VICTORIA FLYING CLUB

Contact Information

- Stephan Heinemann
- SMS: *+1 (250) 891-5446*
- Email: stephan.heinemann@hotmail.com
- Bookings, Questions

VICTORIA FLYING CLUB

Forced Landing

- Review Descent, Approach and Landing
- Definition and Motivation
- **Forced Landing**
- Summary and Questions
- Pre-Flight Briefing

VICTORIA FLYING CLUB

Review Descent, Approach and Landing

- Mentally perform a power-off descent and state all observations and required actions.
- What is the best glide airspeed and where do we find it?
- How do we visually determine our glide distance?
- How can the rate of descent be increased during an approach for landing?
- What types of landing can we perform?
- Mentally perform a soft-field landing and state all observations and required actions.

VICTORIA FLYING CLUB

Definition and Motivation

- *Unplanned immediate* landing due to **failure** or other **emergency**
- **Aviate**, **Navigate**, **Communicate**, **Manage**
- Continue to **fly the airplane** has *highest* priority
- Situations: **engine failure** (mechanical, oil supply, fuel supply – contamination, air supply – icing, blockage, fire)

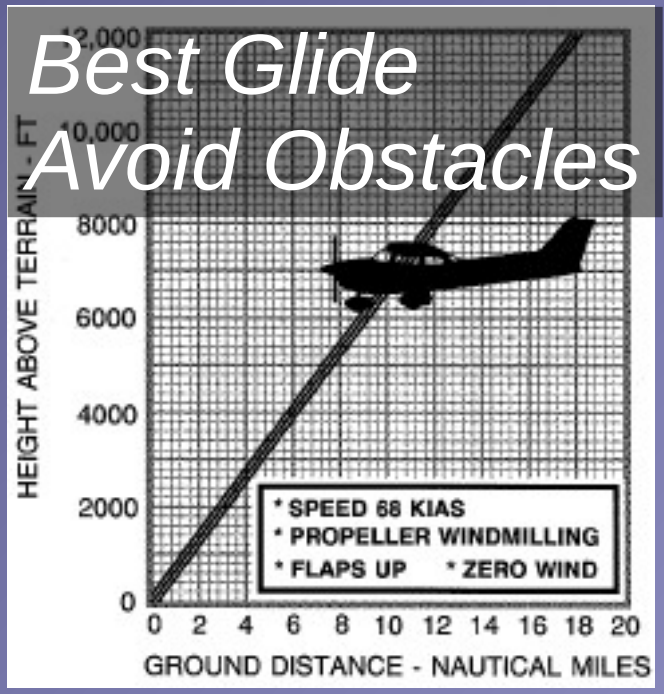
VICTORIA FLYING CLUB

Engine Failure During Take-Off

Power Idle

Apply Brakes

Best Glide
Avoid Obstacles



- During take-off run: **power** *idle*, apply **brakes**, keep *straight*
- Immediately after take-off *with* sufficient runway: **power** *idle*, **flaps** *as required*, land *straight ahead*
- Immediately after take-off *without* sufficient runway: establish **best glide airspeed** (***68 KIAS***), avoid *major* **turns** and **obstacles**

VICTORIA FLYING CLUB

Engine Failure at Safe Altitude

- **Altitude** at or above ***2000 ft AGL*** with *sufficient* deliberation time
- Establish **best glide** (***68 KIAS***) **attitude** and **trim**
- Select and head towards suitable **field** (key point)
- **Cause check** (Fuel Selector, Fuel Valve, Mixture, Throttle, Fuel Pump, Magnetos, Engine Instruments)
- Attempt **restart**
- *If restart not successful, continue with low altitude procedures*
- *MEMORIZE THIS PROCEDURE!*

VICTORIA FLYING CLUB

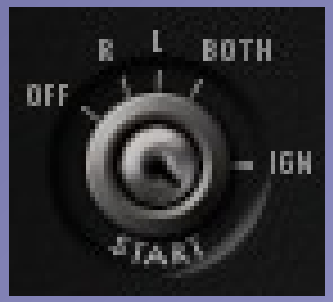
Engine Failure at Low Altitude

- **Altitude** *below* ***2000 ft AGL*** with *limited* deliberation time
- Establish **best glide** (***68 KIAS***) **attitude** and **trim**
- Select and head towards suitable **field** (key point)
- **Fuel Valve** - Off, **Mixture** - Off, **Ignition** - Off
- **Mayday**, **Squawk** 7700, **ELT** On, passenger **briefing**
- Seats upright, seat belts fasted, cockpit hazards removed
- **Flaps** as required
- **Master** - Off, **Doors** – Unlatch
- *MEMORIZE THIS PROCEDURE!*

VICTORIA FLYING CLUB

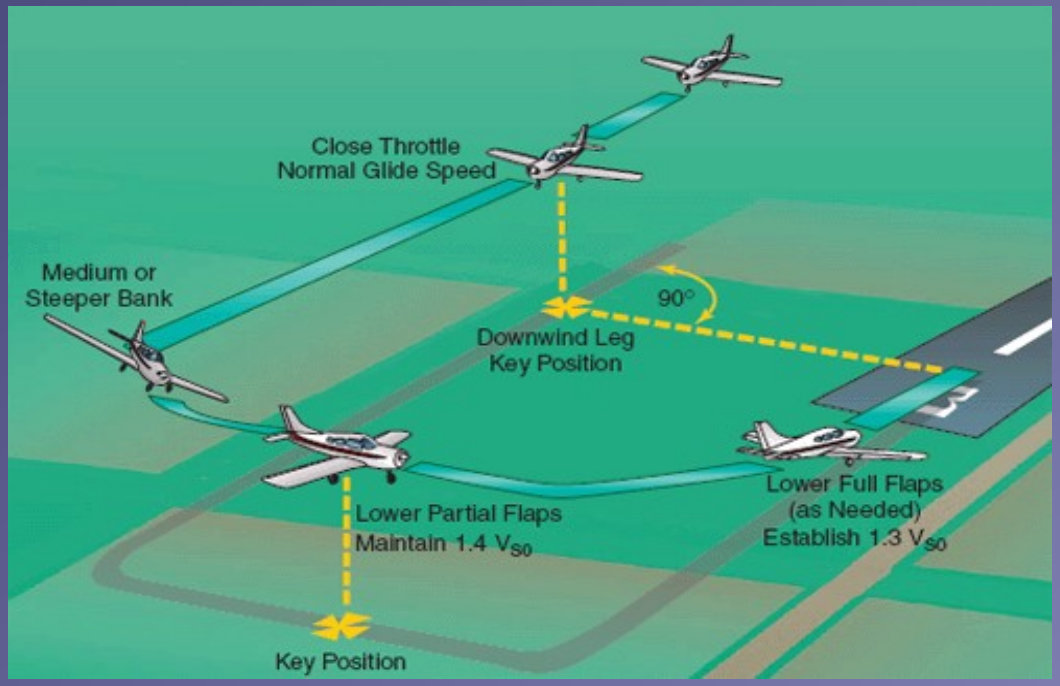
Restart Procedure

- **Fuel Valve** – On
- **Fuel Selector** – Both
- **Mixture** – Full Rich
- **Fuel Pump** – On
- **Ignition** – Start / Windmilling
- **Fuel Pump** – Off (Consider On)



VICTORIA FLYING CLUB

Engine Failure in Circuit

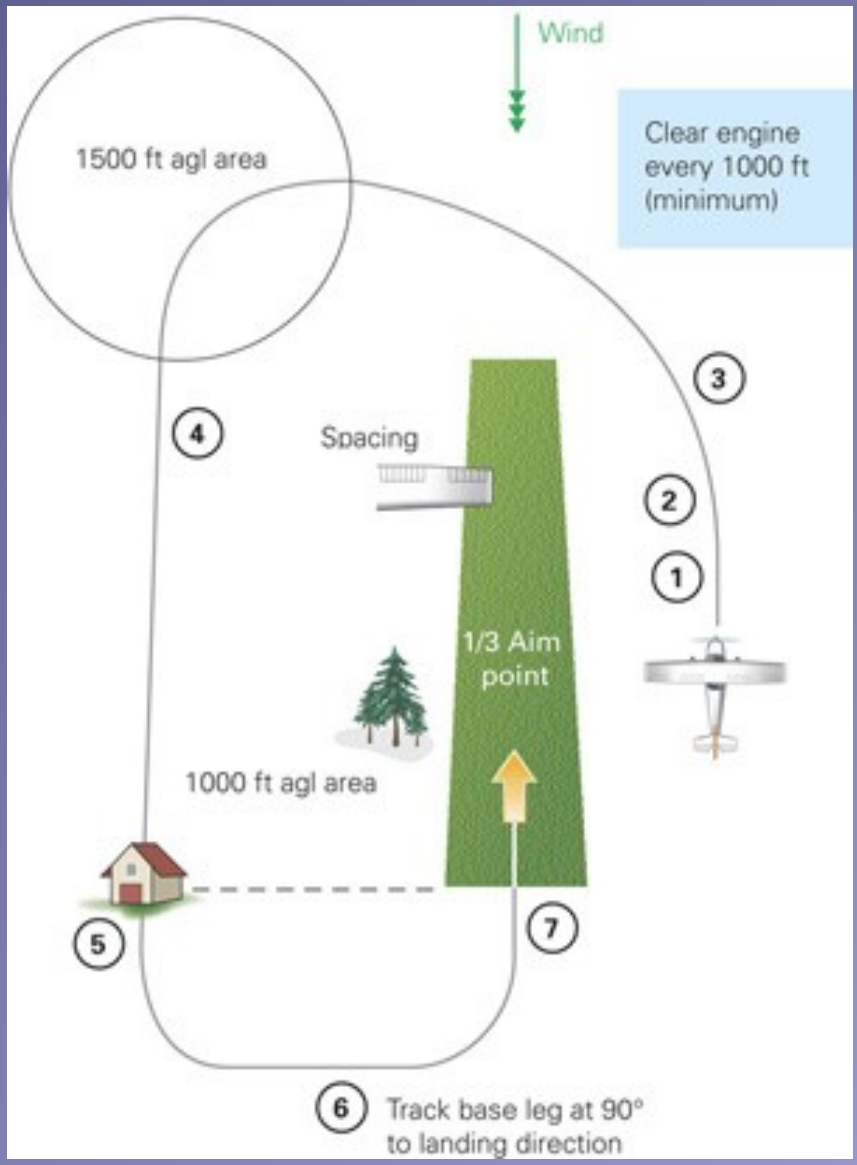


- Perform **power-off landing** *if* at or above **circuit altitude**
- Manage energy / airspeed and plan for each leg to final
- Use **slipping** or **flaps** as required to control rate of descent
- Consider **absolute altitude**, **rate of descent** and **wind**
- Inform ATC (request clearance beforehand if practicing)

VICTORIA FLYING CLUB

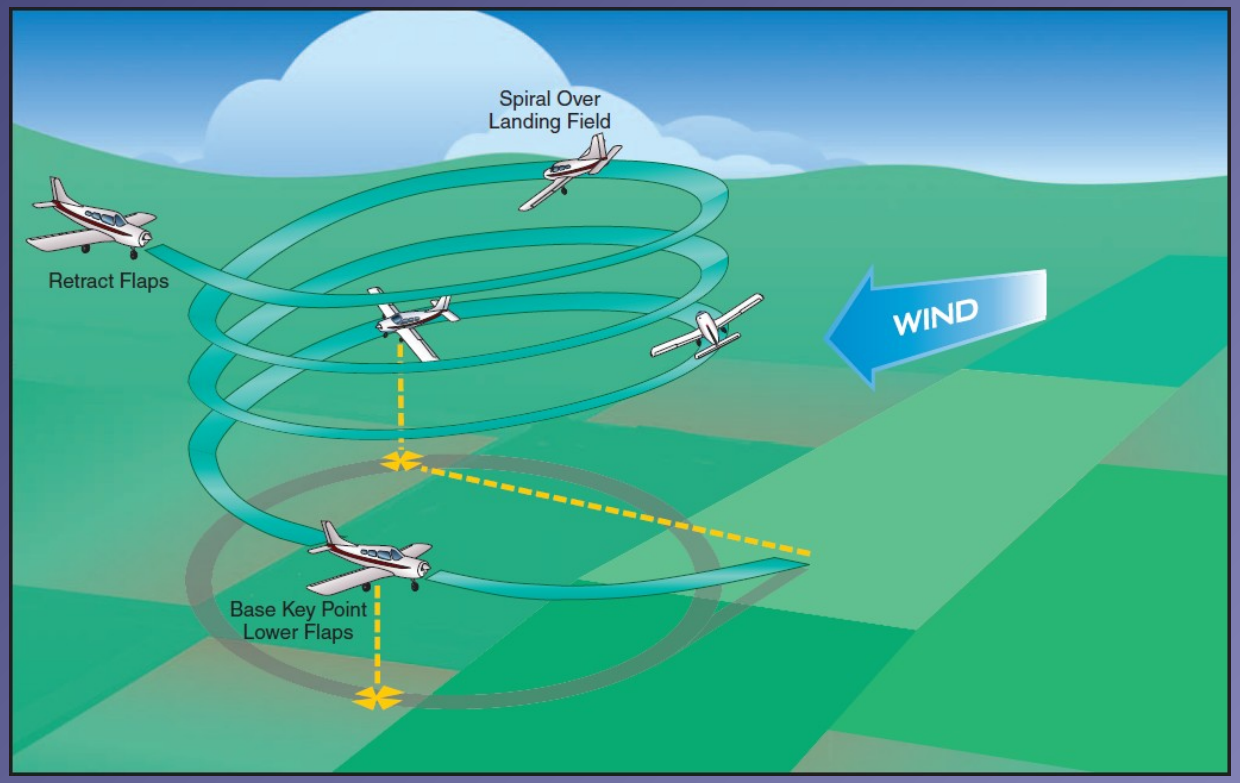
Forced Landing Approach

- Establish **key points** (high key, low key, final) and key point **altitudes**
- Organize **legs**
- Consider **absolute altitude**, **rate of descent** and **wind**
- Example aircraft performance: ROD ***500 ft/min*** → altitude loss turning ***180º: 500 ft***, ***360º: 1000 ft***
- Approach *slightly high* and attempt to land in **first third** of the selected **field** (***1000 ft THLD***)
- Use **slipping** and **flaps** *as required* to increase rate of descent



VICTORIA FLYING CLUB

360° Forced Landing Pattern



- Proceed to selected **key point** at altitude – **high key** *above* threshold
- Descend to lower altitude **circling** – **low key** *abeam* threshold
- Initiate final approach from low to **final key** on extended centerline
- Options if *high* but *too low* for full turn: widen out, bow ties or serpentines

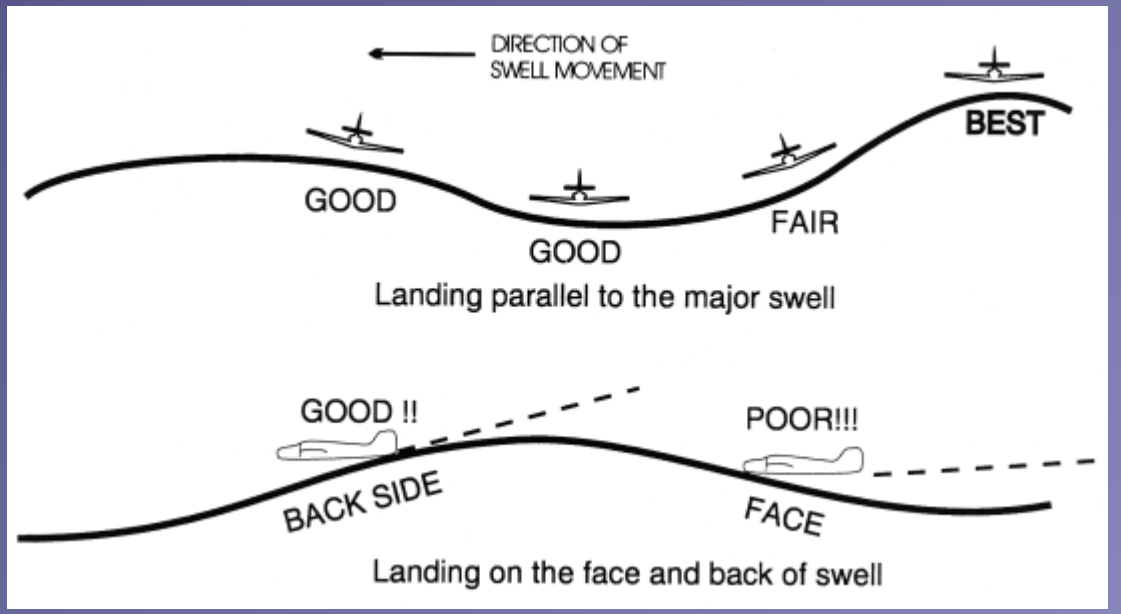
VICTORIA FLYING CLUB

Distress Communication

- Current frequency or **121.5**
- Mayday, Mayday, Mayday
- 3 x Callsign
- **Position**, Altitude
- **Problem**
- **Intentions**
- Callsign
- Squawk 7700, ELT On

VICTORIA FLYING CLUB

Hills, Mountains, Forest, Water



- Hills / Mountains: land *uphill*
- Forest: assume **tree tops** as landing surface
- Plantation / Field: assume **plant tops** as landing surface
- Roads (traffic, power lines, obstructions)
- Water: ditching and evacuation – consider **swell**, **wind**

VICTORIA FLYING CLUB

Safety Considerations

- Avoid any skidding tendency during maneuver
- Avoid unnecessary noise or livestock nuisance
- Remain clear of all obstacles
- Clear engine every ***1000 ft*** in cold weather
- Go around at ***500 ft AGL*** (***1000 ft*** over civilization)
- *Lower* altitudes are *only* permitted with instructor

VICTORIA FLYING CLUB

Summary / Quiz

- What situations may lead to a forced landing?
- How does altitude affect the type of forced landing?
- Mentally perform a forced landing from a safe altitude within farmland countryside.
- Simulate a Mayday call reporting an engine failure and state your intentions.
- What other means of communication are available in an emergency?

VICTORIA FLYING CLUB

Pre-Flight Briefing

- Exercise
- Training Area
- Departure and Arrival Procedures
- Weather Briefing / NOTAMs
- Aircraft and Documents
- Time and Fuel Requirements
- Safety Considerations and Responsibilities

VICTORIA FLYING CLUB

Additional Materials

- Additional materials for Forced Landing
- Flight Instructor Guide – Exercise 22, Lesson Plan 20, 22