



GLIDING AUSTRALIA

TRAINER REFERENCE CARDS

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Contents

Introduction	4
AEF Air Experience Flights	5
1. Lookout Awareness	6
2. Ground Handling & Signals	7
3. Pre-Flight Preparation	8
4. Orientation & Stability	9
5. Primary Effects of Controls	10
6. Aileron Drag, Rudder Coordination	11
7. Straight Flight Various Speeds & Trim	12
8. Sustained Turns All Controls	13
9. Lookout Scan	15
10. Use of Ancillary Controls	16
11. Introduction to Soaring	18
12. Slow Flight & Stalling	19
13. Launch & Release (Aerotow)	20
14. Launch & Release (Winch)	21
15. Self Launch	22
16. Take-off (Aerotow)	23
17. Take-Off (Winch)	24
18. Take-Off (Self Launch)	25
19. Break-Off & Circuit	26
20. Approach & Landing	27
21. Spinning & Spiral Dives	29
22. Crosswind Takeoff & Landing	31
23. Launch Emergencies (Aerotow)	32
24. Launch Failure (Winch/Auto)	34

25.	Radio Use and Endorsement (Local Area)	36
26.	Use of Situational Awareness Aids	37
27.	Rules of the Air	38
28.	Human Factors & Pilot Limitations	39
29.	Threat & Error Management	41
30.	Assessment for First Solo	43
31.	Advanced Aerotow	45
32.	Sideslipping	46
33.	Steep Turns	47
34.	Passenger Carrying	48
35.	Visual Meteorological Conditions (VMC) .	49
36.	Circuit Diagram	50
37.	Type Conversions	51

Notes on ePub Version:

The behaviour, look and feel seems to vary between ePub readers Colour and text attributes don't always carry to ePub layout. Image performance also is variable, some readers don't display images.

Tested with IOS "Books"

*Looking for an Android ePub reader that presents well.
Please pass suggestions & feedback to:
cop@glidingaustralia.org*

Introduction

- This document provides a summary of the instructional points from a selection of the Glider Pilot Certificate (GPC) training modules. Information for each module is drawn from the Trainer Guide and Pilot Guide information.
- The training sequence for each GPC Module is:
- Pre-flight briefing – including the sequence/s to be covered and the required actions of the student.
- Airborne demonstration and patter
- Effective Handover / takeover (“You have control / I have control” or equivalent)
- Student practice and feedback
- Fault analysis and prompting
- Post-flight debriefing
- Always provide a briefing before an instructional flight. Augment these cards with your own notebook.
- During demonstrations, advise the student what you are going to do before you do it, for example:
- When I move the stick forward, the nose of the glider will go down — then move the stick forward.
- This prepares the student against the unexpected, and when the glider responds, reinforces what you have said.

Pre-Flight

- Ensure GFA membership completed.
- Remember it is the student's flight, not yours.
- Provide a thorough briefing on the expected flight.

In Flight

- Safety first - do not take unnecessary risks to prolong the flight.
- As a general principle, no aerobatics.
- Monitor student carefully for signs of discomfort, especially when thermalling on hot and/or rough days.
- Accept reduced rate of climb in preference to circling tightly.
- Ask student to advise of any traffic they see.
- Remember future participation of the student in gliding depends on their impressions of the first flight.

1. Lookout Awareness

Lookout

- Pre-takeoff - limits of vision
- Move your head
- Clock code
- Identify landmarks

Collision Avoidance

- Alerted See and avoid
- Look outside
- Student to call traffic
- Listen to radio calls.

Rules of the air

- Who has right of way
- Head-on
- Approaching from side
- Overtaking

2. Ground Handling & Signals

Key Items

- Safety is a shared responsibility.

Ground Handling

- How to tow aircraft behind vehicles.
- Everyone must understand their role.
- Where and how to push gliders / hold wings / affix tow gear.
- How long tow ropes must be.

Signals when Handling Aircraft

- Take-up slack – wave of arm in lower arc.
- All out/proceed – wave of arm in higher arc.
- Stop – Call 'STOP' and raise arm/s vertically upwards.

Hook-on & Launch Actions

- Check ropes/cables when hooking on for condition/damage.
- Always check weak links.
- Check AIRSPACE CLEAR FOR LAUNCH prior to launching.
- Maintain sterile environments to minimize distraction.
- Be deliberate and thorough – haste breeds errors.
- PIC is always in command of the launch – if in doubt DO NOT PROCEED.

3. Pre-Flight Preparation

Access Correct Documentation

- Location of AFM / POH. Cockpit placards.
- Find critical speeds, weights & other limitations (e.g. crosswind).
- Know emergency procedures.

Pre-Flight Inspection

- Use of pre-embarkation check (ABCD).
- Key elements to observe.
- Identify instruments / check altimeter & radio.
- Use of controls & how to test correct operation.

Parachutes

- How to check serviceability.
- How to care for and wear correctly.
- When & how to exit aircraft & deploy.

Cockpit Access

- How to safely enter/exit.
- How to arrange seat position & cushioning.
- Way to secure harness & other items.
- Dangers of FOD in the cockpit.
- Correct control column grip.
- Use of pre-launch check (CHAOTIC).
- Ensure ground team performs adequate airspace clear check.
- (Motorgliders – correct ground checks & procedures for engine use on ground).

4. Orientation & Stability

Orientation

- Introduction of three dimensions.
- Awareness of local features.
- Airfield layout.
- Flying area boundaries.
- Local operational briefs.
- Primacy of horizon reference.
- Emphasis looking out.

Stability

- Stability in all 3 planes – hands off demo – wings level & banked.
- Positive in pitch/yaw.
- Neutral in roll.
- Lateral damping.

Aerodynamics

- 4 forces – lift, weight, drag, forward flight.
- How lift is generated from the wing.
- 3 axes – lateral, longitudinal, normal/vertical.
- Rotation around C of G in each axis (pitch, roll & yaw).

5. Primary Effects of Controls

Key Items

- Start & end with Stable Platform.
- Always refer to horizon.
- Student follows on controls.
- Demonstrate one control at a time.
- Positive hand-over/take-over.

Elevator

- Nose up-down, attitude change.
- Note airspeed, sound, control feel.
- Attitude = Speed.
- Demonstrate Positive stability.

Ailerons

- Roll left-right on Longitudinal Axis.
- Identify bank looking at horizon and wing tip
- Roll occurs when ailerons moved.
- Bank constant when aileron neutral
- Different rates of use = different roll rates.
- Neutral stability.

Rudders

- Yaw left-right on Vertical/Normal Axis.
- Yaw only applies whilst rudder is applied.
- Note change in yaw string.
- More rudder = more yaw.
- Feel turbulence/disturbed airflow.
- Positive stability.

6. Aileron Drag, Rudder Coordination

Key Items

- Start and end with Stable Platform.
- Use min sink airspeed.
- Refer to horizon for reference.
- Student follows on controls.

Aileron Drag

- Ask student to look ahead to identify yaw.
- Apply aileron and observe adverse yaw.
- Drag results from increased lift
- Demonstrate in both directions, Opposite to aileron use.
- Note slip to lower wing.

Rudder Coordination

- Demonstrate aileron use with rudder to balance drag with yaw.
- Emphasis on simultaneous use of controls.
- Show more force on rudder is needed with larger aileron control movement.
- Centre control stick and rudders when desired angle of bank achieved.
- Use yaw string to indicate degree of balance.
- Practice rolls left and through wings level to right.

7. Straight Flight Various Speeds & Trim

Key Items

- Ensure lookout (cruising/full scan).

Straight Flight at Various Speeds

- Attitude is primary reference, regardless of stick load.
- Attitude = airspeed.
- Maintain wings-level
- stick and rudder with immediate reaction to any wing lift.
- Look into distance to identify point to maintain desired heading.
- Elevator is the speed control.

Use of Trim

- Hold nominated attitude.
- Move trim to decrease stick load to minimum.
- Adjust trim when speed is changed.
- Effective trim use reduces workload.

8. Sustained Turns All Controls

Key Items

- Lookout is critical.
- Aileron is primary turning control.
- Three stages of turn:
Roll In, Maintain, Roll out.
- Use of aileron, rudder & elevator in each stage.
- Maintain horizon as reference.

Roll In

- Conduct targeted Scan.
- Apply aileron and rudder in the required direction of turn.
- Ensure aircraft attitude constant with back pressure on elevator.
- Roll to desired angle of bank.
- Centralise aileron & rudder at desired angle of bank.
- Adjust for any yaw as necessary.

Maintaining the Turn

- Note stability in the turn.
- Maintain required angle of bank with coordinated aileron (A) & rudder (R).
- Maintain aircraft nose attitude with elevator (E).
- A-R-E we maintaining the turn?
- Continue targeted scan and periodic full scan.
- Show turn rate related to angle of bank.
- Note if glider requires off-neutral stick to maintain angle-of bank.

Leaving the Turn

- Conduct targeted Scan.
- Apply aileron and rudder to return to wings-level.
- Ensure aircraft attitude constant with release of back pressure on elevator.
- Centralise aileron & rudder just prior to wings-level.
- Ensure correct nose attitude by horizon reference.

Student Practice

- Student to perform various turns:
- to different angles of bank
- in either direction.
- Use rolling on a point to develop coordination.
- Keep bank angles $< 5^\circ$.

9. Lookout Scan

Key Items

- Explain reason for lookout scanning - Mid Air Collisions.
- Who is responsible for collision avoidance.
- Demonstrate where to look and blind spots.
- Importance of a clean canopy.
- Demonstrate clock code.

Flight Demonstration

- Demonstrate scanning technique – head movement, focused attention, progressive around horizon:
- Cruising scan (60° cone)
- Full Scan
- Targeted Scan
- Ask student to look behind wing, overhead, below.
- Student demonstrates each scan
- Student uses clock code to advise location of aircraft and landmarks
- Safe method of scanning instruments.
- Minimize time looking inside cockpit

10. Use of Ancillary Controls

Key Items

- With all controls:

LOCATE – IDENTIFY – OPERATE

Spoilers / Airbrakes (BLUE)

- Used to control rate of descent only (elevator is used to control attitude and airspeed).
- Spoilers are not speed-limiting – airbrakes might be (refer AFM).
- Spoilers cause nose-down trim change.
- Increases stalling speed due to increased wing loading.
- Airbrakes cause more drag than spoilers - gently lower the nose to counter any loss of airspeed.
- Use may cause a nose-up or nose-down trim change.

Flaps (GREY)

- Demonstrate use on ground and position against placard.
- Brief required use on launch & landing.
- Check airspeed within limits prior to use.
- Demonstrate use at 50 kts.
- Flaps down/out:
- Increase drag – steeper flightpath.
- Reduced stall speed.
- Flaps up/in:
- Decreased drag – shallower flightpath
- Increased stall speed.
- Must never be retracted near the ground.
- Flaps out/down allows for lower approach speed.

Undercarriage (BLACK)

- Brief its use on ground – explain any locks/safe-guards/alarms.
- Explain potential down but not locked scenarios.
- Demonstrate use in flight.
- Ensure set for landing PRIOR to pre-landing check.

Canopy (WHITE & RED)

- Explain use of normal (WHITE) and emergency (RED) canopy releases.
- Describe where and how to hold canopy when unlocked.
- Explain use in high winds.

Tow Release (YELLOW)

- Demonstrate use on ground.
- Where to place hand during hook-on and takeoff.
- Ensure effective operation.
- Twice on winch (cable release is not visible)
- Once on aerotow (rope release is visible)

11. Introduction to Soaring

Key Items

- “The sport and goals beyond solo”
- Potential thermal sources.
- Best thermalling techniques.

Flight Demonstration

- Reasonable day for low stress.
- Local features in your area
- Indicate lift and sink - thermals for x-countries.
- Demonstrate centering by feel - then the vario.
- Build a mental picture of the thermal.
- Maintain a constant nose attitude and bank angle.

12. Slow Flight & Stalling

Key Items

- Check & monitor G sensitivity.
- Pre-aerobatic check prior exercises.

Stall Demonstration

- Do not raise nose too high. Keep stick progressively coming back.
- Can student identify pre-stall symptoms:
 - nose attitude higher than normal,
 - controls becoming less effective (sloppy),
 - less wind noise,
 - stick moving aft but nose not raising,
 - possible vibration through stick and airframe buffeting.
- Demonstrate positive recovery action of stick forward.
- If wing drops before nose drops, take recovery action using wing-drop as primary cue. Use of forward stick will cure wing-drop.
- If nose drops naturally, ensure positive forward stick movement is used in recovery.
- After stall recovery, look for safe speed before recovering back to level flight.
- Ensure student looks at horizon during stall and recovery, not inside cockpit.
- Highlight altitude loss after recovery. Start with gentle stalls, then steeper.

13. Launch & Release (Aerotow)

Key Items

- Top part of the launch (800'+ AGL) is taught before the more difficult and critical early stage.
- Students must be competent at coordination and have acquired some anticipation before commencing aerotow instruction.

Launch

- Demonstrate stable platform on tow.
- Ensure trim is correct.
- Emphasise slipstream as the reference point.
- Demonstrate allowable out-of-position limits.
- Emphasise regaining normal towing position unhurriedly.

Release

- Airmanship - ensure good lookout in the areas which glider and tug are about to occupy.
- Locate and identify the release knob before attempting to operate it.
- Release from whichever towing position the glider is in - pull the release once.
- Observe that the rope releases - say "rope gone"
- Commence clearing turn to right.

14. Launch & Release (Winch)

Key Items

- Full climb & release first, then initial climb.
- Brief winch launch speed band.

Full Climb & Release

- Maintain climb by slowly increasing back- pressure, easing the pressure as top of launch is approached.
- Use of visual clues on correct climb angle.
- Monitor amount of drift.
- Use of too-fast signal.
- Actions if speed decays.
- As speed decays at top of launch, ease forward.
- Pull release twice as nose passes through horizon.
- Back-release may occur.
- Set safe flying attitude, perform full scan.

Initial Climb

- Gradual transition from take-off attitude to full climb attitude.

Work Cycle during Launch

- AIRSPEED
- ANGLE of CLIMB
- DRIFT

15. Self Launch

Key Items

- Take care in high density altitudes/sink areas as aircraft performance will be lower.
- Ensure sufficient height if a restart is required.
- Do not launch through towing pattern or winch launch areas.

Launch

- Conduct regular performance checks until top of launch.

Shutdown

- Conduct specific engine shut-down checks and process.

16. Take-off (Aerotow)

Key Items

- Pre-flight brief of ground run for nose heavy or tail heavy as appropriate.
- Control of aircraft on ground.
- Do not let wingtip touch ground.
- Maintain hand near release.
- Flying too high during any stage of the launch may cause a tug upset
- High-tow launch identical, except that the glider does not move through the slipstream into low-tow.

Ground Run

- Balance aircraft on main wheel.
- Control direction with rudder, wings level with aileron.
- Do not use elevator to pull aircraft off the ground.
- Maintain separation attitude until take-off.

Separation

- Hold position just above ground, no higher than the height of the tug's fin.
- When tug lifts off, maintain station directly behind and climb through low level wind gradient.
- After tug positively established in the climb, move smoothly and positively into low-tow position.
- Use trim as necessary.

17. Take-Off (Winch)

Key Items

- Pre-flight brief of ground run for nose heavy or tail heavy as appropriate.
- Control of aircraft on ground.
- Do not let wingtip touch ground.
- Maintain hand on release.

Ground Run

- Balance aircraft on main wheel.
- Control direction with rudder, wings level with aileron.
- Do not use elevator to pull aircraft off the ground.
- Maintain separation attitude.
- Cross-wind requires cross controls.
- Balance on main wheel until airspeed increases to point of separation.

Separation and Initial Climb

- Allow aircraft to gain airspeed after separation.
- Ensure speed is at required value ($1.3V_s$) before allowing further climb.
- Transition smoothly from initial into full climb stage.

18. Take-Off (Self Launch)

Start-Up & Taxi

- Conduct specific engine start-up checks and process.
- Demonstrate taxi procedures.
- Ensure motor glider specific checks completed.

Take-Off

- Demonstrate take-off and climb away process appropriate to aircraft.

19. Break-Off & Circuit

Plan for the Circuit

- Know when to cease soaring flight.
- Determine landing area and circuit direction.
- Determine Break-Off Point.
- Configure Aircraft for circuit.
- Transition from Soaring to Landing Pilot.
- Transit to Circuit Joining Area.
- Set Safe Speed Above Ground & set trim.

Join the Circuit

- Scan for traffic.
- Correct radio transmission / communicate as required.
- Identify obstacles in circuit & in landing area.
- Verify wind direction/speed
- Complete Pre-Landing Checklist.
- Determine aiming point
- Work cycle AAAL:
- Altitude, Airspeed, Angle, Lookout
- Move in/out as required to maintain angle to runway.
- Increase airspeed to $1.5 V_S + \frac{1}{2}$ expected wind speed & re-trim.
- Visualize the approach path.
- Turn base to intercept approach path.
- Move base leg upwind or downwind as necessary to achieve the correct intercept.

20. Approach & Landing

Key Items

- The Stabilised Approach is:
- Constant Attitude / airspeed.
- Constant Decent rate.
- Constant Track.

Approach Work Cycle AGD

- Airspeed – Glideslope – Direction.

At End of Base Leg

- Locate & Identify Airbrakes.
- Maintain approach airspeed.
- Turn onto approach with $<30^\circ$ angle of bank.
- AVOID shallow, over-ruddered, final turn, and over-banking in a wind gradient.

Approach Phase

- Check flap & undercarriage setting.
- Identify aiming point.
- Start work cycle.
- Only use airbrake if positive OVERSHOOT is established and
- 50' clearance over obstacles can be maintained.
- Maintain work cycle.
- Control airspeed with elevator.
- Expect and Adjust airspeed for wind shear.
- Aiming point rising on canopy – UNDERSHOT - close airbrakes.
- Aiming point dropping on canopy – OVERSHOOT – extend airbrakes.

- Avoid coarse airbrake movements.

Landing Phase

- The change from descent at constant speed to level flight at decreasing speed.
- Approaching aiming point:
- look well ahead to the end of runway.
- ease stick back to transition to level flight above landing area – ROUND OUT.
- When flying level near ground, maintain height as speed reduces by easing stick back – HOLD OFF.
- Touch down at minimal airspeed.
- Keep wings level with aileron, steer aircraft with rudder.

Balloon on Landing

- Lower nose - regain airspeed. Close airbrakes.
- Reestablish landing attitude
- Re-land the aircraft.

21. Spinning & Spiral Dives

Spin Requirements

- Stalled wing plus yaw.
- Stall in turn – stall with wing drop.

Entry Phase

- Wing stalled.
- Rotation commences due to yaw.
- Demonstrate accidental entry (using lower nose attitude).

Incipient Phase

- Rotational forces build.
- Possible to recover by moving stick forward.
- Use only enough rudder to overcome yaw.

Fully Developed Phase

- Aircraft stable in spin.
- ~1G maneuver.
- ASI low or unreliable.
- Oscillation in all three axes.
- Ineffective Controls.

Recovery Phase

- Ailerons Neutral
- Full opposite rudder.
- Stick forward until rotation ceases.
- Rudder neutral, over from dive.
- Highlight altitude loss.

Spiral Dive Recognition

- Increasing ASI & wind noise.

- Increasing G force.
- Effective Controls

Spiral Dive Recovery

- Unload wing by moving stick forward.
- Roll wings gently with aileron and rudder.
- Ease stick back to recover from dive.

22. Crosswind Takeoff & Landing

Key Items

- Requires a 5-8 kt cross wind.
- Negative flap may assist control effectiveness on ground.

Take-off

- Maintain runway heading on ground – rudder to prevent weathercock.
- After separation – counter drift
- Ensure wings clear of ground
- On aerotow do not drift downwind of tug before tug separation.

Landing

- Side-slip approach
- Crabbing approach
- On landing control aircraft to run along runway with wings level.

23. Launch Emergencies (Aerotow)

Key Items

- Radio may be used in lieu of signals to communicate with the tow pilot, however the emergency signals must be taught as a backup in the case of radio failure or 'no radio' operations.

Wave Off - Emergency release

- Tug rocks wings - release immediately. Any delay and tug pilot may release the rope at tug end.
- Maintain at least 1.5Vs.
- Assess options - land ahead if possible.

Airbrakes out signal – low rate of climb

- Causes – airbrakes, sink, tug performance, tail chute, etc.
- Tug waggles rudder.
- Glider pilot checks airbrakes closed and locked, flap setting correct, and tail-chute jettisoned.
- If the rate of climb does not improve, then a wave-off can be expected.

Release failure

- Glider flown out to left - tug pilot must acknowledge.
- Return to low tow behind tug.
- Climb to high-tow and stabilize.
- Tug-pilot releases rope.
- Glider returns to land, making higher than normal approach.

Double release failure, landing on tow

– BRIEFING ONLY, NO FLIGHTEX

- Glider in high tow, tug fails to release rope.
- Tug begins gentle descent. Return to low tow.
- Glider maintains station using airbrakes as necessary.
- Tug-pilot controls descent rate with power.
- Approach angle will be shallower than for a normal glider approach, and the aiming point may be further forward.
- Glider maintains low-tow to touchdown.
- Glider does all the braking on the ground. Tug pilot does not touch brakes.

24. Launch Failure (Winch/ Auto)

Key Items

- Treat all launch failures as real.
- Anticipate a launch failure on every flight.

Brief Immediate Actions

- Regain & maintain safe speed above ground (ATTITUDE & AIRSPEED)
- Operate release twice.
- Land ahead if safe to do so (ASSESS).
- Can't land ahead? Modified CCT to available landing area.

Launch Failure on Ground / Cable Overrun

- Operate release twice.
- Full airbrake.
- Stick forward.
- Radio STOP STOP STOP!
- Steer away from the cable.
- DO NOT let the aircraft fly.

Launch Failure when in Flight

- This can be a hard failure (cable break) or soft failure (slow loss of power) – train for both.
- Conduct IMMEDIATE ACTIONS (ATTITUDE – AIRSPEED - ASSESS).
- Land ahead if safe,
- Or fly modified circuit – turn downwind in significant crosswind.

- Do not attempt to return to usual landing point if altitude is insufficient.

25. Radio Use and Endorsement (Local Area)

Key Items

- Explain:
- Aviate – Navigate - Communicate.
- Alerted see & avoid.

Radio Operation

- Select/change freq.
- Set volume & squelch.
- Press to transmit
- Use and position of microphones
- Transmission Procedure
- Think before keying PTT
- Listen before transmitting
- Press PTT, pause, then speak.

Diagnostic Procedures

- Obtain radio reception level (1-5).

Radio Procedures

- Call structure – directed / broadcast.
- Calls to make at non-towered airfields.
- Use of phonetic alphabet/numerals.
- Radio failure – transmitting blind.

Emergency & Urgency Messages

- 'MAYDAY' – how and when to use.
- 'PAN PAN' – how and when to use.
- 'Stop Transmitting' Call
- International distress frequency

26. Use of Situational Awareness Aids

Key Items

- All electronic aids can fail.
- No substitute for effective lookout.

Introduce Aids

- Show set up and configuration.
- How do you know they are working?

Function in Flight

- Demonstrate use in flight.
- Show how to respond to radio alerted threats.
- Show action to take depending on direction and distance of threat.
- Show different indications (FLARM vs XPNDR vs ADS-B).

27. Rules of the Air

Key Items

- Alerted see-and-avoid is more effective than unalerted see-and-avoid. Use radio effectively to enhance situational awareness.

Rules

- Give way to other aircraft on your right.
- Two aircraft approaching head-on, both turn right.
- To overtake another aircraft, alter course to the right (exception for hill-soaring, when you must pass between the overtaken glider and the hill).
- When hill-soaring, all turns shall be away from the hill.
- Landing aircraft have priority over aircraft taking off.
- Powered aircraft give way to gliders. Gliders give way to balloons and airships.
- First glider in a thermal establishes circling direction.
- Ensure vertical and horizontal separation of 200ft.
- Aerobatics (including spinning) are not permitted below 1,000ft AGL (or below 2,000ft AGL within 2NM of a certified or registered aerodrome).

28. Human Factors & Pilot Limitations

Key Items

- 75% of accidents have a human factors contribution.
- Medical fitness is our own responsibility to assess – IMSAFE.

Hazardous Attitudes (HAZATTS)

- Anti-authority (Don't tell me to..)
- Impulsivity (Do it now!)
- Invulnerability (It won't happen to me.)
- Machismo (I can do it!)
- Resignation (What's the use?)

Aviation Decision Model - DECIDE

- Detect – what has happened.
- Estimate – need to react/counter.
- Choose – an outcome for the event.
- Identify – actions to control change.
- Do – Take necessary actions.
- Evaluate – the effects of the actions.

Human Physiological Factors

- Stress affects us – underload, optimum and overload.
- Alcohol & drugs affect judgement.
- Our brain does not always sense what the eyes see.
- Are we carrying our glasses?
- Fatigue can have the same effect as alcohol.
- G forces can affect blood flow to brain.
- Oxygen is reduced at height.
- Ears can be blocked and damaged.

Practice Good AIRMANSHIP

- AIR (environment)
- MAN (fitness to fly, training, currency, skills)
- SHIP (airworthy, fit for task, prepared)
-

29. Threat & Error Management

Key Items

- Concept of a 'pristine flight'.
- Threats lead to Errors. Errors lead to UAS. UAS Lead to accidents.
- Threats come AT you.
Errors come FROM you.
- Threats are present on every flight.

Error Types

- Slips - Lapses - Mistakes - Violations.

Detection, Mitigation & Recovery Strategies

- Don't see what you expect to see – LOOK for threats & errors.
- Manage the threats.
- If the threat causes an error – manage the error effects to prevent progression to UAS.
- Use SOPs, checklists etc.
- Check ATTITUDE – safety above all else.
- Use System B (slow, deliberate) thinking rather than System A (rash, instinctive) thinking.
- Plan the flight, fly the plan.
- Be ahead of the aircraft – anticipate.
- After an interruption – work out 'where was I'?
- Ensure health does not present a threat – check IMSAFE.
- Always maintain Situational Awareness.

- Evaluate post-flight – what threats presented, were they mitigated sufficiently – what errors occurred & how were these managed?
- A good pilot never stops learning.

30. Assessment for First Solo

Key Items

- Safety before polish with the skill to handle the degree of responsibility given.
- Never force or pressure (or allow others to do so) a student to go solo if they are unwilling.
- In the pre-flight briefing, mention the reduced weight without instructor may cause more rapid pitch change and quicker ground roll and separation. Do not get too high after separation.

Performance Assessment

- Student must have a satisfactory performance in the following essential skills and knowledge:
- Good lookout.
- Flight radiotelephone operator's logbook endorsement.
- Circuit planning - especially recognising getting low in the circuit.
- Approach Control - able to recognise and correct for an undershoot and understand the need to turn in early if necessary.
- Stalling - competent at recognising even disguised stalls and consistently making efficient recoveries.
- Able to induce a spin, recognise the spin symptoms and take the correct recovery action recovering with minimum height loss.
- Able to recognise and recover correctly from the ensuing spiral dive.

- Good speed and directional control - especially on approach.
- Satisfactorily handled launch failures without assistance from the instructor.
- Satisfactory take-off and launch - including a clean take-off avoiding PIOs, adopting the correct climb attitudes at the correct moments on a winch launch, and boxing the slipstream and recovering from an 'out of position' on aerotow.
- An understanding of thermal joining & centering techniques & sufficiently skilled not to keep falling out of thermals.
- Knowledge of the rules of the air

31. Advanced Aerotow

Key Items

- If glider pilot(s) lose sight of tug, release immediately.
- When changing station. Do so smoothly and unhurriedly.
- Student and instructor must keep their left hand near the release knob.
- If a significant bow develops in the rope, rather than attempt to rescue the situation the instructor should release. This should be done just before the slack is taken up to minimise the risk of the rope and rings contacting the glider.
- Conduct maneuvers with reference to tug slipstream.

Boxing the Slipstream

- Fly to the right first.
- Stop at each corner for 2 seconds.
- Ensure smooth transition without cutting corners of the box.
- Return to low tow start point without overshoot.

Flying on Tow

- Flying level on tow. Watch for slack rope – use airbrakes as required. Great difference in trim of glider - re-trim as required.
- Descending on tow. As for flying level on tow, but more so. Airbrakes will certainly be required.

32. Sideslipping

Key Items

- Objective is to increase rate of descent without increasing speed.
- Can be used to steepen approach.
- When landing one wingtip is closer to ground – end slip early before round out.

Demonstration

- Apply bank and sufficient opposite rudder to prevent a turn.
- Correct for drift / maintain track by varying bank and yaw appropriately.
- Note issues with ASI in sideslip due to yaw error.
- Elevator continues to control attitude.
- Maintain same attitude in the sideslip as at normal approach speed.
- Remove sideslip – confirm safe attitude, remove bank & yaw.

33. Steep Turns

Key Items

- Increased entry speed due to higher stalling speed.
- The steeper the bank, the more back pressure is needed.
- Anything over 60 degrees of bank is defined as aerobatics.

Demonstration

- Perform pre-Aerobatic Check
- Increase airspeed, roll to desired angle. Note higher G forces. Warning! Can induce grey-out or black-out if sustained at high G.
- Take care a spiral dive does not develop.
- Use of trim for sustained steep turns is recommended, remember to re-trim on roll out to relieve the control pressure.

34. Passenger Carrying

Key Items

- Passenger carriage is a privilege not a right.
- You are responsible for someone else's life.

On the Ground

- Passenger briefing:
- Objectives of the flight.
- What they can and cannot touch
- What will be experienced on launch.
- What emergencies can occur.
- FOD management.
- Ask them to alert you of other traffic.
- If parachutes are worn – brief on donning, egress from aircraft, deployment and landing.

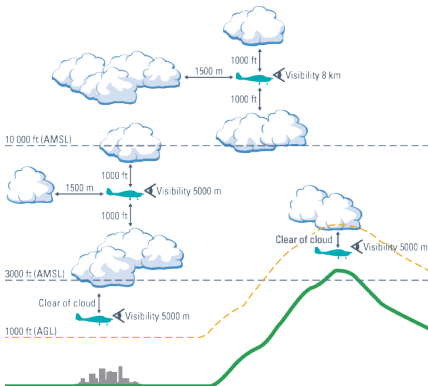
In Flight

- Demonstrate conservative and accurate flight sequences.
- Continual communication and assessment of passenger comfort.
- Land if passenger unwell or distressed.
- Provide detail on local area/landmarks etc.
- When in circuit confirm passenger's harness is still tight.
- Ensure sterile cockpit during critical procedures.

35. Visual Meteorological Conditions (VMC)

Gliders are permitted to fly only in daylight in VMC.

(Double tap image to expand)



(Source: CASA VFRG)

When operating clear of cloud below 3,000' AMSL or 1,000' AGL radio must be carried and used on the appropriate frequency.

36. Circuit Diagram

- Refer to the Pilot Guide for GPC 16.

(Double tap image to expand)

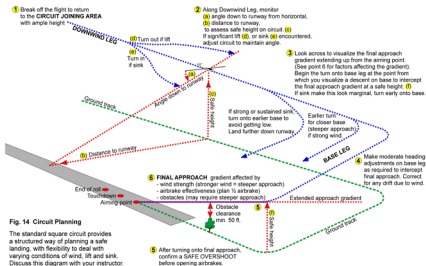


Fig. 14 Circuit Planning

The standard square circuit provides a structured way of planning a safe landing, with flexibility to deal with varying conditions of wind, lift and sink. Discuss this diagram with your instructor.

37. Type Conversions

Key Items

- Briefing should be conducted by one instructor and not by a crowd.
- The instructor must be familiar with the type being converted to, and the one from which the conversion is being made.

Conversion Process

- Refer to aircraft flight manual.
- Conduct an external walk-around similar to a DI as a useful introduction to the glider, especially if it is a completely unfamiliar type.
- Unless the primary controls function differently to those of gliders that the student has flown previously, they do not need to be mentioned.
- Brief auxiliary controls such as the undercarriage, airbrake and flap levers, which may be subtly different or entirely new. Not any airspeed restrictions for use.
- Allow student to sit in the glider for some minutes before the launch and note the positions of the instruments, controls and visibility from cockpit.
- Ensure student can obtain full travel on all the controls, especially full forward stick, without having to stretch.
- Seated in the glider with wings level and the canopy closed, the tail should be lifted and lowered to show the correct attitude at take-off and landing.
- Brief correct adjustments and procedures for the parachute (if used) and means of egress from cockpit

in emergency.

- Ensure student can reach the cable release easily.
- Brief on limiting speeds, especially VA, VNE, VT, VFE and VW with reference to placard, and appropriate minimum launch and approach speeds determined.
- The use of ballast is recommended unless the student is an experienced pilot or is at least 10kgs above the placarded minimum figure.
- Point out and explain the canopy latches, jettison procedures and ventilation knobs.

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