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AIR NAVIGATIONAL SERVICES

GENERAL

SEARCH AND RESCUE PROCEDURES

A Indicates changes.

A This AIC replaces AIC 40.2 dated 93-05-15.

1. Search and Rescue Phases

Search and Rescue (SAR) phases are designated as follows:-

1.1 Uncertainty Phase (abbreviation INCERFA) - a situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

1.2 Alert Phase (abbreviation ALERFA) - a situation wherein apprehension exists as to the safety of an aircraft and its occupants.

1.3 Distress Phase (abbreviation DETRESFA) - a situation wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance.

2. Circumstances requiring the declaration of an SAR phase.

2.1 INCERFA. This phase will be declared by the appropriate authority when -

(a) a radio-equipped aircraft maintaining radio contact is not in communication within 30 minutes after -

(i) ETA at the next reporting point; or

(ii) pre-arranged or scheduled reporting time.

(NOTE. Where an aircraft is equipped with VHF only and continuous radio contact cannot be maintained with an ATSU throughout the flight, the pilot-in-command should state before departure the reporting point(s) at which overdue action must be taken in the event of non-receipt of the position report, or whether overdue action is required only at destination; or

(b) an aircraft is known or believed to be subject to irregular operation, i.e. when it is –

(i) not following the correct track or maintaining the correct flight level(s); or

(ii) not in normal communication; or

(iii) unable to use appropriate navigation aids; or

(iv) experiencing navigational difficulties; or

(v) experiencing hazardous weather conditions; or

(vi) experiencing impaired operating efficiency but not to the extent that the flight plan cannot be completed; or

- (c) *an aircraft which is operating on an "SAR at destination only" flight plan is not in contact with the destination aerodrome within 1 hour after ETA; or*
- (d) *an aircraft which is flying on a flight plan stipulating SAR action after a specified time fails to arrive or is not in contact with the ATSU by the time specified in the flight plan and preliminary checks fail to reveal the whereabouts of the aircraft; or*
- (e) *an aircraft which is proceeding to an unmanned aerodrome, but which is operating on an SAR action flight plan, fails to report arrival by the time specified in the flight plan and preliminary checks fail to reveal the whereabouts of the aircraft.*

2.2 ALERFA. *This phase will be declared by the appropriate authority when –*

- (a) *following an INCERFA declared because of failure to report or loss of communication, subsequent attempts to establish communication with the aircraft or enquiries to other relevant sources fail to reveal any news of the aircraft; or*
- (b) *information has been received which indicates that the operating efficiency of the aircraft has been impaired but not to the extent that a forced landing is likely; or*
- (c) *an aircraft is known to be operating in other than normal circumstances or is lost and there is reason to believe that in consequence the safe conduct of the flight is in jeopardy.*

(NOTE. "Other than normal circumstances" may include all or any of the circumstances for which declaration of INCERFA is required and any circumstances having comparable consequences)

2.3 DETRESFA. *This phase will be declared by the appropriate authority when -*

- (a) *following an ALERFA declared because of failure to report or loss of communication, further widespread attempts to establish communication with the aircraft and more widespread unsuccessful enquiries point to the probability that the aircraft is in distress; or*
- (b) *the fuel on board, as stated on the flight plan, is considered to be exhausted or to be insufficient to enable the aircraft to reach safety; or*
- (c) *information is received which indicates that the operating efficiency of an aircraft has been impaired to the extent that a forced landing is likely; or*
- (d) *information is received which indicates that an aircraft is about to make, or has made a forced landing, has ditched or crashed; or*
- (e) *an aircraft which has been given approach or landing instructions at an aerodrome, fails to land within 5 minutes of the estimated landing time and communication cannot be re-established before the expiration of the 5 minute period; or*
- (f) *an aircraft fails to report after take-off when instructed or expected to do so and communication cannot be re-established before the expiration of 5 minutes.*

3. *Procedures to be used by aircraft.*

3.1 *General*

The procedures outlined below are to be used by aircraft concerned with an emergency. Since aircraft from different organisations may either be the subject of a search or participate in the search, it is essential, if the search is to be conducted efficiently, that all participants use the same procedures.

3.2 *Aircraft subject to an emergency*

3.2.1 *An aircraft which experiences conditions as described in para. 2 should notify the appropriate ATSU without hesitation to ensure that effective action may be taken without delay. In this respect remember the 'Five Golden Rules'.*

- (a) *confess your predicament to any ATSU to enable the organisation to assist while there is still time;*

- (b) communicate with the ATSU, passing as much of the pertinent information as possible in the first message;
- (c) climb, if possible, for improved direction-finding and radar coverage;
- (d) comply with instructions and advice given and assist the ATSU to control communication on the frequency in use. Do not change frequency unless it is absolutely necessary; and
- (f) conserve - slow down and select power for maximum endurance.

3.2.2 Emergency communications from aircraft.

Emergency communications from aircraft are divided into two categories as follows:-

- (a) distress covers aircraft threatened by grave and imminent danger and in need of immediate assistance; and
- (b) urgency identifies a very urgent message concerning the safety of a ship, aircraft or other vehicle, or some person on board or within sight.

3.2.2.1 Distress communications

The distress message sent out by an aircraft must be preceded by the distress signal MAYDAY preferably spoken three times, and should –

- (a) be transmitted on the air/ground frequency in use at the time;
- (b) consist of as many as possible of the following elements, spoken distinctly and, if possible, in the following order:-
 - (i) the name of the station addressed (time and circumstances permitting);
 - (ii) the identification of the aircraft;
 - (iii) the nature of the distress condition;
 - (iv) the intention of the person in command;
 - (v) present position, level (i.e. flight level, altitude as appropriate) and heading;
 - (vi) any other useful information.

3.2.2.2 Urgency communications

In addition to being preceded by the radiotelephony urgency signal PAN, preferably spoken three times, the urgency message to be sent by an aircraft reporting an urgency condition must –

- (a) be on the air-ground frequency in use at the time;
- (b) consist of as many as required of the following elements spoken distinctly and, if possible, in the following order:--
 - (i) name of the station addressed (time and circumstances permitting);
 - (ii) identification of the aircraft;
 - (iii) nature of the urgency condition;
 - (iv) intention of the person in command;
 - (v) present position, level (i.e. flight level, altitude, etc., as appropriate) and heading;
 - (vi) any other useful information.

3.2.2.3 Progress reports from aircraft subject to an emergency.

- (a) After declaring an emergency aircraft in flight should endeavour to maintain contact with an ATSU

and should transmit progress reports as frequently as possible.

- (b) Before changing frequency aircraft should advise the ground station of the frequency to which it intends changing. If the aircraft is not in contact with an ATSU this information should be broadcast before the frequency change is made.

3.3 Action after crash or forced landing.

3.3.1 The pilot of an aircraft which has crashed or force landed shall use his own discretion on whether to remain at the aircraft or to attempt to reach help.



3.3.2 Factors which could influence his decision are -

- (a) if the aircraft was operating on an 'SAR action' flight plan and the aircraft has crashed or force landed in a desert area, a swamp area or a very sparsely populated area, it is advisable to remain at the aircraft and take such of the following action as may be appropriate or possible -
- (i) take steps to conserve the strength of survivors, e.g. avoid unnecessary exertion in the sun;
 - (ii) conserve available water and food supplies;
 - (iii) if a useable radio transmitter is available, make transmissions using the distress procedure, giving the aircraft's position and any other pertinent data, at H + 15 and H + 45. These transmissions should be kept as short as possible to conserve battery power. (H+15 and H+45 mean at times which are 15 and 45 minutes past the hour, e.g. 0715, 0745, 1215, 1245 etc);
 - (iv) if automatic SAR beacons are available one should be switched on for 5 minutes from H+15 and H+45. If however, aircraft are seen or heard a beacon should be left on continuously.
 - (v) if flares are carried they should be conserved for use when search aircraft, ships or ground search parties are known to be in the vicinity. The danger of falling flares starting veld and bush fires must be borne in mind before using flares;
 - (vi) if possible place the aircraft in a conspicuous position. Engine cowls, doors or other removable parts of the aircraft should be removed, polished-up and placed where they will reflect the rays of the sun. Fine sand can be used to remove paint from metal surfaces;
 - (vii) lay out the appropriate ground/air emergency signal strips in a conspicuous place; and
 - (viii) light smoke fires.
- (b) if the aircraft has crashed or force landed in a settled area where help is near at hand it is better to leave the aircraft to look for help. In such cases SAP stations, telephone exchanges, railway station masters, etc. will render such assistance as they can. The pilot should inform the unit he has called upon for help that he is operating on an 'SAR action' flight plan and ask them to advise the nearest ATSU of his whereabouts.

3.3.3 Ground/Air Emergency signalling code.








- (i) The following code is the internationally accepted code for survivors to use to communicate with aircraft:

No.	Message	Code Symbol
1	Require Assistance	∨
2	Require Medical assistance	X
3	No or Negative	N

4	Yes or Affirmative	
5	Proceeding in this direction	

4. Ground / Air visual signalling code for use by rescue units

4.1 The following code will be used by rescue units to communicate with aircraft when no other means of communication exists.

No.	Message	Code Symbol
1	Operation completed.	
2	We have found all personnel.	
3	We have found only some personnel.	
4	We are not able to continue. Returning to base	
5	Have divided into 2 groups each proceeding in direction indicated.	
6	Information received that aircraft is in this direction.	
7	Nothing found. Will continue search.	

COMMISSIONER FOR CIVIL AVIATION