



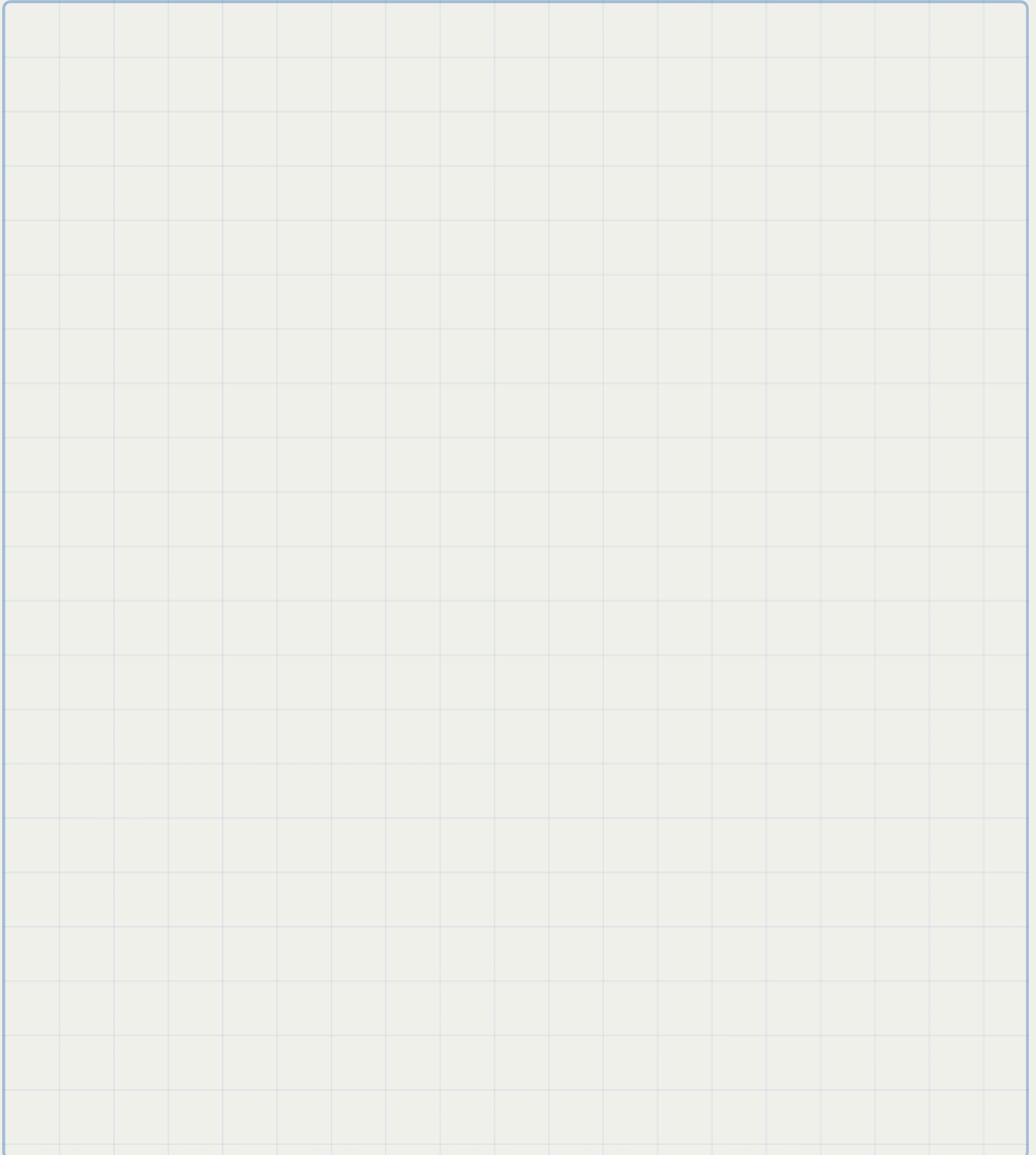
Steep Turns

*CASA Recreational Pilot License (Aeroplane) – CASA Sample Syllabus
Lesson 18, Pre-flight Briefing Notes*

These notes help you plan and run an interactive **whiteboard briefing** immediately before the flight – they are components to draw from, not a script to read.

My whiteboard and running order

Before the lesson, read the sections that follow, then come back here: note *your* running order and approximate timings, and sketch the whiteboard you'll draw – your training area, today's weather and traffic, and the manoeuvre sequence. For inspiration, see the NZ CAA Flight Instructor Guide whiteboards for [Steep turns](#) and [Maximum rate turns](#).



Using these notes

By the time of the pre-flight brief the theory is done and the student is keen to fly — keep this to about **15 minutes** (the syllabus allows 0.3 hr), at the whiteboard, working interactively: **ask, draw, and listen** rather than present. Build the picture together using your plan.

The components (choose your own order on the planning page):

Component	~ time
The aim of the flight	1-2 min
Today's flight — whiteboard walk-through	3-4 min
Threats and how we'll manage them	3 min
Airmanship emphasis — lookout and recovery rehearsal	4-5 min
Questions, then fly	1-2 min

The aim of the flight

Ask — "From the theory: what are we setting out to do today?"

Expect — in the student's own words, something close to:

- fly **steep level and descending turns** accurately, holding height/speed and rolling out on a feature or heading
- experience **maximum-rate and minimum-radius** turns at the buffet
- **recognise and recover** from a spiral dive
- **sideslip** the aeroplane (where the flight manual permits)

Write the aim briefly on the board — it anchors everything else.

Today's flight – whiteboard walk-through

Draw – the flight as a path: taxi → take-off → climb to the training area → manoeuvres → return → **flapless** approach and landing. Fill in local detail as you go:

- Runway: _____ Training area: _____ Area limits / base of controlled airspace: _____
- Height for manoeuvres (recovery complete by **3000 ft AGL**): _____
- Transit route & any transit lane: _____ CTAF / frequencies: _____

Draw – the manoeuvre sequence as a simple ladder (the order you plan to fly):

1. Steep level turn – 45° , building to 60°
2. Maximum-rate turn – 60° , full power, at the buffet
3. Minimum-radius turn – 60° with take-off flap, at the buffet
4. Steep descending (gliding) turn
5. Spiral dive – recognition and recovery
6. Sideslip – straight slip, then slipping turn (if the flight manual permits)

Ask – "In a steep turn, if the nose drops, what's the *first* thing we do?"

Expect – *reduce the bank first*, then raise the nose, then re-establish the bank. If this doesn't come back cleanly, revisit it now – it is the difference between a tidy steep turn and a spiral dive.

Ask – "Give me the spiral-dive recovery, in order."

Expect – **power off → wings level → ease out of the dive** (Power, Bank, Pitch).
Emphasise: wings level *before* you pull.

Threats and how we'll manage them

I'M SAFE and PAVE are standing checks before **every** flight — by now the student walks through them, not is taught them.

Ask — "Run me through your I'M SAFE — any flags today?" Watch for anything that raises the stakes on a 'g'-heavy, disorienting lesson: fatigue, illness, a heavy meal (this lesson can provoke **motion sickness**).

Ask — "PAVE for today's flight?" — Pilot, Aircraft, enVironment, External pressures — applied to *this* flight: today's weather and turbulence _____, the aircraft's **manoeuvring limits** (symmetrical and rolling 'g', V_{FE} , any sideslip restriction), and any pressure to press on.

Draw — the genuine threats you and the student identify for this flight:

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Likely candidates to draw out: **overstressing** the airframe (snatched pull in a spiral recovery), **inadvertent stall/spin** from an unbalanced steep turn, **disorientation / motion sickness**, **losing the lookout** while chasing accuracy, straying into **controlled airspace** or over the height floor, and **radio/engine** issues (both assessed today).

Ask — apply **TEAM** to each: **Transfer · Eliminate · Accept · Mitigate**. For most, the mitigation is the same: **height, a good lookout, and smooth inputs**.

Airmanship emphasis – lookout and recovery rehearsal

This is a **performance-manoeuvre** lesson: higher 'g', steep attitudes, and a deliberate look at how a turn goes wrong. The emphasis:

Ask / Draw – "How do we clear the airspace before a steep turn?"

Expect – a proper **lookout / clearing turn** (visibility is poor once banked); ~85% of a turn is spent looking out. In a high-wing type, lift the wing to check before rolling in.

Rehearse the recoveries on the ground – hands moving, say it aloud, before we ever fly them:

- **Spiral dive:** "Throttle closed – roll wings level – ease out of the dive." Wings level *before* the pull.
- **Steep turn, nose low:** "Reduce bank – raise nose – re-establish bank."
- **Sideslip:** "Level the wings, centre the yaw, guard the speed" – and only where the **flight manual permits**, never explored low.

Normalise the surprise – say it plainly: *the 'g' in a steep turn, the buffet at the max-rate turn, and the nose-low picture of a spiral all feel dramatic the first time. That is normal.* We fly them **high, deliberately, and smoothly** so the sensations and the actions become familiar.

Height, lookout, smooth inputs – the three things that keep every manoeuvre today safe.

Questions, then fly

Ask – "Any questions before we head out?"

Quick recap as you pack up the whiteboard:

- I'M SAFE – already checked; eat something light, speak up early if you feel unwell
- Lookout and a clearing turn before **every** manoeuvre
- Steep turn, nose low → **reduce bank first**
- Spiral dive → **power off, wings level, then ease out**
- Recovery complete by **3000 ft AGL**

Confirm who handles the taxi and the radio, and go flying.