

# Gliding Australia Training Manual

## Trainer Guide



### Unit 20S

### Launch Emergencies Self-Launch

## Unit 20S - Launch Emergencies Self-Launch

---

### AIM

To describe types of launch emergency and demonstrate approaches to prevent these emergencies, and safe actions in the event of them happening on the ground and in the air. Competency in this unit is a prerequisite to solo flight when this involves self-launch aircraft.

### PRE-REQUISITE UNITS

- GPC Unit 13S Launch
- GPC Unit 14S Take-off
- GPC Unit 15 Break-off and circuit planning
- GPC Unit 16 Circuit Joining and execution
- GPC Unit 17 Stabilised approach and landing...

### COMPLEMENTARY UNITS

- There are no complementary Units

## COMPETENCY ELEMENTS AND PERFORMANCE STANDARDS

ELEMENT	PERFORMANCE STANDARDS
1. Describe the range of Launch emergencies.	<ul style="list-style-type: none"> <li>• <b>Describe</b> <ul style="list-style-type: none"> <li>o possible launch emergencies that may occur with ground run, initial climb (to 500 feet AGL) and during full climb above 500 feet;</li> <li>o actions to reduce the chances of launch emergencies.</li> </ul> </li> </ul>
2. Ground roll emergencies	<ul style="list-style-type: none"> <li>• <b>Demonstrate:</b> <ul style="list-style-type: none"> <li>o Prevention of loss of directional control and taking appropriate actions;</li> <li>o appropriate action with a wing drop, possibly due to crosswind;</li> <li>o appropriate action with engine failure during ground roll.</li> </ul> </li> </ul>
3. Initial climb emergencies.	<ul style="list-style-type: none"> <li>• <b>Describe:</b> <ul style="list-style-type: none"> <li>o suitable landing areas off the airfield for emergency use;</li> <li>o options with engine failure below 500 feet AGL.</li> </ul> </li> <li>• <b>Demonstrate:</b> <ul style="list-style-type: none"> <li>o Appropriate response to engine problems and low climb rate issues.</li> <li>o Briefing and calling out options on climb out on all flights;</li> <li>o Taking appropriate action with simulated engine failure, including landing on airfield, 180 turn, and explains options re: outlanding.</li> </ul> </li> </ul>
4. Full climb emergencies.	<ul style="list-style-type: none"> <li>• <b>Demonstrate:</b> <ul style="list-style-type: none"> <li>o Taking appropriate actions to simulated engine failure above 500 ft AGL.</li> </ul> </li> </ul>

### KEY MESSAGES

- Launch emergencies are easily resolved provided thought and planning takes place.
- Maintain safe speed near to the ground at all times.
- Maintain at all times situational awareness, aircraft control and safety.
- Locate, identify and operate controls correctly during all phases of practice emergencies.
- Verbalising options for launch failure on all flights, dual or solo.

## LESSON PLANNING AND CONDUCT

### Briefing

#### Classroom Briefing

- *(Consider using a Simulator)*
- Summary of the range of emergencies that pilots need to avoid and to know how to react.
- **Ground signals to abort launch prior to ground roll.**
  - Anyone outside can abort launch:
    - Shouting “STOP! STOP! STOP!” and holds both hands vertically above head.
    - A radio call of “(Callsign) STOP! STOP! STOP!”
- **O for Options in ABCDEF CHAOTIC** pre-flight checklist identifies alternative actions at stages of launch if failures occur.
  - In practice, the various stages should be called out on all flights as the launch occurs after this classroom briefing, (i.e. abort point airborne – continue, runway, runway, straight ahead, paddock there, paddock there, safe height modified circuit.)
- **Engine problem on ground roll or not airborne by abort point:**
  - Close throttle;
  - Maintain directional control;
  - Apply full airbrake and wheel brake(s).
- **Engine problem airborne, runway remaining:**
  - Lower nose to adopt safe speed;
  - Close throttle;
  - Land straight ahead on runway;
  - If over running the runway, ground loop prior to hitting fence.
- **Engine problem airborne, no runway remaining**
  - Lower nose to adopt and maintain safe speed;
  - If time permits, conduct **CFMOST** check:

## Unit 20S - Launch Emergencies Self-Launch

---

- Carburettor Heat (on if fitted);
- Fuel (On and correct tank, fuel boost pump is on);
- Mixture (Choke Off; Full Rich as required);
- Oil Temperature and Pressure checked;
  - (if Temperature high and Pressure low, consider possibility of fire);
- Switches: (Magnetos switched on or both);
- Throttle & linkage (checked).
- Close throttle.
- If time permits: **Fuel and Switches off.**
- Outland straight ahead or within 30 degrees either side of straight ahead;
- If above safe height either 180 degree turnback or modified circuit to a runway depending on aircraft type, aerodrome layout and/or weather conditions.
- **Remember priorities: 1. Aviate 2. Navigate 3. Communicate.**
- Low rate of climb – check if the airbrakes may be out.
- **Fire in flight:**
  - Adopt glide attitude;
  - Throttle Back;
  - Fuel and Switches off.
  - Land immediately.

### Flight Exercises

#### Specific demonstration and practice required

- All configurations except Fire in flight and Outlanding off low level engine failure practice are to be demonstrated by the student and observed by the trainer to be carried out safely and correctly.

#### Trainer demonstrates:

- Trainer to demonstrate all emergencies including at least one low level engine failure to a modified circuit on glider type prior to the student practicing them.
- If a student shows reticence or nervousness during practice, more demonstration by the trainer is advised.
- Student should identify and perform correct actions for simulated fire on ground and airborne
- Simulated engine failures as appropriate to assess competency.
- When should the engine be stowed and when is too low (leave it out)
- Landing with engine out (if manufacturer allows it)
- Demonstration of glide with engine out but not developing power
- Engine stow failure and troubleshooting at height.

## Unit 20S - Launch Emergencies Self-Launch

### Student practice (under supervision):

- To call options on take-off run and climb out on all flights post classroom briefing;
- Engine failure on take-off run, runway remaining;
- Low level engine failure to a modified circuit or turnback depending on club safety policy.

### Advice to trainer regarding their responsibility to maintain safe flight.

- Do not exceed your own limitations when setting difficult tasks for the student. The student may just say to you – ‘you have control’.
- Maintain safe speed near the ground at all times.
- Maintain currency with modified circuits/ turnback procedures.
- Maintain at all times situational awareness, aircraft control and safety.
- Ensure student locates, identifies and operates correctly controls and equipment during all phases of operation during practice emergencies.
- **During a real (not practice) emergency, the trainer will take command.**

#### Notes

Advice on the ease of learning and traps that may be encountered:

- Don't dramatise exercises; adopt matter of fact approach to reassure the student and to instil confidence.
- Students can practice calling out actions sitting in a parked glider responding to trainer calls locating, identifying and operating controls.
- Don't practice low level engine failure exercises in busy circuit traffic sequences.
- Remember to brief any ground crew fully prior to practicing emergencies.

### COMMON PROBLEMS

Problem	Probable Cause
<ul style="list-style-type: none"> <li>• Student does not monitor speed, rate of climb, abort point, engine parameters on take-off</li> </ul>	<p>Student not aware of aircraft requirements.</p> <p>Lack of practice, demonstration.</p>
<ul style="list-style-type: none"> <li>• Student does not recognise reduced performance as an emergency situation.</li> </ul>	<p>Lack of awareness of performance minima and potential consequences.</p>

## THREAT AND ERROR MANAGEMENT

- Do not exceed personal minima;
- If uncurrent on type with some of these exercises undertake refresher practice with your CFI or a more experienced trainer prior to training this unit.



# Gliding Australia Training Manual

## Trainer Guide

### Unit 20S - Launch Emergencies Self-Launch

---

- Student may react much more slowly than you expect, if too slow - take over.
- Don't underestimate height loss in turnback procedures.
- Turnback practices should not be carried out in busy circuit traffic sequences.

### TRAINING MATERIALS AND REFERENCES

- Powered Sailplane Manual: GFA Ops 0009 Aug 2015
- Australian Gliding Knowledge, pages 140-152
- GPC Pilot Guide Unit 20S;
- Simulator. If available.