



International Civil Aviation Organization

NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN OFFICE

**Eighteenth Meeting of Directors of Civil Aviation of the Eastern Caribbean
(18th E/CAR DCA)**

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14/11/03

Agenda Item 4: E/CAR SAR Committee and MCI Task Force Activities

UPDATED ANNEX 12 – SEARCH AND RESCUE

(Presented by the United States of America)

SUMMARY

This paper is intended to provide information about the soon to be adopted major update to the Convention on International Civil Aviation, Annex 12 – *Search and Rescue*. This project would be of interest to all Caribbean States and, in particular, the Eastern Caribbean SAR Committee.

References:

- Convention on International Civil Aviation, Annex 12 – *Search and Rescue*
- Report of the First North American, Central American and Caribbean Directors of Civil Aviation Meeting 8-11 October 2002

1. Introduction

1.1 Appended to this paper is the amendment proposal for Annex 12 – Search and Rescue. The Air Navigation Commission (ANC) carried out a preliminary review of proposals to Amend Annex 12 and transmitted its recommendations to States and appropriate international organizations for comment. The ANC considered all comments submitted and has now passed the proposal on to the Council for adoption. It is anticipated that the amendment proposal will be adopted this year.

1.2 While Annex 12 had previously been updated in numerous relatively minor ways, it has been basically the same as when it initially became effective on 1 December 1950, and entered into force on 1 March 1951. However, general SAR concepts and principles have matured substantially since 1951. The proposed changes were initially developed by a Study Group that is a cooperative forum between ICAO and the International Maritime Organization (IMO) for considering search and rescue (SAR) matters that relate in any way to harmonization of aeronautical and maritime SAR procedures and techniques. This Group, commonly called the ICAO/IMO Joint SAR Working Group, was responsible for development of the three-volume International Aeronautical and Maritime Search and Rescue Manual, which is well established around the world.

2. Discussion

2.1 The following is a partial list of considerations used to amend Annex 12:

- retain the aeronautical character of the current Annex while increasing emphasis on co-operation and harmonisation with maritime services to enable aeronautical SAR services to be more effective;
- provide for an optional regional approach to providing SAR services based on cooperation among neighbouring States; and
- better describe the purpose and objectives of establishing SAR regions.

2.2 The Report of the First North American, Central American and Caribbean Directors of Civil Aviation Meeting held 8-11 October 2002 reaffirmed the recommendations on SAR issues developed by the CAR/SAM3 RAN Meeting held in Buenos Aires, Argentina in 1999. Of note is *Recommendation 6/3 - Coordination with maritime SAR authorities and IMO*. In light of the ongoing joint aeronautical and maritime effort for SAR as envisioned in the amendment proposal for Annex 12, it is highly likely that many national aeronautical authorities will be contacted by their national maritime SAR counterparts.

3. Conclusion

3.1 The Eighteenth Meeting of the Directors of Civil Aviation of the Eastern Caribbean is invited to note the above information. Any comments that the Meeting or its participants may wish to provide to the U.S. for consideration to implement the intent of the revised Annex 12 may be addressed to Mr. Dave Edwards at 202 267-1552 or dedwards@comdt.uscg.mil.

APPENDIX

ATTACHMENT A to State letter AN 15/1.1-03/19

PROPOSED AMENDMENTS TO ANNEX 12 – *SEARCH AND RESCUE*

NOTES ON THE PRESENTATION OF THE AMENDMENT

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
2. New text to be inserted is highlighted with grey shading. new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading. new text to replace existing text

ANNEX 12

INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES

Note. — Although the Convention on International Civil Aviation allocates to the State of Registry certain functions which that State is entitled to discharge, or obliged to discharge, as the case may be, the Assembly recognized, in Resolution A23-13, that the State of Registry may be unable to fulfil its responsibilities adequately in instances where aircraft are leased, chartered or interchanged — in particular without crew — by an operator of another State and that the Convention may not adequately specify the rights and obligations of the State of an operator in such instances. Accordingly, the Council, without prejudice to the question of whether the Convention may require amendment with respect to the allocation of functions to States, urged that if, in the above mentioned instances, the State of Registry finds itself unable to discharge adequately the functions allocated to it by the Convention, it delegate to the State of the operator, subject to acceptance by the latter State, those functions of the State of Registry that can more adequately be discharged by the State of the operator. It is understood that the foregoing action will only be a matter of practical convenience and will not affect either the provisions of the Chicago Convention prescribing the duties of the State of Registry or any third State. This Annex is supplemented by the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual, Volume I — Organization and Management, Volume II — Mission Coordination, and Volume III — Mobile Facilities (Doc 9731), 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:

Note. — The designation (RR) in these definitions indicates a definition which has been extracted from the Radio Regulations of the International Telecommunication Union (ITU) (see Handbook on Radio Frequency Spectrum Requirements for Civil Aviation including statement of approved ICAO policies (Doc 9718).

Alerting post. ~~A unit designated to receive information from the general public regarding aircraft in emergency and to forward the information to the associated rescue coordination centre.~~ 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 and its occupants.

Distress phase. A situation wherein there is a reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger ~~or~~ and require 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 coordination centre (JRCC). A rescue coordination centre responsible for both aeronautical and maritime search and rescue operations.

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

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.

Radio direction-finding station (RR S1.91). A radio determination station using radio direction finding.

Note.— The aeronautical application of radio direction finding is in the aeronautical radio navigation service.

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 coordination centre (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.

Rescue subcentre (RSC). A unit subordinate to a rescue coordination centre, established to complement the latter ~~within a specified portion of a search and rescue region.~~ according to particular provisions of the responsible authorities.

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

Search. An operation normally coordinated by a rescue coordination centre or rescue subcentre 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 service (SRR). 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.

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

~~***Search and rescue services unit.*** A generic term meaning, as the case may be, rescue coordination centre, rescue subcentre or alerting post.~~

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

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

CHAPTER 2. ORGANIZATION

~~2.1—Establishment and provision of~~ sSearch 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. ~~A—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 services to be established and provided in accordance with the provisions of this Annex.~~

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.

2.1.1.2 Basic elements of search and rescue services shall include a legal framework, a responsible authority, organized available resources, communication facilities and a work force skilled in coordination and operational functions.

2.1.1.3 Search and rescue services shall establish processes to improve service provision, including the aspects of planning, domestic and international cooperative arrangements 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 ~~aircraft or survivors~~; persons or the circumstances in which such persons are 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 Where separate aeronautical and maritime rescue coordination centres serve the same area, States shall ensure the closest practicable coordination between the centres.

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

2.1.6 **Recommendation.**— *Contracting States should establish joint rescue coordination centres to coordinate aviation and maritime search and rescue operations, where practical.*

2.2 ~~Establishment of~~ Search and rescue regions

2.2.1 Contracting States 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 determined on the basis of technical and operational considerations and is not necessarily related to the delineation of boundaries between States.

2.2.1.1 **Recommendation.**— ~~Boundaries of~~ Search and rescue regions should, in so far as practicable, be coincident with both ~~the boundaries of~~ corresponding flight information regions and, with respect to those search and rescue regions established over the high seas, maritime search and rescue regions.

2.3 ~~Establishment and designation of~~ ~~search and rescue services units~~ Rescue coordination centres and rescue subcentres

2.3.1 Contracting States shall establish a rescue coordination centre in each search and rescue region.

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

2.3.2 **Recommendation.**— ~~Contracting States should establish rescue subcentres whenever this would improve the efficiency of search and rescue services.~~ Where all or part of the airspace of a Contracting State is included within a search and rescue region associated with a rescue coordination centre in another Contracting State, that former State should establish a rescue subcentre subordinate to the rescue coordination centre wherever this would improve the efficiency of search and rescue services within its territory.

2.3.3 Each rescue coordination centre and, as appropriate, rescue subcentre, shall be staffed 24-hours a day by trained personnel proficient in the use of the language used for radiotelephony communications.

2.3.4 **Recommendation.**— RCC personnel involved in the conduct of radiotelephony communications should be proficient in the use of the English language.

~~2.3.3~~ 2.3.5 **Recommendation.**— *In areas where public telecommunications facilities would not permit persons observing an aircraft in emergency to notify the rescue coordination centre concerned directly and promptly, Contracting States should designate suitable units of public or private services as alerting posts.*

2.4 ~~Communication for search and~~ ~~rescue services units~~ Search and rescue communications

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

- a) ~~the~~ associated air traffic services units;
- b) associated rescue subcentres;
- c) appropriate direction-finding and position-fixing stations ~~in the region~~;
- 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 rescue 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; and
- j) the Cospas-Sarsat Mission Control Centre servicing the search and rescue region.

Note. — “Means of immediate communication” are considered to be direct line telephone or teletype, direct radiotelephone circuit, or, when these cannot be made available, telephone or teletype via a switchboard.

~~2.4.2 Each rescue coordination centre shall have means of rapid and reliable communication with:~~

- ~~—— a) —— the headquarters of rescue units in the region;~~
- ~~—— b) —— rescue coordination centres in adjacent regions;~~
- ~~—— c) —— a designated meteorological office or meteorological watch office;~~
- ~~—— d) —— rescue units when employed in search and rescue;~~
- ~~—— e) —— alerting posts;~~
- ~~—— f) —— the COSPAS SARSAT* Mission Control Centre servicing the search and rescue (SAR) region when the rescue coordination centre (RCC) has been designated SAR point of contact (SPOC).~~

~~*Note. — “Means of rapid and reliable communication” include digital data interchange, telephone, facsimile and radiotelephone.*~~

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

~~2.4.3~~ 2.4.2 ~~In addition to the requirement in 2.4.1 b), each~~ Each rescue subcentre shall have means of rapid and reliable communication with:

- a) adjacent rescue subcentres;

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

Note. — See Note following 2.4.2.

~~2.4.4 **Recommendation.** — The means of communication provided in accordance with 2.4.2 c) and 2.4.3 b) should be supplemented, as and where necessary, by other means of visual or audio communication, for example, closed circuit television.~~

2.5 Designation of 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. ~~in each search and rescue region, and shall define the relative functions of these elements and the respective rescue coordination centre.~~

~~2.5.1.1 Contracting States shall establish additional rescue units wherever the units designated in accordance with 2.5.1 are insufficient.~~

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.

2.5.2 ~~**Recommendation.** — Contracting States should~~ 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; ~~and should define the relative functions of these elements and the respective rescue coordination centres.~~

2.6 ~~Equipment of rescue units~~ Search and rescue equipment

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

Note. — ~~In selecting equipment for 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 the Standards in 2.4.2 d) and 2.4.3 e), each~~ Each search and rescue unit should have means of rapid and reliable communication with other ~~units or elements~~ search and rescue facilities engaged in the same operation.

Note. — See Note following 2.4.2.

2.6.3 Each search and rescue aircraft shall be equipped to be able to communicate on the aeronautical distress and on-scene ~~of action~~ 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 distress frequencies. ~~emergency locator transmitters transmitting on 121.5 MHz required to be carried by aircraft in accordance with the provisions of Annex 6, Parts I, II and III.~~

Note 1. — Emergency locator transmitter carriage requirements are given in Annex 6, Parts I, II and III.

Note 2.— Specifications for emergency locator transmitters (ELTs) are given in Annex 10, Volume III.

2.6.5 Each search and rescue aircraft, when used for search and rescue over maritime areas, ~~and required to communicate with merchant ships~~, shall be equipped to be able to communicate with vessels. ~~such ships on 2182 kHz.~~

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.

2.6.6 Each search and rescue aircraft, when used for search and rescue over maritime areas ~~and required to communicate with merchant ships~~, shall carry a copy of the International Code of Signals to enable it to overcome language difficulties that may be experienced in communicating with ~~such~~ ships.

Note.— The International Code of Signals is published in English, French and Spanish by the International Maritime Organization as Documents IMO-994E, 995F and 996S.

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 locate, at appropriate aerodromes, ~~provide, at appropriate aerodromes where search and rescue aircraft are not readily available,~~ survival equipment suitably packed for dropping by aircraft ~~not normally participating in search and rescue operations.~~*

~~2.6.9 **Recommendation.**— Containers or packages containing survival equipment for dropping to survivors should have the general nature of their contents indicated by a colour code, by printed indication, and by self-explanatory symbols, to the extent that such symbols exist.~~

~~2.6.9.1 **Recommendation.**— The colour identification of the contents of droppable containers and packages containing survival equipment should take the form of coloured streamers according to the following code:~~

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.

~~2.6.9.2 **Recommendation.**— Where supplies of a mixed nature are dropped in one container or package, the colour code should be used in combination.~~

~~2.6.10 **Recommendation.**— Instructions on the use of the survival equipment should be enclosed in each of the droppable containers or packages. They should be printed in at least three languages of which at least one should be one of the working languages of ICAO.~~

CHAPTER 3. COOPERATION

3.1 Cooperation between States

3.1.1 Contracting States shall coordinate their search and rescue organizations with those of neighbouring ~~Contracting~~ 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 adjacent search and rescue regions.*

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 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.

3.1.4 The authorities of a Contracting State which wish its 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 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 coordination centres to:*

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

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

3.1.8 **Recommendation.**— *Contracting States should 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.*

3.1.9 **Recommendation.**— *Contracting States should make arrangements for periodic liaison visits by personnel of their rescue coordination centres and subcentres to the centres of neighbouring States.*

3.2 Cooperation with other services

3.2.1 Contracting States 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.

3.2.2 **Recommendation.**— *Contracting States should ensure the closest practicable coordination between the relevant aeronautical and maritime authorities to provide for the most effective and efficient search and rescue services.*

~~3.2.2~~ 3.2.3 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~~ 3.2.4 **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~~ 3.2.5 States shall designate a search and rescue point of contact ~~(SPOC)~~ for the receipt of ~~COSPAS SARSAT~~ 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 territory or, alternatively, include this information in search and rescue service arrangements.

~~Note.~~— ~~See 3.1.3.~~

3.3.2 **Recommendation.**— ~~When requested,~~ *When such information could benefit the provision of search and rescue services, 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.**— ~~Each Contracting State recording information on the position of ships at sea should disseminate, on a regular basis, in so far as practicable, such information to other Contracting States concerned requesting it.~~

~~3.3.4~~ **3.3.3 Recommendation.**— *Contracting States should, to the extent desirable and practicable, disseminate information to the general public ~~directives on~~ and emergency response authorities regarding actions to be taken when there is reason to believe that an aircraft's emergency situation may become cause for public concern or require a general emergency response ~~is in an emergency and in the event of an aircraft accident.~~*

CHAPTER 4. PREPARATORY MEASURES

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

4.1.2 **Recommendation.**— *Each rescue coordination 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;*
- ~~d) c)~~ *locations where supplies of droppable emergency and survival equipment are stored; and*
- ~~e) d)~~ *objects which it is known might be mistaken for unlocated or unreported wreckage, particularly if viewed from the air;.*

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, ~~true track,~~ course and speed ~~and call sign~~ of ships within such areas; which may be able to provide assistance to aircraft in distress, and information on how to contact them.*

Note 1. — This information may either be kept in the rescue coordination centres or be readily ~~obtainable if and when necessary,~~ accessible.

~~4.1.4 — A large scale map of the search and rescue region shall be available at each rescue coordination centre for the purpose of displaying and plotting information of interest to search and rescue.~~

Note 2. — Amver is a cooperative international ship reporting system with worldwide coverage that is available for interrogation by all rescue coordination centres. A number of Contracting States also operate regional ship reporting systems.

4.1.4 Recommendation.— *Contracting States should, 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.*

4.1.5 Recommendation.— *Each Contracting State 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, obliterated or charted following completion of the accident investigation, if its presence might constitute a hazard or confuse subsequent search and rescue operations.*

4.2 ~~Plan~~Plans of operation

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

4.2.2 Recommendation.— *Search and rescue plans of operations should 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.*

~~4.2.2~~ **4.2.3** The ~~plan~~ plans of operation shall specify arrangements for the servicing and refuelling, to the extent possible, of aircraft, vessels and vehicles employed in search and rescue operations, including those made available by other States.

~~4.2.3~~ **4.2.4 Recommendation.**— *The ~~plan~~ search and rescue plans of operation should contain details regarding ~~all~~ actions to be taken by those persons engaged in search and rescue, including:*

- a) the manner in which search and rescue ~~is~~ 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 ~~adjacent~~ other rescue coordination centres;*
- d) the methods of alerting en-route aircraft and ships at sea;*
- e) the duties and prerogatives of ~~personnel~~ persons assigned to search and rescue;*
- f) the 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 coordination centres, such assistance, including aircraft, vessels, ~~personnel~~ persons or equipment, as may be needed;*

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- 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~~ proceed to aircraft in distress; and*
- k) *~~the initial~~ cooperative actions taken in conjunction with air traffic services units and other authorities concerned to assist ~~for assistance to an~~ aircraft known or believed to be subject to unlawful interference.*

4.2.5 Recommendation.— *Search and rescue plans of operation should be integrated with airport emergency plans to provide for rescue services in the vicinity of aerodromes including, for coastal aerodromes, areas of water.*

4.3 ~~Preparatory procedures for~~ 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:

- ~~b) a)~~ maintain in readiness the required number of search and rescue ~~craft and vehicles~~; facilities; and
- ~~c) b)~~ maintain adequate supplies of rations, medical stores, signalling devices and other survival and rescue equipment;
- ~~d) —~~ ~~keep the rescue coordination centre currently informed of the quantity and preparedness of its equipment.~~

~~4.3.2 Recommendation.~~— ~~Each rescue unit should make arrangements for the supply of additional craft or vehicles in case replacement of those already engaged in search and rescue is required.~~

4.4 Training and exercises

Recommendation.— To achieve and maintain maximum efficiency in search and rescue, Contracting States ~~should~~ 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 ~~shall~~ 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 or charted following completion of the accident investigation, or charted, so as to prevent subsequent confusion.~~ if its presence might constitute a hazard or confuse subsequent search and rescue operations.*

~~4.5.2 Recommendation.~~— ~~To facilitate compliance with 4.5.1, each Contracting State should require any person finding wreckage of aircraft to notify the appropriate authority as soon as possible.~~

CHAPTER 5. OPERATING PROCEDURES

5.1 Information concerning emergencies

~~5.1.1 **Recommendation.** Contracting States should encourage any person observing an accident or having reason to believe that an aircraft is in an emergency to give immediately all available information to the appropriate alerting post or to the rescue coordination centre concerned.~~

~~5.1.2~~ 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.

~~5.1.3~~ 5.1.2 Rescue coordination centres shall, immediately upon receipt of information concerning aircraft in emergency, evaluate such information and ~~determine~~ assess the extent of the operation required.

~~5.1.4~~ 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 coordination centres during emergency phases

5.2.1 Uncertainty phase

~~During the~~ 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.

5.2.2 Alert phase

Upon the occurrence of an alert phase the rescue coordination centre shall immediately alert ~~appropriate search and rescue services units 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,~~ Upon the occurrence of a distress phase, the rescue coordination centre shall:

- a) immediately initiate action by ~~appropriate search and rescue services units and rescue~~ units in accordance with the ~~detailed~~ appropriate plan of operation;
- 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 ~~him~~ the operator informed of developments;
- d) notify ~~adjacent~~ other rescue coordination centres, the help of which seems likely to be required, or which may be concerned in the operation;

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- 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~~ and other services not specifically included in ~~a) as are in a position to do so, to:~~ the appropriate plan of operation and able to assist to:
 - 1) maintain a listening watch for transmissions from the aircraft in distress, ~~or from~~ survival radio equipment, or an emergency locator transmitter;
Note.— The frequencies contained in the specifications for emergency locator transmitters (ELTs) given in Annex 10, Volume III, are 121.5 MHz and 406 MHz.
 - 2) assist the aircraft in distress as far as practicable; and
 - 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 evolving circumstances, the detailed plan of action; ~~guidance already given in g);~~
- i) notify the appropriate accident investigation authorities; and
- ~~j) notify the State of Registry of the aircraft;~~
- ~~j) — notify the appropriate accident investigation authorities.~~

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

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 coordination centre to assume responsibility forthwith;
- b) Unless otherwise decided by common agreement of the rescue coordination centres concerned, the rescue coordination centre to coordinate search and rescue action shall be the centre responsible for:
 - the region in which the aircraft ~~was according to its last reported~~ last reported its position; or

- the region to which the aircraft was proceeding when its last reported position was ~~at the boundary of~~ on the line separating 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; and
- c) After declaration of the distress phase, the rescue coordination centre ~~coordinating search and rescue action~~ with overall coordination responsibility shall inform all rescue coordination centres that may become involved in the operation; of all the circumstances of the emergency and subsequent developments. Likewise, all rescue coordination centres becoming aware of any information pertaining to the incident, shall inform the rescue coordination centre which ~~is coordinating the search and rescue action~~ has overall responsibility.

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

Whenever applicable, the rescue coordination 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

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 rescue coordination centre of the region.

5.4 Procedures for authorities in the field

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 coordination centre of such instructions; and
- b) keep the rescue coordination centre informed of developments.

5.5 Procedures for rescue coordination centres — termination and suspension of operations

5.5.1 ~~Uncertainty and alert phases~~

~~When during an uncertainty or an alert phase the rescue coordination centre is informed that the emergency no longer exists, it shall so inform any unit or service which it has activated or notified.~~

5.5.2—Distress phase

~~5.5.2.1 When during a distress phase the rescue coordination centre is informed that the emergency no longer exists, it shall take the necessary action to terminate the operations and to inform any authority, unit or service which it has activated or notified.~~

~~5.5.2.2 If during a distress phase it is determined that the search should be discontinued, the rescue coordination centre shall suspend the operations and so inform any authority, unit or service which has been activated. Pertinent information subsequently received shall be evaluated and operations resumed when justified on the basis of such information.~~

~~5.5.2.3 If during a distress phase it is determined that further searching would be of no avail, the rescue coordination centre shall terminate the operations and so inform any authority, unit or service which has been activated.~~

5.5.1 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.

5.5.2 The responsible rescue coordination centre 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.

5.5.3 When a search and rescue operation has been successful or, when a rescue coordination centre 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 which has been activated or notified shall be promptly informed.

5.5.4 If a search and rescue operation becomes impracticable and the rescue coordination centre concludes that there might still be survivors, the centre 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.

~~5.6—Procedures for rescue units~~

~~When notified by the rescue coordination centre, the rescue unit shall:~~

- ~~a) act as required in the notification;~~
- ~~b) keep the rescue coordination centre currently informed of the quantity and preparedness of its search and rescue equipment;~~
- ~~c) keep the rescue coordination centre currently informed of its operations.~~

**~~5.7—Procedures for person in charge
of the rescue unit at the scene of an accident~~**

~~The person assigned to be in charge of the rescue unit at the scene of an accident shall act as required by the rescue coordination centre and shall:~~

- a) ~~ensure that no risk of setting fire to the aircraft is created by the use of improper types of lights or by equipment likely to produce electric or friction sparks;~~
- b) ~~give aid to survivors;~~
- c) ~~except as necessary for b), or when otherwise directed, ensure that the wreckage of the aircraft or marks made by it in landing are not disturbed until all information required for investigation of the causes of the accident has been obtained.~~

5.8 5.6 Procedures for pilots-in-command 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 subcentre 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.

~~5.8.1~~ 5.6.2 When a pilot-in-command observes that either another aircraft or a surface craft is in distress, ~~he the pilot shall, unless he is unable, or in the circumstances of the case considers it unreasonable or unnecessary:~~ if possible and unless considered unreasonable or unnecessary:

- a) ~~keep in sight~~ the craft in distress in sight until ~~such time as his presence~~ compelled to leave the scene or advised by the rescue coordination centre that it is no longer necessary;
- b) ~~if his position is not known with certainty, take such action as will facilitate the determination of it;~~ determine the position of the craft in distress;
- c) as appropriate, 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 or grid 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 Coordinated Universal Time (UTC);
 - number of persons observed;
 - whether persons have been seen to abandon the craft in distress;
 - on-scene weather conditions;
 - ~~— number of persons observed to be afloat;~~
 - apparent physical condition of survivors;

— apparent best ground access route to the distress site; and

- d) act as instructed by the rescue coordination centre or the air traffic services unit.

~~5.8.1.1~~ 5.6.2.1 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 rescue coordination 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.

~~5.8.3~~ 5.6.3 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 ~~the~~ a hard copy message.

~~5.8.4~~ 5.6.4 When a ground signal has been displayed, the aircraft shall indicate whether the signal has been understood or not by the means described in ~~5.8.3~~ 5.6.3 or, if this is not practicable, by ~~use of~~ making the appropriate visual signal ~~in the Appendix~~.

~~5.8.2~~ 5.6.5 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~~ make the appropriate visual signal ~~in the Appendix~~.

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

~~5.9~~ 5.7 Procedures for pilot-in-command intercepting a distress transmission

Whenever a distress signal and/or message or equivalent transmission is intercepted ~~on radiotelegraphy or radiotelephony~~ by a pilot-in-command of an aircraft, ~~he~~ the pilot shall if feasible:

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

5.10 5.8 Search and rescue signals

~~5.10.1~~ 5.8.1 The air-to-surface and surface-to-air visual signals in the Appendix 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.

~~5.10.2~~ 5.8.2 Upon observing any of the signals ~~given~~ in the Appendix, aircraft shall take such action as may be required by the interpretation of the signal given in that Appendix.

~~5.11~~ 5.9 Maintenance of records

~~5.11.15~~ 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.*

~~5.11.25~~ 5.9.2 **Recommendation.**— *Each rescue coordination centre should prepare appraisals of actual search and rescue operations in its region. These appraisals should comprise any pertinent remarks on the procedures used ~~by the pilot~~ 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. SEARCH AND RESCUE SIGNALS

(Note.— See Chapter 5, ~~5.10-8~~ of the Annex)

~~1.— Signals with surface craft~~

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:*

_____ *1) ~~the hoisting of the international flag “N” (a blue and white checkered square);~~*

_____ *2) ~~the flashing of a succession of “N’s” in the Morse code.~~*

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:

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- 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 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.— 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:*

1) *the hoisting of the international flag “N” (a blue and white checkered square);*

2) *the flashing of a succession of “N’s” in the Morse code. Note.— See Note following 1.1 b).*

2. Ground-air visual signal code

2.1 Ground-air visual signal code for use by survivors

<i>No.</i>	<i>Message</i>	<i>Code symbol</i>
1	Require assistance	
2	Require medical assistance	
3	No or Negative	
4	Yes or Affirmative	
5	Proceeding in this direction	

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

<i>No.</i>	<i>Message</i>	<i>Code symbol</i>
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	

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.

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ATTACHMENT B to State letter AN 15/1.1-03/19

RESPONSE FORM
TO BE COMPLETED AND RETURNED TO ICAO
TOGETHER WITH ANY COMMENTS YOU MAY
HAVE ON THE PROPOSED AMENDMENTS

To: The Secretary General
 International Civil Aviation Organization
 999 University Street
 Montreal, Quebec
 Canada, H3C 5H7

(State)

Please make a checkmark (✓) against one option for each amendment. If you choose options “agreement with comments” or “disagreement with comments”, **please provide your comments on separate sheets.**

	<i>Agreement without comments</i>	<i>Agreement with comments*</i>	<i>Disagreement without comments</i>	<i>Disagreement with comments</i>	<i>No position</i>
Amendment to Annex 2 (Attachment A refers)					
Amendment to Annex 6, Parts I, II and III (Attachment B refers)					
Amendment to the PANS-ATM (Attachment C refers)					
Amendment to Annex 12 (Attachment A refers)					

* “Agreement with comments” indicates that your State or organization agrees with the intent and overall thrust of the amendment proposal; the comments themselves may include, as necessary, your reservations concerning certain parts of the proposal and/or offer an alternative proposal in this regard.

Signature _____ Date _____

— END —