VICTORIA FLYING CLUB

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- Bookings, Questions

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Stalls

- Review Slow Flight
- Definition and Motivation
- **Power-Off** and **Power-On Stalls**
- **Accelerated**, **Approach** and **Departure Stalls**
- Summary and Questions
- Pre-Flight Briefing

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Review Slow Flight

- *Attitude plus power equals performance!*
- Mentally enter a slow flight in landing configuration from cruise flight and state all observations and required actions.
- What particular observation applies to the control inputs compared to normal cruise flight?
- Mentally recover from a slow flight in landing configuration and state all observations and required actions.

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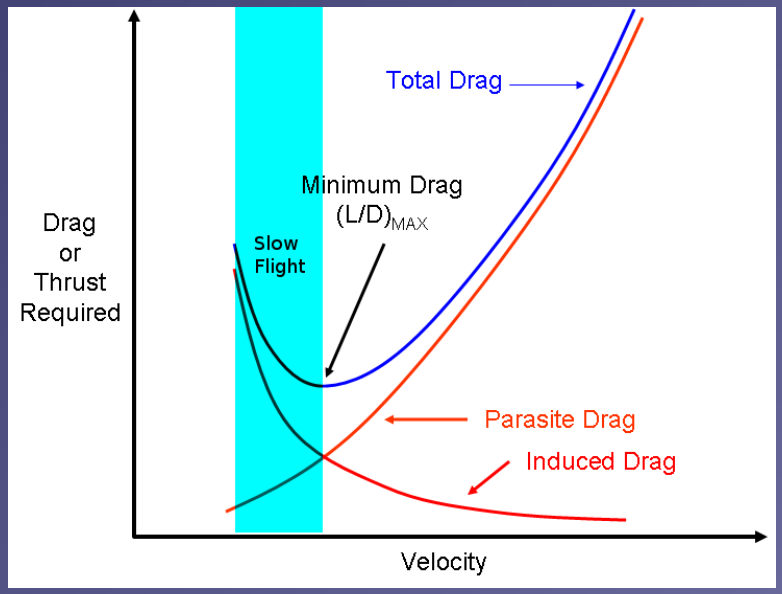
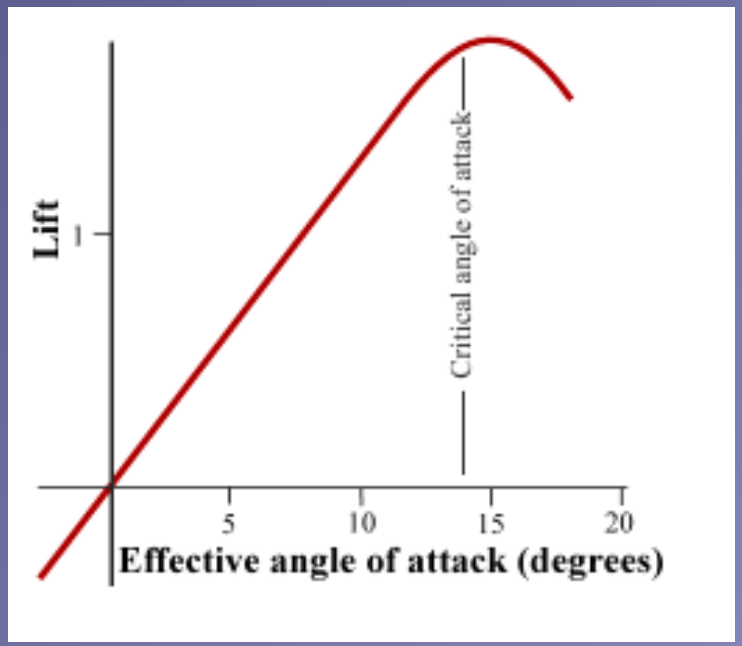
Definition and Motivation





- **Lower limit** of the **slow flight** range
- Any angle of attack **beyond** the **critical angle of attack** at which any further increase leads to **less lift** and **more drag**
- *Imminent* – **stall warning**, **bottom of arc**, **buffet**
- *Fully Developed* – nose or wing drop

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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
- **Utility category** for **wing drop** stalls

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Entering a Power-Off Stall

- **Reduce power** to **idle**, **decelerate** and control **yaw**
- Apply **elevator back-pressure** to **increase nose-up attitude** controlling **yaw** with **rudder** maintaining **altitude**
- Extend flaps in stages to desired degree in **white arc**

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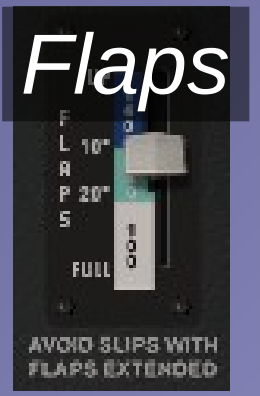
Recovering a Power-Off Stall



- Apply **elevator forward pressure** to lower the nose *immediately*
- Apply **full power** controlling **yaw** with **rudder** to remain **coordinated**
- **Accelerate** past the slow flight range and **regain altitude**
- Retract **flaps** in stages to up in **white arc**
- Establish **cruise attitude** and **accelerate** to **cruise airspeed**
- **Reduce power** to **cruise power** setting and finally **trim**

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Entering a Power-On Stall

- Apply **elevator back-pressure** to **increase** and **hold nose-up attitude** controlling **yaw** with **rudder**
- Extend flaps in stages to desired degree in **white arc**

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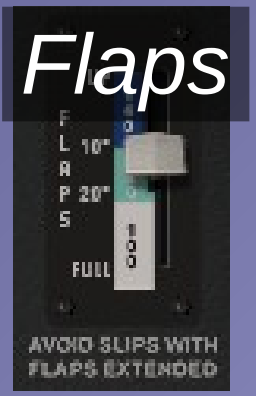
Recovering a Power-On Stall



- Apply **elevator forward pressure** to lower the nose *immediately*
- Apply **full power** controlling **yaw** with **rudder** to remain **coordinated**
- **Accelerate** past the slow flight range and **regain altitude**
- Retract **flaps** in stages to up in **white arc**
- Establish **cruise attitude** and **accelerate** to **cruise airspeed**
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Power-On versus Power-Off Stall

- Slightly lower **stall speed** and higher **pitch attitude**
- More directional **control** and **coordination** required
- **Ailerons** are even less effective
- More **rudder** and **elevator** effectiveness (slipstream)
- More pronounced **attitude change**

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Imminent and Fully Developed Stalls

- Stall **recovery** in normal flight operations should be performed as **early as possible** – during the **imminent stall**
- Recover at the **first indication** of **stall warning**, **bottom of arc** or **buffet**
- Fully developed stalls are practiced to develop **proficiency** in **recognition** and **recovery** *only*

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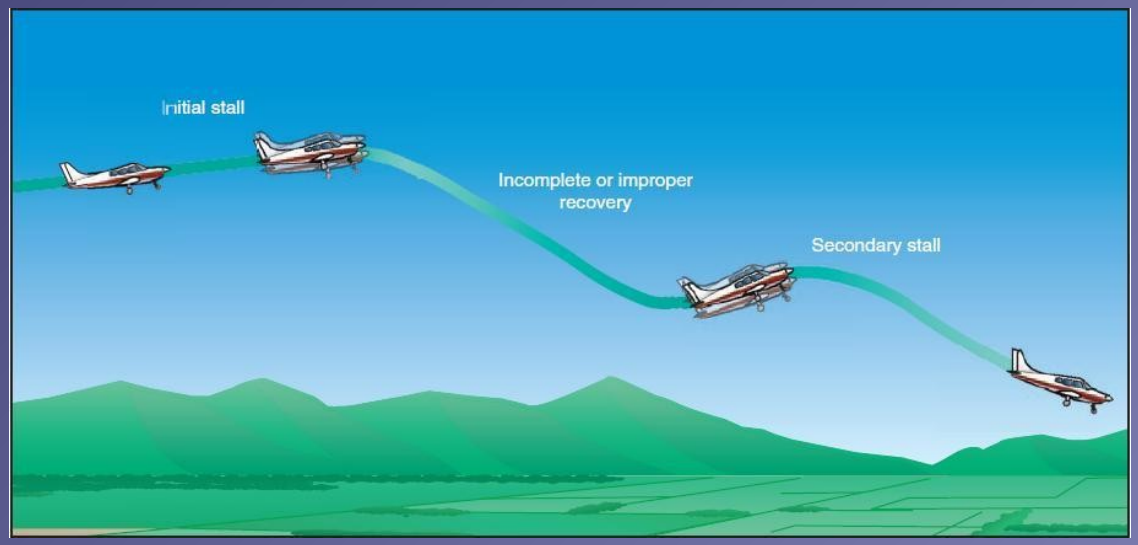
Accelerated Stall



- **High load factors** and **abrupt elevator back-pressure** may lead to a stall at **any airspeed** and **attitude**
- An incorrect stall recovery may lead to a **secondary stall**

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Approach / Turning Stall

- Establish a power-off descending turn
- Increase bank attitude with high rate of turn
- **Inner wing** *may* stall first and drop
- **Release elevator back-pressure** lowering nose, apply **opposite rudder** and **ease out** of dive applying **power**

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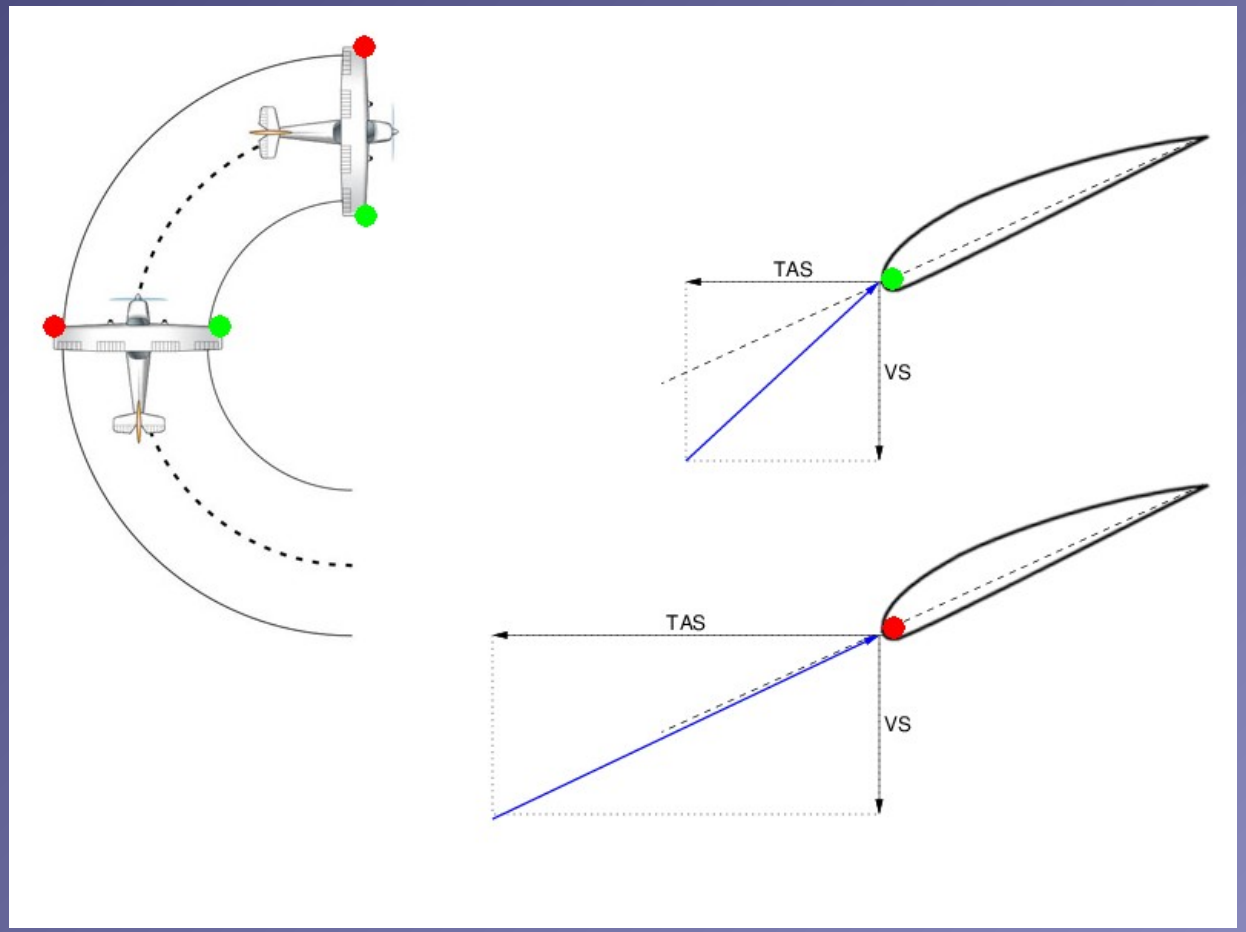
Approach / Turning Stall AoA



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Departure / Turning Stall

- Establish a power-on climbing turn
- Increase nose-up attitude while turning
- **Outer wing** *may* stall first and drop – **opposite** to the turn
- **Release elevator back-pressure** lowering the nose, **reduce power**, apply **opposite rudder**, then **neutralize**, **wings level** and **ease out** of dive applying **power**

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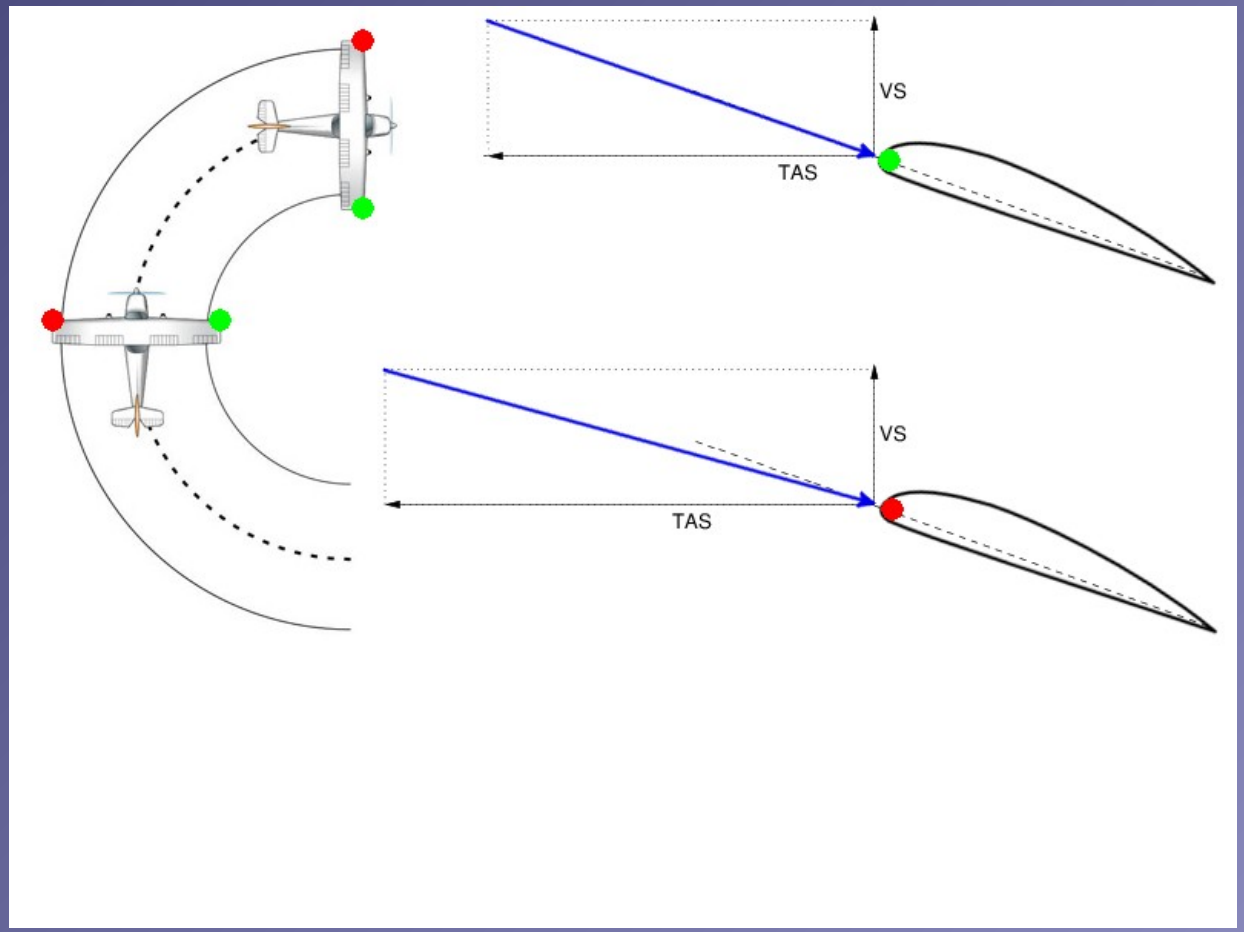
Depature / Turning Stall AoA



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Summary / Quiz

- Define a stall and describe the indications of a stall.
- What airspeed or attitude is required to produce a stall?
- Mentally enter and recover a clean power-off stall from cruise flight and state all observations and required actions.
- Mentally enter and recover a power-on stall with flaps from cruise flight and state all observations and required actions.
- Mentally enter and recover a departure stall 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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Stalls (Ex. 12, LP. 5, 6)

- Objective
- Review
- Motivation
- Howto
- Summary / Questions
- Preflight Briefing

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Entering a Power-On Stall

- **Reduce power** to low power setting (1500 RPM)
- Apply **elevator back-pressure** to **increase nose-up attitude** controlling **yaw** with **rudder** maintaining **altitude**
- Extend **flaps** in stages to desired degree in **white arc**