

Computer Based Transmitters

One of our new members selected an absolutely great trainer for their first plane. There is no doubt that it is an excellent choice for a first plane. However, I take exception to the words used to describe the transmitter that comes with RTF version of the trainer. From the website that sells the plane, here are those words:

“... includes a sophisticated Spektrum™ DX4e 4-channel 2.4GHz DSMX™ transmitter, which supports both Spektrum DSM2 and DSMX receivers. The DX4e boasts the best 2.4GHz RC technology available. And the best part is it can also be used with other RC aircraft as a pilot's skills progress.”

Going by the above, one would think that you have a great transmitter to use for all of your airplanes for years to come. However, the transmitter is not a computer based transmitter, which has some serious drawbacks. The following is an excerpt of my email response to our new member about computer based transmitters:

A computer based transmitter makes all of the difference in the world. The computer transmitter has the ability to store settings to different planes. You have adjusted the trim settings for your trainer so it will fly straight and level. Now, you start flying a second plane on your current transmitter, and you adjust the trim settings so that plane flies straight and level. Well, you just lost your settings to the first plane. Each time you switch planes, you will have to adjust the trim settings to match the current plane that you are flying. The computer transmitter has the ability to store the settings to many different planes.

John Backes chimed in with a more in depth discussion to the above with the following 2 options:

I will add some more information on using you existing transmitter to fly more than one plane. There are two different ways to make this work:

- 1) After you have trimmed out the plane carefully document the trim settings by counting the clicks of trim on each surface. Repeat for the second plane. Now you must meticulously readjust the trims each time you change planes - not recommended. This will take care of the trimming but you must also worry having to reverse a channel. Again you can keep good notes and make sure that you reverse the channel each time you change planes. Failure to do this one time will probably result in a crash. Again - not recommended
- 2) Fly the first plane and make all the trim adjustments. After landing, note the amount of offset that each surface has been trimmed. Return the trims to zero on the transmitter and make mechanical adjustments to have the same amount of offset. Repeat this process until the plane flies well with no adjustment of the transmitter trim. Then repeat the process for the second plane. If servo directions are different, remount the servos so that they servo reversing is the same for all of the planes. It could be a lot of work but can work if you reconfigure both planes to be identical but you can then safely use the same transmitter.

I then discussed some additional advantages to computer based transmitters:

The computer transmitter also has the ability to have dual rates. Let's just focus on the elevator. With dual rates, with a flip of a switch you can change the max throw of the elevator. At low rates, perhaps the elevator max travel is 30 degrees. At high rates, you may have it set at 60 degrees. The transmitter gives you the ability to set it to anything that you want. Low rates makes the plane easier to fly. High rates makes the plane more aerobatic. For me, I take off and land on low rates, and then once in the air I fly on high rates. When I first started out in the hobby, I would just fly on low rates.

The next thing is called exponential. Let's focus on the elevator again. Without exponential, if you move the stick half way, the elevator will move half of its full travel. When the stick is move $\frac{3}{4}$ of the way, the

elevator will move 75 % of its full travel. With exponential, it's no longer a one to one relationship, here is an example:

Stick Movement Elevator travel

¼	10%
½	30%
¾	50%
1	100%

This makes a plane much easier to fly.

Please remember that the next plane you will most likely get will not have the gyro stabilizer system that your trainer has. Dual rates and exponential will make it not such a big jump from what you are flying now.

I hope this helps. I'm not saying that you absolutely cannot use your current transmitter. I'm just not sure that you would want to.

Tom Treese added the following to the conversation:

The transmitter and receiver is the backbone of RC flying. Don't buy a system because it's cheap. You need to decide what you RC goals are. Then buy a transmitter system that will fulfill most those goals now. Don't buy less than a six channel computerized system.

See you at the field.

Alan Fry
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