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Global Certificate in Aviation English

# Flight Planning and Navigation

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## Flight Planning and Navigation Glossary

### 1. Air Traffic Control (ATC)

Related Terms: Airspace, Radar, Communication, Clearance

Air Traffic Control (ATC) is a service provided by ground-based controllers who direct aircraft on the ground and in the sky. ATC ensures the safe and efficient flow of air traffic by providing instructions to pilots, such as altitude changes, route modifications, and landing clearances.

### 2. Altitude

Related Terms: Flight Level, Altitude Hold, Vertical Speed

Altitude refers to the height of an aircraft above a specific reference point, usually sea level. Pilots must carefully monitor and adjust their altitude to comply with airspace restrictions and avoid collisions with other aircraft.

### 3. Dead Reckoning

Related Terms: Navigation, Pilotage, Magnetic Heading

Dead Reckoning is a method of aircraft navigation that involves calculating the aircraft's position based on its previous known position, speed, and heading. Pilots use dead reckoning when other navigation aids are unavailable or unreliable.

### 4. Flight Plan

Related Terms: Route, Waypoints, Fuel Consumption

A flight plan is a detailed document that outlines the intended route, altitude, speed, and fuel requirements for a specific flight. Pilots must submit a flight plan to air traffic control before departure to ensure a smooth and safe journey.

### 5. Groundspeed

Related Terms: Airspeed, Wind Correction, True Airspeed

Groundspeed is the speed at which an aircraft is moving over the ground. It is calculated by combining the aircraft's airspeed with the effects of wind. Pilots use groundspeed to estimate arrival times and fuel consumption.

### 6. Holding Pattern

Related Terms: Racetrack Pattern, Stack, Air Traffic Control

A holding pattern is a designated flight path that aircraft follow when they are unable to land at their destination due to congestion, weather, or other factors. Pilots must maintain a specific altitude and

airspeed while in a holding pattern.

#### 7. Instrument Flight Rules (IFR)

Related Terms: Visual Flight Rules (VFR), Flight Instruments, Instrument Approach

Instrument Flight Rules (IFR) are regulations that govern the operation of aircraft when visibility is poor or weather conditions are unfavorable. Pilots flying under IFR must rely on their instruments for navigation and control.

#### 8. Jet Stream

Related Terms: High-Altitude Wind, Tailwind, Headwind

The jet stream is a narrow band of strong, high-altitude winds that flow from west to east across the globe. Pilots often use the jet stream to their advantage by flying in its direction to save time and fuel.

#### 9. Minimum Equipment List (MEL)

Related Terms: Aircraft Maintenance, Inoperative Equipment, Flight Dispatch

The Minimum Equipment List (MEL) is a document that specifies the minimum equipment required for an aircraft to be legally dispatched for a flight. If any equipment on the MEL is inoperative, the aircraft may still be allowed to fly under certain conditions.

#### 10. Navigation Log

Related Terms: Waypoints, Course, Distance

A navigation log is a planning tool used by pilots to calculate the headings, distances, and estimated times between waypoints along a flight route. Pilots use navigation logs to ensure accurate navigation and fuel planning.

#### 11. Obstacle Clearance Altitude (OCA)

Related Terms: Terrain, Obstacle, Instrument Approach Procedure

Obstacle Clearance Altitude (OCA) is the minimum altitude at which an aircraft can safely cross a given obstacle during an instrument approach. Pilots must adhere to the OCA to avoid collisions with terrain or man-made structures.

#### 12. Preflight Planning

Related Terms: Weather Briefing, NOTAMs, Flight Plan

Preflight planning is the process of gathering and analyzing information before a flight to ensure its safety and efficiency. Pilots must consider factors such as weather, airspace restrictions, and aircraft performance during preflight planning.

#### 13. RNAV (Area Navigation)

Related Terms: GPS, Waypoints, Navigation Accuracy

RNAV, or Area Navigation, is a method of aircraft navigation that allows pilots to fly direct routes between waypoints using onboard navigation systems. RNAV provides greater flexibility and efficiency compared to

traditional ground-based navigation aids.

14. SID (Standard Instrument Departure)

Related Terms: Departure Procedure, ATC Clearance, Waypoints

A Standard Instrument Departure (SID) is a published departure procedure that guides aircraft from the airport to the en-route phase of flight. Pilots must follow SIDs to ensure safe and efficient departures in busy airspace.

15. STAR (Standard Terminal Arrival Route)

Related Terms: Arrival Procedure, ATC Clearance, Waypoints

A Standard Terminal Arrival Route (STAR) is a published arrival procedure that guides aircraft from the en-route phase of flight to the airport. Pilots must follow STARs to ensure smooth transitions into busy terminal airspace.

16. True Airspeed (TAS)

Related Terms: Indicated Airspeed, Wind Correction, Groundspeed

True Airspeed (TAS) is the actual speed at which an aircraft is moving through the air. Pilots must adjust their indicated airspeed for temperature and altitude to calculate true airspeed accurately.

17. VFR (Visual Flight Rules)

Related Terms: IFR, Flight Visibility, Cloud Clearance

Visual Flight Rules (VFR) are regulations that govern the operation of aircraft when visibility is good and weather conditions are favorable. Pilots flying under VFR use visual references to navigate and avoid other aircraft.

18. Waypoint

Related Terms: Navigation, GPS, Flight Plan

A waypoint is a specific geographical location or navigational point along an aircraft's route. Pilots use waypoints to define their flight path, measure progress, and make course corrections during a flight.

19. X-Ray Clearance

Related Terms: Air Traffic Control, Departure Clearance, Flight Plan

An X-Ray Clearance is a clearance given by air traffic control to an aircraft before departure. The X-Ray clearance includes instructions on the assigned route, altitude, and any special instructions for the flight.

20. Yaw

Related Terms: Roll, Pitch, Aircraft Control

Yaw is the rotation of an aircraft around its vertical axis. Pilots use yaw control to keep the aircraft's nose pointed in the desired direction during flight. Yaw is one of the three primary axes of aircraft control, along with roll and pitch.