



EAC 172-3

EMERGENCIES

Emergencies

ECAA Circular 172.3

EMERGENCIES

Section 1. GENERAL

1.1 Introduction

- a) We can not prescribe specific procedures, or develop a standard list of duty priorities that would apply uniformly to every conceivable situation, because of:
 - 1) The infinite variety of possible emergency situations; and
 - 2) The various circumstances surrounding each situation,
- b) Detailed instructions cannot be given for every situation, each situation must be evaluated on its merit;
- c) However this does not preclude the establishment of procedures to be used as a general guide to air traffic services personnel.

1.2 General Functions

- a) Controllers must always be alert to the possibility of an aircraft emergency;
- b) An emergency may require alerting action to be taken immediately or it may develop to that point later;
- c) Speed may be necessary in certain circumstances but calm coordinated actions are essential in all situations;
- d) When you believe an emergency exists or is imminent,
 - 1) Confirm and correctly establish the nature of emergency immediately;
 - 2) Immediately take action appropriate to the circumstances;
 - 3) Inform pilot immediately of anything relevant observed visually;
 - 4) Select and pursue a course of action appropriate to the circumstances.
- e) When more than one action is required, the action which is most critical from the safety standpoint is performed first.
- f) ATC units shall maintain full and complete coordination, and personnel shall offer as much assistance as possible, and shall use their best judgement in handling emergency situations.
- g) Assistance to the aircraft can include the provision of information on:
 - 1) The availability of aerodromes and their associated approach aids;
 - 2) Radar vectoring;
 - 3) Weather information; and
 - 4) Details of terrain clearance.
- h) The supervisor should be informed as soon as practicable and where more than one ATS unit is involved complete coordination must be maintained between units.
- i) If the ACC is involved the ACC supervisor should take charge of the operation. Controllers must be ready to give all possible assistance to the ACC, ARCC and other units. If more than one ACC is involved then the supervisors should agree between them which one takes charge.

1.3 Emergency Determination

1.3.1 Phases Of Emergency

- a) Uncertainty phase (INCERFA).
- b) Alert phase (ALERFA).
- c) Distress phase (DETRESFA).

1.3.2 Categories of Aircraft Emergency

- a) The following terms are used in relation to alerting emergency services:

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- 1) **Aircraft Accident:** Accidents which have occurred or on, or in the vicinity of, the aerodrome.
- 2) **Aircraft Accident Imminent:** Accidents which are inevitable on, or in the vicinity of, the aerodrome.
- 3) **Aircraft Ground Incident:** An aircraft on the ground is known to have an emergency situation, other than an accident, requiring the attendance of emergency services.
- 4) **Full Emergency:** When it is known that an aircraft is, or is suspected to be, in such trouble that there is a danger of an accident.
- 5) **Local Standby:** When it is known that an aircraft:
 - (i) Has or is suspected to have developed some defect but the trouble would not normally involve any serious difficulty in effecting a safe landing;
 - (ii) Has to be searched following a bomb warning or requires inspecting on the ground by the aerodrome fire service.
- 6) **Weather Standby:** When weather conditions are such as to render a landing difficult or difficult to observe.

1.3.3 Definition & Condition

- a) An emergency can be either a Distress or an Urgency condition:
 - 2) **URGENCY:** A situation of being concerned about safety of an aircraft or other vehicle, or of some person on-board or within sight, and of requiring timely but not immediate assistance:
 - (i) **Alert phase:** A situation wherein apprehension exists as to the safety of an aircraft and its occupants.
 - (ii) **Uncertainty phase:** A situation wherein uncertainty exists as to the safety of an aircraft, and its occupants.
 - 3) **DISTRESS:** A situation wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger, or require immediate assistance.
- b) A pilot who encounters a Distress condition should declare an emergency by beginning the initial communication with the word "Mayday," preferably repeated three times. For an Urgency condition, the word "Pan-Pan" should be used in the same manner;

1.3.4 Key Words

- a) **Key words used in Emergencies are:**
 - 1) **MAYDAY MAYDAY:** For DISTRESS condition;
 - 2) **PAN PAN:** For URGENCY condition.
- b) If the Key words are not used and you are in doubt that a situation constitutes an emergency or potential emergency, handle it as if it were an emergency

1.4 Emergency Declaration

- a) Emergency may be declared by:
 - 1) Pilot ;
 - 2) Operator; or
 - 3) Controller

1.4.1 Recognizing an Emergency

- a) A controller may suspect that an aircraft is in an emergency situation when:
 - 1) Radio contact is not established at the time, it is expected to be established;

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- 2) Radio contact is lost;
- 3) A pilot makes a report about the malfunctioning of his aircraft, or the unusual behavior of persons onboard;
- 4) The erratic behavior of an aircraft, or radar blip is observed;
- 5) An aircraft is overdue at an aerodrome;
- 6) The pilot reports that the aircraft is short of fuel;
- 7) Aircraft switched the landing or navigation lights on and off repeatedly (*difficulties compel it to land without requiring assistance*);
- 8) Pilot reports that he is lost or uncertain of his position;

1.4.2 Controller Declaring Emergency

1.4.2.1 Introduction

- a) The pilot is in at least an urgency condition, the moment he is doubtful about:
 - 1) Position;
 - 2) Fuel endurance;
 - 3) weather; or
 - 4) Any conditions that could adversely affect flight safety.
- b) Some pilots are reluctant to report an emergency when they encounter, controller may carry out the necessary actions as if the pilot had declared an emergency;

1.4.2.2 Cases Involving Controller Action

a) Controller Shall Consider An Emergency Exists When:

- 1) An emergency is declared by either:
 - (i) The pilot,
 - (ii) ATC unit personnel,
 - (iii) Officials responsible for the operation of the aircraft.
- 2) The words PANPAN are not used and he believes an emergency exists or is imminent;
- 3) A pilot makes a report about the malfunctioning of his aircraft, or the unusual behavior of persons onboard;
- 4) The erratic behavior of an aircraft, or radar blip is observed;
- 5) An aircraft is overdue at an aerodrome;

NOTE. An aircraft is considered overdue or missing when:

- (i) *It fails to arrive within 30 min of the ETA last notified to or is estimated by, ATC whichever is the later; Or*
- (ii) *It has been cleared to commence approach after completing any necessary holding and fails to land within 5 min of the estimated time of landing, **and in either case** neither communication nor radar contact can be re-established.*
- 6) The pilot reports that the aircraft is short of fuel;
- 7) Aircraft switched the landing or navigation lights on and off repeatedly.
 - *Difficulties compel it to land without requiring assistance.*
- 8) Pilot reports that he is lost or uncertain of his position;
- 9) Simultaneous loss of radar contact and radio communication with aircraft;
- 10) An emergency radar transponder code is received;

11) Reports indicate that:

- (i) An aircraft has made a forced landing, is about to do so; or
- (ii) Its operating efficiency is so impaired that a forced landing is likely;
- (iii) The crew has abandoned the aircraft or is about to do so;

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- 12) Intercept or escort aircraft services are required;
- 13) The need for ground rescue appears likely;
- 14) An Emergency Locator Transmitter (ELT) signal is heard or reported;
- b) When a pilot has given certain items of information normally associated with an emergency message but has not prefixed the transmission with "MAYDAY" or "PAN PAN", the controller must ask the pilot if he wishes to declare an emergency.

1.4.3 Pilot Indicating An Emergency Situation

- a) To indicate an emergency situation, pilot may select one of the following:
 - 1) Code 7700 for emergency;
 - 2) Code 7600 for radio communication failure;
 - 3) Code 7500 for unlawful interference;
- b) If in contact, the controller should ask the pilot if he wishes to declare an emergency and, if not specified by the pilot, the class of emergency being declared.

1.5 Obtaining Information

- a) Obtain enough information to handle the emergency intelligently;
- b) Base your decision as to what type of assistance is needed based on information and requests received from the pilot;
- c) Remember that only the pilot is authorized to determine a course of action.

1.6 Providing Assistance

- a) Provide maximum assistance to aircraft in distress;
- b) Enlist the services to use when the pilot requests or when you deem necessary as:
 - 3) Available radar facilities;
 - 4) The military services, as well as their emergency services and facilities;
 - 5) COMOPS Department.

1.7 Responsibility

- a) If you are in communication with an aircraft in distress, handle the emergency and coordinate and direct the activities of assisting facilities;
- b) Monitor and continuously ensure the safe and expeditious passage of the emergency and other aircraft;
- c) Transfer this responsibility to another unit only when you feel better handling of the emergency will result.
- d) When you receive information about an aircraft in distress, forward detailed data to the ACC in whose area the emergency exists.
- e) ACCs shall serve as the central points for collecting information, for coordinating with SAR, and for conducting a communications search concerning:
 - 1) Overdue or missing aircraft which:
 - (i) Fails to arrive within 30 min of the ETA last notified to/estimated by, ATC whichever is the later; Or
 - (ii) Has been cleared to commence approach after completing any necessary holding and fails to land within 5 min of the estimated time of landing.

NOTE 1. In (i) & (ii) neither communication nor radar contact can be re-established.

NOTE 2. For SAR purposes, all aircraft are treated the same as IFR aircraft.

- 2) Aircraft in an emergency situation occurring in their respective area;
- f) Notify the ACC serving departure or destination point, for relay to aircraft operator.

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- g) When consideration is given to the need to escort an aircraft in distress, special consideration should be given if the maneuver takes the aircraft through the clouds.
- h) Before a determination is made to have an aircraft in distress be escorted by another aircraft, ask the pilots if they are familiar with and capable of formation flight.
- i) Do not allow aircraft to join up in formation during emergency conditions, unless:
 - 1) The pilots involved are familiar with and capable of formation flight; and
 - 2) They can communicate with, and have visual contact with each other.
- j) If there is a need for aircraft that are not designated as search and rescue aircraft to get closer to one another than radar separation minima allow, the maneuver shall be accomplished, visually, by the aircraft involved.

1.8 Coordination

Coordinate efforts to the extent possible to assist any aircraft believed overdue, lost, or in a state of emergency.

1.9 Airport Ground Emergency

- a) When an emergency occurs on the airport, control other air and ground traffic to avoid conflicts:
 - 1) In the area where the emergency is being handled.
 - 2) When routes within the airport are required for movement of local emergency equipment to or from an emergency which occurs outside the manoeuvring area.

NOTE.

- (i) *Aircraft operated in proximity to accident or other emergency or disaster locations may cause hindrance to airborne and surface rescue or relief operations.*
- (ii) *Other effects as congestion, distraction or wake turbulence from nearby aircraft and helicopters, could prevent or delay proper execution of operations.*
- b) If workload permits, monitor the progress of emergency vehicles responding to a situation, provide available information to assist finding the accident/incident scene,

1.10 Inflight Emergencies Involving Military Aircraft

- a) The design and complexity of fighter aircraft places an extremely high workload on the pilot during an in-flight emergency. The pilot's full attention is required to maintain control of the aircraft; therefore
- b) Radio frequency and transponder code changes should be avoided and radio transmissions held to a minimum, especially when the aircraft is at low altitude.

1.11 Nature of Emergency

- **Controllers may encounter any of the following emergencies however; they are likely to encounter other variety of possible emergency situations:**

Fuel dumping, bird strike, passenger seriously ill, radio failure, hijack, cabin fire, emergency descent, smoke in the cockpit, bomb scare, aircraft bomb threats, no gyro, loss of oxygen, collision, turbulence, undercarriage failure, engine on fire (port/starboard), engine failure, bad weather, explosion, severe icing, flame out, sudden depressurization (pressure drops), upset aircraft, lost aircraft, fuel emergency, state of minimum fuel, radio failure, loss of radar contact and radio communications with an aircraft, loss of engine power, Cracked canopy, mechanical failure, structural damage.

1.12 Phases of Emergency

- a) The table below shows the phases into which emergencies fall;

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b) Subject to his discretion, controller may declare a phase earlier than described.

TYPE OF AIRCRAFT EMERGENCY			
RADIO FAILURE	OVERDUE	Operating Efficiency	Forced Landing
<ul style="list-style-type: none"> No comm. within a period of 20 min: 1) After the time it should have been received; OR 2) From the time an unsuccessful attempt to establish comm. was first made. 	<ul style="list-style-type: none"> Fails to arrive within 30 min of the ETA last notified to/estimated by ATC whichever is the later; or Has been cleared to commence approach after completing any necessary holding and fails to land within 5 min of the estimated time of landing. 	Not impaired	No forced landing (Crash)
<ul style="list-style-type: none"> Attempts to establish comm. during INCERFA have failed 	<ul style="list-style-type: none"> Enquiries to relevant sources during INCERFA have failed to reveal any news; OR Has been cleared to land and fails to land within 5 min of the estimated time of landing and comm. cannot be re-established. 	<ul style="list-style-type: none"> Impaired but not to the extent that a forced landing is likely 	No forced landing (Crash)
<ul style="list-style-type: none"> Further attempts to establish comm. during the ALERFA have failed. 	<ul style="list-style-type: none"> More widespread enquiries during the ALERFA have failed to reveal any news; OR The fuel on-board is considered to be exhausted or insufficient to enable the aircraft to reach safety. 	<ul style="list-style-type: none"> Impaired to the extent that a forced landing is likely. 	<ul style="list-style-type: none"> Known to have force landed or Crashed
EXCEPTIONS	PHASE	DURATION	ACTION TAKEN
<ul style="list-style-type: none"> No doubt exists as to the safety of the aircraft and its occupants 	INCERFA	<ul style="list-style-type: none"> Maximum of 30 min 	<ul style="list-style-type: none"> ACC/RCC collect & evaluate reports Rescue/other ACCs may be informed of the situation.
<ul style="list-style-type: none"> Evidence exists that would allay apprehension as to the safety of the A/C 	ALERFA*	<ul style="list-style-type: none"> Maximum of one hour 	<ul style="list-style-type: none"> RCC alerts the SAR services for immediate action
<ul style="list-style-type: none"> Reasonable certainty exists, that the A/C and its occupants are not threatened by grave and imminent danger and do not require immediate assistance 	DETRESFA	<ul style="list-style-type: none"> Until A/C is found and the survivors are rescued; OR it is clear that there is no longer any chance of so doing 	<ul style="list-style-type: none"> RCC puts the SAR plan into operation and directs it for the duration of this phase.

* An alert phase will be initiated when an aircraft is known or believed to be the subject of unlawful interference.

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Section 2. EMERGENCY ASSISTANCE

2.1 Information Requirements

- a) Unless clearly stated by the flight crew or otherwise known, take all necessary steps to ascertain the situation
- b) When an emergency is declared, you believe it exists or is imminent, select a course of action which appears to be most appropriate under the circumstances;
- c) Start assistance as soon as enough information has been obtained upon which to act.
- d) Information requirements will vary, depending on the existing situation.
- e) Minimum required information for in-flight emergencies is:
 - 1) Aircraft identification and type;
 - 2) Position
 - 3) Nature of the emergency.
 - 4) Pilot's desires.

***NOTE.** Only the pilot is authorized to determine the course of action. He is directly responsible for, and is the final authority as to the operation of the aircraft.*

- f) After initiating action, obtain the following items or any other pertinent information from the pilot or aircraft operator, as necessary:
 - 1) Aircraft altitude.
 - 2) Fuel remaining in time.
 - 3) Pilot reported weather.
 - 4) Time and place of last known position.
 - 5) Heading since last known position.
 - 6) Airspeed.
 - 7) Navigation equipment capability.
 - 8) Visible landmarks.
 - 9) Aircraft colour.
 - 10) Number of persons on board.
 - 11) Point of departure and destination.
 - 12) Emergency equipment on board.

2.2 Frequency

- a) Although **121.5 MHz & 243.0 MHz** are emergency frequencies, emergency cases shall be made on the frequency in-use at the time;
- b) Aircraft which is not assigned to a radio frequency may declare an emergency using the emergency frequency.

2.2.1 Frequency Change

- a) Although it is better to keep the aircraft on the initial contact frequency, controller may change frequency only when there is a valid reason e.g. :
 - 1) When you feel that better handling of the emergency will result.
 - 2) Another unit may give more assistance.
 - 3) Current frequency limitations.
- b) In the circumstances, it is reasonable to ask the pilot to change frequency.
- c) Consult ACC supervisor and act according to his instructions.
- d) Instruct the pilot to change frequency.

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- e) If no reply on the new frequency, listen on the original frequency until the aircraft is known to be in two-way communication.

2.3 Aircraft Orientation

- a) Orientate and direct an aircraft by the means most appropriate to the circumstances.
- b) Recognized standard methods include:
 - 1) Radar.
 - 2) DF.
 - 3) NAVAIDs.
 - 4) Pilotage.
 - 5) Sighting by other aircraft.

2.4 Altitude Change for Improved Reception

When you consider it necessary and if weather and circumstances permit, suggest that the aircraft maintain or increase altitude to improve communications or radar reception.

2.5 Emergency Situations

Consider that an aircraft emergency exists and inform the RCC or ACC and alert the appropriate facilities/units **when:**

NOTE ATC units are only required to notify the ACC

- a) An emergency is declared by either:
 - 1) The pilot.
 - 2) ATC unit personnel.
 - 3) Officials responsible for the operation of the aircraft.
- b) There is unexpected loss of radar contact and radio communications with any aircraft.
- c) Reports indicate that the aircraft:
 - 1) Has made a forced landing;
 - 2) Is about to make a forced landing; or
 - 3) Its operating efficiency is so impaired that a forced landing will be necessary.
- d) Reports indicate the crew has abandoned the aircraft or is about to do so.
- e) An emergency radar transponder response is received.

NOTE. Transponder Code 7700 causes EMRG to blink in the data block.

- f) Intercept or escort aircraft services are required.
- g) The need for ground rescue appears likely.
- h) An Emergency Locator Transmitter (ELT) signal is heard or reported.

2.6 PRIORITY

- a) An aircraft known or believed to be in a state of emergency, including being subjected to unlawful interference shall be given priority over other aircraft.
- b) URGENCY messages have priority over all transmissions, except DISTRESS ones.

2.7 Handling an Emergency

2.7.1 ATC Course of Action

1. Use of Communication Facilities

ATS units shall use all available communication facilities to endeavor to establish and maintain communication with aircraft in emergency, and to request news of the aircraft.

1.1 Coordinate with Other Agencies

- a) Immediately identify and inform appropriate agencies:
 - 1) ATC Watch Supervisors;
 - 2) Operators and companies;

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- 3) ATS Unitss
- 4) RCC;
- 5) The Search and Rescue Organization.

Regularly review/update information provided to appropriate agencies.

2. Notification

- a) Notify Cairo ACC watch supervisor who should take charge of the operation;
- b) Forward detailed data to the ACC in whose area the emergency exists;
- c) ACC shall service as the central point for collecting all relevant information;
- d) Tower or approach shall notify the ACC immediately of any emergency arising **except** if nature of emergency is such that the notification would be unessential.
- e) Tower or approach shall first alert and set in motion all appropriate local rescue and emergency organizations to give the immediate assistance required whenever the urgency of the situation so requires.

NOTE. Appropriate local rescue and emergency organizations are: Fire brigade, Ambulance, Police, Airport operations.

- f) ACC supervisor shall inform and take alerting action with SAR unit and RCC;
- g) Information notified to SAR/RCC, shall be communicated without delay to the operator;
- h) Notify the appropriate ATS units/authorities as specified in the unit instructions;
- i) Notify the A/D selected for emergency landing, to make suitable preparations;
- j) Warn other aerodromes in the vicinity to stand by;
- k) Inform the rescue services if it is known that an aircraft has a dangerous cargo on board;
- l) Keep the aircraft operator informed of all developments.
- m) Pass essential traffic information, when necessary.

2.1notification of RCC

ACC shall notify RCC immediately an aircraft is considered to be in a state of emergency in accordance with the following:

a) Uncertainty Phase (INCERFA) When:

- 1) No communication received from an aircraft within a period of 30 min:
 - (i) after the time communication should have been received; or
 - (ii) from the time an unsuccessful attempt to establish communication with such aircraft was first made, whichever is the earlier; or
- 2) When aircraft fails to arrive within 30 min of the ETA notified to or estimated by ATS units, whichever is the later, except when no doubt exists as to the safety of the aircraft and its occupants.

b) Alert Phase (ALERFA) When:

- 1) Following *INCERFA*, subsequent attempts to establish communication/inquiries to other relevant sources have failed to reveal any news of the aircraft, or when
- 2) An aircraft cleared to land and fails to land within 5 min of the estimated time of landing and communication has not been re-established, or when
- 3) Information received indicates that the operating efficiency of the aircraft has been impaired, but not to the extent that a forced landing is likely, except when

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evidence exists that would allay apprehension as to the safety of the aircraft and its occupants, or when

- 4) An aircraft is known or believed to be the subject of unlawful interference.

c) distress phase (DETRESFA) When:

- 1) Following *ALERFA*, attempts to establish communication failed and more unsuccessful inquiries point to the probability that the aircraft is in distress, or
- 2) The fuel on-board is considered to be exhausted, or to be insufficient to enable the aircraft to reach safety, or
- 3) Information is received which indicates that the operating efficiency of the aircraft has been impaired to the extent that a forced landing is likely, or
- 4) Information is received or it is reasonably certain that the aircraft is about to make or has made a forced landing, **except** when there is reasonable certainty that the aircraft and its occupants are not threatened by grave and imminent danger and do not require immediate assistance.

2.1.1 Contents

- a) Notification of RCC shall contain such of the following information as is available in the order listed:

- 1) INCERFA, ALERFA or DETRESFA, as appropriate to the emergency phase;
- 2) Agency and person calling;
- 3) Nature of the emergency;
- 4) Significant information from the flight plan;
- 5) Unit which made last contact, time and means used;
- 6) Last position report and how determined;
- 7) Colour and distinctive marks of aircraft;
- 8) Dangerous goods carried as cargo;
- 9) Any action taken by reporting office; and
- 10) Other pertinent remarks.

- b) Information which is not available at the time notification is made to RCC, should be sought by an ATS unit prior to the declaration of a distress phase, if there is reasonable certainty that this phase will eventuate.

- c) Further to the notification RCC shall, without delay, be furnished with:

- 1) Any useful additional information, especially on the development of the state of emergency through subsequent phases; or
- 2) Information that the emergency situation no longer exists.

2.2 Information to the Operator

- a) When ACC decides that an aircraft is in the uncertainty or the alert phase, it shall advise the operator prior to notifying the RCC.

NOTE. *If an aircraft is in the distress phase, the RCC has to be notified immediately.*

- b) All information notified to the RCC by ACC shall, whenever practicable, also be communicated, without delay, to the operator.

2.3 Information to Aircraft in the Vicinity of an Emergency Aircraft

Known aircraft operating in the vicinity of the aircraft is in a state of emergency shall be informed of the nature of the emergency as soon as practicable;

3. Pilot Requests

Provide the flight crew with any information requested as well as any additional relevant information, such as:

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- a) Details on suitable aerodromes:
 - 1) Advise the pilot of the nearest suitable aerodromes and suggest one for landing;
 - 2) Inform the pilot of the up to date information on the selected aerodrome.

NOTE. ACC will be able to assist in the selection.

- b) Minimum safe altitudes;
- c) Weather information;
- d) Navigation and approach aids...etc.

4. Procedures

- a) If not radar identified, assign the emergency code 7700: "SQUAWK MAYDAY ON SEVEN SEVEN ZERO ZERO" "RADAR CONTACT (position) IF FEASIBLE SQUEWK (code)"
- b) Inform appropriate emergency services of the declared category of emergency.
- c) Monitor and continuously ensure the safe and expeditious passage of the emergency and other aircraft.
- d) Inform pilots immediately of:
 - 1) Any relevant information or messages received from other sources.
 - 2) Any depletion/reduction of aerodrome emergency services.Assist appropriate vehicles to proceed to location immediately.
- e) Maintain complete coordination if more than one unit is involved;
- f) Take alerting action appropriate to the declared emergency phase
- g) Alert local emergency services in the area of expected forced landing in coordination with SAR/RCC;
- h) Control tower or approach control shall alert and set in motion all appropriate local rescue and emergency organization to give immediate assistance required whenever the urgency of the situation so requires;

4.1 Coordinate Associated Vehicular Movements

- a) Assist the movement of local emergency equipment and vehicles to proceed to or from an emergency location immediately.
- b) Vehicular movements include fire brigade, ambulance, police, airport operations....

4.1.1 Effects on Emergency or Disaster Rescue Operations

- a) Aircraft operated in proximity to accident or other emergency or disaster locations may cause hindrance to airborne and surface rescue or relief operations.
- b) Congestion, distraction or wake turbulence from nearby aircraft and helicopters, could prevent or delay proper execution of operations.

4.2 Plotting Aircraft in a State of Emergency

- a) The flight of the aircraft involved shall be plotted on a chart to determine its:
 - 1) Probable future position and maximum range of action from last known position.
- b) The flights of other aircraft in the vicinity of the aircraft involved shall also be plotted to determine their probable future positions and maximum endurance.
- i) Plot position of the emergency aircraft and its subsequent track using radar until the aircraft is out of coverage; and
- j) Pass position and bearing information to other interested units;

5. Subsequent Action Where appropriate:

- a) Ensure that a supplementary flight plan is requested from the departure aerodrome;

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- b) Confirm notification to RCC using the prefix INCERFA, ALERFA, or DETRESFA.
- c) Inform the original destination aerodrome of a crash and of the action taken;
- d) Ensure that an aircraft in an emergency has an uninterrupted approach to the selected aerodrome, rearrange the traffic pattern if necessary;
- e) If it is known that an aircraft which has crashed or is likely to crash has a dangerous cargo on board, inform the rescue services;
- f) Keep the aircraft operator informed of all developments;
- g) If the incident is reported by an outside source, take the name, address and telephone number of the person reporting it.

2.8 Monitoring and Recording the Situation

a) Watch Supervisor and concerned ATC personnel shall:

- 1) Accurately record significant events times.
- 2) Accurately record significant actions taken.
- 3) Ensure all relevant records are correctly preserved.

b) Records consist of:

- 1) Flight progress strips (FPS);
- 2) Written notes;
- 3) Diagrams and maps;
- 4) Report forms;
- 5) Radar and RTF recordings;
- 6) Special MET reports;
- 7) Technical log book.

2.9 Local Emergency Services

- a) A detailed knowledge of the local airspace, terrain or obstacles surrounding aerodromes must be kept in the ACC;
- b) That detailed knowledge will be used for guidance on local minimum sector altitudes in order to provide the fullest possible service to actual emergencies;
- c) Detailed knowledge of aerodromes and landing areas availability within the Cairo FIR as well as a comprehensive database are required to help rapid communication with aerodromes, aircraft operators, ATS units, and the SAR/RCC including police support and the regional emergency services;
- d) ACC supervisor shall alert local emergency services in the area of the expected forced landing, unless the aircraft is within the radius of action of the aerodrome fire service.

2.10 SAR Responsibility

- a) The responsibility for initiating action normally rests with the ATC unit which:
 - 1) Was last in communication with the aircraft in need of search and rescue aid; or
 - 2) Receives the news from an outside source.

2.10.1 Approach & Aerodromes' Role

- a) Approach and aerodrome control units, when they are aware that an aircraft is in need of SAR aid, shall immediately:
 - 1) Set in motion the local rescue services and emergency organizations; and/or
 - 2) Notify the watch supervisor at the ACC.

2.10.2 ACC's Role

- a) If aircraft position is in doubt, emergency action shall be initiated by the ACC.

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- b) Whenever it is reported from any source that an aircraft within the FIR is in need of SAR aid, the ACC watch supervisor shall initiate emergency action unless it is known that the appropriate rescue organization has already been alerted.

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Section 3. HANDLING SPECIFIC EMERGENCIES

1. AERODROME EMERGENCY SERVICES

1. Responsibilities

1.1 Responsibility for Alerting the Aerodrome Emergency Services

- a) The responsibility for alerting the aerodrome emergency services normally rests with the aerodrome tower controller;
- b) When an aircraft which crashes during the transfer of communication:
 - 1) As soon as either unit becomes aware of the incident it must be agreed immediately which unit is to alert the emergency services.

1.2 Aerodrome Authority's Responsibility

- a) **The aerodrome authority is responsible for:**
 - 1) Preparing a detailed aerodrome emergency plan applicable to the aerodrome and making it available to all personnel concerned in aircraft emergencies;
 - 2) Determining The Radius Of Action Of The Aerodrome Fire Service;

NOTE.

- (i) *The Radius Of Action may include an area adjacent to and outside the boundary.*
- (ii) *The size of attendance within this radius will as far as is possible be predetermined and detailed in the aerodrome emergency plan and ATC Unit Contingency Plan*
- 3) Advising the aerodrome tower and aircraft operators whenever the fire and rescue services are deployed for any reason.

1.3 Responsibility and Action by Control Tower

- a) When aware that an aircraft is in need of rescue aid within the radius of action he should in accordance with the aerodrome emergency plan:
 - 1) Immediately alert the emergency services;
 - 2) Give them the fullest available information.
- b) If the rescue services are deployed for any reason the aerodrome controller should:
 - 1) Transmit to aircraft the message received from the aerodrome authority;
 - 2) Inform the ACC supervisor.
- c) Whenever possible aerodrome controller should:
 - 1) Anticipate the need for aerodrome fire service vehicles to cross runways; and
 - 2) Issue information in advance of requirements;
 - 3) Request other traffic to hold position or diverted to avoid conflict.
- d) Inform the rescue services if an aircraft which has crashed or is about to crash:
 - 1) Has radioactive material on board; or
 - 2) Is carrying any dangerous goods, including agricultural chemicals in a crop spraying aircraft.

1.4 Aerodrome Fire Service's Responsibility

- a) The aerodrome fire service will be responsible for final determination of the size of the attendance which will depend upon whether the accident is within or outside the aerodrome boundary;
- b) Normally a full attendance is made to all incidents within the boundary.

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2. Categories of Aerodrome Emergencies

b) The following terms are used in relation to alerting emergency services:

- 1) **Aircraft Accident:** Accidents which have occurred on, or in the vicinity of, the aerodrome.
- 2) **Aircraft Accident Imminent:** Accidents which are inevitable on, or in the vicinity of, the aerodrome.
- 3) **Aircraft Ground Incident:** An aircraft on the ground is known to have an emergency situation, other than an accident, requiring the attendance of emergency services.
- 4) **Full Emergency:** When it is known that an aircraft is, or is suspected to be, in such trouble that there is a danger of an accident.
- 5) **Local Standby:** When it is known that an aircraft:
 - (i) Has or is suspected to have developed some defect but the trouble would not normally involve any serious difficulty in effecting a safe landing;
 - (ii) Has to be searched following a bomb warning or requires inspecting on the ground by the aerodrome fire service.
- 6) **Weather Standby:** When weather conditions are such as to render a landing difficult or difficult to observe.

3. Domestic Fire

- a) The classification "Domestic" is given to any fire:
 - 1) On the aerodrome not included in the aerodrome emergencies categories above;
 - 2) Outside the aerodrome boundary (*other than aircraft accidents*) which is liable to constitute a danger to flying or aerodrome property;
 - 3) Which the aerodrome fire service should attend:
 - (i) According to an agreement with the local fire brigade; or
 - (ii) In response to calls from the public or police on humanitarian grounds.

4. Removal of Crashed Aircraft

- a) Removal of crashed aircraft is the responsibility of the aerodrome authority and the aircraft owner or operator;
- b) In the case of a reportable accident the permission of the **Aircraft Accident Investigation Directorate** is required before removal action can be commenced.

5. Emergency Removal

If it is apparent that continued obstruction of a runway by a crashed aircraft might further endanger life, e.g. other arriving aircraft having insufficient fuel for diversion, the tower supervisor should ensure that the emergency situation is fully understood by the aerodrome authority.

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2. OVERDUE AIRCRAFT

1. Introduction

a) An aircraft is considered overdue or missing when:

- 1) It fails to arrive within 30 min of the ETA last notified to or is estimated by, ATC whichever is the later; or
 - 2) It has been cleared to commence approach after completing any necessary holding and fails to land within 5 min of the estimated time of landing, **and in either case** neither communication nor radar contact can be re-established.
- b) Overdue action should not be considered in isolation, and the emergency actions described in other sections should be applied if they are appropriate.
- c) If an aircraft fails to make an expected report, continued attempts should be made to re-establish communication while at the same time commencing overdue action.
- d) Overdue action is not related solely to the filing of a flight plan. If, at any stage of a flight the pilot has made his intentions clear and subsequently does not arrive or report when expected, controller should seriously consider taking overdue action.
- e) Overdue action described in this section must be commenced not later than the specified times.
- f) The decision to take overdue action before these times is left to the discretion of the ACC watch supervisor and the following points may assist in making the decision:

2. Action by Controller

2.1 RCF Aircraft Preliminary Action

- a) The following preliminary action shall be commenced not later than 30 min after the notified ETA:
- 1) Confirm ATD with aerodrome of departure using the quickest means;
 - 2) Inform the ACC Supervisor of the situation.

2.2 Aircraft-Full Overdue Action

- a) **The following action shall be commenced** not later 15 min after notified ETA:
- 1) Inform the ACC Supervisor that the aircraft is now fully overdue;
 - 2) Continue to consult the ACC supervisor and endeavors to trace the aircraft;
 - 3) Inform local police or any other appropriate bodies to be on the lookout for the aircraft if it is assumed that it has made a forced landing in a particular area.
 - 4) **Route:** The need for prompt action if the route is over sparsely populated areas, mountainous country, and long stretches of water, etc.
 - 5) **Weather:** The pilot of RCF aircraft might well be expected to extend his flight time by deviating from his planned route to avoid bad weather;
 - 6) If no additional hazards exist, sufficient time for a deviation should be allowed.

2.3. Preliminary Action

- a) If a position report is not made when expected, the preliminary action shall be commenced not later than the estimated time for the reporting point plus 15 min:
- 1) Advise the ACC Supervisor that the aircraft is overdue;
 - 2) Confirm ATD from departure aerodrome by quickest possible means.

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2.4 Aircraft, Full Overdue Action

- a) The controller at the destination aerodrome shall inform the ACC Supervisor that the aircraft is fully overdue, if:
- 3) After the preliminary action taken, no news is received; or
 - 4) 30 min has elapsed since a position report should have been received; or
 - 5) Fuel carried is considered to have been exhausted, whichever is the earlier.

See item 7.1.12

3. NON-APPEARANCE OF AIRCRAFT

- a) If an aircraft which has commenced approach fails to land within 5 min of the estimated landing time and communications cannot be re-established, the following action shall be taken:
- 1) Alert radar services where available;
 - 2) Request other aircraft flying in the vicinity of the aircraft's last known position to be on the look-out;
 - 3) During the period of alert, exercise caution when providing information which will result in the movement of aerodrome traffic;
 - 4) Alert the emergency services in accordance with local instructions;
 - 5) Check with other aerodromes in vicinity;
 - 6) Advise the ACC Supervisor, who will take a subsequent action.

4. HIJACKING & THE UNLAWFUL USE OF AIRCRAFT

1. Hijacked Aircraft

1.1 Indications of unlawful interference

- a) ATS personnel shall be prepared to recognize any indication of the occurrence of unlawful interference with an aircraft. You may suspect when you observe:
- 1) A Mode 3/A Code 7500;
 - 2) An unexplained loss of transponder code;
 - 3) Change in direction of flight or altitude; and/or
 - 4) A loss of communications.

1.2 ATC Action

Whenever unlawful interference with an aircraft is known or suspected ATC shall:

- a) Attempt to verify any suspicion about setting the SSR Code 7500:
- 1) If the aircraft is not hijacked, the pilot should respond clearly that he is not being subjected to unlawful interference.
 - 2) If the reply is in the affirmative or if no reply is received, do not question the pilot further but be responsive to the aircraft requests.

PHRASEOLOGY. (callsign) **CONFIRM YOU ARE SQUAWKING** (assigned code, code assigned by ATC that it would otherwise be squawking).

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- (i) *The RTF message must exclude specific mention of code 7500;*
- (ii) *When the code has been intentionally selected, or no verification can be obtained, it shall be assumed that the aircraft has suffered unlawful interference.*
- (iii) *Code 7500 is only assigned upon notification from the pilot that he is being subjected to unlawful interference.*
- (iv) *Code 7500 causes HLJK to blink in the radar data block.*
- b) Notify supervisory personnel immediately of the situation;
- c) Notify the appropriate ACC responsible for en-route control; and
- d) Avoid any reference to the situation in ground/air communications unless:
 - 1) It has first been referred to in communications from the aircraft involved; and
 - 2) Such reference will not aggravate the situation.
- e) Promptly attend to aircraft requests or anticipated needs including requests for information relevant to air navigation facilities, procedures and services along the route of flight and at any aerodrome of intended landing; and
- f) Transmit, and continue to transmit, information pertinent to the safe conduct of the flight, without expecting a reply from the aircraft;
- g) Monitor and plot the progress of the flight with the means available, and coordinate transfer of control with adjacent ATS units without requiring transmissions or other responses from the aircraft, unless communication remains normal;
- h) Inform and continue to keep informed appropriate ATS units, including adjacent FIRs, which may be concerned with the progress of the flight;
- i) Consider all factors which may affect the progress of the flight:
 - 1) Fuel endurance;
 - 2) The possibility of sudden changes in route and destination.
 - 3) The expected/possible aircraft penetration into adjacent areas.
- j) Shall relay appropriate messages, relating to the circumstances associated with the unlawful interference, between the aircraft and designated authorities.
- k) Provide full cooperation with the ATC unit in the control of such aircraft.
- l) If aircraft are dispatched to escort the hijacked aircraft, provide all possible assistance to place the escort aircraft in a position behind the hijacked aircraft.

1.3 Pilot Action

The following procedures are intended as guidance for use by aircraft when unlawful interference occurs and the aircraft is unable to notify an ATS unit of this fact.

- a) Unless considerations on-board dictate otherwise, the pilot should continue flying on the assigned track and at the assigned cruising level at least until he is:
 - 1) Able to notify an ATS unit; or
 - 2) Within radar coverage.
- b) When he must deviate from assigned track or cruising level without being able to make RTF contact with ATS, the pilot-in-command should, whenever possible:
 - 1) Attempt to broadcast warnings on the VHF emergency frequency and other appropriate frequencies, unless considerations on-board dictate otherwise.
 - 2) Use other equipment such as on-board transponders when it is advantageous to do so and circumstances permit; and
 - 3) Proceed in accordance with applicable procedures for in-flight contingencies, where promulgated in the Regional Supplementary Procedures (Doc 7030); or

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- 4) If no applicable regional procedures have been established, proceed at a level which differs from the cruising levels normally used for IFR flight by:
 - (i) 500 ft in an area where 1 000 ft vertical separation minimum is applied; or
 - (ii) 1 000 ft in an area where 2 000 ft vertical separation minimum is applied.

1.4 Primary and Secondary Radar

- a) Whenever possible the aircraft are to be monitored by radar;
- b) Appropriate adjacent ATC units are to be provided with information to enable them to assist with radar monitoring.

2. Direction and Handling Responsibility

- a) The ACC supervisor shall act as ATC coordinating authority for the incident unless responsibility is delegated to another agency by the responsible higher authority.
- b) Responsibility for the overall direction of the incident will rest with government officials and the ATC coordinating authority.
- c) Controllers should be aware that their communications with these aircraft may be subject to government instruction.

2.1 Clearances

- a) Normal ATC clearances shall apply and ATC unit shall attend promptly to requests by the aircraft, unless otherwise directed by the appropriate higher authority.
- b) Necessary action shall be taken to expedite the conduct of all phases of the flight, especially the safe landing of the aircraft.
- c) The Government may request to withhold an ATC clearance to aircraft, particularly if the aircraft has not entered the Egyptian national airspace;
- d) When so authorized use the following **RTF PHRASEOLOGY**:
 - (callsign) *I AM INSTRUCTED TO REFUSE ENTRY INTO EGYPTIAN AIRSPACE. WHAT ARE YOUR INTENTIONS;*
 - (callsign) *I AM INSTRUCTED BY [name the authority] TO INFORM YOU THAT LANDING CLEARANCE HAS BEEN REFUSED FOR ANY AIRFIELD WITHIN THE EGYPTIAN TERRITORIES.*
- e) If appropriate, inform adjacent ATC unit to relay a message on your behalf.

2.2 Ground Handling

- a) An aircraft on ground should remain away from other aircraft and installations.
- b) Aircraft known or believed to be subjected to unlawful interference shall be cleared to isolated parking position.

5. AIRCRAFT BOMB THREAT

1. General

- a) When information is received from any source, that a bomb or other explosive device has been placed on, in, or near an aircraft for the purpose of damaging or destroying such aircraft, controller shall notify:
 - 1) The flight crew by the most expeditious means:
 - (i) On the frequency in-use;
 - (ii) On other sectors' frequency;
 - (iii) Through other ATS units or other channels;

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- 2) Watch supervisor;
- 3) ACC watch supervisor;
- 4) Facility manager;
- 5) Flight safety personnel, who shall notify the appropriate offices, agencies, operators according to applicable checklist, plans and/or directives.
- b) When operator message is received, concerning bomb warning or suspected damage to aircraft
 - 1) Passed the message to the pilot immediately using the operator's own words.
- c) If the threat is general in nature, handle it as a "Suspicious Activity."
- d) When the threat is targeted against a specific aircraft, with which you are in contact, take a course of action from the following, as appropriate:

2. Controller Action

- a) Beside the notification mentioned in a) above, controller shall, as appropriate:
 - 1) Advise the pilot of the threat;
 - 2) Ascertain crew intentions and report them to other concerned ATS units;
 - 3) Inform the pilot if technical assistance can be obtained: explosives experts...;
 - 4) Ask the pilot if he desires to climb/descend to an altitude that would equalize or reduce the outside air pressure/existing cabin air pressure differential;

NOTE. Equalizing existing cabin air pressure with outside air pressure is a key step which the pilot may wish to take to minimize the damage potential of a bomb.

- 5) Issue or relay an appropriate clearance considering MEA, MOCA, and weather;
 - 6) Issue or relay clearances to a new destination if requested;
- b) If you lose contact or unable to inform the suspect aircraft of a bomb threat, inform supervisor and relay pertinent details to other sectors or facilities as necessary;
- e) The handling of aircraft when a hijacker has or is suspected of having a bomb requires special considerations.
- f) Handle the aircraft as an emergency providing the most expeditious handling possible as to the safety of other aircraft, ground facilities, and personnel.
- c) When a pilot requests technical assistance or if it is apparent, do not suggest what actions the pilot should take.

NOTE. Technical advice: can assist flight crews in their search for a bomb and in determining what precautionary action to take if one is found.

2.1 Action on Ground

- a) When bomb threat involves an aircraft on the ground, with which you are in contact, take the following actions, as appropriate:
 - 1) Advise the aircraft to remain far away from other aircraft and facilities, as possible, to clear the runway, if appropriate, and to taxi to isolated/designated isolated area;
 - 2) Taxi clearance shall specify taxi route to the parking position;

NOTE. Taxi route shall be selected with a view to minimizing any security risks to the public, other aircraft and installations at the aerodrome.

- 3) Should the flight crew disembark passengers and crew, other aircraft, vehicles and personnel should be kept at a safe distance from the threatened aircraft;
 - 4) If you lose contact or unable to inform the suspect aircraft of a bomb threat, inform supervisor and relay pertinent details to other sectors or facilities as necessary;

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- 5) The handling of aircraft when a hijacker has or is suspected of having a bomb requires special considerations.
- 6) ATC should be responsive to the pilot's requests and notify supervisory personnel.
- 7) The aircraft shall be handled expeditiously whilst ensuring, as possible, the safety of other aircraft and that personnel and ground installations are not put at risk.
- 8) ATS units shall not provide any advice or suggestions concerning action to be taken by the flight crew in relation to an explosive device.

6. EMERGENCY DESCENT

1. Initial Action

- a) Give first priority to aircraft making emergency descent through other traffic;
- b) ATC shall give all necessary assistance and information and take immediate action to safeguard other aircraft concerned;
- c) When necessary, controllers shall broadcast an emergency message on appropriate frequency:

PHRASEOLOGY. "ATTENTION ALL AIRCRAFT IN THE VICINITY OF [or AT] (significant point or location) EMERGENCY DESCENT IN PROGRESS FROM (level) [followed as necessary by specific instructions/clearances/traffic information].

2. Pilot's Action

Receiving such a broadcast, aircraft will clear the specified areas and stand by on the appropriate radio frequency for further clearances from the ATC unit.

1. Subsequent ATC Action

- a) ATC unit shall forward further clearances to all aircraft involved as to additional procedures to be followed during and subsequent to the emergency descent;
- b) The ATS unit concerned shall additionally inform any other ATC units and control sectors which may be affected.

7. EMERGENCY OVERWEIGHT LANDINGS

1. General

- a) Controllers may experience a situation where a flight in an emergency is unable to continue as planned, requesting immediate landing at the nearest, suitable airfield.
- b) This may result in aircraft landing above the certificated maximum landing weight.

2. Pilot Action and Aircraft Performance

- a) The decision to make an overweight landing rests solely with the pilot who:
 - 1) May land immediately, or
 - 2) When it is inappropriate on safety grounds, spends time dumping fuel.
- b) An overweight landing requires extra care on the part of the crew for the approach, landing and deceleration on the runway.

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- c) In particular, there are limits to the maximum rates of descent on final approach that have to be achieved to ensure a successful landing.
- d) Ideally, the aircraft should intercept the final approach track at or below the ILS glide path to ensure that these rates of descent are not exceeded.
- e) Deceleration on the runway may require additional braking with the attendant risk of wheel fires and it is likely that the full length of the runway will be utilized.
- f) Except in the most extreme situations where the aircraft is compelled to land at all costs, controllers should not observe significant differences from normal aircraft performance with regard to rate of turn and speed.

8. DANGEROUS GOODS

- a) When the pilot of an aircraft in an emergency states that he is carrying dangerous goods, the message must be relayed without delay to the ATC unit at the aerodrome of intended landing.
 - b) The tower supervisor must notify the aerodrome authority immediately.
 - c) Aircraft carrying dangerous goods which, requires special handling, must not deviate from its flight-planned route except in an emergency.
 - d) If it has to divert, the first choice should be a military airfield, if so coordinated.
- NOTE. Military airfields have expertise in handling and parking aircraft with dangerous goods on board, while some airports are not suitable for diversion.*
- e) If the pilot of a military aircraft in an emergency declares that he is carrying dangerous cargo the military unit shall be informed immediately.

9. EMERGENCY DIVERSION: AIRPORT AND ROUTING

- a) When a pilot has declared an emergency and stated the aerodrome to which he wishes to proceed, controllers shall acknowledge this message;
- b) If it is required or requested to divert to another aerodrome, the reason for this change shall be passed to the pilot and his intentions requested;
- c) Aircraft in emergency should not be routed over densely populated areas;
- d) If this is inconsistent, e.g. when any extended routing could jeopardize the safety of the aircraft, the most expeditious route should be given.
- e) If possible, when expeditious routing is not required, suggestions of alternative aerodromes together with the justification that the routing would avoid densely populated areas and be consistent with safety, shall be passed to the pilot and his intentions requested;
- f) The decision to comply with advice/instructions to land at an airport, other than his selected diversion, lies with the pilot-in-command, who has the ultimate responsibility for the safety of his aircraft.
- g) Controllers providing en-route services may not be aware of major cities/towns/villages boundaries. However, aerodrome/approach/approach radar controllers should be familiar with the centres of population within their areas of jurisdiction.

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10. EMERGENCY AIRPORT RECOMMENDATION

1. Considerations

- a) When recommending an emergency airport ATC shall consider the following:
- 1) Remaining fuel in relation to airport distances.
 - 2) Weather conditions.
 - 3) Airport conditions.
 - 4) NAVAID status.
 - 5) Aircraft type.
 - 6) Pilot's qualifications (Instrument rated).
 - 7) Vectoring or homing capability to the emergency airport.

2. Guidance to Emergency Airport

- b) When necessary, use any of the following for guidance to the airport:
- 1) Radar.
 - 2) NAVAID's.
 - 3) Pilotage by landmarks.
 - 4) DF.
 - 5) Compass headings.
 - 6) Following another aircraft

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11. DIVERSION PROCEDURES

1. Introduction

Aircraft may divert from their planned destination to another aerodrome on the initiative of the pilot or request from the appropriate authority on the ground.

2. Reasons for Diversions

Diversions will normally be made for the following reasons:

- a) When the weather at the planned destination is reported to be below the minima prescribed by an operating company for their aircraft;
- b) When obstructions on the landing area which constitute a hazard to aircraft landing cannot be cleared within a reasonable period;
- c) The failure of airborne equipment;
- d) The failure of essential ground aids to landing in circumstances which would require their use;
- e) Unacceptable delay due to congestion of air traffic;
- f) The closure of the aerodrome of destination.

NOTE. The aerodrome authority is responsible for decisions regarding the availability of the aerodrome.

3. Diversions Originated by the Pilot

- a) The pilot is primarily responsible for aircraft safety, therefore he will normally decide whether he can or cannot effect a safe landing at a given aerodrome.
- b) Being aware of weather conditions at his planned destination and alternate aerodromes, whenever he considers a diversion to be necessary, he will make his intention known to the ATC unit and request further clearance.
- c) When requested by the pilot that his company/ nominated addressee be advised of his diversion, ATC shall pass this message to the ATS unit at either:
 - 1) The original destination; or
 - 2) The aerodrome nearest to the original destination.
 - 3) An ATS unit receiving such a message is to pass it to the addressee.

4. Diversions Originated by the Ground Organization

- a) When, for traffic reasons, a controller considers it advisable to divert an aircraft, he shall consult the aircraft operator;
- b) The controller and the aircraft operator shall decide the diversion aerodrome;
- c) The request to divert shall be passed to the pilot together with reasons for diversion, an ATC clearance and any further instructions;
- d) In cases of emergency it may be necessary for an aircraft to be diverted without prior consultation with the aircraft operator;
- e) In this event, the controller shall pass the message to the pilot expressed as a request and inform the aircraft operator as soon as possible;
- f) When the operator of the aircraft is not known, the pilot is to be asked to nominate an addressee.

5. Action by Pilot

- a) On receipt of the diversion message the pilot will acknowledge and comply with the request or give his reason for non-compliance;
- b) If he decides against diversion, permission to attempt a landing shall not be refused unless the aerodrome has been closed by the aerodrome authority.

6. Diversion of Military Aircraft

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- a) All information concerning the diversion of military aircraft is to be passed to the joint approach military office.
- b) ATC shall attend to requests from the military side, who has the final authority as to that diversion.

7. Diversion to Military Aerodromes

- a) Except in emergency, aircraft shall not be diverted to a military aerodrome without the prior approval of the military authority.
- b) In all cases of emergency, controllers should, whenever possible, consult the military side before arranging for the aircraft to land at a military aerodrome.

12. FAILURE OF NAVIGATION LIGHTS

- a) The pilot of an aircraft which has experienced a failure of one or more navigation lights may request permission to continue the flight to destination.
- b) Before authorizing the flight controllers should take the following into consideration:
 - 1) Normally permission should be granted if flight is to be continued wholly within Egyptian controlled airspace;
 - 2) Flight outside the FIR under these conditions may not be authorized unless permission to continue has been obtained from the adjacent FIR;
 - 3) If the pilot's intention is to fly outside controlled airspace he should be instructed to land at the nearest suitable aerodrome;
 - 4) Selection of this aerodrome is the responsibility of the pilot although he may request information to assist him in making his decision;
 - 5) Under certain circumstances the pilot may decide that the nearest suitable aerodrome is his original destination.

13. MINIMUM FUEL

- a) The term "minimum fuel" indicates recognition that fuel supply has reached a state where upon reaching the destination; pilot can not accept any undue delay;
- b) This is not an emergency situation but merely an advisory that indicates an emergency situation is possible should any undue delay occurs;
- c) A "minimum fuel" does not imply a need for traffic priority. Common sense and good judgement will determine the extent of assistance to be given;
- d) If an aircraft declares a state of "minimum fuel":
 - 3) Pass the information to the unit to whom control is transferred; and
 - 4) Be alert of any occurrence which might delay the aircraft.

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14. FUEL SHORTAGE AND MEDICAL EMERGENCIES

- a) Pilots who announce that their aircraft is short of fuel are to confirm that they are declaring an emergency before being given priority over other flights;
- b) Similarly, pilots announcing medical emergencies, e.g. a sick passenger, but not formally declaring an emergency or indicating that the person is seriously ill, shall be asked by ATC to confirm that they are declaring an emergency;
- c) In the absence of such a declaration, priority to the flight shall not be given.
- d) If running short of fuel, and the remaining usable fuel supply suggests the need for traffic priority, the pilot should:
 - 1) Declare an emergency; and
 - 2) Report remaining fuel in minutes.

15. INTERCEPTED MESSAGES

- a) If a controller intercepts a message from an aircraft which indicates that it is in an emergency he should; if possible:
 - 1) Obtain the position of that aircraft and pass it to the station being called;
 - 2) Continue to listen out until he is satisfied that the aircraft is in two way communication with an ATS unit.
- b) The information available shall be forwarded to the ACC.
- c) If it appears that the message is not being acknowledged the controller shall, in addition:
 - 1) Forward the message to the station being called and the ACC supervisor;
 - 2) The ACC supervisor shall take care of the situation;
 - 3) Attempt to establish two way communication with the aircraft; and
 - 4) Give all possible assistance to the emergency aircraft.

16. FUEL DUMPING

1. Definition

- a) **Fuel dumping:** Airborne release of usable fuel.
- b) **Fuel jettisoning:** Airborne release of external stores.

2. General

- a) In emergency or other urgent situations aircraft may need to dump fuel so as to reduce maximum landing mass and to effect a safe landing;
- b) The decision to dump rests with the pilot but he may request guidance from ATC.
- c) The flight crew shall advise ATC and the following should be coordinated:
 - 1) The route to be flown:
 - (i) Should be clear of cities and towns; if possible
 - (ii) Preferred to be over water; and
 - (iii) Away from areas where thunderstorms have been reported or are expected.
 - 2) The level should not be less than 6,000 ft.

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- 3) The duration of the fuel dumping.

3. Separation

“Known traffic” should be separated from the aircraft dumping fuel as follows:

- a) Horizontally: At least 10NM, but not behind the aircraft dumping fuel;
- b) Vertically: If behind the aircraft dumping fuel within 15 min flying time or a distance of 50 NM by;
 - 1) At least 1,000 ft if above the aircraft dumping fuel.; and
 - 2) At least 3,000 ft if below the aircraft dumping fuel.

17. AIR-GROUND COMMUNICATIONS FAILURE

- a) ATC units may be unable to maintain two-way communication with an aircraft operating in a control area or control zone;
- b) As soon as it is known that two-way communication has failed, action shall be taken to ascertain whether the aircraft is able to receive transmissions;
- c) ATC unit shall request aircraft to:
 - 1) Execute a specified manoeuvre which can be observed by radar; or
 - 2) Transmit, if possible, a specified signal in order to indicate acknowledgement.
- d) If it fails to indicate that it is able to receive and acknowledge transmissions, separation shall be maintained between the RCF aircraft and other aircraft, based on the assumption that the aircraft will:

17.1 Pilot action in Visual Meteorological Conditions:

- a) Continue to fly in VMC;
- b) Land at the nearest suitable aerodrome; and
- c) Report its arrival by the most expeditious means to the appropriate ATC unit; or

17.2 Pilot action in Instrument Meteorological Conditions:

When it does not appear feasible that pilot action in VMC will be completed:

- a) Maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 20 min following failure to report its position over a compulsory reporting point and thereafter adjust level and speed in accordance with the FPL;
- b) Proceed according to CPL route to the designated navigation aid serving the destination aerodrome and, hold over this aid until commencement of descent;
- c) Commence descent from the navigation aid specified in b) at, or close as possible to the EAT last received and acknowledged; or
- d) If no EAT has been received and acknowledged, at, or as close as possible to, the ETA resulting from the CPL;
- e) Complete a normal instrument approach procedure as specified for the designated navigation aid; and
- f) Land, if possible, within 30 min after the ETA or the last acknowledged EAT, whichever is later.

17.3 ATC action

- a) ATC action taken to ensure suitable separation based on the assumption of Pilot action in VMC/IMC shall cease when:
 - 1) It is determined that the aircraft is following a different procedure; or

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- 2) Through the use of electronic or other aids, ATC units determine that a different action differing may be taken without impairing safety; or
- 3) Positive information is received that the aircraft has landed.
- g) Appropriate information describing the RCF action taken by the ATC unit, or instructions justified by any emergency situation, shall be transmitted blind for the attention of the aircraft concerned, on the frequencies available on which the aircraft is believed to be listening. Information shall also be given concerning:
 - 1) Weather conditions favourable to a cloud-breaking procedure in areas where congested traffic may be avoided; and
 - 2) Weather conditions at suitable aerodromes.
- h) Pertinent information shall be given to other aircraft in the vicinity of the presumed position of the aircraft experiencing the failure.
- i) When it is known that an aircraft which is operating in its area of responsibility is experiencing an apparent RCF, an ATC unit shall forward information concerning the RCF to all ATS units concerned along the route of flight.
- j) The ACC in whose area the destination aerodrome is located shall take steps to obtain information on the alternate aerodrome(s) and other relevant information specified in the FPL, if such information is not available.
- k) If circumstances indicate that an RCF aircraft might proceed to (one of) the alternate aerodrome(s), the ATC unit(s) serving the alternate aerodrome(s) and any other ATC units affected by a possible diversion shall be informed of the situation and requested to attempt to establish communication with the aircraft at a time when the aircraft could possibly be within communication range.
- l) This shall apply particularly when, a clearance has been transmitted blind to the aircraft concerned to proceed to an alternate aerodrome, or when weather conditions at the aerodrome of intended landing are such that a diversion to an alternate is considered likely.
- m) When an ATC unit receives information that an RCF aircraft, has re-established communication or has landed, that unit shall inform the ATS unit in whose area the aircraft was operating at the time the failure occurred, and other ATS units concerned along the route of flight, giving necessary information for the continuation of control if the aircraft is continuing in flight.
- n) If the aircraft has not reported within 30 min after:
 - 1) The ETA furnished by the pilot;
 - 2) The ETA calculated by the ACC; or
 - 3) The last acknowledged EAT, whichever is latest, pertinent information concerning the aircraft shall be forwarded to aircraft operators, or their designated representatives, and pilots-in-command of any aircraft concerned and normal control resumed if they so desire.
- o) It is the responsibility of the aircraft operators, or their designated representatives, and pilots-in-command of aircraft to determine whether they will resume normal operations or take other action.

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18. STRAYED OR UNIDENTIFIED AIRCRAFT

- **Strayed aircraft.** *An aircraft which has deviated significantly from its intended track or which reports that it is lost.*
- **Unidentified aircraft.** *An aircraft which has been observed or reported to be operating in a given area but whose identity has not been established.*

NOTE. *An aircraft may be considered, at the same time, as a "strayed aircraft" by one unit and as an "unidentified aircraft" by another unit.*

- a) An ATC unit becoming aware of a strayed aircraft, shall take all necessary steps as outlined in b) and c) to assist the aircraft and to safeguard its flight.

NOTE. *Navigational assistance is important if the ATC unit becomes aware of an aircraft straying, or about to stray, into an area where there is a risk of interception or other hazard to its safety.*

- b) If the aircraft's position is not known, the air traffic services unit shall:

- 1) Attempt to establish two-way communication with the aircraft, unless it exists;
- 2) Use all available means to determine its position;
- 3) Inform other ATS units into whose area the aircraft may have strayed or may stray, taking into account all the factors which may have affected the navigation of the aircraft in the circumstances;
- 4) Inform the military unit and provide them with pertinent flight plan and other data concerning the strayed aircraft;
- 5) Request from the units in 3) and 4) and other aircraft in flight every assistance in establishing communication with the aircraft and determining its position.

- c) When the aircraft's position is established, the ATC unit shall:

- 1) Advise the aircraft of its position and corrective action to be taken; and
- 2) Provide other ATS/military units with relevant information concerning the strayed aircraft and any advice given to that aircraft.

- d) An ATS unit shall endeavour to establish the identity of an unidentified aircraft in its area, whenever this is necessary for the provision of ATS or required by the military authorities. It shall take such of the following steps as are appropriate in the circumstances:

- 1) Attempt to establish two-way communication with the aircraft;
- 2) Inquire other ATS units within the FIR / adjacent FIRs about the flight and request their assistance to establish two-way communication with the aircraft;
- 3) Attempt to obtain information from other aircraft in the area.

- e) The ATS unit shall, as necessary, inform the appropriate military unit as soon as the identity of the aircraft has been established.

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19. INTERCEPTION OF CIVIL AIRCRAFT

- a) As soon as an ATS unit learns that an aircraft is being intercepted in its area of responsibility, it shall take such of the following steps as are appropriate:
- 1) Attempt to establish two-way communication with the intercepted aircraft on any available frequency, including the emergency 121.5 MHz, unless such communication already exists;
 - 2) Inform the pilot of the intercepted aircraft of the interception;
 - 3) Establish contact with the intercept control unit maintaining two-way communication with the intercepting aircraft and provide it with available information concerning the aircraft;
 - 4) Relay messages between the intercepting aircraft or the intercept control unit and the intercepted aircraft, as necessary;
 - 5) In close coordination with the intercept control unit take all necessary steps to ensure the safety of the safety of the intercepted aircraft; and
 - 6) Inform ATS units serving adjacent FIRs if it appears that the aircraft has strayed from such adjacent FIRs.
- b) As soon as an ATS unit learns that an aircraft is being intercepted outside its area of responsibility, it shall take such of the following steps as are appropriate:
- 1) Inform the ATS unit serving the airspace in which the interception is taking place, providing this unit with available information that will assist in identifying the aircraft and requesting it to take action in accordance with a);
 - 2) Relay messages between the intercepted aircraft and the appropriate ATS unit, the intercept control unit or intercepting aircraft.
- c) Co-ordination between military and ATS authorities/units:
- 1) Air traffic services authorities shall establish and maintain close co-operation with military authorities responsible for activities that may affect flights of civil aircraft.
 - 2) Co-ordination of activities potentially hazardous to civil aircraft shall be effected in accordance with Annex 11.
 - 3) Arrangements shall be made to permit information relevant to the safe and expeditious conduct of flights of civil aircraft to be promptly exchanged between air traffic services units and appropriate military units.
 - 4) Air traffic services units shall, either routinely or on request, in accordance with locally agreed procedures, provide appropriate military units with pertinent flight plan and other data concerning flights of civil aircraft. In order to eliminate or reduce the need for interceptions, air traffic services authorities shall designate any areas or routes where the requirement of Annex 2 concerning flight plans, two-way communications and position reporting apply to all flights to ensure that all pertinent data are available in appropriate air traffic services units specifically for the purpose of facilitating identification of civil aircraft.

20. Ground Radio Failures

- a) In the event of ATC ground radio equipment complete failure controller shall:
- 1) Attempt to establish contact on the emergency 121.5MHz;
 - 2) Inform adjacent control position or ATS units, as applicable, of the failure;
 - 3) Appraise such position /units of the current traffic situation;
 - 4) Request their assistance in establishing radar/non radar separation between and maintaining control of aircraft, which may establish communication with those positions/units; and
 - 5) Instruct adjacent control positions / ATC units to hold or reroute all controlled flights outside area of responsibility that has experienced the failure until such time that the provision of normal services can be resumed.
- b) In order to reduce the impact of complete ground radio equipment failure on the safety of air traffic, the established contingency procedures shall be followed by control position /ATC units in the event of such failures.
- c) To permit a minimum level of services to be provided, following the ground radio failure, delegation of control to an adjacent control position/ATC unit should be effected until normal operations can be resumed.

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21. BLOCKED FREQUENCY

- a) In the event that the control frequency is inadvertently blocked by an aircraft transmitter, the following additional steps should be taken:
- 1) Attempt to identify the aircraft concerned;
 - 2) If the aircraft blocking the frequency is identified, attempts should be made to establish communication with that aircraft:
 - i. On the emergency frequency 121.5 MHz,
 - ii. By SELCAL,
 - iii. Through the aircraft operator's company frequency if applicable,
 - iv. On any VHF frequency designated for air-to-air use by flight crews or any other communication means or,
 - v. If the aircraft is on the ground, by direct contact;
- b) If communication is established with the aircraft concerned, the flight crew shall be instructed to take immediate action to stop inadvertent transmissions on the affected control frequency.

22. UNAUTHORIZED USE OF ATC FREQUENCY

- a) False and deceptive transmissions on ATC frequencies which may impair the safety of aircraft can occasionally occur. In such events the ATC unit should:
- 1) Correct any false/ deceptive instructions/ clearances that have been transmitted;
 - 2) Advise all aircraft on the affected frequency that false/ deceptive instructions/ clearances are being transmitted;
 - 3) Instruct all aircraft on the affected frequency(-ies) to verify instructions and clearances before taking action to comply;
 - 4) If practical, instruct aircraft to change to another frequency; and
 - 5) If possible, advise all aircraft affected when the false/deceptive instructions/ clearances are no longer being transmitted.
- b) Flights crews shall verify with the ATC unit concerned any instruction/ clearance issued to them which they suspect may be false/ deceptive.
- c) When so detected, the appropriate authority shall take all necessary action to have the transmitter located and the transmission terminated.

23. EMERGENCY SEPARATION

- a) If, during an emergency situation, it is not possible to ensure that the applicable horizontal separation can be maintained, emergency separation of half the applicable vertical separation minimum may be used:
 - 1) 500 ft between aircraft in airspace where a vertical separation minimum of 1 000 ft is applied; and
 - 2) 1 000 ft between aircraft in airspace where 2 000 ft vertical separation minimum is applied.
- b) The flight crews concerned shall be advised that emergency separation is being applied and informed of the actual minimum used.
- c) Additionally, all flight crews concerned shall be provided with essential traffic information.

24. PROCEDURES IN REGARD TO ACAS EQUIPPED AIRCRAFT

1. Introduction

- a) TCAS II has a great role as a last safety backup to recover situations in which safety was challenged either by a human error (controller or pilot) or by the airspace structure design; different ATC sectors mix of traffic, e.g. IFR/VFR, IPR/military.
- b) Through the analysis of TCAS II events, the safety improvement brought by TCAS II was clearly highlighted.
- c) It does not only generate necessary advisories, also an improvement can result either from the manoeuvre in response to an RA or from the visual acquisition of the interfering aircraft thanks to a TA.
- d) The procedures to be applied for the provision of ATS to aircraft equipped with ACAS shall be identical to those applicable to non-ACAS equipped aircraft.
- e) In particular, the prevention of collisions, the establishment of appropriate separation and the information which might be provided in relation to conflicting traffic and to possible avoiding action shall conform with the normal ATS procedures and shall exclude consideration of aircraft capabilities dependent on ACAS equipment.

2. Control Action

- a) When a pilot reports a manoeuvre induced by an ACAS resolution advisory (RA), the controller shall not attempt to modify the aircraft flight path until the pilot reports returning to the terms of the current ATC instruction or clearance but shall provide traffic information as appropriate.
- b) Do not issue control instruction contrary to the ACAS resolution advisory (RA) procedures that a crew member has advised they are executing.
- c) Provide safety alerts regarding terrain or obstructions and traffic information for the aircraft responding to RA and all other aircraft under your control, as appropriate.
- d) Do not assume, that other aircraft in the proximity of the responding aircraft, are involved in the RA manoeuvre or are aware of the responding aircraft's intended

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- manoeuvre unless they advised so, and continue to provide control instructions, safety alerts and traffic information as appropriate to such aircraft;
- e) Once an aircraft departs from its clearance in compliance with a resolution advisory, the controller ceases to be responsible for providing separation between that aircraft and any other aircraft affected as a direct consequence of the manoeuvre induced by the resolution advisory.
 - t) The controller shall resume responsibility for providing separation for all the affected aircraft when:
 - 1) The controller acknowledges a report from the flight crew that the aircraft has resumed the current clearance; or
 - 2) The controller acknowledges a report from the flight crew that the aircraft is resuming the current clearance and issues an alternative clearance which is acknowledged by the flight crew.
 - g) ACAS can have a significant effect on ATC. Therefore, the performance of ACAS in the ATC environment should be monitored.
 - h) Following an RA event, or other significant ACAS event, pilots and controllers should complete an air traffic incident report.

PHRASEOLOGY.

- 1) **Pilot informing controller during ACAS events:**
 - (ATC unit) (C/S), ACAS CLIMB LEAVING FL ...
- 2) **Pilot returning to previously assigned clearance:**
 - (ATC unit) (C/S,) CLEAR OF CONFLICT, RETURNING TO ASSIGNED LEVEL.

NOTE 1. Operating procedures for use of ACAS are contained in PANS-OPS (Doc 8168), Volume L Part VIII Chapter 3.

25. CHANGE OF RTF CALL SIGN FOR AIRCRAFT

- a) An ATC unit may instruct an aircraft to change its type of RTF call sign, in the interests of safety, when similarity between two or more aircraft RTF call signs are such that confusion is likely to occur.
- b) Any such change to the type of call sign shall be temporary and shall be applicable only within the airspace(s) where the confusion is likely to occur.
- c) To avoid confusion, the ATC unit should, if appropriate, identify the aircraft which will be instructed to change its call sign by referring to its position and/or level.
- d) When an ATC unit changes the type of call sign of an aircraft, that unit shall ensure that the aircraft reverts to the call sign indicated by the flight plan when the aircraft is transferred to another ATC unit, except when the call sign change has been coordinated between the two ATC units concerned.
- e) The appropriate ATC unit shall advise the aircraft concerned when it is to revert to the call sign indicated by the flight plan.

PHRASEOLOGY.

- CHANGE YOUR CALLSIGN TO [new call sign] UFA/UNTIL (fix/time).
- REVERT TO FLIGHTPLAN CALL SIGN AT (position/ time).

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26. BIRD HAZARDS

- a) The air traffic manager of the aerodrome control tower shall establish procedures to:
- 1) Ensure that any reported bird strikes or trend toward an increase in bird activity on or around the airport are reported to airport management;
 - 2) Ensure that coordination will be accomplished with airport management for the possible issuance of NOTAMs when flocks of birds roost (settle) on the runways.

NOTE. *It is the responsibility of airport management to issue any such NOTAMs.*

- 3) Participate in local bird hazard programs when established by airport management.
- 4) ATC shall ensure that advisory information on pilot-reported, tower-observed, or radar-observed and pilot-verified bird activity is issued;
- 5) advisory information include:
 - (i) Position, species (kind) or size of birds, if known;
 - (ii) Course of flight, and altitude.
- 6) Do this for at least 15 minutes after receipt of such information from pilots or from adjacent facilities unless visual observation or subsequent reports reveal the activity is no longer a factor.
- 7) Relay bird activity information to adjacent facilities whenever it appears it will become a factor in their areas.

27. SERVICES TO RESCUE AIRCRAFT

- a) Provide standard IFR separation between the SAR and the aircraft in distress;
- b) IFR separation may be discontinued when visual or radar contact has been established by the search and rescue aircraft and the pilots of both aircraft concur,
- c) Clear the SAR aircraft to a fixed clearance limit rather than to the aircraft in distress, which is a moving fix.
- d) Issue route clearances that are consistent with that of the aircraft in distress.
- e) Advise the rescue aircraft, as soon as practicable, of any factors that could adversely affect its mission; e.g., unfavorable weather conditions, anticipated problems, the possibility of not being able to approve an IFR descent through en route traffic, etc.
- f) Advise the appropriate rescue agency of all pertinent information as it develops.
- g) Forward immediately any information about the action being taken by the RCC, other organizations, or aircraft to the aircraft concerned.
- h) Advise the aircraft operator of the current status of the SAR operation as soon as practicable.
- i) Since prompt, correct, and complete information is the key to successful rescue operations, ensure that this information is promptly and smoothly supplied to those organizations actively engaged in rescue operations.

28- Short-term conflict alert (STCA) procedures

Introduction

1. The generation of short-term conflict alerts is a function based on surveillance data, integrated into an ATC system. The objective of the STCA function is to assist the controller in preventing collision between aircraft by generating, in a timely manner, an alert of a potential or actual infringement of separation minima.
2. In the STCA function the current and predicted three-dimensional positions of aircraft with pressure-altitude reporting capability are monitored for proximity. If the distance between the three-dimensional positions of two aircraft is predicted to be reduced to less than the defined applicable separation minima within a specified time period, an acoustic and/or visual alert will be generated to the controller within whose jurisdiction area the aircraft is operating.

Control action

1. Local instructions concerning use of the STCA function shall specify, inter alia:
 - (a) The types of flight which are eligible for generation of alerts;
 - (b) The sectors or areas of airspace within which the STCA function is implemented;
 - (c) The method of displaying the STCA to the controller;
 - (d) In general terms, the parameters for generation of alerts as well as alert warning time;
 - (e) The volumes of airspace within which STCA can be selectively inhibited and the conditions under which this will be permitted;
 - (f) Conditions under which specific alerts may be inhibited for individual flights;
 - (g) Procedures applicable in respect of volume of airspace or flights for which STCA or specific alerts have been inhibited.
2. In the event an STCA is generated in respect of controlled flights, the controller shall without delay assess the situation and, if necessary, take action to ensure that the applicable separation minimum will not be infringed or will be restored.
3. Following the generation of an STCA, controllers should be required to complete an air traffic incident report only in the event that a separation minimum was infringed.
4. The appropriate ATS authority should retain electronic records of all alerts generated. The data and circumstances pertaining to each alert should be analyzed to determine whether an alert was justified or not. Non-justified alerts, e.g. when visual separation was applied, should be ignored. A statistical analysis should be made of justified alerts in order to identify possible shortcomings in airspace design and ATC procedures as well as to monitor overall safety levels.