F3F template for ETHOS

Version 2.1

Setup Guide

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F3F template control layout (Mode 2 shown)

CONTENTS

1 INTRODUCTION

1.1 TEMPLATE DESCRIPTION

F3F for Ethos is for slope soarers with 2 servos in the fuselage and 4 in the wing. It's closely based on the author's well proven F3F template for Open/EdgeTX.

Version 2.1 benefits from the advances in Ethos 1.5.5. In particular, perfect trim throughout the crow range is assured with the easy-to-use Crow-aware Trim system.

Application

- For 6-servo gliders
- V-tail and X-tail
- Any stick mode

Flight modes

- NORMAL, REFLEX, CLIMB, PUMP, and LANDING
- Voice confirmation on change of mode
- Customisable flight mode switches

In-flight adjustments

- adjuster for snapflap volume
- adjuster for snapflap expo
- adjuster for aileron diff
- adjuster for camber preset

Crow functions

- Crow-aware elevator trim
- Choice of deployment methods
- Automatic differential suppression
- Reverse Diff
- Adjustable deadband on crow control.

Control surface calibration

- 'CAL' mode for adjusting servo centres and limits
- Balancing curve for flaps for accurate tracking
- Full rotation on flap servos

Other

- Channels 7-9 free for motor etc.

PLEASE READ THROUGH THESE INSTRUCTIONS ONCE BEFORE STARTING
PLEASE FOLLOW THE STEPS IN SEQUENCE!

1.2 PACKAGE CONTENTS

Filename	Description
f3f-ethos-21_setupguide.pdf	Setup guide
f3f-ethos-21?_reference.xls	Programming reference
f3f-eth_21?xv.bin	Model file (configurable for X- or V-tail)
*.wav	Sound files

1.3 REQUIREMENTS

The following are required:

- FrSky transmitter
- Ethos v 1.5.6 or above
- USB cable for connecting to PC

2 OVERVIEW

2.1 FLIGHT MODES

There are five flight modes, plus a special CAL mode.

Switch SA is the main flight mode switch. It selects between CLIMB, {switch SB}, and LANDING.
Switch SB selects between NORMAL and REFLEX.

Flight Mode	SA	SB
NORMAL	Middle	↑ or middle
REFLEX	Middle	↓
LANDING	↑	
CLIMB / PUMP	↓	

PUMP mode is an optional flight mode for 'pumping' in F3F competitions. It is disabled by default.
To enable PUMP mode, see section 7.3.

2.2 MIXER TABLE

The table below shows the mixers in each flight mode.

FM	Diff *	Ail→Rud	Ail→Flap	Crow brakes	Crow comp *	Snapflap *	Camber *	Reflex
Normal	✓	✓	✓			✓		
Climb	✓	✓	✓				✓	
Landing	✓	✓	✓	✓	✓			
Reflex	✓	✓	✓			✓		✓
Pump	✓	✓	✓			✓		

* adjustable in flight.

2.3 CONTROL ASSIGNMENTS

The table below shows the key functions and the type of controls required to operate them.

The defaults are for the X20. If you have a different transmitter or you prefer a different layout, you may need to reassign some functions - follow the instructions in the 'Configuration' column below.

Function	Type	Default	Configuration
Crow brakes	Stick	Throttle stick	Section 7.5
Diff adjustment	Trim	Rudder trim	—
Snapflap volume	Trim	Throttle trim	—
Snapflap expo adjust	Pot or slider	Pot1	Section 7.6
Camber preset adjust	Pot or slider	Pot2	Section 7.7
CAL switch	Momentary	SH	Section 7.4
Main flight mode switch	3-pos switch	SA	Section 7.4
Reflex mode switch	2- or 3-pos switch	SB	Section 7.4

2.4 CAL MODE

CAL mode is a special flight mode for calibrating servo end points and centres. When CAL is active, stick signals are passed directly to the outputs (trims and mixers are ignored).

To activate CAL mode:

1. Apply full left aileron + full up elevator (pull stick back towards your body) – and hold.
2. Pull and release SH
3. Release sticks.
4. Select the CAL submode using switch SA:
   - SA—: for calibrating servo end points, and balancing the flaps. In this mode, the flaps move in 25% increments.
   - SA↓ for calibrating flap neutral.
   - SA↑ for calibrating with 50% aileron travel. The flaps move to their neutrals.

To exit CAL mode, pull SH.

2.5 SERVO ASSIGNMENTS

Servos are assigned according to the table below.

Channel #	Vtail	Xtail
1	Right aileron	
2	Left aileron	
3	Right flap	
4	Left flap	
5	Right Vtail	Elevator
6	Left Vtail	Rudder
7-12	[free]	

'Left' and 'right' are relative to an imaginary pilot looking forwards.
The left and right channels are not interchangeable – *please ensure they are plugged in correctly!*

2.6 BASIC OPERATION

Rates and expo
- Rates/expo may be set globally or per flight mode.

Trims
- Aileron trim is global across all flight modes.
- Elevator trim is per flight mode.
- Rudder and throttle trims are repurposed (see below).

Camber and reflex
- In CLIMB mode, camber is adjustable via Pot2.
- In REFLEX mode, reflex is preset.

Aileron-to-flap mix
- Aileron-to-flap mixing may be set globally or per flight mode.

Crow->elevator compensation
- Crow->elevator compensation is continuously variable, and adjusted via the elevator trim (Crow aware trim system)

Differential
- Diff is adjustable during flight, using the rudder trim.
- Diff settings are stored per flight mode.

Roll rate enhancement
- Aileron diff is suppressed, as crow is deployed.
- 'Reverse' diff can be configured to further lower the down-going aileron as crow is deployed.

Aileron to Rudder mix
- Aileron to rudder mix is global or per flight mode.

Snapflap
- Snapflap is available in NORMAL, REFLEX and PUMP modes.
- Snapflap volume is independent for each flight mode, and adjustable in flight via the throttle trim.
- Snapflap expo is adjustable via Pot1.

Pump mode
- PUMP mode is optional. It's for 'pumping' during the 30-second climbout in an F3F comp.

3   PREPARING THE TRANSMITTER

3.1   TRANSFER FILES TO TRANSMITTER
1. Unzip the files in the package to your computer's hard drive.
2. Switch on the transmitter in bootloader mode and establish a USB connection.
3. Copy the model file **f3f21?xv.bin** to the \models folder on the SD card.
4. The sound files must be copied to the folder for voice1. To determine the voice1 folder, look in the SYSTEM>GENERAL menu and make a note of voice1. On the SD card, locate the \audio folder, and then the subfolder for voice1 – this is where the sound files should be copied.
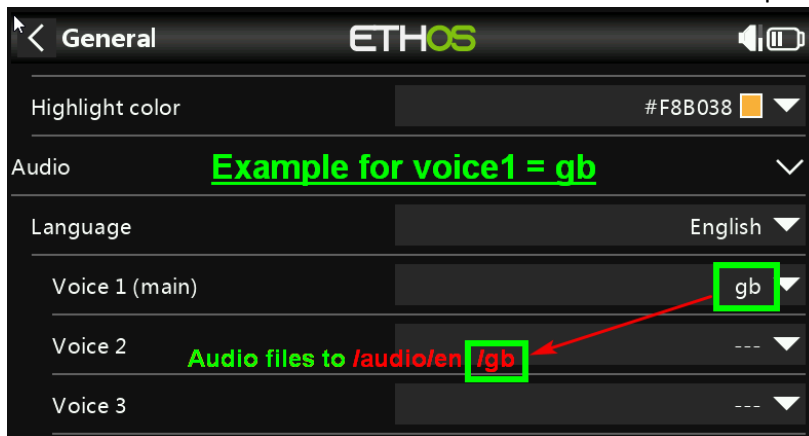
5. Disconnect USB and restart the transmitter.

Now activate the model as follows:

6. Go to the MODEL SELECT menu and find the model 'f3f21?xv'.
7. Click and choose 'Set current model'.
8. Go to the EDIT MODEL menu and change the name as desired.

3.2 HARDWARE CONFIGURATION

Now check that all the electronics are set up and ready.

1. The transmitter hardware must be properly calibrated, so do so now if in any doubt.
2. Configure the transmitter RF module.

3.3 FAMILIARISATION

Using the transmitter on its own, practice the following:

- Activate NORMAL, CLIMB, LANDING, and REFLEX modes (see Section 2.1).
- Activate CAL mode and sub-modes (see Section 2.4)
- Verify that the sounds are working correctly. If not, check that the sound files are in the correct location (see section 3.1).

4 CONFIGURE TAIL TYPE

Configure the tail type in the following VAR. The setting should be stored in the *Values* field.

VARS	Description	Setting
V_IsVtail	Tail type	0: X- or T-tail 1: V-tail (default)

5 CALIBRATE OUTPUTS

In this section, you will set the operating envelope of each servo – just enough to provide sufficient movement but without damaging your linkages. You'll also balance up the movements on the left and right sides. This section must be completed before configuring the mixers.

5.1 SET SERVO ROTATION

First set the rotation direction of the servos:

1. Switch on the transmitter (do not power up the receiver yet)
2. Set throttle stick to centre, Switch SA to middle
3. Enter CAL mode
4. Switch on the receiver
5. Open the OUTPUTS menu
6. *While still in CAL mode, set the direction of the control surfaces according to the table below. Pay attention to the notes regarding aileron and elevator!*

Stick command	Control surface	Notes
Aileron stick right →	RtAil goes up ↑ LtAil goes up↑	Ailerons **move up together**. This is to aid visual calibration later.
Thr stick forward ↑	RtFlap goes up↑ LtFlap goes up↑	
V-TAIL only: Ele stick forward ↑	RtVee goes up ↑ LtVee goes up ↑	In CAL mode, elevator operates in **reverse direction to normal.**
X-TAIL only: Ele stick forward ↑	Ele goes up ↑	
X-TAIL only: Rud stick right →	Rud goes right →	

To reverse a control surface, open the output editor, and change the *Invert* field from 'Normal' to 'Inverted'.
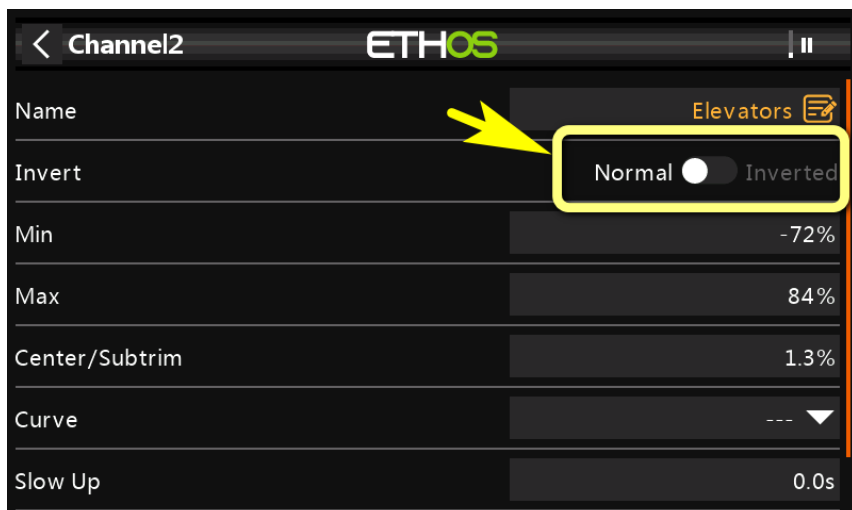
7. Exit CAL mode and enter NORMAL mode.
8. Move the aileron, elevator and rudder sticks, and for normal operation.
   Note that the flaps will not function yet!

5.2 ADJUST SERVO END POINTS AND CENTRES

In this section, you will (a) set the operating range of each servo and (b) compensate for linkage differences between the left and right sides. Note:

- All adjustments in CAL mode.
- Set servo limits to maximum possible - just a little less than the physical limits of the linkages and hinges.
- Adjustments are made using curves. **Do not alter min, max or Subtrim!**
- You may need to experiment to see which end of a curve to adjust, as explained in each note.

Channel	Calibration procedure

CH 4: LtFlap	Start with left flap. In this step, you'll set the end points and servo centre. Do not worry about the flap neutral. it will be set later.
	1. Switch SA to middle
	2. Enter CAL mode
	3. In the OUTPUTS menu, open CH4:LtFlap
	4. Skip to the 'curve' field, and open the curve editor
	    ☐ Throttle stick back (↓), then adjust the absolute lower limit with curve point 1 or 3 (whichever works).
	    ☐ Throttle stick forward (↑), adjust absolute upper limit with point 3 (or 1).
	    ☐ Adjust point 2 so it's on the straight line through points 1 and 3.
	5. Move throttle stick from one end to the other, observing step intervals. If necessary, you can adjust point 2 to make the response more linear.

Channel	Calibration procedure

CH 3: RtFlap	Next, calibrate the right flap. A 5-point curve is used, using the left flap as a reference.
	
	1. Enter CAL mode
	2. Switch SA to middle
	3. In the OUTPUTS menu, open CH3:RtFlap
	4. Skip to the 'curve' field and open the curve editor. Adjust the points to exactly match the left flap. Note: *the order of the curve points may be reversed, if the first point doesn't work, try the alternative (in brackets).*
	   ☐ stick fully back, adjust point 1 (or 5) for the lower limit of travel.
	   ☐ stick ½-back, adjust point 2 (or 4)
	   ☐ stick to centre, adjust point 3.
	   ☐ stick to ½-forward, adjust point 4 (or 2)
	   ☐ stick fully forward, adjust point 5 (or 1) for the upper limit of travel
	
	To match the end points on left and right sides, it may be necessary to go reduce one or other end points for the left flap in the previous step.
	
	Do a final check. Pay particular attention the points adjacent to flap neutral.

Flap neutral	Next, you'll set the flap neutral, by applying an offset mix. 1. Open the VARS menu 2. Scroll to V_FlapOffset 3. Activate CAL mode 4. Switch SA down. 5. Listen for callout 'calibrate flap neutral'. 6. Adjust *Values* for correct neutral. If the flaps are not perfectly in line with each other, then redo calibration for CH3:RtFlap above, paying particular attention to the two points adjacent to the neutral position.

V-Tail
CH 5: RtVee
CH 6: LtVee
	Calibrate V-tail (applies to V-tail version only).
	
	1. Enter CAL mode (position of SA is not critical.)
	2. In the OUTPUTS menu, open CH5:RtVee
	3. Skip to the 'curve' field, and open curve editor
	   ☐ Ele stick to centre, adjust point 2 for correct neutral
	   ☐ Ele stick forward (↑), adjust end point 3 (or 1) for **upper** (↑) travel limit.
	   ☐ Ele stick back (↓), adjust point 1 (or 3) for **lower** (↓) limit.
	4. Repeat for CH6:LtVee
	5. Check equal travel up/down; left and right surfaces match

X-Tail
CH 5:Elev
	Calibrate elevator (applies to X-or T-tail only)
	
	1. Enter CAL mode. (Position of SA is not critical.)
	2. In the OUTPUTS menu, highlight CH5:Elevator
	3. Skip to 'curve' field, open curve editor
	   ☐ Ele stick to centre, adjust point 2 for correct neutral
	   ☐ Ele stick forward (↑), adjust point 1 (or 3) point for **upper** (↑) limit
	   ☐ Ele stick back (↓), adjust point 3 (or 1) for **lower** (↓) limit
	4. Check travel is equal up & down

X-Tail **CH 6:Rudd**	Calibrate rudder (applies to X-or T- tail only) 1. Check you're still in cal mode (position of SA is not critical.) 2. In the OUTPUTS menu, highlight CH6:Rudd 3. Skip to 'curve' field, open curve editor 4. Rudder stick to centre, adjust point 2 for neutral 5. Rudder right (→), adjust end point 1 (or 3) for right limit 6. Rudder left (←), adjust end point 3 (or 1) for left limit 7. Check equal travel left/right

Channel	Calibration procedure

CH 1:RtAil
CH 2:LtAil
	Finally, calibrate ailerons:
	1. Enter CAL mode
	2. Set switch SA to down position. The flaps will go to their calibrated neutrals.
	3. In the OUTPUTS menu, go to CH1:RtAil and open the curve editor
	    ☐ Aileron stick to centre. Set Point 2 for correct centre
	    ☐ Move aileron stick right (→). Set point 3 (or 1) for desired upper limit.
	    ☐ Move aileron stick left (←). Set point 1 (or 3) so that down-travel = up-travel. If down-travel is limited and you cannot complete this step, then move SA to the up position – this reduces aileron movement by 50% during calibration; retry the calibration remembering that you will get double the movement when you exit CAL mode. Don't worry if down-travel is excessive when you exit CAL – later adjustments to the aileron rate and diff will reduce it.
	4. Repeat for CH2:LtAil
	5. Check: constant rate up/down for each aileron, and check left and right ailerons match. Readjust if necessary.

Check operation as follows:
1. Exit CAL mode
2. Move the sticks, checking that aileron, elevator and rudder move in the correct sense. Note that **the flaps will not function yet** – they will be configured in the next section.
3. Don't worry that the travel of the ailerons and elevator are excessive – they'll be reduced in the next step.

WELL DONE! CALIBRATION IS COMPLETE – PLEASE BACKUP YOUR WORK NOW (MAKE A CLONE)

6 MIXER CONFIGURATION

In the final step, you'll set the control travel (rates) and mixers. Refer your plane's instructions for recommended settings. ***All settings adjusted via the VARS menu (new in Ethos 1.5).***

6.1 RATES AND EXPO

This section is for setting rates (also known as 'control travel') and expo on the main flight controls.

VARS	Adjusts	Settings
V_AilRates V_EleRates V_RudRates	Aileron/Ele/Rud rates.	To set the default travel, enter a value in the first *Values* line. You can override this for specific flight modes by adding extra *Values* lines as follows: 1. Click 'Add new value' 2. Click the adjacent down arrow 3. Select category 'Flight modes', and choose the flight mode 4. Set the desired travel in the adjacent *value* field ***Safety: Never set the default travel to zero, even if you specify FM-specific over-rides!!*** The default must always offer sufficient control.
V_AilExpo V_EleExpo V_RudExpo	Aileron/Ele/Rud expo.	To set the default expo, enter a value in the *Values* field. You can override this for specific flight modes by adding extra *Values* lines: 1. Click 'Add a new value' 2. Click adjacent down arrow 3. Select category 'Flight modes', and choose the flight mode 4. Set the desired expo in the adjacent value

6.2 CROW BRAKES

This section is for setting up crow brakes.

VARS	Adjusts	Setting
V_CrowtoAil	Crow to ailerons up	Sets the upward aileron movement due to crow. To configure: 1. Enter LANDING mode 2. Pull the throttle stick fully back/down. 3. Adjust *Values* field for desired upward movement of ailerons
V_CrowToFlap	Crow to flaps down	*-- as above, for downward movement of flaps --*
V_CrowCompMax	Crow to elevator ('compensation')	Sets the maximum possible crow compensation. The default is 80% of total elevator travel, and should not need adjusting.
V_RevDiff	Reverse diff	This setting allows you to increase the travel of the down-going aileron when both full crow and full aileron are applied. This can improve roll response at full crow. To configure: 1. Activate LANDING mode 2. Apply full crow and full aileron 3. Adjust *Values* field so that the down going aileron is a little below the airfoil neutral line. NOTE: this measure for improving roll response is in addition to the suppression of aileron diff as crow is deployed (this is done automatically).
V_AutoCrow	Enable Autocrow	See section 7.2

6.3 CROW-AWARE TRIM

Version 2.1 introduces an advanced crow-aware trim system. In Landing mode, the elevator trim is repurposed to bend the compensation curve. The system automatically selects the correct point(s) on the curve, according to the amount of crow. The trimming process is completely transparent.

To familiarise yourself with the system, go to the CURVES menu and highlight the CrowComp curve. Then enter LANDING mode. Finally move the elevator trim forward and back, and see how the curve changes. Note the first point on the curve (immediately after transitioning into Landing mode) is fixed and does not respond to the trim.

To trim out your crow brakes in flight, simply traverse through the full range of crow, using the elevator trim to correct for pitch changes as necessary. There is no need to look at the screen.

> *Technical note:* at transition into LANDING mode, the elevator trim value is inherited from NORMAL mode. This constitutes the 'base' trim. As crow is deployed, the correct amount of compensation is added to the base trim to give the final elevator offset.

6.4 AILERON => FLAP

The aileron=>flap mix causes the flaps to act like ailerons in response to roll commands.

VARS	Adjusts	Setting
V_AilToFlap	Aileron to flap mix	Adjust *Values* field for default aileron=>flap movement. You can over-ride the default for specific flight modes - same method as rates (see 6.1) When making adjusting, focus on the **upward** movement of the flaps (downward movement is affected by the diff setting, adjusted with the rudder trim).

6.5 AILERON => RUDDER

Aileron => rudder is useful in landing mode, for improving turn response.

VARS	Adjusts	Setting
V_AilToRud	Aileron to rudder mix	Adjust *Values* field for default aileron=>rudder mix. You can over-ride the default for specific flight modes - same method as rates (see 6.1)

6.6 CAMBER

Configure maximum camber (Climb mode only)

VARS	Adjusts	Setting
V_CambToAil	Aileron camber	To configure, enter Climb mode, rotate Pot2 fully clockwise and adjust *Values* field.
V_CambToFlp	Flap camber	*-- as above, but for flaps --*

6.7 REFLEX

Set the amount of reflex (Reflex mode only)

VARS	Adjusts	Setting
V_RflxToAil	Aileron reflex	To configure the amount of aileron reflex, enter REFLEX mode and adjust *Values* field.
V_RflxToFlap	Flap reflex	*-- as above, but for flaps --*

6.8 AILERON DIFF

Aileron differential reduces the travel of the downgoing aileron in response to roll commands. The reduction is expressed as a percentage of the upgoing travel.

Diff is adjusted using the rudder trim as follows:

- Rudder trim full left => 50% diff (down travel = ½ up-travel)
- Rudder trim centre => 25% diff (down travel = ¾ up-travel)
- Rudder trim full right => 0% diff (down travel = up travel)

Diff is flight mode dependent. *Make sure to set the diff for each flight modes!*

6.9 FLAP DIFF (CHANGED IN V1.1)

Flap differential works like aileron diff, but is applied to flaps.
Flap diff can be enabled or disabled via a configuration setting as follows:

VARS	Adjusts	Settings
V_FlDfEnable	Flap diff enable	0% = disabled 1% = enabled (default)

6.10   ELEVATOR => AIL/FLAP ('SNAPFLAP')

Snapflap is adjustable in flight. Configure separately for ailerons and flaps.

VARS	Adjusts	Settings
V_SnapToAil V_SnapToFlap	Elevator to aileron ('Snapflap')	Snapflap is active in NORMAL, PUMP and REFLEX modes, and is adjustable in each mode independently using the throttle trim. First, configure the *maximum possible* snapflap as follows: 1. Enter NORMAL mode 2. Move the throttle trim fully back (for max snapflap). 3. Apply full up elevator 4. Select VAR:V_SnapToAil and adjust *Values* field for required max downward aileron movement. 5. Repeat step 4, with VAR:V_SnapToFlap to adjust max flap movement. Next, set snapflap for actual flight using the throttle trim. Repeat for flight modes NORMAL, REFLEX and PUMP (if enabled). Finally, set zero snapflap expo, by centring Pot1. See also section 7.6.

6.11   OTHER PARAMETERS

Various other parameters.

VARS (*Values* field)	Adjusts	Notes
V_PumpMode	Enable PUMP mode	See section 7.3
V_TogglePump	Enable Toggle pump	See section 7.3
V_IsVtail	Tail type	0% = X- or T-tail 1% = V-tail
V_FlapOffset	Flap neutral offset	Adjusted in CAL mode

7   CUSTOMISING YOUR SETUP

This section describes various optional customisations. Your mixer settings etc. will not be affected so you can make these changes any time. Remember to make a backup first (an easy way is simply to 'clone' your setup from the MODEL SELECT menu).

7.1   SETTING THE LOW BATTERY ALARM

A low battery alarm is provided, and can be configured as follows:

1. Go to the SPECIAL FUNCTIONS menu
2. Open SF9
3. Set *State* to 'enabled' and set the repeat interval.
4. Go to the LOGICAL SWITCHES menu, open LSW32:BAT_LOW.
5. Set *Value(X)* to the required threshold voltage.

The alert will be triggered when the voltage drops below the threshold for more than 3 seconds.

7.2 CONFIGURING 'AUTOCROW'

The Autocrow setting allows you to activate LANDING mode simply by pulling on the crow stick. Many pilots prefer this style of operation as it avoids having to move a switch. Autocrow is enabled in the VARS menu as follows:

VARS	*Values* field
V_AutoCrow	0%: disabled (default)
	1%: enabled

When Autocrow is enabled, the switch layout automatically changes:

- The previous Landing mode switch (default SA↑) is reassigned to Reflex mode
- The previous Reflex mode switch (default SB) is free for re-use.

7.3 CONFIGURING PUMP MODE

PUMP flight mode is optional. Use it to set high rates when 'pumping' in F3F competitions.

VARS	*Values* field
V_PumpMode	0%: disabled (default)
	1%: enabled

Once enabled, Pump flight mode is activated as follows:
1. Enter CLIMB mode
2. Pull SH↓

Pump mode is cancelled when another flight mode is activated. It can also be toggled on/off via SH↓ as follows:

VARS	*Values* field
V_TogglePump	Allows PUMP mode to be toggled on/off using SH↓.
	0%: Disabled (default)
	1%: Enabled

7.4 REASSIGNING FLIGHT MODE SWITCHES

Flight mode switches are assigned in logical switches LSW4 – LSW8.

Flight mode	Adjustment point	Default	Notes
Cal & Pump modes	LS4:SW_SPRING	SH↓	Must be 2-pos momentary switch (safety!)
Autocrow off: Landing mode *Autocrow on*: Reflex mode	LS5:SW-3P_OTHER	SA↑	Must all be same 3-pos switch
Normal/Reflex mode	LS6:SW-3P_NORMAL	SA–	
Climb mode	LS7:SW-3P_CLIMB	SA↓	
Autocrow off: Reflex mode	LS8:SW-2-3P_REFLEX	SB↓	Regular 2- or 3-pos switch.

7.5 CONFIGURING THE CROW STICK

The crow stick incorporates some deadband to prevent accidental deployment. The amount of deadband can be adjusted as follows:

1. Go to the Curves menu and open CV:ThrDB
2. Change Point2 → X. Default is 85.

To reverse the crow stick:

1. Go to the MIXERS menu
2. Scroll down to the 'Throttle' mix for channel 21, then {long press} to open the mixer editor.
3. {Long press} on source ('Throttle') and choose 'negative'. The source changes from 'Throttle' to '–Throttle'.

7.6 ASSIGNING OR DISABLING SNAPFLAP EXPO ADJUSTER

By default snapflap expo is assigned to Pot1. You can assign it to a different control as follows:

1. Go to the MIXERS menu
2. Scroll down to the SnapExpoAdj mixer for channel 23, then {long press} to open the editor
3. Change the source as required.
4. To reverse the direction, {long press} on source, and choose 'negative'.

You can also disable the adjustment altogether. To do this, set the source to '---' (step 2). Expo will be fixed at zero and Pot1 can be re-assigned for other purposes.

7.7 ASSIGNING CAMBER PRESET ADJUSTER

By default the camber preset adjustment is assigned to Pot2. You can alter this as follows:

1. Go to the MIXERS menu
2. Scroll down to the mix 'CambAdj' for channel 28, then {long press} to open the editor.
3. Change the source from pot2 to another control.

To reverse the control, {long press} on the *source* field, and choose 'negative'.

7.8 CONFIGURING POT CHECKS
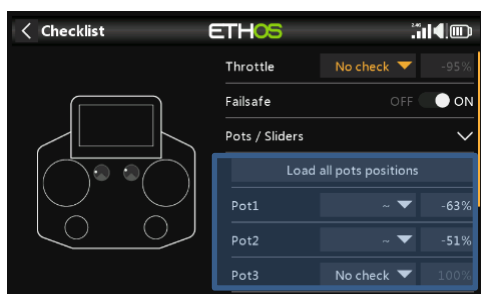
Once the settings for pot1 and pot2 have been optimised, it's a good idea to configure pot checks – these will warn if the pots have moved away from the set positions.

1. Enter the Checklist menu.
2. Click 'load all pot positions'
3. Choose the ' ~ ' option (it means 'approximately equal to').

8 DISCLAIMER

Although this setup is tested, it's up to the pilot to make sure that the controls respond correctly under all conditions. The author will not be responsible for the consequences of any bugs in the setup or documentation or as the result of changes in Ethos.

Remember to test your setup thoroughly before the first flight and after any modifications!

If in doubt, don't fly!!

If you have any queries or suggestions, or if you find any errors in the documentation, or just want to say hello, then please contact me at http://rc-soar.com/email.htm.

Safe flying!

Mike Shellim