VICTORIA FLYING CLUB

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- Bookings, Questions

VICTORIA FLYING CLUB

Normal Take-Offs and Landings

- Review Climbing, Descending, Slow Flight
- Definition and Motivation
- **Normal Take-Off**
  - Criteria and Phases
- **Normal Approach and Landings**
  - Criteria and Phases
- **Circuits**
- Summary and Questions
- Pre-Flight Briefing

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Review Climbing

- Define and state the two important reference speeds for climbing.
- Where do we find the relevant performance data?
- How do we maintain a selected climb airspeed given a fix power setting?
- What factors affect climb performance?
- How do we maintain *coordinated flight* during a climbing turn?

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Take-Off – Definition and Motivation

- *Act of leaving a supporting surface including the immediately preceding and following acts*
- Leaving the ground and **becoming airborne**
- Essential maneuver used in every single flight

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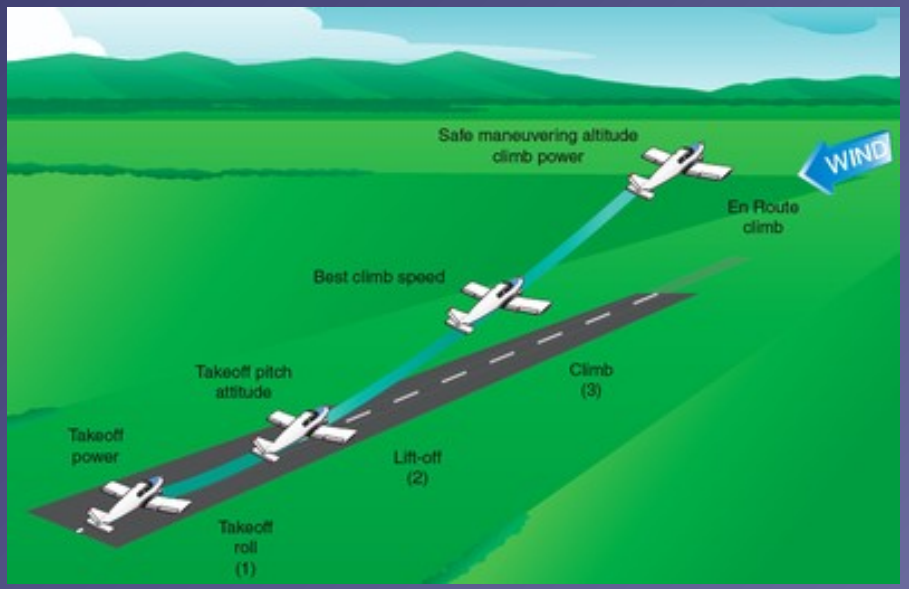
Normal Take-Off



- *Criteria*: **hard uncontaminated surface**, **long runway**, **no obstacles**, **low density altitude**, **no** or **steady headwind**
- Check environment and consult **performance** data in POH
- Pre-take-off checks according to **checklists** in POH
- **Mixture full rich**, **lean** for **maximum RPM** above ***3000' DA***
- **Passenger**, **departure** and **emergency briefings**

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Normal Take-Off – Line Up

- **Check** approach sector and **callout** *Approach Sector Clear*
- Align with **runway** **centerline** using **rudder** and **brakes**
- Keep **nose-wheel centered** and **stop** before take-off run
- Crosscheck **runway heading**, **magnetic compass**, **heading indicator**

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Normal Take-Off – Run

- **Callout** *Take-Off* before initiating take-off run
- *Smoothly* apply **full power** **keeping** **straight** with **rudder**
- Use **runway end** as **reference** for directional control
- **Check** RPM/ASI and **callout** *RPM Checked*, *Airspeed Alive*
- Continue to **accelerate** to **lift-off speed** (***Vr = 55 KIAS***)
- *Gently* apply **elevator** **back-pressure** to lift off nose-wheel

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Normal Take-Off – Initial Climb

Positive Rate

Vy

Adjust Attitude

Maintain Vy

Control Direction

- **Check** VSI and **callout** *Positive Rate*
- **Accelerate** to **best rate of climb airspeed** (*Vy = 74 KIAS*)
- Adjust and **maintain nose-up attitude** for **airspeed**
- **Trim** away **elevator forward-pressure** as required
- Maintain directional control and control **yaw** with **rudder**

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Review Descending and Slow Flight

- Mentally perform a power-off and power-on descent and state all observations and required actions (PAT).
- Define and state the best glide airspeed.
- How do we recognize that a ground reference can be reached during a descent?
- What is slow flight and how do we recover from the slow flight range?
- Define and state the two stall v-speeds.

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Landing – Definition and Motivation

- *Landing is the last part of a flight, where a flying animal, aircraft, or spacecraft returns to the ground.*
- Stabilized **approach**, **flare**, **touchdown**, **ground roll**
- Essential maneuver used in every single flight

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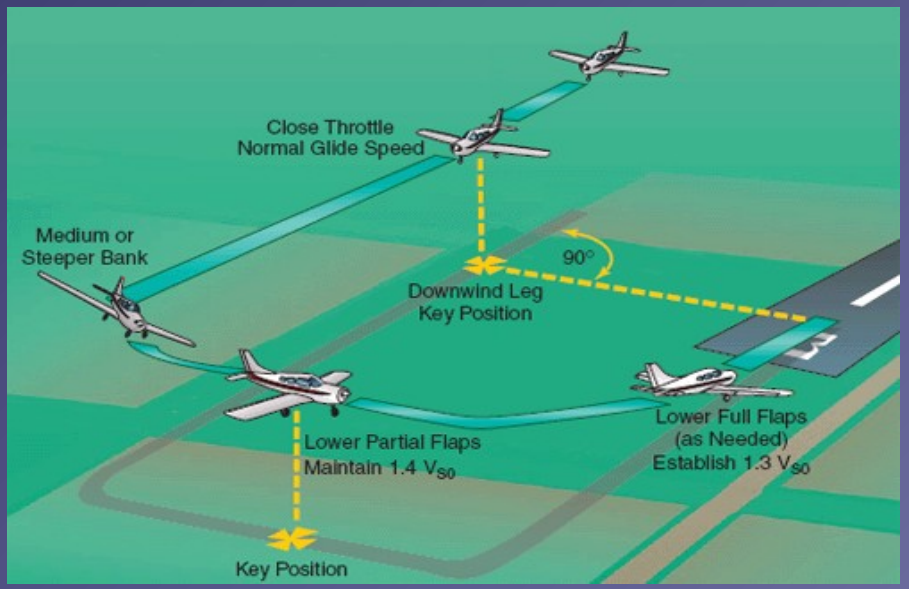
Normal Approach and Landing



- *Criteria*: **hard uncontaminated surface**, **long runway**, **no obstacles**, **low density altitude**, **no** or **steady headwind**
- Check environment and consult **performance** data in POH
- Pre-landing checks according to **checklists** in POH
- **Passenger**, **arrival** and **emergency briefings**

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Normal Landing – Approach

Align and Descent *Perspective* *Approach Speed*

- Align with **runway** and establish a *stabilized* **descent**
- Aim for runway threshold to flare into landing zone
- Set **flaps** as required (***10°-20°***) in **white arc** (below ***85 KIAS***)
- *Continuously* check correct **approach airspeed** (***65-75 KIAS***)
- Adjust **power** to **maintain attitude** and **perspective**

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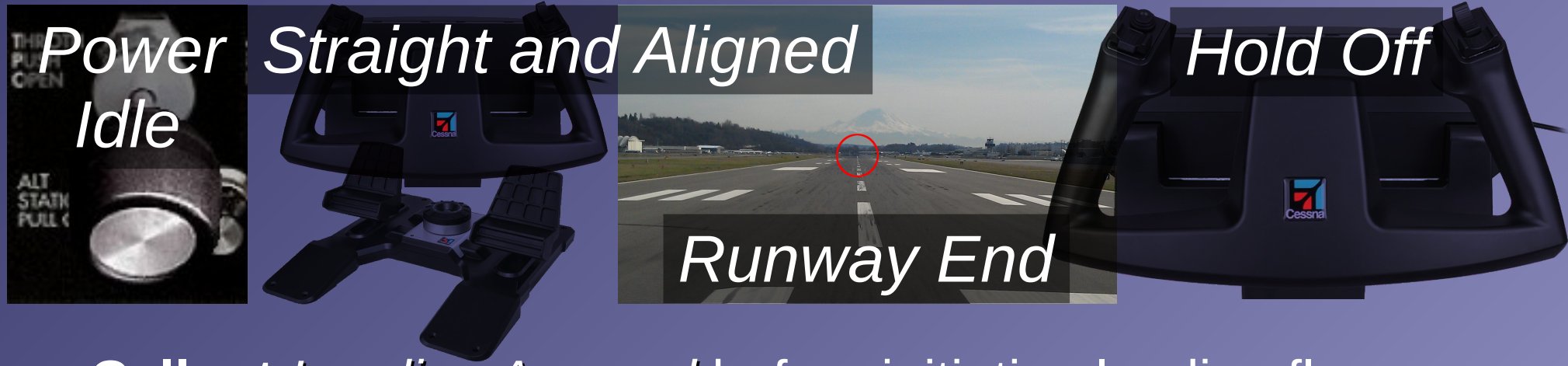
Normal Landing – Flare and Touchdown



- **Callout** *Landing Assured* before initiating landing flare
- Reduce **power** to **idle** **keeping straight**
- Use **runway end** as **reference** for directional control
- Continue to **decelerate** in **level slow flight** above runway
- *Gently* increase **elevator** **back-pressure** to **assume landing attitude** *gradually – slight* **nose-up**, **main-wheels** *first*

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Normal Landing – Ground Roll

Keep Straight

Runway End

Allow Nose Wheel to Settle

Apply Brakes

- Keep **straight** with **rudder** using **peripheral vision**
- **Hold elevator back-pressure** allowing nose wheel to settle
- *Gently* **apply brakes** keeping **straight** towards **runway end**
- **Slow down** to taxi speed and **vacate runway**
- Post-Landing – clearance, flaps, transponder, lights, time

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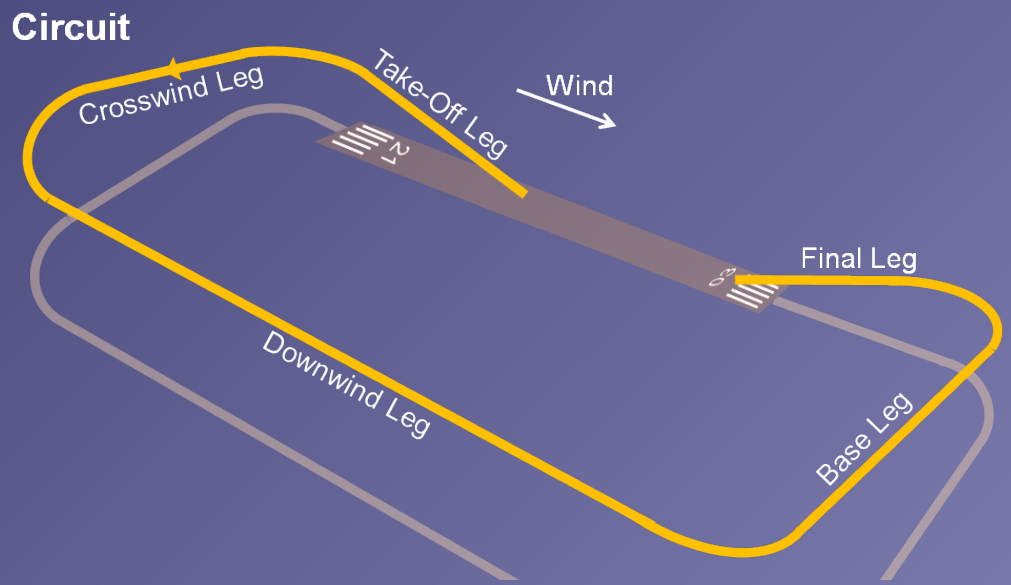
Circuits – Definition and Motivation



- **Standardized** *rectangular* **traffic circuit** at **aerodromes**
- **Ordered** and **organized** flow of traffic to avoid conflicts
- Safety and **traffic separation**, **stabilized approaches**
- *Types*: **controlled** and **uncontrolled** aerodrome circuit
- *Applications*: portion of a circuit is flown in every single flight

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Circuit Procedures

- **Climb** to ***500' AAE*** or as assigned on **upwind** leg
- Transition to *Vy* and perform **cockpit checks** (flaps up)
- **Climb** to ***1000' AAE*** or as assigned on **crosswind** leg
- Perform **cockpit checks** on **downwind** (switches)
- Turn **base leg** at ***45°*** or as assigned past threshold
- Configure for landing on **downwind** and **final** legs
- Establish **stabilized approach** on final leg
- Maintain *speed and spot* with stable descent rate
- **Go around** if necessary
- Maintain **lookout** and separation: situational awareness

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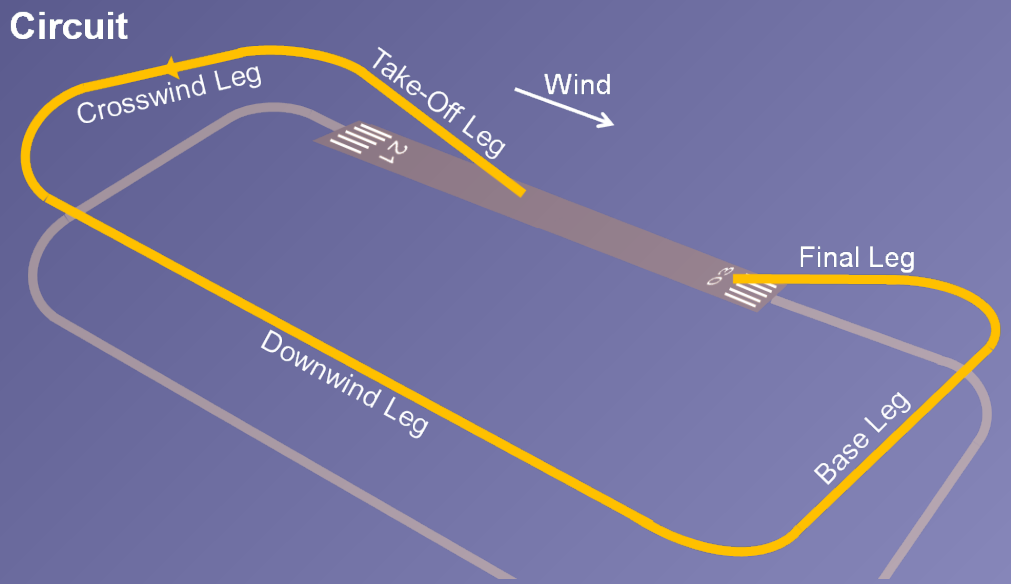
Circuit Radio Procedures and SOPs



- Report **entry** leg
- Report **downwind** leg (standard left or *right*) and **intentions**
- Perform **downwind leg** midfield **checks**
- Report **final leg** – check final items
- Assure **clearances** for **landings** and **deviations** or **exercises** if required in the environment

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Summary / Quiz

- What are the factors affecting take-offs and landings the selection of a *normal* take-off and landing?
- Mentally perform a normal take-off and state all observations and actions (phases).
- Mentally perform a normal landing and state all observations and actions (phases).
- How do flaps affect the landing performance?
- How is the standard circuit organized and what procedures are associated with it?

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Pre-Flight Briefing

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

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Overshoot / Go-Around

Full Power

Control Yaw

Assume Slight Nose-Up Attitude

Flaps Up In Stages

- *Reasons*: balked landing, failures, traffic, animals, humans
- Apply **full power** controlling **yaw** with **rudder**
- Assume a *slight* **nose-up attitude** just above the horizon
- **Retract flaps** to ***10°*** and **accelerate** to *safe* **climb speed**
- **Maintain climb speed** and **retract flaps** in **white arc**

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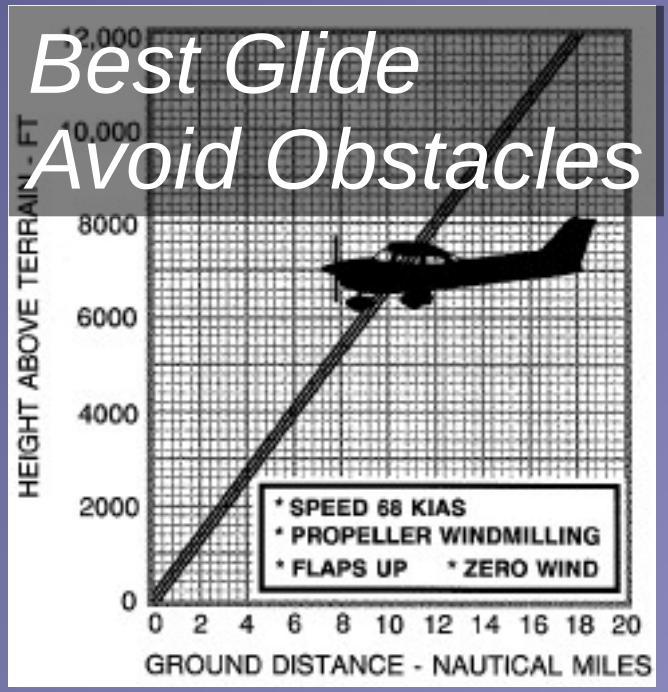
Aborted / Rejected Take-Off

Power Idle

Apply Brakes

Best Glide
Avoid Obstacles



- *Reasons*: failures, traffic, animals, humans
- *During Take-Off Run*: **power idle**, apply **brakes**
- *Immediately after Take-Off*: **best glide airspeed** (***68 KIAS***), **avoid obstacles**

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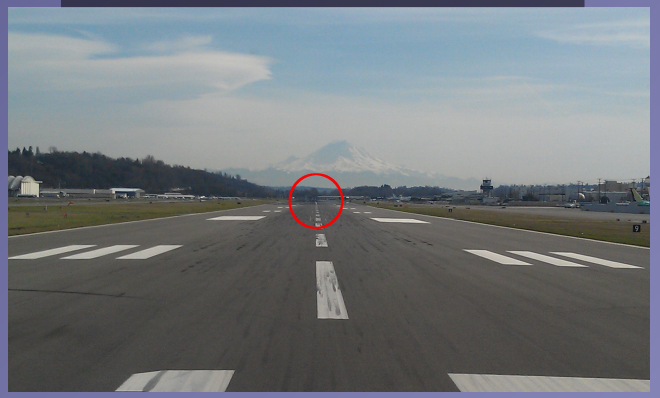
Touch and Go

Flaps Up

Full Power

Keep Straight

Runway End



- *Ensure sufficient runway length beforehand*
- **Retract flaps** *completely* during ground roll, **trim** for take-off
- Apply **full power** and **keep straight** with **rudder**
- Use **runway end** as **reference** for directional control
- Perform **take-off run** and **initial climb** as required

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Wheelbarrowing

- Higher load on the nose-wheel
- Tendency to pivot about the nose wheel may result in ground loop
- *Before pivoting*: **Ease back elevator** to reduce weight
- *After pivoting*: **Relax forward elevator** and abort if not stopped

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Approach Perspective

- **Maintain descent angle** (**perspective**) and **attitude**
- Control **airspeed** and **rate of descent** with **power**
- Be aware of potential **visual illusions**

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Take-Off and Landing Factors

- **Density** (Altitude, Pressure, Temperature, Humidity)
- **Surface** Material (Hard, Soft, Rough) and **Slope**
- Surface **Contamination** (Wet, Dry, Slush, Snow, Ice)
- **Wind** / Turbulence (Head-/Tailwind, Gusts, Windshear)
- **Wake** Turbulence
- **Obstacles**
- **Weight** and **Balance**
- Lifting Surfaces **Contamination**
- Ground Effect, Wheelbarrowing, Weathercocking

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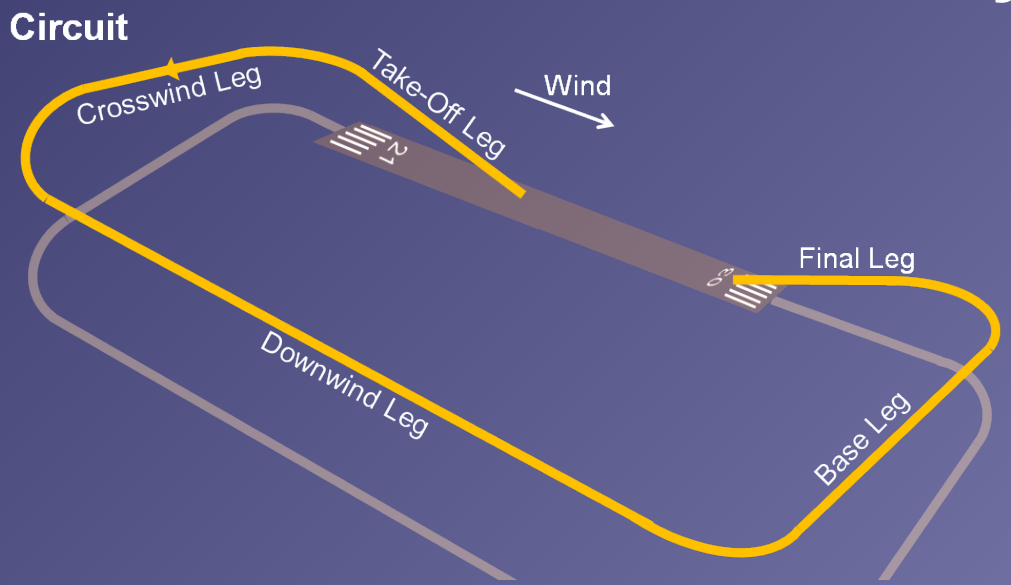
Circuit Layout



- *Legs*: **Take-Off**, **Crosswind**, **Downwind**, **Base**, **Final**
- *Sides*: **Upwind** and **Downwind**
- Standard **left-hand** aerodrome circuit with ***1000' AAE*** **circuit height**
- Standard crosswind and base legs transition between ***500'*** and ***1000' AAE***
- Consult *Canadian Flight Supplement* for **specific layout** and **procedures**
- Modifications due to **obstacles**, **noise abatement** and **points of interest**