

Clean copy of the proposed revised Annex 12

ANNEX 12

INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

Note: This Annex is supplemented by the International Aeronautical and Maritime Search and Rescue Manual Volumes I, II and III, the purpose of which is to assist States in meeting their search and rescue needs and obligations accepted under the Convention on International Civil Aviation. These obligations, as they relate to the provision of SAR services, are specified in this Annex as Standards and Recommended Practices. 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 neighbouring States

CHAPTER 1. DEFINITIONS

When the following terms are used in the Standards and Recommended Practices for Search and Rescue they have the following meanings:

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

Alert Phase. A situation wherein apprehension exists as to the safety of an aircraft or marine vessel, and of the persons on board.

Cospas-Sarsat. A satellite system designed to detect distress beacons transmitting on the frequencies of 121.5 MHz and 406 MHz.

Distress Phase. A situation wherein there is a reasonable certainty that a vessel or other craft, including an aircraft or a person, is threatened by grave and imminent danger and requires immediate assistance.

Ditching. The forced landing of an aircraft on water.

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

Joint Rescue Co-ordination Centre (JRCC). A rescue co-ordination centre responsible for both aeronautical and maritime search and rescue incidents.

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

Pilot-in-command. The pilot responsible for the operation and safety of the aircraft during flight time.

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

Rescue Co-ordination Centre (RCC). A unit responsible for promoting efficient organization of search and rescue services and for co-ordinating the conduct of search and rescue operations within a search and rescue region.

Rescue Sub-Centre (RSC). A unit subordinate to a rescue coordination centre, established to complement the latter according to particular provisions of the responsible authorities

Search. An operation, normally co-ordinated by a rescue co-ordination 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.

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

Search and rescue service. The performance of distress monitoring, communication, co-ordination and search and rescue functions, including provision of medical advice, initial medical assistance or medical evacuation, through the use of public and private resources, including cooperating aircraft, vessels and other craft and installations.

Search and Rescue Mission Coordinator (SMC). The official temporarily assigned to co-ordinate response to an actual or apparent distress situation.

Search and Rescue Region (SRR). An area of defined dimensions, associated with a rescue coordination centre, within which search and rescue services are provided.

Search and Rescue Unit (SRU). A unit composed of trained personnel and provided with equipment suitable for the expeditious conduct of search and rescue operations.

Search object. A ship, aircraft, or other craft missing or in distress or survivors or related search objects or evidence for which a search is being conducted.

State of Registry. The State on whose register the aircraft is entered.

Uncertainty Phase. A situation wherein doubt exists as to the safety of an aircraft or a marine vessel, and of the persons on board.

Vessel. A maritime craft.

CHAPTER 2. ORGANIZATION

2.1 Search and rescue services

2.1.1 Contracting States shall, individually or in cooperation with other 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.

2.1.1.1 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. Contracting States 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 service to be established and provided in accordance with the provisions of this Annex.

Note.- The phrase "regional air navigation agreements" refers to the agreement approved by the Council of ICAO normally on the advice of Regional Air Navigation Meetings.

2.1.1.2 Basic elements of search and rescue services shall include a legal framework, a responsible authority, organization of available resources, communication facilities, coordination and operational functions; and processes to improve the services, including planning, domestic and international cooperative relationships and training.

2.1.2 In providing assistance to aircraft in distress and to survivors of aircraft accidents, Contracting States shall do so regardless of the nationality or status of such a person or the circumstances in which that person is found.

2.1.3 Contracting States 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.

2.1.4 Recommendation. *Contracting States should promote consistency and facilitate cooperation between their aeronautical and maritime search and rescue services.*

2.1.5 Recommendation. *Contracting States should establish Joint Rescue Co-ordination Centres to co-ordinate aviation and maritime incidents where practical.*

2.1.6. Where separate aeronautical and maritime rescue co-ordination centres serve the same area, States shall ensure the closest practicable co-ordination between the centres.

2.2 Search and rescue regions

2.2.1 Contracting States through regional air navigation agreements shall delineate the search and rescue regions within which they will provide search and rescue services. Such regions shall not overlap and neighbouring 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. Neighbouring States may cooperate to establish search and rescue services within a single SAR region.

Note 2.- The delineation of search and rescue regions is not related to the delineation of any other boundaries between States.

Note 3 - Contracting States that do not have an assigned search and rescue region are responsible for providing a local search and rescue service in territorial airspace. Responsibility for providing search and rescue services over a larger area can occur where there are operational benefits and an agreement is held with the applicable rescue co-ordination centre for this to occur. In this case, the Contracting State accepting the responsibility would establish a rescue sub-centre for this purpose.

2.2.1.1 Recommendation. *Delineation of search and rescue regions should, in so far as practicable, be coincident with the boundaries of corresponding flight information regions.*

2.2.1.2 Recommendation. *Delineation of search and rescue regions should, in so far as practicable, be coincident with the boundaries of corresponding maritime search and rescue regions.*

2.3 Establishment of rescue coordination centres and rescue sub-centres

2.3.1 Contracting States with an assigned responsibility via the regional air navigation agreement shall establish a rescue coordination centre in each search and rescue region.

2.3.2 Recommendation. *Contracting States should establish rescue sub-centres whenever this would improve the efficiency of search and rescue services. This may include the establishment of centres by other Contracting States which by agreement have accepted responsibility for a portion of the search and rescue region which is greater than their sovereign airspace.*

2.3.3 Each Rescue Coordination Centre and, as appropriate, rescue sub-centre shall be staffed 24-hours a day by trained personnel proficient in the use of the English language.

2.3.4 **Recommendation.** *In areas where public telecommunications facilities would not permit persons observing an aircraft in emergency to notify the rescue co-ordination centre concerned directly and promptly, Contracting States should designate suitable units of public or private services as alerting posts.*

2.4 Search and rescue communications

2.4.1 Each rescue coordination centre shall have means of rapid and reliable communication with:

- a) associated air traffic services units;
- b) associated rescue sub-centres;
- c) appropriate direction-finding and position-fixing stations;
- d) where appropriate, coastal radio stations capable of alerting and communicating with surface vessels in the region.
- e) the headquarters of search and rescue units in the region;
- f) all maritime coordination centres in the region and aeronautical, maritime or joint rescue coordination centres in adjacent regions;
- g) a designated meteorological office or meteorological watch office;
- h) search and rescue units;
- i) alerting posts;
- j) the Cospas-Sarsat Mission Control Centre servicing the search and rescue region when the rescue co-ordination centre has been designated SAR point of contact.

Note.- Maritime rescue coordination centres are identified in relevant documents of the International Maritime Organization.

2.4.2 In addition to the requirement in 2.4.1 b), each rescue sub-centre shall have means of rapid and reliable communication with:

- a) adjacent rescue sub-centres;

- b) a meteorological office or meteorological watch office;
- c) search and rescue units;
- d) alerting posts.

2.4.3 **Recommendation.** *The means of communication provided in accordance with 2.4.1 and 2.4.2 should be supplemented, as and where necessary.*

2.5 Search and rescue units

2.5.1 Contracting States 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 Regional Air Navigation Plan and Facilities and Services Implementation Document publications.

2.5.2 Contracting States shall designate as parts 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.

2.6 Search and rescue equipment

2.6.1 Search and rescue units shall be provided with equipment for locating promptly, and for providing adequate assistance at, the scene of an accident.

Note.- In selecting equipment for search and rescue units it is important that due regard be given to the size and passenger capacity of modern aircraft.

2.6.2 **Recommendation.** *In addition to the communications required by 2.4.1 h) and 2.4.2 c), each search and rescue unit should have means of rapid and reliable communication with other search and rescue facilities engaged in the same operation.*

2.6.3 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.

2.6.4 Each search and rescue aircraft shall be equipped with a homing device for homing on emergency locator transmitters transmitting on 121.5 MHz.

Note.- Specifications for emergency locator transmitter (ELT) are given in Annex 10, Vol. III.

2.6.5 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 monitored by vessels for calling purposes. Therefore, vessels may have to be advised by search and rescue authorities to monitor these frequencies when situations arise in which they need to be called by aircraft.

2.6.6 Each search and rescue aircraft, when used for search and rescue over maritime areas, shall carry a copy of the Search and Rescue Signals in Appendix A to enable it to overcome language difficulties that may be experienced in communicating with vessels.

2.6.7 **Recommendation.** *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 should carry droppable survival equipment.*

2.6.8 **Recommendation.** *States should consider locating survival equipment suitably packed for dropping by aircraft at appropriate aerodromes.*

CHAPTER 3. COOPERATION

3.1 Cooperation between States

3.1.1 Contracting States shall coordinate their search and rescue organizations to the extent possible with those of neighbouring States.

3.1.2 **Recommendation.** *Contracting States should, whenever necessary, coordinate their search and rescue operations with those of neighbouring States especially when these operations are proximate to an agreed search and rescue boundary.*

3.1.2.1 **Recommendation.** *Contracting States should, in so far as practicable, develop common search and rescue plans and procedures to facilitate coordination of search and rescue operations with those of neighbouring States.*

3.1.3 Subject to such conditions as may be prescribed by its own authorities, a Contracting State shall permit immediate entry into its territorial sea and air space search and rescue units of other States for the purpose of searching for the site of aircraft accidents and rescuing survivors of such accidents.

3.1.4 The authorities of a Contracting State which wishes its search and rescue units to enter the territorial sea and/or air space 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 co-ordination centre of the State concerned or to such other authority as has been designated by that State.

3.1.4.1 The authorities of Contracting States shall immediately acknowledge the receipt of such a request, and as soon as possible indicate the conditions, if any, under which the projected mission may be undertaken.

3.1.5 **Recommendation.** *Contracting States should enter into agreements with neighbouring 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 should also provide for expediting entry of such units with the least possible formalities.*

3.1.6 **Recommendation.** *Each Contracting State should authorize its rescue co-ordination centres to:*

- a) *request from other rescue co-ordination centres such assistance, including aircraft, vessels, personnel or equipment, as may be needed;*
- b) *grant any necessary permission for the entry of such aircraft, vessels, personnel or equipment into its territory; and*

- c) *make the necessary arrangements with the appropriate customs, immigration or other authorities with a view to expediting such entry.*

3.1.7 **Recommendation.** *Each Contracting State should authorize its rescue co-ordination centres to provide, when requested, assistance to other rescue co-ordination centres, including assistance in the form of aircraft, vessels, personnel or equipment.*

3.1.8 **Recommendation.** *Contracting States should make arrangements for joint training exercises involving their search and rescue units and those of other States in order to promote search and rescue efficiency.*

3.1.9 **Recommendation.** *Contracting States should make arrangements for periodic liaison visits by personnel of their rescue co-ordination centres and sub-centres to the centres of neighbouring States.*

3.2 Cooperation with other services

3.2.1 Contracting States, when requested, shall arrange for all aircraft, vessels and local services and facilities which do not form part of the search and rescue organization to cooperate with the latter in search and rescue and to extend any possible assistance to the survivors of aircraft accidents.

3.2.2 Contracting States shall ensure that their 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.

3.2.3 **Recommendation.** *To facilitate accident investigation, rescue units should, when practicable, be accompanied by persons qualified in the conduct of aircraft accident investigations.*

3.2.4 States shall designate a search and rescue point of contact for the receipt of Cospas-Sarsat distress data.

3.3 Dissemination of information

3.3.1 Each Contracting State shall publish and disseminate all information necessary for the entry of search and rescue units of other States into its territorial sea and/or air space or alternatively to include this information in bilateral SAR Arrangements

3.3.2 **Recommendation.** *When requested, Contracting States should make available, through the rescue coordination centres or other agencies, information regarding their search and rescue plans of operation.*

3.3.3 **Recommendation.** *Contracting States should, to the extent desirable and practicable, disseminate information to the general public and emergency response authorities regarding actions to be taken when there is reason to believe that an aircraft's emergency situation leads to a cause for public concern or the potential for an emergency response.*

CHAPTER 4. PREPARATORY MEASURES

4.1 Preparatory information

4.1.1 Each 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:

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

4.1.2 **Recommendation.** *Each rescue co-ordination centre should have readily available all other information of interest to search and rescue, including information regarding:*

- a) *the locations, call signs, hours of watch, and frequencies of all radio stations likely to be employed in support of search and rescue operations;*
- b) *the locations and hours of watch of services keeping radio watch, and the frequencies guarded;*
- c) *locations where supplies of droppable emergency and survival equipment are stored.*

4.1.3 **Recommendation.** *Each rescue coordination centre whose search and rescue region includes maritime areas should have ready access to information regarding the position, course and speed of ships within such areas, which 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 centres or be readily accessible.

4.1.4 **Recommendation.** *Contracting States should, individually or in cooperation with other States, establish ship reporting systems to facilitate search and rescue operations at sea. Establishment of such systems should be coordinated with maritime authorities.*

Note.- Amver is a world-wide ship reporting system.

Rescue coordination centres may obtain information on ships in the vicinity of an aircraft in distress by contacting any rescue coordination centre operated by the United States Coast Guard. A number of other Contracting States also operate regional ship reporting systems.

4.1.5 **Recommendation.** *Contracting States recording information on the position of ships should disseminate, as far as practicable, such information to other States when so requested for search and rescue purposes.*

4.2 Plans of operation

4.2.1 Each rescue coordination centre shall prepare detailed plans for the conduct of search and rescue operations within its search and rescue region.

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

4.2.3 **Recommendation.** *The search and rescue plans should contain details regarding all actions to be taken by those engaged in search and rescue, including:*

- a) *the manner in which search and rescue operations are to be conducted in the search and rescue region;*
- b) *the use of available communication systems and facilities;*
- c) *the actions to be taken jointly with other rescue coordination centres;*
- d) *the methods of alerting en-route aircraft and ships at sea;*
- e) *the duties and prerogatives of personnel assigned to search and rescue;*
- f) *possible redeployment of equipment that may be necessitated by meteorological or other conditions;*
- g) *the methods for obtaining essential information relevant to search and rescue operations, such as weather reports and forecasts, appropriate NOTAM, etc.;*

- h) *the methods for obtaining, from other rescue co-ordination centres, such assistance, including aircraft, vessels, personnel or equipment, as may be needed;*
- i) *the methods for assisting distressed aircraft being compelled to ditch to rendezvous with surface craft;*
- j) *the methods for assisting search and rescue or other aircraft to rendezvous with aircraft in distress;*
- k) *the initial actions for assistance to an aircraft known or believed to be subject to unlawful interference.*

4.2.5 **Recommendation.** *The search and rescue plans should be coordinated with airport emergency plans to provide for rescue services in the vicinity of aerodromes including aerodromes located near water.*

4.3 Search and rescue units

- 4.3.1 Each search and rescue unit shall:
- a) be cognizant of all parts of the plans of operation prescribed in 4.2 that are necessary for the effective conduct of its duties; and
 - b) keep the rescue coordination centre informed of its preparedness.

4.3.2 Contracting States shall:

- a) maintain in readiness the required number of search and rescue-facilities; and
- b) maintain adequate supplies of rations, medical stores, signalling devices and other survival and rescue equipment;

4.4 Training and exercises

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

4.5 Removal of wreckage

4.5.1 **Recommendation.** *Each Contracting State should 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 obliterated following completion of the accident investigation, or charted, so as to prevent subsequent confusion.*

Note.- The wreckage only needs to be charted at sea if of a depth to be a potential danger to shipping.

CHAPTER 5. OPERATING PROCEDURES

5.1 Information concerning emergencies

5.1.1 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.

5.1.2 Rescue coordination centres shall, immediately upon receipt of information concerning aircraft in emergency, evaluate such information and determine the extent of the operation required.

5.1.3 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.

5.2 Procedures for rescue co-ordination centres during emergency phases

5.2.1 Uncertainty Phase

During the uncertainty phase, the rescue coordination centre or rescue sub-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.

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.

5.2.3 Distress Phase

When an aircraft is believed to be in distress, or when a distress phase exists, the rescue coordination centre shall:

- a) initiate action by search and rescue units in accordance with the appropriate search and rescue plan;
- b) 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;
- c) notify the operator, where possible, and keep the operator informed of developments;

- d) notify other rescue coordination centres, the help of which seems likely to be required, or which may be concerned in the operation;
- e) notify the associated air traffic services unit, when the information on the emergency has been received from another source;
- f) request at an early stage such aircraft, vessels, coastal stations, or other services not specifically included in a) as are in a position to do so, to:
 - 1) maintain a listening watch for transmission from the aircraft in distress, from survival radio equipment, or from an emergency locator transmitter;

Note.-The frequencies contained in the specifications for emergency locator transmitters (ELTs) given in Annex 10, Vol. III, are 121.5 MHz and 406 MHz

- 2) assist the aircraft in distress as far as practicable;
- 3) inform the rescue coordination centre of any developments;
- g) from the information available, draw up a detailed plan of action for the conduct of the search and/or rescue operation required and communicate such plan for the guidance of the authorities immediately directing the conduct of such an operation;
- h) amend as necessary, in the light of circumstances, the guidance already given in g);
- i) notify the appropriate accident investigation authorities;
- j) notify the State of Registry of the aircraft either directly or through the national accident investigation authority.

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

5.2.4 Initiation of search and rescue action in respect of an aircraft whose position is unknown

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

- a) When a rescue coordination centre is notified of the existence of an emergency phase and is unaware of other centres taking appropriate action, it shall assume responsibility for initiating suitable action in accordance with 5.2 and confer with neighbouring rescue coordination centres with the objective of designating one rescue co-ordination centre to assume responsibility forthwith.
- b) Unless otherwise decided by common agreement of the rescue co-ordination centres concerned, the rescue co-ordination centre to co-ordinate search and rescue action shall be the centre responsible for:
 - the region in which the aircraft was according to its last reported position; or
 - the region to which the aircraft was proceeding when its last reported position was at the boundary of two search and rescue regions; or
 - 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.
- c) After declaration of the distress phase, the rescue co-ordination centre with overall coordination responsibility, co-ordinating search and rescue action shall inform all rescue co-ordination centres that may become involved in the operation, of all the circumstances of the emergency and subsequent developments. Likewise all rescue co-ordination centres becoming aware of any information pertaining to the incident, shall inform the rescue co-ordination centre which is co-ordinating the search and rescue action.

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

5.2.5.1 Whenever applicable, the rescue co-ordination centre 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 to the aircraft.

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

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

5.4 Procedures for authorities in the field

5.4.1 The authorities immediately directing the conduct of operations or any part thereof shall:

- a) give instructions to the units under their direction and inform the rescue co-ordination centre of such instructions;
- b) keep the rescue co-ordination centre informed of developments.

5.5 Procedures for rescue coordination centres - Termination and suspension of operations

5.5.1 Search and rescue operations shall continue, when practicable, until all reasonable hope of rescuing survivors is over.

5.5.2 The responsible rescue coordination centre or rescue sub-centre shall decide when to discontinue search and rescue operations.

5.5.3 When a search and rescue operation has been successful or, when a rescue coordination centre or rescue sub-centre considers that an emergency no longer exists, the search and rescue operation shall be terminated and any authority, facility or service which has been activated or notified shall be so informed promptly.

5.5.4 If a search and rescue operation becomes impracticable and the rescue coordination centre or rescue sub-centre concludes that there might still be survivors, the centre shall temporarily suspend the on-scene activities pending further developments, and shall promptly so inform any authority, facility or service which has been activated or notified. Information subsequently received shall be evaluated and search and rescue operations resumed when justified on the basis of such information.

5.6 Procedures at the scene of an accident

5.6.1 When multiple facilities are engaged in search and rescue operations on-scene, the rescue coordination centre or rescue sub-centre 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.

5.6.2 When a pilot-in-command observes that either another aircraft or a surface craft is in distress, the pilot shall, unless unable to do so, or when the pilot considers it unreasonable or unnecessary:

- a) keep the craft in distress in sight until it is no longer necessary;
- b) determine the position of the craft in distress;
- c) report to the rescue coordination centre or air traffic services unit as much of the following information as possible:
 - type of craft in distress, its identification and condition;
 - its position, expressed in geographical coordinates or in distance and true bearing from a distinctive landmark or from a radio navigation aid;
 - time of observation expressed in hours and minutes UTC;
 - number of persons observed;
 - whether persons have been seen to abandon the craft in distress;
 - apparent physical condition of survivors;
 - on scene weather conditions
- d) act as instructed by the rescue coordination centre or the air traffic services unit.

5.6.2.1 If the first aircraft to reach the scene of an accident is not a search and rescue aircraft, and no aircraft has already been designated by a rescue coordination centre or rescue sub-centre to coordinate actions on-scene, 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 rescue co-ordination centre 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.

5.6.3 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 use the appropriate signal in Appendix A.

5.6.4 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 message.

5.6.5 When a ground signal has been displayed, the aircraft shall indicate whether the signal has been understood or not by the means described in 5.6.4 or, if this is not practicable, by use of the appropriate signal in Appendix A.

5.7 Procedures for pilots-in-command intercepting a distress transmission

5.7.1 Whenever a distress transmission is intercepted by a pilot-in-command of an aircraft, the pilot shall:

- a) acknowledge the distress transmission;
- b) record the position of the craft in distress if given;
- c) if possible take a bearing on the transmission;
- d) inform the appropriate rescue co-ordination centre or air traffic services unit of the distress transmission, giving all available information;
- e) at the pilot's discretion, while awaiting instructions, proceed to the position given in the transmission.

5.8 Search and rescue signals

5.8.1 The signals in Appendix A shall be used only for the purpose indicated and no other signals likely to be confused with them shall be used.

5.8.2 Upon observing any of the signals given in Appendix A, aircraft shall take such action as may be required.

5.8.3 Symbols shall be at least 2.5 metres (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, etc.

Note 2.- Attention to the above signals may be attracted by other means such as radio, flares, smoke, reflected light, etc.

5.9 Maintenance of records

5.9.1 **Recommendation.** Each rescue coordination centre should keep a record of the operational efficiency of the search and rescue organization in its region.

5.9.2 **Recommendation.** Each rescue co-ordination centre should 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 should be submitted to ICAO for information and dissemination as appropriate.

APPENDIX A. SEARCH AND RESCUE SIGNALS

(Note.- See Chapter 5, 5.8 of this Annex)

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.

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 changing of heading to follow the aircraft.*
- *For indicating inability to comply:*
 - 1) *the hoisting of the international flag "N" (a blue and white chequered square).*

1.2 The following manoeuvre 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.- See Note following 1.1 b).

2. Ground-air visual signal code

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

[Editor's Note: The symbols in the tables below change according to font selection. Check final version prior to printing.]

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	↑

2.2 Ground-air visual signal code for use by rescue units.

No.	Message	Code Symbol
1	Operation completed	LLL
2	We have found all personnel	LL
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	NN

2.3 Symbols shall be at least 2.5 metres (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, etc.

Note 2.- Attention to the above signals may be attracted by other means such as radio, flares, smoke, reflected light, etc.

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.
