

The ATPL Cheat Sheet

092 IFR Communications

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.

092 IFR Communications

36 memory items

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

You are reading the static PDF. The interactive web version of this cheat sheet at skystudyatpl.com/atpl-cheat-sheet adds a light and dark theme, a quiz mode that covers every key value so you can test your recall, instant search across every memory item, and hover or tap explanations for every aviation abbreviation. Like the rest of SkyStudy, it is free to use in the browser while the beta is open.

Study aid only. This is an independently authored revision summary, not exam material and not affiliated with EASA or any CAA. Figures marked **VERIFY** and all regulatory limits change over time and vary by aircraft type, so always confirm against the current EASA regulations, AMC/GM and your aircraft AFM. No pass is guaranteed. Copyright SkyStudy, skystudyatpl.com. Free to share unmodified.

IFR clearances, mandatory readback, holding, radio failure, emergencies.

◆ TRANSITION ALTITUDE/LEVEL AND THE HOLD

FLIGHT LEVELS set 1013 hPa (QNE)

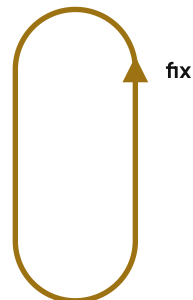
Transition Level (ATC assigned, floats)

layer: do not level off here

Transition Altitude (fixed, published)

ALTITUDES set QNH

HOLDING PATTERN



inbound leg: 1 min at/below 14,000 ft,
1.5 min above. Standard turns are right.

Below the transition altitude fly altitudes on QNH; **above the transition level** fly flight levels on 1013. The transition altitude is fixed and published; the transition level is assigned by ATC and moves with pressure. Never level off inside the layer between them.

◆ MUST-KNOW DEFINITIONS AND CONCEPTS

- An IFR **clearance** authorises proceeding under specified traffic conditions; it is not an instruction to fly a specific track unless a route is stated.
- Items read back verbatim: route clearances, any runway entry/land/takeoff/hold-short/cross/backtrack instruction, runway-in-use, altimeter settings, SSR codes, level, heading and speed instructions, frequency changes, and VDF information.
- A **conditional clearance** is issued and read back as: identification, then the condition, then the clearance.
- **Transition altitude** is fixed and published (QNH); **transition level** is the lowest usable FL above it on 1013.2 and is assigned by ATC; do not level in the layer between.
- **RVSM** applies FL290 to FL410 inclusive and needs specific approval.
- **MAYDAY** = distress (grave, imminent danger); **PAN PAN** = urgency (a concern, no immediate danger). PAN can be upgraded to MAYDAY; it is a distinct category, not an automatic step.
- **SELCAL** lets a station call a specific aircraft by a unique tone code, relieving a continuous listening watch.
- **CPDLC** is text-based data link for clearances, complementing voice, especially oceanic/en-route.
- **MONITOR** = listen out on a frequency (no two-way needed); **CONTACT** = establish two-way communication.
- Radio failure IFR, in order of priority: fly the last acknowledged clearance, then the notified or expected further clearance, then the filed flight plan route.
- Holding uses standard **right** turns unless the chart or ATC specifies left; fly the published or amended missed approach if a landing is not completed.

◆ KEY NUMBERS, LIMITS AND VALUES

- **CLEARED** = authorised to proceed;
CLIMB/DESCEND = commence to the level;
MAINTAIN = continue at the stated level/speed/heading.
- **EXPECT** = planning information only, not an authorisation to act.
- Transponder codes: **7500** hijack, **7600** radio failure, **7700** general emergency.
- Distress/emergency frequencies: **121.5 MHz VHF** (civil), **243.0 MHz UHF** (military); HF for long-range relay **VERIFY**.
- Standard pressure setting **1013.2 hPa** (29.92 inHg).
- RVSM vertical separation **1000 ft** FL290 to FL410 inclusive; **2000 ft** above FL410.
- Holding timing: **1 minute** inbound at or below 14,000 ft, **1.5 minutes** above 14,000 ft **VERIFY**.
- **MAYDAY** and **PAN PAN** are each spoken three times.
- SSR phraseology: SQUAWK (code), SQUAWK IDENT, SQUAWK STANDBY, SQUAWK CHARLIE (altitude reporting on).

◆ MNEMONICS AND MEMORY ITEMS

- **CRAFT** to copy an IFR clearance: Clearance limit, Route, Altitude, Frequency, Transponder code.
- Codes by loss of normal operation: **7500** someone else has control, **7600** you cannot talk, **7700** something is critically wrong.
- **EXPECT is for your ears, not your hands:** it feeds the plan, it never authorises action.
- **Transition altitude is fixed like the ground; transition level floats with the weather.**
- Each distress/urgency call is said **three times** so it cannot be mistaken for routine chatter.

◆ COMMON EXAM TRAPS

- Do not act on **EXPECT** before the actual clearance is issued.
- Not every transmission needs a full readback; only the specific safety-critical items do, others may be acknowledged with the callsign.
- Do not confuse **MONITOR** (listen only) with **CONTACT** (call in).
- **Transition level** varies with QNH and is assigned by ATC; it is not fixed like the transition altitude.
- ATC will not openly acknowledge a **7500** squawk by name; controllers use indirect phraseology.
- **PAN PAN** does not automatically escalate to MAYDAY; the crew must declare it.
- Holding turns default to **right** unless stated otherwise.
- VMC radio failure (continue in VMC, land nearest suitable) differs from the IMC rule (follow the last clearance / flight plan).
- **CPDLC** does not replace voice for distress and urgency.
- A conditional clearance is invalid if the **condition** is not stated before the clearance, or omitted in the readback.
- **121.5 MHz** is VHF (civil), **243.0 MHz** is UHF (military); do not reverse them.

Mandatory read-back items

090 • COMMUNICATIONS



Safety-related items you must read back to ATC

- ✓ ATC route clearances
- ✓ Runway: enter, land, take off
- ✓ Runway: cross, hold short, backtrack
- ✓ Runway in use
- ✓ Altimeter settings (QNH / QFE)
- ✓ SSR (transponder) codes
- ✓ Newly assigned communication frequencies
- ✓ Level instructions
- ✓ Heading and speed instructions
- ✓ Transition levels

1 Why read back

A full read-back lets the controller confirm the clearance was received correctly. Only the safety-related items above are read back, ended with your call sign.

2 Roger and Wilco are not enough

ROGER only means the transmission was received and WILCO means it will be complied with; neither replaces a required read-back of a safety-related item.

3 End with your call sign

Every read-back or acknowledgement is terminated by the aircraft call sign, so the controller knows which station answered.

4 Say 'flight level'

Levels flown on the standard setting are preceded by 'flight level', so read 'flight level eight zero', never the bare number.

Route clearances, runway clearances, runway-in-use, SSR codes, altimeter settings, frequency changes, level, heading and speed instructions and transition levels are read back, ended with your call sign.

1

Squawk 7600

Tell ATC and radar you have lost two-way contact

2

Try to restore

Check volume, headset, frequency; try the last frequency, then 121.5

3

Transmit blind

If you can transmit but not hear, prefix 'TRANSMITTING BLIND'

IFR (in IMC)

Continue on the last assigned route, level and speed. Hold speed and level for 20 min after a missed compulsory report, then follow the filed flight plan.

VFR / in the circuit

Stay in or regain VMC and land at the nearest suitable aerodrome. At a controlled aerodrome, watch the tower for light-gun signals.

Light-gun signals to an aircraft in flight**Steady green**

Cleared to land

**Green flashes**

Return for landing (a landing clearance will follow)

**White flashes**

Land here, then proceed to the apron

**Steady red**

Give way to other aircraft, continue circling

**Red flashes**

Aerodrome unsafe, do not land

**Red pyrotechnic**

Do not land for the time being

1

Squawk 7600

Select 7600 so ATC and radar recognise a two-way communication failure and can route other traffic clear of you.

2

Restore, then 121.5

Check volume, headset and the selected frequency; try the previous frequency, then 121.5 MHz, before assuming full failure.

3

Transmit blind

If you can transmit but not receive, make blind transmissions prefixed 'TRANSMITTING BLIND', at reporting points and before manoeuvres.

4

IFR route and timing

In IMC hold the last assigned speed and level for 20 minutes after a missed compulsory report, then continue on the filed flight-plan route and levels.

On radio failure squawk 7600, try to restore then 121.5, and transmit blind if you can only transmit; IFR hold level and speed then fly the flight plan, VFR obey the light-gun signals.

Two of the 369 code-drawn study figures inside the SkyStudy question bank. Try them with the free demo at skystudyatpl.com/demo.

FREE WHILE SKYSTUDY IS IN BETA

Keep studying free, while the beta is open

This cheat sheet is built and maintained by **SkyStudy**. SkyStudy is currently in **beta**, and during the beta every study tool below is free to use in the browser at skystudyatpl.com. This will not always be the case: when the beta ends, parts of SkyStudy will move to a paid subscription. If you want the full toolset free, now is the time to try it.

ATPL Question Bank

31,000+ independently authored revision questions across all 14 subjects, with explanations, code-drawn figures and spaced repetition.

ATC Comms Simulator

Practise IFR radiotelephony call by call, with audio and instant feedback on your phraseology.

ICAO English Test

Check where you stand with a realistic ICAO English self-assessment.

Pilot Aptitude Training

Timed cognitive exercises across memory, spatial, numerical and multitasking domains, built for airline selection preparation.

Pilot CV Maker

Build a clean, airline-ready pilot CV in your browser, free.

And much more

Aviation weather tools, a free demo question bank, study guides and the rest of the free tool family.



On paper? Scan to open SkyStudy and every free tool on this page: **skystudyatpl.com**

Found this useful? Share the cheat sheet unmodified with your study group or forum of choice. And if you are reading this on paper or PDF: the web version at **skystudyatpl.com/atpl-cheat-sheet** adds light and dark themes, quiz mode and tap-to-expand abbreviations.

Copyright SkyStudy. Independently authored ATPL revision aid. Not affiliated with EASA or any CAA. Free to share unmodified. SkyStudy is in beta; free access to the full toolset is a beta offer and will not always be available.

skystudyatpl.com