

Rules of the Air

Chapter 4 — Comprehensive CPL / ATPL Study Notes

Ref.: ICAO Annex 2 | AIP India | CAR Section 9 – Air Space and Air Navigation Services Standards Series 'C' Part I Issue II | Revision dated 12th November, 2018

 ICAO Annex 2

IN AIP India

 CAR Section 9

✈ CPL / ATPL

 Rev. Nov 2018



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1. Applicability & Territorial Application of Rules of the Air

APPLICABILITY — WHO & WHERE?

These rules apply to:

- All aircraft flying over **Indian Territory**
- Aircraft bearing **Indian nationality and registration marks**, wherever they may be — to the extent that they do not conflict with rules published by the State having jurisdiction over the territory overflown.

For flights over the **high seas** where a Contracting State has accepted responsibility for providing ATS (pursuant to a regional air navigation agreement), the "appropriate ATS authority" is the authority designated by that State.

✓ COMPLIANCE WITH RULES OF THE AIR

The operation of an aircraft — either **in flight** or on the **movement area of an aerodrome** — shall be in compliance with:

- The **General Rules**, and in addition when in flight, either:
 - a) The **Visual Flight Rules (VFR)**, or
 - b) The **Instrument Flight Rules (IFR)**.

Note (DGCA): *Local flights as may be exempted by ATC and training flights of Flying Club aircraft cleared by ATC may be operated during night in Visual Meteorological Conditions. A local flight is a flight wholly conducted in the immediate vicinity of an aerodrome.*

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2. PIC Authority, Responsibilities & Psychoactive Substances

■ RESPONSIBILITY FOR COMPLIANCE — PIC

The **Pilot-in-Command (PIC)** of an aircraft shall, whether manipulating the controls or not, be **responsible** for the operation of the aircraft in accordance with the rules of the air.

Exception: The PIC may *depart* from these rules in circumstances that render such departure **absolutely necessary in the interests of safety**.

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✓ PRE-FLIGHT ACTION

Before beginning a flight, the PIC shall **become familiar with all available information appropriate to the intended operation**.

For flights **away from the vicinity of an aerodrome**, and for **all IFR flights**, pre-flight action shall include:

- A careful study of available **current weather reports and forecasts**
- Taking into consideration **fuel requirements**
- An **alternative course of action** if the flight cannot be completed as planned

AUTHORITY OF PIC

The PIC of an aircraft shall have **final authority** as to the disposition of the aircraft **while in command**.

PSYCHOACTIVE SUBSTANCES — STRICT PROHIBITION

No person whose function is **critical to the safety of aviation (safety-sensitive personnel)** shall undertake that function while **under the influence of any psychoactive substance**, by reason of which human performance is impaired.

No such person shall engage in **any kind of problematic use of substances**.

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3. General Rules — Protection of Persons & Property

NEGLIGENT OR RECKLESS OPERATION

An aircraft shall **NOT** be operated in a negligent or reckless manner so as to **endanger life or property of others**.



4. Minimum Safe Heights

MINIMUM SAFE HEIGHT — GENERAL RULE

Except when necessary for take-off or landing, or except by permission from the **Director General**, aircraft shall **NOT** be flown over:

- The **congested areas** of cities, towns or settlements
- Over an **open-air assembly** of persons

...unless at such a height as will permit, in the event of an emergency arising, a landing to be made without undue hazard to persons or property on the surface.

Note: The Director-General may, by order in writing, permit — subject to conditions and restrictions — aircraft engaged in **aerial spraying, crop dusting, or mining exploration** to fly at or above such height as specified in the order.

✓ VFR MINIMUM SAFE HEIGHT VALUES (CAR Section 9)

Area	Minimum Height AGL
Over congested areas / cities / towns or open-air assembly — within 600m radius of aircraft	300 m (1,000 ft) above the highest obstacle
Elsewhere (outside congested areas)	150 m (500 ft) above ground or water

Note: These minimums do NOT apply during take-off or landing, or with explicit DG permission.



5. Cruising Levels

■ DEFINITION — CRUISING LEVELS

The cruising levels at which a flight or a portion of a flight is to be conducted shall be in terms of:

- a) **Flight levels** — for flights at or above the lowest usable flight level or, where applicable, above the transition altitude
- b) **Altitudes** — for flights below the lowest usable flight level or, where applicable, at or below the transition altitude

STUDENT TIP

Simply put: above transition altitude = use **Flight Levels (QNE)**. At or below transition altitude = use **Altitude (QNH)**. The Semicircular Rule determines which FL/altitude to select based on your magnetic track. See Section 27 for the full Cruising Levels table.



6. Dropping / Spraying / Towing / Parachutes / Acrobatic Flight

DROPPING OR SPRAYING

Nothing shall be dropped or sprayed from an aircraft in flight **except** under conditions prescribed in **Rule 26 of the Aircraft Rules, 1937** and as indicated by relevant information, advice and/or clearance from the appropriate ATS unit.

TOWING — INDIA SPECIFIC

No aircraft shall be towed by another aircraft.

Objects other than aircraft shall be towed by an aircraft, in accordance with requirements prescribed by the Director General and as indicated by relevant ATS information/clearance.

 Towing of Aircraft is NOT permitted in India.

PARACHUTE DESCENTS

No person shall, **except in an emergency**, descend by means of a parachute from an aircraft, and no person shall drop or cause to be dropped from an aircraft in flight any article, whether attached to a parachute or not, unless:

- The descent/drop is made in accordance with conditions or limitations in general or special order of the **Central Government in writing** (Rule 26 of Aircraft Rules, 1937).

 Parachute descent NOT allowed in normal conditions in India.

✈️ Acrobatic Flight — Conditions & Prohibitions

Join live classes for guided practice and doubt clearing.

✓ WHEN CAN AN AIRCRAFT BE USED FOR AEROBATICS?

- a) It shall be flown by a **licensed pilot**, or if by a person qualifying for a licence, they must be **accompanied by a licensed pilot instructor**
- b) If passengers are carried, their **previous consent in writing** must be obtained
- c) The pilot must satisfy himself that every person carried is **properly secured by safety belts**
- d) Aerobatics shall be commenced at such a height to permit completion of the manoeuvre at a height of **not less than 600 metres (2,000 ft)** above the ground, or such higher height as specified in the Certificate of Airworthiness for aircraft in the aerobatic category.

⊖ NO PERSON SHALL FLY ACROBATICALLY:

- ✗ So as to **constitute a hazard to air traffic**
- ✗ In the vicinity of an aerodrome at a distance of **less than 2 NM** from the nearest point of the perimeter, unless flown at a height greater than **1,800 m (6,000 ft)**
- ✗ When flying over any **city, town, village, populous area**, or over any meeting/games/sports/public assembly — *except where a written request has been made to the Director General by the promoters of such meeting.*

Min. completion height: **600 m / 2,000 ft AGL**

Near aerodrome: **< 2 NM radius prohibited** (unless > 1800m / 6000ft)

✈ 7. Formation Flights

⊖ INDIA-SPECIFIC RULE

No civil aircraft shall be flown in formation in India.

ICAO ANNEX 2 — FORMATION FLIGHT PROVISIONS (For Reference)

Aircraft shall not be flown in formation except by **pre-arrangement among pilots-in-command**. For formation flight in controlled airspace, it must be in accordance with conditions prescribed by the appropriate ATS authority, which shall include:

- a) The formation operates as a **single aircraft** with regard to navigation and position reporting
- b) Separation between aircraft is the **responsibility of the flight leader** and other PICs, including during transition when aircraft are manoeuvring, join-up, and breakaway
- c) Each aircraft shall maintain a distance **not exceeding 1 km (0.5 NM) laterally and longitudinally** and **30 m (100 ft) vertically** from the flight leader

RPA Formation: *A remotely piloted aircraft shall be operated so as to minimize hazards to persons, property or other aircraft and in accordance with conditions specified in Appendix 4 of Annex 2.*

Lateral/Longitudinal separation: **$\leq 1 \text{ km (0.5 NM)}$**

Vertical separation: **$\leq 30 \text{ m (100 ft)}$**

India civil formation: **PROHIBITED**



8. Avoidance of Collisions & Right-of-Way Rules

⊖ AVOIDANCE OF COLLISIONS — ABSOLUTE RESPONSIBILITY

Nothing in these rules shall relieve the PIC of an aircraft from the responsibility of taking such action, **including collision avoidance manoeuvres based on Resolution Advisories (RA) provided by ACAS equipment**, as well as to avert collision.

⊖ PROXIMITY

An aircraft shall **NOT** be operated in such proximity to other aircraft as to **create a collision hazard**.

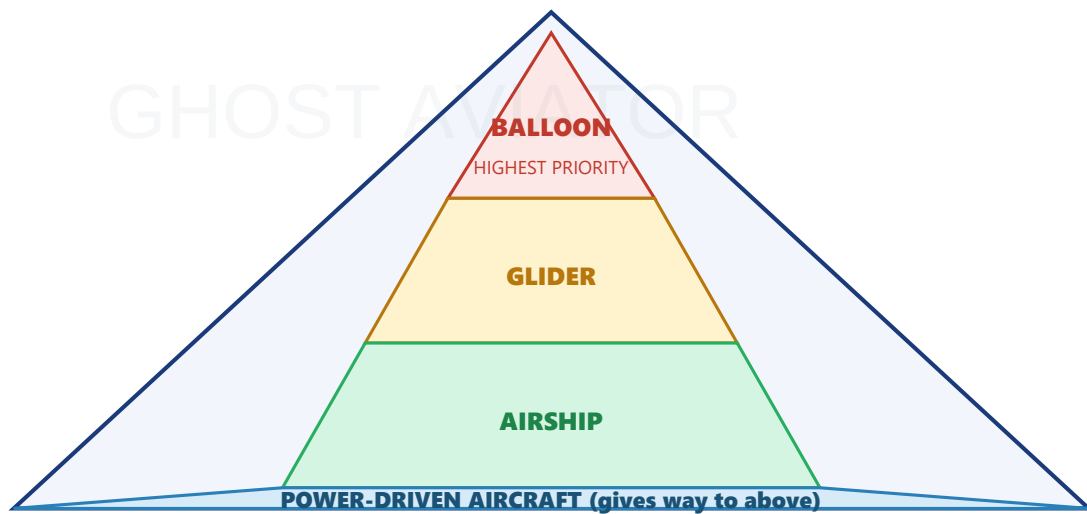
🔄 RIGHT-OF-WAY RULES (In Flight)

GENERAL PRINCIPLE

The aircraft that has the **right-of-way** shall maintain its heading and speed.

An aircraft obliged to keep out of the way shall **avoid passing over, under or in front** of the other, unless it passes well clear and takes into account the effect of **aircraft wake turbulence**.

RIGHT-OF-WAY PRIORITY PYRAMID (Give Way ↓ Has Priority ↑)



Aircraft towing objects also have priority over power-driven aircraft

At top = highest priority; power-driven heavier-than-air aircraft gives way to airships, gliders & balloons

Situation	Rule	Key Point
Approaching Head-On	Each shall alter heading to the RIGHT	Both aircraft turn right simultaneously
Converging (same level)	Aircraft that has the other on its RIGHT shall give way	Except: Power-driven gives way to airships/gliders/balloons; Airships give way to gliders/balloons; Gliders give way to balloons; Power-driven gives way to aircraft towing objects
Overtaking	Overtaking aircraft keeps out of way by altering heading to the RIGHT	Overtaking aircraft = approaches from rear at angle $<70^\circ$ to plane of symmetry. Being overtaken = RIGHT OF WAY regardless of climbing, descending or level flight
Landing (general)	Aircraft in flight or on ground/water gives way to aircraft landing or in final approach	When two aircraft approaching to land — lower one has priority. But lower one cannot cut in front of another in final approach
Landing (multiple aircraft)	Aircraft at higher level gives way to aircraft at lower level	Power-driven heavier-than-air gives way to gliders; lower aircraft cannot abuse this rule
Emergency Landing	An aircraft aware that another is compelled to land shall give way to that aircraft	Absolute priority in emergencies
Taking Off	Aircraft taxiing gives way to aircraft taking off or about to take off	Taxiing aircraft yields to aircraft on takeoff roll

💡 STUDENT TIP — OVERTAKING DEFINITION

An **overtaking aircraft** is one approaching another from the **rear on a line forming an angle of less than 70°** with the plane of symmetry of the latter — i.e., positioned such that at night it cannot see either the port (left) OR starboard (right) navigation lights of the other aircraft.

Once overtaking, **no subsequent change in relative positions absolves the overtaking aircraft** from this obligation until it is entirely past and clear.

9. Surface Movement of Aircraft

GROUND COLLISION AVOIDANCE — TAXIING RULES

In case of danger of collision between two aircraft taxiing on the movement area of an aerodrome:

- a) **Head-on approach:** Each shall stop or, where practicable, alter course to the **RIGHT** so as to keep well clear
- b) **Converging course:** The one which has the other on its **right shall give way**
- c) **Overtaking:** Aircraft being overtaken has **right-of-way**; overtaking aircraft shall keep well clear

RUNWAY HOLDING POSITION

An aircraft taxiing on the manoeuvring area shall **STOP AND HOLD at all runway holding positions** unless otherwise authorised by the aerodrome control tower.

LIGHTED STOP BARS

An aircraft taxiing on the manoeuvring area shall **STOP AND HOLD at all lighted stop bars** and may proceed further **ONLY when the lights are switched off**.



10. Lights to be Displayed by Aircraft

LIGHTS IN FLIGHT — MANDATORY DISPLAY PERIOD

From sunset to sunrise (or during any other period prescribed by the Director General), **all aircraft in flight** shall display:

- a) **Anti-collision lights** — intended to attract attention to the aircraft
- b) **Navigation lights** — intended to indicate the relative path of the aircraft to an observer

Other lights shall NOT be displayed if they are likely to be **mistaken for navigation lights**.

Note: Lights fitted for other purposes (landing lights, airframe floodlights) may be used in addition to anti-collision lights as specified in the Airworthiness Technical Manual (Doc 9051) to enhance aircraft conspicuity.

✓ LIGHTS ON GROUND (Movement Area) — From Sunset to Sunrise

- a) All aircraft moving on the movement area shall display **navigation lights**
- b) Unless stationary and otherwise adequately illuminated, all aircraft on the movement area shall display lights indicating the **extremities of their structure**
- c) All aircraft operating on the movement area shall display lights to attract **attention**
- d) All aircraft on the movement area whose engines are running shall display lights which **indicate that fact**

■ ANTI-COLLISION LIGHTS — ALWAYS ON

- All aircraft in flight and fitted with anti-collision lights shall display such lights **also outside the period** specified (sunset to sunrise)
- All aircraft operating on the movement area of an aerodrome and fitted with anti-collision lights shall also display such lights outside the specified period

✓ WHEN MAY FLASHING LIGHTS BE SWITCHED OFF?

A pilot shall be permitted to **switch off or reduce the intensity** of any flashing lights if they:

- a) **Adversely affect the satisfactory performance of duties**, or
- b) **Subject an outside observer to harmful dazzle**



11. Simulated Instrument Flights

⊖ SIMULATED INSTRUMENT CONDITIONS — CONDITIONS REQUIRED

An aircraft shall **NOT** be flown under simulated instrument flight conditions **UNLESS**:

- a) **Fully functioning dual controls** are installed in the aircraft, AND
- b) A **qualified pilot occupies a control seat** to act as **safety pilot** for the person flying under simulated instrument conditions.

The safety pilot shall have **adequate vision forward and to each side** of the aircraft, OR a **competent observer in communication with the safety pilot** shall occupy a position from which the observer's field of vision adequately supplements that of the safety pilot.



12. Operation On and In the Vicinity of an Aerodrome

✓ DUTIES OF EVERY AIRCRAFT NEAR AN AERODROME

An aircraft operated on or in the vicinity of an aerodrome shall, whether or not within an aerodrome traffic zone:

- a) **Observe other aerodrome traffic** for the purpose of avoiding collision
- b) **Conform with or avoid the pattern of traffic** formed by other aircraft in operation
- c) Make all turns to the **LEFT** when approaching for a landing and after taking off, **unless otherwise instructed**
- d) **Land and take off into the wind** unless safety, runway configuration, or air traffic considerations determine a different direction is preferable

✓ WHEN AERODROME CONTROL TOWER IS IN OPERATION — ADDITIONAL DUTIES

The PIC shall also:

- a) Maintain a **continuous listening watch** on the appropriate radio frequency of the aerodrome control tower (unless under approach control service or not possible, in which case keep a watch for **visual signals**)
- b) Obtain either by **radio or visual signals prior authorisation** for any manoeuvre preparatory to or associated with taxiing, landing, or take-off



13. Flight Plans

✗ WHEN IS A FLIGHT PLAN MANDATORY?

A flight plan shall be submitted prior to operating (exceptions for nano/micro RPA below 50 ft/200 ft AGL in uncontrolled airspace/enclosed premises):

- a) Any flight or portion thereof to be provided with **air traffic control service**
- b) Any **IFR flight** within advisory airspace
- c) Any flight within or into **designated areas or along designated routes** when required by the ATS authority for flight information, alerting, and search & rescue services
- d) Any flight within or into designated areas or along designated routes requiring **co-ordination with military units or ATS units in adjacent States** (to avoid interception)
- e) Any flight **across International borders**

FLIGHT PLAN SUBMISSION TIMES

Type	Submission Time
Standard intended flights	At least 3 hours (180 minutes) before EOBT , but not earlier than 120 hours (5 days) before EOBT
RPA (Remotely Piloted Aircraft)	At least 24 hours before estimated time of departure
Delay of 15 minutes or more (previously filed FP)	PIC or representative must notify ATC of revised ETD ; amend FP or file new FP and cancel old one

COMPLETION OF A FLIGHT PLAN

Whatever the purpose for which it is submitted, a flight plan shall contain information as applicable on relevant items up to and including "**Alternate aerodrome(s)**" regarding the whole route or the portion thereof for which the flight plan is submitted.

RNP/RVSM/RCP/RSP REQUIREMENT

An operator shall, prior to departure, ensure that where the flight is intended to operate on a route or in an area where an **RNP/RVSM/RCP/RSP type specification is prescribed**, the aircraft has an appropriate approval and that all conditions applying to that approval will be satisfied.

Changes to a Flight Plan

Flight Type	When to Report Changes
IFR flight OR VFR flight operated as controlled flight	As soon as practicable to the appropriate ATS unit
Other VFR flights	Significant changes shall be reported as soon as practicable
Fuel endurance or number of persons on board (if incorrect at departure)	Constitutes a significant change — must be reported

Closing a Flight Plan

✓ ARRIVAL REPORT

Unless otherwise prescribed by the appropriate ATS authority, a **report of arrival** shall be made in person, by radiotelephony or via data link at the **earliest possible moment** after landing, to the appropriate ATS unit at the arrival aerodrome, by any flight for which a flight plan has been submitted covering the **entire flight** or the **remaining portion** of a flight to the destination aerodrome.



14. Time (UTC)

📅 TIME STANDARD

- **Co-ordinated Universal Time (UTC)** shall be used and expressed in hours and minutes (and when required, seconds) of the **24-hour day beginning at midnight**
- A **time check** shall be obtained prior to operating a controlled flight and at such other times during the flight as may be necessary
- ATS unit clocks and time-recording devices shall be checked to ensure correct time to within **±30 seconds of UTC**
- Wherever time is utilised in the application of **data link communications**, it shall be accurate to within **1 second of UTC**

ATS clock accuracy: **±30 sec of UTC**

Data link time accuracy: **±1 sec of UTC**

Time format: **24-hour UTC**



15. Air Traffic Control Service

✓ ATC CLEARANCE

An **ATC clearance** shall be obtained prior to operating a controlled flight, or a portion of a flight as a controlled flight. Such clearance shall be requested through the **submission of a flight plan** to an ATC unit.

✓ ADHERENCE TO FLIGHT PLAN

An aircraft shall adhere to the **current flight plan** or the applicable portion unless a request for a change has been made and **clearance obtained** from the appropriate ATC unit.

⚠ Deviations from the Current Flight Plan

Deviation Type	Required Action
Deviation from Track	Take action forthwith to adjust heading to regain track as soon as practicable
Deviation from ATC assigned Mach number/indicated airspeed	Inform appropriate ATS unit immediately
Deviation from Mach number / true airspeed — varies by $\pm$ Mach 0.02 or more, or $\pm$ 19 km/h (10 kt) TAS or more	Inform appropriate ATS unit
Change in Time Estimate — exceeds 2 minutes from notified time	Notify ATS unit as soon as possible (unless ADS-C is activated and serviceable in airspace where ADS-C services are provided)

📘 ADS-C AUTOMATIC REPORTING

When ADS-C services are provided and ADS-C is activated, the ATSU shall be informed **automatically via data link** whenever changes occur beyond the threshold values stipulated by the **ADS event contract**.

📝 Change Requests — Required Information

Type of Change	Information to Include in Request
Change of cruising level	Aircraft identification; requested new cruising level and Mach/TAS at this level; revised time estimates at subsequent reporting points or FIR boundaries
Change of Mach/TAS	Aircraft identification; requested Mach/TAS
Change of route (destination unchanged)	Aircraft identification; flight rules; description of new route including related FP data beginning with position from which change is to commence; revised time estimates; any other pertinent info
Change of route (destination changed)	Aircraft identification; flight rules; description of revised route to revised destination including related FP data; alternate aerodrome(s); any other pertinent info

Weather Deterioration Below VMC (VFR Controlled Flight)

OPTIONS WHEN VMC CANNOT BE MAINTAINED (VFR Controlled Flight)

- a) Request an **amended clearance to continue in VMC** to destination or alternate, or to leave the airspace requiring ATC clearance
- b) If no clearance can be obtained, **continue in VMC and notify ATC** of the action being taken either to leave the airspace or to land at the nearest suitable aerodrome
- c) If operated within a control zone, request authorisation to operate as a **Special VFR flight**
- d) Request clearance to operate in accordance with **IFR**



16. Position Reports & Communications

✓ POSITION REPORTS — CONTROLLED FLIGHTS

Unless exempted, a controlled flight shall report to the ATS unit, as soon as possible, the **time and level** of passing each **designated compulsory reporting point**, together with any other required information. Position reports shall also be made in relation to additional points when requested.

✓ COMMUNICATIONS — CONTROLLED FLIGHTS

An aircraft operated as a controlled flight shall maintain **continuous air-ground voice communication watch** on the appropriate channel and establish **two-way communication** as necessary with the appropriate ATC unit.

SELCAL or similar automatic signalling devices satisfy the requirement to maintain an air-ground voice communication watch.

The requirement for air-ground voice communication watch **remains in effect after CPDLC has been established.**

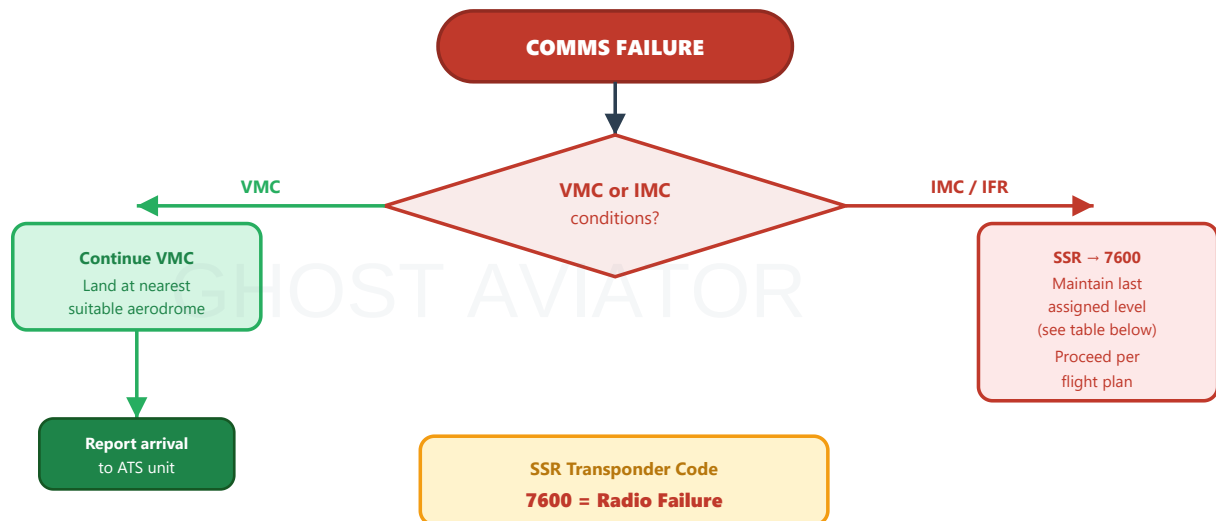
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17. Radio Communication Failure (RCF) Procedures



RCF DECISION FLOWCHART



✓ IF IN VMC (Radio Failure) — Actions

- a) **Continue to fly in VMC**, land at the nearest suitable aerodrome, and report arrival by the most expeditious means to the appropriate ATC unit
- b) If considered advisable, complete an **IFR flight in accordance with the provisions below**

IF IN IMC (or IFR PIC considers inadvisable to complete VMC provisions) — Detailed Procedure

Step	Airspace	Action Required
a)	Non-radar airspace	Unless otherwise prescribed (regional air navigation agreement) — maintain last assigned speed and level, or minimum flight altitude if higher, for 20 minutes following the aircraft's failure to report over a compulsory reporting point, then adjust level and speed per filed flight plan
b)	Radar-provided airspace	Maintain last assigned speed and level, or minimum flight altitude if higher, for 7 minutes following: (1) time last assigned level/min altitude reached; OR (2) time transponder set to Code 7600; OR (3) aircraft's failure to report over compulsory reporting point — whichever is later. Then adjust per filed flight plan.
c)	Radar vectored / RNAV offset	Rejoin current flight plan route no later than the next significant point , taking into account applicable minimum flight altitude
d)	En-route	Proceed per current FP route to the appropriate designated navigation aid or fix serving the destination aerodrome , and hold over this aid until commencement of descent
e)	Approach	Commence descent from the nav aid/fix at expected approach time last received and acknowledged , or if no EAT received, at the estimated time of arrival from the current FP
f)	Approach	Complete a normal instrument approach procedure as specified for the designated nav aid or fix
g)	Landing	Land, if possible, within 30 minutes after the ETA specified in step (e) or the last acknowledged EAT, whichever is later

KEY RCF TIME VALUES TO MEMORISE

Non-Radar: maintain for **20 minutes**

Radar: maintain for **7 minutes**

Land within **30 min** of ETA/EAT

Squawk: **7600**

Note: The provision of ATC service to other flights operating in the airspace concerned will be based on the premise that an aircraft experiencing communication failure will comply with these rules.



18. VMC Visibility and Distance from Cloud Minima (Table 3-1)

Altitude Band	Airspace Class	Flight Visibility	Distance from Cloud	
			Horizontal	Vertical
At and above 3,050 m (10,000 ft) AMSL	A*** / BCDEFG	8 km	1,500 m	300 m (1,000 ft)
Below 3,050 m (10,000 ft) AMSL and above 900 m (3,000 ft) AMSL, or above 300 m (1,000 ft) above terrain, whichever is higher	A*** / BCDEFG	5 km	1,500 m	300 m (1,000 ft)
At and below 900 m (3,000 ft) AMSL, or 300 m (1,000 ft) above terrain, whichever is higher	A***BCDE	5 km	1,500 m	300 m (1,000 ft)
	F, G	5 km**	Clear of cloud and with the surface in sight	

*** Note on Transition Altitude:** When the height of the transition altitude is lower than 3,050 m (10,000 ft) AMSL, FL 100 should be used in lieu of 10,000 ft.

**** Special Provisions for Airspace F & G (India — at/below 900m/3000ft AMSL or 300m/1000ft AGL):**

- Flight visibilities reduced to not less than **3,000 m** may be permitted for flights operating: (1) at speeds giving adequate opportunity to observe other traffic/obstacles, or (2) in areas where encounter probability with other traffic is normally low
- **Helicopters** may be permitted to operate up to **1,500 m flight visibility** at a speed giving adequate opportunity to observe other traffic/obstacles
- When so prescribed by the appropriate ATS authority: helicopters may operate up to **1,000 m flight visibility**

*** **Class A Airspace:** *VMC minima in Class A airspace are included for guidance to pilots and do not imply acceptance of VFR flights in Class A airspace.*

MEMORY AID — VMC MINIMA

Above 10,000 ft AMSL: **8 km vis | 1500m H | 1000ft V**

3000–10,000 ft AMSL: **5 km vis | 1500m H | 1000ft V**

Below 3000 ft (Class A-E): **5 km | 1500m H | 1000ft V**

Below 3000 ft (Class F/G): **5 km | Clear of cloud | Surface in sight**

19. Visual Flight Rules (VFR)

VFR FLYING CONDITIONS

Except when operating as a **Special VFR** flight, VFR flights shall be conducted so that the aircraft is flown in conditions of **visibility and distance from clouds equal to or greater than those specified in the VMC Table.**

VFR — CONTROL ZONE ENTRY/DEPARTURE RESTRICTIONS

Except when a clearance is obtained from an ATC unit, VFR flights shall **NOT** take off or land at an aerodrome within a control zone, or enter the aerodrome traffic zone or traffic pattern:

- a) When the **ceiling is less than 450 m (1,500 ft)**, or
- b) When the **ground visibility is less than 5 km**

✓ VFR OPERATING HOURS

VFR flights shall be operated during the period from **20 minutes before sunrise to 20 minutes after sunset**, except when exempted by ATC for local flights and training flights of flying club aircraft cleared by ATC.

✗ VFR ALTITUDE / AIRSPACE RESTRICTIONS (Unless ATS Authority Authorizes)

- ✗ VFR flights shall **NOT** operate **above FL 150**
- ✗ VFR flights shall **NOT** operate at **transonic and supersonic speeds**
- ✗ VFR flights shall **NOT** operate more than **100 NM seaward** from the shoreline within controlled airspace

Authorization for VFR flights to operate above FL 290 shall NOT be granted in areas where a vertical separation minimum of **300 m (1,000 ft)** is applied **above FL 290**.

✓ WHEN VFR FLIGHTS COMPLY WITH ATC PROVISIONS

- a) When operated within **Class B, C, and D airspace**
- b) When forming part of aerodrome traffic at **controlled aerodromes**
- c) When operated as **Special VFR flights**

✓ CHANGE FROM VFR TO IFR

An aircraft operating VFR that wishes to change to IFR compliance shall:

- a) If a FP was submitted, **communicate the necessary changes** to be effected to its current flight plan, or
- b) When required, submit a FP to the appropriate ATS unit and **obtain a clearance prior to proceeding IFR** when in controlled airspace.



20. Special VFR Flights

WHAT IS A SPECIAL VFR FLIGHT?

A VFR flight cleared by ATC to operate within a **control zone in meteorological conditions below VMC**, but following certain special provisions.

CONDITIONS FOR SPECIAL VFR AUTHORISATION

- a) When traffic conditions permit, Special VFR flights may be authorised subject to approval from the unit providing **approach control service**
- b) Requests shall be handled **individually**
- c) When ground visibility is **not less than 1,500 metres**, Special VFR flights may be authorised to enter a CTR for landing, take-off, depart, cross, or operate locally within a CTR
- d) Performance Class I and Class II helicopters may be authorised when ground visibility is **not less than 1,000 metres**
- e) Pilot is responsible for meeting criteria for performance class helicopters and shall state this in Field 18 of the flight plan and report on RTF to ATC
- f) **Special VFR flights shall be operated ONLY by pilots holding:**
 - Instrument Rating (IR), or
 - Assistant Flight Instructor (AFI) rating, or
 - Flight Instructor (FI) rating

Fixed-wing min visibility: **1,500 m**

Helicopter min visibility: **1,000 m**

Required rating: **IR / AFI / FI**



21. Instrument Flight Rules (IFR)

✓ IFR AIRCRAFT EQUIPMENT

Aircraft shall be equipped with **suitable instruments and with navigation equipment appropriate to the route to be flown.**

⊖ IFR MINIMUM LEVELS (Where No State Minimum Has Been Established)

Terrain Type	Minimum IFR Level	Obstacle Clearance Reference
High terrain or mountainous areas	600 m (2,000 ft) above highest obstacle	Within 8 km of estimated position
All other areas	300 m (1,000 ft) above highest obstacle	Within 8 km of estimated position

Mountains: **600m (2000ft)** above highest obstacle within 8km

Elsewhere: **300m (1000ft)** above highest obstacle within 8km

✈ IFR — Rules Applicable to Controlled Airspace

✓ CRUISING LEVELS IN CONTROLLED AIRSPACE

An IFR flight in cruising flight in controlled airspace shall be flown at a cruising level, or if authorised for cruise climb, between two levels or above a level, selected from:

- a) The **Tables of cruising levels**, or
- b) A modified table for flight above **FL 410**, except that the correlation of levels to track shall not apply whenever otherwise indicated in ATC clearances or specified by ATS authority in AIPs.

✈ IFR — Rules Applicable Outside Controlled Airspace

✓ CRUISING LEVELS OUTSIDE CONTROLLED AIRSPACE

An IFR flight operating in level cruising outside controlled airspace shall be flown at a cruising level appropriate to its track per:

- a) Tables of cruising levels, except when otherwise specified by appropriate ATS authority for flight at or below 900 m (3,000 ft) AMSL
- b) Modified table for flight above FL 410

✓ COMMUNICATIONS — IFR OUTSIDE CONTROLLED AIRSPACE

An IFR flight operating outside controlled airspace but within or into areas or along routes designated by ATS authority shall maintain **air-ground voice communication watch** and establish two-way communication with the air traffic services unit providing flight information service.

🔄 Change from IFR to VFR

📋 IFR → VFR CANCELLATION

An aircraft electing to change from IFR to VFR compliance shall, if a FP was submitted, **notify the appropriate ATS unit specifically that the IFR flight is cancelled** and communicate thereto the changes to be made to the current FP.

When an aircraft operating IFR encounters VMC, it shall **NOT cancel its IFR flight unless it is anticipated, and intended, that the flight will be continued for a reasonable period of time in uninterrupted VMC.**

🌙 Flight by Night (Definition)

📋 NIGHT DEFINITION

A flight performed between **half an hour after sunset** and **half an hour before sunrise.**

💡 Contrast with VFR Day Operations

VFR flights are operated **20 minutes before sunrise to 20 minutes after sunset.**

Night definition for IFR/general purposes: 30 min after sunset to 30 min before sunrise.



IFR — Position Reports Outside Controlled Airspace

✓ IFR POSITION REPORTS (Advisory Airspace Users)

Aircraft electing to use the air traffic advisory service whilst operating IFR within specified advisory airspace are expected to comply with these provisions, **except that flight plan changes are not subjected to clearances** and that two-way communication will be maintained with the unit providing the air traffic advisory service.

SOS

22. Distress, Urgency & Interception Signals

🚫 DISTRESS SIGNALS — MAYDAY (Grave and Imminent Danger)

The following signals, used **either together or separately**, mean that **grave and imminent danger threatens, and immediate assistance is requested**:

- a) Radiotelegraphy: **SOS** (· · · — — — · · ·) in Morse Code
- b) Radiotelephony: spoken word **MAYDAY**
- c) Distress message via **data link** transmitting intent of word MAYDAY
- d) **Rockets or shells** throwing red lights, fired one at a time at short intervals
- e) A **parachute flare showing a red light**

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⚡ **URGENCY SIGNALS — PAN PAN (Difficulties compelling landing, no immediate assistance)**

Type 1 — Aircraft has difficulties compelling it to land without requiring immediate assistance:

- a) Repeated switching on and off of the **landing lights**
- b) Repeated switching on and off of the **navigation lights** in such manner as to be distinct from flashing nav lights

Type 2 — Aircraft has a very urgent message concerning safety of a ship, aircraft, vehicle or person:

- a) Radiotelegraphy: **XXX** (— · — — · — — · —)
- b) Radiotelephony: spoken words **PAN, PAN**
- c) Urgency message via **data link** transmitting intent of words PAN, PAN

🔑 **DISTRESS vs URGENCY — KEY DISTINCTION**

Signal	Words Used	Morse	Meaning
DISTRESS	MAYDAY MAYDAY MAYDAY	SOS ··· — — — · ·	Grave & imminent danger; immediate assistance needed
URGENCY	PAN PAN PAN PAN	XXX — · — — · — — · —	Very urgent message / difficulties compelling land

🛡️ **Interception — Actions of the Intercepted Aircraft**

✓ WHEN YOUR AIRCRAFT IS INTERCEPTED — IMMEDIATE ACTIONS

- a) Attempt to establish two-way communication via any available means, including **emergency radio frequency 121.5 MHz** (and if practicable, also on **243 MHz**)
- b) If equipped with SSR transponder: select **Mode A, Code 7700** (unless otherwise instructed by ATS unit)
- c) If equipped with ADS-B or ADS-C: select the **appropriate emergency functionality**, if available

Conflict of Instructions: *If any instructions received by radio from any sources **conflict** with those given by the intercepting aircraft by visual signals, the intercepted aircraft shall **request immediate clarification while continuing to comply with the visual instructions** given by the intercepting aircraft. If instructions by radio conflict with those from intercepting aircraft by radio, request clarification while complying with **radio instructions from the intercepting aircraft**.*

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INTERCEPTION COMMUNICATION PHRASEOLOGY

PHRASES FOR USE BY INTERCEPTING AIRCRAFT			PHRASES FOR USE BY INTERCEPTED AIRCRAFT		
Phrase	Pronunciation	Meaning	Phrase	Pronunciation	Meaning
CALL SIGN	KOL SA-IN	What is your call sign	CALL SIGN	KOL SA-IN	My call sign is ...
FOLLOW	FOL-LO	Follow me	WILCO	VILL-KO	Understood, will comply
DESCEND	DEE-SEND	Descend for landing	CAN NOT	KANN NOTT	Unable to comply
YOU LAND	YOU LAAND	Land at this aerodrome	REPEAT	REE-PEET	Repeat your instruction
PROCEED	PRO-SEED	You may proceed	AM LOST	AM LOSST	Position unknown
			MAYDAY	MAYDAY	I am in distress
			HIJACK	HI-JACK	I have been hijacked
			LAND (place)	LAAND	I request to land at (place)
			DESCEND	DEE-SEND	I require descent



Visual Signals — Interception Sequences

Series	Intercepting Aircraft Signal	Meaning	Intercepted Aircraft Response	Meaning
1	DAY/NIGHT — Rocking aircraft + flashing nav lights at irregular intervals from position slightly above and ahead of, to the left of intercepted aircraft (or right if helicopter); slow level turn to left on desired heading	You have been intercepted. Follow me.	DAY/NIGHT — Rocking aircraft + flashing nav lights at irregular intervals, and following	Understood, will comply
2	DAY/NIGHT — Abrupt breakaway climb of 90° or more without crossing the line of flight of intercepted aircraft	You may proceed.	DAY/NIGHT — Rocking the aircraft	Understood, will comply
3	DAY/NIGHT — Lowering landing gear + showing steady landing lights + overflying runway in use	Land at this aerodrome.	DAY/NIGHT — Lowering landing gear + steady landing lights + following and landing if safe	Understood, will comply
4	<i>(Response to Series 4 from intercepted aircraft)</i> Raises landing gear + Series 1 signals = follow to alternate aerodrome; or Series 2 signals = release intercepted aircraft		DAY/NIGHT — Raising landing gear + flashing landing lights while passing over runway at 300–600m, continuing to circle runway	Aerodrome you have designated is inadequate
5	Use Series 2 signals	Understood	DAY/NIGHT — Regular switching on/off all available lights but distinct from flashing lights	Cannot comply
6	Use Series 2 signals	Understood	DAY/NIGHT — Irregular flashing of all available lights	In distress

VISUAL SIGNAL — WARNING: RESTRICTED/PROHIBITED/DANGER AREA

By day and by night: a series of **projectiles discharged from the ground at intervals of 10 seconds**, each showing on bursting **red and green lights or stars**, indicate to an unauthorised aircraft that it is flying in or about to enter a restricted, prohibited, or danger area, and that it is to take such remedial action as may be necessary.



23. ADIZ (Air Defense Identification Zone) & Air Defense Clearance (ADC)

ADIZ ZONES IN INDIA

Air Defense Identification Zones (ADIZ) have been established for air defense clearance:

- **ADIZ North, South, East, West, Central, and Sub-ADIZ South East**

WHEN IS ADC REQUIRED?

Except local flights within **5 NM radius** centred at ARP and vertical limits of **1,000 ft AGL** of an aerodrome: aircraft operating to, through, or within the ADIZ shall obtain **Air Defense Clearance (ADC) before take-off**, through the ATC concerned.

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ADC Rule	Details
ADC validity — Scheduled/RPL/FPL	(-) 15 minutes to (+) 45 minutes of EOBT
ADC validity — Non-scheduled domestic	(-) 15 minutes to (+) 3 hours of EOBT
ADC route validity	Valid for the entire route, irrespective of intermediate halts for flights originating in one ADIZ/FIR and transiting through other ADIZ/FIR
All flights entering Indian airspace	Shall obtain ADC before entering ADIZ from respective FIC, ten minutes prior to entering Indian airspace
Communication difficulty at departure	Aircraft with radio may take off with instructions to obtain ADC immediately after airborne from FIC concerned
Flying Club aircraft (no ATC at aerodrome)	May obtain ADC from nearest IAF ATC Unit; IAF ATC will advise FIC concerned
Same-day return flight	ADC can be issued for return flight also; however, a fresh ADC is required if delay exceeds 30 minutes from estimated departure time

Exemption radius: **5 NM / 1000 ft AGL**

Scheduled ADC validity: **-15 to +45 min EOBT**

Non-scheduled ADC validity: **-15 min to +3 hr EOBT**

Entry timing: **10 min before entering Indian airspace**



24. Aerodrome Light and Pyrotechnic Signals (Tower to Aircraft)

💡 LIGHT GUN SIGNALS — Tower to Aircraft (Table)

Light Signal	Aircraft IN FLIGHT	Aircraft ON GROUND
● Steady GREEN	Cleared to LAND	Cleared for TAKEOFF
● Steady RED	Give way to other aircraft and continue circling	STOP
● Series of GREEN flashes	Return for landing* (clearances will be given in due course)	Cleared to TAXI
● Series of RED flashes	Aerodrome unsafe — DO NOT LAND	Taxi clear of landing area in use
□ Series of WHITE flashes	Land at this aerodrome and proceed to apron* (clearances will be given in due course)	Return to starting point on the aerodrome
● Red PYROTECHNIC	Notwithstanding any previous instructions — DO NOT LAND for the time being	—

👉 Aircraft Acknowledgement of Light Signals

✓ HOW AN AIRCRAFT ACKNOWLEDGES LIGHT SIGNALS

Aircraft State	Daylight	Hours of Darkness
In flight	Rock the wings	Flash on/off landing lights twice OR switch nav lights on/off twice
On the ground	Move ailerons or rudder	Flash on/off landing lights twice OR switch nav lights on/off twice

Note: Wing rocking signal should NOT be expected on the base and final legs of the approach.

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25. Visual Ground Signals

○ PROHIBITION OF LANDING

Signal: Horizontal RED square panel with YELLOW diagonals (X pattern)

Meaning: Landings are prohibited and the prohibition is liable to be prolonged

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● SPECIAL PRECAUTIONS WHILE LANDING

Signal: Horizontal RED square panel with ONE yellow diagonal

Meaning: Owing to bad state of the manoeuvring area or for any other reason, special precautions must be observed in approaching to land or in landing

USE RUNWAYS AND TAXIWAYS ONLY

Signal: Horizontal WHITE DUMBELL

Meaning: Aircraft are required to land, take off, and taxi on runways and taxiways only

RUNWAYS ONLY (Other manoeuvres not confined)

Signal: White dumbbell with a BLACK BAR perpendicular to shaft across each circular portion

Meaning: Aircraft required to land and take off on runways only, but other manoeuvres need not be confined to runways and taxiways

CLOSED RUNWAYS OR TAXIWAYS

Signal: Crosses of a single contrasting colour — WHITE or YELLOW — displayed horizontally on runways and taxiways

Meaning: Area unfit for movement of aircraft

DIRECTION FOR LANDING/TAKEOFF

Signal: Horizontal white or orange landing "T"

Meaning: Indicates direction to be used by aircraft for landing and take-off (parallel to shaft, towards cross arm). At night: illuminated or outlined in white lights.

DIRECTION FOR TAKEOFF (Digits)

Signal: A set of two digits displayed vertically at/near aerodrome control tower — Yellow background

Meaning: Indicates direction for takeoff, expressed in units of 10 degrees to the nearest 10 degrees of the magnetic compass

Example: "12" = 120° magnetic

RIGHT HAND TRAFFIC

Signal: Right-hand arrow of conspicuous colour displayed in signal area or horizontally at end of runway/strip in use

Meaning: Turns are to be made to the RIGHT before landing and after take-off

ATS REPORTING OFFICE

Signal: Letter "C" displayed vertically in BLACK against a YELLOW background

Meaning: Indicates the location of the air traffic services reporting office

GLIDER FLIGHTS IN OPERATION

Signal: Double white cross displayed horizontally in the signal area

Meaning: Aerodrome is being used by gliders and glider flights are being performed



26. Marshalling Signals & Emergency Hand Signals

SIGNALMAN RULES (DGCA)

- No person shall guide an aircraft unless **trained, qualified and approved by DGCA** to carry out the functions of a signalman
- The signalman shall wear a **distinctive fluorescent identification vest**
- **Daylight:** Fluorescent-coloured wands, table-tennis bats, or gloves shall be used
- **Night / Low Visibility:** Illuminated wands shall be used
- Engines are numbered from right to left from the signalman facing the aircraft (No. 1 = port outer engine)
- Signals marked (*) are designed for hovering helicopters

1

Wingwalker / Guide

Right hand up with wand pointing up; left hand wand pointing down toward body

2

Identify Gate

Raise fully extended arms straight above head with wands pointing up

3

Proceed to Next Signalman / Tower

Point both arms upward; move and extend arms outward to side of body; point with wands to direction of next signalman or taxi area

4

Straight Ahead

Bend extended arms at elbows and move wands up and down from chest height to head

5a

Turn Left (Pilot's POV)

Right arm/wand extended at 90°; make "come ahead" signal with left hand. Rate of signal = rate of turn

5b

Turn Right (Pilot's POV)

Left arm/wand extended at 90°; make "come ahead" signal with right hand. Rate of signal = rate of turn

6a**Normal Stop**

Fully extend arms and wands at 90° to sides; slowly move above head until wands cross

6b**Emergency Stop**

Abruptly extend arms and wands to top of head, crossing wands

7a**Set Brakes**

Raise hand just above shoulder height with open palm, ensuring eye contact with flight crew, close hand into a fist. Do not move until "thumbs up" acknowledgment received.

7b**Release Brakes**

Raise hand just above shoulder height with closed fist; open palm. Do not move until "thumbs up" acknowledgment received.

8a**Chocks Inserted**

Arms and wands fully extended above head; move wands inward in a jabbing motion until wands touch. Ensure acknowledgment received from flight crew.

8b**Chocks Removed**

Arms and wands fully extended above head; move wands outward in a jabbing motion. Do not remove chocks until authorised by flight crew.

9**Start Engine(s)**

Raise right arm to head level with wand pointing up; start circular motion with hand. At same time with left arm raised above head, point to engine to be started.

10**Cut Engines**

Extend arm with wand forward of body at shoulder level; move hand and wand to top of left shoulder and draw wand to top of right shoulder in a slicing motion across throat.

11**Slow Down**

Move extended arms downwards in a "patting" gesture; move wands up and down from waist to knees.

12**Slow Down Engine(s) on Indicated Side**

Arms down, wands toward ground; wave either right or left wand up and down indicating which engine(s) should be slowed down.

13**Move Back**

Arms in front of body at waist height; rotate arms in a forward motion. To stop rearward movement, use Signals 6a or 6b.

14a**Turn While Backing (Tail to Starboard)**

Point left arm with wand down; bring right arm from overhead vertical position to horizontal forward position, repeating right-arm movement.

14b**Turn While Backing (Tail to Port)**

Point right arm with wand down; bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.

15**Affirmative / All Clear**

Raise right arm to head level with wand pointing up OR display hand with "thumbs up"; left arm remains at side by knee. Also used as a technical/servicing communication signal.

16*Hover (Helicopter)**

Fully extend arms and wands at a 90° angle to sides.

17*Move Upwards (Helicopter)**

Fully extend arms and wands at 90° to sides with palms turned up; move hands upwards. Speed of movement indicates rate of ascent.

18*Move Downwards (Helicopter)**

Fully extend arms and wands at 90° to sides with palms turned down; move hands downwards. Speed of movement indicates rate of descent.

19a*Move Left (Pilot's POV) (Helicopter)**

Extend arm horizontally at 90° to right side; move other arm in same direction in a sweeping motion.

19b*Move Right (Pilot's POV) (Helicopter)**

Extend arm horizontally at 90° to left side; move other arm in same direction in a sweeping motion.

20*Land (Helicopter)**

Cross arms with wands downwards and in front of body.

21**Hold Position / Stand-by**

Fully extend arms and wands downwards at a 45° angle to sides. Hold position until aircraft is clear for next manoeuvre.

22**Dispatch Aircraft**

Perform a standard salute with right hand and/or wand. Maintain eye contact with flight crew until aircraft has begun to taxi.

23**Do Not Touch Controls (Technical)**

Extend right arm fully above head and close fist or hold wand in horizontal position; left arm remains at side by knee.

24**Connect Ground Power (Technical)**

Hold arms fully extended above head; open left hand horizontally and move finger tips of right hand into and touch the open palm of left hand (forming a "T"). At night, illuminated wands can also be used.

25**Disconnect Power (Technical)**

Hold arms fully extended above head with finger tips of right hand touching open horizontal palm of left (forming "T"), then move right hand away from left. Do not disconnect power until authorised by flight crew.

26**Negative (Technical)**

Hold right arm straight out at 90° from shoulder; point wand to ground or display hand with "thumbs down"; left hand remains at side by knee.

27**Establish Interphone (Technical)**

Extend both arms at 90° from body and move hands to cup both ears.

28**Open/Close Stairs (Technical)**

Right arm at side; left arm raised above head at 45°; move right arm in a sweeping motion towards top of left shoulder. Intended mainly for aircraft with integral stairs at the front.



Standard Emergency Hand Signals (ARFF to Cockpit/Cabin)

ARFF EMERGENCY SIGNALS

These are the minimum required signals for emergency communication between the **ARFF incident commander/firefighters** and the cockpit and/or cabin crews of the incident aircraft. Given from the **left front side of the aircraft for the cockpit crew**.

E1**Recommend Evacuation**

Arm extended from body and held horizontal with hand upraised at eye level. Execute beckoning arm motion angled backward. Non-beckoning arm held against body. Night: same with wands.

E2**Recommended Stop (Stop Evacuation)**

Arms in front of head — crossed at wrists. Night: same with wands.

E3**Emergency Contained ("All Clear")**

Arms extended outward and down at 45°; arms moved inward below waistline simultaneously until wrists crossed, then extended outward (umpire's "safe" signal). Night: same with wands.

E4

Fire

Move right hand wand in a "fanning" motion from shoulder to knee, while at same time pointing with left-hand wand to area of fire.

From Pilot to Signalman Signals

Brakes

Brakes Engaged: Raise arm and hand, with fingers extended, horizontally in front of face, then **clench fist**.

Brakes Released: Raise arm, with fist clenched, horizontally in front of face, then **extend fingers**.

Chocks

Insert Chocks: Arms extended, palms outwards, move hands **inwards** to cross in front of face.

Remove Chocks: Hands crossed in front of face, palms outwards, move arms **outwards**.

12
34

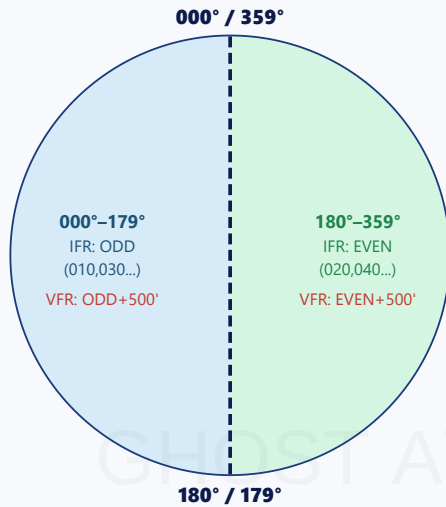
27. Table of Cruising Levels (RVSM & NON-RVSM)

CVSM vs RVSM

- **CVSM (Conventional VSM) / Non-RVSM:** General vertical separation minimum applied everywhere. Separation = 2,000 ft (same direction below FL290)
- **RVSM (Reduced VSM):** 300 m (1,000 ft) applied between **FL 290 and FL 410 inclusive**. RVSM is applied in **Indian airspace** per the table.
- In RVSM airspace (FL290–FL410): VFR flights are **NOT allowed**.
- Above RVSM airspace (>FL410): Separation doubles again.

SEMI-CIRCULAR RULE — CRUISING LEVELS (MNEMONIC DIAGRAM)

BELOW FL290 — CVSM (Non-RVSM Airspace)



AT & ABOVE FL290 — RVSM

(FL290 to FL410 — India)

Track 000°-179°

IFR: ODD (up to FL400)

Then: 430, 470 etc.

VFR: NOT ALLOWED

Track 180°-359°

IFR: EVEN (up to FL410)

Then: 450, 490 etc.

VFR: NOT ALLOWED

SEPARATION RULES

Below FL290: Same direction = 2000'

Below FL290: Reciprocal = 1000'

IFR-VFR (both ways) = 500'

RVSM: Same dir = 2000' | Recip = 1000'

Above RVSM: doubles

SEMI-CIRCULAR RULE — MEMORY TABLE

Airspace	Flight Level	Magnetic Track 000°-179°	Magnetic Track 180°-359°
CVSM (Non-RVSM)	Below FL290	IFR: Odd (FL010, 030, 050...FL280) VFR: Odd + 500 ft (FL045, 065, 085...FL275)	IFR: Even (FL020, 040, 060...FL290-) VFR: Even + 500 ft (FL035, 055, 075...FL285)
RVSM (India)	FL290 to FL410	IFR: Odd up to FL400, then FL430, 470... VFR: N/A	IFR: Even up to FL410, then FL450, 490... VFR: N/A
CVSM Above RVSM	Above FL410	IFR: Odd(290, 330, 390, 430 etc.) VFR: Alternate Even	IFR: Odd(290, 330, 370, 410 etc.) VFR: Alternate Even

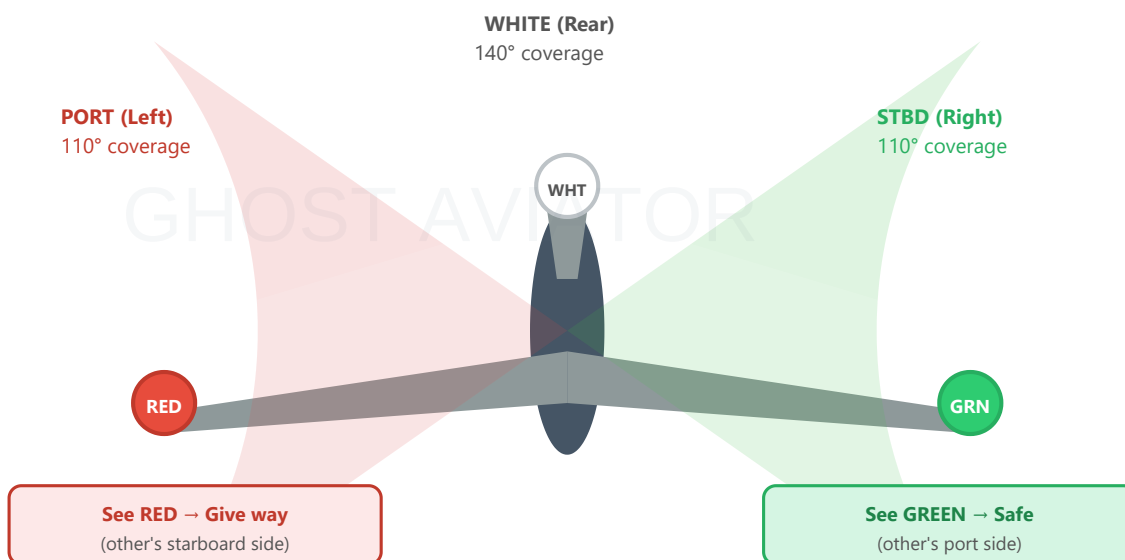
RVSM separation note: Minimum separation in airspaces below FL290 between IFR flights in the same direction is **2,000 ft** and in reciprocal direction **1,000 ft**. Minimum separation between IFR and VFR both ways is **500 ft**. Above FL290 in RVSM, separation is **2,000 ft same direction** and **1,000 ft reciprocal direction**. Above RVSM airspace it doubles.



28. Navigation Lights & Right of Way at Night



AEROPLANE NAVIGATION LIGHT GEOMETRY



Navigation Light	Coverage Angle	Position	Night Right-of-Way Rule
● Red	110° projected L + R of horizontal plane	Port (left) wing	If the light is NOT moving relative to you = risk of collision
● Green	110° projected L + R of horizontal plane	Starboard (right) wing	
□ White	140° rearward (70° each side)	Tail	



Right of Way at Night — What You See

What You See (Not Moving)	Other Aircraft Position	Action Required
RED + GREEN together	Coming directly HEAD-ON at you	⚠️ BOTH alter heading RIGHT
RED + WHITE	Moving from right to left (you see their port side)	Give way (you are on their right — converging rule)
GREEN + WHITE	Moving from left to right (you see their starboard side)	YOU HAVE RIGHT OF WAY
WHITE only	Flying away from you	Monitor; you may be overtaking
GREEN to GREEN	Passing port to port (safe)	Safe passage
RED to RED	Passing starboard to starboard (safe)	Safe passage
GREEN to RED	Crossing paths — unsafe	⚠️ Collision risk — take action

💡 STUDENT TIP — RED/GREEN MEMORY AID

"If you see RED — you could be DEAD" — The red light is on the other aircraft's port (left) side. This means the other aircraft is crossing from your right to your left. Under converging rules, the one with the other on its RIGHT gives way — so that's **YOU**. Give way!

Navigation lights CANNOT be seen from the rear — white only means the aircraft is ahead of or flying away from you.

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29. Unlawful Interference

✓ WHEN UNABLE TO PROCEED PER RULES (HIJACKING/UNLAWFUL INTERFERENCE)

If the PIC cannot proceed to an aerodrome in accordance with the rules, he/she should attempt to continue flying on the **assigned track** and at the **assigned cruising level** at least until able to notify an ATS unit or until within radar or ADS-B coverage.

When an aircraft subjected to unlawful interference must depart from its assigned track or level **without being able to make radiotelephony contact with ATS**, the PIC should, whenever possible:

- a) Attempt to broadcast warnings on the **VHF channel in use or the VHF emergency frequency**, and other appropriate channels; use transponders and data links when advantageous
- b) Proceed in accordance with applicable **special procedures for in-flight contingencies** (Doc 7030 Regional Supplementary Procedures)
- c) If no regional procedures, proceed at a level which differs from the cruising levels normally used for IFR flight by:
 - 1) **150 m (500 ft)** in an area where a vertical separation minimum of 300 m (1,000 ft) is applied
 - 2) **300 m (1,000 ft)** in an area where a vertical separation minimum of 600 m (2,000 ft) is applied

In RVSM area: depart cruising level by **±500 ft (150m)**

In CVSM area: depart cruising level by **±1000 ft (300m)**

Squawk: **7500 (Hijack)**



30. Practice Questions & Answer Key

EXAM TIPS FROM GHOST AVIATOR

- High-frequency exam topics: VMC minima table, cruising levels, RCF procedures, light gun signals, interception signals, right-of-way rules
- Numbers to memorise: acrobatics min height (600m/2000ft), RVSM range (FL290–FL410), RCF non-radar time (20 min), RCF radar time (7 min), special VFR min visibility (1500m fixed, 1000m helicopters)
- Watch for trick questions on VFR ceiling/visibility in control zones: ceiling <450m (1500ft) OR visibility <5km

Q1. Where State has not established minimum IFR altitudes, the minimum height of an aircraft above the highest obstacle over high terrain or mountainous areas shall be:

- A. ✓ A) At least 2,000 ft within 8 km of the estimated position**
- B. B) At least 1,000 ft within 8 km of the estimated position
- C. C) At least 2,000 ft within 5 km of the estimated position

Q2. Aircraft wishing to conduct IFR flight within advisory airspace, but not electing to use the air traffic advisory service:

- A. A) Need to file a flight plan
- B. B) Shall nevertheless submit a flight plan but changes thereto are not necessary to be notified
- C. ✓ C) Shall nevertheless submit a FP and notify changes to the ATS unit providing that service**

Q3. The white dumb-bell with black perpendicular bar indicates that:

- A. A) Taxiing need not be confined to the taxiways
- B. B) Glider flying is performed outside the landing area
- C. ✓ C) Landing, take-off and taxiing is allowed on runway and/or taxiway only**

Q4. Your aircraft is intercepted by a military aircraft. The signals given by this aircraft conflict with ATC instructions. You should:

- A. A) Select code 7500 on your transponder
- B. B) Follow ATC instructions
- C. **✓ C) Follow the instructions of the intercepting aircraft**

Q5. An aircraft subjected to unlawful interference forced to deviate from the cleared track/level without radio contact shall try to:

- A. A) Fly the emergency triangle
- B. **✓ B) Continue at an altitude that differs from the semicircular rule with 1,000 ft when above FL 290 and 500 ft when lower than FL 290**
- C. C) Commence emergency descent

Q6. An aircraft manoeuvring in an airport's circuit receives a series of red flashes from the control tower. This signifies that the aircraft must:

- A. **✓ A) Not land for the moment regardless of previous instructions**
- B. B) Return to land and clearance to land will be communicated in due course
- C. C) Not land because the airport is not available for landing

Q7. Whilst flying in an aerodrome's traffic circuit, an aircraft receives a series of green flashes from the tower. The aircraft:

- A. A) Is cleared to land
- B. B) Must land immediately and clear the landing area
- C. **✓ C) Must come back to land and the landing clearance will be sent in due time**

Q8. Except when a clearance is obtained from an ATC unit, a VFR flight CANNOT enter or leave a control zone when ceiling is less than:

- A. A) 2,000 ft or visibility less than 5 km
- B. B) 1,000 ft or visibility less than 5 km
- C. **✓ C) 1,500 ft (450m) or visibility less than 5 km**

Q9. Which of the following flights has the greatest priority to land?

- A. **✓ A) Emergency aircraft**
- B. B) Military aircraft
- C. C) VIP (Head of State) aircraft

Q10. An aircraft flying above the sea between 4,500 ft MSL and 9,000 ft MSL outside controlled airspace under VFR must remain at least:

- A. A) 1,500m horizontally, 1,000 ft vertically from clouds; 8 km visibility
- B. B) Clear of clouds and in sight of the surface; 8 km visibility
- C. **✓ C) 1,500m horizontally, 1,000 ft vertically from clouds; 5 km visibility**

Q11. The VMC minima for airspace classified as "B" above 10,000 ft MSL are:

- A. A) 2,000m horizontally, 1,000ft vertically from clouds; 8km visibility
- B. **✓ B) 1,500m horizontally, 1,000ft vertically from clouds; 8km visibility**
- C. C) 1 NM horizontally and 1,000 ft vertically from clouds; 8 km visibility

Q12. The VMC minima for airspace classified as "G" above 10,000 ft MSL are:

- A. **✓ A) 1,500m horizontally, 1,000ft vertically from clouds; 8km visibility**
- B. B) 1 NM horizontally and 1,000 ft vertically from clouds; 8 km visibility
- C. C) 1 NM horizontally and 1,000 ft vertically from clouds; 5 km visibility

Q15. Which of the following actions shall be taken in case of a controlled flight deviates from the track?

- A. **✓ A) Adjust the heading of the aircraft to regain track as soon as possible**
- B. B) If VMC, maintain this condition, waiting for ATC instructions
- C. C) Notify ATC of the new track immediately and comply with instructions

Q18. An aircraft intercepted by another aircraft shall immediately attempt to establish radio communication with the intercepting aircraft on:

- A. A) 121.5 MHz – 282.8 MHz
- B. B) 121.5 MHz – 125.5 MHz
- C. **✓ C) 121.5 MHz – 243 MHz**

Q26. An aircraft is considered to overtake another if it approaches the other from the rear on a line forming an angle of less than:

- A. A) 50 degrees with the plane of symmetry of the latter
- B. **✓ B) 70 degrees with the plane of symmetry of the latter**

C. C) 60 degrees with the plane of symmetry of the latter

Q65. While flying at night, another aircraft reports that you are on his 100 degrees relative bearing. In that case you should see his:

A. A) Red navigation light

B. ✓ B) Green navigation light

C. C) Green and white navigation lights

Q106. ADC validity for non-scheduled domestic flights is:

A. A) (-) 15 minutes to (+) 45 minutes of EOBT in RPL/FPL

B. B) (+) 60 minutes of EOBT in RPL/FPL

C. ✓ C) (-) 15 minutes to (+) 3 hours of EOBT

GHOST AVIATOR

 ANSWER KEY (All 106 Questions from the PDF)

1-A	2-C	3-A	4-C	5-B	6-C	7-C	8-C	9-A	10-C	11-B	12-A
15-A	16-B	17-A	18-C	19-B	20-B	21-C	22-B	23-B	24-B	25-C	26-B
29-A	30-C	31-C	32-B	33-C	34-C	35-A	36-A	37-B	38-B	39-B	40-A
43-B	44-B	45-B	46-C	47-B	48-C	49-C	50-B	51-A	52-C	53-B	54-A
57-B	58-B	59-C	60-A	61-A	62-B	63-A	64-A	65-B	66-C	67-C	68-B
71-C	72-A	73-B	74-A	75-B	76-C	77-B	78-B	79-B	80-A	81-C	82-C
85-B	86-A	87-A	88-B	89-B	90-C	91-A	92-A	93-C	94-B	95-A	96-B
99-B	100-A	101-A	102-B	103-C	104-B	105-A	106-C				



QUICK REFERENCE CARD — Critical Numbers to Memorise

Acrobatics min height: **600m / 2000ft AGL**

Acrobatics near aerodrome: **<2NM prohibited (unless >1800m/6000ft)**

Formation lateral: **≤1km / 0.5NM**

Formation vertical: **≤30m / 100ft**

VFR ceiling for CTR entry: **≥450m / 1500ft**

VFR visibility for CTR entry: **≥5km**

Join live classes for guided practice and doubt clearing.

VFR max altitude: **FL150**

VFR operating hours: **-20min SR to +20min SS**

Night definition: **+30min SS to -30min SR**

VMC visibility above 10,000ft: **8km**

VMC visibility below 10,000ft: **5km**

VMC horizontal cloud distance: **1,500m**

VMC vertical cloud distance: **300m / 1,000ft**

Special VFR fixed-wing: **≥1500m vis**

Special VFR helicopter: **≥1000m vis**

IFR mountains: **600m / 2000ft within 8km**

IFR elsewhere: **300m / 1000ft within 8km**

FP submission: **180 min before EOBT**

FP earliest: **120hr before EOBT**

RPA FP: **24hr before ETD**

FP delay report: **≥15min delay → notify ATC**

UTC clock accuracy: **±30 sec**

Data link time: **±1 sec UTC**

Mach deviation notify: **±Mach 0.02 or ±10kt TAS**

ETA deviation notify: **>2 min**

RCF non-radar hold: **20 minutes**

RCF radar hold: **7 minutes**

RCF land within: **30 min of ETA/EAT**

Squawk RCF: **7600**

Squawk hijack: **7500**

Squawk emergency: **7700**

Emergency frequency: **121.5 MHz / 243 MHz**

RVSM range: **FL290–FL410**

RVSM separation: **1000ft same dir, 2000ft recip**

ADC scheduled: **-15 to +45 min EOBT**

ADC non-scheduled: **-15 min to +3hr EOBT**

ADIZ exemption: **5NM / 1000ft AGL**

Overtaking angle: **<70° plane of symmetry**

Nav lights: PORT RED 110° | STBD GREEN 110° | TAIL WHITE 140°

VFR congested area: **≥300m / 1000ft above highest obstacle**

VFR elsewhere: **≥150m / 500ft AGL**

DGCA Rules of the Air — Comprehensive Study Notes

Prepared by: **Ghost Aviator** | Reference: ICAO Annex 2 | AIP India | CAR Section 9 Series 'C' Part I Issue II | Revision: 12th
November 2018

These notes are for educational purposes for CPL/ATPL examination preparation. Always refer to the original DGCA/ICAO documents for official regulatory guidance.

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