

Gliding Australia Training Manual

Pilot Guide



Unit 20 S

Launch Emergencies – Self Launching

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WHAT THIS UNIT IS ABOUT

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.

WHAT ARE THE PRE-REQUISITES FOR THIS UNIT?

- GPC Unit 13S Launch and release (Self Launch)
- GPC Unit 14S Take-off (Self Launch)
- GPC Unit 16 Circuit Joining and execution
- GPC Unit 17 Stabilised approach and landing

COMPLEMENTARY UNITS

Review Pilot Guide GPC Unit 20A Launch Emergencies (Aerotow) for relevant glider flying emergencies related to Ground Roll, PIO, Airspace etc.

KEY MESSAGES

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

PILOT GUIDE FOR THIS UNIT

There are a number of potential launch emergencies that pilots need to be aware of, and have a plan to address them should they occur: As part of your pre-take-off check you should be considering your actions in case any of these emergencies should occur.

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 check list identifies alternative actions at all stages of launch if failures occur.
 - In practice, the various stages should be called out on all flights as the launch occurs (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;

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- Maintain directional control;
- Apply full dive 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:
 - 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 dive brakes may be out.

Fire in flight:

- Adopt glide attitude;
- Throttle Back;
- Fuel and Switches off.
- Land immediately.

FLIGHT EXERCISES FOR THIS UNIT

Specific demonstration and practice required

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- 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 instructor to be carried out safely and correctly.

Instructor demonstrates:

- Your Instructor will demonstrate all emergencies including at least one low level engine failure to a modified circuit on glider type.

Student practice (under supervision):

- Call options on take-off run and climb out on all flights;
- The Instructor may simulate Engine failure on take-off run, runway remaining;
- The Instructor may simulate Low level engine failure to modified circuit or turnback.

THINGS YOU MIGHT HAVE DIFFICULTY WITH

COMMON PROBLEMS

- Set and don't exceed personal minima;
- MAINTAIN SAFE SPEED NEAR THE GROUND;
- Maintain Situational Awareness;
- Don't underestimate height loss in turnback procedures.

HOW DO YOU DEMONSTRATE COMPETENCE?

- Describe: possible launch emergencies that may occur with ground run, initial climb (to 500 feet AGL) and during full climb above 500 feet;
- Describe actions to reduce the chances of launch emergencies
- Prevent loss of directional control;
- Identify and take appropriate action with loss of power on take-off.
- Take appropriate action with a wing drop, possibly due to cross wind;
- Take appropriate action with engine failure during ground roll
- Demonstrate appropriate actions to simulated engine failure above 500 ft AGL.

RESOURCES & REFERENCES

- Powered Sailplane Manual: GFA Ops 0009 Aug 2015
- Australian Gliding Knowledge

SELF-CHECK QUESTIONS

Use these questions to test your knowledge of the unit.

- Under what circumstances would you abort a Self Launch Take-off?

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- What issues should you consider when completing the Outside check of your Pre-takeoff check
- If you experience an engine failure at 400 Feet, what options do you have at your airfield?