Setting Up a FlySky FS-i6 and FS-i6X for RC-Sailing

2/28/26

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Note: This is the first major update of this article since I first wrote it in 2022. I have added support for the FS-i6X, the 10 channel cousin of the FS-i6. The function of the two is, I think, identical, except for the extra channels, but there are some differences in the menus. For our purposes, since we only use two channels, it doesn't matter whether you use the FS-i6 or the FS-i6X. I used a FS-iA10B receiver with the FS-i6X, because that is what comes with it, but the FS-iA6A or iA6B receivers would also work fine for radio sailing. I want to thank my friend, Jack Chambers, for loaning me the FS-i6X and FS-iA10B for the sake of revising this article.

Introduction:

The FlySky FS-i6 transmitter has become one of the most popular transmitters for radio sailing. This has to do primarily, I think, with the fact that it is a full featured, high quality transmitter being sold at a bargain price, typically $55-$65 including receiver. It is not because it is easy to program initially. Nor because it comes with a great manual (printed or on-line). The paper manual is useful as kindling. I know of no use for the on-line one.

There is a very nice article about the use of FS-i6 for rc-sailing. You can find it here: Set-up of FlySky FS-i6 Transmitter(Tx) and FS-iA6B Receiver(Rx) for DF65 RC Racing Sailboat. But the problem for the beginning or non-techy sailor is that you still need to figure out the exact set-ups for your boat. The purpose of this article is not to explain much of anything, but rather to show you, step by step, how I set-up a typical small RC boat and a typical larger one.

I will show you the set-ups for my Micro Magic and my ODOM. You will note that they are nearly identical. In fact, they might be actually identical if I were to also use analog servos on my ODOM. In most cases, the set-ups shown here will work, with minor adjustments, for most other classes and servos.

Separately, it is important to note that I am not a top US rc-sailor. Rather, I am an active class secretary with a slightly geeky side. I suggest asking the best skippers in your class what transmitter set-ups they use and trying those out. But you can certainly start with this set-up, it works fine.

I doubt that this article will be useful to read if you aren't already familiar with the FS-i6 or, alternatively, if you don't have a powered up FS-i6 next to you.

Setup and Use:

- **About receivers:**
    - FS-i6 transmitters used to come with FS-iA6 receivers. Now they often come with FS-iA6B receivers.
        - The main differences are that the FS-iA6B seems to have better antennas, it is encased in a hard plastic box, and the plugs attach into the end of the receiver, not the top. Because of the better case, it is marginally heavier.
        - Theoretically, the FS-iA6B should have better range. I have been able to test this on my ODOM at Harper Lake near Denver. At reasonably far RC sailing distances (telltales and wind vanes invisible, small luffs in sails very hard to see) both receivers work fine, but the FS-iA6B seems to have lower error rates, suggesting better range.
            - That said, I once sailed my ODOM in Foster City, CA so far out that I couldn't distinguish the main from the jib. I was using a regular FS-iA6, and it worked fine. I don't recall the error rate, but I am certain that it was much lower than my own error rate at that distance.
            - For Micro Magics, which normally aren't raced so far away, I am certain that either receiver will work fine. The FS-iA6B is likely a marginally better choice for ODOMs and other one meter boats.
            - The FS-iA6B and the FS-iA10B that comes with the FS-i6X seem to be identical except that the 10 channel receiver is slightly larger and a little heavier due to its larger case (as it needs to be bigger to handle more connectors).

- **About servos:**
    - For this article, I am using standard servos in both my MM and my ODOM.
        - The MM has a Hitec HS-65HB rudder servo and a Hitec HS-485HB sail servo. Both are analog.
        - The ODOM has a Hitec HS-5245MG rudder servo and a Hitec HS-7955TG sail servo. Both are digital.

        - I think that it is likely that if you are using different servos or different servo swing arms, your personal settings will be somewhat different from those that I show here, though obviously, the principles will be identical.
            - The principles will also be the same for boats with sail winches, though the settings will differ.

- **About all of the lever, switches, and dials:**

Fig. 1

        - 1 - Sail Control Lever (Channel 3)
            - Up and down.

            - I actually put a tiny drop of CA so that this lever only moves up and down, and no longer side to side.
            - I set it up so that down is trimmed in.
    - 2 - Rudder Control Lever (Channel 1)
        - Side to side.
            - I also put a tiny drop of CA so that this lever only moves side to side.
            - I set it so that pushing the lever to the right turns the boat to the right.
    - 3 - Sail Trim tab
        - Set it in the middle while we are setting up the transmitter. You can use it like a traveler to let the sail out ~5-10 degrees if the wind comes up during a race.
    - 4 - Rudder Trim tab
        - You can use this to center your rudder mid-point if it comes out of adjustment and needs a fine adjustment.
    - 5 - Other Trim tabs
        - Not used for RC sailing as far as I know.
    - 6 - Bind button
        - Used to bind a new receiver to your transmitter. I will not discuss this here. There are multiple good YouTube videos that explain this.
    - 7 - Switch A (SwA)
        - Allows two rudder sensitivity set ups.
            - I think that this is a terrible idea, but I will show you how to do it should you disagree with me, and how to disable it if you agree.
    - 8 - Switch B (SwB)
        - Allows two jib and main sheet endpoints and sensitivities.
            - This is very useful, and I will show you a couple of possibilities.
    - 9 - Switch C (SwC)
        - I haven't figured out any use for this yet, but it is probably not useful in RC-sailing, since I don't think that it can be assigned to Channel 1 (rudder servo) or Channel 3 (sail servo)
    - 10 - Switch D (SwD)
        - Toggles Throttle Hold on and off. This is useful for flying airplanes, but I cannot picture any use for a throttle hold on a sailboat. I will show you how to inactivate this switch.

- 11 - Dial A (VrA) amd Dial B (VrB)
  - I haven't figured out any use for these yet, but they are probably not useful in RC-sailing, since I don't think that they can be assigned to Channel 1 or 3.

- **About the menu system:**
  - The Basic Screen

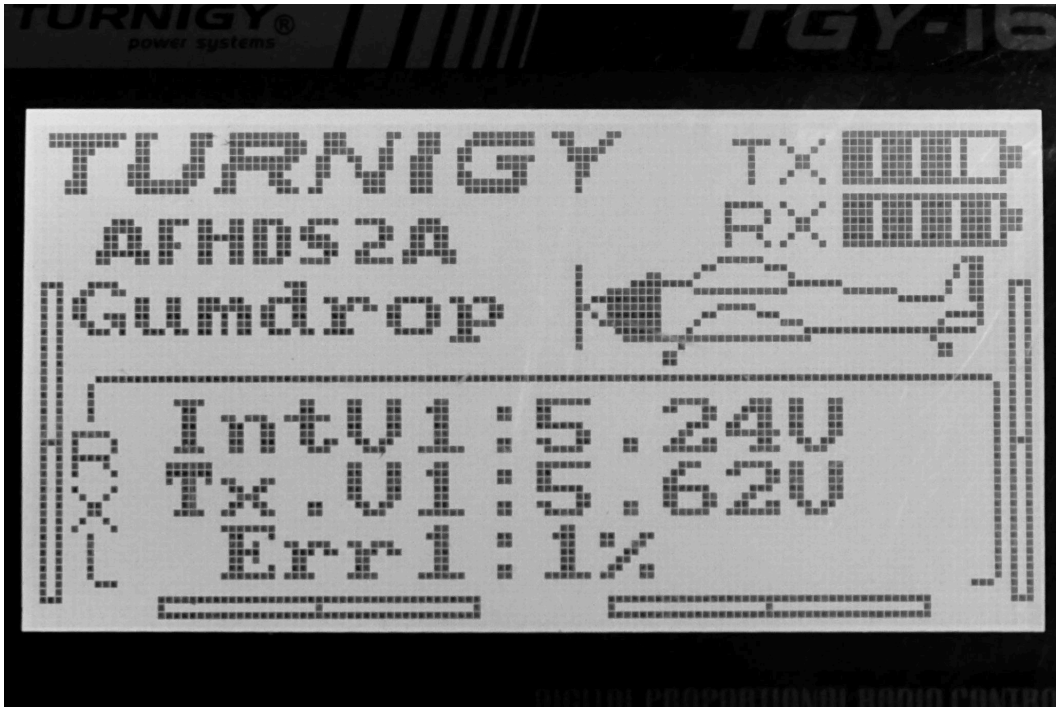

Fig. 2

  - This is nice. It shows a lot. Learn to use it.
    - Upper right: Transmitter and Receiver battery levels
    - Middle: Boat name if you set this up, Gumdrop in this case.
    - Middle: Receiver (IntV1) voltage
    - Middle: Transmitter (Tx.V1) voltage
    - Middle: Error Rate (Err1)
      - This basically shows how well connected you are. Usually reads 0-2%.
      - The FS-i6X doesn't have this. Rather it reports Received Signal Strength, a 1-10 scale, 10 being highest. (This is preferable to the error rate in my

estimation, though practically neither is very important.)
- Far Left: The little bar shows the trim setting for the jib and main sheets.
  - I will discuss this below.
- Lower Edge Left: Another trim setting bar.
  - We don't use this one.
- Lower Edge Right: The little bar shows the trim setting for the rudder.
  - I will discuss this below.
- Far Right: Another trim setting bar.
  - We don't use this one either.

- Using the Menu System:
  - If you ever used mainframe computers (which used to have weird and arbitrary menu systems), you will feel right at home.
  - Navigation is sometimes weird and inconsistent:
    - Sometimes you advance in a menu with the OK button and sometimes with the Up and Down buttons.
    - Exiting a menu is consistent: just press Cancel quickly.
    - Menu choice selection is also always the same. Just press the OK button.
    - Save is weird, but consistent: Press and hold Cancel until you hear a beep.
      - I always check that this works by pressing Cancel briefly to exit the menu, and then going back into the menu to assure that the save took.
    - All of this is the same on the FS-i6 and the FS-16X.

- **The System Menus:**
  - You will likely only use the System menu for initial transmitter set-up. (And maybe if you change the type of battery that you are using for the transmitter or the receiver.)
  - To get to the System menu, press and hold the OK button, and select the System menu by pressing and holding the OK button.
    - Note that for all navigation, you can only navigate when the menu light is on. To turn on the light, just press the OK button briefly.
  - Model Select: You can set up the FS-i6 for more than one boat. I don't do this.

- Model Name: You can put in your boat's name or something like “MM 666” or here “ODOM”, but this is not all that useful.
    - Much better to label the controller externally with some tape with the model name and your name in case someone finds it.

Fig. 3

- RX Setup: Be sure that RX Battery is set to Low: 4.00V, Alarm: 4.20V, High 5.00V if you use 4 NiMh AAAs, or something else appropriate if you use other receiver batteries.

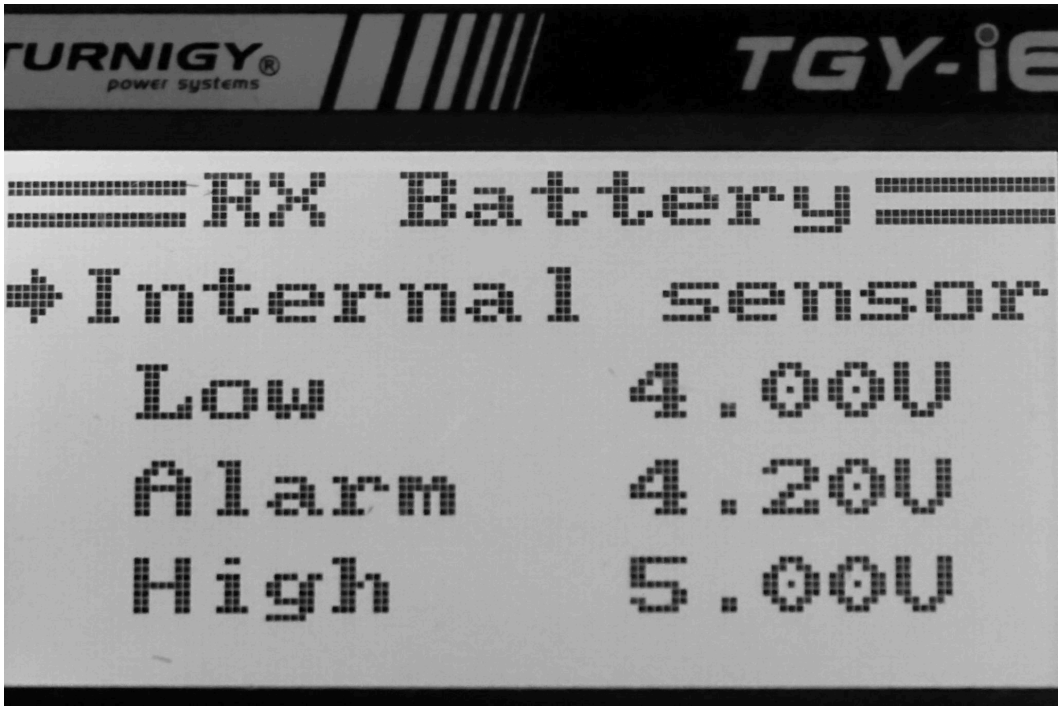

Fig. 4.

        - If you use 5 NiMh AAAs or AAs, as I do on my ODOM, set to Low: 5.00V, Alarm: 5.20V, High 7.00V
    - All of this is the same on the FS-i6 and the FS-16X.

- **The Setup Menus:**
    - This is where the action is.
    - This is the menu to the right of the System menu.
    - Reverse: My usual is to reverse both the rudder and the sheets, so change Channels 1 (Rudder) and 3 (Main and Jib Sheets) to reverse.

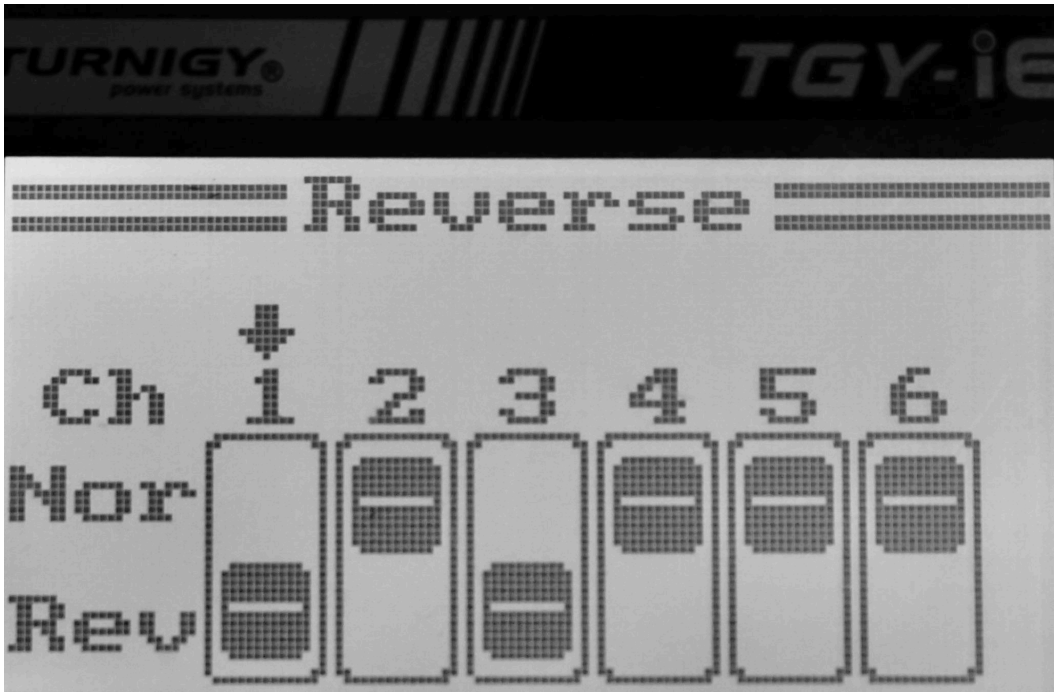

Fig. 5

- Rudder (Channel 1):
  - End Points:
    - Mark the bottom of your hull for 45 degrees port and starboard rudder throw, mid-line, and 3 degrees starboard and port rudder throw.
      - Note that you do not want the boat to be totally neutral rudder going upwind, but rather to have 2-3 degrees weather helm. This is faster upwind. (I'm not sure if this is also true for boats that have the rudder attached to the aft end of the keel.)
    - Adjust your rudder mechanism such that the rudder is mid-line with the receiver on and the trim marking on the transmitter screen is also midline.

Fig. 6

- Now use Channel 1 End Point adjustment to get the rudder to 45 degrees port and starboard. You'd think you'd set it to 120% on each side, but my experience is that is rarely the setting for equal throw to each side.

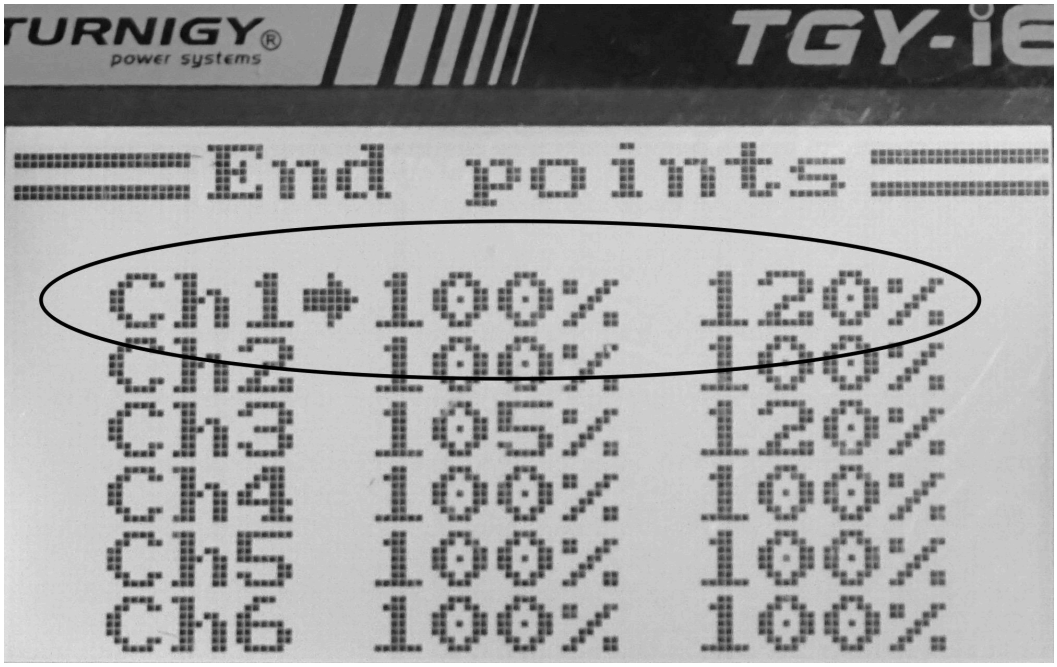

Fig. 7

- Dual Rate / Exponential: The preset sensitivity is linear. I find that it is way too sensitive and really promotes oversteering. I like the rudder to be really, really soft for most of its throw to avoid oversteering, and I don't change this setting.
    - Set Switch A (SwA) to 1 (Normal), leave the Rate at 100 and Change Exp to -100.

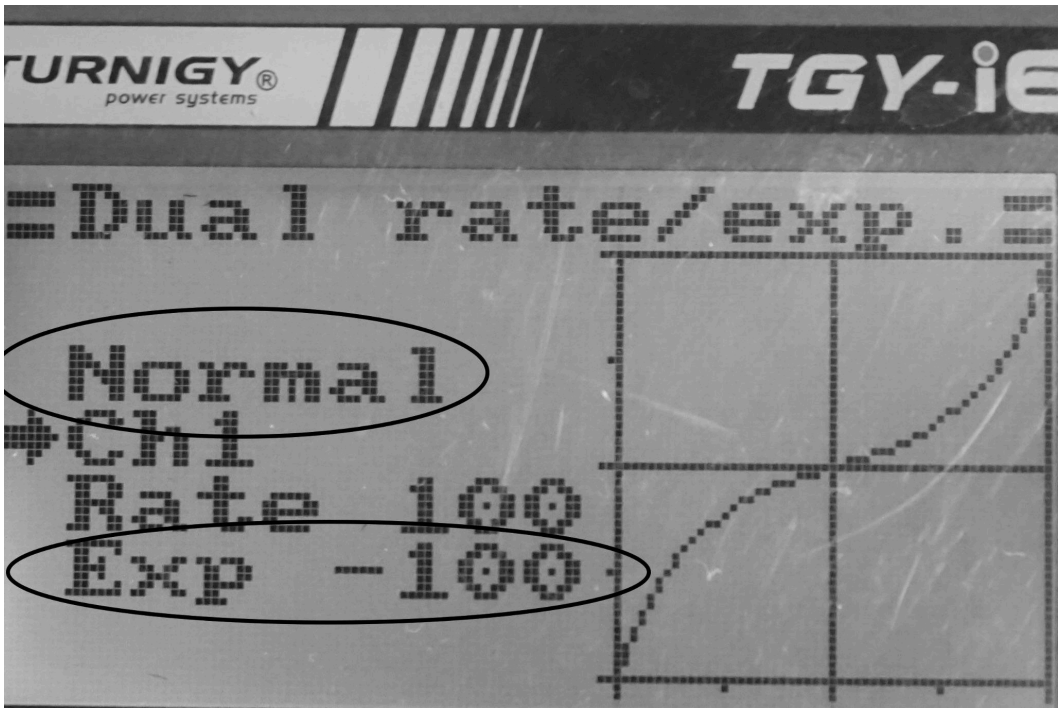

Fig. 8

        - Be careful that it is -100 NOT 100.
    - Try this out. If it is too soft for you, try Exp -25, -50, and -75 to see which you like best.
        - Note that while initial steering is very soft, as soon as you get past about 10 degrees of rudder throw, it becomes very aggressive (i.e exponential), AND that the softer you set it initially, the more aggressive it will get after the initial 10 degrees.
    - Set Switch A (SwA) to 2 (Sport), leave the Rate at 100 and Change Exp to -100 (or whatever you set SwA setting 1 to.)
        - (This is not necessary on the FS-i6X since Switch A is not defaulted to switch between normal and sport mode, a difference we don't use.)

- This will assure that your rudder settings stay the same even if you throw Switch A inadvertently.
- If you would like 2 different steering sensitivities, you can do this with Switch A by simply assigning a different switch setting to 1 (Normal) or 2 (Sport). As I said earlier, I think that this is a really bad idea.

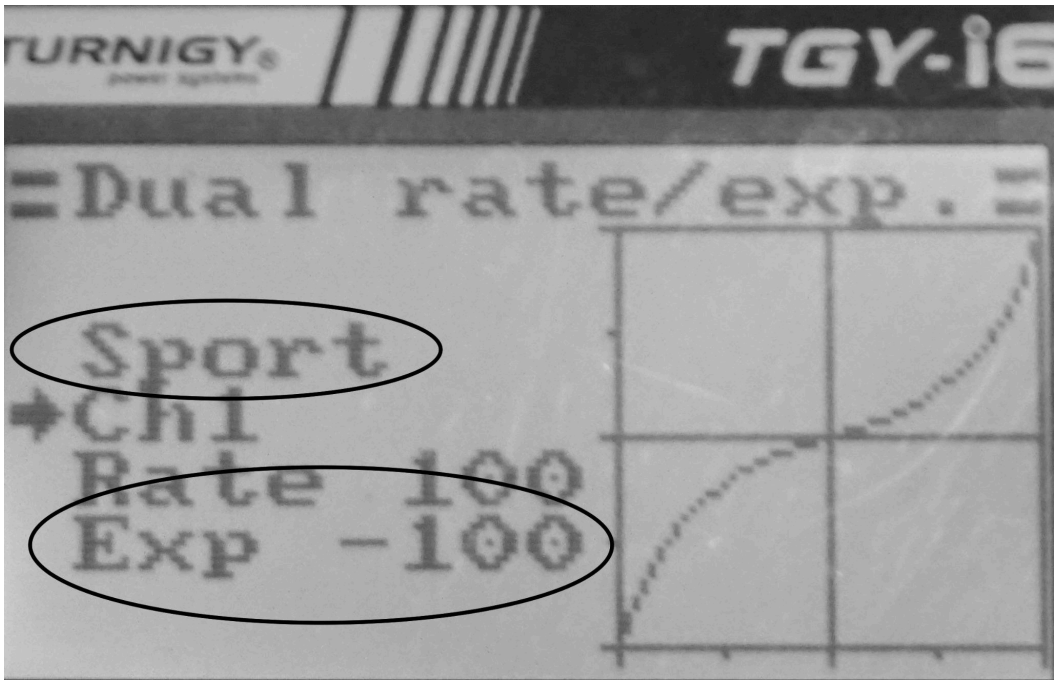

Fig. 9

- Rudder set-up is identical on my MM and my ODOM.
- All of this is the same on the FS-i6 and the FS-16X.

- Main and Jib Sheets (Channel 3):
  - You can set up in two separate ways, and you'll need to decide which you like best:
    - You can have a Normal and Pinch mode, the difference between the two being that the end of mainboom in Pinch mode is near midline and at the edge of the cockpit floor in Normal mode.
    - You can have a Normal and Puff mode, the difference being that the end of the mainboom is at the edge of the cockpit floor in Normal mode and 5 - 10 degrees further out in Puff mode.

        - I changed my mind on this. I used to like normal and pinch mode, but now I prefer normal and puff mode. Note: Use Normal mode 99% of the time, but switch to Pinch mode when you need to pinch up and away from another boat, pinch to a nearby windward mark, etc.
            - Note, your boat needs to be moving well before switching to Pinch mode. Your boat will not accelerate well from standstill sheeted in tight in Pinch mode.
            - Also, you need to remember to put Switch B into position 2 each time you turn on your transmitter.
        - Many racers, including my friend Ray Seta, who is a far better skipper than I am, also prefer to have Normal and Puff (sheets eased) mode better. I will show you how to set-up both ways.
- Normal and Pinch Modes:
    - Assure that Switch B (SwB) is set to 1.

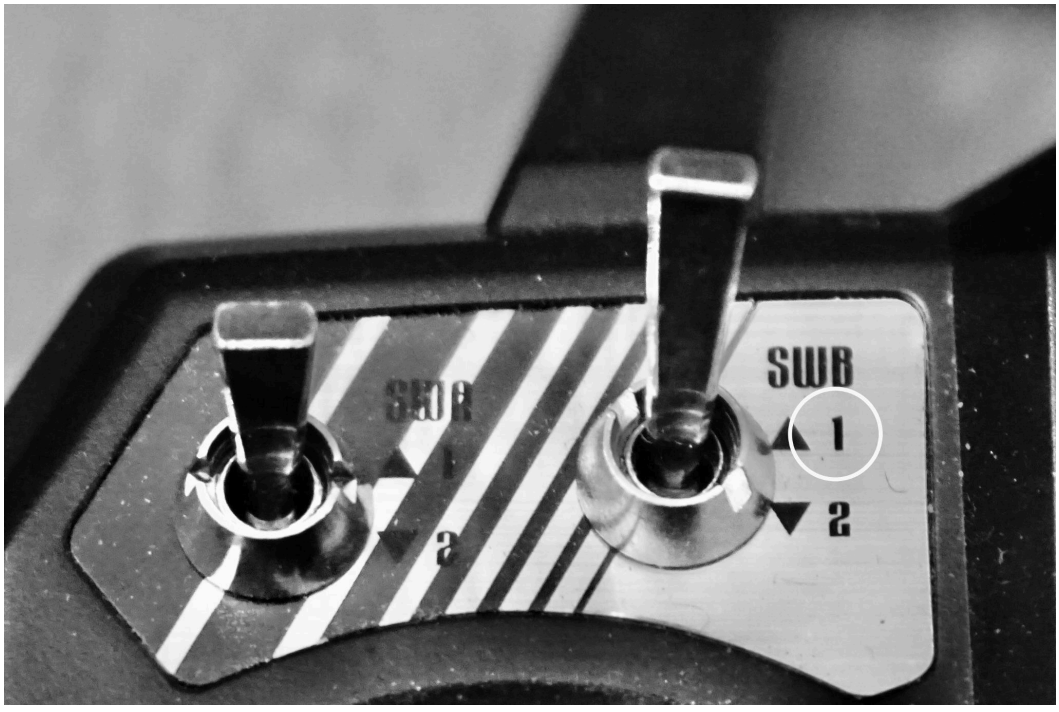

Fig. 10

- Assure that the sheet trim marking on the screen is midline.

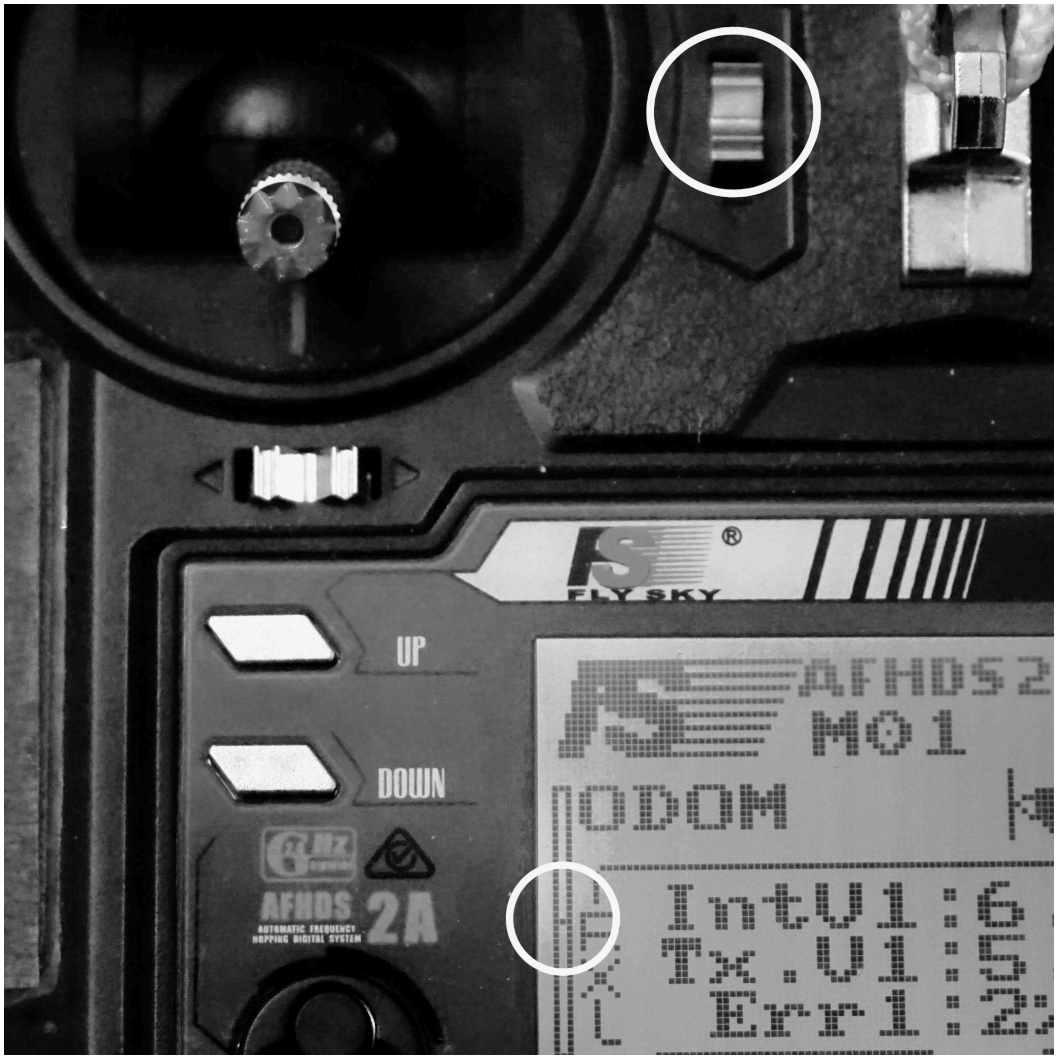

Fig. 11

- Set up your rig so that you have mast rake, camber, and twist in exactly your usual settings, then adjust the main and jib sheets mechanically so that the slot is correct.

- Use the Channel 3 right endpoint setting to set the mainboom to a little off of the midline. (Pinch mode)

Fig. 12

- You need to make a decision concerning the maximum sheet eased setting for downwinds: MMs don't have sidestays, so that you can easily ease more than 90 degrees to sail by the lee. This is sometimes useful.

Fig. 13

- On the other hand you can set the sheets for optimal downwind running (usually about 85 degrees.) (The actual optimal downwind running boom angle depends on how much twist you are sailing with.)

Fig. 14

- Use the Channel 3 left endpoint to set the maximum sheet out endpoint to main boom at either 85 degrees or 110 degrees.

Fig. 15

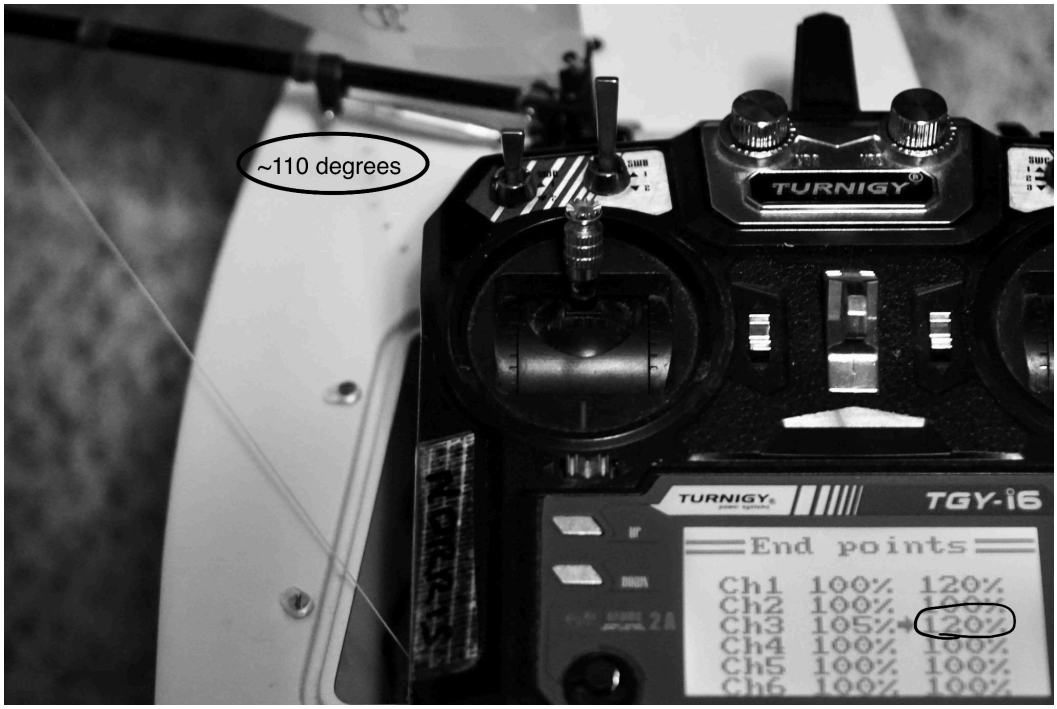

Fig. 16

- Assure Switch B is in position 1. (This will become your Pinch mode.) Go to the Throttle Curve menu. The display will show Normal (sorry!).
    - Set L to 0%, 1 to 5%, 2 to 15%, 3 to 40% and H to 100%.

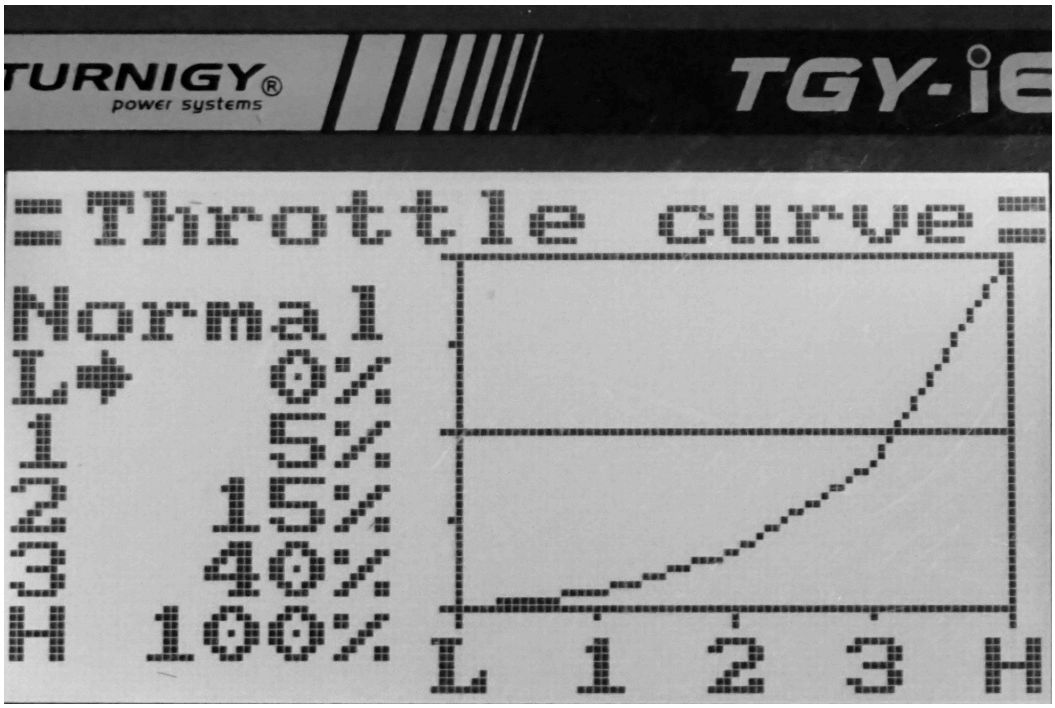

Fig. 17

- Now put Switch B in position 2. (This will become your Normal mode.)
    - On the FS-i6X you will need to assign the idle mode to Switch B. (On the FS-i6 it is pre-selected.)
        - Assign Switches is on the 2nd page of the Functions (right hand) menu
        - Scroll down to Idle Mode
        - Select SwB
    - The display will show Idle Up (sorry, again!).
    - Set L to 3%, 1 to 8%, 2 to 18%, 3 to 43% and H to 100%.

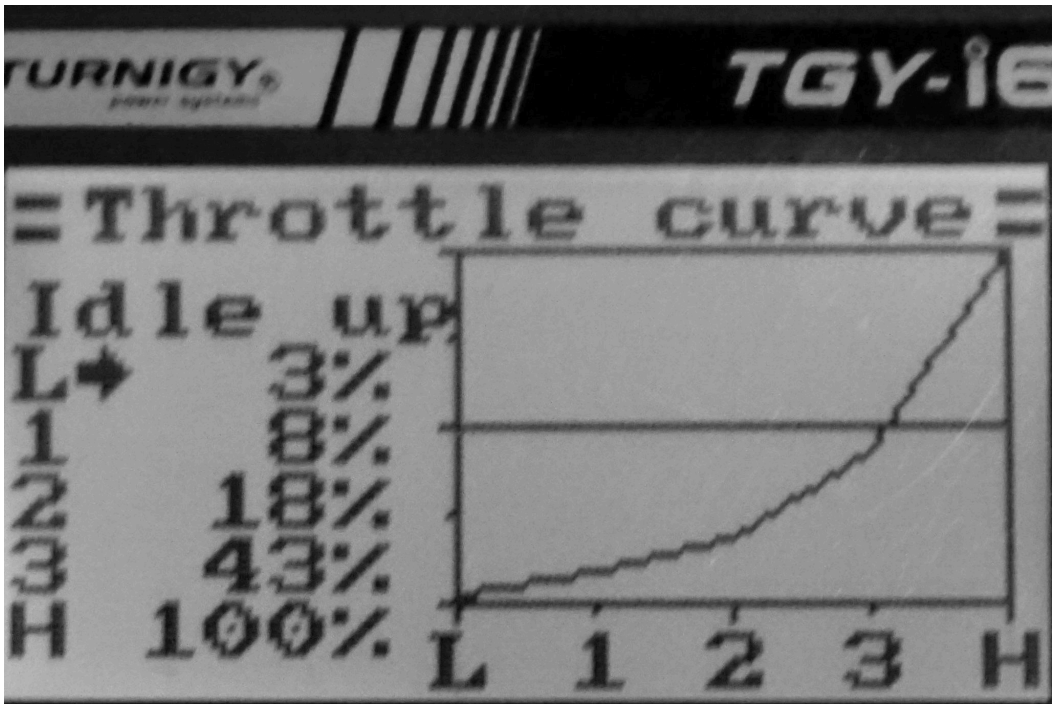

Fig. 18

- Note that if these settings are too soft you can try L to 0%, 1 to 10%, 2 to 25%, 3 to 50% and H to 100% for switch position 1 and L to 3%, 1 to 13%, 2 to 28%, 3 to 53% and H to 100% for switch position 2.
- And if you'd like more difference between Pinch and Normal modes you can try something like L to 5%, 1 to 10%, 2 to 20%, 3 to 45% and H to 100% for switch position 2 (and obviously consider pulling the base (Pinch) mainboom position further inboard before you do this.)

- Normal and Puff Modes
    - Actually the set-up for the transmitter is the same, but the boat is set up differently.
    - Assure that Switch B (SwB) is set to 1.
    - If you are using an FS-i6X, you will need to assign Switch B to Idle Mode as taught above under Pinch and Normal modes.

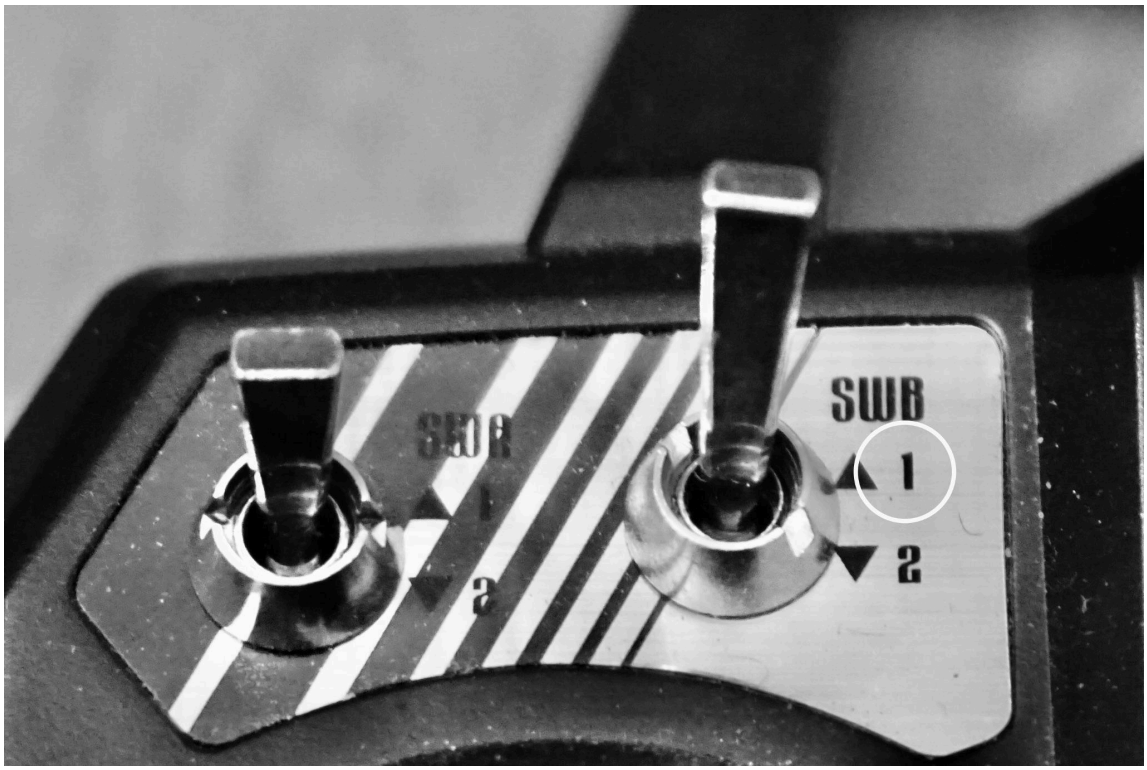

Fig. 10 (repeated)

- Assure that the sheet trim marking on the screen is midline.

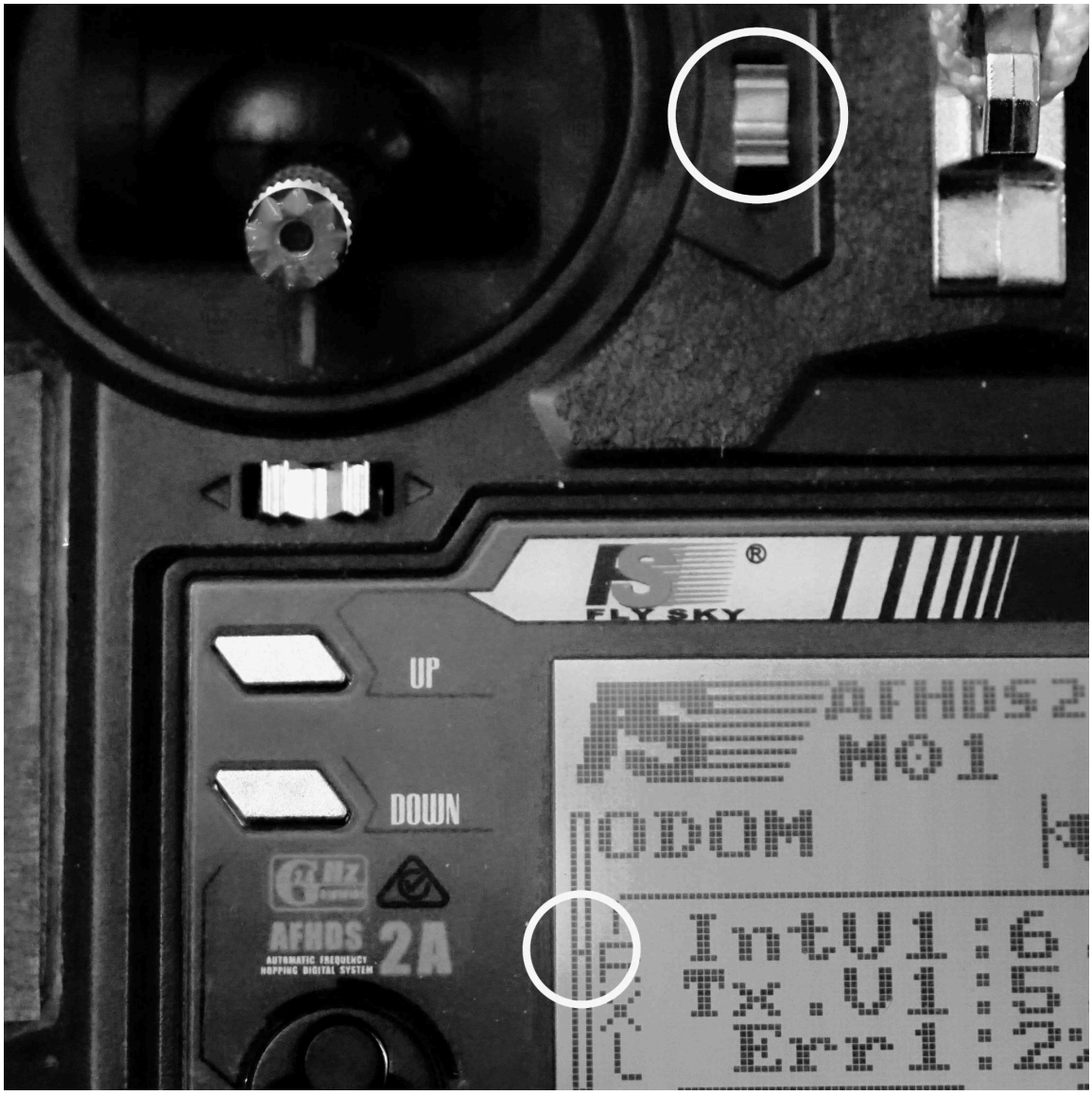

Fig. 11 (repeated)

- Set up your rig so that you have mast rake, camber, and twist in exactly your usual settings, then adjust the main and jib sheets mechanically so that the slot is correct.

- Use the Channel 3 right endpoint setting to set the end of the mainboom just at the edge of the cockpit floor. (Normal mode)

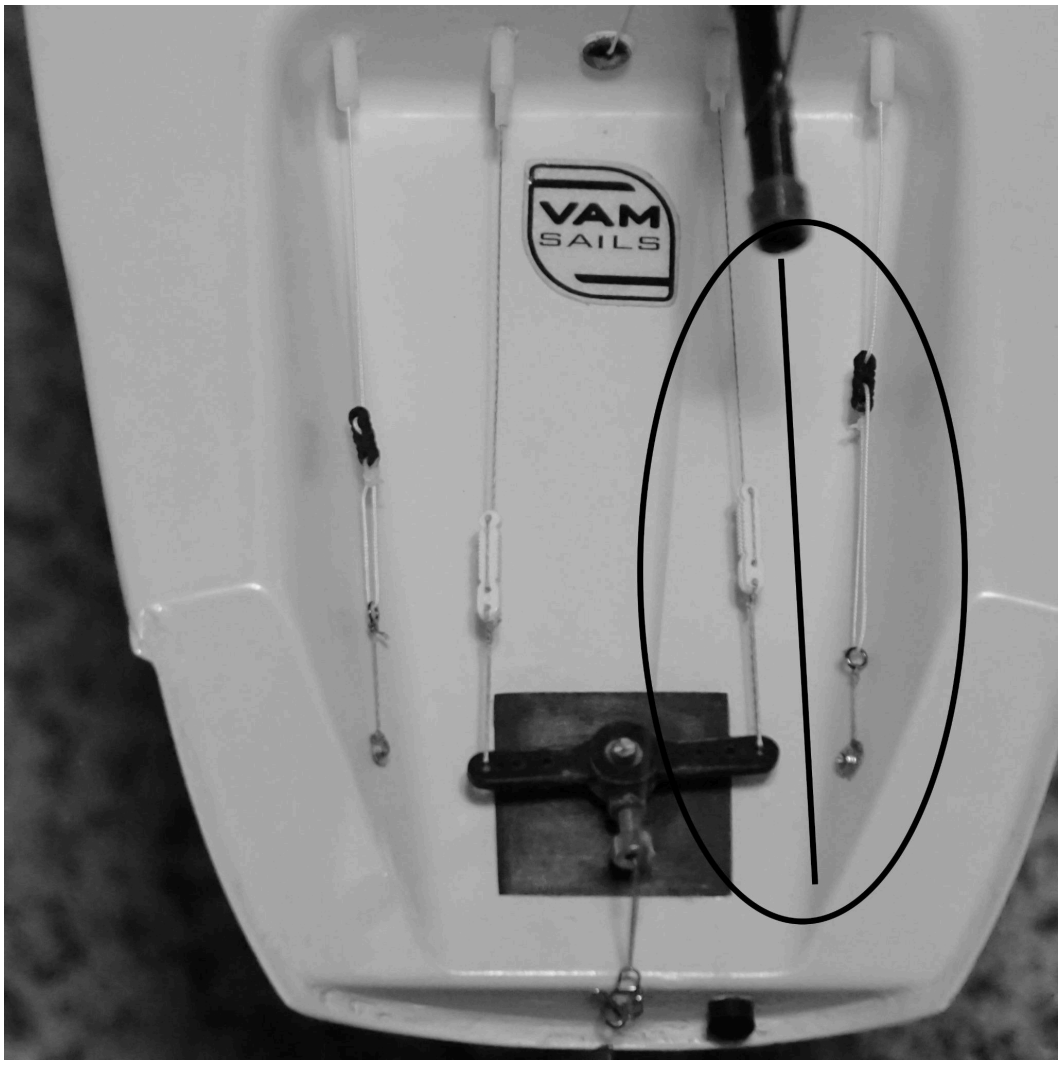

Fig. 19

- (This section is a verbatim copy of a paragraph in the Normal and Pinch mode section. See there for all of the photos.) You need to make a decision concerning the maximum sheet eased setting for downwinds: MMs don't have sidestays, so that you can easily ease more than 90 degrees to sail by the lee. This is sometimes useful. (Fig. 13) On the other hand you can set the sheets for optimal downwind running (usually about 85 degrees.) (The actual

optimal downwind running boom angle depends on how much twist you are sailing with.) (Fig. 14) Use the Channel 3 left endpoint to set the maximum sheet out endpoint to either 85 degrees or 100 degrees. (Figs. 15 and 16)

- Assure Switch B is in position 1. (This will become your Normal mode.) Go to the Throttle Curve menu. The display will show Normal.
    - Set L to 0%, 1 to 5%, 2 to 15%, 3 to 40% and H to 100%.

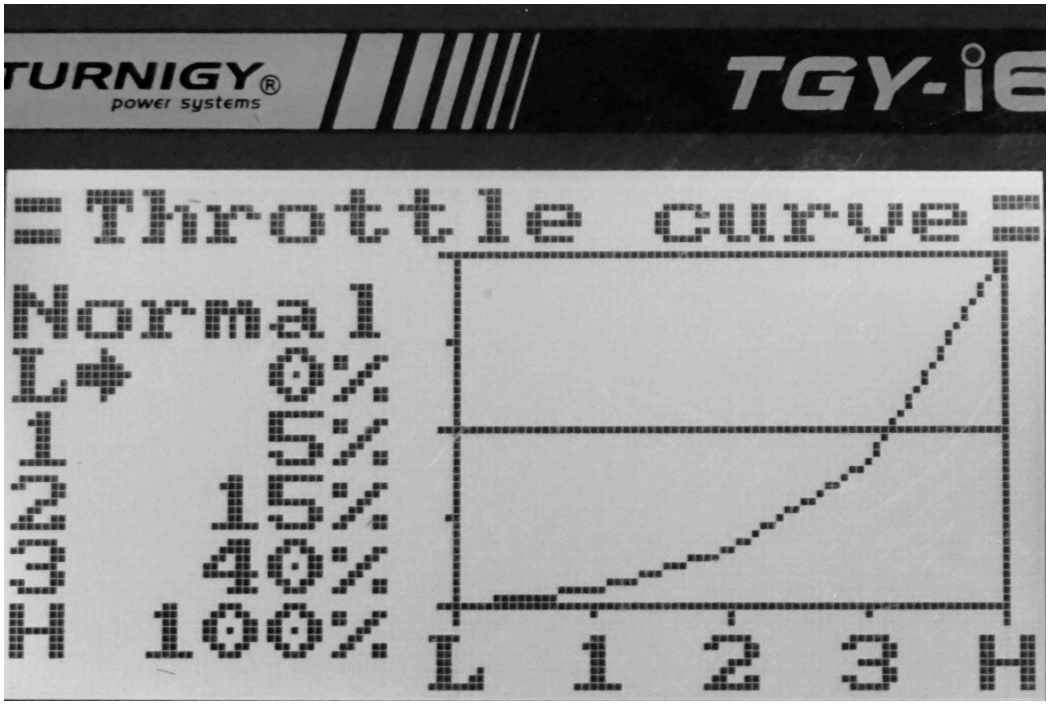

Fig. 17 (repeated)

- Now put Switch B in position 2. (This will become your Puff mode.) The display will show Idle Up. (Sorry!)
    - Set L to 3%, 1 to 8%, 2 to 18%, 3 to 43% and H to 100%.

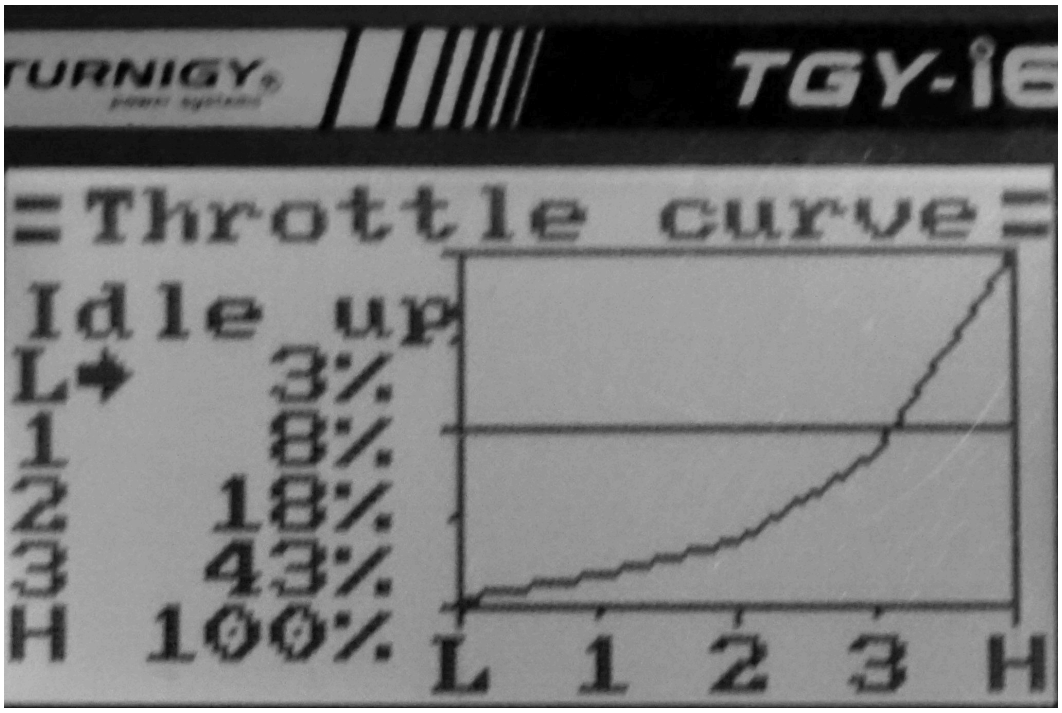

Fig. 18 (repeated)

- Note that if these settings are too soft you can try L to 0%, 1 to 10%, 2 to 25%, 3 to 50% and H to 100% for switch position 1 and L to 3%, 1 to 13%, 2 to 28%, 3 to 53% and H to 100% for switch position 2.
- And if you'd like more difference between Normal and Puff modes you can try something like L to 5%, 1 to 10%, 2 to 20%, 3 to 45% and H to 100% for switch position 2.
    - This is the setting that I currently use.
- Obviously, you sail with Switch B in position 1 (Normal) until you are overpowered (or if you're really on your game, just before you become overpowered), then flick to position 2 (Puff) for the puff, and back to position 1 when it is time to sheet back in.

■ If setting my ODOM for Normal and Puff mode. The set-up method is identical, but the settings are

- L to 0%, 1 to 5%, 2 to 15%, 3 to 40% and H to 100%. (Fig. 16) for Pinch mode (Switch B, position 1)
- Set L to 5%, 1 to 10%, 2 to 20%, 3 to 45% and H to 100%. (Fig. 17) for Normal mode (Switch B, position 2)
- For Normal and Puff mode, I use the same settings, but different initial end point settings as described above.
- ODOMs have sidestays, so I set up the downwind sheets out end point for 85 degrees of main boom angle (which is where the sidestays are anyway).

- Getting Rid of Throttle Hold on Switch D (and Assuring that All of the Switches are Assigned Correctly)
  - This is not necessary on the FS-i6X.
  - Switch Assign:
    - Assure Fly Mode says SwA and is Normal for Switch A in position 1 and Sport in position 2.
    - Assure Idle Mode says SwB and is Normal for Switch B in position 1 and Idle Up in position 2.
    - Assure Thro. Hold is SwD and is Off in position 1 and On in position 2.

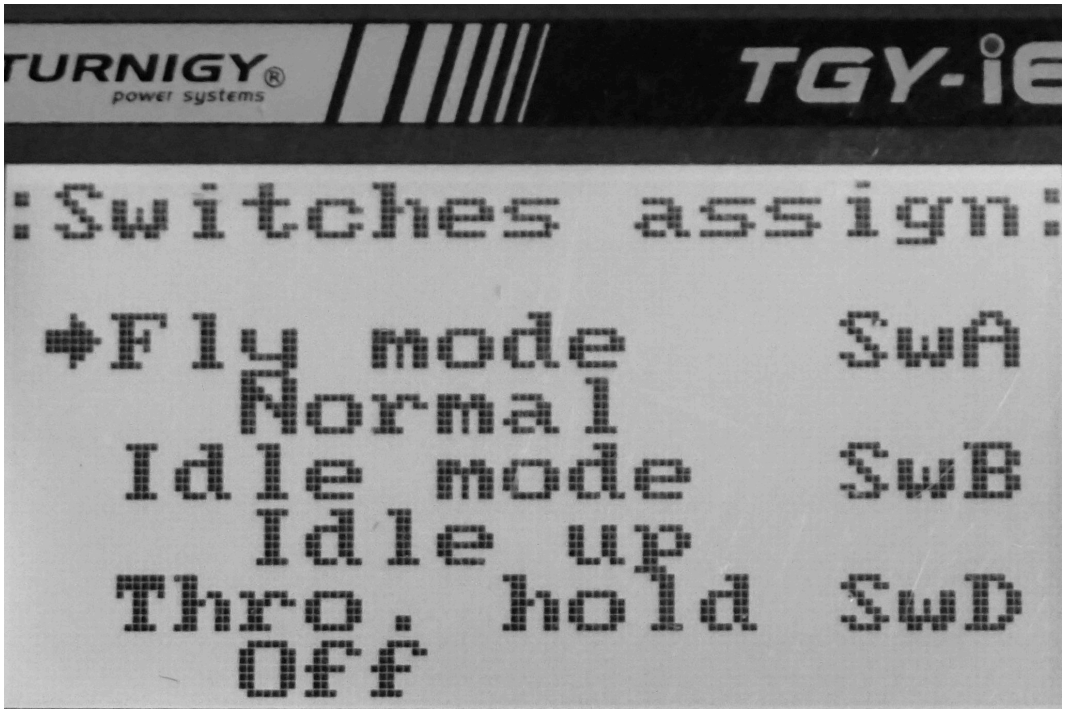

Fig. 20

- Throttle Hold: Assure that Hold is Off. (A sailboat does not need throttle hold to be on ever, I think. :-))

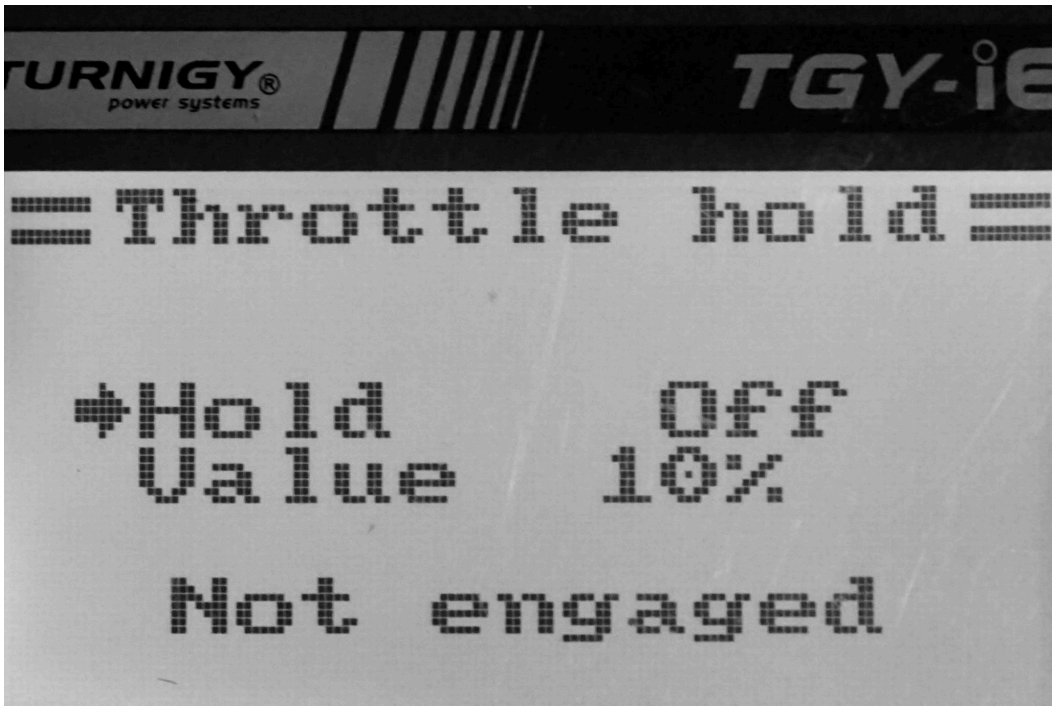

Fig. 21

- Menu Settings that I Don't Use:
  - Mix
  - Elevon
  - Display
  - Aux. Channels
  - Sub-trim: I don't use this, since I prefer to set my rudder mid-line mechanically. I think that this works much better. I do use the rudder trim tab (fig 1. #4) for minor adjustments between races.

Conclusion: I hope that this has been useful. I know that it is a lot, but if you go step by step you should be able to set-up your FS-i6 transmitter easily enough.

As always, contact me at gsnorris@gmail.com for any questions, comments, or criticisms.