



VICTORIA FLYING CLUB

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# Slow Flight

- Review Flight for Endurance
- Definition and Motivation
- **Slow Flight** in Clean and Landing Configuration
- **Slow Flight** Climbs, Descents and Turns
- Summary and Questions
- Pre-Flight Briefing



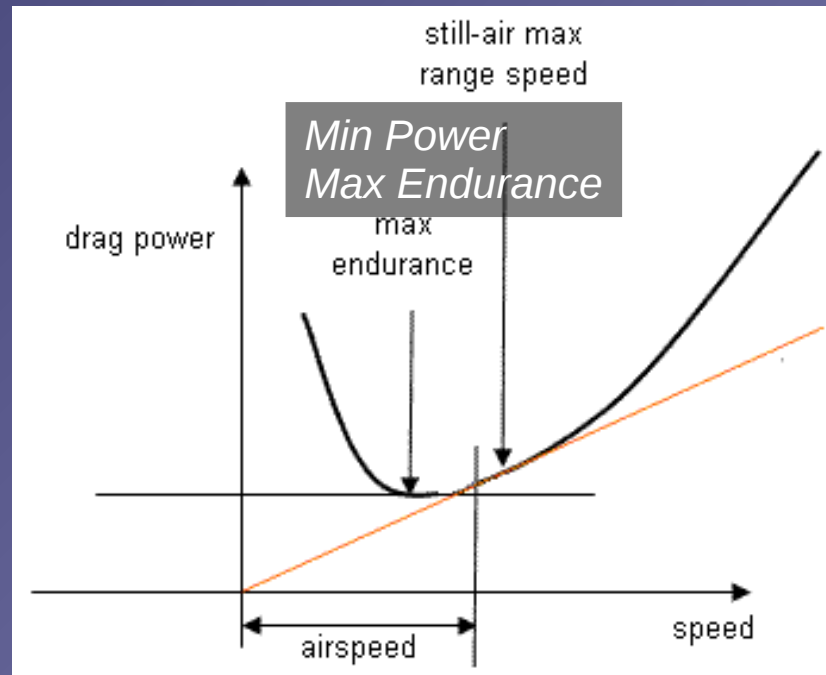
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# Review Flight for Endurance

- *Attitude plus power equals performance!*
- Mentally configure the aircraft for maximum endurance flight and state all observations and required actions.
- What particular observation applies to the control inputs compared to normal cruise flight?



# Definition and Motivation



- Flight at airspeeds in the **range below the maximum endurance** speed down to just above the stalling speed
- Dominating **induced drag** requires **more power**
- **Control surfaces** are **less effective** at slow airspeeds
- (Soft Field) **Take-offs, Landings and Go-Arounds**



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# Safety Considerations

- High **nose-up** attitude maneuver
- Limited forward visibility
- **HASEL, lookout** ahead and below
- **Maintain** good **lookout** during maneuver
- **Yaw** is to be controlled precisely with **rudder**
- **Remain coordinated** at all times



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# Entering Slow Flight (Clean) from Flight for Maximum Endurance



- Configure the aircraft for **maximum endurance** flight
- Apply **elevator back-pressure** and establish a **more nose-up** attitude to **decelerate** into the slow flight range
- Increase **power** as required to keep the airspeed stable controlling **yaw** with **rudder** maintaining **altitude** and finally **trim**





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# Entering Slow Flight (Clean)

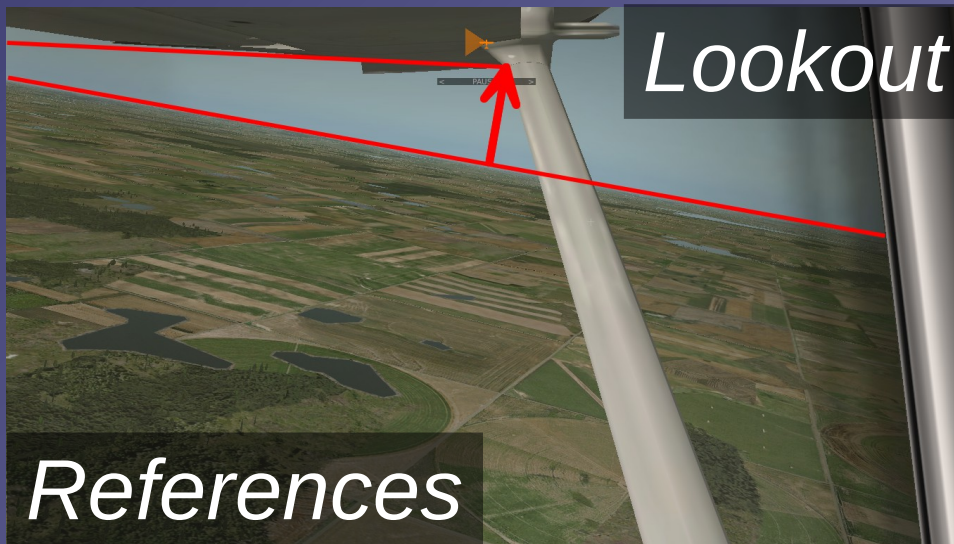


- Reduce **power** and **decelerate** into slow flight range
- Apply elevator **back-pressure** and increase **nose-up** attitude as required to maintain **altitude**
- Increase **power** as required to keep the airspeed stable controlling **yaw** with **rudder** maintaining **altitude** and finally **trim**



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# Maintaining Slow Flight (Clean)



- **Stall warning** audible and **ailerons** are much **less responsive**
- More **power** in slow flight produces more **yaw** and requires **continuous rudder input** to remain **coordinated**
- *Attitude plus power equals performance!*
- **Pitch** controls **airspeed**, **power** controls **altitude**

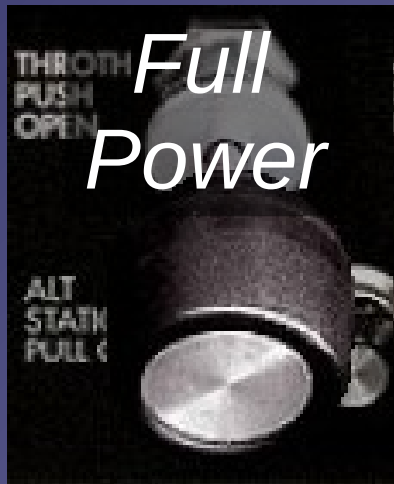




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# Recovering Slow Flight (Clean)

*Forward  
Pressure*



- Apply **full power** controlling yaw with **rudder** to remain coordinated
- Apply elevator **forward pressure** to lower the nose *gradually*
- Establish cruise attitude and **accelerate** to cruise airspeed
- Reduce **power** to cruise power setting and finally **trim**



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# Entering Slow Flight (Flaps)

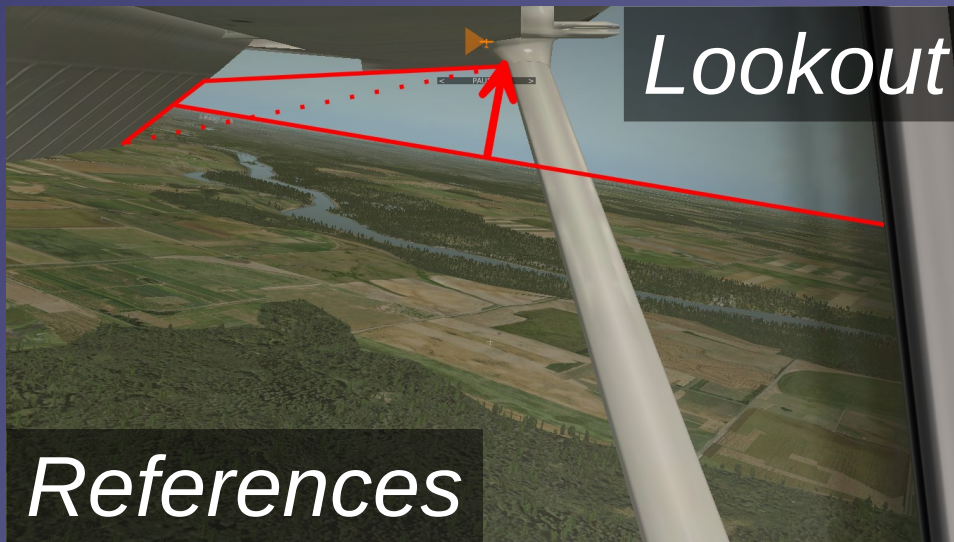


- Reduce **power** and **decelerate** into slow flight range
- Apply elevator **back-pressure** to increase **nose-up** attitude as required to maintain **altitude**
- Extend **flaps** in **stages** to desired setting while in **white arc**
- Increase **power** as required to keep the airspeed at the bottom of the **white arc** controlling **yaw** with **rudder** maintaining **altitude** and finally **trim**



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# Maintaining Slow Flight (Flaps)



- Additional **flaps** create **more drag** and require **more power**
- **Stall warning** audible and **ailerons** are much **less responsive**
- More **power** in slow flight produces more **yaw** and requires **continuous rudder** input to remain **coordinated**
- *Attitude plus power equals performance!*
- **Pitch** controls **airspeed**, **power** controls **altitude**





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# Recovering Slow Flight (Flaps)



- Apply **full power** controlling yaw with **rudder** to remain coordinated
- Apply elevator **forward pressure** to lower the nose *gradually*
- Raise **flaps** in stages to up while in white arc
- Establish cruise attitude and **accelerate** to cruise airspeed
- Reduce **power** to cruise power setting and finally **trim**





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# Climbs and Descents in Slow Flight

*Slow Flight Clean*



*Slow Flight Flaps*



- *Attitude plus power equals performance!*
- **Increase power** as required to initiate **climb**
- **Reduce power** as required to initiate **descent**
- **Adjust attitude** to maintain (slow flight) **airspeed**



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# Turns in Slow Flight



*Slow Flight Clean Turn*



*Slow Flight Flaps Turn*

- Ailerons are less responsive and cause more **adverse yaw**
- More **rudder** is required to compensate yaw, support turns and remain **coordinated**
- Establish and maintain banked attitude (up to **30°**) with ailerons and **continuous rudder** support
- Right turns require more rudder than left turns



## Summary / Quiz

- Define slow flight and give examples for when slow flight is applicable.
- Mentally enter a slow flight in landing configuration from cruise flight and state all observations and required actions.
- Mentally perform a turn to the right in slow flight and state all observations and required actions.
- Mentally recover from a slow flight in landing configuration and state all observations and required actions.



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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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# Slow Flight Ex. 11 LP. #5

- Objective
- Review
- Motivation
- Howto
  - Entry, Maintain, Recovery
- Summary / Questions
- Preflight Briefing



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# Familiarization Demonstration

- Employ an obvious and dramatic example
- Stall: Power Idle, increase nose-up attitude while maintaining straight-and-level, control yaw and demonstrate falling leaf / nose-drop