Advanced Snapflap Mixer Script (snp410.lua)

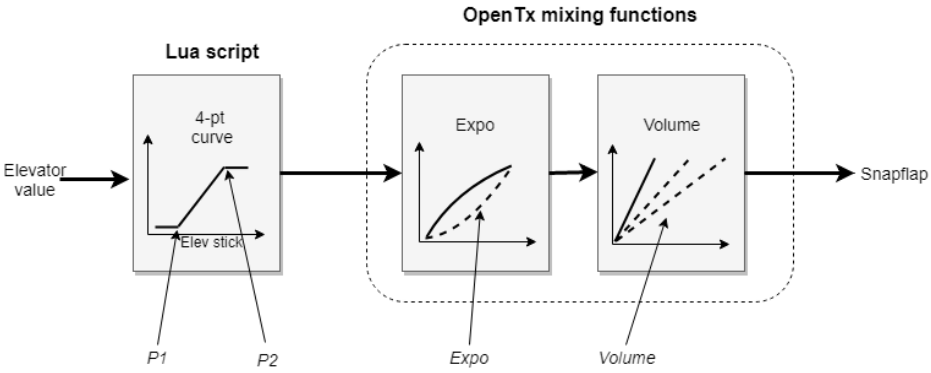
snp410 is a Lua script which offers adjustable snapflap deadband. It replaces **Ele** as the source of the snapflap mix. The script is for competition pilots who wish to optimise snapflap for racing - it's not needed or recommended for sport flying.

1 Requirements

- FrSky transmitter + OpenTx built using 'Lua' option
- Ideally, two spare sliders/knobs for deadband adjustment

2 How it works

The script reads the elevator stick value, and applies a 4-point curve with inflection points P1 and P2. These provide deadband around stick centre (P1) and extremes of stick deflection (P2). Expo and Volume will normally be applied via standard mixing features. The complete snapflap system can be represented as follows:

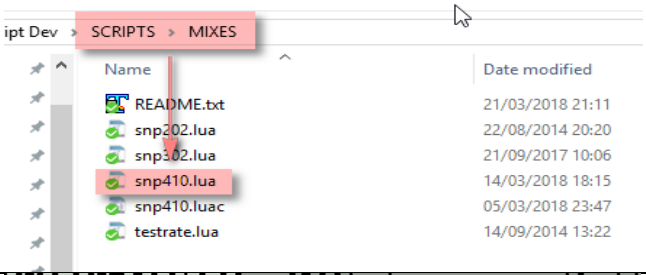


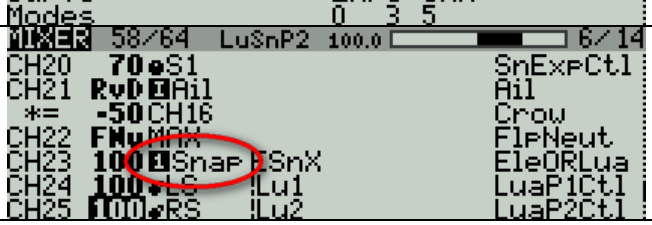
3 Use with *F3F Setup version 5.0*

If you're using *F3F* Setup *5.0,* then only minimal changes are required to use the script. Channels 24 and 25 are already configured to provide values for P1 and P2, via sliders LS and RS respectively.

- **P1 = CH24** – adjustment range via LS is **0 – 30%** of ele stick travel
- **P2 = CH25 –** adjustment range via RS is **60 - 100%** of ele stick travel

3.1 Installing the script in *F3F 5.0*

1. copy **snp410.lua** to the \SCRIPTS\MIXES folder on the SD card. (Either use a card reader, or connect your Taranis to a PC via USB.)	
2. Prepare for installation: 1. Clear any entries already present (set to '---'). 2. Highlight LUA1	
3. Configure the script 1. Press Enter to open the configurator 2. Set script = 'snp410'. 3. Set P1 = CH24 4. Set P2 = CH25 5. Leave the name field blank. 6. Check that '1Snap' varies as the ele stick is moved 7. Exit the configurator	

4. Prepare to change the snapflap mix source to reference the script: 1. Open the Mixers menu 2. Scroll down to CH23. This is the snapflap mix. 3. Press Long Enter to open the mixer editor.	
5. Change the source of the mix from 'Ele' to '1Snap'	
6. Exit the mixer editor. The new source is displayed.	

3.2 Testing

Activate NORMAL flight mode. Open the MIXERS menu and highlight CH23. Looking at the channel bar, check that the output of CH23 varies as the elevator stick is moved.

3.3 To reverse LS or RS

To reverse the direction of adjuster LS or RS

1. Open the mixer editor for CH24 (LS) or CH25 (RS)
2. Highlight the *curve* field.
3. Select the inverse curve – for example if the curve is currently 'Lu1', then choose '!Lu1', or vice versa. Note leading '!'

3.4 Altering the range of deadband adjustment

The range of adjustment of P1 and P2 are defined by curves **Lu1** and **Lu2** respectively. Each curve has two points defining the min and max limits. Note that at any time, the following must be observed:

- P1, P2 >= 0
- P1, P2 <= 100
- P2–P1 > 10%

If an error is found, zero snapflap is returned.
To lock P1 and/or P2, open curve editor for Lu1 or Lu2, and set both points to the same value.

3.5 Using a different adjuster and operation with the Q-X7

To use a different control as adjuster, change the source of CH24 and CH25. For the Q-X7, which does not have sliders, you can preset the deadband value by specifying MAX as the source of CH24/25, and setting the weight directly to a percentage of elevator stick deflection.

Test thoroughly before flight
- if in doubt… don't fly !!

Mike Shellim - 23 March 2018
last updated 20 June 2018