



Forced Landings

Pre-lesson Workbook

*CASA Recreational Pilot License (Aeroplane) – CASA Sample Syllabus
Lesson 17, Pre-lesson Workbook*

Complete this before your lesson – on your own, at your own pace. For each topic: watch a video, read an article, or go and find the answer yourself, then answer the questions in the space provided. Print this out, or write your answers in a notebook. It should take about 30–45 minutes in total, and we'll check it together at the start of your pre-flight brief.

Some topics deliberately ask you to **think or research first**, before you're given an answer. Those are the ones worth slowing down on – reasoning it out yourself is what makes it stick when you need it.

1. Why engines fail

Complete engine failure is rare in a well-maintained training aeroplane – but partial power loss (rough running, reduced power) is more common, and this lesson trains you to handle both. Knowing the common causes helps you recognise *which* kind of failure you're dealing with.

Watch:

- [Partial power loss after take off](#) – ATSB, about 4½ minutes. It's framed around a partial failure just after take-off, which builds directly on the engine failure after take-off you met in Lesson 9 – but the *causes* it works through are the same ones that can bite you in the cruise.

Read:

- [Engine failure after take-off](#) – NZ CAA Flight Instructor Guide. Read the first part only, which sets out the main causes of engine failure.

Watch (optional, to compare):

- [Engine Failure at 2,000 Feet](#) – Young Pilots. Not a reference, but it talks through how a simulated failure with height in hand differs from the engine failure after take-off you've already practised. Watch it with question 4 below in mind.

Answer:

1. Name three common causes of partial or complete engine failure in a light aircraft: _____
2. Which of these causes is most often due to pilot error rather than mechanical fault? _____
3. Why might a *partial* power loss be more dangerous to manage well than a complete one – what decision does it force you to make?

4. Thinking back to Lesson 9 (Circuit Emergencies): an engine failure straight after take-off is handled very differently from one in the cruise. What's the key difference in your situation that drives that – and how does it change what you have time to do? _____

2. Reading the wind from the air

Once you're gliding, you need a landing direction — and there's no time or possibility to check an ATIS. Learning to read wind from what you can see is a skill worth practising well before you ever need it for real.

Research:

- There's no set video for this one. Search online — or ask an AI assistant — for how a pilot judges **wind direction and strength from the air**, and note down where you found your answer. Look for what the ground and water surface tell you, and for what the aeroplane itself tells you.

Answer:

1. Where did you look, and what was the most useful source you found?

2. Name three ground indicators you could use to judge wind direction if no windsock is visible: _____
3. How can the aeroplane's own **drift** during the descent tell you about the wind?

4. Food for thought: why might landing **across** wind sometimes be the safer choice over landing directly into a shorter into-wind strip?

5. If your only option were a landing on water, would you land into the wind, or along the line of the swell (the wave ridges) rather than into them? Look this one up — and note *why*: _____

3. Choosing your field

With the engine gone, your gliding distance is fixed by height – so the field you choose has to be within easy reach, and good enough to land on safely. This is a skill you can start building now, from the ground, every time you fly as a passenger or drive through the countryside.

Think first:

- Before you look anything up: what factors do **you** think would matter when you have to choose a field to land in? Reason it out from what you already know about landing an aeroplane, and write your own list below. Resist reaching for a mnemonic – we'll compare your list with what an experienced pilot weighs up when we go through this together.

Answer:

1. Your own list – write down at least **four** factors you'd weigh up when choosing between two possible paddocks, and why each matters:

Factor	Why it matters
_____	_____
_____	_____
_____	_____
_____	_____

2. Which factor on your list would you compromise on **first**, if no field ticked every box? _____
3. Why is a **long run into wind** usually preferred, but not always the right choice?

4. Why should you keep assessing and be ready to **change your chosen field** all the way down, not just pick once and commit? _____

4. The MAYDAY call

If you only remember one radio call from your entire training, make it this one. A MAYDAY call has a fixed structure so that anyone who hears it – controller or not – immediately understands what's happening and where.

Research:

- Find the format of a distress (MAYDAY) call for yourself, in either the CASA [Visual Flight Rules Guide](#) or the [AIP](#), and note which one you used and where in it you found the call.

Watch:

- [Practice Forced Landings](#) – Learn To Fly Melbourne, from **6:44 to 7:20** only, for a worked example of the call in a training flight. Note this aircraft is a DA40, which has no carburettor – so you won't hear carburettor heat in any of its checks.

Answer:

- Which document did you use, and where in it is the distress call format?

- Write out the structure of a MAYDAY call in order (what comes first, second, and so on): _____
- Why is it better to make the MAYDAY call **early** (as soon as the failure is confirmed), rather than waiting until you're established in the glide?

- What should you do if you can't raise anyone on the current frequency?

- If your aircraft has a transponder, what emergency code would you select to alert ATC even before you make contact? _____

5. Detailed trouble checks & engine management

Once the immediate actions are done and you're established in the glide toward your field, there may be time to look for the cause of the failure and attempt a restart – but only if height and workload allow. It's also worth understanding why we don't treat a *practice* failure exactly like a real one.

Watch:

- [Prevent Engine Failure! Use CFMOST!](#) – Phil Unicomb Aviation. Works through a systematic trouble check, and what each item is actually looking for.

Answer:

1. Write out what each letter of **CFMOST** stands for, and what you're checking for at each:

Letter	Stands for	What you're checking
C	_____	_____
F	_____	_____
M	_____	_____
O	_____	_____
S	_____	_____
T	_____	_____

2. Which items on that check could plausibly get the engine running again, and which are just telling you what went wrong? _____
3. Why do we look for a restart cause **only after** the immediate actions and field selection are already done, not before? _____
4. During a *practice* forced landing (engine still running at idle, not actually failed), why might the instructor ask you to open the throttle briefly every so often during the descent? _____

6. Passenger briefing & shutdown checks

If a landing away from an aerodrome is genuinely unavoidable, your passengers need clear, simple instructions – and the aircraft needs to be made as safe as possible before touchdown.

Think first:

- Before you watch anything: you have maybe fifteen seconds and a frightened passenger beside you. What would **you** tell them, and in what order? Write it down first, then watch.

Watch:

- [Practice Forced Landings](#) – Learn To Fly Melbourne, from **7:33 to 8:08**, for an outline and example of the passenger brief.

Read:

- For the shutdown itself, one widely taught Australian memory aid is **BUSH FMMM**:

Letter	Check
B	Brakes – pressure available, park brake off
U	Undercarriage – down, or as the type requires
S	Switches (FMMM) – Fuel off, Mixture idle cut-off, Magnetos off, Master off
H	Hatches and harnesses – doors unlatched, harnesses tight

Answer:

1. Your own version first – what would you tell a passenger, and in what order?

Your passenger brief

2. After watching: what did the brief in the video cover that yours didn't?

3. Why is the **master switch** left until last, rather than switched off early with the rest? -----

4. Why are the doors unlatched *before* touchdown rather than after?

Bring this to your lesson

- Bring your completed answers (printed, or your notebook) to the pre-flight brief
- We'll check through them together and answer anything that didn't make sense – especially the two you reasoned out yourself: your field-selection list, and your passenger brief
- From there, the live theory brief builds on this: the immediate/vital actions sequence, applying your field-selection knowledge to a real scenario, flying the approach and correcting if you're too high or low, and recognising an over- or undershoot before it's too late

Optional, to pull it all together: watch [Practice Forced Landings](#) – Learn To Fly Melbourne – in full (about 18 minutes). You've already seen two short sections of it; the whole flight shows how the checks, the call, the brief and the pattern fit together in one sequence. Remember the DA40 has no carburettor, so its checks have no carburettor heat.

None of this is about memorising trivia for its own sake – it's about building a plan familiar enough that, if you're ever faced with a real engine failure, no time is wasted deciding what to do next.