

# **LIBERIA CIVIL AVIATION REGULATIONS**

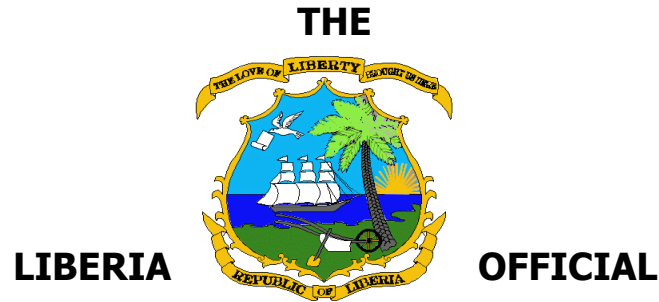


**PART 27  
SEARCH AND RESCUE**

**EDITION 1.0**

**JULY 13, 2021**





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**EXTRAORDINARY**

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The Government of the Republic of Liberia announces that the Liberia Civil Aviation Authority, pursuant to its mandate under the Liberia Civil Aviation Act of 2019, and specifically consistent with Subchapter XII, Section 1218 (1), has issued on August 11, 2021 its Regulation N0. LCAA/LCAR/001/2021, herein under:

**CONCERNING LIBERIA CIVIL AVIATION REGULATIONS**

**BY ORDER OF THE PRESIDENT**

**AMB. DEE-MAXWELL SAAH KEMAYAH, SR.  
MINISTER OF FOREIGN AFFAIRS**

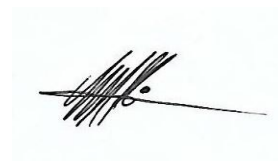
**MINISTRY OF FOREIGN AFFAIRS  
MONROVIA, LIBERIA**



## **AUTHORITY TO PROMULGATE CIVIL AVIATION REGULATIONS**

IN EXERCISE OF THE POWERS CONFERRED ON THE DIRECTOR GENERAL OF LIBERIA CIVIL AVIATION AUTHORITY UNDER THE LIBERIA CIVIL AVIATION ACT OF 2019 THESE REGULATIONS ARE MADE.

DATE: 13<sup>th</sup> JULY 2021



SIGNATURE: \_\_\_\_\_

Hon. Moses Y. Kollie  
**DIRECTOR GENERAL**

## AMENDMENTS

LOCATION	DATE	DESCRIPTION

## INTRODUCTION

This Technical Regulations prescribes the detailed technical provisions that contain standards, procedures, instructions and information which are intended for Search and Rescue Operations necessary for the safety, regularity and efficiency of international air navigation within the territory of Liberia.

The standards in this Technical Regulations are based mainly on Standards and Recommended Practices stipulated in Annex 12 to the Convention on International Civil Aviation (the Chicago Convention) with such modifications as may be determined by the Authority to be applicable in Liberia.

This Technical Regulations is supplemented by the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual, Volume I — Organization and Management, Volume II — Mission Co-ordination, and Volume III — Mobile Facilities (Doc 9731), the purpose of which is to assist Liberia in meeting its search and rescue (SAR) needs and obligations accepted under the Chicago Convention. These obligations, as they relate to the provision of SAR services, are specified in this Technical Regulations. The three volumes of the IAMSAR Manual provide guidance for a common aviation and maritime approach to organizing and providing SAR services. States are encouraged, by use of the Manual, to develop and improve their SAR services and to cooperate with neighboring States.

The Authority, as the Air Navigation Services Provider (ANSP) in Liberia is required to comply with the provisions contained in this Manual. The ATS Section shall document local procedures in their own operational manuals to ensure the maintenance of and compliance with standards in this Regulation. Where the ATS Section is unable to comply with any provision in any of this Technical Regulations, it shall inform the Authority within a reasonable period of time and in writing. The ATS Section shall explain the basis for its non-compliance and proposal for corrective action in a timely manner and the Authority may approve the proposal, subject to such other conditions it may impose.

**Table of content**

<b>AMENDMENTS</b> .....	4
<b>INTRODUCTION</b> .....	5
<b>PART 27 — SEARCH AND RESCUE</b> .....	9
<b>27.1 DEFINITIONS</b> .....	9
<b>27.2 ORGANIZATION</b> .....	10
<b>27.2.1 SEARCH AND RESCUE SERVICES</b> .....	10
<b>27.2.2 SEARCH AND RESCUE REGIONS</b> .....	11
<b>27.2.3 RESCUE COORDINATION CENTERs AND RESCUE SUBCENTERs</b> .....	11
<b>27.2.4 SEARCH AND RESCUE REGIONS</b> .....	12
<b>27.2.5 RESCUE COORDINATION CENTRES AND RESCUE SUBCENTERs</b> .....	12
<b>27.2.6 SEARCH AND RESCUE COMMUNICATIONS</b> .....	12
<b>27.2.7 SEARCH AND RESCUE UNITS</b> .....	13
<b>27.2.8 SEARCH AND RESCUE EQUIPMENT</b> .....	14
<b>27.3 COOPERATION</b> .....	14
<b>27.3.1 COOPERATION BETWEEN STATES</b> .....	14
<b>27.3.2 COOPERATION WITH OTHER SERVICES</b> .....	15
<b>27.3.3 DISSEMINATION OF INFORMATION</b> .....	16
<b>27.4 PREPARATORY MEASURES</b> .....	16
<b>27.4.1 PREPARATORY INFORMATION</b> .....	16
<b>27.4.2 PLANS OF OPERATION</b> .....	17
<b>27.4.3 SEARCH AND RESCUE UNITS</b> .....	18
<b>27.4.4 TRAINING AND EXERCISES</b> .....	19
<b>27.4.5 WRECKAGE</b> .....	19
<b>27.5 OPERATING PROCEDURES</b> .....	19
<b>27.5.1 INFORMATION CONCERNING EMERGENCIES</b> .....	19
<b>27.5.2 PROCEDURES FOR RCC DURING EMERGENCY PHASES</b> .....	19
<b>27.5.2.1 UNCERTAINTY PHASE</b> .....	19
<b>27.5.2.2 ALERT PHASE</b> .....	19
<b>27.5.2.3 DISTRESS PHASE</b> .....	20
<b>27.5.2.4 INITIATION OF SEARCH AND RESCUE ACTION IN RESPECT OF AN AIRCRAFT WHO'S POSITION IS UNKNOWN</b> .....	20
<b>27.5.2.5 PASSING OF INFORMATION TO AIRCRAFT IN RESPECT OF WHICH AN EMERGENCY PHASE HAS BEEN DECLARED</b> .....	21
<b>27.5.3 PROCEDURES WHERE RESPONSIBILITY FOR OPERATIONS EXTENDS TO TWO OR MORE CONTRACTING STATES</b> .....	21
<b>27.5.4 PROCEDURES FOR AUTHORITIES IN THE FIELD</b> .....	21
<b>27.5.5 PROCEDURES FOR RCC — TERMINATION AND SUSPENSION OF OPERATIONS</b> .....	22
<b>27.5.6 PROCEDURES AT THE SCENE OF AN ACCIDENT</b> .....	22
<b>27.5.7 PROCEDURES FOR A PILOT-IN-COMMAND INTERCEPTING A DISTRESS TRANSMISSION</b> .....	23
<b>27.5.8 SEARCH AND RESCUE SIGNALS</b> .....	24
<b>27.5.9 MAINTENANCE OF RECORDS</b> .....	24

<b>27.5.10 INITIATION OF SEARCH AND RESCUE ACTION IN RESPECT OF AN AIRCRAFT WHO'S POSITION IS UNKNOWN .....</b>	<b>24</b>
<b>27.5.10.1 PASSING OF INFORMATION TO AIRCRAFT IN RESPECT OF WHICH AN EMERGENCY PHASE HAS BEEN DECLARED .....</b>	<b>25</b>
<b>27.5.11 PROCEDURES WHERE RESPONSIBILITY FOR OPERATIONS EXTENDS TO TWO OR MORE CONTRACTING STATES.....</b>	<b>25</b>
<b>PART 27 — IMPLEMENTING STANDARDS .....</b>	<b>27</b>
<b>IS: 27.5.8 SEARCH AND RESCUE SIGNALS .....</b>	<b>28</b>

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## PART 27 — SEARCH AND RESCUE

### 27.1 DEFINITIONS

(a) When the following terms are used in this Part, they shall have the following meanings:

- (1) **Alerting post.** Any facility intended to serve as an intermediary between a person reporting an emergency and a rescue coordination centre or rescue sub-center.
- (2) **Alert phase.** A situation wherein apprehension exists as to the safety of an aircraft and its occupants.
- (3) **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.
- (4) **Ditching.** The forced landing of an aircraft on water.
- (5) **Emergency phase.** A generic term meaning, as the case may be, uncertainty phase, alert phase or distress phase.
- (6) **Joint rescue coordination center (JRCC).** A rescue coordination center responsible for both aeronautical and maritime search and rescue operations.
- (7) **Operator.** A person, organization or enterprise engaged in or offering to engage in an aircraft operation.
- (8) **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.
- (9) **Rescue.** An operation to retrieve persons in distress, provide for their initial medical or other needs, and deliver them to a place of safety.
- (10) **Rescue coordination center (RCC).** 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.
- (11) **Rescue sub center (RSC).** A unit subordinate to a rescue coordination center, established to complement the latter according to particular provisions of the responsible authorities.
- (12) **Search.** An operation normally coordinated by a rescue coordination center or rescue sub center using available personnel and facilities to locate persons in distress.

- (13) **Search and rescue aircraft.** An aircraft provided with specialized equipment suitable for the efficient conduct of search and rescue missions.
- (14) **Search and rescue facility.** Any mobile resource, including designated search and rescue units, used to conduct search and rescue operations.
- (15) **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.
- (16) **Search and rescue region (SRR).** An area of defined dimensions, associated with a rescue coordination center, within which search and rescue services are provided.
- (17) **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.
- (18) **State of Registry.** The State on whose register the aircraft is entered.
- (19) **Uncertainty phase.** A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

## 27.2 ORGANIZATION

### 27.2.1 SEARCH AND RESCUE SERVICES

- (a) The Republic of Liberia shall, individually or in cooperation with its neighboring States, arrange for the establishment and prompt provision of search and rescue services within their territories to ensure that assistance is rendered to persons in distress. Such services shall be provided on a 24-hour basis.
- (b) Those portions of the high seas or areas of undetermined sovereignty for which search and rescue services will be established shall be determined on the basis of regional air navigation agreements. The Republic of Liberia having accepted the responsibility to provide search and rescue services in such areas shall thereafter, individually or in cooperation with other States, arrange for the services to be established and provided in accordance with the provisions of this Regulation.

*Note. — The phrase “regional air navigation agreements” refers to the agreements approved by the Council of ICAO normally on the advice of Regional Air Navigation Meetings.*

- (c) Basic elements of search and rescue services shall include a legal framework, a responsible authority, organized available resources, communication facilities and a workforce skilled in coordination and operational functions.
- (d) Search and rescue services shall establish processes to improve service provision, including the aspects of planning, domestic and international cooperative arrangements and training.

- (e) In providing assistance to aircraft in distress and to survivors of aircraft accidents, the Republic of Liberia shall do so regardless of the nationality or status of such persons or the circumstances in which such persons are found.
- (f) The Republic of Liberia having accepted responsibility to provide search and rescue services shall use search and rescue units and other available facilities to assist any aircraft or its occupants that are or appear to be in a state of emergency.
- (g) Where separate aeronautical and maritime RCC serve the same area, the Republic of Liberia shall ensure the closest practicable coordination between the centers.
- (h) The Republic of Liberia shall facilitate consistency and cooperation between its aeronautical and maritime search and rescue services.

### 27.2.2 SEARCH AND RESCUE REGIONS

- (a) The Republic of Liberia in cooperation with neighboring States shall delineate the search and rescue regions within which they will provide search and rescue services. Such regions shall not overlap and neighboring regions shall be contiguous.

*Note 1. — Search and rescue regions are established to ensure the provision of adequate communication infrastructure, efficient distress alert routing and proper operational coordination to effectively support search and rescue services. Neighboring States may cooperate to establish search and rescue services within a single SAR region.*

*Note 2. — The delineation of search and rescue regions is determined on the basis of technical and operational considerations and is not related to the delineation of boundaries between States.*

- (b) Search and rescue regions shall, in so far as practicable, be coincident with corresponding flight information regions and, with respect to those areas over the high seas, maritime search and rescue regions.

### 27.2.3 RESCUE COORDINATION CENTERS AND RESCUE SUBCENTERS

- (a) The Republic of Liberia shall establish a rescue coordination center in its search and rescue region.

*Note. — A Contracting State may establish a rescue coordination center with an associated search and rescue region that, in accordance with regional air navigation agreement, extends over an area greater than its sovereign airspace.*

- (b) The rescue coordination center and, as appropriate, rescue sub center, shall be staffed 24 hours a day by trained personnel proficient in the use of the language used for radiotelephony communications.
- (c) The rescue coordination center shall employ sufficient workforce skilled in coordination and operational functions.
- (d) The RCC and RSCs shall develop written job descriptions for each of their technical staff.
- (e) RCC personnel involved in the conduct of radiotelephony communications shall be proficient in the use of the English language.

- (f) In areas where public telecommunications facilities would not permit persons observing an aircraft in emergency to notify the rescue coordination center concerned directly and promptly, the Republic of Liberia shall designate suitable units of public or private services as alerting posts.

#### **27.2.4 SEARCH AND RESCUE REGIONS**

- (a) The Republic of Liberia in cooperation with neighboring States shall delineate the search and rescue regions within which they will provide search and rescue services. Such regions shall not overlap and neighboring regions shall be contiguous.

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- (a) The Republic of Liberia shall establish a rescue coordination center in its search and rescue region.

*Note.— A Contracting State may establish a rescue coordination center with an associated search and rescue region that, in accordance with regional air navigation agreement, extends over an area greater than its sovereign airspace.*

- (b) The rescue coordination center and, as appropriate, rescue sub center, shall be staffed 24 hours a day by trained personnel proficient in the use of the language used for radiotelephony communications.
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- (d) The RCC and RSCs shall develop written job descriptions for each of their technical staff.
- (e) RCC personnel involved in the conduct of radiotelephony communications shall be proficient in the use of the English language.
- (f) In areas where public telecommunications facilities would not permit persons observing an aircraft in emergency to notify the rescue coordination center concerned directly and promptly, the Republic of Liberia shall designate suitable units of public or private services as alerting posts.

#### **27.2.6 SEARCH AND RESCUE COMMUNICATIONS**

- (a) The rescue coordination center shall have means of rapid and reliable two-way communication with:
- (1) associated air traffic services units;
  - (2) associated rescue sub centers;
  - (3) appropriate direction-finding and position-fixing stations;
  - (4) where appropriate, coastal radio stations capable of alerting and communicating with surface vessels in the region;
  - (5) the headquarters of search and rescue units in the region;
  - (6) all maritime RCC in the region and aeronautical, maritime or joint RCC in adjacent regions;
  - (7) a designated meteorological office or meteorological watch office;
  - (8) search and rescue units;
  - (9) alerting posts; and
  - (10) the Cospas-Sarsat Mission Control Centre servicing the search and rescue region.

*Note. — Maritime RCC are identified in relevant documents of the International Maritime Organization.*

- (b) The rescue sub center shall have means of rapid and reliable two-way communication with:
- (1) adjacent rescue sub centers;
  - (2) a meteorological office or meteorological watch office;
  - (3) search and rescue units; and
  - (4) Alerting posts.

#### **27.2.7 SEARCH AND RESCUE UNITS**

- (a) The Republic of Liberia shall designate as search and rescue units elements of public or private services suitably located and equipped for search and rescue operations.

*Note.— The minimum units and facilities necessary for provision of search and rescue operations within a search and rescue region are determined by regional air navigation agreements and are specified in the appropriate Air Navigation Plan and Facilities and Services Implementation Document publications.*

- (b) The Republic of Liberia shall designate as part of the search and rescue plan of operation, elements of public or private services that do not qualify as search and rescue units but are nevertheless able to participate in search and rescue operations.

## 27.2.8 SEARCH AND RESCUE EQUIPMENT

- (c) Search and rescue units shall be provided with equipment for locating promptly, and for providing adequate assistance at, the scene of an accident.
- (d) Each search and rescue unit shall have means of rapid and reliable two-way communication with other search and rescue facilities engaged in the same operation.
- (e) Each search and rescue aircraft shall be equipped to be able to communicate on the aeronautical distress and on- scene frequencies and on such other frequencies as may be prescribed.
- (f) Each search and rescue aircraft shall be equipped with a device for homing on distress frequencies.

*Note 1. — Specifications for Emergency Locator Transmitters are given in Part 23.3 of the Liberia Civil Aviation Regulations.*

- (g) Each search and rescue aircraft, when used for search and rescue over maritime areas, shall be equipped to be able to communicate with vessels.  
*Note. — Many vessels can communicate with aircraft on 2182 kHz, 4125 kHz and 121.5 MHz. However, these frequencies, and in particular 121.5 MHz, may not be routinely monitored by vessels.*
- (h) Each search and rescue aircraft, when used for search and rescue over maritime areas shall carry a copy of the *International Code of Signals* to enable it to overcome language difficulties that may be experienced in communicating with ships.  
*Note. — The International Code of Signals is published in English, French and Spanish by the International Maritime Organization as documents I994E, I995F and I996S.*
- (i) Unless it is known that there is no need to provide supplies to survivors by air, at least one of the aircraft participating in a search and rescue operation shall carry droppable survival equipment.
- (j) The Authority shall locate, at appropriate aerodromes, survival equipment suitably packed for dropping by aircraft.

## 27.3 COOPERATION

### 27.3.1 COOPERATION BETWEEN STATES

- (a) The Authority shall coordinate its search and rescue organization with those of neighboring States.
- (b) The Authority shall, whenever necessary, coordinate its search and rescue operations with those of neighboring States especially when these operations are proximate to adjacent search and rescue regions.

- (c) The Authority shall, in so far as practicable, develop common search and rescue plans and procedures to facilitate coordination of search and rescue operations with those of neighboring States.
- (d) Subject to such conditions as may be prescribed by its own authorities, the Republic of Liberia shall permit immediate entry into its territory of search and rescue units of other States for the purpose of searching for the site of aircraft accidents and rescuing survivors of such accidents.
- (e) The authorities of a Contracting State who wish their search and rescue units to enter the territory of another Contracting State for search and rescue purposes shall transmit a request, giving full details of the projected mission and the need for it, to the rescue coordination center of the State concerned or to such other authority as has been designated by that State.
- (f) The authorities of The Republic of Liberia shall:
  - (1) immediately acknowledge the receipt of such a request, and
  - (2) as soon as possible, indicate the conditions, if any, under which the projected mission may be undertaken.
- (g) The Authority shall enter into agreements with neighboring States to strengthen search and rescue cooperation and coordination, setting forth the conditions for entry of each other's search and rescue units into their respective territories. These agreements shall also provide for expediting entry of such units with the least possible formalities.
- (h) The Authority shall authorize its RCC to:
  - (1) request from other RCC such assistance, including aircraft, vessels, persons or equipment, as may be needed;
  - (2) grant any necessary permission for the entry of such aircraft, vessels, persons or equipment into its territory; and
  - (3) make the necessary arrangements with the appropriate customs, immigration or other authorities with a view to expediting such entry.
- (i) The Authority shall authorize its RCC to provide, when requested, assistance to other RCC, including assistance in the form of aircraft, vessels, persons or equipment.
- (j) The Authority shall make arrangements for joint training exercises involving their search and rescue units, those of other States and operators, in order to promote search and rescue efficiency.
- (k) The Authority shall make arrangements for periodic liaison visits by personnel of their RCC and sub centers to the centers of neighboring States.

### **27.3.2 COOPERATION WITH OTHER SERVICES**

- (a) The Republic of Liberia shall arrange for all aircraft, vessels and local services and facilities which do not form part of the search and rescue organization to cooperate fully with the latter in search and rescue and to extend any possible assistance to the survivors of aircraft accidents.

- (b) The Republic of Liberia shall ensure the closest practicable coordination between the Authority and the Liberia Maritime Authority to provide for the most effective and efficient search and rescue services.
- (c) The Republic of Liberia shall ensure that the aeronautical rescue coordination center maintains a close coordination with the maritime rescue coordination center.
- (d) The Authority shall ensure that its search and rescue services cooperate with those responsible for investigating accidents and with those responsible for the care of those who suffered from the accident.
- (e) To facilitate accident investigation, rescue units shall, when practicable, be accompanied by persons qualified in the conduct of aircraft accident investigations.
- (f) The Liberia Civil Aviation Authority shall ensure that search and rescue activities in Liberia are coordinated with those of neighboring states.
- (g) The Roberts Rescue Coordination Centre shall be the designated search and rescue point of contact for the receipt of Cospas-Sarsat distress data.

### **27.3.3 DISSEMINATION OF INFORMATION**

- (a) The Republic of Liberia shall publish and disseminate all information necessary for the entry of search and rescue units of other States into its territory or, alternatively, include this information in search and rescue service agreements as may be applicable.
- (b) When such information could benefit the provision of search and rescue services, the Authority shall make available, through the RCC or other agencies, information regarding the other State's search and rescue plans of operation.
- (c) The Authority shall, to the extent desirable and practicable, disseminate information to the general public and emergency response authorities regarding actions to be taken when there is reason to believe that an aircraft's emergency situation may become a cause for public concern or require a general emergency response.

## **27.4 PREPARATORY MEASURES**

### **27.4.1 PREPARATORY INFORMATION**

- (a) The Rescue Coordination Centre shall have readily available at all times up-to-date information concerning the following in respect of its search and rescue region:
  - (1) search and rescue units, rescue sub centers and alerting posts;
  - (2) air traffic services units;
  - (3) means of communication that may be used in search and rescue operations;
  - (4) addresses and telephone numbers of all operators, or their designated representatives, engaged in operations in the region; and



- (5) any other public and private resources including medical and transportation facilities that are likely to be useful in search and rescue.
- (b) The Rescue Coordination Centre shall have readily available all other information of interest to search and rescue, including information regarding:
  - (1) the locations, call signs, hours of watch, and frequencies of all radio stations likely to be employed in support of search and rescue operations;
  - (2) the locations and hours of watch of services keeping radio watch, and the frequencies guarded;
  - (3) locations where supplies of droppable emergency and survival equipment are stored; and
  - (4) objects which it is known might be mistaken for unlocated or unreported wreckage, particularly if viewed from the air.
- (c) The Rescue Coordination Centre whose search and rescue region includes maritime areas shall have ready access to information regarding the position, course and speed of ships within such areas that may be able to provide assistance to aircraft in distress and information on how to contact them.

*Note. — This information may either be kept in the Rescue Coordination Centers or be readily accessible.*

- (d) The Republic of Liberia shall, individually or in cooperation with other States, either establish ship reporting systems in cooperation with maritime authorities or arrange communication links with Amver or regional ship reporting systems to facilitate search and rescue operations at sea.

*Note. — Amver is a cooperative international ship reporting system with worldwide coverage that is available for interrogation by all RCC. A number of Contracting States also operate regional ship reporting systems.*

#### **27.4.2 PLANS OF OPERATION**

- (a) The Rescue Coordination Centre shall prepare detailed plans of operation for the conduct of search and rescue operations within its search and rescue region.
- (b) Search and rescue plans of operations or an Emergency Response Plan (ERP) shall be developed jointly with representatives of the operators and other public or private services that may assist in providing search and rescue services or benefit from them, taking into account that the number of survivors could be large.
- (c) The plans of operation or ERP shall specify arrangements for the servicing and refueling, to the extent possible, of aircraft, vessels and vehicles employed in search and rescue operations, including those made available by other States.
- (d) The search and rescue plans of operation or ERP shall contain details regarding actions to be taken by those persons engaged in search and rescue, including:
  - (1) the manner in which search and rescue operations are to be conducted in the search and rescue region;

- (2) the use of available communication systems and facilities;
  - (3) the actions to be taken jointly with other RCC;
  - (4) the methods of alerting en-route aircraft and ships at sea;
  - (5) the duties and prerogatives of persons assigned to search and rescue;
  - (6) the possible redeployment of equipment that may be necessitated by meteorological or other conditions;
  - (7) the methods for obtaining essential information relevant to search and rescue operations, such as weather reports and forecasts, appropriate NOTAM, etc.;
  - (8) the methods for obtaining, from other RCC, such assistance, including aircraft, vessels, persons or equipment, as may be needed;
  - (9) the methods for assisting distressed aircraft being compelled to ditch to rendezvous with surface craft;
  - (10) the methods for assisting search and rescue or other aircraft to proceed to aircraft in distress; and
  - (11) cooperative actions to be taken in conjunction with air traffic services units and other authorities concerned to assist aircraft known or believed to be subject to unlawful interference.
- (e) Search and rescue plans of operation or ERP shall be integrated with airport emergency plans to provide for rescue services in the vicinity of aerodromes including, for coastal aerodromes, areas of water.
- (f) The aeronautical rescue coordination center shall develop regional Emergency Response Plan for all the public-use regional airports. This shall be done in consultation with all the stakeholders and agencies involved in search and rescue mission. The document when completed shall be submitted for approval by Liberia Civil Aviation Authority.

### **27.4.3 SEARCH AND RESCUE UNITS**

- (a) The Search and Rescue unit shall:
- (1) be cognizant of all parts of the plans of operation or ERP prescribed in 27.4.2 that are necessary for the effective conduct of its duties; and
  - (2) keep the Rescue Coordination Centre informed of its preparedness.
- (b) The Republic of Liberia shall:
- (1) maintain in readiness the required number of search and rescue facilities; and
  - (2) maintain adequate supplies of rations, medical stores, signaling devices and other survival and rescue equipment.

#### **27.4.4 TRAINING AND EXERCISES**

- (a) To achieve and maintain maximum efficiency in search and rescue, the Authority shall provide for regular training of their search and rescue personnel and arrange appropriate search and rescue exercises.
- (b) The RCC and if appropriate, RSCs, shall establish a training program for their staff and ensure that such training programs are implemented.
- (c) The RCC shall develop a system for maintenance of training records of its staff.

#### **27.4.5 WRECKAGE**

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

### **27.5 OPERATING PROCEDURES**

#### **27.5.1 INFORMATION CONCERNING EMERGENCIES**

- (a) Any authority or any element of the search and rescue organization having reason to believe that an aircraft is in an emergency shall give immediately all available information to the Rescue Coordination Centre concerned.
- (b) Rescue Coordination Centers shall, immediately upon receipt of information concerning aircraft in emergency, evaluate such information and assess the extent of the operation required.
- (c) When information concerning aircraft in emergency is received from other sources than air traffic services units, the Rescue Coordination Centre shall determine to which emergency phase the situation corresponds and shall apply the procedures applicable to that phase.

#### **27.5.2 PROCEDURES FOR RCC DURING EMERGENCY PHASES**

##### **27.5.2.1 UNCERTAINTY PHASE**

Upon the occurrence of an uncertainty phase, the Rescue Coordination Centre 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.

##### **27.5.2.2 ALERT PHASE**

Upon the occurrence of an alert phase the Rescue Coordination Centre shall immediately alert search and rescue units and initiate any necessary action.

27.5.2.3 DISTRESS PHASE

**(a)** Upon the occurrence of a distress phase, the Rescue Coordination Centre shall:

- (1) immediately initiate action by search and rescue units in accordance with the appropriate plan of operation;
- (2) ascertain the position of the aircraft, estimate the degree of uncertainty of this position, and, on the basis of this information and the circumstances, determine the extent of the area to be searched;
- (3) notify the operator, where possible, and keep the operator informed of developments;
- (4) notify other RCC, the help of which seems likely to be required, or which may be concerned in the operation;
- (5) notify the associated air traffic services unit, when the information on the emergency has been received from another source;
- (6) request at an early stage such aircraft, vessels, coastal stations and other services not specifically included in the appropriate plan of operation or ERP and able to assist to:
  - i. maintain a listening watch for transmissions from the aircraft in distress, survival radio equipment or an ELT;

*Note. — The frequencies contained in the specifications for ELTs given in Part 23.3, are 121.5 MHz and 406 MHz*

- ii. assist the aircraft in distress as far as practicable; and
  - iii. inform the RCC of any developments.
- (7) from the information available, draw up a detailed plan of action for the conduct of the search and rescue operation required and communicate such plan for the guidance of the authorities immediately directing the conduct of such an operation;
- (8) amend as necessary, in the light of evolving circumstances, the detailed plan of action;
- (9) notify the appropriate accident investigation authorities; and
- (10) notify the State of Registry of the aircraft.

**(b)** The order in which these actions are described shall be followed unless circumstances dictate otherwise.

27.5.2.4 INITIATION OF SEARCH AND RESCUE ACTION IN RESPECT OF AN AIRCRAFT WHO'S POSITION IS UNKNOWN

- (a) In the event that an emergency phase is declared in respect of an aircraft whose position is unknown and may be in one of two or more search and rescue regions, the following shall apply:
- (1) When a rescue coordination center is notified of the existence of an emergency phase and is unaware of other centers taking appropriate action, it shall assume responsibility for initiating suitable action in accordance with 27.5.2 and confer with neighboring RCC with the objective of designating one rescue coordination center to assume responsibility forthwith.
  - (2) Unless otherwise decided by common agreement of the RCCs concerned, the RCC to coordinate search and rescue action shall be the center responsible for:
    - i. the region in which the aircraft last reported its position; or
    - ii. the region to which the aircraft was proceeding when its last reported position was on the line separating two search and rescue regions; or
    - iii. the region to which the aircraft was destined when it was not equipped with suitable two-way radio communication or not under obligation to maintain radio communication; or
    - iv. the region in which the distress site is located as identified by the Cospas-Sarsat system.
- (b) After declaration of the distress phase, the RCC with overall coordination responsibility shall inform all RCCs that may become involved in the operation of all the circumstances of the emergency and subsequent developments. Likewise, all RCCs becoming aware of any information pertaining to the emergency shall inform the RCC that has overall responsibility.

#### 27.5.2.5 PASSING OF INFORMATION TO AIRCRAFT IN RESPECT OF WHICH AN EMERGENCY PHASE HAS BEEN DECLARED

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

#### 27.5.3 PROCEDURES WHERE RESPONSIBILITY FOR OPERATIONS EXTENDS TO TWO OR MORE CONTRACTING STATES

Where the conduct of operations over the entire SRR is the responsibility of more than one State, each involved State shall take action in accordance with the relevant plan of operations when so requested by the RCC of the region.

#### 27.5.4 PROCEDURES FOR AUTHORITIES IN THE FIELD

- (a) The authorities immediately directing the conduct of operations or any part thereof shall:

- (1) give instructions to the units under their direction and inform the RCC of such instructions; and
- (2) keep the RCC informed of developments.

#### **27.5.5 PROCEDURES FOR RCC — TERMINATION AND SUSPENSION OF OPERATIONS**

- (a) Search and rescue operations shall continue, when practicable, until all survivors are delivered to a place of safety or until all reasonable hope of rescuing survivors has passed.
- (b) The responsible RCC shall normally be responsible for determining when to discontinue search and rescue operations.

*Note.* — Contracting States may require input from other appropriate State authorities in the decision-making process leading to termination of SAR operations.

- (c) When a search and rescue operation has been successful or when a RCC considers, or is informed, that an emergency no longer exists, the emergency phase shall be cancelled, the search and rescue operation shall be terminated and any authority, facility or service that has been activated or notified shall be promptly informed.
- (d) If a search and rescue operation becomes impracticable and the RCC concludes that there might still be survivors, the center shall temporarily suspend on-scene activities pending further developments and shall promptly inform any authority, facility or service which has been activated or notified. Relevant information subsequently received shall be evaluated and search and rescue operations resumed when justified and practicable.

#### **27.5.6 PROCEDURES AT THE SCENE OF AN ACCIDENT**

- (a) When multiple facilities are engaged in search and rescue operations on-scene, the RCC or rescue sub center shall designate one or more units on-scene to coordinate all actions to help ensure the safety and effectiveness of air and surface operations, taking into account facility capabilities and operational requirements.
- (b) When a pilot-in-command observes that either another aircraft or a surface craft is in distress, the pilot shall, if possible and unless considered unreasonable or unnecessary:
  - (1) keep the craft in distress in sight until compelled to leave the scene or advised by the RCC that it is no longer necessary;
  - (2) determine the position of the craft in distress;
  - (3) as appropriate, report to the RCC or air traffic services unit as much of the following information as possible:
    - i. expressed in hours and minutes Coordinated type of craft in distress, its identification and condition;
    - ii. its position, expressed in geographical or grid coordinates or in distance and true bearing from a distinctive landmark or from a radio navigation aid;

- iii. time of observation Universal Time (UTC);
  - iv. number of persons observed;
  - v. whether persons have been seen to abandon the craft in distress;
  - vi. on-scene weather conditions;
  - vii. apparent physical condition of survivors;
  - viii. apparent best ground access route to the distress site; and
- (4) act as instructed by the RCC or the air traffic services unit.
- (c) If the first aircraft to reach the scene of an accident is not a search and rescue aircraft, it shall take charge of on-scene activities of all other aircraft subsequently arriving until the first search and rescue aircraft reaches the scene of the accident. If, in the meantime, such aircraft is unable to establish communication with the appropriate RCC or air traffic services unit, it shall, by mutual agreement, hand over to an aircraft capable of establishing and maintaining such communications until the arrival of the first search and rescue aircraft.
- (d) When it is necessary for an aircraft to convey information to survivors or surface rescue units, and two-way communication is not available, it shall, if practicable, drop communication equipment that would enable direct contact to be established, or convey the information by dropping a hard copy message.
- (e) When a ground signal has been displayed, the aircraft shall indicate whether the signal has been understood or not by the means described in 37.5.6.3 or, if this is not practicable, by making the appropriate visual signal.
- (f) When it is necessary for an aircraft to direct a surface craft to the place where an aircraft or surface craft is in distress, the aircraft shall do so by transmitting precise instructions by any means at its disposal. If no radio communication can be established, the aircraft shall make the appropriate visual signal.

*Note. — Air-to-surface and surface-to-air visual signals are published in Volume III of Doc 9731.*

#### **27.5.7 PROCEDURES FOR A PILOT-IN-COMMAND INTERCEPTING A DISTRESS TRANSMISSION**

- (a) Whenever a distress transmission is intercepted by a pilot-in-command of an aircraft, the pilot shall, if feasible:
- (1) acknowledge the distress transmission;
  - (2) record the position of the craft in distress if given;
  - (3) take a bearing on the transmission;

- (4) inform the appropriate RCC or air traffic services unit of the distress transmission, giving all available information; and
- (5) at the pilot's discretion, while awaiting instructions, proceed to the position given in the transmission.

#### **27.5.8 SEARCH AND RESCUE SIGNALS**

- (a) The air-to-surface and surface-to-air visual signals in the IS: 27.5.8 shall, when used, have the meaning indicated therein. They shall be used only for the purpose indicated and no other signals likely to be confused with them shall be used.
- (b) Upon observing any of the signals in the IS: 37.5.8, aircraft shall take such action as may be required by the interpretation of the signal given in that IS: 37.5.8.

#### **27.5.9 MAINTENANCE OF RECORDS**

- (a) The RCC shall keep a record of the operational efficiency of the search and rescue organization in its region.
- (b) The RCC shall prepare appraisals of actual search and rescue operations in its region. These appraisals should comprise any pertinent remarks on the procedures used and on the emergency and survival equipment, and any suggestions for improvement of those procedures and equipment. Those appraisals which are likely to be of interest to other States shall be submitted to ICAO for information and dissemination as appropriate.

#### **27.5.10 INITIATION OF SEARCH AND RESCUE ACTION IN RESPECT OF AN AIRCRAFT WHO'S POSITION IS UNKNOWN**

- (a) In the event that an emergency phase is declared in respect of an aircraft whose position is unknown and may be in one of two or more search and rescue regions, the following shall apply:
  - (1) When a rescue coordination center is notified of the existence of an emergency phase and is unaware of other centers taking appropriate action, it shall assume responsibility for initiating suitable action in accordance with 27.5.2 and confer with neighboring RCC with the objective of designating one rescue coordination center to assume responsibility forthwith.
  - (2) Unless otherwise decided by common agreement of the RCCRCCs concerned, the RCC to coordinate search and rescue action shall be the center responsible for:
    - i. the region in which the aircraft last reported its position; or
    - ii. the region to which the aircraft was proceeding when its last reported position was on the line separating two search and rescue regions; or



- iii. the region to which the aircraft was destined when it was not equipped with suitable two-way radio communication or not under obligation to maintain radio communication; or
  - iv. the region in which the distress site is located as identified by the Cospas-Sarsat system.
- (b) After declaration of the distress phase, the RCC with overall coordination responsibility shall inform all RCCs that may become involved in the operation of all the circumstances of the emergency and subsequent developments. Likewise, all RCCs becoming aware of any information pertaining to the emergency shall inform the RCC that has overall responsibility.

#### 27.5.10.1 PASSING OF INFORMATION TO AIRCRAFT IN RESPECT OF WHICH AN EMERGENCY PHASE HAS BEEN DECLARED

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

#### 27.5.11 PROCEDURES WHERE RESPONSIBILITY FOR OPERATIONS EXTENDS TO TWO OR MORE CONTRACTING STATES

Where the conduct of operations over the entire search and rescue region is the responsibility of more than one Contracting State, each involved State shall take action in accordance with the relevant plan of operations when so requested by the RCC of the region.

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## **Part 27 — IMPLEMENTING STANDARDS**

# **LIBERIA CIVIL AVIATION AIR NAVIGATION SERVICES REGULATIONS**

### **PART 27 – IMPLEMENTING STANDARDS**

*For ease of reference, the number assigned to each implementing standard corresponds to its associated regulation. For example, IS 27.2.1 would reflect a standard required in subsection 27.2.1*

## IS: 27.5.8 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:
  - 1) rocking the wings; or
  - 2) opening and closing the throttle; or
  - 3) changing the propeller pitch.

*Note.* — *Due to high noise level on board surface craft, the sound signals in 2) and 3) may be less effective than the visual signal in 1) 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:

- 1) rocking the wings; or
- 2) opening and closing the throttle; or
- 3) 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:*

**1)** *the hoisting of the “code pennant” (vertical red and white stripes) close up (meaning understood);*

**2)** *the flashing of a succession of “T’s” by signal lamp in the Morse code;*

**3)** *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.

## 2. Ground-air visual signal code

### 1.2.1 Ground-air visual signal code 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	Y
5	Proceeding in this direction	↑

### 1.2.2 Ground-air visual signal code for use by rescue units

No	Message	Code Symbol						
1	Operation completed	L L L						
2	We have found all personnel	<u>L L</u>						
3	We have found only some personnel	<table border="1" style="margin: auto;"> <tr> <td style="width: 10px; height: 10px;"></td> <td style="width: 10px; height: 10px;"></td> </tr> <tr> <td style="border: none;"> </td> <td style="border: none;"> </td> </tr> <tr> <td style="width: 10px; height: 10px;"></td> <td style="width: 10px; height: 10px;"></td> </tr> </table>						
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						

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

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

*Note 2. — Attention to the above signals may be attracted by other means such as radio, flares, smoke 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.