



# EMERGENCY MANAGEMENT FOR APPROACH CONTROLLER

## 1. Introduction

**ASSIST** is a simple set of acronyms which may make it easier for controllers to remember the immediate actions, or sequence of actions, to be followed on initial notification in the event of an unusual/emergency situation:

- **A**cknowledge the call. Make sure you understand the nature of the emergency.
- **S**eparate the aircraft from other traffic. Give it room to manoeuvre. Do not forget to maintain separation all the time.
- **S**ilence on your control frequency if necessary. Do not disturb urgent cockpit actions by unnecessary radio transmissions.
- **I**nterrogate those who need to know and those who can help; inform others as appropriate
- **S**upport the pilots in any way possible - Start to think of alternative routings, etc.
- **T**ime - Give the pilots time to collect their thoughts, do not harass them for information. Time produces good decisions

Many organizations successfully adopted the **ASSIST** principle pioneered by the Deutsche Flugsicherung GmbH (DFS) entrusted with controlling the air traffic in Germany

Pay attention during emergencies, the controller shall maintain necessary communication with the flight crew if possible and of course, in function of the situation.

The air traffic controller shall avoid frequency change if he can continue to manage the traffic even outside of his responsibility area. Radar contact shall be maintained during the emergency activation period.

Emergency management for approach controller	Version 1.1	31 January 2016	Page 1
© IVAO HQ training department	Training Documentation Manager Erwan L'hotellier		

## 2. Emergency declared on runway

### 2.1. Brake problem or poor braking

Situation:

- Poor braking can be due to contamination of the runway or due to technical problems
- Pilots can request the longest runway.

The controller shall anticipate the following consequences:

- High level of stress and increased workload - caused by directional control and deceleration problems resulting from brake failure during landing, or during high speed rejected take off (RTO)
- Flight crew might be not aware of fire, tyre burst or deflation that could result from heavy braking upon landing, RTO
- Aircraft can overshoot runway threshold at far end
- Aircraft tyres can burn (fire) or deflate
- Aircraft can lose directional control
- Aircraft swerving off of the runway
- Collision with nearby traffic or object close to the runway
- Runway(s) can be blocked after landing
- Taxiway(s) can be blocked after landing
- ILS unserviceable (not applicable for IVAO)

The actions for the controller shall be:

- Follow ASSIST procedure
- Free the landing runway and all the holding points if possible.
- When the aircraft is on final, do not allow poor positioning for the approach, carefully monitor alignment, height, speed and distance to touchdown
- If a brake problem was discovered prior to landing, ATC shall inform the pilot about:
  - the longest runway available
  - the widest runway available
  - possibility to execute holding procedures to burn fuel in order to lower aircraft landing weight;
  - possibility to divert to alternate aerodrome if any condition such as poor braking action, runway contamination or adverse weather is present at the destination aerodrome, or if any other conditions exist that could result in higher ground speed on touchdown or are unfavourable for taxiing;

<b>A</b>	Acknowledge the emergency; inform the flight crew if fire/smoke is observed (not applicable for IVAO)
<b>S</b>	Separate the aircraft and if necessary prioritize it for landing, keep the active runway clear of departures & arrivals
<b>S</b>	Silence the non-urgent calls (as required); use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the airport emergency fire rescue services and inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details
<b>T</b>	Provide time for the flight crew to assess the situation; do not press them with non-urgent matters.

Emergency management for approach controller	Version 1.1	31 January 2016	Page 2
© IVAO HQ training department	Training Documentation Manager Erwan L'hotellier		

## 2.2. Bird strike

Birds, which are flying around airfield, are dangerous for aircraft and can be the cause of many situations:

- Bird impact can break the windshield or canopy, creating loss of visibility from the flight deck or windshield penetration
- Birds may get into a jet engine and cause single or multi engine failure
- Aircraft hydraulics may get damaged and may bring about loss of control

According to real studies on bird strike incidents, in 40% the impact was on the aircraft engines. Another large portion of impacts are spread out over the aircraft nose, radome and flight deck windscreen.

The controller shall anticipate the following consequences during take-off:

- Flight crew can decide to abort take-off
- Flight crew can decide an immediate return to the aerodrome or next suitable aerodrome
- Flight crew can have restricted visibility if canopy is damaged.
- Landing gear can be damaged

The actions for the controller shall be:

- Follow the ASSIST procedure
- Ask the pilot if he is able to control the aircraft
- Allow long final if requested.
- Free the runway if it is required by the emergency
- Inform about alternate aerodrome details as soon as possible including runway characteristics and navigation information.

<b>A</b>	Acknowledge the bird strike, ask for the crew's intentions when the situation permits, minimize frequency changes, and establish whether the crew is able to control the aircraft
<b>S</b>	Separate the aircraft from other traffic, prioritize it for landing and keep the active runway clear of departures & arrivals
<b>S</b>	Silence the non-urgent calls (as required) and use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the airport emergency services and inform the adjacent ATC units
<b>S</b>	Support the flight experiencing the consequences of the bird strike with any information requested and deemed necessary (e.g. type of approach, runway length and aerodrome details, etc.)
<b>T</b>	Provide time for the crew to assess the situation; do not press them with non-urgent matters.

## 2.3. Rejected take-off

Situation:

- Aircraft can abort take-off during rolling before  $V_1$

In the event of an engine malfunction, flight crew should be able to safely reject the take off if the decision to do so is made at a speed not greater than the correctly calculated decision speed ( $V_1$ ). After  $V_1$ , a reject should only be considered if there is a strong reason to believe that the aircraft will not fly.

The controller shall anticipate the following consequences:

- Aircraft can overshoot the runway threshold at the far end
- Aircraft tires can burst
- Runway can be blocked after landing
- Go-around for approaching aircraft
- Passenger evacuation (not applicable for IVAO)
- Directional control is not maintained during the roll

The actions for the controller shall be:

- Delay the taking-off and landing on that runway

## 3. Emergency declared near the runway

### 3.1. Engine or APU on fire

Situation:

- Fire is the first enemy on board. Engines when facing failure can create fire.
- A bird strike can create fire inside the engines
- When fire is detected, aircraft shall land as soon as possible on a suitable aerodrome.

Fire in the air is one of the most hazardous situations that a flight crew can be faced with. A fire can lead to the catastrophic loss of that aircraft within a very short period of time.

The controller shall anticipate the following consequences:

- Flight crew are facing maximum stress in the cockpit and heavy workload.
- Flight crew can use fire extinguishers
- Aircraft engine(s) can shut down as a first consequence
- Hot brakes if a rejected take-off has been performed
- Runway can be blocked after landing or rejected take-off
- Aircraft could lose altitude in order to re-gain performance
- Aircraft speed should decrease
- Flight crew can ask to land on the next suitable aerodrome or return to the departure aerodrome after take-off

The actions for the controller shall be:

- Follow the ASSIST procedure

Emergency management for approach controller	Version 1.1	31 January 2016	Page 4
© IVAO HQ training department	Training Documentation Manager Erwan L'hotellier		

- Ask if there are dangerous goods on board, the number of persons on board
- Coordinate with the landing aerodrome controller if connected
- Clear the runway when the aircraft is 20NM final
- In case of an emergency landing, record last known position and time.

The controller shall inform all pilots about:

- The closest and suitable aerodrome considering aircraft situation
- Selected landing aerodrome details as soon as possible including runway in use, length, elevation
- Weather information of landing aerodrome including wind, visibility, ceiling and QNH

In addition, the action for the controller shall be for private pilots:

- Check the fuel selector
- Check mixture
- Check fuel pump
- Check cabin heating and venting

<b>A</b>	Acknowledge and ensure that the fire emergency is well-understood
<b>S</b>	Establish and maintain separation from other traffic and terrain
<b>S</b>	Impose silence on your control frequency, if necessary; and do not delay or disturb urgent cockpit action by unnecessary transmissions
<b>I</b>	Inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Provide maximum support to the flight crew
<b>T</b>	Allow the flight crew sufficient time to manage the emergency

## 3.2. Landing gear problem

There are several possible situations:

- Gear cannot be extended or gear is partially extended
- Gear is extended but gear indication on cockpit panel is wrong
- No retraction of the gear is possible after take-off
- Gear collapse with subsequent airframe damage.

Commercial airliners use complex retractable landing gears. The inboard system provides light indication regarding the status of the landing gear: a green light when the landing gear is down and locked and a red light when there is a discrepancy between the gear lever and landing gear positions. The unsafe indication might be the first sign of a problem related to the proper preparation of the landing gear for landing.

The controller shall anticipate the following consequences:

- Pilot in command can decide to go-around if the gear indication on cockpit is wrong
- Pilot can request a low pass for visual gear inspection by the tower
- Pilot can perform manual gear extension
- Pilot can decide asking alternate airfield, land on departure airfield or continue to destination when no gear retraction is possible

The actions for the controller shall be:

- Prepare for a low pass
- Clear the runway
- Ask the flight crew if they want to continue to fly with permanently extended gear or not

<b>A</b>	Acknowledge the gear problem, ask for the crew's intentions when the situation permits, and establish whether the crew is able to extend the gear into locked position
<b>S</b>	Separate the aircraft from other traffic, prioritize it for landing and keep the active runway clear of departures & arrivals
<b>S</b>	Silence the non-urgent calls (as required) and use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the airport emergency services and inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight experiencing gear problems with any information requested and deemed necessary
<b>T</b>	Provide time for the crew to assess the situation. Do not press them with non-urgent matters.

## 4. Emergency declared in departure or approach area

### 4.1. Smoke or fire in the cockpit

Situation:

- Smoke or fire in the cockpit is one of the most important dangers for the flight crew.

Fire in the air is one of the most hazardous situations that a flight crew can be faced with. A fire can lead to the catastrophic loss of that aircraft within a very short period of time.

The controller shall anticipate the following consequences:

- Flight crew are facing high stress in the cockpit
- Flight crew will ask to land on the next suitable aerodrome or return to the departure aerodrome after take-off (opposite landing possible)
- Find shortest high-speed vector to land to the nearest suitable aerodrome
- Poor or loss of radio transmission (due to high stress, oxygen mask or failure)
- Expect passenger evacuation after landing
- Expect runway blocked after landing

The actions for the controller shall be:

- Follow the ASSIST procedure
- Ask if there are dangerous goods on board, the number of persons on board
- Coordinate with the landing aerodrome controller if connected
- Avoid go-around due to bad decisions and anticipation
- Clear the runway when the aircraft is 20NM final

The controller shall inform the pilot about:

- The track to touchdown of the next suitable aerodrome
- Availability of automatic approach when following low visibility procedure
- Aerodrome details as soon as possible including the runway in use, the length, the elevation and all navigation aids available around the airfield.
- Weather information of the landing aerodrome including wind, visibility, ceiling and QNH

<b>A</b>	Acknowledge the emergency, inform the crew if fire/smoke is observed from the undercarriage area
<b>S</b>	Separate the aircraft and if necessary prioritize it for landing, allow long final if requested, keep the active runway clear of departures, arrivals
<b>S</b>	Silence the non-urgent calls (as required) and use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the airport emergency services and inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details, etc.
<b>T</b>	Provide time for the crew to assess the situation. Do not press them with non-urgent matters.

Emergency management for approach controller	Version 1.1	31 January 2016	Page 7
© IVAO HQ training department	Training Documentation Manager Erwan L'hotellier		

## 4.2. Electrical problems

Situation:

- Electrical problems are some of the random failures in an aircraft. The consequence can be minor or major depending on the nature of failure and the number of instruments and/or systems out of order.
- A complete black out can occur through loss of all generators before switching the battery
- Partial loss of some instrument or systems (loss of communication, loss of navigation instruments or systems (FMC), loss of flight instruments or a combination of many factors).

The controller shall anticipate the following consequences:

- Flight crew are facing high stress in the cockpit
- Navigation instrument failures are common (FMC, VOR, NDB can be out of order)
- Flight instruments and compass can be impacted.
- With the loss of all generators, aircraft have only the battery power to supply the aircraft. Autonomy is only about 20min flying time (without using RAT).
- Transponder can be deactivated to save energy
- Communication failure can occur or flight crew can limit read back time to save energy
- Due to navigation failure, aircraft should maintain VMC. Expect level change request or new heading and relative vectoring.
- Expect manual gear extension or RAT (remote air turbine) extension.
- Approach and landing without landing lights

The actions for the controller shall be:

- Follow the ASSIST procedure
- Inform landing aerodrome possibilities
- Help flight crew using vectors to the landing aerodrome

The controller shall inform the pilot about:

- The track to touchdown of the next suitable aerodrome and aircraft position, course and/or altitude information
- Aerodrome details as soon as possible including the runway in use, the length, the elevation, landmarks around
- Weather information of the landing aerodrome including wind, visibility, ceiling and QNH
- Avoiding IMC

<b>A</b>	Acknowledge the emergency and provide position information and suitable vectors if navigational problems are reported.
<b>S</b>	Separate the aircraft as necessary, expect the aircraft to request level change in order to maintain VMC.
<b>S</b>	Silence the non-urgent calls (as required) and use a separate frequency if possible.
<b>I</b>	Inform the airport emergency services and inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details, etc.
<b>T</b>	Provide time for the crew to assess the situation. Do not press them with non-urgent matters.

Emergency management for approach controller	Version 1.1	31 January 2016	Page 8
© IVAO HQ training department	Training Documentation Manager Erwan L'hotellier		

### 4.3. Hydraulic problems

Situation:

- Hydraulic problems are some of the random failures in an aircraft. The consequence can be minor or major depending on the failure and the number of instrument and/or system out of order
- The situation could be dramatic with complete or partial failure of flight controls
- Gear can be locked in extension or cannot be unlocked from docking position
- Braking efficiency can be impacted
- Flaps can be blocked in position (extended or not, in function of the flight)
- Nose wheel steering may not work

The controller shall anticipate the following consequences:

- Flight crew could have gear problems (see gear problem chapter) with manual gear extension procedure or no retraction possible.
- Aircraft could have limited manoeuvrability (partial control over different control surfaces)
- Aircraft could have limited flaps settings or only one setting possible
- Aircraft could have limited bank angle due to bad manoeuvrability
- Flight crew can ask holding patterns for necessary check, extended final, higher approach speed
- Poor braking problems (see braking problem chapter)
- Runway could be blocked after landing
- Lack of auto pilot and manual flying

The actions for the controller shall be:

- Follow the ASSIST procedure
- Provide increased separation between the affected aircraft and all others. Expect non-routine manoeuvres
- Inform landing aerodrome possibilities
- Help flight crew using vectors and assign level blocks
- Ask about dangerous goods on board and the number of persons on board (POB)
- Avoid go-around due to bad decisions and anticipation
- Clear the runway when the aircraft is 20NM final

The controller shall inform the pilot about:

- Next suitable aerodrome
- Aerodrome details as soon as possible including the runway in use, the length, the elevation, and all navigation aids available around the airfield.
- Weather information of landing aerodrome including wind, visibility, ceiling and QNH

<b>A</b>	Acknowledge the hydraulics problem. Ask for the crew's intentions when the situation permits, and establish whether the crew is able to control the aircraft
<b>S</b>	Separate the aircraft and if necessary prioritize it for landing, allow long final if requested, keep the active runway clear of departures, arrivals and vehicles;
<b>S</b>	Silence the non-urgent calls (as required) and use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the airport emergency services and inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details, etc.
<b>T</b>	Provide time for the crew to assess the situation. Do not press them with non-urgent matters.

Emergency management for approach controller	Version 1.1	31 January 2016	Page 9
© IVAO HQ training department	Training Documentation Manager Erwan L'hotellier		

## 4.4. Engine failure for multi engine aircraft

Situation:

- Engine failure can occur during take-off or when flying
- A bird strike can provoke engine failure
- Engine failure can imply an engine shutdown
- Engine failure cannot be a complete engine shutdown
- Engine on fire.

The controller shall anticipate the following consequences:

- Engine could be on fire (see engine fire chapter)
- Flight crew are facing high stress in the cockpit and heavy workload.
- Aircraft engine(s) can shut down as a first consequence
- Aircraft could lose altitude in order to re-gain performance
- Aircraft speed could decrease
- Aircraft can deviate from cleared route, departure or arrival
- Flight crew can ask to land on the next suitable aerodrome or return to the departure aerodrome after take-off
- Flight crew could ask descent due to maintain aircraft stability and flight conditions, or avoid pressurisation problems
- Long and high speed approach and landing due to performance limitations attributed to the engine failure which is the result of a non-stabilised approach
- The turn rate is expected to be slow if it is executed on the inoperative engine side

The actions for the controller shall be:

- Follow the ASSIST procedure
- Coordinate with the landing aerodrome controller if connected
- Avoid go-around due to bad decisions and anticipation
- Clear the runway when the aircraft is 20NM final
- Offer flight crew extended final
- In case of an emergency landing, record last known position and time.

The controller shall inform all pilots about:

- The closest and suitable aerodrome considering aircraft situation and all navigation aids available around the airfield.
- Selected landing aerodrome details as soon as possible including runway in use, length, elevation

<b>A</b>	Acknowledge the problem. Ask for the flight crew's intentions when the situation permits
<b>S</b>	Separate the aircraft from other traffic and allow room to manoeuvre
<b>S</b>	Silence the non-urgent calls (as required) and use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the airport emergency services and inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details, etc.
<b>T</b>	Provide time for the crew to assess the situation. Do not press them with non-urgent matters.

Emergency management for approach controller	Version 1.1	31 January 2016	Page 10
© IVAO HQ training department	Training Documentation Manager Erwan L'hotellier		

## 4.5. Low oil pressure

Situation:

- Low oil pressure can be a consequence of engine failure (single or multi).
- Low oil pressure can be a consequence of outside landing

The controller shall anticipate the following consequences:

- Flight crew can ask to land on the next suitable aerodrome or return to the departure aerodrome after take-off (opposite landing possible)
- Flight crew can precautionary shutdown one engine

The action for the controller shall be:

- Follow the ASSIST procedure
- Coordinate with the landing aerodrome controller if connected
- Avoid go-around due to bad decisions and anticipation
- Clear the runway when the aircraft is 20NM final
- In case of an emergency landing, record last known position and time.

<b>A</b>	Acknowledge the problem. Ask for the flight crew's intentions when the situation permits
<b>S</b>	Separate the aircraft from other traffic and allow room to manoeuvre
<b>S</b>	Silence the non-urgent calls (as required) and use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the airport emergency services and inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details, etc.
<b>T</b>	Provide time for the crew to assess the situation. Do not press them with non-urgent matters.

## 4.6. Fuels problems

Fuel problems can be caused by the following situations:

- One engine failure
- Multi engine failure
- Outside landing
- Permanent gear extension
- Fuel circuit failure (fuel leakage)
- Too long holding (more than 30min)

The controller shall anticipate the following consequences:

- Flight crew can declare MAYDAY Low Fuel when facing a low fuel emergency with imminent danger to the aircraft
- Flight crew can declare PAN minimum FUEL which means priority handling but with no immediate danger.
- Other improper use of other phraseology forcing the controller to verify the actual fuel status with the flight crew (emergency or not, minimum fuel or not, minimum diversion fuel...)

The actions for the controller shall be:

- Follow the ASSIST procedure
- Keep aircraft at high altitude as much as possible (save fuel)
- Ask if there are dangerous goods on board, the number of persons on board
- Avoid go-around due to bad decisions and anticipation
- Clear the runway when the aircraft is 20NM final
- In case of an emergency landing, record last known position and time.

The controller shall inform all pilots about:

- The closest and suitable aerodrome considering aircraft situation and all navigation aids available around the airfield.
- Selected landing aerodrome details as soon as possible including runway in use, length, elevation
- Weather information of landing aerodrome including wind, visibility, ceiling and QNH

<b>A</b>	Acknowledge the emergency. Ask autonomy/ flight time remaining
<b>S</b>	Separate the aircraft if necessary and give priority for landing, allow long final if requested, keep the active runway clear of departures & arrivals
<b>S</b>	Silence the non-urgent calls (as required) and use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the airport emergency services and inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details, etc.
<b>T</b>	Provide time for the crew to assess the situation. Do not press them with non-urgent matters.

Emergency management for approach controller	Version 1.1	31 January 2016	Page 12
© IVAO HQ training department	Training Documentation Manager Erwan L'hotellier		

## 4.7. Fuel Dumping

Situation:

- Fuel dumping is necessary when the current mass of the aircraft is greater than the maximum landing weight

The controller shall anticipate the following consequences:

- Dumping without approval in case of engine failure after take-off to reduce weight
- Possibility of no radio transmission during dumping procedure
- Assignment of a fuel dumping area with avoiding densely populated areas

The actions for the controller shall be:

- Follow the ASSIST procedure
- If fuel dumping takes place at or below FL150, make a general broadcast
- Separation shall be made horizontal and vertical during the entire dumping operation

The controller should inform all pilots about:

- Dumping area and altitude when necessary

<b>A</b>	Acknowledge the dumping request
<b>S</b>	Separate the aircraft and if necessary prioritize it for landing, allow long final if requested, keep the active runway clear of departures & arrivals
<b>S</b>	Silence the non-urgent calls (as required) and use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the airport emergency services and inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details, etc.
<b>T</b>	Provide time for the crew to assess the situation. Do not press them with non-urgent matters.

## 4.8. Icing

Situation:

- When crossing a cloud at specific conditions (temperature), icing may occur on the aircraft (wings, propeller).

Controllers should stay alert for any extraordinary climb/descent. They should be ready to provide climb/descent to affected traffic and allow space for horizontal manoeuvres. The aircraft, experiencing severe icing would certainly need increased separation as its flying characteristics will be degraded.

The controller shall anticipate the following consequences:

- Aircraft can change flight level and heading due to icing
- Aircraft could have some limited performance in terms of rate of climb and descent.
- Aircraft speed can be modified.
- Aircraft stalling speed shall be increased (Adverse Aerodynamic Effects)
- Higher approach/landing speed due to increase of stalling speed
- Blockage of pitot tubes and static vents

The actions for the controller shall be:

- Follow the ASSIST procedure
- Avoid holding
- Enable continuous climb after departure

The controller should inform all pilots about:

- Check anti-icing and de-icing system
- Check pitot, carburettor, prop, windshield heating
- Higher approach and landing speed due to increase of stalling speed

<b>A</b>	Acknowledge the icing problem and ask flight crew intentions
<b>S</b>	Separate the aircraft and if necessary prioritize it for landing, allow long final if requested, keep the active runway clear of departures and arrivals
<b>S</b>	Silence the non-urgent calls (as required) and use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details, etc.
<b>T</b>	Provide time for the crew to assess the situation. Do n't press with non-urgent matters.

## 5. Emergency declared in area control centre (other cases)

Many of the previous emergency situations can occur inside the airspace of an area control centre. In addition, there are a few more situations which can occur mainly on area control centre airspace.

### 5.1. Lightning Strike

Situation:

- Inside or under some clouds, there are lightning strikes

The controller shall anticipate the following consequences:

- Communication may be lost
- Electrical problems may occur (see electrical problems chapters)
- Aircraft may ask for precautionary manoeuvres
- Navigation performance may be disturbed.

The actions for the controller shall be:

- Follow the ASSIST procedure
- Ask if flight crew is able to control the aircraft

The controller shall inform all pilots about:

- The closest and suitable aerodrome considering aircraft situation and all navigation aids available around the airfield if the flight crew request immediate landing as a consequence of a lightning strike.
- Selected landing aerodrome details as soon as possible including runway in use, length, elevation

<b>A</b>	Acknowledge the emergency;
<b>S</b>	Separate the aircraft and if necessary prioritize it for landing, allow long final if requested, keep the active runway clear of departures, arrivals and vehicles;
<b>S</b>	Silence the non-urgent calls (as required) and use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the airport emergency services and inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details, etc.
<b>T</b>	Provide time for the crew to assess the situation. Do not press them with non-urgent matters.

## 5.2. Emergency descent and pressurisation problems

Situation:

- Pressurisation problems can occur at any time
- In-flight fire is one reason to make an emergency descent to an alternate airfield
- When a major problem occurs in the aircraft, an emergency descent shall be performed by the flight crew

An emergency descent may be initiated without prior warning. Depending on the circumstances, the flight crew may start a high vertical speed descent without warning if the safety of the aircraft is at risk.

Decompression is defined as the inability of the aircraft's pressurisation system to maintain its designed pressure schedule. Decompression can be caused by a malfunction of the system itself or by structural damage to the aircraft.

The controller shall anticipate the following consequences:

- Flight crew shall decide to start an emergency descent without warning
- Flight crew can initiate a turn away from the assigned route or track before commencing the emergency descent
- Increased workload in the cockpit. It becomes intense as the crew try to resolve the problem with the aircraft
- Poor radio transmission quality due to oxygen mask
- Emergency squawk set or not
- Pressurisation problems may impose an emergency descent down to FL100.
- After an emergency descent, request flight crew intentions (diversion, aircraft damage, injuries...)
- Secure the emergency descent with other aircraft, using increased separation

The actions for the controller shall be:

- Follow the ASSIST procedure
- Give traffic information to aircraft

The controller shall inform all pilots about:

- Descending aircraft heading if necessary

<b>A</b>	Acknowledge the descent (the declared malfunction and emergency if applicable), ask for the crew's intentions when the situation permits
<b>S</b>	Separate other aircraft from the emergency aircraft and issue essential traffic information about the emergency descent
<b>S</b>	Silence the non-urgent calls (as required) and use separate frequency where possible (not applicable for IVAO)
<b>I</b>	Inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details. If necessary inform the crew of the minimum safe altitude.
<b>T</b>	Provide time for the crew to assess the situation. Do not press them with non-urgent matters.

Emergency management for approach controller	Version 1.1	31 January 2016	Page 16
© IVAO HQ training department	Training Documentation Manager Erwan L'hotellier		

## 6. Medical emergencies

Based on the information provided by the flight attendants, an on-board medical professional, the captain in command will make the decision to either continue the flight to the planned destination or to divert to a closer or otherwise more suitable aerodrome. The pilot should desire ATS priority, declaration of an emergency.

Situation:

- Passenger syncope
- Passenger heart attack
- Passenger nausea/vomiting
- Pregnant lady gives birth

The controller shall anticipate the following consequences:

- Pilot shall ask priority to land at the nearest suitable aerodrome

The actions for the controller shall be:

- Follow the ASSIST procedure
- Provide the shortest route to the aircraft
- Give priority to land if required

The controller shall inform all pilots about:

- The closest and suitable aerodrome considering aircraft situation and all navigation aids available around the airfield if the flight crew request immediate landing.
- Selected landing aerodrome details as soon as possible including runway in use, length, elevation

<b>A</b>	Acknowledge the situation and clarify whether an emergency is being declared
<b>S</b>	Separate other aircraft from the emergency aircraft if needed and issue essential traffic information
<b>S</b>	Silence the non-urgent calls (if required) and use a separate frequency if possible (not applicable for IVAO)
<b>I</b>	Inform the adjacent ATC units if the aircraft is approaching or is near to their areas of responsibility;
<b>S</b>	Support the flight by providing any information requested and necessary such as type of approach, runway length and aerodrome details. If necessary inform the crew of the minimum safe altitude.
<b>T</b>	Provide time for the crew to assess the situation. Do not press them with non-urgent matters.

Emergency management for approach controller	Version 1.1	31 January 2016	Page 17
© IVAO HQ training department	Training Documentation Manager Erwan L'hotellier		