Rudder Travel Limits DF 65 & 95

By John Bert

I've been working on the Dragon 65 and 95 Series boats for many years. The rudder servo can be a weakness (increase cause for failure) when not set up correctly. I have found that by reducing the maximum rudder travel will not only reduce the stress on the servo (increasing life) but enhance your controllability by reducing your tendency to over-steer.

Both the 65 and 95 are delivered with the same rudder servos. Over the years servo tray design changes (DF65) and the original 95 design with a straight rudder push rod have helped to extend the life of the servo, but the boats out-of-the-box (OTB) are not set up for optimal rudder performance or to reduce servo stress. Let me explain. The rudder travel left and right of center will be 60-70° (OTB). This is too much for many reasons:

1) Moving your rudder beyond 40° will most likely add more drag than beneficial turning force, not good for boat speed.
2) Inexperienced thumbs tend to use full rudder control much more than necessary (over-steering).
3) The turning force imposed on your rudder servo beyond 40° creates a heavy load adding unnecessary stress that will ***decrease the life of your servo***.

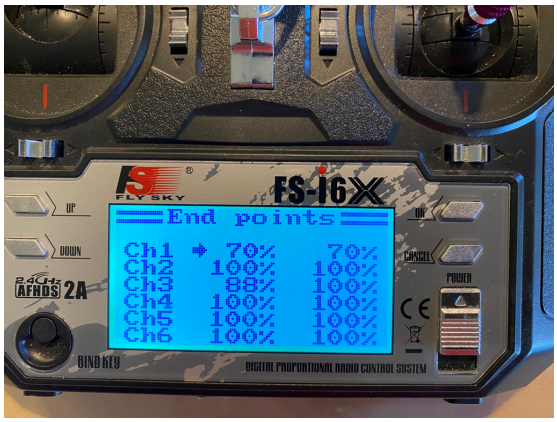
My objective here is to set up your radios to reduce your rudder travel. Many DF boats have FlySky radios so I will demonstrate using these.

Starting with the 95 we are going to make some marks on the back of your boat. (Use tape if you do not want the marks to be permanent.) The first mark is Rudder Center. Now make a mark 21 mm (13/16") to the left and right of rudder center. See picture. (For the 65 mark your transom - 16mm (5/8") left and right of center.) Now turn on your radios and see where your rudder travels in relation to your marks. Most common OTB rudders will travel a much greater distance.

To adjust your FlySky radios to limit your rudder travel:
With Radios ON -

1) Press – OK (1-2 seconds) – See Menu System is Boxed
2) Press – UP – Box moves to Functions Setup
3) Press – OK – See Functions, Reverse
4) Press – Down – See End Points
5) Press – OK – See End Points Ch1 (Ch1 is your rudder servo on most FlySky receivers)

6) Hold Rudder Stick Control Full Right – Arrow moves to Right
7) Holding Rudder Stick Control Full Right - Press Down repeatedly until rudder travel is reduced to your marked line (about 70% in radio window).
8) Hold Rudder Stick Control Full Left – Arrow moves to Left
9) Holding Rudder Stick Control Full Left - Press Down repeatedly until rudder travel is reduced to your marked line (about 70% in radio window).



10) Check full travel in each direction to be sure your rudder is lined up on your marks. Make additional adjustments as necessary.
11) To save your settings – PRESS AND HOLD CANCEL UNTIL A BEEP (1 to 2 seconds) Press Cancel 2 to 3 times to exit Menu.

Many newer 2.4 GHz radios have a similar setup menu to adjust End Points including – Spektrum, RadioMaster and Futaba.

Happy Sailing

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