

Emergencies

An emergency is any situation that poses an immediate risk to an aircraft or its occupants. ATC must provide **immediate assistance, unrestricted airspace, and minimal interference** from other traffic.

Emergency Declarations

Pilots use the following standard phrases to declare emergencies:

- **MAYDAY, MAYDAY, MAYDAY – Distress Call** (Immediate assistance required)
- **PAN-PAN, PAN-PAN, PAN-PAN – Urgency Call** (Serious issue, but not immediate danger)

If unable to communicate verbally, pilots may **squawk 7700** and attempt to contact ATC on **121.5 MHz**.

Types of Emergency Landings

Forced Landing

A landing is required due to **technical failures** making continued flight impossible. Landing as soon as possible is the priority.

Common Causes:

- Engine failure or flameout
- Hydraulic or fuel leaks
- Structural damage

Precautionary Landing

A **planned** landing due to a developing issue that could worsen if the flight continues. These are usually done for **safety reasons rather than immediate danger**.

Common Causes:

- Landing gear problems (e.g., stuck gear, wheel punctures)
- Medical emergency onboard

Ditching

A **forced landing on water**, typically due to complete power loss over the ocean or a large body of water.

Common Causes:

- Total engine failure over water
- Fuel exhaustion

Emergency Classifications

Local Standby

The aircraft has a **suspected issue** that does **not** prevent a normal landing, but ATC treats it as an emergency.

Common Situations:

- Engine vibrations or failure of one engine in multi-engine aircraft
- Hydraulic issues affecting flaps or brakes
- Landing gear steering failure
- Smoke or odor in the cockpit
- Minor structural damage (e.g., bird strike)

Full Emergency

A serious emergency requiring **immediate priority handling** due to the risk of an accident.

Common Situations:

- Onboard fire (engine or cabin)
- Landing gear failure
- Flight control failure
- Cabin depressurization

Aircraft Accident

An **aircraft accident** occurs when an aircraft crashes **on or near the airport**. Immediate coordination with emergency services is required.

Handling Emergencies as ATC

Key Responsibilities:

- **Acknowledge** the emergency and confirm the details.
- **Separate** the emergency aircraft from all other traffic.

- **Ensure silence** on frequency if necessary.
- **Inform and coordinate** with relevant ATC units.
- **Provide support** by offering direct routing, weather updates, etc.
- **Give time** for pilots to manage the emergency.

The ASSISTED Memory Aid

ATC can use the **ASSISTED** checklist for structured emergency handling:

- **Acknowledge** – Confirm the emergency and understand the situation.
- **Separate** – Establish and maintain safe separation.
- **Silence** – Limit unnecessary radio transmissions.
- **Inform** – Notify relevant sectors (e.g., Approach, ACC, Tower).
- **Support** – Provide assistance (e.g., vectors, direct routing, alternate airports).
- **Time** – Allow the flight crew to focus on handling the emergency.
- **Else, Disconnect** – If the emergency disrupts ATC services, the pilot may be instructed to **cancel the emergency or disconnect**.

VATSIM Emergency Policy

Emergencies on VATSIM are subject to network rules:

- A pilot **may only declare an emergency while under ATC service**.
- ATC may **request a pilot to terminate the emergency at any time**.
- If a pilot refuses, **they must disconnect**.
- **Hijackings (squawk 7500) and unlawful acts are strictly prohibited**.
- If a pilot **refuses to comply**, **.wallop** for a Supervisor.

Emergency Handling by ATC Position

Tower Controller Responsibilities

- **Acknowledge** the emergency and instruct the pilot to squawk **7700** if necessary.
- **Guide the aircraft back for landing** (either visual approach or via ATC instructions).
- **Coordinate with Approach** and ensure they are aware of the emergency.
- **Hold or divert other traffic:**
 - Stop all departures and arrivals.
 - Instruct aircraft **on the ground or final approach to hold position or go around**.
 - Keep **runways clear for the emergency aircraft**.
- **Ensure smooth handoff** to Approach if required.

Approach Controller Responsibilities

- **Provide vectors** to the nearest suitable runway.
- **Delay or reroute other arrivals** if needed.
- **Use speed, altitude, or holding instructions** to create space.
- **Offer a visual or ILS approach** depending on weather.
- **Coordinate with Tower** for priority landing.

Area Control (ACC) Responsibilities

- **Direct the aircraft toward the nearest suitable airport.**
- **Coordinate with Approach and Tower.**
- **Use altitude or vectoring to ensure safe descent.**
- **Inform adjacent controllers if necessary.**

Emergency Communication Procedures

An emergency call should include:

- **Station being called** (e.g., "Center, Mayday, Mayday, Mayday")
- **Aircraft callsign**
- **Nature of emergency**
- **Intentions**
- **Position, altitude, heading, speed**
- **Fuel endurance and persons onboard (if relevant)**

“ Example:

Mayday, Mayday, Mayday
Alpha 456, experiencing engine failure.
Request immediate return to airport.
Currently at FL120, heading 270, speed 280 knots.
Fuel endurance: 2 hours, 156 passengers onboard.

Emergency Operations at Multi-Runway Airports

- If multiple runways are available, **non-emergency traffic may be moved to a secondary runway.**
- This ensures **the emergency aircraft has unrestricted access** to the preferred runway.
- **Delays should be minimized** for other traffic while prioritizing the emergency.

Emergency Separation

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. This means that a 1000 ft vertical separation minimum may be reduced to 500 ft and 2000 ft vertical separation minimum may be reduced to 1000 ft. All flight crews concerned must be advised if emergency separation is used.

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