Power-Off Stall aka The Approach to Landing Stall

AIR ECHO ALPHA 51, LLC.

Objective: A pilot must recognize the flight conditions that are conducive to stalls, the stall characteristics of the aircraft, and know how to apply the necessary corrective actions.

Common Errors

- ❑ Failure to establish specified configuration
- ❑ Improper pitch, heading, airspeed and bank control
- ❑ Failure to recognize the first indications of a stall
- ❑ Failure to achieve a stall
- ❑ Uncoordinated controls
- ❑ Poor recovery technique
- ❑ Excessive loss of altitude
- ❑ Excessive airspeed during recovery
- ❑ Secondary stall during recovery

Completion Standards

- ❑ Adheres to recommended safety precautions
  - Selects appropriate altitude
  - Clears the area
- ❑ Exhibits knowledge of the elements & aerodynamics of a stall & when a stall is most likely to occur
- ❑ Understands the method used to initiate a power-off stall
  - Establishes proper Landing config & power setting
  - Establishes stabilized descent
- ❑ Recognizes the first indications of a power-off stall
- ❑ Can demonstrate a stall
  - Smooth & coordinated transition from a descent to a stall
- ❑ Performs proper recovery method
  - Promptly reduces AOA with min loss of alt & increases power to max
- ❑ Maintains heading +- 10°
- ❑ Accelerates to V_X /V_Y & positive rate of climb before final flap/gear retraction
- ❑ Returns to initial alt, heading & airspeed
- ❑ Uses Checklists

PAVE &Preflight Discussion

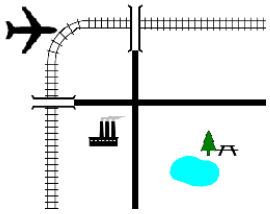
20- Min

- ❑ The **Pilot** & Crew
  - I'M Safe Checklist & Delegate Duties
- ❑ The **Plane**
  - POH - Stall speeds, CG location, Weight, Configuration (flaps) & bank angles
- ❑ The En**vironment**
  - Weather Briefing
  - The effects of environmental elements on aircraft performance related to stalls (turbulence, wind shear, and high-density altitude)
- ❑ **External** Pressures
  - Factors & situations that could lead to an inadvertent power-off stall
  - Distractions, improper task management, loss of situational awareness, or disorientation.
- ❑ Phases of flight that can lead to an inadvertent stall
  - Turn from the **Base leg** to **Final**
  - Attempting to salvage a poor **Final** approach
  - Over-shooting the runway on the **Base leg** due to wind or poor situational awareness
  - Stretch a glide after engine failure or if low on the **Final** approach to landing
  - Obstacle avoidance on short **Final** or flare
  - Poor recovery technique from a bounce, balloon or porpoise during landing
- ❑ Recognizing the stall
  - Vision, hearing, kinesthesia, control pressures, warning horns & IAS
- ❑ Spin Awareness
  - Cause & Recovery

Flight Maneuver- The Power-off Stall

20- Min

- ❑ Clear the Area
  - Altitude: Task completed > 1,500 ft
  - Airspeed: @ or below V_A
  - Airspace: E or G
  - Area Clear: No traffic
- ❑ The Set-up
  - Simulate Landing (Final or Base-to-Final)
  - Choose a ground reference point to simulate a runway (road or train track)
  - Note: Heading & virtual Rwy elevation



  - Complete the Before Landing Checklist
  - Landing Configuration
  - Throttle - Reduce to approach RPM
  - Airspeed - Reduce to approach airspeed
  - Airspeed below V_{LE} - gear extended
  - Airspeed below V_{FE} - lower flaps
  - Carb Heat - On
  - Adjust pitch & power (throttle) and trim to maintain approach airspeed & altitude
- ❑ The Stall
  - Simulate a descent on Final or Base-to-Final (mimicking an airspeed from the POH & descent rate used on final ~ 500 fpm)
  - Throttle - Idle
  - Transition from a descent to a realistic pitch attitude to induce a stall (slightly above the horizon)
  - Maintain **coordinated** directional control

** Announce the first indications of an impending stall*

** Visualize the wing's AOA in any particular profile (compare the relative-wind to the cord-line of the wing)*

- ❑ The Recovery
  - **Decrease AOA**
  - Throttle - smoothly increase to full power
  - Accelerate to V_X or V_Y
  - Directional control - Rudder

** Note & correct for left turning tendencies*

  - Carb heat- Off,
  - @ V_X or V_Y & positive rate-of-climb - retract the landing gear & flaps in increments
  - Return to starting altitude, heading, and airspeed

** Build a habit of Recovering @ the stall horn, or first indication of an impending stall.*

Traffic Pattern

15-Min

- ❑ Normal Landing
  - Complete the Before Landing Checklist
  - Landing configuration, AS & RPM
- ❑ Note your Pitch attitude, Power setting, Airspeed & Rate-of-descent on **Base-to-Final & Final approach**