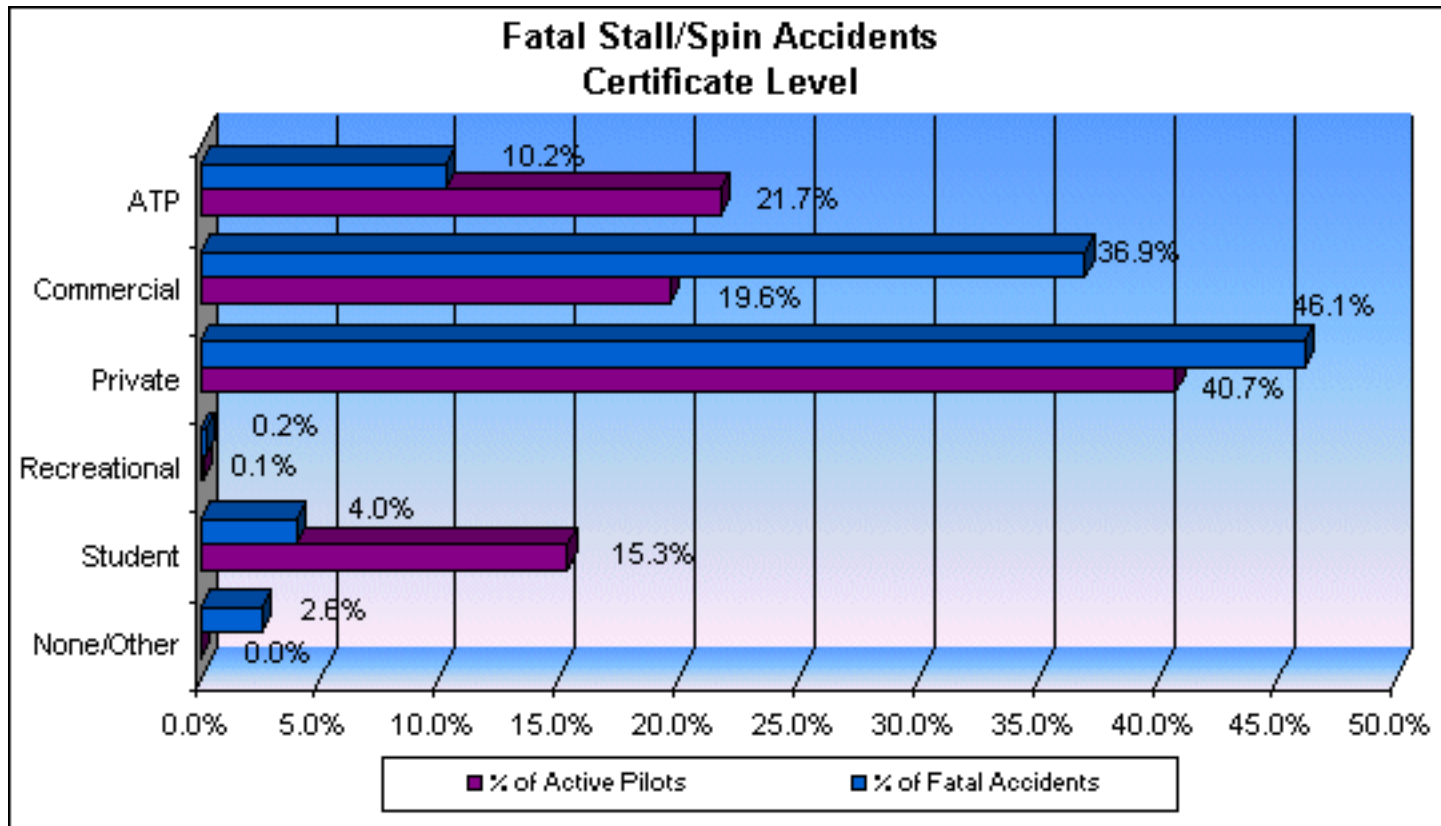


Stall Training for the PPL



Gary White

Objectives

- Stall *Recognition*
- Stall Types for PPL
- Practice *Recognition and Recovery*
- Prevention of Unintentional Stalls
- Quiz

Recognition

- Warning Horn
- Loss of Directional Control
- Buffeting (aircraft dependent)
- Nose Drop (aircraft dependent)
- Lift Less than Weight

**Exceed Critical Angle of
Attack**

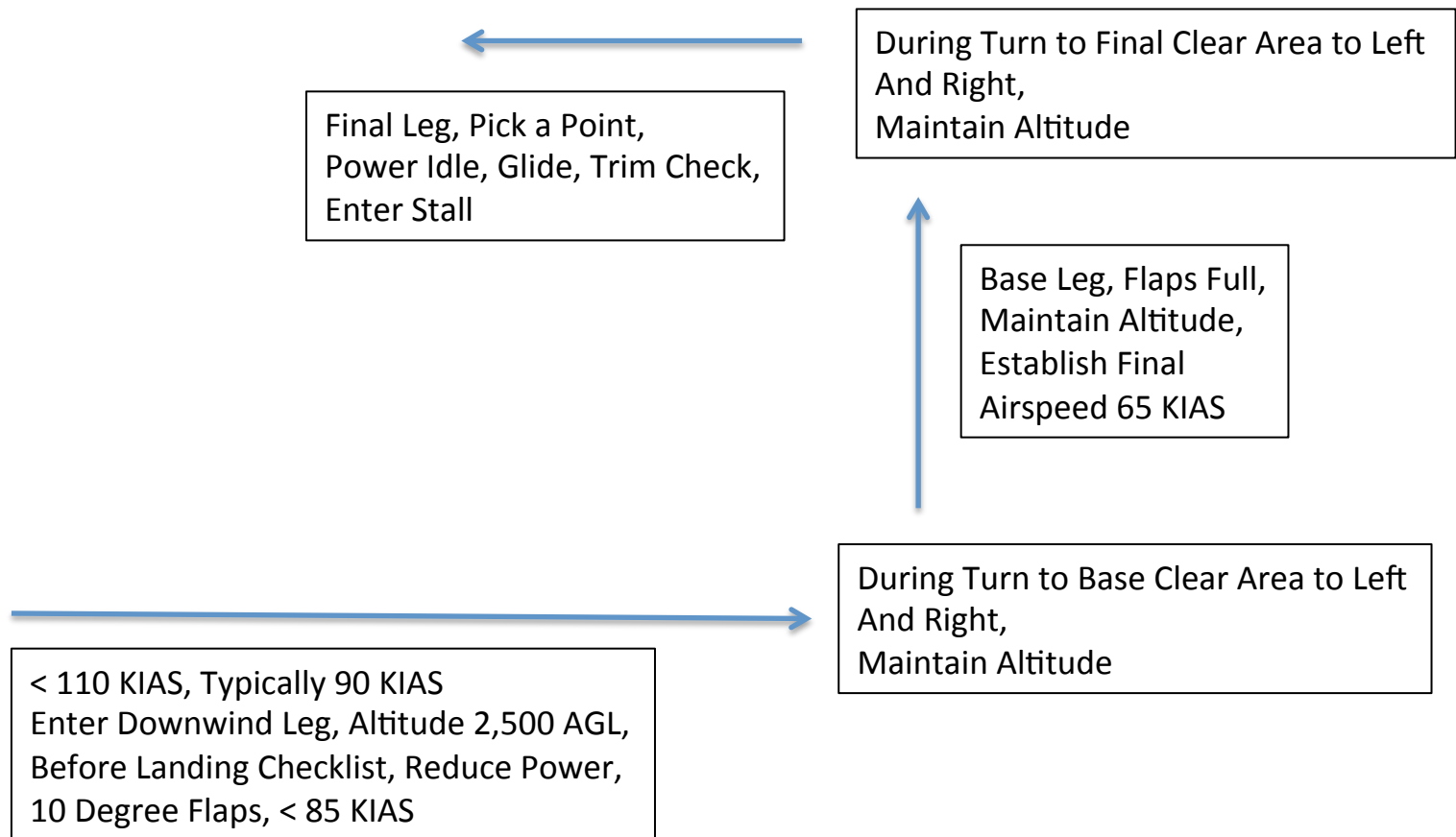
Types of Stalls

- Many Types:
 - Trim
 - Accelerated
 - Secondary
 - Turbulence Induced
 - Uncontrolled or Pro-Spin (aka Base to Final Stall/Spin)
- For PPL the Two You Must Demonstrate:
 - Approach or Power-Off
 - Departure or Power-On

Power-Off Stall (PTS)

1. Exhibits satisfactory knowledge of the elements related to power-off stalls.
2. Selects an entry altitude that allows the task to be completed no lower than 1,500 feet AGL.
3. Establishes a stabilized descent in the approach or landing configuration, as specified by the examiner.
4. Transitions smoothly from the approach or landing attitude to a pitch attitude that will induce a stall.
5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank not to exceed 20° , $\pm 10^\circ$; if in turning flight, while inducing the stall.
6. Recognizes and recovers promptly after a fully developed stall occurs.
7. Retracts the flaps to the recommended setting; retracts the landing gear, if retractable, after a positive rate of climb is established.
8. Accelerates to VX or VY speed before the final flap retraction; returns to the altitude, heading, and airspeed specified by the examiner.

Power-Off Stall Practice Pattern



During the Stall Entry and Recovery

The diagram features a main title at the top. Two blue arrows point downwards from the title to two separate rectangular boxes. The left box lists callouts for the stall entry phase, and the right box lists callouts for the recovery phase.

Student Call Outs:

Trim Check, Instructor Verifies
Begin Stall Entry
Warning Horn
Buffet
Directional Control
Nose Drop and/or Stall, Stall

Student Call Outs:

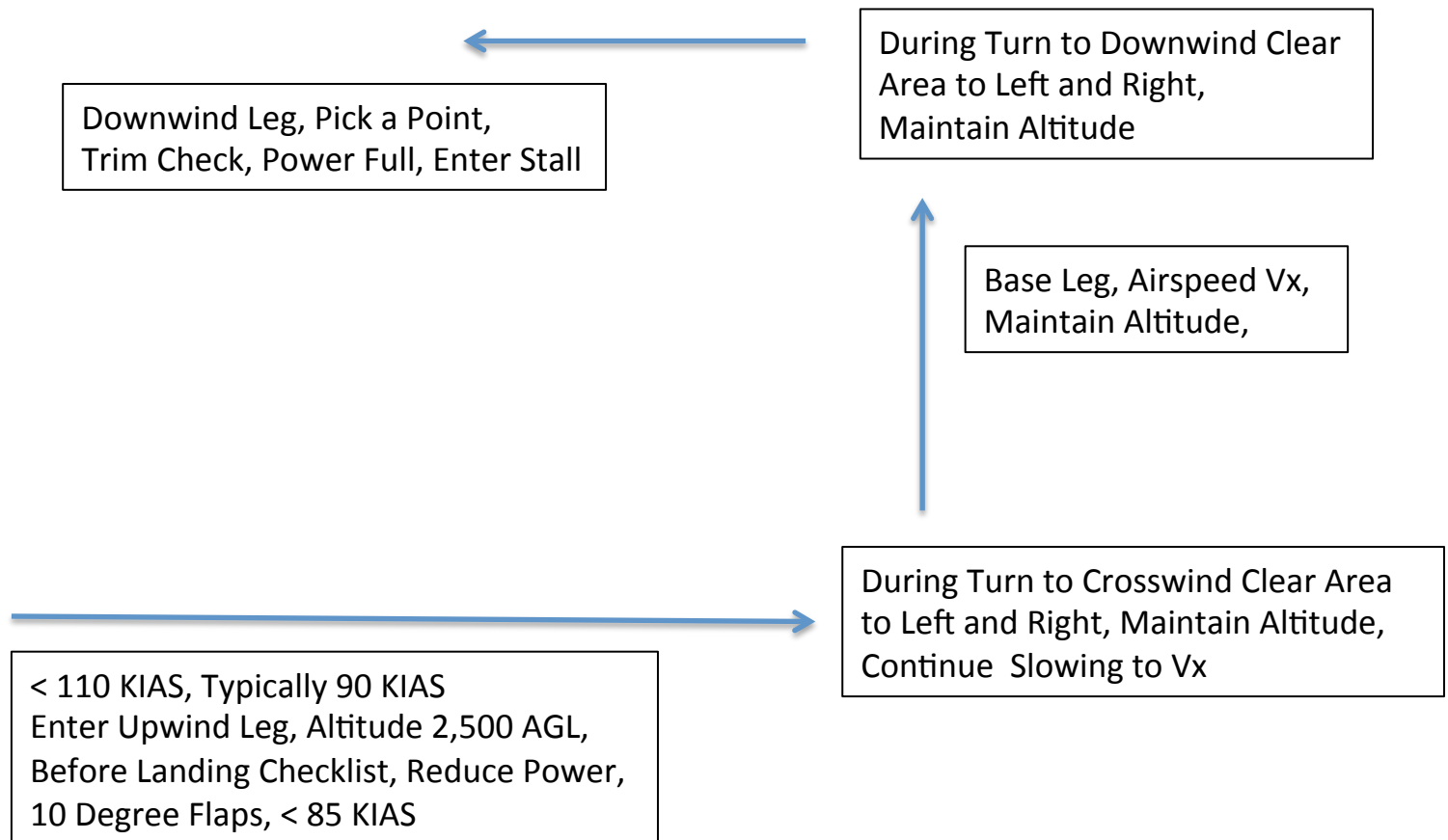
Reduce Pitch
Full Power
Wings Level
Pitch Vx
Flaps to 20 Degrees
Positive Rate of Climb x 2
Established Vx
Positive Rate of Climb x 2
Returning to Cruise

**Call Outs Reinforce
Item 6 on PTS**

Power-On Stall (PTS)

1. Exhibits satisfactory knowledge of the elements related to power-on stalls.
2. Selects an entry altitude that allows the task to be completed no lower than 1,500 feet AGL.
3. Establishes the takeoff or departure configuration as specified by the examiner. Sets power to no less than 65 percent available power.
4. Transitions smoothly from the takeoff or departure attitude to the pitch attitude that will induce a stall.
5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank not to exceed 20° , $\pm 10^\circ$, if in turning flight, while inducing the stall.
6. Recognizes and recovers promptly after a fully developed stall occurs.
7. Retracts the flaps to the recommended setting; retracts the landing gear if retractable, after a positive rate of climb is established.
8. Accelerates to VX or VY speed before the final flap retraction; returns to the altitude, heading, and airspeed specified by the examiner.

Power-On Stall Practice Pattern



During the Stall Entry and Recovery

The diagram features a main title at the top. Two blue arrows point downwards from the title to two separate boxes. The left box lists callouts for the stall entry phase, and the right box lists callouts for the recovery phase.

Student Call Outs:

Trim Check, Instructor Verifies

Begin Stall Entry

Warning Horn

Buffet

Directional Control

Nose Drop and/or Stall, Stall

Student Call Outs:

Reduce Pitch

Full Power Confirm

Wings Level

Pitch Vx

Positive Rate of Climb x 2

Established Vx

Positive Rate of Climb x 2

Returning to Cruise

**Call Outs Reinforce
Item 6 on PTS**

Base to Final Stall/Spin

- Sometimes Called Cross Controlled Stall
- This Video Shows a Simulation
 - <https://www.youtube.com/watch?v=fumnit13r80>
- Starts By Application of Too Much Rudder for Bank Turning Base to Final
 - Nose Drops and Bank Starts to Increase
- Opposite Aileron is Applied and Nose is Lifted
- Airplane Stalls in Cross Controlled, High Yaw Configuration

Prevention of Stalls

- Know That Exceeding Critical Angle of Attack is Preceded by Warning Signs
- Observe 'Sterile Cockpit' Rule During Take-off and Landing
- Practice Stalls – Sometimes Recognition Signs are Subtle
- Maintain Coordination on All Turns
 - Rudder is Your Friend
- Overshoot Base to Final Turn – Make a Go-Around
- New Aircraft Type Checkout Should Include Stalls

Quiz

1. Stalls Can Only Occur if Airspeed is Below Stalling Speed?
2. A Stall Occurs When Airfoil Cannot Create Enough Lift to Overcome Weight?
3. The First Step in Any Stall Recovery is to Add Power?
4. You Can Only Enter a Spin if the Airplane is First Stalled?
5. If a Wing Remains Level During a Stall That is a Sign the Airplane Entered the Stall Uncoordinated?
6. All Airplanes Stall the Same?
7. Stall Recognition Indicators Occur the Same Way Every Time You Approach a Stall?