

Aerobatic Aircraft Trimming Chart

| | Test | Result | Cure |
|----|-----------------------------|--|---|
| 1 | Control Neutral | • Check aircraft for wings level and level flight path | • Adjust trims on radio then re-adjust mechanical throws so that radio trims can be re-centered. |
| 2 | Aileron Throws | • Apply full aileron- check for rate of rotation. • Roll rate should be about three rolls in three seconds. | • Change rates, ATV and/or linkage connections to obtain desired roll rate. |
| 3 | Center of Gravity | <p align="center"><u>Method One:</u></p> • Roll into a vertically banked turn. Check to see if nose or tail drops. <p align="center"><u>Method Two:</u></p> • Roll plane to inverted. Check to see how much down elevator is needed to maintain level flight. | <p align="center"><u>Method One:</u></p> • If tail drops, add nose weight: if nose drops, add tail weight. <p align="center"><u>Method Two:</u></p> • If a lot of down elevator is needed to maintain level flight, add tail weight. If little down elevator is needed, add nose weight. |
| 4 | Dynamic Balance | • First, make sure that elevators track identically on both sides. • From top of the box push straight down for 3 or 4 seconds at idle then pull hard to horizontal. Make sure to pull straight back on stick with no aileron. Plane should exit wings level. • Repeat 10 times until sure of results | • Note which wing drops and add weight to opposite wing- repeat until wings exit level |
| 5 | Right Thrust Angle | • Fly straight line with wings perfectly level into the wind and going away from you then pull to vertical line. | • If plane veers left, add right thrust. If plane veers right, remove some right thrust. |
| 6 | Up/Down Thrust Angle | • Fly straight line with wings perfectly level at bottom of box with wind to side of the plane. • Pull to vertical line and observe if plane pitches to belly or to canopy. | • If plane pitches to belly, add up thrust. • If plane pitches to canopy, add down thrust. |
| 7 | Check for aileron blowback | • From top of box push to down-line. Roll then pause and roll in same direction. • If second roll is slower than first, you are getting blowback. | • If getting blowback: Increase mechanical advantage by moving in on servo arm or add servo. |
| 8 | Aileron Differential | • Fly a 45 degree upline directly into or down wind and away from you. Roll to right. | • If plane "walks" to the right= too much down travel • If plane "walks" to the left= too much up travel |
| 9 | Throttle to Aileron Mixing | <p align="center">Check Two Ways</p> <p align="center">First:</p> • Fly directly overhead into the wind at top of box, fly 50-100 feet past overhead and push down into a dive at idle. • Watch to see if plane rolls to left or right <p align="center">Second:</p> • Fly along at medium height, throttle smoothly back to idle and watch for rolling. | • Add throttle to aileron mix at low throttle to compensate for the rolling. Make sure it takes effect gradually, starting at around half stick. |
| 10 | Throttle to Rudder Mixing | • Fly directly into the wind overhead and at top of box altitude. Push down in front of yourself so that you're looking at the bottom of the plane and observe. Look for plane to yaw left or right. | • Add a low throttle rudder mix- just like the low throttle elevator mix. |
| 11 | Rudder to Aileron Mixing | Flat turns are the best way to check- better than knife edge. • Perform a flat rudder turn and observe if aircraft is rolling left or right. | • Go to Rudder to Aileron mix and add appropriate mix with rudder as master and aileron as slave- left or right as needed. |
| 12 | Rudder to Elevator Mixing | Flat turns are the best way to check- better than knife edge. • Perform a flat rudder turn and observe if aircraft pitches up or down. | • Go to Rudder to Aileron mix and add appropriate mix with rudder as master and elevator as slave- up or down as needed. |
| 13 | Throttle to Elevator Mixing | • Fly overhead at top of box with wind at side of plane. Push to downline. • Watch to see if plane pulls to canopy or to belly. | • If plane pulls to canopy, add mix that adds in up elevator throw at idle with throttle as master and elevator as slave. • If plane pushes to belly, make mix add in down elevator at idle. |