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Solutions

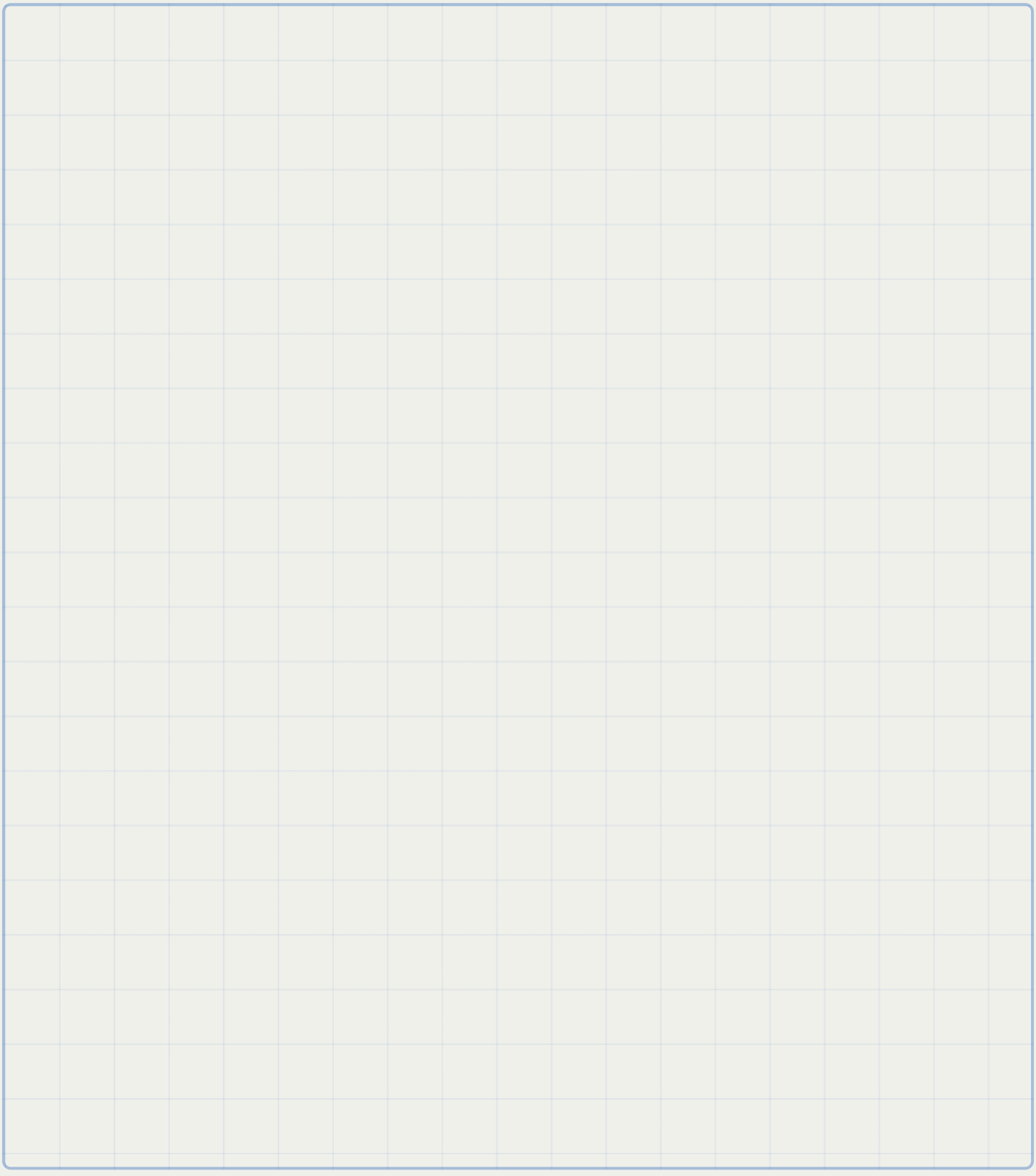
Slow Flight and Stalling

CASA Recreational Pilot License (Aeroplane) — Lesson 5, 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, the safe recovery height, the HASELL check, and the recovery sequence. For inspiration, see the NZ CAA Flight Instructor Guide whiteboards for Basic stalling and Slow flight.



Using these notes

The theory (parts 1 and 2) is done and the student knows today involves intentional stalling — that can make this the briefing where nerves are highest. Keep it to about **15–20 minutes** at the whiteboard, working interactively: **ask, draw, and listen** rather than present. The two safety-critical pieces — the **HASELL check** and the **recovery sequence** — are the heart of this briefing; the student should be able to say both back to you before you walk to the aircraft.

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
HASELL — the pre-stall check	2–3 min
Stall recovery — rehearse it now	3–4 min
Threats and how we'll manage them	2–3 min
Questions, then fly	1–2 min

The order above puts HASELL and the recovery rehearsal *before* threats on purpose — for this lesson they **are** the main threat mitigation. Choose your own order, but keep those two adjacent and unhurried.

The aim of the flight

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

Expect — in the student's own words:

- fly the aircraft in **slow flight** and recognise the degraded, mushy controls
- recognise the **symptoms** of an imminent and a fully developed stall
- carry out the **standard recovery** — with and without power, and from the approach (flap) configuration
- watch an instructor **demonstration** of wing-drop / spin avoidance

Write the aim on the board — everything else hangs off *recognise, then recover*.

Today's flight — whiteboard walk-through

Draw — the flight as a path across the board: taxi → take-off → climb → training area → exercises → return. Fill in your local details:

- Runway: _____ Circuit direction: _____
- Training area: _____ CTAF / frequencies: _____
- Safe height — recover **complete by** _____ ft AGL (≥ 3000 ft AGL)
- Who taxis / handles the first stall: _____ (you demonstrate the first stall, then hand over)

Draw — the exercise sequence as a ladder, a **HASELL** rung before every stall:

1. **Slow flight** — clean, then approach config (flap), feeling the controls go mushy
2. **HASELL → stall, recovery *without* power** — recognise, ease forward, minimal height loss
3. **HASELL → stall, recovery *with* full power** — same recovery, power to minimise height loss
4. **HASELL → stall in the approach (flap) configuration** — lower nose attitude, same recovery
5. **HASELL → wing-drop / spin avoidance** — **instructor demonstration only**, and **only if the aeroplane is approved for intentional spinning**
6. Return to the aerodrome and land

Ask — "Who's flying each part?"

Expect — the student flies the slow flight and the stall exercises; you fly and narrate the first stall, then hand over. Make clear the spin-avoidance item is a demo — they are **not** expected to enter a spin. Confirm the **aeroplane's flight manual approves intentional spinning** before planning that demonstration — if it doesn't, the demonstration must not be flown and the briefing covers wing-drop *avoidance* and *incipient* recognition only.

HASELL — the pre-stall check

This lesson's airmanship emphasis: **we don't stall the aircraft until the area and aircraft are checked.** HASELL is the gate before every stall exercise, and the **lookout turn is the last line of defence** before our attention goes inside the cockpit.

Ask — "Run me through HASELL." (Socratic — let them build it, don't read the table.)

Expect — write each letter on the board as it comes:

- **H** — Height: enough to complete the exercise and recover by your safe height
- **A** — Airframe: configuration correct (flap as required)
- **S** — Security: harnesses fastened, no loose articles
- **E** — Engine: Ts & Ps in the green; carb heat on briefly, then off
- **L** — Location: clear of built-up areas, aerodromes, controlled airspace
- **L** — Lookout: a clearing turn of at least 180°, preferably 360°

Ask — "Why a full clearing turn and not just a glance?"

Expect — once we stall we're looking inside and the nose is high — the time to find traffic is **before** that, with a deliberate turn. Reinforce: **HASELL aloud, every exercise** — it takes under a minute.

Stall recovery — rehearse it now

The recovery has to be **automatic** in the air, so build the motor memory on the ground. Walk it through with hand gestures and have the student say it back before you leave the room.

Draw — the recovery sequence as steps on the board:

1. **Ease forward** — reduce angle of attack (say *"ease forward"* and *"reduce angle of attack"*, never "push down")
2. **Full power** — smoothly, to minimise height loss (carb heat cold)
3. **Rudder** — prevent yaw, control any wing drop; ailerons neutral
4. **Level the wings** — once at flying speed, with coordinated aileron and rudder
5. **Climb** — establish a positive climb and regain height

Ask — "What unstalls the wing — power, or reducing angle of attack?"

Expect — **reduce AoA first.** Power without easing forward will *not* unstall the wing — this is the one idea to nail.

Normalise the surprise — tell them plainly what the first full stall feels like: the nose pitches down, the horizon drops below the cowling, airspeed falls and the controls feel different. **That's normal — the aircraft is behaving as designed.** Knowing it's coming stops the instinctive pull back. Add: *if at any point you're uncomfortable, say so — we'll pause, talk, and try again.*

Threats and how we'll manage them

I'M SAFE and PAVE are standing checks before **every** flight — by now the student runs them, rather than being taught them.

Ask — "Run me through your I'M SAFE — any flags today?"

Expect — honest self-assessment. Nerves before a first stalling lesson are normal; the point is that **Stress** and **Fatigue** cut the brain power available exactly when today's exercises demand a clear head.

Ask — "Apply PAVE to today's flight — what stands out?"

Expect — Pilot, Aircraft, enVironment, External. Listen for the **enVironment** angle — we need **height and a clear area**: cloud base, the training-area boundary, and other traffic all bound where we can stall today.

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

Ask — apply **TEAM** to each: "What are our options?"

- **Transfer** · **Eliminate** · **Accept** · **Mitigate**

Likely ones to surface: **insufficient height** for recovery (eliminate — HASELL height gate); **unseen traffic** (mitigate — clearing turn); **an unintended wing drop or incipient spin** (mitigate — ailerons neutral, rudder, ease forward); **startle** on the first stall (mitigate — we rehearsed it and you know what's coming).

Questions, then fly

Ask — "Any questions before we head out?"

Quick recap as you pack up the whiteboard:

- **HASELL before every exercise** — say it out loud
- **Ease forward first** — reduce angle of attack before power
- **Rudder** to prevent yaw and control any wing drop; ailerons neutral
- A surprising nose drop is **normal** — that's why we rehearse the recovery

Confirm who handles the taxi, and go flying.