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| **Private Pilot Airmen Certification Standards** |
| **Maneuver** | **Speed** | **Tolerance** | **Altitude** | **Tolerance** | **Heading** |
| Normal Takeoff | VY | +10/-5kts |  |  | Aligned |
| Normal Landing | POH | +10/-5kts | TD Point | +400’ | Aligned |
| Soft-Field Takeoff | VX or VY | VX +10/-5kts | VY +10/-5kts |  |  |
| Soft-Field Landing | POH | +10/-5kts |  |  | Aligned |
| Short-Field Takeoff | VX -> VY | VX +10/-5kts | VY +10/-5kts |  | ----- |
| Short-Field Landing | POH | +10/-5kts | TD Point | +200’ | Aligned |
| Go-Around | VX or VY | +10/-5kts |  |  |  |
| Pattern Altitude |  | +/-10kts | Pattern Alt | +/-100’ |  |
| Rectangular Course | Selected | +/-10kts | 600-1000 AGL | +/-100’ |  |
| S-Turns | Selected | +/-10kts | 600-1000 AGL | +/-100’ |  |
| Turns Around a Point | Selected | +/-10kts | 600-1000 AGL | +/-100’ |  |
| Power-Off Stall | Approach |  | 1,500 AGL | Recover at Full Stall | +/-10° |
| Power-On Stall | VR |  | 1,500 AGL | Recover at Full Stall | +/-10° |
| Slow Flight | 0-10 Horn | +10/-0kts | 1,500 AGL | +/-100’ | +/-10° |
| Steep Turns | < VA | +/-10kts | Bank +/-5° | +/-100’ | +/-10° |
| Straight & Level | Selected | +/-10kts | Selected | +/-200’ | +/-20° |
| Turn to a Heading | Selected | +/-10kts | Selected | +/-200’ | +/-10° |
| Constant A/S Climb | Selected | +/-10kts | Selected | +/-200’ | +/-20° |
| Constant A/S Descent | Selected | +/-10kts | Selected | +/-200’ | +/-20° |
| Unusual Att Recovery | Stabilized |  | Stabilized |  | Stabilized |
| Emergency Approach | VG | +/-10kts |  |  |  |
| Emergency Descent | 30°- 45° bank, Speed +0/-10 kts, POH Guidance |
| **Commercial Pilot Airmen Certification Standards** |
| **Maneuver** | **Speed** | **Tolerance** | **Altitude** | **Tolerance** | **Heading** |
| Normal Takeoff | VY | +5/-5kts |  |  | Aligned |
| Normal Landing | POH | +5/-5kts | TD Point | +200’ | Aligned |
| Soft-Field Takeoff | VX or VY | VX +5/-5kts | VY +5/-5kts |  |  |
| Soft-Field Landing | POH | +5/-5kts |  |  | Aligned |
| Short-Field Takeoff | VX -> VY | VX +5/-0kts | VY +5/-5kts |  | ----- |
| Short-Field Landing | POH | +5/-5kts | TD Point | +100’ | Aligned |
| Power-Off 180° |  |  | TD Point | +200’ | Aligned |
| Go-Around | VX or VY | +5/-5kts |  |  |  |
| Pattern Altitude |  | +/-10kts | Pattern Alt | +/-100’ |  |
| Chandelle | < VA | MCA | Selected | Max Gain | +/-10° |
| Lazy 8 | VA | +/-10kts | 1,500 AGL | +/-100’ | +/-10° |
| Steep Spiral |  | +/-10kts | 3 X 360 Turns |  | +/-10° |
| 8’s on Pylons |  |  | Pivotal |  | 40° Bank Max |
| Power-Off Stall | Approach |  | 1,500 AGL | Recover at Horn or Buffet | +/-10° |
| Power-On Stall | VR |  | 1,500 AGL | Recover at Horn or Buffet | +/-10° |
| Accelerated Stall | Vs+20 kts |  | 3,000 AGL | Recover at Horn or Buffet |  |
| Slow Flight | MCA | +5/-0kts | 1,500 AGL | +/-50’ | +/-10° |
| Steep Turns | < VA | +/-10kts | Bank +/-5° | +/-100’ | +/-10° |
| Emergency Approach | VG | +/-10kts |  |  |  |
| Emergency Descent | 30°- 45° bank, Speed +0/-10 kts, POH Guidance |