
Global Certificate in Aviation English

Emergency Situations and Procedures

Emergency Situations and Procedures

Emergency situations and procedures refer to the protocols and actions that need to be followed in the event of an unexpected and potentially dangerous situation occurring during aviation operations. These situations can range from mechanical failures and medical emergencies to extreme weather conditions and security threats. Proper training and preparation are essential for all aviation personnel to effectively respond to emergencies and ensure the safety of passengers and crew.

Abandon

Definition: To leave an aircraft or a location in an emergency situation.

Related Terms: Evacuation, Escape Route

Explanation: In the event of an emergency, passengers and crew may be required to abandon the aircraft quickly and safely. This may involve using emergency exits, slides, or other evacuation procedures to exit the aircraft and move to a safe location.

Example: In the event of a fire on board, passengers may be instructed to abandon the aircraft using the nearest exit.

Challenge: Maintaining calm and order during an evacuation can be challenging, especially in high-stress situations.

Emergency Landing

Definition: A landing made by an aircraft in response to an emergency situation.

Related Terms: Forced Landing, Precautionary Landing

Explanation: An emergency landing is performed when an aircraft encounters a problem that requires it to land immediately. This could be due to mechanical failure, medical emergency, or other critical issues that threaten the safety of the flight.

Example: If an aircraft experiences an engine failure, the pilot may need to make an emergency landing at the nearest suitable airport.

Challenge: Ensuring that the landing is executed safely and smoothly under challenging circumstances.

Mayday

Definition: An international distress signal used to indicate a life-threatening emergency.

Related Terms: Pan-Pan, Squawk

Explanation: "Mayday" is used by pilots and air traffic controllers to signal that an aircraft or its occupants are in grave and imminent danger and require immediate assistance.

Example: "Mayday, mayday, mayday. This is Flight 123 declaring an emergency due to loss of cabin pressure."

Challenge: Communicating clearly and effectively under pressure to ensure that the severity of the situation is understood.

Evacuation

Definition: The process of removing passengers and crew from an aircraft in an emergency.

Related Terms: Abandon, Emergency Exit

Explanation: Evacuation procedures are designed to ensure the safe and rapid exit of all occupants in the event of an emergency, such as a fire or crash landing.

Example: Flight attendants are trained to lead passengers in an orderly evacuation, directing them to the nearest exits.

Challenge: Overcoming obstacles such as blocked exits or limited visibility during an evacuation.

Fire Drill

Definition: A practice exercise to test the response to a fire emergency.

Related Terms: Emergency Response, Fire Suppression

Explanation: Fire drills are conducted regularly to familiarize aviation personnel with the location of emergency equipment, evacuation procedures, and communication protocols in the event of a fire.

Example: Flight crew and ground staff may participate in a fire drill to simulate a fire on board an aircraft and practice extinguishing it.

Challenge: Ensuring that all participants understand their roles and responsibilities during a fire emergency.

Ground Emergency

Definition: An emergency situation that occurs on the ground, such as a security threat or medical

emergency.

Related Terms: Emergency Services, Ground Support

Explanation: Ground emergencies can occur before, during, or after a flight and may require immediate action to ensure the safety and security of passengers, crew, and airport personnel.

Example: A passenger suffering a medical emergency upon arrival may require ground emergency services to provide medical assistance.

Challenge: Coordinating with ground personnel and emergency services to respond effectively to a ground emergency.

Hijacking

Definition: The illegal seizure of an aircraft by individuals seeking to control its destination or make demands.

Related Terms: Skyjacking, Unlawful Interference

Explanation: Hijacking poses a serious threat to aviation security and requires specific protocols and procedures to ensure the safety of passengers and crew.

Example: In the event of a hijacking, pilots may be instructed to follow specific instructions from air traffic control to resolve the situation.

Challenge: Maintaining control of the aircraft and protecting passengers and crew from harm during a hijacking.

Incident

Definition: An event that could have led to an accident but did not result in injury, damage, or loss.

Related Terms: Near Miss, Safety Report

Explanation: Incidents are important to report and investigate to prevent similar situations from escalating into accidents in the future.

Example: A bird strike that causes minor damage to an aircraft but does not result in injuries to passengers would be considered an incident.

Challenge: Identifying and reporting incidents to improve safety and prevent accidents.

Jettison

Definition: To intentionally discard fuel or cargo to reduce weight and improve aircraft performance in an emergency.

Related Terms: Fuel Dump, Weight and Balance

Explanation: Jettisoning is a critical procedure that pilots may need to perform in emergencies to ensure the safe operation and landing of the aircraft.

Example: If an aircraft is experiencing engine failure shortly after takeoff, the pilot may need to jettison fuel to reduce weight before returning to the airport.

Challenge: Calculating the amount of fuel or cargo to jettison to achieve the desired weight reduction.

Keeper of the Flame

Definition: An individual responsible for maintaining a fire extinguisher during an emergency.

Related Terms: Fire Safety, Portable Fire Extinguisher

Explanation: The keeper of the flame plays a crucial role in ensuring that a fire extinguisher is readily available and operational when needed to combat a fire emergency.

Example: Flight attendants may designate a crew member as the keeper of the flame to handle the fire extinguisher in case of a fire on board.

Challenge: Ensuring that the keeper of the flame is trained and prepared to use the fire extinguisher effectively.

Liferaft

Definition: An inflatable raft designed to provide buoyancy and shelter for occupants in the event of a water landing.

Related Terms: Ditching, Water Survival

Explanation: Liferafts are equipped with emergency supplies, such as food, water, and signaling devices, to assist passengers and crew in surviving a water emergency.

Example: In the event of a ditching, passengers may be instructed to board the liferafts and await rescue.

Challenge: Deploying and boarding a liferaft safely in rough seas or adverse weather conditions.

Mayday Relay

Definition: The transmission of a mayday distress signal on behalf of an aircraft in distress.

Related Terms: Distress Call, Emergency Assistance

Explanation: A mayday relay is used by third parties, such as air traffic controllers or nearby aircraft, to relay distress signals for an aircraft experiencing communication or equipment failure.

Example: If an aircraft is unable to transmit a mayday signal, nearby aircraft may relay the distress call on its behalf.

Challenge: Coordinating with other aircraft or ground stations to relay the distress signal accurately and promptly.

Navigation Emergency

Definition: An emergency situation involving a loss of navigational capability or control.

Related Terms: GPS Failure, Instrument Failure

Explanation: Navigation emergencies can occur due to equipment malfunction, weather conditions, or human error, requiring pilots to rely on alternative methods to navigate safely.

Example: If a pilot loses communication with air traffic control and is unable to navigate using instruments, they may need to rely on visual landmarks to determine their position.

Challenge: Maintaining situational awareness and safely navigating the aircraft to a designated location without precise navigation systems.

Overwing Exit

Definition: An emergency exit located on the wing of an aircraft.

Related Terms: Emergency Exit, Evacuation Slide

Explanation: Overwing exits are used during evacuations to provide an additional means of egress for passengers and crew in the event of an emergency.

Example: Flight attendants may assist passengers in opening the overwing exits and deploying evacuation slides during an emergency evacuation.

Challenge: Ensuring that passengers are familiar with the operation of overwing exits and can safely evacuate the aircraft in an emergency.

Pilot Incapacitation

Definition: The inability of a pilot to perform their duties due to illness, injury, or other factors.

Related Terms: Crew Resource Management, Medical Emergency

Explanation: Pilot incapacitation can pose a serious threat to flight safety and may require other crew members to assume control of the aircraft and manage the situation.

Example: If a pilot experiences a sudden medical emergency, the copilot may need to take over the controls and communicate with air traffic control for assistance.

Challenge: Reacting quickly and effectively to pilot incapacitation to ensure the safe operation and landing of the aircraft.

Quick Donning Oxygen Mask

Definition: An oxygen mask designed for rapid deployment in the event of a sudden loss of cabin pressure.

Related Terms: Hypoxia, Passenger Briefing

Explanation: Quick donning oxygen masks are available for passengers and crew to use during emergencies to maintain adequate oxygen levels at high altitudes.

Example: In the event of a rapid decompression, passengers are instructed to don their oxygen masks immediately to prevent hypoxia.

Challenge: Ensuring that passengers understand how to properly don and secure the quick donning oxygen mask in an emergency.

Runway Excursion

Definition: An incident in which an aircraft veers off the runway during takeoff or landing.

Related Terms: Runway Incursion, Skid

Explanation: Runway excursions can occur due to factors such as adverse weather conditions, pilot error, or mechanical failure, posing a risk to aircraft and passengers.

Example: If an aircraft fails to stop within the designated runway area, it may experience a runway excursion and veer off the pavement.

Challenge: Preventing runway excursions through proper aircraft handling, runway assessment, and crew training.

Survival Kit

Definition: A collection of essential items and supplies for surviving in emergency situations.

Related Terms: Emergency Rations, First Aid Kit

Explanation: Survival kits are equipped with tools, food, water, shelter, and other items to assist passengers and crew in surviving a variety of emergency scenarios.

Example: Life rafts and aircraft are typically equipped with survival kits containing items such as flares, signaling mirrors, and emergency blankets.

Challenge: Ensuring that survival kits are properly maintained, accessible, and stocked with essential supplies for emergency use.

Touchdown

Definition: The moment an aircraft makes contact with the runway during landing.

Related Terms: Approach, Landing Gear

Explanation: Touchdown is a critical phase of flight that requires precise control and coordination to ensure a safe and smooth landing.

Example: Pilots aim to achieve a gentle touchdown to minimize stress on the aircraft and provide a comfortable experience for passengers.

Challenge: Judging the correct approach and timing the touchdown to align with the runway and reduce landing forces.

Unlawful Interference

Definition: Any act of interference that jeopardizes the safety and security of civil aviation.

Related Terms: Hijacking, Sabotage

Explanation: Unlawful interference includes acts such as hijacking, sabotage, and terrorism that pose a threat to aviation operations and passenger safety.

Example: Air marshals may be deployed on flights to prevent and respond to incidents of unlawful interference.

Challenge: Detecting and preventing unlawful interference through enhanced security measures and cooperation with law enforcement agencies.

Vacate

Definition: To leave or exit a location, such as an aircraft or building, in an emergency.

Related Terms: Evacuation, Abandon

Explanation: In emergency situations, passengers and crew are instructed to vacate the aircraft quickly and move to a safe location to facilitate rescue and emergency response efforts.

Example: Flight attendants may instruct passengers to vacate the aircraft using designated exits and follow emergency evacuation procedures.

Challenge: Ensuring that all occupants vacate the aircraft promptly and follow evacuation instructions to minimize the risk of injury or delay.

Water Landing

Definition: A landing made on water in the event of an emergency.

Related Terms: Ditching, Water Survival

Explanation: Water landings may be necessary when aircraft experience engine failure, fuel exhaustion, or other critical issues that require them to land on bodies of water.

Example: Pilots are trained to perform controlled water landings, known as ditching, to maximize the chances of survival for passengers and crew.

Challenge: Executing a water landing safely and evacuating passengers onto life rafts in a timely manner.

Mayday

Definition: An international distress signal used to indicate a life-threatening emergency.

Related Terms: Pan-Pan, Squawk

Explanation: "Mayday" is used by pilots and air traffic controllers to signal that an aircraft or its occupants are in grave and imminent danger and require immediate assistance.

Example: "Mayday, mayday, mayday. This is Flight 123 declaring an emergency due to loss of cabin pressure."

Challenge: Communicating clearly and effectively under pressure to ensure that the severity of the situation is understood.

Mayday Relay

Definition: The transmission of a mayday distress signal on behalf of an aircraft in distress.

Related Terms: Distress Call, Emergency Assistance

Explanation: A mayday relay is used by third parties, such as air traffic controllers or nearby aircraft, to relay distress signals for an aircraft experiencing communication or equipment failure.

Example: If an aircraft is unable to transmit a mayday signal, nearby aircraft may relay the distress call on its behalf.

Challenge: Coordinating with other aircraft or ground stations to relay the distress signal accurately and promptly.

Navigation Emergency

Definition: An emergency situation involving a loss of navigational capability or control.

Related Terms: GPS Failure, Instrument Failure

Explanation: Navigation emergencies can occur due to equipment malfunction, weather conditions, or human error, requiring pilots to rely on alternative methods to navigate safely.

Example: If a pilot loses communication with air traffic control and is unable to navigate using instruments, they may need to rely on visual landmarks to determine their position.

Challenge: Maintaining situational awareness and safely navigating the aircraft to a designated location without precise navigation systems.

Overwing Exit

Definition: An emergency exit located on the wing of an aircraft.

Related Terms: Emergency Exit, Evacuation Slide

Explanation: Overwing exits are used during evacuations to provide an additional means of egress for passengers and crew in the event of an emergency.

Example: Flight attendants may assist passengers in opening the overwing exits and deploying evacuation slides during an emergency evacuation.

Challenge: Ensuring that passengers are familiar with the operation of overwing exits and can safely evacuate the aircraft in an emergency.

Pilot Incapacitation

Definition: The inability of a pilot to perform their duties due to illness, injury, or other factors.

Related Terms: Crew Resource Management, Medical Emergency

Explanation: Pilot incapacitation can pose a serious threat to flight safety and may require other crew members to assume control of the aircraft and manage the situation.

Example: If a pilot experiences a sudden medical emergency, the copilot may need to take over the controls and communicate with air traffic control for assistance.

Challenge: Reacting quickly and effectively to pilot incapacitation to ensure the safe operation and landing of the aircraft.

Quick Donning Oxygen Mask

Definition: An oxygen mask designed for rapid deployment in the event of a sudden loss of cabin pressure.

Related Terms: Hypoxia, Passenger Briefing

Explanation: Quick donning oxygen masks are available for passengers and crew to use during emergencies to maintain adequate oxygen levels at high altitudes.

Example: In the event of a rapid decompression, passengers are instructed to don their oxygen masks immediately to prevent hypoxia.

Challenge: Ensuring that passengers understand how to properly don and secure the quick donning oxygen mask in an emergency.

Runway Excursion

Definition: An incident in which an aircraft veers off the runway during takeoff or landing.

Related Terms: Runway Incursion, Skid

Explanation: Runway excursions can occur due to factors such as adverse weather conditions, pilot error, or mechanical failure, posing a risk to aircraft and passengers.

Example: If an aircraft fails to stop within the designated runway area, it may experience a runway excursion and veer off the pavement.

Challenge: Preventing runway excursions through proper aircraft handling, runway assessment, and crew training.

Survival Kit

Definition: A collection of essential items and supplies for surviving in emergency situations.

Related Terms: Emergency Rations, First Aid Kit

Explanation: Survival kits are equipped with tools, food, water