

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH



SEARCH AND RESCUE (SAR) PLANS Of
OPERATION

VERSION-2, 2023

PUBLISHED BY
AIR TRAFFIC MANAGEMENT (ATM) DIVISION
CIVIL AVIATION AUTHORITY OF BANGLADESH
KURMITOLA, DHAKA



PREAMBLE

The SAR Plans of operation is issued by the Chairman, Civil Aviation Authority of Bangladesh in pursuance of the powers vested on him vide Civil Aviation Rule (CAR), Part-Twelve Art -12.1, (1) & (2) and ANO12, Chapter 4, Para 4.2.1.

The SAR function is a State obligation imposed by the Convention on International Civil Aviation (Chicago Convention-1944). This document will serve as a reference for use by the Rescue Coordination Centre in the planning and execution of an Aeronautical SAR operation within the SAR Region (SRR) of Bangladesh. SAR in Bangladesh is provided by ANS provider under the joint collaboration of Civil Aviation Authority of Bangladesh, Bangladesh Army, Bangladesh Navy, Bangladesh Air Force, Bangladesh Fire Service & Civil Defense, Bangladesh Marine Authorities, Bangladesh Coast Guard, Bangladesh Police, Border Guard Bangladesh and Other Civil Organizations when so requested.

PURPOSE

The purpose of this plan is to establish responsibility, authority, operational and administrative procedures for aeronautical SAR activities within the boundaries of the SAR region (SRR).

OBJECTIVES

To describe guidelines for SAR 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 SAR service 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. The SAR function is a State responsibility and is provided by ANS provider with respect to obligations that Bangladesh has accepted under Article 25 of the Convention of International Civil Aviation. The SAR Plans of operation has been enacted by Civil Aviation Authority of Bangladesh (CAAB) in pursuance to powers conferred to the Chairman CAAB vide Civil Aviation Rule (CAR) 84, Part-XII, Art - 232 (1) & (2) and ANO-12, Chapter-4, Para 4.2.1.

The key element of a successful SAR operation is the speed with which it can be set up and carried out. It must always be presumed that in each incident there are survivors who need help and whose chances of survival diminish with every passing minute. In Bangladesh, there are various Government, Public and Private Organizations who share the task of rescue of those in distress. Besides the standing arrangements already exist between various organizations, I appeal to all organizations and personnel to join hands to share the responsibilities of SAR operation, should there be a need.

This document is issued and will be amended as and when require by the authority of the Chairman, CAAB. Suggestion for improvement of the document may be directed to:

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This order shall have immediate effect.

Date: 22.01.2023

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AMENDMENT RECORDS

Amendments to this Aeronautical SAR Plan in Bangladesh are issued by Chairman, Civil Aviation Authority of Bangladesh.

The amendments listed below have been incorporated into this copy of the Aeronautical Search and Rescue Plan.

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



ABBREVIATIONS

AIP	Aeronautical Information Publication
AIS	Aeronautical Information Services
ATC	Air Traffic Control
ATS	Air Traffic Services
ARCC	Aeronautical Rescue Coordination Centre
COSPAS-SARSAT	Cosmicheskeya Systema Poiska Avariynich Sudop- Search and Rescue Satellite Aided Tracking.
ELT	Emergency Locator Transmitter
FIR	Flight Information Region
GADSS	Global Aeronautical Distress & Safety System
HSIA	Hazrat Shahjalal International Airport
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
SC	Search and Rescue Co-ordinator
SRR	Search and Rescue Region
SITREP	Situation Report
SMC	Search and Rescue Mission Co-ordinator
SOLAS	Safety of Life at Sea
SPOC	Search and Rescue point of contact
SRU	Search and Rescue Unit

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Chapter-1

1. 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 Aeronautical Distress & Safety System

A global communication system, 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.

(INCERFA) Uncertainty phase

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

(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.

May Day.

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.

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.

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 Aircraft

An aircraft provided with specialized equipment suitable for the efficient conduct of Search and Rescue missions.

(SC) Search and Rescue 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.

**Search and Rescue facility**

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

Search and Rescue Organisation

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

Search and Rescue 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.

Search and Rescue Unit

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

(SMC) Search and Rescue Mission Coordinator

An official temporarily assigned to coordinate response to an actual or apparent distress situation.

Search action plan

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

Search and Rescue 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

(SPOC) Search and Rescue Point of Contact

Rescue coordination centres and other established and recognized national points of contact which can accept responsibility to receive COPAS- SARSAT alert data to enable the rescue of persons in distress.

Uncertainty Phase

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

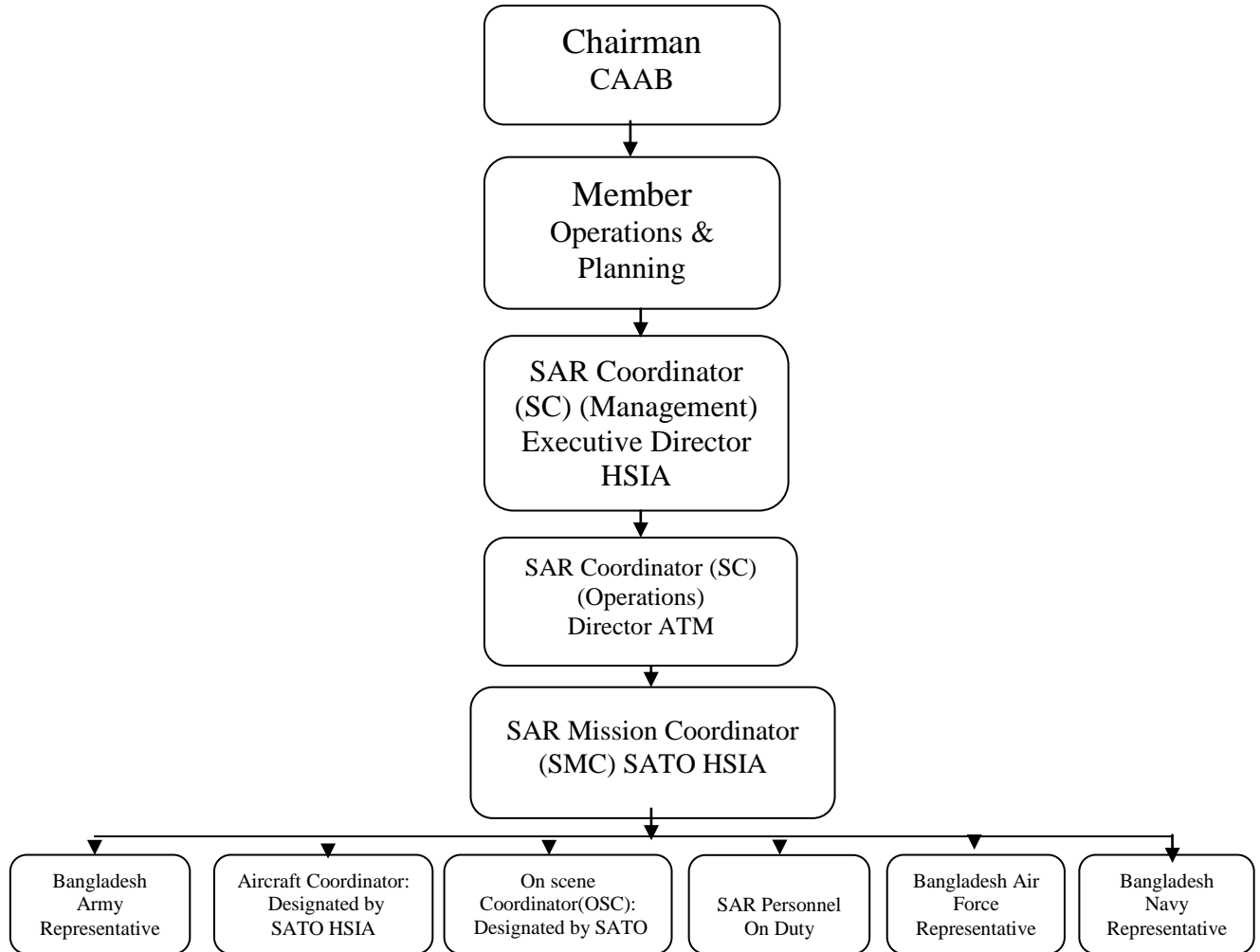


Chapter-2

2. SAR Organizations

2.1 SAR Service Organizational chart of Civil Aviation Authority of Bangladesh (CAAB)

The following chart shows the positions of the SAR Organizations of CAAB



SAR Service:

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



2.1.1 SAR Coordination

The SAR system has three general levels of coordination:

General Levels	General Functions	Designation of SAR Services in CAAB
1(a) SAR Co-ordinator	Management	Executive Director, HSIA
1(b) SAR Co-ordinator	Operations	Director, ATM (CAAB HQ)
2.SAR Mission Coordinator	Mission Planning	SATO (HSIA)
3.On-Scene Coordinator	Operational Oversight	Temporarily designated by SATO (HSIA) from ATS

2.2 Search and Rescue Region (SRR)

The SRR of Bangladesh shall coincident with the boundaries of Dhaka Flight Information Region (FIR) and adjacent waters named as Dhaka SRR.

2.3 SAR Point of Contact (SPOC)

Dhaka ACC is the designated SAR Point of Contact (SPOC) for the receipt of COSPAS-SARSAT distress data.

Flight Information Officer (FIO) on duty shall act as the 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, +88-02-8901464
Fax: + 88-02-8901924
E-mail: rcc_dhaka@caab.gov.bd

2.4 Rescue Coordination Centre (RCC)

- i. Dhaka RCC located in the 3rd floor of Control Tower Building Room No ; 411
- ii. RCC and as appropriate, RSC shall be arranged to be Staffed 24hours a day by trained personnel 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 to be arranged; such as:
 - a) Communications Exercise(In the first year);
 - b) Co-ordination Exercise/Table-Top-Exercise (In the second year);
 - c) Full-Scale Exercise or a Field Exercise (May be in the Third year or Once in three year).
- vii. Training programmes (Initial, Recurrent and Specialized) should be established for RCC/RSC staff and maintain their Training Records;
- viii. Any authority or any element of SAR organization 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 of HSIA, 3rd Floor, and Room No. 411

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

Required	Desired
<ul style="list-style-type: none"> ▶ 24-hour availability of duty officer ; ▶ 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 (Calcutta, 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 Name, location and telephone numbers of RCC and RSCs of CAAB:

SL No.	Name of the Airport.	Telephone Nos.	Director/SATO/APM Telephone Nos.
1	Hazrat Shahjalal International Airport, Dhaka.	ACC : 8901462, 8901463. 8901904-13/3465, 3410. RCC : 8901464, 8901904-13/3589. Control Tower: 0248964462, 01894908022 8901904-13/8022.	Executive Director, HSIA Off: +88-02-8901449 Mob: +88-01894908010 Fax: +88-02-8901450 E-mail: edhsia@caab.gov.bd SATO Off: +88-02-8901460, +88-02-8901904-13/3412 Mob: +88-01894908900 E-mail: satohsia@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, Chattogram.	Control Tower: 0241350105,	Director Off: +88-0241350100 Mob: +88-01894909100 SATO Off: +88-0241350106, Fax: +88-031-2500979 E-mail- dsaiactg@caab.gov.bd
3.	Osmani International Airport, Sylhet.	Control Tower: 02996634315 Mob: 01894909222	Director Off: +88-0821-714243 Mob: +01894909200 dsylhet@caab.gov.bd
4.	Cox's Bazar Airport, Cox's Bazar.	Control Tower: 02333346987	+88-023-33346987 Res : +88-0341-64075 Mob: 01894909300 apmcox@caab.gov.bd
5.	Ishurdi Airport, Ishurdi.	07326-63961	APM Off: +88-07326-63569 Mob: +88-01894909800 E-mail: apmishurdi@caab.gov.bd
6.	Jashore Airport, Jashore.	Control Tower: 0421-65032	APM Off: +88-0421-64033 Mob: +88-01894909600 E-mail: apmJashore@caab.gov.bd
7.	Saidpur Airport, Saidpur.	Control Tower: 05526-72044	APM Off: 88-05526-72384 E-mail: +88-01894909400 E-mail: apmsaidpur@caab.gov.bd
8.	Shah Makhdum Airport, Rajshahi.	Control Tower: 0721-800157	APM Off: +88-0721-800153 Mob: +88-01894909500 E-mail: apmrajshahi@caab.gov.bd
9.	Barishal Airport, Barishal.	Control Tower: 04327-73373	APM Off: +88-0255061662 Mob: +88-01894909700 E-mail: apmBarishal@caab.gov.bd
10	Cumilla Airport, Cumilla.	-	APM Off: +88-081-76119 Mob: +88-01894909900 E-mail: apmcumilla@caab.gov.bd



2.6 Aircraft Accident Investigation Committee Bangladesh (AAIC-BD) 24 Hours Investigator on Duty

HOTLINE		
1.	GP CAPT (RETD) MD HARUNUR RASHID MEMBER(OPERATIONS) OF AAIC	Cell: 8801617785671 Cell: 8801769997731 Tel: 8802-9832977
STANDBY		
2.	Head of AAIC-BD CAAB, HQ, Kurmitola, Dhaka.	Cell: 8801715027508 Tel: : 8802-55000712
3.	WG CDR (RETD) MM ASADUZZAMAN	Cell: 8801713125955 Cell: 8801842125955 Tel: 8802-9833856

2.7 Alerting Posts

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

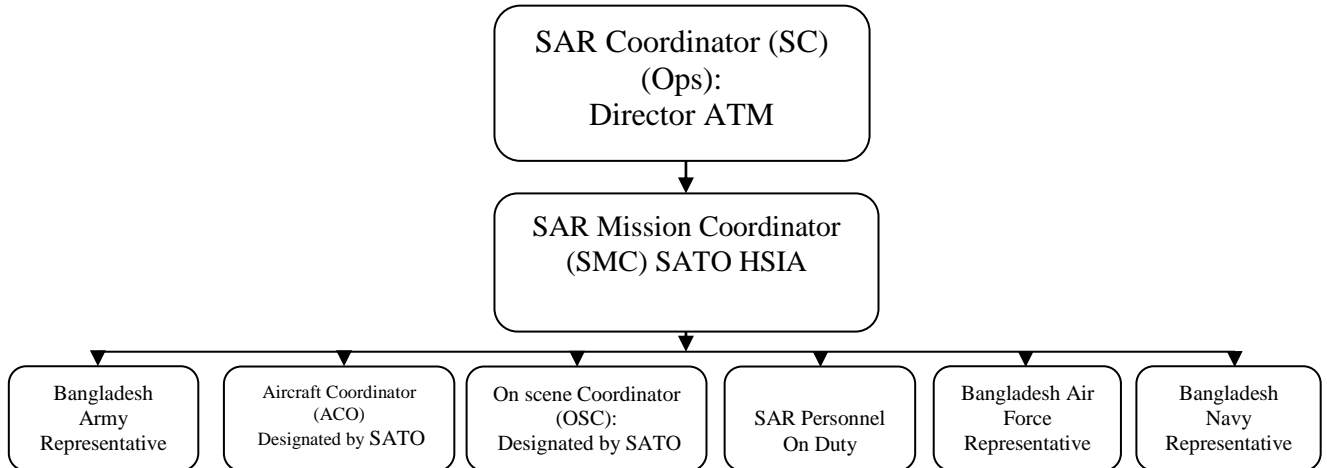
- a) All Civil Airports and Aerodromes in Bangladesh;
- b) All Army Units in Bangladesh;
- c) All Air Force Units in Bangladesh;
- d) All Naval & Coast Guard Units in Bangladesh;
- e) All Police-stations in Bangladesh;
- f) All Border Guard Bangladesh Units;
- g) All Railway Stations in Bangladesh;
- h) All Forest department Units located in different forest ranges in Bangladesh;
- i) All BIWTA and BIWTC Offices in Bangladesh;
- j) Mercantile Marine and Port Authorities;
- k) All other establishments and offices having communication and broadcasting facilities;
- l) All RAB Units including RAB HQ in Bangladesh;
- m) Meteorological Department;
- n) Telephone and telegraph department;
- o) Health Department;
- p) Fire Services and Civil Defense Headquarters, Dhaka (all fire stations in Bangladesh may act as alerting post);
- r) ATS units, aircraft, vessels or other persons or facilities which may receive and relay alerts.



Chapter-3

3. Job descriptions of RCC/RSC Officers and Staff

3.1 RCC Organizational Chart



3.2 Duties and Responsibilities of SC (Management/ED HSIA)

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

- a) establishing, staffing, equipping and managing the SAR system;
- b) establishing RCCs& RSCs;
- 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.

3.3 Duties and Responsibilities of SC (Operation, D/ATM)

- a) activate RCC in case of emergency;
- b) keep liaison with the higher authority and inform update position of the situation;
- c) maintain coordination with other SAR Units (BAF, Navy& Army and others as necessary).
- d) An MOU on SAR is already been made between CAAB and BAF to fulfill the efficient provision of Search and Rescue service in Bangladesh, SAR Coordinator Operations will



coordinate with BAF authority for SAR operation. As per MOU Article five, Para 5.1 BAF will be principal organisation responsible for SAR operation within Bangladesh SRR and will be responding immediately when informed by Dhaka ACC or RCC as per the procedure for the SAR operation.

As per MOU, BAF is an organisation capable of conduct Search and Rescue operations in by her available aircraft, helicopter and trained manpower following the provisions of Air Force Manual No.55-3, within Dhaka FIR including territorial waters of Bangladesh whenever called for.

- e) Reference MOU Article eight, Para 8.1 described that, having information through the concerned appropriate ATS unit(s), or the evaluation of information from Alerting Post and any other unit/personnel/organisation indicates that an aircraft within the territory of Bangladesh is in any phases of emergency, Dhaka ACC or RCC will immediately declare appropriate emergency phase(s) and will inform BAF Operation Centre with a request to activate its operation as may be appropriate for the declared emergency phase(s).

3.4 Duties and Responsibilities of SMC (SATO HSIA)

SMCs are empowered with the authority to adequately carry out their responsibilities and shall:

- 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.



3.5 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 with all participating facilities.
- b) The SMC designates an OSC, who may be the person in charge of a SAR 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.

3.6 Duties & Responsibilities of Aircraft Coordinator (ACO)

The Function of ACO should be seen as a cooperating, supporting and advisory service on scene for supporting OSC and responsible to the SMC. The ACO on-scene must be coordinated closely with the OSC, and if no OSC, as the case may be, the ACO would remain in overall in charge of operation. Duties of the AOC can be carried out from a fixed-wing aircraft, helicopter, ship or an appropriate land unit. Flight safety of aircraft is a primary concern of the ACO. ACO maintain safe separation of aircraft.

3.7 Duties & Responsibilities of RCC /RSC staff

RCC staff on duty designated by SMC shall be responsible for RCC and Airport Manager (APM) 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 onboard;
 - 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:



3.8 Qualifications of SMC

The SMC must be from Air Traffic Services provider 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.

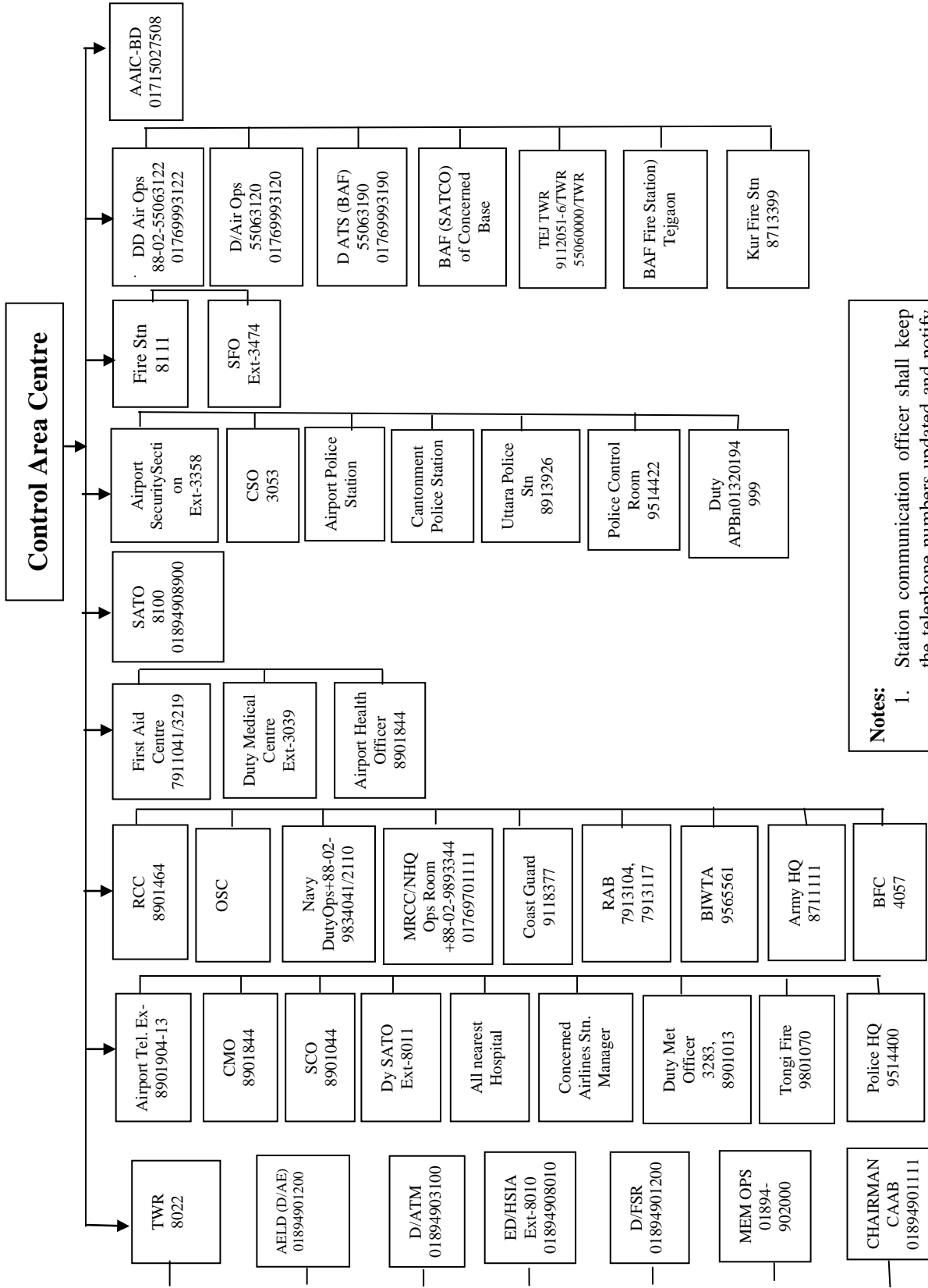
3.9 Qualifications of OSC

To assume the duties as OSC must be from ATS provider and have satisfactorily completed appropriate SAR training.

- 3.9.1 The RCC/RSC staff shall consist of personnel who are experienced in ATC and/or trained in SAR operations. At least two persons must be available with SAR organisation to perform their designated duties.
- 3.9.2 When a period of heavy activity is anticipated or during major SAR incidents, the regular staff may be supplemented as required.
- 3.9.3 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.
- 3.9.4 The number of personnel required to staff an RCC will vary with local requirements, such as traffic density, seasonal conditions etc.



3.10 Search and Rescue (SAR) Emergency Action Flow Chart



Notes:

1. Station communication officer shall keep the telephone numbers updated and notify all concerned in case of any change.
2. The persons—those who are concerned for that situation, only they will be contacted.



Chapter-4

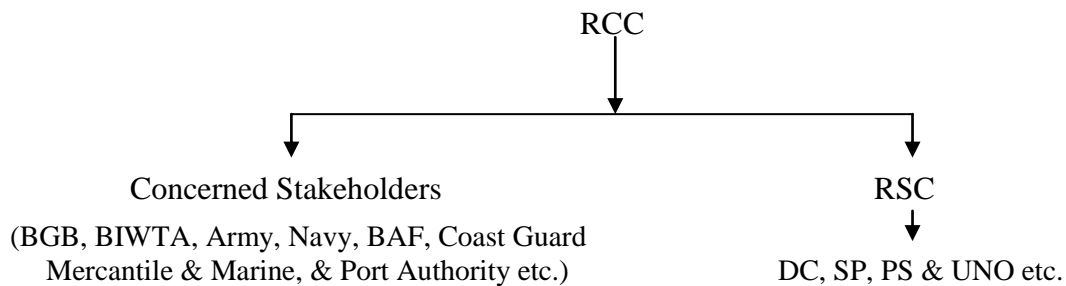
4. SAR System for RCC

4.1 Procedure for RCC

The procedure given below is intended to provide guidance to the authorities in charge of RCC, RSC and Alerting Posts. These are only basic procedures normally adopted and should be interpreted with a measure of flexibility because no two SAR situations are identical. The sequence of action indicated may have to be modified to suit the particular situation. Notification of emergency RSC, Alerting posts and/or ATS Units shall notify the RCC concerned immediately an aircraft is believed or reported to be in a state of emergency and also the phase of emergency.

4.2 RCC action flow Chart

RCC Coordinating Chart



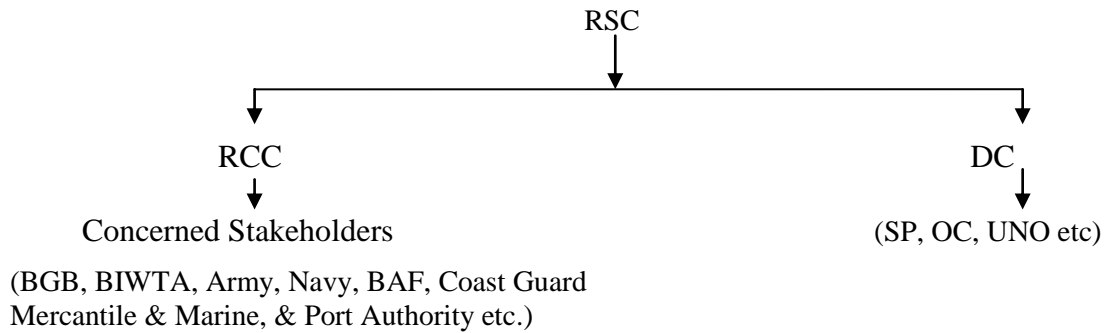
4.3 Duties of RCC for land Search

RCC shall inform/request:

- a) RSC concerned for SAR action;
- b) BGB, 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 SAR action;
- c) Railway control at Bhairab Bazar/ Paksey/ Chattogram/ 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 SAR 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 SAR action directly or through rescue units;
- h) Navy, Coast Guard, Port Authorities, Mercantile & Marine Authorities if SAR over sea is involved;



4.4 RSC action flow chart



4.5 Duties of RSC officers/staff for land search

On receipt of the information about an emergency aircraft through any source, all RSC officers/staff 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/ OC of Police Station concerned to alert all police post and outpost in the vicinity of the affected aircraft to assist in search and rescue;
- e) Request the concerned District traffic superintendent of Bangladesh Railway to instruct the Railway station in the vicinity of the affected aircraft to assist in SAR 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, person on board etc. (as much information as 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 SAR;

4.6 Specific duties of RSCs officers/staff for SAR at sea

In addition to the general duties listed before RSC officers/staff shall also take specific action as listed below:

4.6.1 Chattogram RSC Shall:

- a) Keep liaison with Commander Chattogram Naval area & all MRCCs, Harbour Master and Coast
- b) Guard Chattogram and Naval Commander in Khulna, Army, and Air force in organizing SAR at sea, as applicable;



- c) Inform Chattogram Padma Oil Company Ltd, Meghna Petroleum Ltd and Bangladesh Fire Service & Civil Defense (BDFS & CD), Police, and Civil Administration to assist in SAR with their available vehicles/water-vessels, as appropriate;
- d) Assist Cox's Bazar RSC, if SAR action is taken by Cox's Bazar RSC, in maintaining liaison with RCC, Dhaka and other concerned units located at Chattogram;
- e) Obtain help and assistance from Army and Air force units, BIWTA located at Chattogram.

4.6.2 Jashore RSC:

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

4.6.3 Sylhet RSC:

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

4.6.4 Cox's Bazar RSC:

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

4.6.5 Saidpur RSC:

- a) Request Army, Police and Civil administration for land search and obtain help and assistant from them;
- b) If direct liaison with RCC Dhaka & concerned agencies is not possible due to lack of speedy and reliable means of communication, liaison will be maintained through the Rajshahi RSC.

4.6.6 Rajshahi RSC:

- a) Request Police and Civil administration for land search and obtain help and assistant from them.
- b) If direct liaison with RCC Dhaka & concerned agencies is not possible due to lack of speedy and reliable means of communication, liaison will be maintained through the Saidpur RSC.

4.6.7 Barishal RSC:

- a) Request Police and Civil administration for land search and obtain help and assistant from them.
- b) Obtain help and assistant from Naval Commander in Khulna in organizing SAR at sea, if necessary;
- c) If direct liaison with RCC Dhaka & concerned agencies is not possible due to lack of speedy and reliable means of communication, liaison will be maintained through the Jashore or Chattogram RSC.



4.6.8 Ishurdi RSC:

- a) Request Police and Civil administration for land search and obtain help and assistant from them.
- b) If direct liaison with RCC Dhaka & concerned agencies is not possible due to lack of speedy and reliable means of communication, liaison will be maintained through the Rajshahi or Saidpur RSC.

4.7 Information concerning emergencies

4.7.1 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.

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

4.7.3 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.

4.7.4 SAR Facility list

It is crucial for the SMC to be aware of the available units in or close to the SRR. Therefore, there must be an asset register in the RCC. Ideally, for easy regular updating, it could be available in electronic format/online. It may then appear as a separate document. However, if it is not the case, at least a list of available assets should be maintained.

4.8 Procedures for RCC during emergency phases

Three phases of emergencies are:

- Uncertainty Phase (INCERFA)- uncertainty exists
- Alert Phase (ALERFA)- apprehension exists
- Distress Phase (DETRESFA)- there is a reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger and require immediate assistance

Declaration of phases should be within the specified time in the following table as a guide:

		INCERFA	ALERFA	DETRESFA
For All Flights	Distress Signal Mayday-SOS-A7700			Within 5 min
	Urgency Signal-Pan Pan-XXX- ELT		Within 5 min	Depending on the circumstances
	Unlawful Interference -A7500		Within 5 min	Depending on the circumstances
	Loss of both radio (where required by ATC) and RADAR contact		Within 5 min	Within 10 min
	Loss of radio contact in the approach phase and within the aerodrome traffic zone/aerodrome vicinity		Within 5 min	Within 10 min
	Loss of radio contact with aircraft leaving the aerodrome traffic zone/ aerodrome vicinity	Within 10	Within 30	Within 30



Controlled Flights	Loss of radio contact		Within 10	Within 20	Within 30
Uncontrolled Flights	Flight Plans submitted	Loss of radio contact (where required by ATC)	Within 30	Within 60	Within 90 min or when remaining fuel onboard is considered exhausted
		Delay in arrival	Within 30	Within 60	Within 90 min or when remaining fuel onboard is considered exhausted
	Flight Plans not submitted		Depending on the circumstances		

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 is 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 SAR 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.



4.8.1 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.

4.8.2 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.

4.8.3 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" 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;
- c) Initial action to obtain full details of the aircraft in case of Departure /Plan. Message not received;
- d) Inform concerned ATS units, RSC and Alerting posts for necessary SAR 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, Chief of Flight Inspection, CAAB, Director of Air Operation, Bangladesh Air Force, Director, Bangladesh Army Aviation, SATCO BAF Base Basher, Director Operations, Bangladesh Navy, Director, Bangladesh Coast Guard, Owner of the Aircraft, Honorary Secretary Bangladesh Flying Club Limited, IGP Police ,DG Bangladesh Railways, Head of Postal and BTCL, Duty Controller Biman Operations, Chief of Harbor master & Port Authorities(if necessary), BIWTA, Deputy Commissioner, Upazila Executive concerned, DG Radio Bangladesh & Bangladesh Television(if necessary), DG RAB & DG BGB ,Fire Service & Civil Defense HQ, Dhaka and any other organization or person if required as applicable;



- f) Plot the probable estimated position of the aircraft on the map (Procedure for international aircraft accident in Bangladesh is incorporated in Airport Emergency Plan (AEP)).

4.9 Search

4.9.1 Aerial Search

Dhaka RCC shall be responsible to coordinate with the following organisations/units to organize aerial search of the entire SRR of Bangladesh:

- b) Director of Air Operation, Air Headquarters, Bangladesh Air Force;
- c) Director, Bangladesh Army Aviation ;
- d) Director Operation, Naval Headquarters;
- e) SATCO's of BAF Bases (Bashar, Dhaka/Zahurul Haque, Chattogram/Matiur Rahman, Jashore/Bangabandhu, Kurmitola).

4.9.1.1 BAF will carry out Aerial Search in Bangladesh in case of any aircraft missing within Dhaka SRR. BAF shall endeavor to make available aircraft and crew for SAR operation. Such aircraft will conduct SAR operation in accordance with requirements of the RCC Dhaka.

4.9.1.2 In addition, co-operation may be sought from the following organizations, if required:

- (a) Duty Operation Officer, of National or Private Airlines;
- (b) Training Flying Academy or Organisations.

4.9.1.3 Dhaka RCC 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.

4.9.2 Land Search

RCC/RSC shall co-ordinate with available Civil Administration, BAF, Bangladesh Naval Aviation, & other Military/Para Military Services, Police, Forest Department, Fire Services and Civil Defense, Railway, BTCL and other organizations within its own area as necessary for manpower and equipment and conduct land Search of its own area. All RSC will work under the instruction of Dhaka RCC.

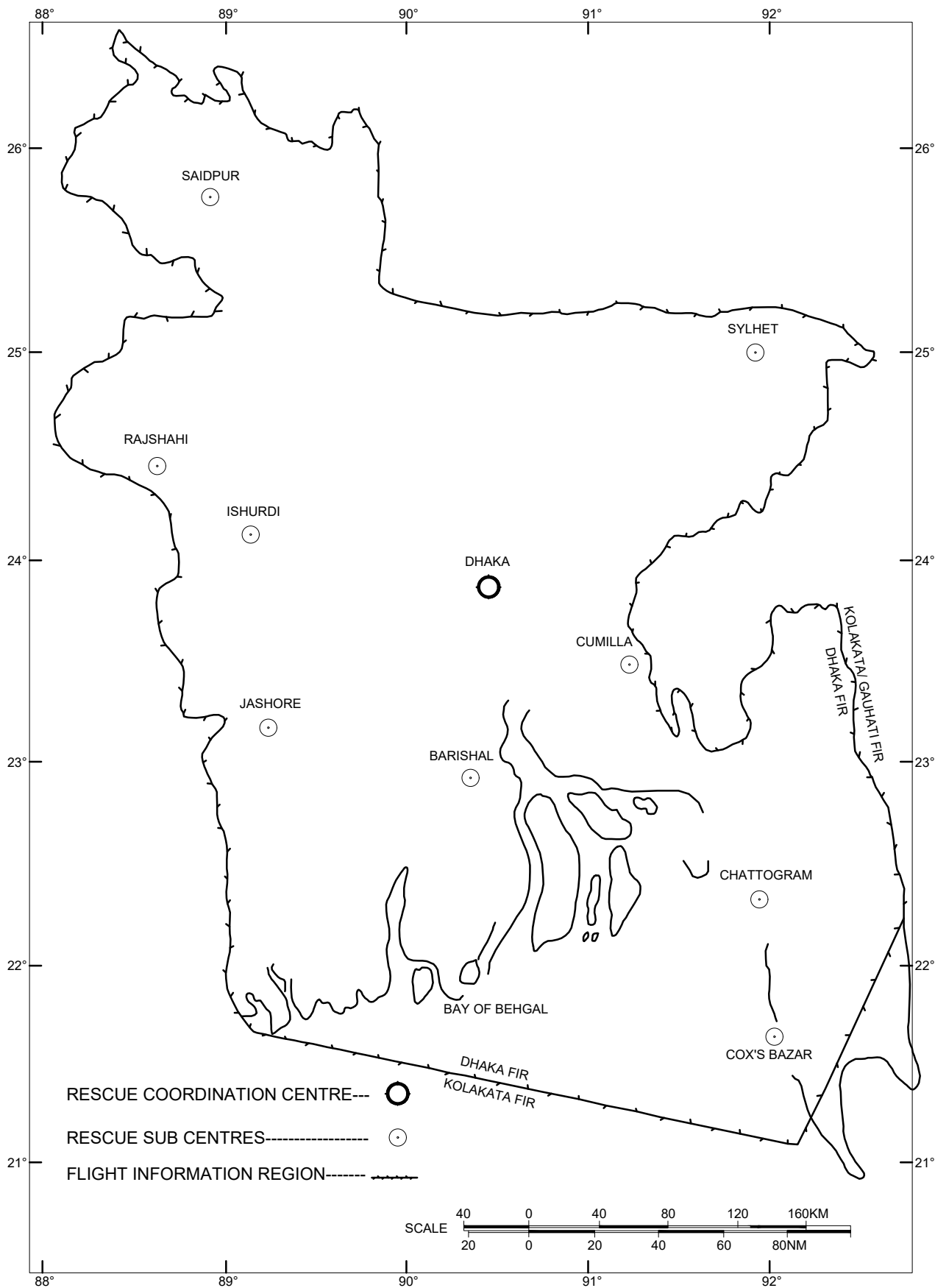
4.9.3 Maritime Search

When there is a possibility that, any aircraft or person have fallen into water, MRCC Dhaka and concerned MRSC (Chattogram or Khulna) will be alerted to initiate Maritime SAR .Due to the vastness of the Sea and a larger possibility for an aeronautical emergency to turn into a maritime SAR mission, an Air Liaison Officer may be placed at MRCC or concerned MRSC. In such case the mission will turn into a maritime SAR operation and hence would be taken over by MRCC Dhaka. RCC will continue to follow up and may also request BAF and other agencies to continue rendering aircraft support.

**4.10 Area of responsibility**

SL No.	RCC/RSC	AREA OF RESPONSIBILITY
1.	Dhaka RCC	Entire area covered by Dhaka SRR.
2.	Chattogram RSC	Entire area covered by the Division of Chattogram except Cumilla, Chandpur and Brahmanbaria Districts and falling South of Latitude 21 ⁰ 45N.
3.	Cox's Bazar RSC	Entire area covered by the Division of Chattogram except falling North of Latitude 21 ⁴⁵ N.
4.	Cumilla RSC	Entire area covered by the District of Cumilla, 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 Natore District.
8.	Ishurdi RSC	Entire area covered by the District of Pabna and Natore .
9.	Jashore RSC	Entire area covered by the Division of Khulna.
10.	Barishal RSC	Entire area covered by the Division of Barishal.

RESCUE COORDINATION CENTRE(RCC) AND RESCUE SUB CENTRES(RSC)





4.12 Functions of ATS units

All 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 AFTN or by any other means. These alerts shall immediately be communicated to the RCC.

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.

4.13 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.

4.13.1 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 arrange of incident times, positions, situations and environmental factors; and
- a) propose locations and areas most likely to contain the search object.

4.13.2 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.

4.13.3 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.

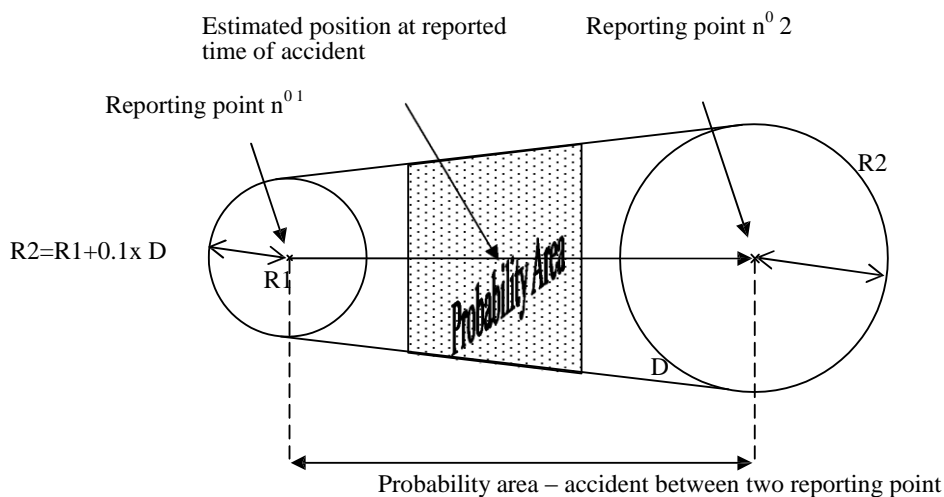
Unless the position of an aircraft in distress is accurately known, the most Probable location of the missing aircraft should be calculated. This location, corrected for surface movements over time, is known as the datum. Determination of the probability area is based on the navigational accuracy of 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.

4.14 Search action plan

4.14.1 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:

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



4.15 Rescue action plan

4.15.1 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 air craft, etc.

4.16 Termination or suspension of SAR mission

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

4.16.1 SAR mission shall be terminated only upon the decision by the Chairman, CAAB.

4.16.2 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.



Chapter -5

5. Designation of SAR units, elements public or private suitably located for SAR operation.

5.1 Role of Defense Services of Bangladesh

Defense services with their large resources of men and material are in position to render very useful assistance in the matter of SAR covering a wide area.

5.2 Bangladesh Army

For SAR operation over the land, the Army can help in numerous ways and more important aspects of their assistance are as follows:

- a) Inform different army units within the concerned area of emergency aircraft to carry out search and rescue;
- b) Provision of temporary alerting posts;
- c) Provision of transport and communication facilities;
- d) Provision of emergency and survival equipment to the extent possible;
- e) Provision of medical facilities when required;
- f) Co-ordination and provision of information to RCC, HSIA/Nearest RSC.

5.3 Bangladesh Air Force (BAF)

BAF is maintaining an organization for SAR which is intended to work in close co-operation and liaison with the Civil Aviation Authority. The Base commanders BAF Base Basher/Zahurul Haque/Matiur Rahman and Bangabandhu will furnish at the request of RCC, Dhaka all possible assistance in SAR of aircraft in emergency as early as possible. BAF is also responsible for undertaking the SAR of occupants of civil as well as military aircraft in distress and provides support for SAR operation of Military/civil ships and its occupants in distress, when requested by MRCC. BAF will select type of aircraft suitable for aerial search as per Air Force Manual No. 55-3 for "operation of Search and Rescue". All reports received by the Air force to be communicated to RCC. BAF having suitable aircraft for SAR in Bangladesh will carry required food stuff and ancillary equipment and will drop to survivors when necessary. BAF can render timely assistance in locating missing aircraft. BAF will carry out aerial search in Bangladesh.

Each SAR aircraft shall be equipped with a device for homing on distress frequencies (406 MHz, 121.5 MHz, 2182 KHz and 2187.5 KHz).

5.4 Bangladesh Navy

When any ship in Bangladesh (internal, territorial, EEZ or continental shelf) receives any distress message from another ship or aircraft, they are required to report to nearest navy/coast guard station or MRCC. For SAR operation over deep sea the co-operation and assistance of the naval authorities is of utmost importance. In the event of an emergency, Dhaka RCC or RSC at Chattogram Airport or RSC at Jashore Airport will request the nearest naval authority to render all possible assistance. Information relating to an aircraft in emergency/distress, if received by the mercantile marine department or any other organization having wireless station at coastal areas may also be conveyed to the Naval authorities. On receiving such information the naval authorities shall forthwith take all steps to render immediate aid and assistance to the aircraft or its survivors.



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), 156.8 MHz maritime voice distress, safety and calling frequency or 123.1 MHz may be used for communication on scene as applicable.

5.5 Mercantile Marine, Coast Guard, Port Authority.

Mercantile Marine, Coast guard and Port authority Bangladesh may sometimes be in a position to render the most valuable assistance in SAR operation. Any information regarding aircraft in distress or in emergency at sea receive or observe shall take action according to their emergency procedure.

5.6 Bangladesh Fire Service and Civil Defense (BDFS&CD)

For rescue operation over water and land areas the co-operation and assistance of Bangladesh Fire service and Civil Defense (BDFS&CD) is utmost importance, in the event of emergency. Information relating to an aircraft in emergency/distress, if received by shall forth take all steps to render immediate aid and assistance to the aircraft or its survivors as per their procedures.

5.7 Ministry of Disaster and Management

For rescue operation over water and land areas the co-operation and assistance of Ministry of Disaster Management is utmost importance, in the event of emergency. Information relating to an aircraft in emergency/distress, if received by shall forth take all steps to render immediate aid and assistance to the aircraft or its survivors as per their existing procedures.

5.8 Air/ Sea Search and Rescue

In the case of aircraft missing over the sea, when notified, MRCC Dhaka will initiate Maritime SAR mission as per procedure.

BAF search aircraft may also be requested to relay distress messages on emergency frequencies 121.5 MHz and 156.8 MHz

MRCC Dhaka is responsible for SAR operation in maritime zones of Bangladesh (Territorial Water, EEZ and Continental Shelf) in coordination with Armed Forces, Coast Guard, Fire Service, BIWTA, CAAB and Department of forest.

The Bangladesh Air force is responsible for co-coordinating SAR in waters adjoining Bangladesh in conjunction with the local Naval, Mercantile Marine, Port trust, Coast Guard and Civil Aviation Authorities.



Chapter-6

6. Role of schedule aircraft in the air and training flights which do not form the part of the SAR organisation

6.1 Schedule aircraft in the air and training flights

Pilots of schedule aircraft in the air and training flights can render timely assistance in locating missing aircraft.

a) Divert their aircraft to assist an aircraft in distress. An Aircraft, in the vicinity of the Aircraft which is threatened with danger should divert from its course, if such diversion is necessary for rendering assistance to the threatened aircraft. When requested by RCC/ECC to search for a missing aircraft, the pilot in flight shall deviate from his course to cover the presumed route of the missing aircraft provided that the detour can be made without any hazard to safety.

b) Provide Information to RCC/Rescue Sub Centre/Alerting post. The crew of aircraft on Intercepting any distress signals should in addition to taking appropriate action in accordance with the national and international regulations, endeavor to communicate the same to RCC, Dhaka or nearest RSC/Alerting post.

6.2 Action by Pilot in Case of Forced Landing

Pilot-in-Command or any other member of the aircrew of the aircraft obliged to make a forced landing or a non-scheduled landing at a place which is not a controlled aerodrome should communicate by any quickest means available, to the Airport/Aerodrome or to the ACC/FIC/RCC, the following information:

- a) Registration marking of the aircraft;
- b) Pilot's name;
- c) Position of aircraft (distance and bearing from marked prominent place);
- d) Cause for forced landing;
- e) Nature of assistance required.

In addition, he should also notify DC/ UNO/ Local Police Officer/ Union Parishad Chairman as far as possible.



Chapter-7

7. Role of BGB, Police, RAB and various civil organizations (DC, UNO) which do not form the part of SAR organisations

7.1 BGB (Border Guard Bangladesh)

The BGB with their large resources of men and materials are in a position to render very useful assistance in the matter of ground SAR covering a wide area specially border areas. It is hoped that the BGB authorities will issue instruction to different units of BGB to assist in SAR of a distressed aircraft and to inform the RCC, Dhaka or to the nearest Airport/aerodrome and police as and when any information received about the distressed aircraft with detail particulars about the condition of the aircraft and persons on board including assistance required. BGB personnel may also be instructed to guard the aircraft without disturbing the wreckage. However, wounded crews and passengers including dead bodies can be rescued encountering fewer disturbances to the wreckage. First aid to be provided to wounded passengers or crews. BGB personnel will hand over responsibility of further action to police as they arrived.

7.2 Police, RAB (Rapid Actions Battalion) and various Civil Organisations

The assistance to be rendered and the function to be assumed by Police/RAB/Fire Service/DC/Upazila Nirbahi Officer, in aiding SAR operations are almost unlimited and it will not be possible to specify exactly the extent to and the manner in which they will be called upon to provide help in these operations. Some of their more important functions are, however indicated hereunder:

- (a) Channelization to the RCC or the RSC of information received from pilots; public or other sources, relating to aircraft in distress;
- (b) Assistance in location of a missing aircraft;
- (c) Assistance on side to aircraft in distress;
- (d) Guarding the aircraft and its wreckage; and
- (e) Assistance in investigating the cause of accident.

Channelization of information and information relating to an aircraft accident may be received by police authorities from various sources. The first reaction of a member of public, who has observed an aircraft in a perilous situation, would be to inform the nearest Police-station, Fire authority or Union Parishad Chairman.

It is imperative that any information received by Police authorities relating to an aircraft in danger or distress should be communicated to the Officer-in-charge/Airport Manager of the nearest Airport/Aerodrome or RCC Hazrat Shahjalal International Airport, Dhaka.

It would prove helpful to each police-station to know beforehand which are the nearest Alerting post/RSC and RCC to which it has to send messages, and the medical and the district authorities who are to be informed for rushing help etc.

7.3 Assistance in locating of the missing aircraft

When there is no news of an aircraft and it has become so overdue that the occurrence of an Accident is to be apprehended, the problem of locating it assumes a very different character and it is in this case that the RCC may call upon the police authorities to render help in locating the aircraft.

On a request from RCC/RSC, Police authorities shall send a search party to locate the missing aircraft it is impracticable to attempt to include here detailed guidance on the methods to be adopted by these search parties in reaching their objective as this essentially a problem dictated by local conditions.



The search parties will, as far as possible, be briefed fully to the RCC, and/ or the Alerting post/ RSC and will conduct the search in accordance with the direction received by them from the RCC or the Alerting post/ RSC. Search parties should carry first aid kit and large scale maps of an area and other necessary equipment suitable for the operations.

7.4 Assistance on site to aircraft in distress

When the place of accident is known, the police official on duty shall on his own initiative organize a party which shall proceed forthwith to the scene of accident to render all possible help to the aircraft and the survivors. He shall also simultaneously take action to transmit or dispatch a report to the rescue co-ordination centre or the rescue unit and obtain instructions. Assistance by Police, on site to aircraft in distress shall also be rendered in response to and in accordance with the request from the RCC or the RSC. While the extent of assistance required from police will depend upon the nature of the accident.

7.5 Rescue of passengers, crews and others

- a) Even prior to arrival of the Inspector of Accident, Officer-in-Charge of the nearest Airport/Aerodrome or any officer of the Civil Aviation Authority, the Police authorities shall initiate action to extinguish fire and assist the officers of the fire authority, on their arrival.
- b) While rescuing the injured crew members (Pilot & co-pilot) their identification and location in or around the aircraft must be carefully observed and recorded.
- c) In the event of pilot and/or the co-pilots being found dead, it is advisable to take photographs prior to their removal. The removal action should be such as to cause minimum of disturbance to the aircraft wreckage/parts and any such disturbance should be fully recorded.
- d) The location of the passengers alive or dead should be recorded immediately during rescue/ removal operation. However removal of the injured to the nearest hospital must not be delayed for want of formalities with regard to the recording as stated above.
- f) Removal of the persons dead or alive from the wreckage is the responsibility of the Police/ Fire service & Civil Defence as in any other accident.
- g) Goods and passenger's baggage may be removed from the aircraft only under the supervision of the Inspector of Accidents but if the aircraft has come from a place outside
- h) Bangladesh they shall not be removed from the vicinity of the aircraft except on clearance by or with the consent of an officer of customs.

7.6 Medical Check-up/Post-mortem Examination

i) Crew Members Alive

The Captain and the Co-pilots should be immediately subjected to medical check-up for consumption of alcohol. The Doctor carrying out such a medical check-up shall take samples of blood, urine etc as required for detailed chemical analysis. The samples shall be suitably preserved for detailed laboratory examination. These checks should be expeditiously carried out without any loss of time for obvious reasons.

ii) Dead Crew Members

- a) In the event of death of the crew member, he/they should be subjected to detailed Post-mortem examination immediately to ascertain the precise cause of death including the presence and extend of alcohol and carbon monoxide etc, in the system of the blood, urine and the viscera of the dead should be properly preserved by the Doctor carrying out post-mortem examination for further detailed chemical analysis.



b) The Post-mortem examination shall include among those mentioned above, other aspects such as physical incapacitation if any, prior to the accident and precise cause of death etc.

c) Prior to subjecting the body of the crew member to Post-mortem examination its identification must be fully and properly established to the extent possible, full body photographed and its clothes and belongings recorded and preserved carefully in accordance with the Police procedures.

Note: The local police authority will take necessary action for Post-mortem examination of crew member of civil aircraft. Military authorities are to arrange Post-mortem examination in case of a military aircraft. Police authority concerned will dispatch a copy of the Post-mortem examination to the Chairman, Civil Aviation Authority of Bangladesh, Kurmitola, Dhaka at the earliest possible to carry out investigation.

7.7 Release of dead bodies

i) Crew

No dead bodies of the crew members especially of the pilot and the co-pilots are to be released even after the Post-mortem examination has been completed by the Police authorities or any other authority. The Inspector of Accident/any other representative of the Chairman, Civil Aviation Authority is the only authorized officers to issue instructions for the release of dead bodies of crews.

ii) Passengers

With the approval of Inspector of Accident, the Police authorities may dispose the dead bodies of the passengers in accordance with their procedures and in consultation with airlines/ owner concerned.

7.8 Guarding of the wreckage and preservation of evidence

- a) The entire site of the crash area, including wreckage trail shall be immediately cordoned off and guarded by the police till such time the investigation of the accident has been completed and positive instructions in writing issued to the police authorities by the Investigator of accident/Investigation-in-Charge or the Chairman, Civil Aviation Authority of Bangladesh;
- b) The Police authorities arriving at the site of crash shall ensure that the public and other unauthorized person are kept away from entering into the cordoned area and not allowed to interfere with the wreckage/parts of the aircraft or move around in the area which may obliterate the ground marks left by the aircraft which are of considerable value as a piece of evidence to the investigator;
- c) The parts of the wreckage aircraft shall not be disturbed or interfered with except for the purpose of providing succor to the injured, removal of human remains, extinguishing of fire and a saving the wreckage parts.

7.9 Eye Witness

Police authorities shall record the names and addresses of all the eye witnesses and others who may have first-hand knowledge of the accident and supply such a list to the Investigator of Accident/Investigation-in-Charge on his arrival for the purpose of investigation and facilitate production of such witnesses, if recorded, may be handed over to the Investigator of Accident/ Investigation-in-charge..

7.10 General

- (a) On the arrival of the Inspector of Accident/ Investigator-in-Charge at the crash site and his assuming responsibility shall be the final authority in all matters.



b) For the purpose of investigation under the aircraft Rules 1937, it is imperative that Investigator of Accident/Investigator-in-Charge appointed by the Chairman, Civil Aviation Authority has an unrestricted control over the aircraft wreckage and the accident site. The police authorities shall provide maximum assistance required by him in discharge of his duties, however, the police authorities may carry out their functions in accordance with the police procedures and other such formalities which they are required to fulfill under relevant rules in co-ordination with him without interfering smooth and efficient function of the Investigator of Accident/ Investigator-in-Charge (IIC).

7.11 Photography

Photography may be carried out freely, by the police authorities and/ or the fire fighting authorities taking due care that no ground marks are obliterated and the aircraft wreckage/ parts are not disturbed for this purpose. The Investigator of Accident/ Investigator-in-charge may however take over this function on his arrival.

7.12 Rescues by Fire-Fighting Services

a) During rescue operation, fire-fighting services play a very important role. Whilst extracting the bodies from the wreckage alive or dead, the Officer-in-Charge supervising the operation shall ensure that minimum disturbance to the wreckage is caused while extricating such bodies and that he will keep adequate notes for the purpose to be passed on to the Investigator of Accident/ Investigator-in-Charge conducting the investigation. Any movement of the control/ cutting of wires, cables etc, must be made note for the purpose. If it is possible free use of photography can be made prior to removal of such bodies.

However, where there is a reasonable doubt to believe that the person to be extricated from the wreckage is still alive no delay should be caused to removal of that body. In the event of there being sufficient reasons to believe that body to be extricated is dead one, all possible care should be exercised as stated above.

b) Where the fire-fighting services are not available, and such rescue operations are being carried out by the police authorities the police officer-in-charge of the operation shall ensure that the above instructions with regard to fire fighting and rescue operations are complied with.

7.13 Assistance in investigating the cause of accident

Accident investigation is recognized today as one of the fundamental elements of a sound Programme of improving the safety of aircraft operation. The high quality of accident investigation necessary to make the Programme a success can only be achieved with the fullest co-operation from the police authorities. The wreckage of the crashed aircraft with invariably contains evidence, which if correctly identified and assessed, will enable the cause of accident to be determined. Every failure, scratch, tear buckle or other damage must have been made by some specific object, or under certain set conditions or circumstances which always leave their traces behind, Just as there is no perfect crime there is also no perfect accident and traces and clues will

always be available to assist in the determination of the cause of accident. The need for preservation of evidence to help in formulation of conclusion regarding the cause of accident cannot therefore be over emphasized.

7.14 Aircraft documents

The Police shall also collect, seal and keep in safe custody documents concerning aircraft as may be found and hand them over intact to the Investigator of Accident on his arrival. All the evidence collected by the police authorities should be made available to the Investigator of Accident, information which is considered of importance should be telegraphed to the Chairman, Civil Aviation Authority of Bangladesh.



Chapter-8

8. Role of UP Chairman, Bangladesh Railway, Postal Department, BTCL, Other Government/Semi-Government Department and Private Organizations which do not qualify as SAR units.

8.1 UP Chairman

Bangladesh being a thickly populated area, the public/Union Parishad Chairman can play a vital role in search and rescue. DC/UNO/Police Officers of different areas are requested to issue instructions to Union Parishad Chairman about their actions after receipt of information of a distressed aircraft. After receiving information about a distressed aircraft the Chairman will normally make arrangement, to rescue wounded crew & the area is properly guarded. He should inform police at the earliest possible.

8.2 Railway Official

Railway officials can play an important role in assisting the SAR organization by ensuring speedy transmission of information relating to aircraft in distress to the Rescue Co-ordination Centre Dhaka or to the nearest Airport/aerodrome/Police through the Railway control for taking appropriate action. Railway controls when requested by the Rescue co-ordination centre, Dhaka or RSC to assist in locating a missing aircraft shall direct all stations and staff in the area to be on the lookout.

8.3 Postal Department and B.T.C.L

The post and Telecommunication and Telephone Department have a vast organization with a network of post and Telephone offices throughout the length and breadth of the country. The active co operation of the officers of these departments and alerting the police or the RCC, Dhaka in case of any accident or danger to aircraft will of great value. Officers of these Departments are to ensure that a high priority is accorded to contact/call relating to aircraft in distress. Normally, such calls should take precedence over all other calls/immediate calls.

8.4 Other Government/Semi-Government department and Private Organizations

Other Departments like, Bangladesh Radio/Television, Wireless office, Ministry of Communication, Ministry of Home affairs, PWD, Roads and Highways, Meteorological Department, Bangladesh Fire Service & civil Defence and others can help in the SAR matter. Instruction may be issued by the concerned Departmental authorities to their subordinate offices to inform RCC, Dhaka/ alerting posts or police station as and when information received about a distressed/ missing aircraft. Bangladesh Radio can broadcast information about a missing aircraft when requested by RCC, Dhaka. However they are to reconfirm from RCC, Dhaka before broadcasting a message.



Chapter-9

9. Miscellaneous

Inspector General of Police, Deputy Commissioner/ Superintendent of Police of the District, General Manager of Bangladesh Railway, Chairman of BIWTC, Chairman of BTCL, Post master General, Chairman Port Authority, Defence authorities and other concerned Department/ Organization are requested to issue standing instruction to their subordinate offices/ Units to take necessary action as and when information received about a distressed/missing aircraft on the basis of the planned action to be taken as mentioned earlier.

All information regarding distressed aircraft is to be brought to the knowledge of RCC, Hazrat Shahjalal International Airport, Dhaka-1229. Telephone No. +88-02-8901462, +88-02-8901463, +88-02-8901464, +88-02-8901904-13/Extn-3589 either directly or through nearest aerodrome authorities.

Deputy Commissioners/Superintendent of police of the districts are also requested to issue instructions to UP Chairman about their action as and when they receive information about a distressed aircraft.

Note: Cancellation of SAR action is to be intimated to all concerned to whom intimation was passed to carry out SAR action.



APPENDIX-A

SAR EXERCISE (SAREX)

1. Introduction:

A SAR exercise is a facilitated analysis of an emergency situation. It is designed to draw out constructive discussion as participants examine and resolve problems based on existing operational plans and identify where those plans need to be refined. The participants usually people on a decision-making level are to discuss general problems and procedures in context of an emergency scenario. The focus is on training and familiarization with rules, procedures, or responsibilities.

2. Purpose and Objectives;

The purpose of the SAREX is:

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

The exercise scenario will involve:

- Declaration of emergency phases;
- Gradual implementation of SAREX;
- Implementation of an air-land search system;
- Application of rescue phase.

2.1 Advantages:

- Requires only a modest commitment in terms of time, cost, and resources;
- Is an effective method for reviewing plans, procedures, and policies;
- Is a good way to acquaint key personnel with emergency responsibilities, procedures?

2.1.1 Type of Exercises

The IAMSAR manual defines three levels of SAR exercises:

- a) The most simple type of exercise, it may state as communication exercise: it requires the least planning. It consists of periodic use of all means of communications between all potential users to ensure capability for actual emergencies.
- b) A Co-ordination Exercise/Table-Top-Exercise: it 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 one to three days to execute.
- c) Full- scale Exercise or a Field Exercise: differs from Co-ordination Exercise in this Exercise the actual SAR facilities are deployed. This increases the scope of SAR system testing and realistic constraints due to the times involved in launching, transit, and activities of the SAR units. These exercises may be national or international.



PLAN FOR FINAL REPORT ON EXERCISE

- 1. Alert**
- 1.1 Origin of Alert :
- 1.2 Agencies Alerted :
- 2 Information Gathering**
- 2.1 Initial Information :
- 3 Searches**
- 3.1 SAR Agency assuming responsibility:
- 3.2 Associated agencies :
- 3.3 Establishment of search Plan :
- Limits of search area :
- Type of search (Land, Air, Sea) :
- 3.4 Brief description of Searches :
- Time searches started :
- Weather in the area :
- 3.5 Locating of Object :
- Position :
- Time :
- Mode of location :
- 4 Rescue**
- 4.1 Agency delegated to rescue :
- 4.2 Resources used :
- 4.3 Steps taken to guide rescue teams at the site :
- 4.4 Steps taken to evacuate, identify victims and inform competent authorities :
- 4.5 Steps take to evacuate the injured :
- 4.6 Nature of site :
- 4.7 Condition of Wreckage :
- 4.8 Date and Time rescue ended :

The head of Exercise will prepare the final report of the exercise

ASSESSMENT OF EXERCISE

- a) Application of procedures :
- Alert Phase :
- Research phase :
- Rescue and evacuation phase :
- b) Overall Co-ordination :
- c) Transmission :
- d) Comments and suggestions :



ACTION PLAN TO CORRECT DEFICIENCIES

- a) Findings (Strengths, Weakness) :
- b) Proposed corrective measures :
- c) Time Lines :
- d) Authorities responsible for Implementation :

EXERCISE EVALUATION PROCESS

The evaluation process is divided into three stages:

- a) Before the exercise
 - Select the evaluation Team (Observer)
 - Establish the evaluation methodology
 - Inform and assign tasks to evaluation team (Observer)
- b) During the exercise
 - Observe the actions of participants
 - Record activities in registers and documents
 - Analyze the actions of participants
- c) After the exercise
 - Hold a meeting of control personnel
 - Compile reports Conduct preliminary analysis of the exercise (Objectives met?)
 - Hold other evaluation meetings
 - Conduct final analysis of the exercise
 - Plan corrective action
 - Determine the real cost of the exercise

The head of Exercise will prepare the evaluation report of the exercise



APPENDIX-B

SEARCH AND RESCUE SIGNALS

1 Signals with surface craft

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.

Note. — Due to high noise level on board surface craft, the sound signals in ii) and iii) may be less effective than the visual signal in i) and are regarded as alternative means of attracting attention.

- (c) heading in the direction in which the surface craft is to be directed.

Repetition of such manoeuvres has the same meaning.

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:

- 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.

Note.—The following replies may be made by surface craft to the signal in 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.*



— 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.

Note.— Ref Note following 1.1 b), 3).

2 Ground-air visual Signal code

2.1 Ground-air visual signal code for use by survivors

No.	Message	Code symbol
1	Required assistance	V
2	Required medical assistance	X
3	No or Negative	N
4	Yes or Affirmative	Y
5	Proceeding in this direction	↑

2.1 Ground-air visual signal code for use by rescue units

No.	Message	Code Symbol
1	Operation completed	L LL
2	We have found all personnel	<u>LL</u>
3	We have found only some personnel	++
4	We are not able to continue. Returning to base	XX



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

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.

Note2.—Attention to the above signals may be attracted by other means such as radio, flares, smokes and reflected light.

3. Air-to-ground signals

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

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

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

**APPENDIX- C****Contact list of concerned CAAB officials for SAR Action**

Name:	Aeronautical Address:	Telephone No:
1. Chairman Civil Aviation Authority, Bangladesh. Headquarters, Kurmitola, Dhaka -1229.	VGHQYAYX	Tel: +88-02-41091000, Fax: +88-02-41091111 Mob: +88-01894900000 E-mail: chairman@caab.gov.bd
2. Member (Operations& Planning) Civil Aviation Authority, Bangladesh, Headquarters, Kurmitola, Dhaka-1229.	VGHQYAYX	Tel: +88-02-41091002, Fax: +88-02-8901428 Mob: +88-01894902000 E-mail: mops@caab.gov.bd
3. Director Air Traffic Management Search & Rescue Coordinator(SC) (Admin)	VGHQYAYS	Tel. +88-02-41091031, Fax: +88-02-8901411 Mob: +88-01894903100 E-mail: datm@caab.gov.bd
4. Executive Director Hazrat Shahjalal International Airport, Kurmitola,Dhaka-1229 Search & Rescue Coordinator (SC) (Ops)	VGHSYDYX	Tel: +88-02-8901449, Fax: +88-02-8901450 Mob: +88-01894908010 E-mail: edhsia@caab.gov.bd
5. Station Air Traffic Officer (SATO) Hazrat Shahjalal International Airport, Dhaka(Chief of Rescue Co- ordination Centre/SAR Mission Coordinator)	VGHSYHYX	Off : +88-02-8901460, Ext:+88-02-8901904-13/3412, Mob: +88-01894908900 E-mail: satohsia@caab.gov.bd
6. Rescue Co-ordination Centre, Hazrat Shahjalal International Airport, Dhaka.	VGHSYCYX	ACC:+88-02-8901462 Ext:+88-02-8901904-13/3465/3410 RCC:+88-02-8901464 FAX:+88-02-8901924 E-mail: rcc_dhaka@caab.gov.bd
7. Control Tower, Shah Amanat International Airport, Chattogram, Duty Controller or (SATO)	VGEGZTZX	TWR: +88-02-41350105 Director Off: +88-02-41350100 Director Mob: +88-01894909100 SATO: 01894909110 E-mail: dsaiactg@caab.gov.bd
8. Control Tower, Osmani International Airport, Sylhet. (Duty Controller or SATO)	VGSYZTZX	TWR: +88-02-996634315 TWR Mob: 01894909222 Director: 01894909200 E-mail: dsylhet@caab.gov.bd
9. Control Tower, Cox's Bazar Airport(Duty Controller Or Airport Manager)	VGCBZTZX	TWR: +88-0341-62530 APM: +88-0341-52353 Director Mob: +88-01894909300 E-mail: dcox@caab.gov.bd
10. Control Tower, Saidpur Airport(Duty Controller Or Airport Manager)	VGSDZTZX	TWR: +88-05526-72044 APM: +88-05526-72384 Mob: +88-01894909400 E-mail: apmsaidpur@caab.gov.bd



11. Control Tower, Ishurdi Airport (Duty Controller Or Airport Manager)	VGISZTZX	APM Off:+88-07326-63569 Mob: +88-01894909800 E-mail: apmishurdi@caab.gov.bd
12. Control Tower, Jessore Airport (Duty Controller Or Airport Manager)	VGJRZTZX	TWR: +88-0421-65032, +88-01894909622 APM Off: +88-0421-64033 APM Mob: +88-01894909600 E-mail: apmjessore@caab.gov.bd
13. Control Tower, Shah Makhdum Airport, Rajshahi (Duty Controller or Airport Manager)	VGRJZTZX	TWR: +88-01894909522 APM Off: +88-0247800053 APM Mob: +88-01894909500 E-mail: apmrajshahi@caab.gov.bd
14. Control Tower, Barishal Airport(Duty Controller Or Airport Manager)	VGBRYDYX	TWR: +88-0255061673 APM Off: +88-0255061662 Mob: +88-01894909700 E-mail: apmbarisal@caab.gov.bd
12. Comilla Airport, Comilla.	VGCMYDYX	APM: +88-081-76119 Mob: +88-01894909900

**APPENDIX-D****Contact list for SAR Action of Alerting Posts**

Name of Agencies Office/Designation	Telephone Numbers Office
Director Operations & Plan Armed Forces Division, Dhaka Cantonment.	+88-02-9834332, Fax:+88-02-9834399 E-mail: gsol_jtops@afd.gov.bd
Director Operations Army Headquarters, Dhaka Cant. Dhaka.	+88-02-8711111/2100, E-mail: nac3216@gmail.com
Director Operations Naval Headquarters, Banani, Dhaka.	+88-02-9834041/2110, +88-02-9836512 Mob: +88-01769702110 E-mail: dno@navy.mil.bd ddno@navy.mil.bd
Director Operations, Air Headquarters, Dhaka Cant. Dhaka.	+88-02-55063120, Ext:+88-02-55060000/3120 +88-02-9112051-6, E-mail: dao@baf.mil.bd Cell:+88-01769993120,
DD Air Operation, Air Headquarters	Cell:+88-01769993122 Ext: +88-02-55060000/3122
Maritime Rescue Coordination Centre(MRCC), Naval Headquarters, Banani, Dhaka -1213	+88-02-9836314 Ext:+88-02-9836141-9/2116, 2128 Cell:+88-01769701111 (Duty Officer) +88-01769702113 (In charge) E-mail: nhqmso@navy.mil.bd ddno@navy.mil.bd , mrccdhk@navy.mil.bd
Coast Guard HQ. PA to DG	Dhaka: Mob: +88-01766690049, E-mail: ops_cghq@coastguard.gov.bd Chattogram East Zone: +88-01766690153 Mongla West Zone:+88-01766690383 Vhola South Zone : +88-01766690603
Naval Command in Khulna. (Commodore Commanding Khulna)	+88-041-760200-2/24 +88-041-761001,761000
Naval Officer-in-Charge, Mongla.	+88-01713080138
BAF Base, Zahur, Chattogram.	+88-02333301631
BAF Base, Motiur, Jashore.	+88-0421-68601-9
Ministry of Disaster Management & Relief 92-93, Mohakhali C/A, Bir Uttam A K Khondokar Road, Dhaka- 1212	+88-02-8616262, +88-02-8611595, +88-02-8861581, PABX+88-02-8613639-49
Director General, Boarder Guard Bangladesh (BGB), Dhaka.	+88-02-9650100, +88-02-965101
I.G Police, Police Headquarters, Fulbaria, Dhaka.	+88-02-9514445,+88-02-9514444



Name of Agencies Office/Designation	Telephone Numbers Office
Director Operations & Plan Armed Forces Division, Dhaka Cantonment.	+88-02-9834332, Fax:+88-02-9834399 E-mail: gsol_jtops@afd.gov.bd
Director Operations Army Headquarters, Dhaka Cant. Dhaka.	+88-02-8711111/2100, E-mail: nac3216@gmail.com
Director Operations Naval Headquarters, Banani, Dhaka.	+88-02-9834041/2110, +88-02-9836512 Mob: +88-01769702110 E-mail: dno@navy.mil.bd ddno@navy.mil.bd
Director Operations, Air Headquarters, Dhaka Cant. Dhaka. DD Air Operation, Air Headquarters.	+88-02-55063120, Ext:+88-02-55060000/3121 +88-02-9112051-6, E-mail: dao@baf.mil.bd Cell:+88-01769993120, Cell:+88-01769993122, 3122
Maritime Rescue Coordination Centre(MRCC), Naval Headquarters, Banani, Dhaka -1213	+88-02-9836314 Ext:+88-02-9836141-9/2116, 2128 Cell:+88-01769701111 +88-01769702113 E-mail: nhqmso@navy.mil.bd ddno@navy.mil.bd
Coast Guard HQ. PA to DG	Dhaka: Mob: +88-01766690049, E-mail: ops_cghq@coastguard.gov.bd Chattogram East Zone: +88-01766690153 Mongla West Zone:+88-01766690383 Vhola South Zone :+88-01766690603
Naval Command in Khulna. (Commodore Commanding Khulna)	+88-041-760200-2/24 +88-041-761001,761000
Naval Officer-in-Charge, Mongla.	+88-01713080138/24
BAF Base, Zahur, Chattogram.	+88-031-2501000-7
BAF Base, Motiur, Jashore.	+88-0421-68601-9
Ministry of Disaster Management & Relief 92-93, Mohakhali C/A, Bir Uttam A K Khondokar Road, Dhaka-1212	+88-02-8616262, +88-02-8611595, +88-02-8861581, PABX+88-02-8613639-49
Director General, Boarder Guard Bangladesh (BGB), Dhaka.	+88-02-9650100, +88-02-965101
I.G Police, Police Headquarters, Fulbaria, Dhaka.	+88-02-9514445,+88-02-9514444
MD. BTCL, Tele Communication Building, 37/E Eskaton Garden, Dhaka.	+88-02-8311500 +88-02-8651800
Postmaster-General, Dhaka.	+88-02-9568978
Chairman, BIWTA Bangladesh Inland Water Transport Authority.	+88-02-9565561



Chairman, BIWTC Bangladesh Inland Water Transport Corporation, Dhaka.	+88-02-9554100 +88-02-9567780
Director, Bangladesh Meteorological Department (BMD), Agargaon, Dhaka-1207.	+88-02-8116534, 8119832
Director General , Bangladesh Railway	+88-02-9561200
Managing Director, Bangladesh Biman, Dhaka.	+88-02-8901700, Ext:+88-02-8901500/2210
Director General, Bangladesh Television, Dhaka	+88-02-9334110, +88-02-9330131-9
Director General, Radio Bangladesh, Dhaka	+88-02-9660003, +88-02-9660836,+88-02-9667226
Department of Shipping, Ministry of Shipping Government of the People's Republic of Bangladesh, 141-143, Motijheel C/A (8th Floor) Dhaka-1000, Bangladesh.	Chief Nautical Surveyor Phone: +88029553584 (OFF) Mob: +8801711333981 Fax: +88029587301 E-Mail: cns@dos.gov.bd (Official)
Chairman, Port Authority, Chattogram	+88-02333310170
Chairman, Port Authority, Mongla, Bagerhat.	+88-04662-75215, +88-02333310173
Harbour Master, Chattogram	+88-031-2510873,+88-031-2510854
Chairman, National Board of Revenue, Segun Bagicha, Dhaka.	+88-02-9355959, +88-02-9348344
Directorate of Agriculture	+88-02-9117030, +88-02-9115791, +88-02-58153103
Chief Conservator of Forest, Bangladesh Bon Bhaban, Agargaon, Sher-e-Bangla Nagar, Dhaka.	+88-02-9357132,+88-02-8833700
Director General, RAB HQ	Control Room: +88-02-9555555, +88-02- 791310
Director (Admin), RAB,HQ	Ops Con: +88-02-9555555, +88-02-7913117, 7913104
Director General of Bangladesh Fire Service & Civil Defense.	Control Room:+88-02-9555555, +88-02-9558880
Managing Director, Bangladesh Shipping Corporation, Dhaka	+88-02-9553568
Honorary Secretary, Bangladesh Flying Club Ltd	+88-02-8901904-13/4057
Chief Engineer ,PWD, Dhaka	+88-02-9562795
Chief Eng. Roads & High way, Dhaka.	+88-02-8879299
Director, Centre for Medical Education	+88-02-8821809



APPENDIX-E
CONTACT LIST OF BAF FOR SAR RESPONSE

Appointment	E-mail Add.	BAF Exchange Civil No		Civil No		Mobile No
		Office	Res	Office	Res	
Director (AO)	dao@baf.mil.bd	3120	4120	88-02-55063120	88-02-55064120	88-01769993120
DDAO(A&T)	ddaotpt@baf.mil.bd	3122	4122	88-02-55063122	88-02-55064122	88-01769993122
D ATS	dats@baf.mil.bd	3190	4190	88-02-55063190	88-02-55064190	88-01769993190
OC Ops BSR	ocopsbsr@baf.mil.bd	5010	6010	88-02-55065010	88-02-55066010	88-01769975010
OC Ops BBD	ocopsbbd@baf.mil.bd	5010	6010	88-02-9836003	88-02-9836004	88-01769905010
OC Ops ZHR	ocopszhr@baf.mil.bd	5010	6010	0312502002	0312502003	88-01769505010
OC Ops MTR	ocopsmtr@baf.mil.bd	5010	6010	042168707	042168707	88-01769405010
OC Ops PKP	ocopspkp@baf.mil.bd	5010	6010	-	-	88-01769965010
OC Ops CXB	ocopscxb@baf.mil.bd	5010	6010	-	-	88-01769955010

**CONTACT LIST OF BANGLADESH NAVY FOR SAR RESPONSE****MRCC AND MRSC**

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	+88-02-9893344	
				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	+88-02-8711439
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.	Chattogram	Maritime Rescue Sub-Centre (MRSC)Chattogram (Commander Chattogram Naval Area Ops Room New Mooring, Chattogram, Bangladesh)	Primary:			
			Telephone	Direct	+88-023333422250	
				PABX	+88-02333342500,+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 Chattogram (COMCEN Chattogram, New Mooring, Chattogram, Bangladesh)	Telephone	Direct	+88-02333342462
					PABX	+88-031-740391-9, +88-031-740400-9, +88-031-741770-9, Ext: 4137,6137
Mobile	Staff Officer	+ 8801769724131				
FAX		+88-031-741162				
3	Khulna	Maritime Rescue Sub Centre, Khulna (COMKHUL Ops Room, Town Khalishpur, Khulna, Bangladesh)	Primary:			
			Telephone	Direct	+88-041-762222	
				PABX	+88-041-761420-9, 041-760200-2 +88-041-760485-6, 041-761833 +88-041-760552, 041-760488-9/ Ext: 20,4119	
			Mobile	Duty Officer	+8801769781111	
				Staff Officer	+8801769784106	
			FAX		+88-041-762555	
			Email:		mrsckln@navy.mil.bd	



Secondary:				
	Maritime Rescue Sub Centre, Khulna (COMCEN Khulna, Town Khalishpur, Khulna, Bangladesh)	Telephone	Direct	+88-041-2850169
			PABX	+88-041-761420-9, 041-760200-2, +88-041-760485-6, 041-761833 +88-041-760552, 041-760488-9/ Ext: 4173,4118,4170
		Mobile	Staff Officer	+8801769784170
		FAX:		+88-041-762555
		Email	cmcnkln@navy.mil.bd	

Bangladesh Coast Guard

Dhaka: PA to DG Coast Guard Mob: +88-01766690049, E-mail: ops_cghq@coastguard.gov.bd
Chattogram East Zone: +88-01766690153
Mongla West Zone: +88-01766690383
Bhola South Zone: +88-01766690603

Kolkata RCC

Tel.No : +91-33-2256 1803, +91-33-2256 1283
Fax: +91-33-2256 1365
AFS: VECCYCYX

Myanmar/Yangon MRCC

Tel. No: + 95-31-31642, +95-31-31651, +955621507
yangon@mptmail.com.mm

Chief Nautical Surveyor
Phone: +88029553584 (OFF)
Mob: +8801711333981
Fax: +88029587301
E-Mail: cns@dos.gov.bd (Official)

Ministry of Disaster Management & Relief
+88-02-8616262, +88-02-8611595,
+88-02-8861581, PABX +88-02-8613639-49



APPENDIX-F

Initial Report Form

Date/ Time:

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 endurances 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 require.....

.....

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.....



APPENDIX-G

International SITREP FORMAT (Situation Report Format)

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 played by RCC)
K. COORDINATING INSTRUCTIONS	(OSC designated, units participating, Communications)



APPENDIX-H

Sample of Search Action Message

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 TECNUF 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	COORDINATES
A-1	MR	X			
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 SEARCHD, TRACK SPACING USED, COURNER POINTS OF ACTUAL AREAS SEARCHED IF DIFFERENT FORM THOSE ASSIGNED. SEND REPORTS VIA MOST RAPID MEANS.



ATTACHMENT-A

List of designated SAR units and facilities available with BAF& Navy

Bangladesh Air Force having suitable SRUs and SAR Facilities:

- a) Minimum range (MRG) C-130 with a radius of action of 740 km plus two and half hours search remaining;
- b) Short range (SRG) AN-32 aircraft with a radius of action of 280 km plus one and half hours search remaining;
- c) Short range (SRG) L410 aircraft with a radius of action 280 km plus one and half hours search remaining;
- d) Helicopter Bell-212 and Augusta Westland (AW-139) helicopter with a radius of action for rescue purposes of 185 to 370 km and a capability for evacuating 6 to 15 personnel. Mentionable that AW-139 helicopter is additionally equipped with FLIR, DAFCS (Digital Automatic Flight Control System) enhanced with hover mode and SAR mode, Moving Map Euro avionics, VHF Homer and NVG compatibility both for cockpit and cabin crews;
- e) Dhaka &BAF RADAR units can play major role in SAR.

Bangladesh Navy having suitable SRUs and SAR facilities:

- a) Short Range Group (SRG) Two Aircraft with a radius of action of 280 km plus one and half hours search remaining;
- b) Helicopter (HeL-L) Two aircraft;
- c) Number of Rescue Vessels (RVs) possessing sea-going qualities;
- d) Number of Rescue Boats (RBs);
- e) Bangladesh Navy having their Maritime Patrol Aircraft (MPA) and Air Search RADAR.



ATTACHMENT-B

List of Rescue Units of Bangladesh

- a) All Army units in Bangladesh;
- b) All Air Force Units in Bangladesh;
- c) All Naval and Coast Guard Units in Bangladesh;
- d) Bangladesh Fire Service and Civil Defense Headquarters, Dhaka;
- e) All Fire Stations in Bangladesh;
- f) All police Stations in Bangladesh;
- g) All Border Guard Bangladesh Units;
- h) All BIWTA and BIWTC offices in Bangladesh;
- i) Mercantile Marine and Port Authorities;
- j) All RAB Units in Bangladesh.

ATT-B



END