

Futaba T6K Programming for Winch and Rudder Control

April 2022 [Revision 02]

Introduction

These instructions were compiled from thoughts and photographs originally supplied by Glen Dawson. They are intended for use on IOMs with a late model Futaba transmitter and a winch travel of about 240 to 250 mm.

They may well be easily adapted to suit the Futaba T6J and the SkyFly FS-i6 transmitters as they each have very similar functions in their menus.

The winch functions appear to work well with the common RMG winch series as well as the newer RedAnt Stinger winches.

Overview

Sheet Control

The winch stick operation is supplemented by the Switch A immediately above the winch stick on the transmitter. This three-position switch having an up, central and down position can be programmed to slightly ease the sheets for both Jib and Main (say 15 mm) in **Up** position and to slightly tighten the sheets (say 5 mm) in the **Down** position. Note that the switch moves in a similar direction to the stick for easing and tightening. In the **Central** position the sheets are in normal close-hauled position.

Some sailors may wish to have two stages of easing and not have a tightening facility, and this can also be easily achieved.

Rudder Control

The rudder stick operation is supplemented by the Switch B immediately above the rudder stick on the transmitter. This three-position switch can be programmed to narrow the rudder swing and soften the movement in the centre of the stick travel for smoother, strong wind downwind sailing, by using the **Down** position alone. Only the down position is used to vary the normal rudder swing.

Pre-requisites

- Boats with RMG Smart winches need to be initially “Setup” using the winch instructions, with the transmitter travel end points programmed into the RMG winch permitting only about 10 to 20 mm of travel beyond the normal working end points, yet still within the safe travel of the sheeting system. These settings will protect the boat from accidental damage caused by a powerful winch over or under sheeting in the future.

- You have marked your normal winch travel points (temporally) on your boat, with your fully eased and optimal close-hauled settings. Felt pen marks on masking tape will do. **Retain records of these two endpoints for later use.**
- You have set your **SUB TRIM** to **zero%** on **Channel #3** for the winch.
- You may use your Channel #1 **SUB TRIM** to what ever percentage aligns your rudder to the centreline. (I prefer to set my four slider Stick trims to zero for normal sailing and do the original adjustment/correction with Tx software.)

Part One

Programming the Transmitter for Winch Sheet Control

1. Assign the Switch A to Channel #5.

- Select the menu functions by holding the "+" button for 2 seconds,
- Using the "Jog" button, select **AUX CH** function,
- Using the "Jog" button, move the high-lighted field adjacent **CH5** and using the "+" or "-" buttons select **SwA**, and save by pushing the "END" button twice.
Refer to Photo 1.

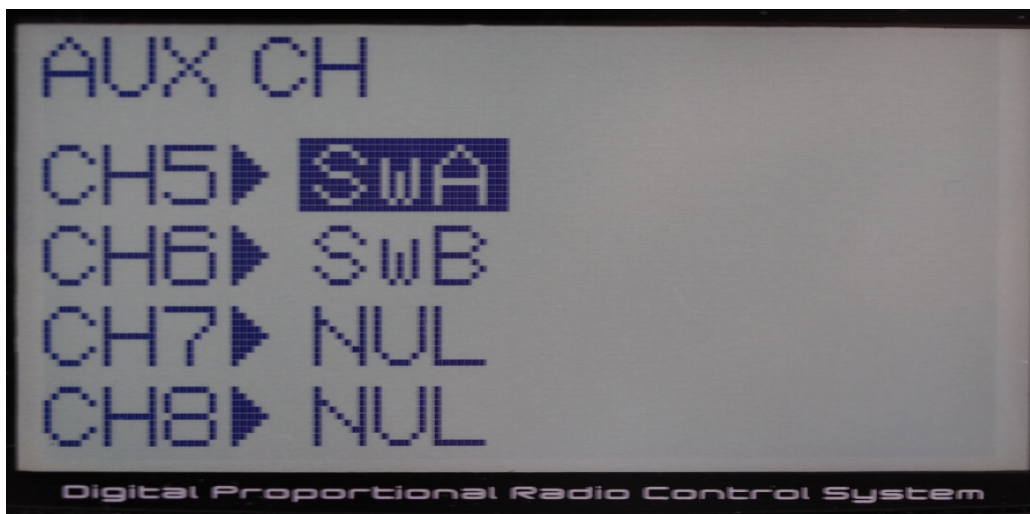


Photo 1 Assigning Channel 5 & 6 to switches A & B

2. Set Normal End Points

- Select the menu functions by holding the "+" button for 2 seconds,
- Using the "Jog" button, select **E POINT** function,
- Using the "Jog" button, move down to the high-lighted fields adjacent to **Channel #3** and with the winch stick hard down, using the "+" or "-" buttons confirm your normal close hauled end point. Move the winch stick hard up and repeat for the fully eased endpoint **and** save by pushing the "END" button twice.
(These endpoints should be within the travel of the RMG end points.)
Refer to Photo 2.

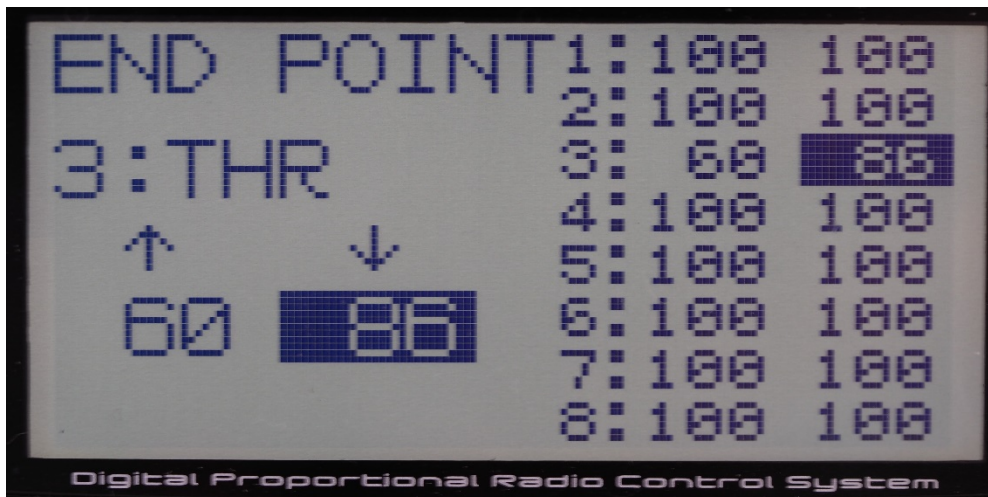


Photo 2 End Point setting

3. Set P. MIX :1

- Select the menu functions by holding the "+" button for 2 seconds,
- Using the "Jog" button, select **P.MIX** function,
- Using the "Jog" button, move down to the high-lighted fields adjacent to **NOR : 1** and select this function to program the **High and Slow** mode.
- The winch stick must be **DOWN** and **SwA DOWN** also.

Refer to Photo 3.

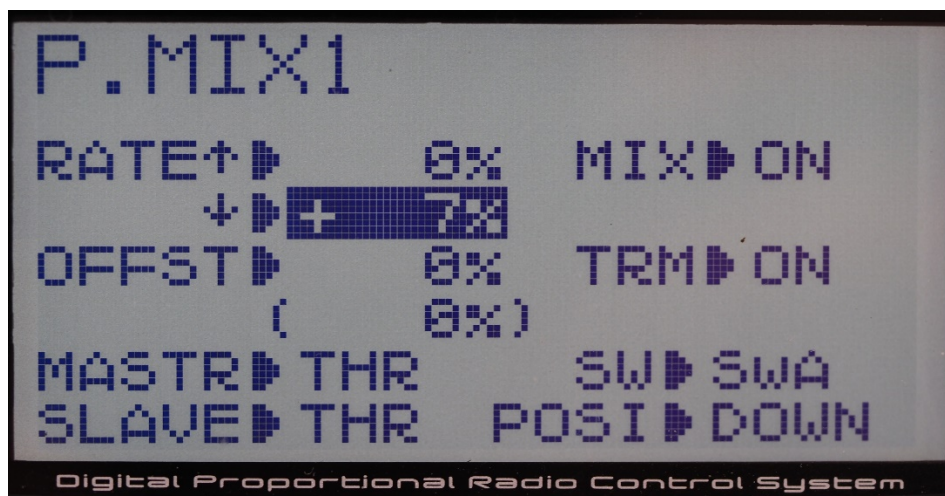


Photo 3 P-Mix 1

Replicate this screen including the + 7% tightening of the sheets.
(You can of course use a different percentage here).

- Check to ensure that when the **SwA** is positioned at Centre or Up that the **MIX** is **OFF**. These positions are for other adjustments.
- Save by pushing the "END" button three times.

4. Set P. MIX : 3

- Select the menu functions by holding the "+" button for 2 seconds,
- Using the "Jog" button, select **P.MIX** function,

- c) Using the “Jog” button, move down to the high-lighted fields adjacent to **NOR : 3** and select this function to program the **Low and Fast** mode.
- d) The winch stick must be **DOWN** and **SwA Up**.
Refer to Photo 4.



Photo 4 P-Mix 3

Replicate this screen including the **-15%** easing of the sheets.
(You can of course use a different percentage here).

- e) Check to ensure that when the **SwA** is positioned at Centre or Down that the **MIX** is **OFF**. Again, these positions are for other adjustments.
- f) Save by pushing the “END” button three times.

5. Final Check

Go to the **P. MIX** screen from the main menu and ensure it replicates Photo 5.
If not identical repeat the setting of P-Mix 1 & P-Mix 3 above.



Photo 5 P.MIX final configuration

Save by pushing the “END” button twice.

6. Alternate Settings

Should you wish to have TWO eased settings and ONE normal setting then all you need to do is program **SUB TRIM, Ch #3, to about -20%** in this example to shift both travel end points outwards (eased) the same amount that settings overtightened them in the switch **IN** position.



Sub TRM optional Program

Furthermore, this is an ideal adjustment to make when switching rigs when the new rig sheets are adjusted to the same normal end points in item 2. above.

[This programming is very similar to Glen’s advice, but he appears to use a ‘smoothing’ P- MIX 4 Curve which I don’t quite understand at the moment.]

To quote Glen Dawson: -

“The end result with these settings is that the switch A becomes a 3 Position switch that changes the location of the booms from tight (when down) to medium (when in the middle) and loose (when switched up).

I sail with my handset in the middle as “normal”. I have one tight setting used if I am trying to pinch to make a mark, or there is a boat on my leeward side, and I need to sail in high mode.

I use the up position to foot and gain speed – used mostly if the wind pressure increases and I want to scoot along a bit quicker.

The main reason I like this, is that I know where the booms are set to when the switch is being used. If I rely on the stick, I am not as certain where the boom position is located.”

Part Two

Programming the Transmitter for Rudder Control

1. Assign the Switch B to Channel #6.

- a) Select the menu functions by holding the “+” button for 2 seconds,
- b) Using the “Jog” button, select **AUX CH** function,
- c) Using the “Jog” button, move the high-lighted field adjacent **CH6** and using the “+” or “-” buttons select **SwB**.

Refer to again Photo 1 and save by pushing the “END” button twice.



2. Program the DR EXP function

- a) Select the menu functions by holding the “+” button for 2 seconds,
- b) Using the “Jog” button, select **DR EXP** function,
- c) Using the “Jog” button high light Channel #1 (the rudder),
- d) Place **SwB** in the **UP** position (**SW: UP**),

- e) Replicate photo 6.
- f) Save by pushing the "END" button twice.

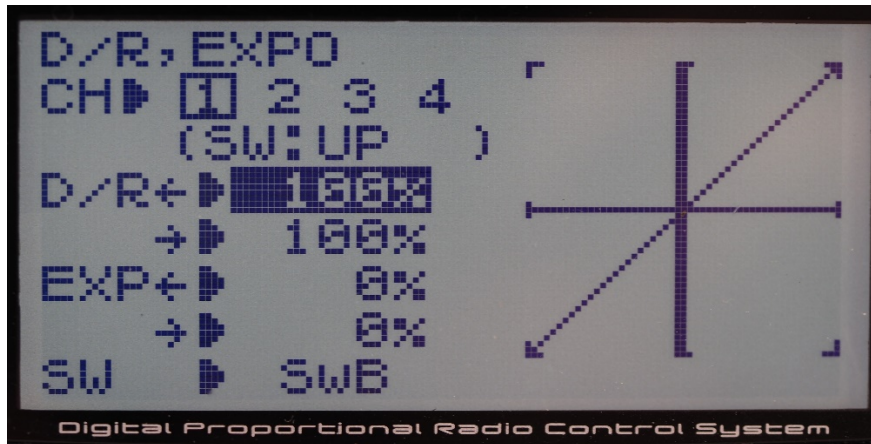


Photo 6 SwB UP

- g) Set **SwB DOWN**, this now sets the narrower swing and softens the central stick action.
- h) Change fields by touching the rudder stick left or right.
- i) Replicate photo 7.
- j) Check that the reduced swing and softer central action only occurs with the **SwB DOWN**.
- k) Save by pushing the "END" button twice.

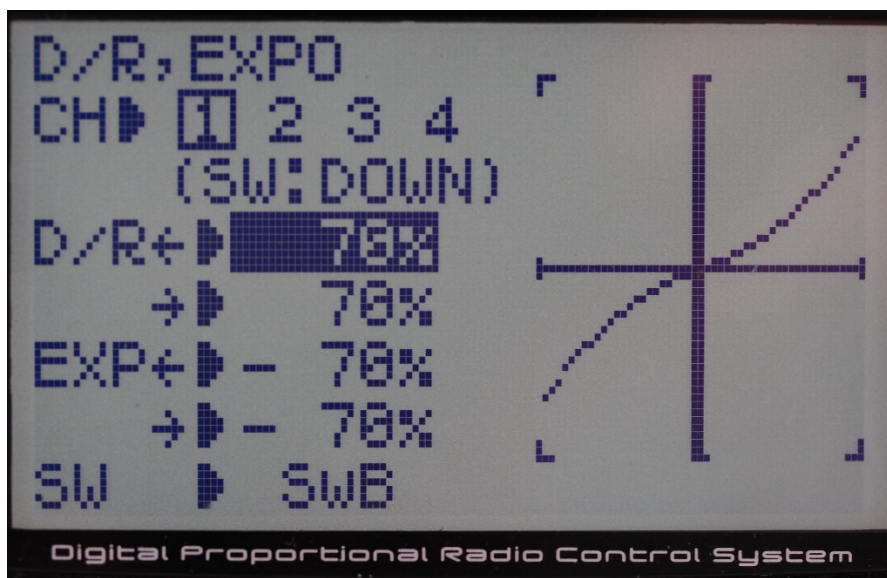


Photo 7 SwB DOWN

Concluding Notes

1. Most of the photos above are taken on a boat fitted with a RMG winch and a Futaba servo attached to the rudder. The drum diameter is 32 mm. and this turns about $2\frac{1}{3}$ turns.
2. Drums of smaller diameters will consistently use different percentage settings through-out the programs and require more turns.
3. In setting the winch try using a tightening of say 5mm, and an easing of say 15 mm of the sheets from the normal close-hauled position.
4. Sailors preferring two levels of easing can use the **SUB TRM** function to move the **SwA down** position to the normal close hauled setting mark on your boat.

Hunter Gillies April 9, 2022