



VICTORIA FLYING CLUB

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Spins

- Review Stalls
- Definition and Motivation
- **Spinning** and Factors
- Summary and Questions
- Pre-Flight Briefing



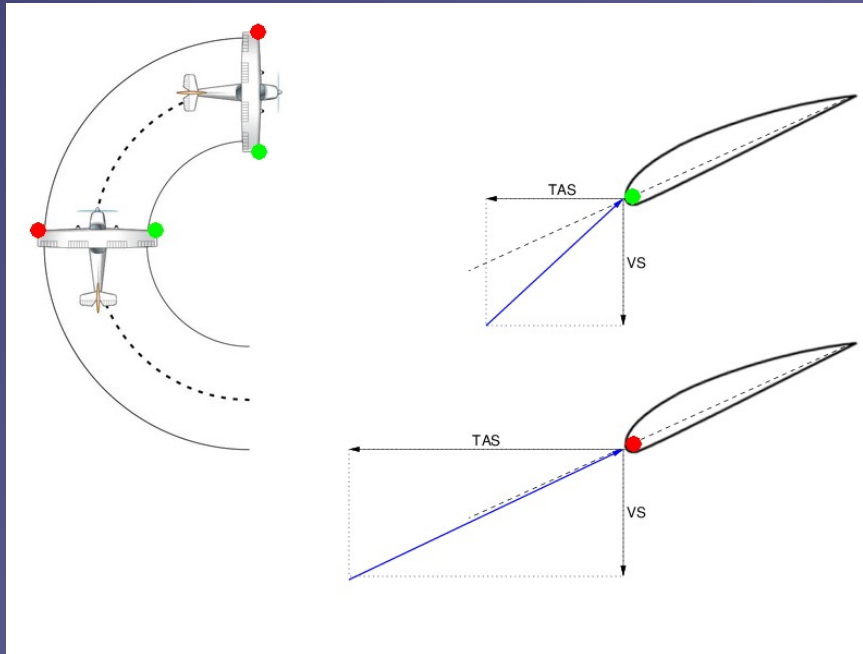
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Review Stalls

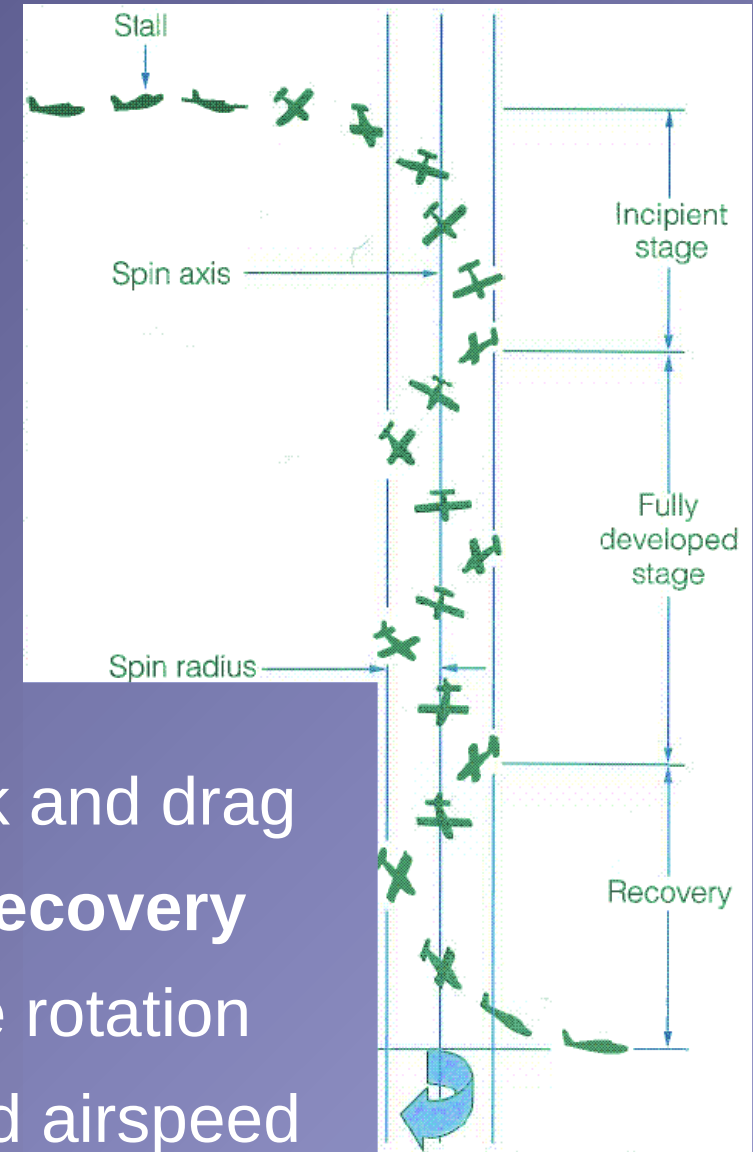
- What are the signs of an *imminent* stall?
- Define a wing drop stall and give examples of situations when it may occur.
- Mentally perform a departure / turning stall entry and recovery and state all observations and required actions.



Definition and Motivation



- **Stall** *aggravated by yaw*
- Inner wing has higher angle of attack and drag
- No applications – **recognition** and **recovery**
- *Incipient* – initial transition into stable rotation
- *Fully Developed* – stable rotation and airspeed





Safety Considerations

- High **nose-up / nose-down** attitude maneuver
- Spin can occur at any attitude and airspeed
- **AFM – utility category** is required
- **HASEL, lookout** ahead and below
- Significant **loss of altitude**
- **Recovery** above **2000' AGL**



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Spin Entry

Enter Imminent Stall



Full Aft Elevator



Full Left Rudder

- Reduce **power** to low power setting (**1500 RPM**)
- Apply elevator **back-pressure** to increase **nose-up attitude** controlling yaw with **rudder** maintaining **altitude**
- During the imminent stall *simultaneously* apply and **hold full elevator back-pressure** and **full left-rudder**



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Spin Entry

Enter Imminent Stall



Full Aft Elevator



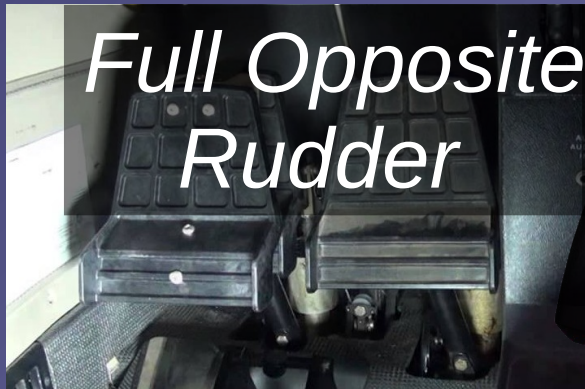
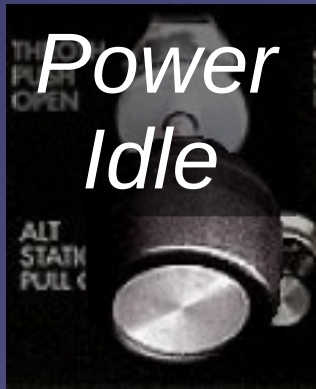
Full Rudder

- Reduce power to idle
- Apply elevator **back-pressure** to increase **nose-up attitude** controlling yaw with **rudder** maintaining **altitude**
- During the imminent stall *simultaneously* apply and **hold full elevator back-pressure** and **full rudder**



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Spin Recovery



- Reduce **power** to **idle** and keep **ailerons neutral**
- Apply **full opposite rudder** (opposite spin direction) and **release elevator back-pressure** (briskly forward) until turn stops, then **neutralize rudder**
- **Ease out** of dive and increase **power** to regain **altitude**
- Establish **cruise attitude**, set **cruise power** and **trim**



Spin Recovery – Factors

- *Incipient versus fully developed* spin – rate of turn and recovery time
- Power – additional yaw and flatter spin
- Flaps – flatter spin, reduced elevator effectiveness and structural damage
- Weight and Balance – forward versus rearward center of gravity, load factor and inertia
- Altitude – density and control effectiveness



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Incipient versus Fully Developed Spin

Power on stall recovery Pitch down to break the stall

Roll wings level

Resume normal climb



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Instruments



- **Turn coordinator** may help to determine direction of spin
- **Airspeed** should not increase significantly
- High airspeed (acceleration) could indicate a spiral dive
- **Rate of descent** should be stable – constant **altitude** loss



Summary / Quiz

- Define spinning and explain the difference between incipient and fully developed spin.
- Mentally perform a spin entry and recovery and state all observations and required actions.
- Why can ailerons not be used for the recovery of a spin?
- What situation can potentially lead to an inadvertent spin at low altitude?



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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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Spins (Ex. 13, LP. 6)

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