

GEN 3.6 SEARCH AND RESCUE**1 Responsible Service**

The Search and Rescue Service in Zambia is provided by National Search and Rescue Organization under the Ministry of Transport and Logistics postal and telegraphic addresses of the responsible institutions are:

- a. National Search and Rescue Organization
Zambia Civil Aviation Authority
P.O Box 50137
LUSAKA 10101
Number : 260-211-271091/0950708012
Mobile Numbers 260-977421424/ 0950708012
Email: civil.aviation@caa.co.zm
Aeronautical: FLKKYCYX
- b. Zambia Airports Corporation Limited
Chief Search and Rescue Officer
P.O Box 30175
LUSAKA 10101

A Rescue Co-ordination Centre (RCC) is established at Kenneth Kaunda International Airport. When search and rescue operations are needed, the RCC is activated.

- Rescue Co-ordination Centre
Zambia Airports Corporation Limited
P.O. Box 30175
LUSAKA 10101

Telegraphic address
Aeronautical: FLKKYCYX/FLKKZQZX
Commercial: Chief Ridgeway Lusaka
Telephone Numbers: 260-211- 271312
260-211-271091
Mobile Number: 260-760634261
Email: lusakarcc@zacl.aero

1.1 Applicable ICAO-Documents

The Search and Rescue Service is provided in accordance with the provisions contained in the following ICAO documents: Annex 12- Search and Rescue, Doc 7030-Regional Supplementary Procedures for alerting and Search and Rescue Services applicable in the AFI region and IAMSAR Manual Doc 9731 Vol 1, 2 and 3.

2 Area of responsibility

The Search and Rescue Coordination Centre is responsible for SAR operations within the Lusaka FIR.

3 Types of services

Details of R.C.C and related rescue units are given on page 3.6-2 rescue units. In addition, various elements of National Search and Rescue Organisation are available for search and rescue missions when required.

SEARCH AND RESCUE UNITS

Name	Location	Facilities	Remarks
1	2	3	4
Z.A.F	152000S 0282700E	Y12	Available as and when required

4 SAR Agreements

Zambia has only signed SAR agreement with the Government of The Republic of Botswana. SAR service of Zambia and the SAR service of other neighbouring states, assistance is normally provided upon receipt of request. This mutual understanding of SAR services provide for facilitation of the over-flight and landing of search and rescue aircraft without prior permission after dispatch of a flight plan, for similar facilitation of the entry of surface vessels and their operation in border areas for notification of entry to the authorities controlling entry, for defraying the costs of stop-over, accommodation and transportation of crew members, and for direct communication between the two SAR services. On all common search and rescue matters, request for the entry of aircraft,

equipment or personnel from other states to engage in the search of aircraft in distress or to rescue survivors of aircraft accidents should be transmitted to the Rescue Co-ordination Centre. Instructions as to the control which will be exercised on entry of such aircraft and/or personnel will be given by the Rescue Co-ordination Centre in accordance with a standing plan for the conduct of Search and Rescue in its areas.

5 Conditions of availability

The SAR service and facilities in the Republic of Zambia are available without charge to neighbouring states upon request to the Director General of Zambia Civil Aviation Authority at all times when they are not engaged in search and rescue operations in their home territory. All facilities are specialised in SAR techniques and functions.

6 Procedures and signals used

6.1 Procedures and signals used by aircraft

Procedures for pilot-in-command observing an accident or intercepting a distress call and/or message are outlined in ICAO Annex 12 Chapter 5.

6.2 Communications

Transmission and reception of distress message within Zambian Search and Rescue Area are handled in accordance with ICAO Annex 10, Volume II Chapter 5 Paragraph 5.3.

For communications during search and rescue operations, the codes and abbreviations, published in ICAO abbreviations and codes (Doc 8400) are used.

The frequency 121.5MHz is monitored continuously in Lusaka Area Control Centre 24hours, while monitoring at Simon Mwansa Kapwepwe, Harry Mwaanga Nkumbula and Mfuwe Airports is during operational hours.

Rescue aircraft belonging to permanent search and rescue units use both the call sign RESCUE and additional identification marks (ALFA, BRAVO, CHARLIE, etc) during rescue operations.

Rescue Unit- A unit composed of trained personnel and provided with equipment suitable for the expeditious conduct of search and rescue.

Search and Rescue Area- An area within which the co-ordination of search and rescue is integrated by a single rescue co-ordination centre.

6.3 Dropable Containers and Packages

The type and dimensions of dropable containers or packages will vary with the nature and qualities of survival stores to be dropped, the size and type of the delivery (e.g. parachute, or free dropper let down from helicopter etc) and also the type of terrain on which they will fall.

The contents of each container or package should be clearly identified in print in at least one of the three languages (English, French or Spanish) by self explanatory symbols or by colour code streamers as follows:



- Red-Medical supplies and first aid equipment
- Blue-Food and water
- Yellow-Blankets and protective clothing
- Black-Miscellaneous equipment such as stoves, axes, compasses, cooking utensils etc.
- Combination of colours- Mixed contents.

6.4 Search and rescue signals

The search and Rescue signals to be used are those prescribed in ICAO Annex 12, Chapter 5, Paragraph 5.10

6.4.1 Ground/Air visual signal codes for use by survivors








No	Message	Code symbol
1	Require assistance	V
2	Require medical assistance	X
3	No or Negative	N

4	Yes or affirmative	
5	Proceeding in this direction	

INSTRUCTION FOR USE:

- Make signals not less than 8ft (2.5m)
- Take care to lay out signals exactly as shown.
- Provide as much colour contrast as possible between signals and back ground.
- Make every effort to attract attention by other means such as radio, flares, smoke, reflected light.

6.4.2 Ground/Air visual signal code for use by rescue units

No	Message	Code Symbol
1	Operation completed	
2	We have found all personnel	
3	We have found only some personnel	
4	We are not able to continue. Returning to base	
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	

6.5 Emergency and Survival

Equipment to be Carried in Aircraft.

6.5.1 Public Transport Aircraft

In accordance with Regulation 28 of the Air Navigation Regulations CAP 444, the Director General Civil Aviation Authority in his powers prescribes the following minimum emergency and survival equipment to be carried in all public transport aircraft and other flights, engaged in flight across notified areas where search and rescue would be especially difficult.

- Four White Fabric Strips, 2.5 x 0.6 metres (8x2 feet) for making the ground signals depicted in Section GEN 3.6.6.4.
- Very pistol and at least six cartridges or six hand held flares.
- Emergency rations and water sufficient to sustain all occupants of the aircraft for at least three days.
- Heliograph or signalling mirror
- Marching compass
- Axe and large knife

- g. Flashing light
- h. Water proof matches
- i. Insect repellent
- j. Water bag
- k. Water purifying tablets
- l. First-aid kit
- m. Portable survival radio equipment stored so as to facilitate its ready use in an emergency and must operate on VHF.

NOTE: A hand mirror is recommended to be carried for signalling to search aircraft. The above scale of survival equipment may be varied from time to time by the Director General of Civil Aviation to suit particular cases. First aid kits must be carried in all Public Transport Aircraft for all flights, (air Navigation Regulations number 34 CAP 444) refers.

6.5.2 Private Aircraft

Whilst there is no regulation for compulsory carriage of survival and first aid equipment in private category aircraft, it is strongly recommended that such equipment particularly first aid kit and white signalling strips listed above be carried by private aircraft whilst on cross country flights across areas where search and rescue is difficult.

6.6 Search and Rescue Supplies

Survival Equipment (as recommended) by ICAO

Supplies and survival equipment must be carried by aircraft, land facilities to give aid and sustenance to survivors and to facilitate their rescue.

6.7 Basic Packs of Supplies and Survival Equipment

The list of supplies and survival equipment which follow are not intended to be all inclusive but rather to serve as guide in deciding what should be held in stock. The list indicates which items should be included in the basic pack, i.e

- a. Medical: First aid kits, insect repellent, head net, aspirin, sunburn lotion, sunglasses or glare goggles.
- b. Ration: subsistence pack of concentrate food or assorted cans of food, water in sealed cans or screw top, polythene containers, condensed milk, coffee, sugar and salt.
- c. Signalling: Portable radio transmitter/receiver, pyrotechnic signal , smoke candles and red flare, very pistol and cartridges, whistle, signalling mirror and signal code card.
- d. Covering: Tent sleeping bag, blanket, waterproof clothing, walking shoes, socks and gloves.
- e. Fire and Landing: waterproof matches, burning lens, fire kindling tablets, emergency stove, candles, flash light with spare batteries and bulbs.
- f. Sundry: Can openers, cooking and eating utensils, non-sparking axe, rope, compass, writing pad, pencil, soap, towelling and toilet tissue, cigarettes, booklet with survival units.
- g. Hunting and self Protection. Fire arms and ammunition, slash knives.
- h. Care of injured: Extra dressing and bandages, air mattresses, stretcher splints, morphine and antibiotics drugs.

6.8 Procedure and/or Signals employed by rescue Aircraft

6.8.1 Information Concerning Emergencies

Any authority or any rescue service having reason to believe that an aircraft is in an emergency shall immediately give all available information to the Lusaka R.C.C or Air Traffic Services Unit.

When information is received other than through the agency of ATS, RCC shall use such information and determine to which phase of the emergency situation corresponds, and shall apply the procedures applicable to that phase.

6.8.2 Emergency Phases

- Uncertainty phase
- Alert phase

- Distress phase

6.9 Procedures for a Pilot in Command Observing an Accident

When a pilot in command observes that either another aircraft or a surface craft is in distress, unless he is unable, or in the circumstances of the case considers it unreasonable or unnecessary, he shall:

1. Keep in sight the craft in distress until such a time as his presence is no longer necessary or until he is no longer able to remain in the vicinity of the distressed craft.
2. Report to the R.C.C or Air Traffic Services Unit as much of the following information as possible.
 - a. Report to the R.C.C or Air Traffic Services Unit as much of the following information as possible.
 - b. Its position, expressed in graphical co-ordinates or in distance and true bearing from distinctive landmark.
 - c. Time of observation expressed in UTC.
 - d. Number of persons observed, whether persons have been seen to abandon the aircraft in distress.
 - e. Apparent physical conditions of survivors.
3. Acts as instructed by the R.C.C or ATS unit.

6.9.1 Procedures for a Pilot in Command Intercepting a Distress Call and/or Message

Whenever a distress call and/or message is intercepted on radio telephone by a pilot in command of an aircraft other than a search aircraft he shall

- a. Plot the position of the craft in distress if given.
- b. If possible take bearing on the transmission.
- c. At his discretion, while awaiting instruction proceed to the position given in the distress signal.

6.9.2 Communication

Transmission and reception of distress message within the Lusaka search and Rescue Area are handled in accordance with ICAO Annex 10 Vol II Chapter 5.

For communication during Search and Rescue operations the codes and abbreviations published in ICAO Doc 8400 (codes and abbreviations) are used.

Information concerning positions, call signs, frequencies and hours of operation of the Lusaka FIR Aeronautical Station is published in ENR 2.1-1.

The search and rescue signals to be used are those prescribed in Annex 12 Chapter 6. When those symbols are used, they shall have the meaning indicated.

When survivors wish to inform an aircraft about their wellbeing, intentions and/or requirements they are to use the symbols prescribed on page GEN 3.6.6.4.

When ground signal displayed by survivors is understood by an aircraft, it should acknowledge the signal by:

- a. dropping a message
- b. rocking the wings of the aircraft
- c. making green flashing with signal lamp.
- d. Flashing the morse code procedure signal - ("T" meaning word or group received") or _.(R) meaning "received or I received your last signal/message" with a lamp signal.
- e. Any other suitable signal agreed upon during the briefing period (international distress signal-visual signals).
- f. Attention to the above signal may be attracted by other means such as radio flares, smoke, reflected light etc.

When a ground signal displayed by a survivor (GEN 3.6.6.4) is not understood by the aircraft, it should inform the survivor or land party by:

- a. Flying straight and level without rocking wings.
- b. Making a complete RIGHT HAND CIRCLE

- c. Making red flashes with a signal lamp.
- d. Flashing the morse code procedure signal . _ . _ _ . _ (RPT) meaning repeat or what you have sent" with a signal lamp.

When displaying visual signals, the following must be noted:

- a. Lay out these symbols by using strips of fabric or parachutes, pieces of wood, stones or any other available material
- b. Endeavour to provide as big a colour contrast as possible between the material used for the symbols and the background against which the symbols are exposed.
- c. Symbols should be at least 2.5m (8 feet) in height or larger if possible. Care should be taken to lay out the symbols exactly as depicted to avoid confusion with other symbols.
 - o ANNEX 12 - Search and Rescue
 - o ANNEX13 - Aircraft Accident Investigation
 - o Doc 7030 - Regional Supplementary Procedures for Alerting and Search and Rescue applicable in the AFI Region.

6.10 Definitions

When the following terms are used in this section of the AIP - Search and Rescue, they have the following meanings:

- o Alert (to) to warn to prepare for search and rescue and to direct the guarding of specified radio frequencies.
- o Alerting post - Any agency designated to serve as an emergency between the person reporting an aircraft in distress and R.C.C
- o Distress - A state of being threatened by serious and immitent danger and require immediate assistance.
- o Uncertainty Phase - A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.
- o 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.
- o Alert Phase - A situation wherein apprehension exists as to the safety of an aircraft and its occupants.
- o Rescue Co-ordination Centre - A centre established within an assigned Search and Rescue area to promote efficient organisation of search and rescue.
- o Rescue Subcentre - A centre surbordinate to a rescue co-ordination centre established to direct localised operations