Travel and Absolute Travel by Andy Kunz

Question:

I need to reduce the overall travel of my elevator servos. I have made all of the mechanical adjustments that are possible. Without doing any electronic adjustment the servos are binding at the end of their throws.

Which feature on my DX18 do I use, and **WHY**?

TRAVEL or **ABS. TRAVEL**

Both techniques reduce the overall motion of the servo but I can't tell which one is doing the **better** job.

This information might not matter, but the servos are Digital, Brushless, High Voltage.

Thanks for the insight.

Answer:

Both. You use travel to control the range that the rest of the transmitter considers 100% - with no rates or mixes the extremes of stick travel. You use abs travel to make sure mixes or rates > 100% don't ever exceed max you want the surface to move.

Set it up with travel first. If you have mixes or modes etc. that together put things into a bind again then use ABS. travel.

Let's assume as an example that you adjust maximum rudder range to 30º (100%) using travel and also configure an AIL=>RUD mix; then if you move rudder to extreme of the stick travel and also apply some aileron, chances are that maximum travel will exceed the 30º range you defined for the rudder. Using abs travel to adjust/limit the range, assures that maximum range will never be exceeded.

Travel is a scaling factor, like a volume control. It adjusts the travel volume based on the input. You use this to adjust the feel of the aircraft.

Abs Travel is a limiting function. If the calculated travel ((inputs + mixes) * Travel scaling) exceeds the absolute limit, the output is clipped off. It will absolutely NEVER send a command to go further. You would use this to prevent a servo from over-travel that could damage the servo or aircraft.

Andy

Question:

Based on this I would assume that since the servos are stalling out, I should use Abs Travel FIRST! I need to reduce their movement by about 35% with the default settings that are in the transmitter.

Answer:

I think if you play with the two of them you'll see the difference. Move abs travel way down - considerably more than you need - just to see the effect. You'll notice that past a certain point the movement on the stick doesn't get any more movement on the servo. That's because as Andy said abs travel is clipping the value.

While you're messing with abs travel, write down what value limits is to where you need it to be limited, but set it back to the max. Then bring down the value of travel to way more than you need. Note that now you get servo motion through the whole range of stick movement.

So, set the travel to get the full servo movement you want with full stick movement, then set the abs travel to make sure that a mix or something won't push the servo to the point where there is a mechanical problem.

I like to mentally rename "absolute travel" to "absolute range". Now the "travel" feature works within "absolute range".

Andy