

Procedures for Aerodrome Control Service

Objective: Achieve a safe, orderly, and expeditious flow of air traffic while preventing collisions.



5 Categories of Collision Prevention

- (A) Aircraft flying in the area of responsibility/circuits
- (B) Aircraft on the manoeuvring area
- (C) Aircraft landing/taking off
- (D) Aircraft and vehicles on the manoeuvring area
- (E) Aircraft and obstructions on the manoeuvring area

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Exam Q5 & Q9 Focus: Understand the exact boundaries.

Movement Area = Manoeuvring Area (Runways + Taxiways) + Aprons.

Aerodrome traffic includes aircraft on the movement area AND flying in the vicinity.

Tower Organization & Alerting Triggers

A control tower is a synchronized team with strictly delineated zones of authority and specific triggers for alerting emergency services.

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Exam Q8 Focus: A controlled aerodrome MUST have a control tower giving an ATC service. It does not necessarily have to be located within a CTR.

Aerodrome Controller	Ground Controller	Clearance Delivery
Operations on the runway and aircraft flying within the area of responsibility (Airborne & Active Runway).	Traffic on the manoeuvring area – explicitly excluding runways.	Delivery of start-up and ATC clearance to departing IFR flights.

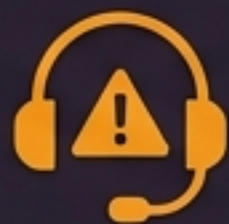
Alerting Service Activation Triggers



An aircraft accident has occurred



Safety of an aircraft has been impaired



Requested by the flight crew



Deemed necessary or desirable by ATC

Pre-Flight & Runway Occupancy

Objective: Maximize throughput by minimizing runway occupancy time.

Departure Sequence

Pre-Startup

Ensure step ladders/aerobridges removed. Doors closed. Intimate total POB and security checks.

Prior to Lineup

Cockpit checks must be completed prior to lineup to prevent runway delays.

Line-Up & Take-Off

Commence take-off roll immediately upon clearance.

ATC Expectation

Delays may occur for regulatory separation, sequence holding, or VIP facilitation. Deviations are permitted to prioritize maximum departures with the least average delay.

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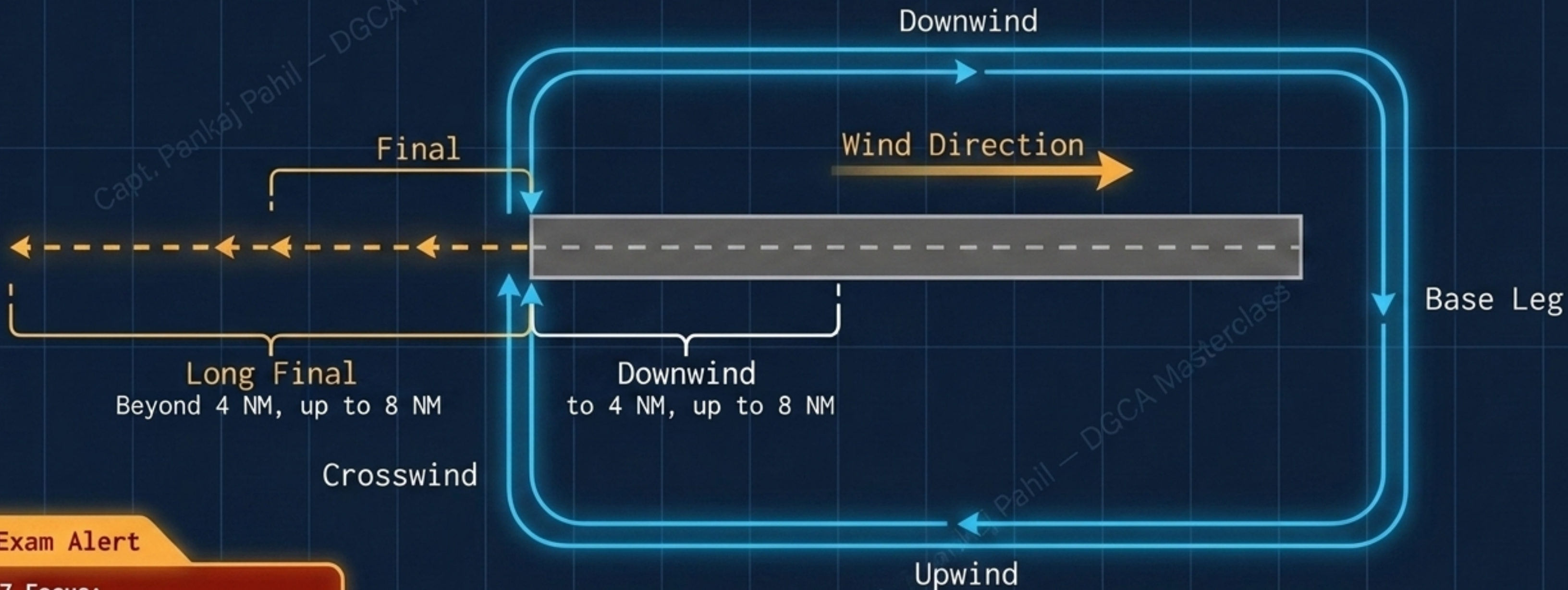
High Probability Prohibition Rule:

Cruise Climb is NOT permitted in Indian Flight Information Regions.

Transonic and Supersonic phases of flight are explicitly PROHIBITED over Indian airspace.

The Visual Traffic Circuit

A standardized, predictable routing loop around the aerodrome for visual sequencing.



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Exam Q7 Focus:

An aircraft shall report "Long Final" when it is beyond 4 NM up to 8 NMs from the approach end of the runway.

Taxi Clearance & Ground Movement

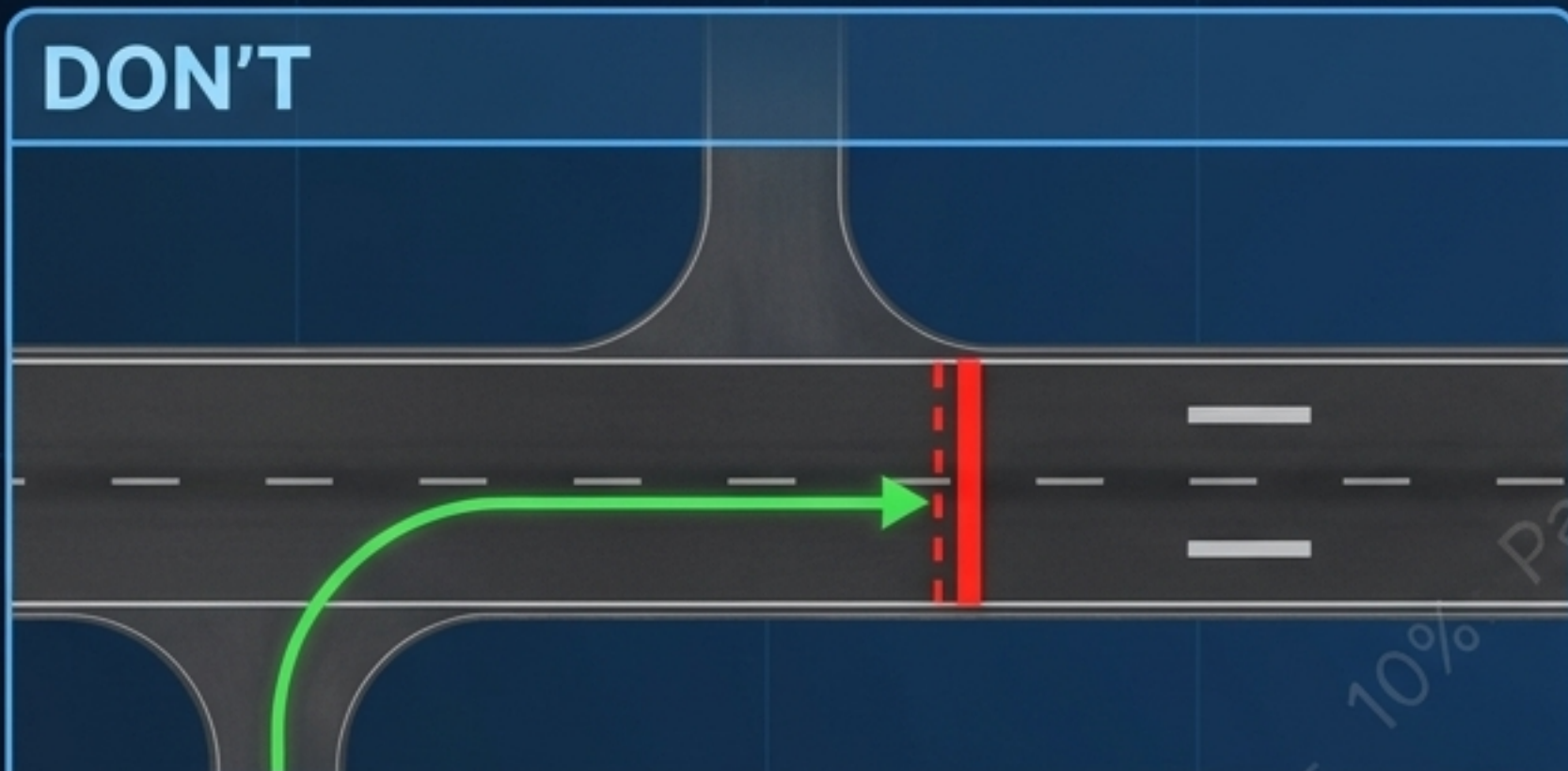
Ground movement is a high-risk phase. Clearances must be explicit, concise, and never assumed.

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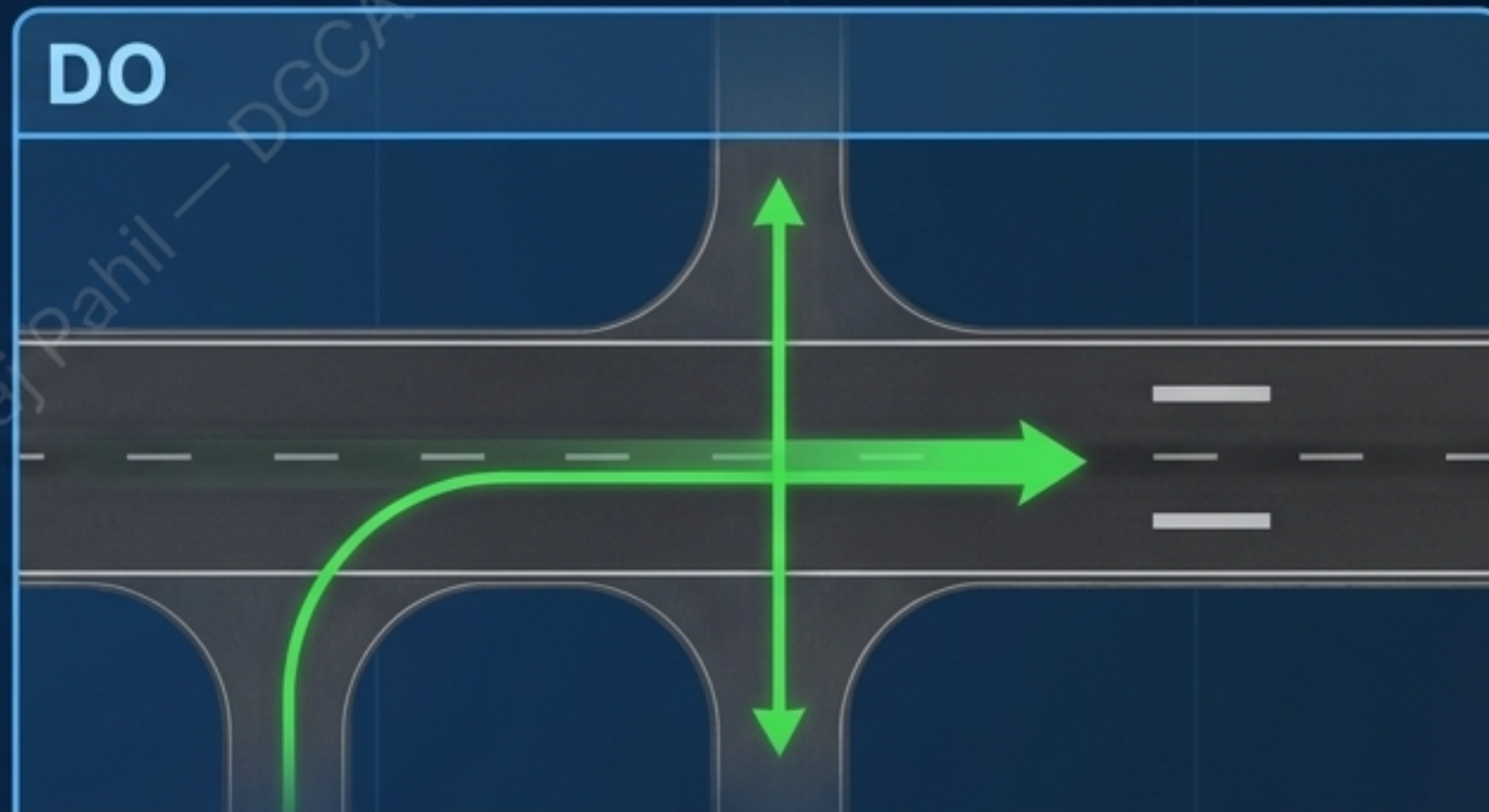
Exam Q6 Focus: The Manoeuvring Area is used specifically for taxiing, taking off, and landing. It explicitly **EXCLUDES** the apron.

DON'T



Instruction to hold short is mandatory if route goes beyond active runway without explicit crossing clearance.

DO

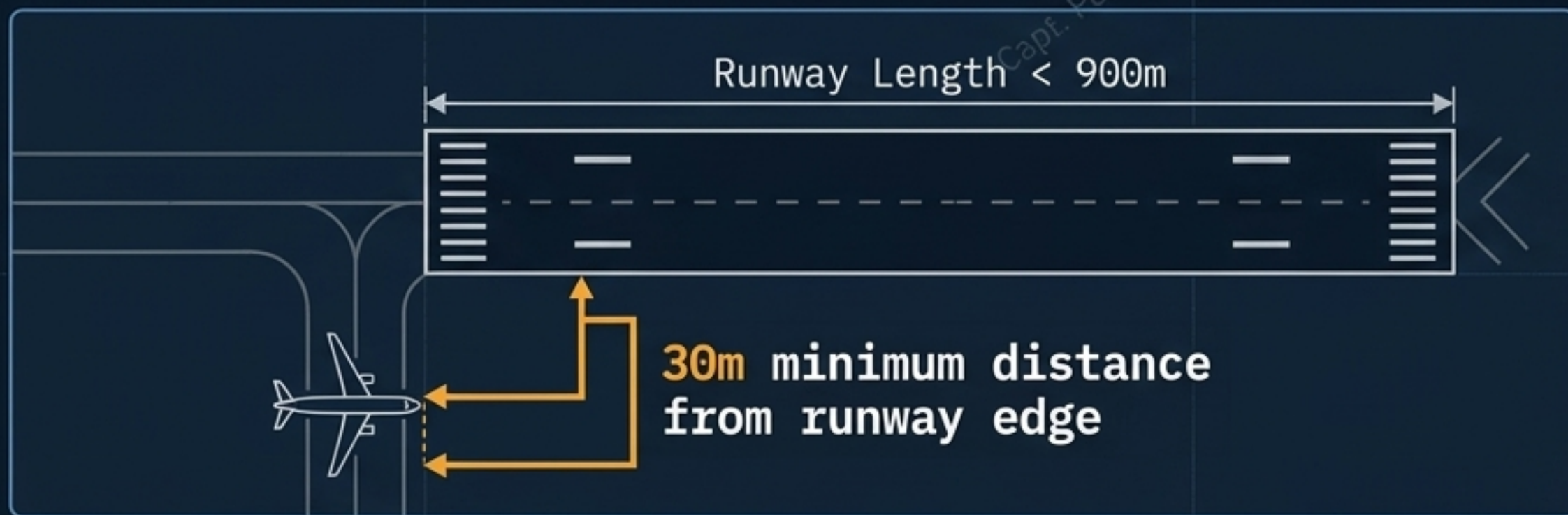


Clearance MUST contain an EXPLICIT instruction to cross the runway.

Note: Pilots requiring to back-track a runway must notify ATC prior to the commencement of taxi.

Critical Distances: Runway-Holding Positions

Physical buffer zones protecting landing and departing traffic are dictated by the runway's length.



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Exam Q1 & Q10 Focus:
 When instructed to hold short, pilot must stop so that NO PART of the aircraft extends beyond the hold line.

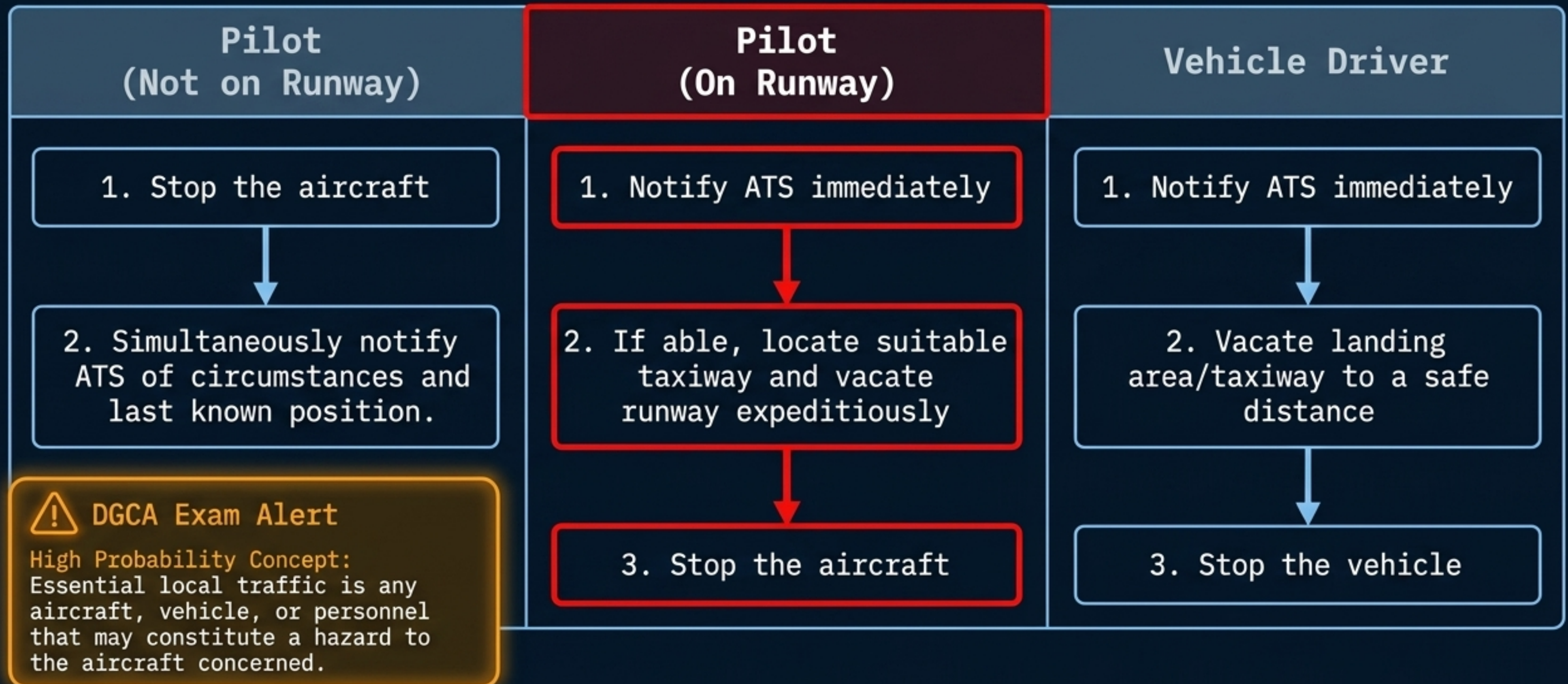
Do not hold closer than the runway-holding position.

Airspace Blue

Capt. Pankaj Pahil — DGCA Masterclass

Uncertainty of Position Protocols

Immediate, standardized actions required when spatial awareness is lost on the manoeuvring area.



Essential Information: Pre-Taxi & Pre-Take-Off

Pilots require sequential packets of environmental data fed to them at exact phases of departure.

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High Probability Fact: QNH is provided on a regular basis, whereas QFE is provided only if requested by the aircraft.

Pre-Taxi Information

A

- Runway to be used
- Surface Wind Direction & Speed
- QNH Altimeter Setting
- Air Temp (for turbine engines)
- Visibility / RVR
- Correct Time

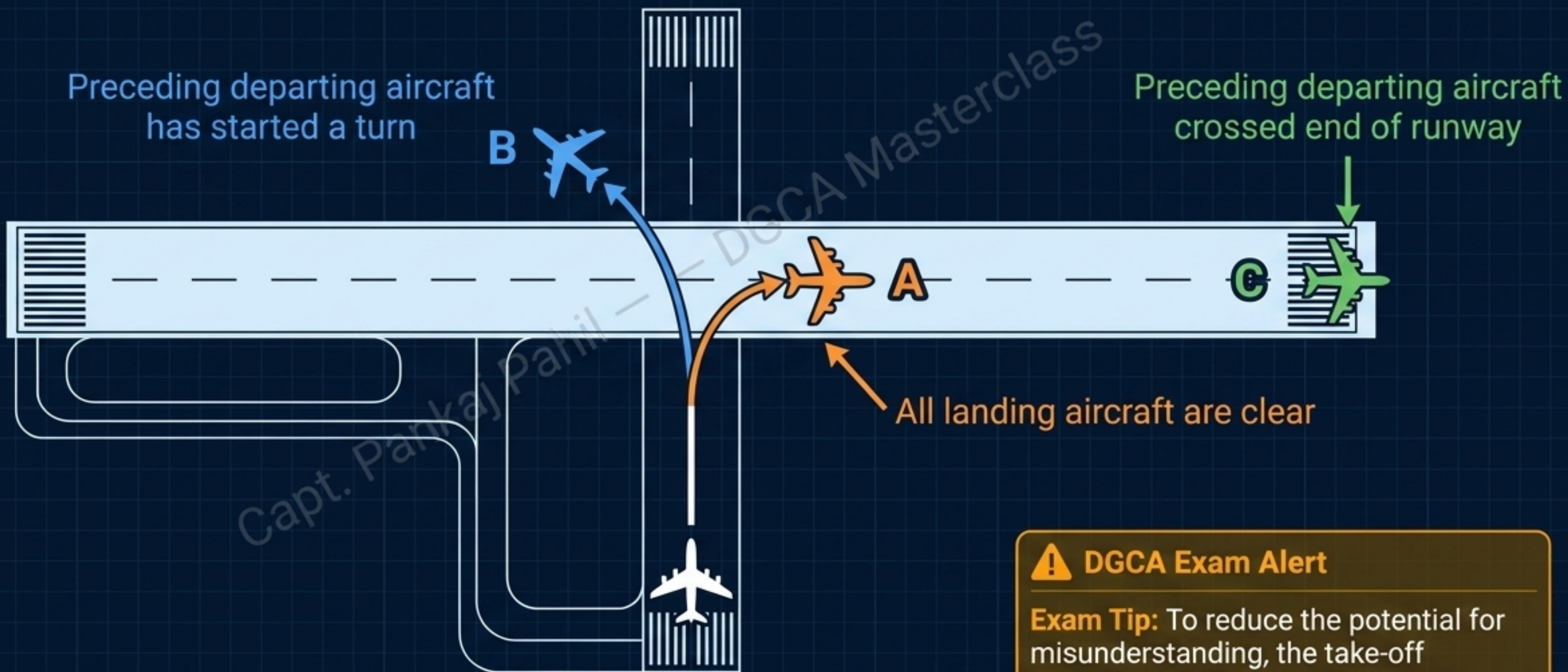
Pre-Take-Off Information

B

- Significant changes in Wind, Temp, Visibility
- Severe MET Conditions (CB clouds, wind shear, hail, severe turbulence)

Airborne Separation: Departures

The runway must be definitively cleared by preceding traffic before the next aircraft commences take-off.



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Exam Tip: To reduce the potential for misunderstanding, the take-off clearance shall always include the designator of the **departure runway**.

Time: 0:0:00

Airborne Separation: Arrivals

The threshold acts as a hard boundary for landing aircraft until the runway is sanitized.

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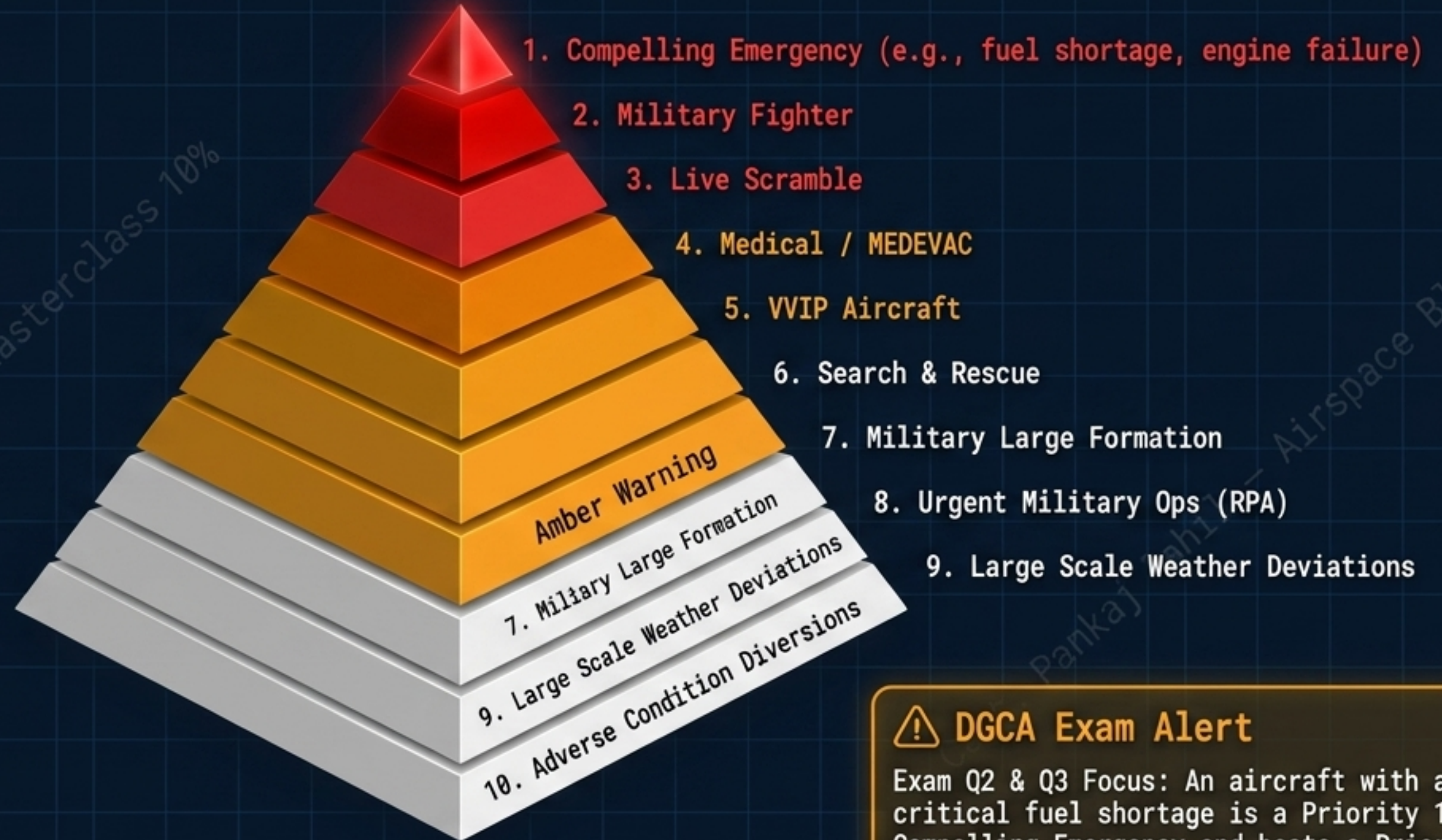
Fundamental Priority Rule:
An aircraft landing or in the final stages of an approach to land shall normally have priority over an aircraft intending to depart.

Landing aircraft **CANNOT** cross the runway threshold until preceding aircraft crosses the end or starts a turn.

Clearance to Land: Issued only when there is reasonable assurance separation will exist. Must not be issued until preceding landing aircraft has crossed the threshold.

The Traffic Priority Pyramid

ATC utilizes a strict 10-tier hierarchy to resolve traffic conflicts, prioritizing human life over scheduling.



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Exam Q2 & Q3 Focus: An aircraft with a critical fuel shortage is a Priority 1 Compelling Emergency and beats a Priority 5 VVIP aircraft every single time.

VFR Suspension & Emergency Vehicles

Normal visual operations can be instantly suspended by specific authorities to protect airspace integrity.

Authority & Actions to Suspend VFR

- ❑ **Who Can Suspend:**
 - Approach Control Unit (ACC)
 - Aerodrome Control Tower
 - Appropriate ATS Authority
- ❑ **Immediate ATC Actions:**
 - Hold all VFR departures
 - Recall all local VFR flights
 - Notify operators and ACC

Emergency Light Signals (No Radio)



Signal: Flashing Runway Lights

Meaning: Vacate the runway or taxiway immediately and observe the tower for light signal.

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High Probability Signal: Flashing runway lights means surface traffic must vacate the runway or taxiway immediately and observe the tower for light signals.

Absolute Priority: Emergency vehicles proceeding to the assistance of an aircraft in distress have priority over ALL other surface traffic.

Aeronautical Ground Lights (AGL)

Concept statement: Ground lighting provides critical visual reference, and post-departure operation is tightly regulated based on ATC presence.

Operated sunset to sunrise

Operated when visibility \leq 5000m

Operated when requested by pilot

Aerodrome Type	Lighting Rule After Take-Off
With ATC service + centrally controlled lights	Lights remain on as long as considered necessary for the return of the aircraft due to an emergency .
Without ATC service OR without centrally controlled lights	Lights remain on until likelihood of emergency return passes, and in ANY case not less than 15 minutes after takeoff .



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Exam Tip: **VASI** (Visual Approach Slope Indicator) lights must be operated during hours of **daylight** AS WELL AS **darkness** when the runway is in use.

Invisible Threats: Wind Shear & Wake Turbulence

Sudden aerodynamic disruption from weather or preceding heavy aircraft requires strict spatial separation and reporting.



Wind Shear: Sustained change in velocity below 1,500 ft. Pilot reports MUST be passed to subsequent aircraft until it ceases or is on ATIS.



Jet Blast Hazard: Personnel must maintain strict distance to avoid injury. ATC applies wake turbulence separation minima.

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Exam Q4 Focus: For safety reasons, personnel must remain away from an operating jet engine by at least 200 feet.

Runway Surface Friction & Segments

Braking action degrades predictably with contamination. Data is reported sequentially in 1/3 runway segments.



	Measured Coefficient	Estimated Surface Friction	Code
1	0.40 and above	GOOD	5
2	0.39 to 0.36	MEDIUM TO GOOD	4
3	0.35 to 0.30	MEDIUM	3
4	0.29 to 0.26	MEDIUM TO POOR	2
5	0.25 and below	POOR	1

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Exam Q11 & Q12

Focus: Runway is divided into 1/3
A friction coefficient of 0.20 falls below 0.25, meaning estimated surface friction is POOR