EASA ATPL(A) · THEORY REVISION

The ATPL Cheat Sheet
010 Air Law

The facts that actually get tested, stripped to the bone: definitions, key numbers, formulas, mnemonics and the classic exam traps for each subject. Built for the night before, the commute, and the last scroll before you walk into the exam hall.

010 Air Law | **48** memory items

One of 14 subjects; the full set is free at skystudyatpl.com/atpl-cheat-sheet

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010 Air Law

Chicago Convention, ICAO Annexes, airspace classes, rules of the air, VFR minima, light signals.

AIRSPACE CLASSES A TO G AT A GLANCE

A	IFR only. Every aircraft separated. ATC clearance required.
B	IFR + VFR. Every aircraft separated from every other.
C	IFR + VFR. IFR separated from all; VFR separated from IFR.
D	IFR + VFR. IFR separated from IFR; VFR gets traffic info.
E	IFR + VFR. IFR separated from IFR; VFR needs no clearance.
F	Uncontrolled. IFR advisory service where it is provided.
G	Uncontrolled. Flight information; traffic info on request.

A to E are controlled (an ATC service is given); **F and G are uncontrolled**. Class A is the only class that forbids VFR; class G gives information only.

MUST-KNOW DEFINITIONS AND CONCEPTS

- The **Chicago Convention (1944)** established ICAO and confirms every state has complete and exclusive sovereignty over the airspace above its territory.
- ICAO has **19 Annexes** to the Chicago Convention; each contains Standards (must comply, differences must be filed) and Recommended Practices (should comply, no filing obligation).
- Key Annexes to know cold: **1** Personnel Licensing, **2** Rules of the Air, **3** Meteorological Service, **6** Operation of Aircraft, **7** Nationality and Registration Marks, **8** Airworthiness, **11** Air Traffic Services, **13** Accident and Incident Investigation, **14** Aerodromes, **17** Security.
- The **Five Freedoms of the Air**: 1st and 2nd are technical (overfly, technical stop), 3rd to 5th are traffic freedoms.
- **State of Registry**: the state on whose register the aircraft is entered; responsible for the Certificate of Registration.
- **State of the Operator**: the state where the operator has its principal place of business; issues the Air Operator Certificate.
- Certificate of Airworthiness, Certificate of Registration and Noise Certificate are three separate mandatory documents carried on board.
- Civil aircraft versus State aircraft (military, customs, police): State aircraft are not bound by ICAO Annexes.
- Airspace classes A to G: **A** is IFR only, ATC clearance and separation from all traffic; **G** is uncontrolled, no ATC service, traffic information only on request.
- The **Pilot-in-Command** has final authority and responsibility for the safety of the aircraft and all persons on board.
- **CAVOK** means visibility 10 km or more, no cloud below 5000 ft (or the highest minimum sector altitude if higher), no CB or towering cumulus, no significant weather.
- **Distress (MAYDAY)** = grave and imminent danger requiring immediate assistance. **Urgency (PAN PAN)** = a safety concern not requiring immediate assistance.
- **NOTAM**: time-critical information not known early enough to publish in the AIP. The **AIP** is the primary source of permanent aeronautical information for a state.
- Annex 13 accident and incident investigations exist solely to prevent future accidents, never to apportion blame or liability.

KEY NUMBERS, LIMITS AND VALUES

- SSR transponder codes: **7500** unlawful interference (hijack), **7600** radio failure, **7700** general emergency.
- Emergency frequency **121.5 MHz** (civil); **243.0 MHz** military. ELT transmits on **121.5 MHz and 406 MHz**.
- ISA: sea level **1013.25 hPa** (29.92 inHg), **15 C**, lapse rate about **1.98 C per 1000 ft** (rounded to 2 C/1000 ft).
- Pressure decreases by roughly **1 hPa per 30 ft** near sea level (the ratio changes with altitude).
- **QNH**: reads elevation AMSL on the ground. **QFE**: reads height above the aerodrome. **QNE**: standard 1013.25 hPa above the transition altitude.
- Semicircular rule: magnetic track **000 to 179** flies odd thousands; **180 to 359** flies even thousands (add 500 ft for VFR where applicable).
- Transition altitude is fixed by the state/aerodrome (flown on QNH); transition level is calculated by ATC and varies with pressure (flown on 1013.25).
- VFR at and above 10,000 ft AMSL: **8 km** visibility, 1500 m horizontal and 300 m (1000 ft) vertical from cloud.
- VFR below 10,000 ft down to 3000 ft AMSL: **5 km** visibility, 1500 m horizontal and 300 m vertical from cloud.
- VFR at or below 3000 ft AMSL (or 1000 ft above terrain) in class F/G: 5 km visibility, clear of cloud, in sight of the surface.
- Minimum height: **1000 ft** above the highest obstacle within 600 m over congested areas; elsewhere not within **500 ft** of any person, vehicle, vessel or structure.
- Runway designators are the magnetic bearing of the centreline rounded to the nearest 10 degrees, last digit dropped (274 becomes 27).
- Right of way order: aircraft in distress, then balloons, gliders, airships, aircraft towing, then powered heavier-than-air aircraft.
- Converging same-category aircraft: the one with the other on its **right** gives way. Head-on: **both turn right**. Overtaking: overtaker alters **right**, overtaken has right of way.
- Aircraft on final approach to land has right of way over aircraft on the ground or about to take off. Time in aviation is always **UTC**.
- Alcohol: a common minimum is **8 hours** bottle to throttle VERIFY.
- Light signals to aircraft **in flight**: steady green = cleared to land; steady red = give way and keep circling; flashing green = return to land; flashing red = aerodrome unsafe, do not land.
- Light signals to aircraft **on the ground**: steady green = cleared for takeoff; flashing green = cleared to taxi; steady red = stop; flashing red = taxi clear of the runway in use; flashing white = return to starting point.

MNEMONICS AND MEMORY ITEMS

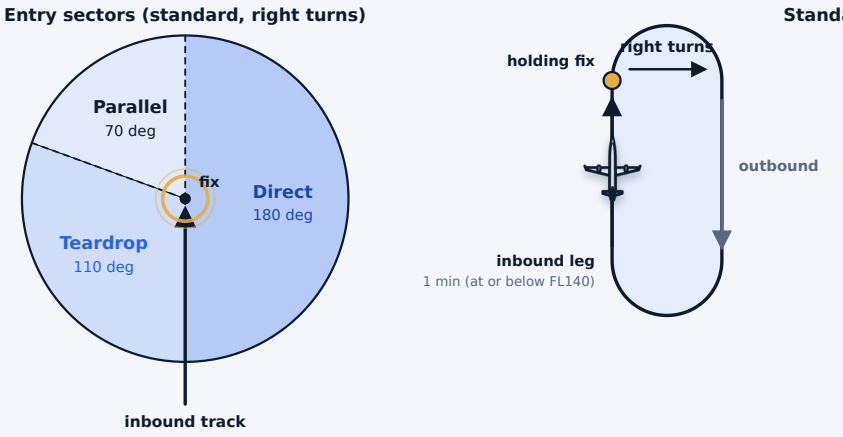
- Anchor the **Annexes by number**: 1 Licensing, 2 Rules of the Air, 3 Met, 6 Operations, 7 Marks, 8 Airworthiness, 11 ATS, 13 Investigation, 14 Aerodromes, 17 Security.
- Right of way pecking order: **Big Girls Always Take Priority** (Balloons, Gliders, Airships, Towing, Powered).
- **MAYDAY = Menace** (grave danger), **PAN = Precaution** (urgent, not yet grave). Each is said three times.
- Squawk ladder by severity: **7500** hijack, **7600** comms lost, **7700** general emergency.
- Cloud clearance hook **1-5-3**: 1500 m horizontal, 300 m (1000 ft) vertical, at every VFR band above the surface layer.
- **QNH** = height above sea level; **QFE** reads zero on the Field.

COMMON EXAM TRAPS

- Do not confuse **State of Registry** (Certificate of Registration, aircraft) with **State of the Operator** (AOC, operator).
- Standards are not automatically law everywhere: states may file differences; Recommended Practices carry no filing obligation.
- Transition **altitude** is fixed; transition **level** changes with QNH. Do not swap them.
- On converging tracks, the aircraft that gives way is the one with the other on **its right**, not the faster or first-arriving one.
- When overtaking, the **overtaking** aircraft alters right and the overtaken aircraft keeps its heading; students often reverse this.
- Powered aircraft give way to balloons, gliders and airships regardless of which side they are on.
- **CAVOK** has strict thresholds; weather just short of them is not CAVOK even if it looks fine.
- **7500** gives no aural warning to the crew that set it; do not assume all three emergency codes behave the same.
- State aircraft (military, customs, police) are exempt from ICAO Annexes.
- Runway numbers round the **magnetic** bearing, not the true bearing; convert first if a true heading is given.

The holding pattern and its three entry sectors

010 · HOLDING



1 Standard hold

The standard holding pattern uses right-hand turns at rate one (3 deg/s) or 25 degrees of bank, whichever needs the lesser bank; left turns must be published.

2 Leg timing

The inbound leg is timed: 1 minute at or below 14 000 ft, and 1.5 minutes above 14 000 ft. The outbound leg is adjusted to give that inbound time.

3 Maximum holding speeds

Up to 14 000 ft 230 kt, above 14 000 to 20 000 ft 240 kt, above 20 000 to 34 000 ft 265 kt, and above 34 000 ft Mach 0.83 (ICAO).

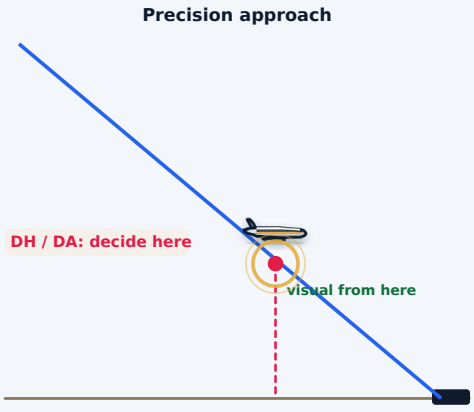
4 The three entries

Join by sector: direct covers 180 degrees on the holding side, teardrop the 110 degree sector, and parallel the 70 degree sector next to the inbound track.

A standard hold uses right turns with a 1-minute inbound leg (1.5 minutes above 14 000 ft); join it by the direct (180 deg), teardrop (110 deg) or parallel (70 deg) sector. Drawn in code.

Precision approach categories and landing minima

010 · LANDING MINIMA



Category	DH / DA	RVR minimum
CAT I	200 ft or above	550 m or more
CAT II	100 to below 200 ft	300 m or more
CAT IIIA	below 100 ft / none	200 m or more
CAT IIIB	below 50 ft / none	75 to 200 m
CAT IIIC	no decision height	no RVR limit

DH is a radio-altimeter height; DA is the same point as an altitude on QNH.

1 DH vs MDA/MDH

A decision height (precision/APV) may be momentarily passed during the go-around; an MDA/MDH (non-precision) must not be descended below until visual with the runway.

2 RVR

Runway visual range is measured along the runway by transmissometer; it is the distance a pilot sees runway lights or markings and sets the approach limit.

3 Fail-passive vs fail-operational

CAT II/IIIA are typically fail-passive (revert to manual with no large out-of-trim); CAT IIIB/C are fail-operational, completing the approach after one failure through redundancy.

4 Lower minima, more capability

As the DH and RVR fall, the aircraft, crew and ground equipment must all be approved to that category; CAT II and below need an approved automatic landing system or a head-up display for manual flight.

Lower minima need more capability: CAT I is DH 200 ft and RVR 550 m, falling to CAT III with little or no DH, its minima then set by RVR. Drawn in code.

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