



PHASE OF FLIGHT DEFINITION

1. Introduction

The phase of flight refers to a period within a flight. In the case of a manned aircraft, a flight begins when any person boards the aircraft with the intention of flight and continues until such time as all such persons have disembarked.

In real aviation, the goal of defining the phase of flight is:

- To develop common taxonomies and definitions for aviation accident and incident reporting
- To improve the aviation community's capacity to focus on common safety issues.

The phases of flight are:

- Standing
- Pushback / Towing
- Taxi
- Take-off
- En-route
- Approach
- Landing
- Manoeuvring
- Post impact
- Unknown

2. Standing phase (STD)

The standing phase is the phase of flight prior to pushback or taxi, or after arrival, at the gate, ramp, or parking area, while the aircraft is stationary.

- **Standing & Engine(s) Not Operating:** The phase of flight, while the aircraft is standing and during which no aircraft engine is running.
- **Standing & Engine(s) Start-up:** The phase of flight, while the aircraft is parked during which the first engine is started.
- **Standing & Engine(s) Run-up:** The phase of flight after start-up, during which power is applied to engines, for a pre-flight engine performance test.
- **Standing & Engine(s) Operating:** The phase of flight following engine start-up, or after post-flight arrival at the destination.
- **Standing & Engine(s) Shut Down:** Engine shutdown is from the start of the shutdown sequence until the engine(s) cease rotation.

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- Standing & Other cases: An event involving any standing phase of flight other than one of the above.

3. Pushback / Towing (PBT)

The pushback or towing phase is the phase of flight when an aircraft is moving in the gate, ramp, or parking area, not under its own power, but assisted by a tow vehicle [tug].

Note: unassisted movement in the gate or ramp area is included in the taxiing phase.

- **Assisted & Engine(s) Not Operating:** The phase of flight when an aircraft is moved in the gate, ramp, or parking area, not under its own power, during which no engine is running.
- **Assisted & Engine(s) Start-up:** The phase of flight when an aircraft is moved in the gate, ramp, or parking area, not under its own power, from the time of the first engine startup sequence until the last engine startup sequence is completed.
- **Assisted & Engine(s) Operating:** The phase of flight when an aircraft is moved in the gate, ramp, or parking area, not under its own power, after all engines have been started-up or before the shut-down sequence has been initiated.
- **Assisted & Engine(s) Shutting Down:** Engine shutdown is from the start of the shutdown sequence until the engine(s) cease rotation.

4. Taxi (TXI)

The taxi phase is the phase of flight in which movement of an aircraft on the surface of an aerodrome under its own power occurs, excluding take-off and landing.

- **Power back:** The aircraft is reversing under its own power from the parking position.
- **Taxiing to/from runway:** The phase of flight, after reaching the movement area, when the aircraft progresses under its own power to the departure runway, or post-flight moves under its own power after leaving the landing runway.
 - Taxi to runway: Commences when the aircraft begins to move under its own power leaving the gate, ramp, apron, or parking area, and terminates upon reaching the runway.
 - Taxi to take-off position: From entering the runway until reaching the take-off position (backtrack)
 - Taxi from runway: Begins upon exiting the landing runway and terminates upon arrival at the gate, ramp, apron, or parking area, when the aircraft ceases to move under its own power.
 - Maintaining position: Maintaining position at holding point.
- **High speed taxi trial:** taxiing on a runway/taxiway at high speed to test/check the aircraft.
- **Taxiing & Other:** An event involving any phase of taxiing other than one of the above

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5. TAKEOFF (TOF)

The take-off phase is the phase of flight from the application of take-off power until:

- reaching the first prescribed power reduction, or
- reaching the VFR pattern, or
- reaching 1000feet (300metres) above runway end elevation,

whichever comes first or the termination (abort) of the take-off.

- **Take-off run:** The phase of flight from the application of take-off power, through the take-off roll and rotation up to 35 feet [12 metres] above runway end elevation or until gear-up selection, whichever comes first.
- **Rejected take-off:** The phase of flight in which any attempt is made to terminate a take-off between the application of take-off power, through rotation and up to 35 feet [or 12 metres] above the elevation of the runway end (from the point where the decision to abort has been taken until the aircraft begins to taxi from the runway).
- **Initial climb:** From the end of the take-off run sub-phase to the first prescribed power reduction, or until reaching 1000 feet above runway elevation or the VFR pattern, whichever comes first.
- **Climb into traffic pattern:** The phase of flight from 35 feet [12 metres] above runway end elevation to the first prescribed power reduction on reaching the VFR pattern. Applies to pilot training in which the aircraft's climb phase is not intended to reach altitude.
- **Emergency descent during take-off:** The phase of flight in which an intentional descent is made, in response to an emergency, which occurs after rotation but before the first prescribed power reduction, on reaching 1000feet (300metres) or the VFR pattern, whichever comes first.
- **Uncontrolled descent during take-off:** The phase of flight in which any uncontrolled descent occurs after rotation but before the first prescribed power reduction, on reaching 1000feet (300metres) or the VFR pattern, whichever comes first.
- **Take-off & Other:** The phase of flight in which any event occurs during take-off, other than one of the above.

6. EN ROUTE (ENR)

The en-route phase is the phase of flight:

- For Instrument Flight Rules (IFR): phase starting from completion of Initial Climb through cruise altitude and ending with the completion of controlled descent to the Initial Approach Fix (IAF).
- For Visual Flight Rules (VFR): phase starting from completion of Initial Climb through cruise and ending with the controlled descent to the VFR pattern altitude or 1000 feet above runway elevation, whichever comes first.

- **Climb to cruising level or altitude:** Climb to Cruise is
 - For IFR: From completion of Initial Climb to arrival at initial assigned cruise altitude.
 - For VFR: From completion of Initial Climb to initial cruise altitude.
- **Cruise:** The phase of flight from the top of climb to cruise altitude, or flight level, to the start of the descent toward the destination aerodrome or landing site. Any level flight segment after arrival at cruise altitude until the start of descent to the destination.

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- **Change of cruise level:** The phase of flight during which the aircraft climbs, or descends, from one cruising flight level or altitude to the next cruising flight level or altitude. Any climb or descent during cruise after the initial climb to cruise, but before descent to the destination. This includes an aeroplane cruising technique resulting in a net increase in altitude as the aeroplane mass decreases
- **Normal descent:** Normal descent is
 - For IFR: Descent from cruise to either Initial Approach Fix (IAF) or VFR pattern entry.
 - For VFR: Descent from cruise to the VFR pattern entry or 1000 feet above the runway elevation, whichever comes first.
- **Emergency descent en-route:** The phase of flight in which an intentionally rapid, or premature, descent is made en-route, in response to an in-flight emergency. The descent is controlled by the crew.
- **Uncontrolled descent en-route:** The phase of flight in which the aircraft descends uncontrolled.
- **En-route holding:** Execution of a predetermined manoeuvre (usually an oval race track pattern) which keeps the aircraft within a specified airspace while awaiting further clearance.
- **En-route & Other:** Any phase of flight en-route, other than one of the above.

Note: descent during holding is also covered in this sub-phase. A holding procedure executed at the IAF is also included in this sub-phase.

7. APPROACH (APR)

The approach phase is the phase of flight:

- From the outer marker to the point of transition from nose-low to nose-high attitude immediately prior to the flare above the runway for IFR flight rules.
 - From 1000 feet (300metres) above the runway end elevation or from the point of VFR pattern entry to the flare above the runway for VFR flight rules.
- **Initial Approach (IFR):** The phase of flight from the Initial Approach Fix (IAF) to the Final Approach Fix (FAF), or The phase of flight between the initial approach fix (IAF) and the intermediate approach fix (IF) when IF is defined.
 - **Intermediate approach(IFR):** The phase of flight between the Intermediate approach fix and the final approach fix (FAF); or between the end of a reversal procedure or dead-reckoning track procedure and the final approach fix (FAF)
 - **Final approach (IFR):** The phase of flight from the final approach fix (FAF) or point (FAP), or where such a fix or point is not specified,
 - At the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified or
 - At the point of interception of the last track specified in the approach procedure; and ends at a point in the vicinity of an aerodrome from which a landing can be made; or a missed approach procedure is initiated.
 - **Circuit pattern – downwind:** The phase of VFR, flight from 1000 feet above runway end elevation (300metres) or the point of VFR pattern entry, commences at about 45 degrees from the threshold, continues parallel to the runway in the direction opposite to landing and terminates upon initiating the turn to base leg.

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- **Circuit pattern - base leg:** The phase of VFR flight from the start of the turn at end of downwind leg, then at 90 degrees to the landing runway until reaching the extended centre line of the approach end of the runway.
- **Base turn:** a turn executed by the aircraft during the initial approach between the end of the outbound track and the beginning of the intermediate or final approach track. The tracks are not reciprocal.
- **Circuit pattern - final approach:** The phase of flight between the start of the turn from base leg to a flight path along the extended runway centre line, to the runway.
- **Circuit pattern – crosswind:** A flight path of the VFR traffic pattern, which is perpendicular to the landing runway, crosses the departure end of the runway, and connects with the downwind leg.
- **Aborted - interrupted approach** (before reaching decision height): The phase of flight where the pilot aborts the approach during an ILS or other precision approach involving an abnormally early turn on approach before reaching minimum decision altitude or decision height.
- **Missed approach or go-around:** From the first application of power after the crew elects to execute a missed approach or go-around until the aircraft re-enters the sequence for a VFR pattern (go-around) or until the aircraft reaches the IAF for another approach (IFR)
- **Emergency descent during approach:** The phase of flight in which an intentionally rapid or premature descent is made in response to an in-flight emergency during approach. The descent is controlled by the crew.
- **Uncontrolled descent during an approach:** The phase of flight in which a previously normal descent during an approach becomes uncontrolled.
- **Approach – holding:** The phase of flight in which a pre-determined ad-hoc manoeuvre during the approach keeps the aircraft within a specified airspace awaiting further instructions.
- **Approach & Other:** An event involving any phase of flight, while on approach, in which an event other than one of the above occurs.

Note: Base turns may be designated as being made either in level flight or while descending, according to the circumstances of each individual procedure.

Note: a holding procedure executed at the IAF is included in the En-route phase.

8. LANDING (LDG)

The landing phase is the phase of flight from the point of transition from nose-low to nose-up attitude, immediately before landing (flare), through touchdown and until aircraft exits landing runway, comes to a stop or when power is applied for take-off in the case of a touch-and-go landing, whichever occurs first.

- **Level off-touchdown:** The phase of flight from the point of transition from nose-low to nose-up attitude, just before landing, until touchdown.
- **Landing roll:** The phase of flight from touchdown until the aircraft exits the landing runway or comes to a stop, whichever occurs first.
 - Landing roll - on runway: the part of the landing roll when the aircraft is on the runway.
 - Landing roll - off runway: the part of the landing roll after the aircraft left the runway by excursion to the side or overrun the end of the runway. Also to be used when the aircraft has landed beside, in front of (undershoot) or behind the runway. The intent is to assist in better qualifying the related events, in particular in regards to any damages sustained.

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- **Landing aborted before touch-down:** The phase of flight in which an attempt is made to get airborne before touchdown (successful or not).
- **Landing aborted after touch-down:** The phase of flight in which an attempt is made to get airborne after touchdown (successful or not). This does not include the take-off portion of a touch-and-go.
- **Emergency landing or off-runway landing:** The phase of flight where an intentional landing is made at a point other than a runway or normal landing site, in response to an in-flight emergency.
- **Landing: Other:** An event involving any phase of flight while landing other than one of the above.

9. MANOEUVRING (MNV)

The manoeuvring phase is the phase of flight in which planned low-level flight, or attitude, or planned abnormal attitude, or abnormal acceleration occurs.

This includes any intentional manoeuvring that exceeds 30° of pitch attitude or 60° of bank, or both, or abnormal acceleration.

- **Low altitude or aerobatic flight operations:** An event involving any phase of flight in which manoeuvring into an abrupt change in attitude, abnormal attitude or abnormal acceleration occurs (usually associated with air shows and military flight).
- **Low flying:** The phase of flight made at a height below the normal minima, e.g. in preparation for, or during, observation work, demonstration, photography work, aerial application, training, sightseeing, ostentatious display, or other similar activity.
- Intentional low-altitude flight not connected with a landing or takeoff.
- **Emergency descent:** The phase of flight in which an intentionally rapid or premature descent, from a previously normal manoeuvre, is made in response to an in-flight emergency. The descent is controlled by the crew.
- **Uncontrolled descent:** The phase of flight in which an uncontrolled descent from a previously normal manoeuvre occurs.
- **Manoeuvring & Other:** An event involving any phase of manoeuvring flight other than one of the above

10. POST-IMPACT (PIM)

The post impact phase is the phase, in an accident or incident sequence, after the aircraft has collided with the first object, place or person. (not simulated in IVAO).

11. UNKNOWN (UNK)

The unknown phase is a phase of flight of the aircraft that is unknown or not recorded (not simulated in IVAO).

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