

Training – Transmitter “Dual Rates”

We have spent several months recently talking about various transmitter-related topics for the purpose of helping new pilots understand modern transmitters’ capabilities. Last month we explored and tried to simplify the meaning and usefulness of the “Exponential” which is provided for in all of the modern transmitters. Notice I said “provided for” as it is an optional aid and nothing says you have to use it at all! Recall that expo can be used as much or as little as desired. The amount of expo you choose is up to you and you can apply it in the amount you want for your ailerons, rudder and elevator. But what if you would like to have it sometimes, but not all the time? What can you do? Keep reading.

Most new pilots are bombarded with terms (right at the same time they are bombarded with names of all the club members) and it can get rather confusing as to what all those terms mean. One such modern term you will hear early-on is **“Dual Rates”**. You might hear or read that a transmitter has “dual rates and exponential” (OMG)! It often gets kinda’ run-together like it is one rather complicated thing. Actually it is quite simple and hopefully after reading another couple of paragraphs here, even the newest pilot will feel comfortable talking about it and experimenting with it. Since we learned last month how simple the use of “exponential” is, all we need do now is come to grips with this “dual rates” thing. Keep reading.

That question in the first paragraph above about not wanting to have expo all the time.....well it has an easy answer! Just flip a switch! Yes, what you can do is set up your controls for easy flying with rather tame throws, and then also set up another set of more radical throws for aggressive flying. That’s where the “dual rates” comes in (two sets of rates). The transmitter manufacturers have provided for us again. It’s kinda’ like the old thing about having your cake and eating it too. We can take off in the mode of Clark Kent, and then flip the switch and become an instant Superman pilot! The term “Dual Rates” is really just that simple; two sets of rates.

Now you recall that we said “just flip a switch”. Actually you have some options. You can set up the dual rates to work such that one switch changes the rates for all three control surfaces at once, or you can select a different switch and control your two sets of rates for each of the three control surfaces (elevator, ailerons and rudder) separately. If your goal, for example, is to be able to make sudden and tight inside or outside loops, you could set up one switch to only control your “dual rates” just for the elevator. After you have taken-off with rates suitable for general flying, and landing, you could flip your designated switch and instantly have much more elevator “authority” for your desired tight loops! But, since you have not changed the rates on your ailerons, you still have good control of your ailerons to keep your loops on track by keeping your wings level. Or, if your goal is to perform rapid “snap rolls”, you could designate a switch to allow “dual rates” on the ailerons only, but not on the other control surfaces. This would allow you to perform rapid rolls while still having good control (less sensitivity) of your elevator and rudder to allow you to keep your plane flying on a level path.

From the above examples, you can see that modern transmitters allow you a lot of options for adjusting the authority of your control surfaces to accomplish most any type of flying you might want. One **little warning** about doing this however is that you need to be able to remember which switch you have selected to make each of these changes, and you have to be able to do it in the air! You need to know **which switch controls what** and you need to remember which direction of the switch gives you each result. Again, **you need to be able to do this while flying!** As in most aspects of flying, a little **mental preparation** as well as a **fair amount of practice** is highly advised. Many pilots who use separate switches to control the dual rates of the different control surfaces establish a convention for themselves as to which direction of their switches gives high rates, and which direction gives low rates. For example, you might want to establish that you will always flip a switch “up” to get high rates and “down” to get low rates.

Hopefully this discussion of “dual rates” has taken the mystery out of the term and gotten you to the point of being comfortable with starting to use this feature of your radio. Now if you put your newfound knowledge from this month together with the discussion of “exponential” from last month, you may find that you have a powerful new tool to make your flying easier and better. In coming months we may discuss and hopefully clarify other related terms but we will continue to do it in small “bite-sized” pieces.

As we said last month, if this explanation does not make clear what “dual rates” is all about and how to start using it, feel free to seek help from the club’s training staff or any of the more experienced pilots in the club. Once you understand how to use “dual rates”, you will realize what a powerful tool it can be.

Until next time; remember to try something new each time you fly.

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