Balanced Controls & Mulligan Control Checks

SETUP

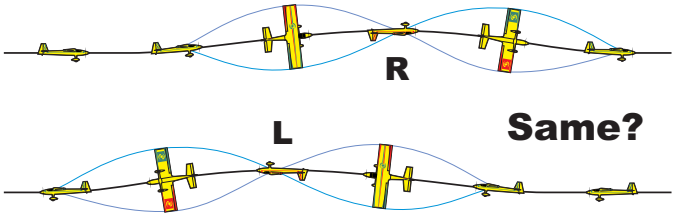
"Balanced controls" refers to the ideal condition in which the aileron, elevator, and rudder all feel equally sensitive. Few things inhibit aerobatic progress more than when one of the controls is noticeably more or less sensitive than the others, thus forcing the pilot to remember to use two different control pressures depending on the input. Therefore, your main objective should always be to increase and/or decrease your control surface travels until you achieve balanced controls in all directions that match your current comfort level. Why needlessly force yourself to get used to an overly sensitive or sluggish elevator or aileron response, when a simple travel adjustment may be all that is needed to make the airplane more agreeable? As obvious as that sounds, thousands of perfectly good airplanes are faulted or retired every year because pilots dislike the way they handle, but they hope that they'll get used to it, and then end up looking for another airplane when it proves not much fun to fly. On the other hand, changing the travels to match your immediate comfort level will boost your confidence and allow you to concentrate on perfecting the setup rather than merely trying to get used to the plane.

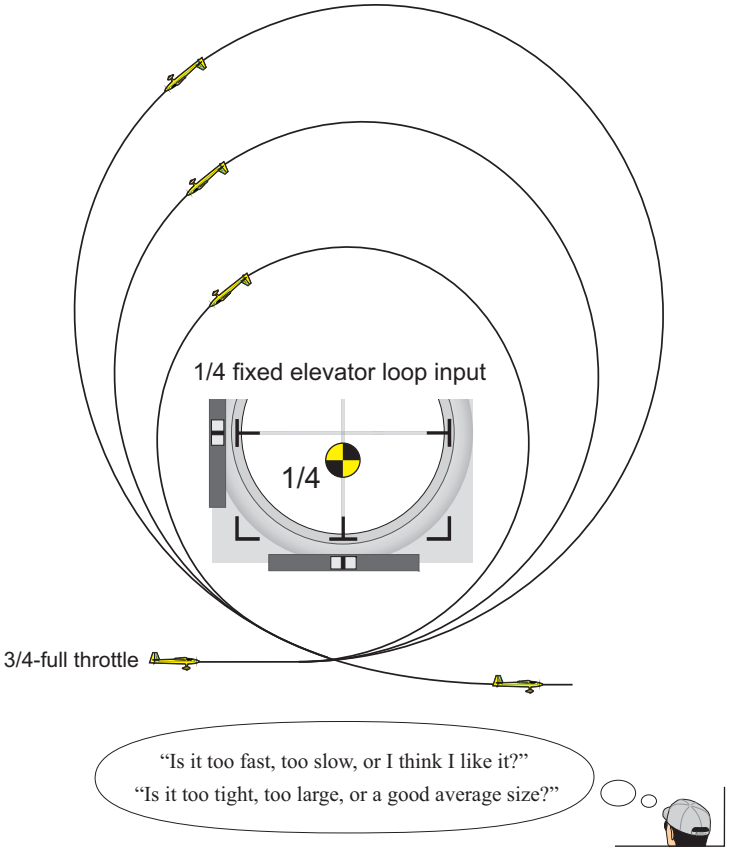
Thus, after trimming the airplane, perform some basic (climbing entry) full aileron rolls while asking yourself whether you would prefer a faster or slower roll rate. Then perform back-to-back left and right rolls to note whether the roll rate is the same in both directions, or whether you need to land to make an adjustment. Remember, it's quite common to have to program different percentages to achieve the same roll rate in both directions.

Next, perform a series "mulligan" fixed elevator loops using the amount of elevator that you're accustomed to starting your loops with (e.g., 1/4). If you feel the loop is too tight or too large, rather than changing your input, use that time to assess whether you need to make a small, med., or large elevator adjustment when you get back on the ground. Keep fine tuning the controls until they are all equally sensitive (balanced) and you are satisfied with the plane's handling overall. Once again, a smart pilot always adjusts the airplane to his liking, not the other way around!

Since nearly all aerobatic maneuvers are based on loops and rolls, you now know that your airplane is optimized for you to comfortably perform nearly any precision aerobatic maneuver that you'll fly for the foreseeable future.

Perform both left and right rolls holding full aileron and adjust the percentages to achieve the same comfortable roll rate (not too fast, not too slow) in both directions. Tip: To make it easier to assess the roll rates, pull the nose up into a climb before initiating the roll to avoid feeling rushed.





KPTR: There's no more effective measure to determine low rate travel adjustments than what your immediate gut tells you!