E-Soar Plus

F5J template for EdgeTX

Version 4.0

Setup Guide

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1 INTRODUCTION

E-Soar Plus is an advanced template for full-house (F5J) electric sailplanes. It contains all the mixing needed for competition, yet is easy to configure and operate. Before starting please:

- Read through these instructions once
- Visit the support page for latest alerts

1.1 PACKAGE CONTENTS

Filename	Description
esoarplus_40_SetupGuide.pdf	Setup guide
esoarplus_40_SettingsRef.xls	Settings reference
esoarplus_40*.etx	Setups for V- and X/T- tail
esp***.wav	Sound files

1.2 REQUIREMENTS

The following are required:

- Transmitter with EdgeTX 2.12.4 or greater. Suitable tx's range from TX16S Mk3 down to the Pocket.
- Companion software.
- USB cable

Note: The versions of Companion and EdgeTX must be identical to avoid risk of corruption.

2 OVERVIEW

This section describes the general concepts. Please read before starting the configuration.

2.1 STICK MODE AND CONTROL ASSIGNMENTS

The stick mode (1-4) is set in the **RADIO SETUP → MODE** menu. Any stick mode may be used.

2.2 CONTROL ASSIGNMENTS

Some controls are 'soft', to cater for different transmitters and preferences. These will be assigned to physical switches during initial configuration (see section 3.2).

Control		Assigned to
Rudder stick		Rudder
Rudder trim		Aileron diff adjust
Aileron stick + trim		Ailerons
Elevator stick + trim		Elevator
'Soft' switches, assigned in section 3.2	**Th2**	*[optional]* Thermal2 mode
	Mot	Motor control
	Brk	Brake control
	SFM	Flight mode selection and CAL submode
	Mom	Momentary switch for CAL mode and arming
	ArS	*[optional]* 2-pos switch for arming option 3
	Sp2	*[optional]* Speed2 mode

From this point, 'soft' controls will be identified by their 3-character ids (**Brk**, **Mot** etc.)

2.3 FLIGHT MODES

There are 5 primary flight modes: Power, Landing, Thermal, Cruise and Speed.
In addition, there are 2 optional modes: Thermal2 and Speed2. These are disabled by default.

In the event of a clash, Power has highest priority, then Landing, then Thermal/ Cruise/Speed.

Flight Mode	FM ID	Activated by	Priority
Power	FM2	**Mot** control ↑ (if motor armed)	High
Landing	FM3	Throttle stick ↓, activates brakes	Mid
Speed1 [Speed2]	FM6 FM5	**SFM ↑**	Low
Cruise	FM4	**SFM —**	Low
Thermal1 [Thermal2]	FM0 FM7	**SFM ↓**	Low

A special CAL flight mode (FM1) is also provided, for calibrating the control surfaces.

2.4 SERVO ASSIGNMENTS

Ch	Function
1	Right aileron
2	Left aileron
3	Right flap
4	Left flap

Ch	Function	
5	Elevator	RtVee
6	Rudder	LtVee
7	Motor	

Note 1: 'Left' and 'right' are relative to an observer facing forwards
Note 2: Left and right channels are not interchangeable – ensure servos are connected correctly!

2.5 MIXERS

The table below shows which mixers are active in each flight mode.

Flight mode	Ail→ Flap	Ail→ Rud	Brakes	Brake comp	Motor Comp	Snapflap	Camber	Diff
Power	Y	Y			Y	Y	Y	Y
Landing	Y	Y	Y	Y		Y	Y	Y
Cruise	Y	Y				Y	Y	Y
Thermal1/2	Y	Y				Y	Y	Y
Speed1/2	Y	Y				Y	Y	Y

2.6 BASIC OPERATION

Flight trims

- Aileron trim is shared across all flight modes
- Elevator trim is independent for each flight mode. In Landing and Power modes, adjusts elevator compensation.
- Rudder trim adjusts diff (see below)

Camber / reflex mixes

- Camber (+ve and -ve) is preset per flight mode

Elevator compensation

- Adjusted using the elevator trim, independently in Landing and Power modes.

Aileron differential

- Applied to ailerons and flaps
- Adjustable per flight mode, via the rudder trim.

Snapflap (elevator to flap mix)

- Snapflap may be preset per flight mode

Roll rate enhancement with brakes

- The aileron offset due to brakes reduces to zero as the aileron stick is displaced. This ensures excellent roll response when brakes are deployed.

Aileron to rudder

- Aileron to rudder mix may be preset per flight mode.

2.7 OPERATING THE MOTOR

This section describes how to arm and operate the motor.

There are three arming options available (see section 7.3). This section describes option 1 (the default, and most secure).

Safety note: do not connect the motor until configuration is complete!

Arming the motor

To arm the motor:

1. Move **Mot** control to idle (assigned in section 3.2)
2. Apply full right-aileron and full up-elevator, and hold
3. Pull **Mom** switch and hold for 1 second until the startup sound
4. Release switch
5. Release stick(s)

Note 1: A warning beep sounds every 12 seconds to indicate that the motor is live
Note 2: With all arming options, the motor is disarmed at startup, without the need for switch checks.

Running the motor

To run the motor:

1. Arm the motor
2. Advance the **Mot** control

Power mode is activated automatically while the motor is running.
Note: the motor control incorporates some deadband at the idle position, to prevent accidental operation.

Disarming the motor

To disarm the motor, pull **Mom** switch for 1 second until the 'motor disabled' alert.

2.8 FLIGHT TIMER

Timer1 is configured as an automatic flight timer. The timer is named 'Flight'.

- *To reset*: arm motor.
- *To start*: advance motor
- *To stop*: disarm motor.

2.9 CAL MODE

CAL mode is a special flight mode for calibrating the servos. When CAL mode is active, all mixers and trims are disabled, and the raw stick values passed directly to the outputs. To enable CAL mode:

1. Apply full left aileron and full up elevator, and hold
2. Pull **Mom** switch (assigned in section 3.2)
3. Release switch
4. Release stick(s)

There are three sub-modes selected via switch the flight mode switch:

- Sub-mode 1 (**SFM**↑): calibrate with reduced aileron movement
- Sub-mode 2 (**SFM** —): calibrate end points and centres (throttle stick responds in 25% increments)
- Sub-mode 3 (**SFM** ↓): calibrate flap neutral

When CAL mode is enabled, there's a beep every 3 secs and a voice alert every 9 secs.

To exit CAL mode, pull **Mom** switch.

3 INITIAL SETUP

Okay, so let's get started!

3.1 TRANSFERRING THE TEMPLATE TO TRANSMITTER

The first step is to transfer the template to your transmitter. You will need the Companion software.
Note: the versions of Companion and EdgeTX must match, otherwise the setup may be corrupted.

Connect transmitter to PC

1. Enter bootloader mode. (Power on while pressing horizontal trim levers inwards.)
2. Connect the tx to computer via USB. The tx's SD card (and/or internal flash memory) should appear as an external drive. Select the drive which has MODELS and SOUNDS folders.

Copy sound files

1. On your PC, extract all files from .ZIP package
2. Copy the sound files to the \SOUNDS\{language} folder on the SD card. For example, English folder is "\SOUNDS\EN". *Do not copy to the SYSTEM folder.*
   Note: there are new sound files in version 4.

Convert the template

1. Start EdgeTX Companion. In the **SETTINGS** menu, select (or create) a profile for your transmitter.
2. Open the template file esoarplus_40x.etx. Versions for X/T and V tails are displayed in a window.
3. You may see alerts "Input line [x] has no source". If so, assign sources ***now***, see section 3.2. Do this for both the X and V setups (or else delete the unwanted setup).
4. *Optional:* Once all the inputs are assigned and checked, you can "File save as" as your working template file, to avoid having to repeat the preceding steps for your next model.

Copy templates to your transmitter

1. From the File menu, choose **READ MODELS AND SETTINGS FROM RADIO**. The models from your radio are listed in a second window.
2. Copy the ESOARP setup (Ctrl+C), then paste/insert into the model list (Ctrl+V).
3. Close the esoarplus_40x.etx window.
4. In the model list, right-click on the ESOARP setup and choose "Set as Default"
5. From the File menu, choose **WRITE MODELS AND SETTINGS TO RADIO**. (If the menu is greyed out, it means there are still errors in the setup(s), see "Convert the template" above.)
6. Close EdgeTX Companion

3.2 ASSIGNING SWITCHES AND CONTROLS

This section describes how to assign switches and controls. Initially, this should be done in Companion before transferring the template to the transmitter (see section 3.1 above).
Later, you can change the assignments directly in the transmitter if you wish to try a different layout.

To check the assignments

1. Enter the **INPUTS** menu and scroll down.
2. Referring to table below, check each input has a valid source, and is of the correct type.

Input	Function	Source	Example for TX16S	Example for Pocket
[I10]Th2	Thermal2 switch **[*Optional*]**	Slider or switch, or MIN to disable	MIN	MIN
[I11]Mot	Motor control	Slider, 3-pos switch or throttle stick	LS	SC
[I12]Brk	Brake control	Throttle stick or slider	Thr	Thr
[I13]SFM	Thermal/Cruise/Speed switch CAL submodes switch	3-pos switch	SA	SB
[I14]Mom	CAL mode Arming options 1, 2	Momentary switch	SH	SE
[I16]ArS	Arming option 3 ***[optional]***	2-pos switch, or MIN to disable	MIN	MIN
[I17]Sp2	Speed2 switch ***[Optional]***	2-pos switch, or MIN to disable	MIN	MIN

Note 1: All the sources must be assigned (not '---'), otherwise Companion will flag an error.
Note 2: Some functions are shown as optional. To disable them set the source to the system 'MIN' source.
Note 3: The same source should not be assigned to more than one function.

To change an assignment:

1. Highlight the input line
2. Double-click to open the input editor
3. Tab to the Source option, and choose from the dropdown list.

To reverse a source (stick, slider or switch):

1. Highlight the input and open the editor
2. Choose the same source, but with a negative sign.

Notes:

- Leave weights at 100%.
- Do not alter expo or other fields.

3.3 HARDWARE CALIBRATION.

Make sure your sticks etc. are properly calibrated. If in doubt, recalibrate (**SYS -> HARDWARE -> CALIBRATION)**.

3.4 FAMILIARISATION

In this step, you'll get familiar with changing flight modes etc. The receiver is not needed.

- With the motor disconnected, practise motor arming and disarming (see Section 2.7).
- With motor disarmed and the brake stick in Off position, activate Thermal, Cruise, Power, Speed
- If enabled, activate Thermal2 and Speed2 modes (see Section 2.3)
- Apply brakes to activate Landing mode (see Section 2.3)
- Activate CAL mode and sub-modes (see Section 2.9)
- Start/stop/reset the flight timer (see Section 2.8)

A voice confirmation should accompany each action. If not, then check that the sound files have been copied correctly. Check that the volume is sufficient (**SYS > RADIO SETTINGS > SOUND**). Finally, go to the **SPECIAL FUNCTIONS** menu, and check that the SF's are enabled (Companion sometimes disables them during conversion).

If any switches need to be reversed, do so now (see section 3.2).

4 CALIBRATING THE SERVOS

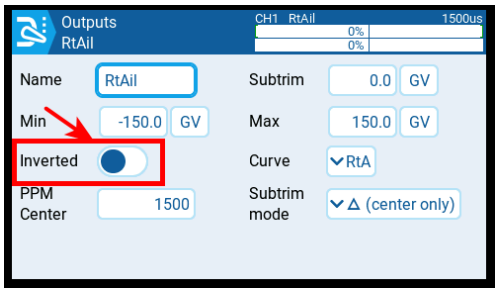
In this section you will calibrate the servos. The goals are as follows:

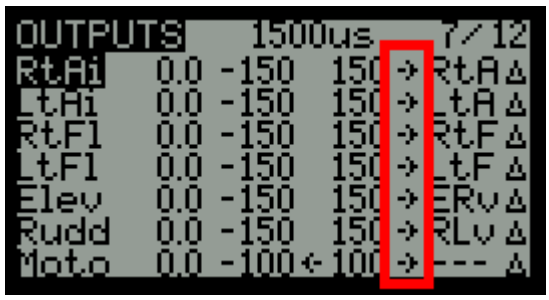
- Set direction of rotation
- Set limits and centres
- Equalise left/right control surface ranges

All adjustments in CAL mode unless noted.

4.1 SET SERVO ROTATION

First, set rotation of each servo, in the **OUTPUTS** menu. The menu differs between colour and mono radios:





Prepare as follows:

1. Switch on the transmitter (do not power up the receiver yet)
2. Move brake stick to centre
3. Enter CAL mode, and set switch **SFM** to middle.
4. Power up the receiver
5. Open the **OUTPUTS** menu

Okay, so now you're ready to set the rotations. Follow the instructions in the table below.
IMPORTANT: please observe the notes for aileron and elevator

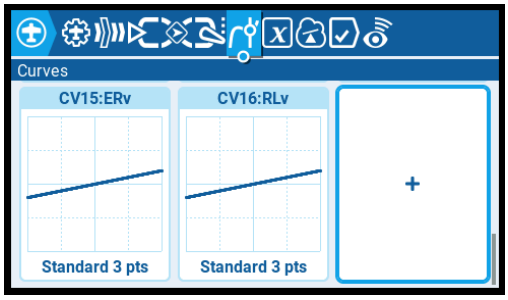
Stick command	Control surface	Notes
Aileron stick right →	RtAil goes up ↑ LtAil goes up↑	***In CAL mode, the ailerons move up together!***
Thr stick forward ↑	RtFlap goes up↑ LtFlap goes up↑	
V-TAIL only: Ele stick forward ↑	RtVee goes up ↑ LtVee goes up ↑	***In CAL mode, the elevator(s) move in reverse to normal!***
X-TAIL only: Ele stick forward ↑	Ele goes up ↑	
X-TAIL only: Rudder stick right →	Rud goes right →	

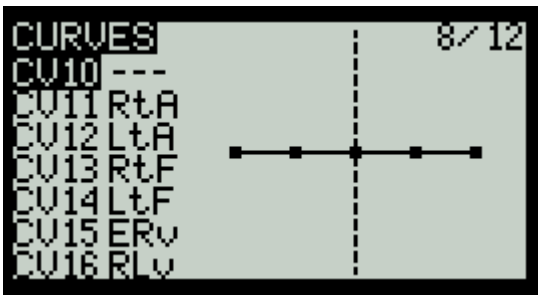
After the servo directions are finalised:

1. Exit CAL mode and enter Cruise mode.
2. Check for correct direction of aileron, elevator and rudder. ***Note*: The flaps will not function yet.**

CALIBRATE SERVO END POINTS AND CENTRES

Next, set the servo end points and centres. Adjustments are made in curves CV11 to CV16.





Note 1: all adjustments are via curves - **do not adjust Min/Max/Subtrim**.
Note 2: when setting end points, adjust for *maximum possible travel, limited only by hinge geometry.* Then refine as directed, for left/right symmetry etc.
Note 3: CAL mode must be active when making these adjustments

The following table shows the procedure for each servo:

Channel	Calibration procedure
CH 4 – Lt Flap	Start by calibrating the left flap. 1. Enter CAL mode 2. Move switch **SFM** to middle position 3. In the **CURVES** menu, open curve **CV14:LtF** 4. Throttle stick fully back (↓), adjust point 1 for lowest possible end point. 5. Throttle stick fully forward (↑), adjust point 3 for highest possible end point. 6. Adjust point 2 so it lies on the straight line between points 1 and 3.
CH 3 – Rt Flap	Next, calibrate the right flap (CH3). The goal is to precisely match the left flap. 1. Enter CAL mode 2. Move switch **SFM** to middle position 3. In the **CURVES** menu, open curve **CV13:RtF** 4. Adjust points 1 – 5 to exactly match the left flap: • stick fully back, adjust point 1 • stick ½-back, adjust point 2 • stick to centre, adjust point 3 • stick to ½-forward, adjust point 4 • stick fully forward, adjust point 5 To match the end points on left and right sides, it may be necessary to go back and reduce one or other end points for the left flap
Flap offset	Next, adjust the flap offset: 1. Enter CAL mode 2. Move switch **SFM** down. 3. Open the **GLOBALVARS** menu. 4. Now set the value of GV4:FOf for FM0:Thermal1. Adjust so the flaps follow the airfoil profile, *Note:* if you're you're not familiar with the **GLOBALVARS** menu, please see the screenshots in section 5. 5. Check that the flaps line up. If not, then redo the calibration of the right flap (see previous step), paying particular attention to the points either side of the neutral position.

Channel	Calibration procedure
V-Tail CH 5 – RtVee CH 6 – LtVee	Calibrate V-tail surfaces (**V-tail version only**) Start with the right V-tail: 1. Enter CAL mode 2. In the **CURVES** menu, open curve **CV15:ERv** • With Ele stick at centre, adjust point 2 for correct neutral • Ele stick forward (↑), set point 3 to upper limit • Ele stick back (↓), set point 1 to lower limit For the left side, repeat the above, adjusting curve **CV16:RLv** Check equal travel up/down; check left and right travels match
X-Tail CH 5 – Ele	Calibrate elevator (**X-tail version only**) 1. Enter CAL mode 2. In the **CURVES** menu, open curve **CV15:ERv** • With Ele stick at centre, adjust point 2 for correct neutral • Move Ele stick forward (↑), then adjust point 3 for upper limit • Move Ele stick back (↓), then adjust point 1 for lower limit 3. Adjust for equal travel up / down
X-Tail CH 6 – Rudder	Calibrate rudder (**X-tail version only**) 1. Enter CAL mode 2. In the **CURVES** menu, open curve **CV16:RLv** • With stick in centre, adjust point 2 so rudder is central • Move Rudder stick right (→), then set point 3 for max right movement • Move Rudder stick left (←), then set point 1 for max left movement 3. Adjust for equal travel left/right
CH 1 – Rt Ail CH 2 – Lt Ail	Finally, calibrate ailerons: Start with the right aileron: 1. Enter CAL mode 2. Move switch **SFM** to down position. The flaps will go to their calibrated neutrals. 3. In the **CURVES** menu, open curve **CV11:RtA** • With Ail stick at centre, adjust point 2 for correct centre. • Move aileron stick right (→), then set point 3 to desired upper limit. Allow for both brake and aileron movement. • Move aileron stick left (←), then set point 1 so that down-travel = up-travel. If you cannot get sufficient down movement then: • Move SA up (↑) – this reduces aileron movement by 50%. Note: this reduced rate applies only in CAL mode! • Now try again: Move aileron stick left (←) and adjust point 1 so down-travel = (reduced) up-travel. Full rate will be restored when you exit CAL; don't worry if down-travel is excessive – later adjustments in the **INPUTS** menu, and to aileron diff, will reduce the movement. Finally, adjust the left aileron: repeat the above, adjusting curve **CV12:LtA**. Check: (a) equal up/down movement, (b) left and right ailerons match.

Important note: *In the Outputs menu, you'll see an option near the top 'Copy trim to Subtrim' option – DO NOT use this, as doing so will trash you CAL settings.*

Well done - calibration is complete!

- Exit CAL mode
- Move the sticks, checking that aileron, elevator and rudder control surfaces move in the correct sense.

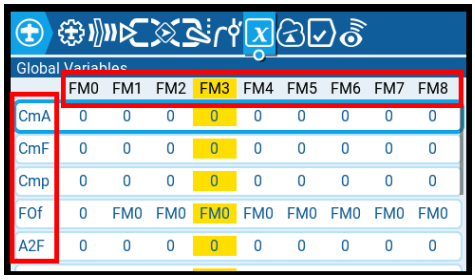
***Note 1*: the flaps will not respond after exiting CAL mode.** They will be configured in the next section.
Note 2: Movements may appear excessive – they'll be reduced in the next section.
Note 3: After exiting CAL mode, the aileron up/down travel will not be equal since aileron diff will be active. Diff is adjusted using the rudder trim.

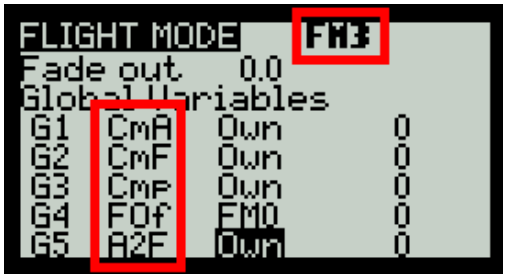
Now is a good time to make a backup (duplicate) your model setup.

5 CONFIGURING INPUTS AND MIXERS

In this section, you'll set the control movements and mixing. Most of the configuration is done using global variables (GV's). The procedure will depend on whether your radio has a mono or colour screen:

- On colour screen radios, there is a dedicated **GLOBAL VARIABLES** menu. Highlight the GV first, open the editor, then scroll down to view the relevant flight mode.
- On mono radios, global variables are accessed through the **FLIGHT MODES** menu. Select the flight mode first, open the Edit screen, then then scroll to the relevant GV.





Flight mode numbers are as follows:

Flight mode	Name	Flight mode	Name
FM0	Thermal1	**FM4**	Cruise
FM1	CAL	**FM5**	Speed2
FM2	Power	**FM6**	Speed1
FM3	Landing	**FM7**	Thermal2

5.1 CONTROL SURFACE TRAVEL AND EXPO

Adjustment point: INPUTS menu

In this section, you'll set the travel of the main flight surfaces (rudder, elevator and ailerons).

1. Activate Cruise mode
2. Open the **INPUTS** menu
3. Scroll down to [I]Ail, [I]Ele or [I]Rud as required
4. Open the input editor
5. Go the weight field, and adjust for required travel.

To add expo, go to the Curve option, and change the curve type from 'Diff' to 'Expo'. Set required expo.

Note: When adjusting aileron travel, only consider upward travel. Downward travel is affected by diff, which is adjusted with the rudder trim (do not set Diff in the input, as it would generate an asymmetric stick response).

5.2 AILERON DIFF

Adjustment point: Rudder trim
Flight modes: individually settable per FM

Diff alters the downward travel of the ailerons in response to roll commands. Diff is adjusted using the rudder trim. As the trim is moved from left to right, the amount of diff *decreases*. When flying, think of the trim as a roll rate adjuster.

The default diff range +70% (trim fully left) to 0% (trim fully right). Trim centre corresponds to 35% diff. Remember to adjust for each flight mode.

5.3 AILERON TO FLAP MIX

Adjustment point: GLOBAL VARIABLES > GV5:A2F
Flight modes: individually settable per FM

This mix causes the flaps to move in response to roll commands. Adjust for upward travel only (down-travel is subject to aileron diff).

5.4 AILERON AND FLAP CAMBER

Adjustment points: GLOBAL VARIABLES, GV1:CmA (ailerons), GV2:CmF (flaps)
Flight modes: individually settable per FM, except Landing.

In this step, you will set the camber for ailerons and flaps. Adjust for each flight mode (except Landing). A typical setup will have positive camber for Thermal modes, negative camber for Speed modes. In Cruise mode camber would normally be zero. To configure, activate the target flight mode, then adjust the GVs.

5.5 AILERON TO RUDDER MIX

Adjustment point: GLOBAL VARIABLES > GV7:A2R
Flight modes: individually settable per FM

This mix causes the rudder to move with the ailerons.

5.6 BRAKE TRAVEL

Adjustment points: GLOBAL VARIABLES GV1:CmA (ailerons), GV2:CmF (flaps)
Flight mode: FM3:Landing

Typically, flaps should move downwards a large amount. Ailerons may move up or down according to choice. To configure, enter Landing mode and apply full brakes, then adjust the GVs.

5.7 BRAKE/ROLL ENHANCEMENT

Adjustment point: *[none]*

Version 4 features a new way of enhancing roll response when braking. As the aileron stick is moved away from centre, the aileron offset due to braking is reduced to zero. No configuration is required.

To further improve turn response, you may wish to set a high Aileron to Rudder mix in Landing mode (see section 5.5)

5.8 SNAPFLAP (ELEVATOR TO CAMBER MIX)

Adjustment points: GV8:E2A (ailerons), GV9:E2F (flaps)
Flight modes: individually settable per FM (default is zero)

Snapflap can soften pitch response at slow speeds. With this mix, camber increases as the elevator stick is pulled back. To configure, pull full back on the elevator stick while adjusting the GVs.

5.9 MOTOR TO ELEVATOR COMPENSATION

Adjustment point: Elevator trim

This mix counteracts pitch changes due to motor thrust - the more power, the more elevator offset. It's active in Power mode only. The mix is adjusted using the regular elevator trim.

To configure on the bench:

1. Disconnect the motor
2. Arm the motor
3. **Mot** control fully forward to simulate max power.
4. Adjust elevator trim for required offset.
5. Test by moving **Mot** control forward and back

In Power mode: *Effective trim =* Cruise *trim + (variable) Compensation*. Therefore, ensure Cruise trim is correct before finalising the compensation.

5.10 BRAKE TO ELEVATOR COMPENSATION

Adjustment point: Elevator trim

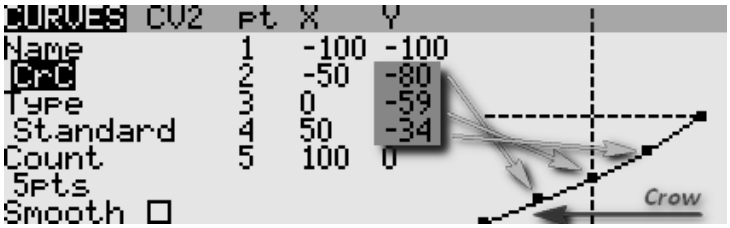
This mix counteracts changes in pitch due to brakes. The more brake, the more elevator offset. The mix is active in Landing mode only. It's adjusted using the regular elevator trim.

To configure on the bench:

1. Enter Landing mode and apply full brakes
2. Adjust elevator trim for required offset.
3. Test by moving the brake stick back and forth.

In Landing mode, *Effective trim =* Cruise *trim + (variable) Compensation*. Therefore, during flight tests, ensure Cruise trim is correct before finalising the compensation.

After initial tests, you can fine-tune the mid-brake response by editing curve 'CrC'. Alter intermediate points 2-4 only. The Figure below shows a typical compensation curve.



6 BEFORE YOUR FIRST FLIGHT

6.1 FAILSAFE AND ALARMS

Before the first flight:

- ***Important:*** set the failsafe so that the motor channel (CH7) goes to −100 on loss of signal.
- Train your ESC to recognise the motor off/on commands – consult your ESC documentation.

6.2 MOTOR SAFETY CHECK

With the motor disconnected, do a final sanity check on motor operation:

1. Enter the **CHANNELS MONITOR** menu (if necessary, do an AI search on how to access this menu for your radio)
2. Check for correct behaviour of the motor channel (CH7:Motor). Practise arming, disarming and applying throttle. Monitor the channel output, and verify that CH7 outputs −100% when idle.

Congratulations, you've finished setting up your model. Just one last thing, please back up your work now!

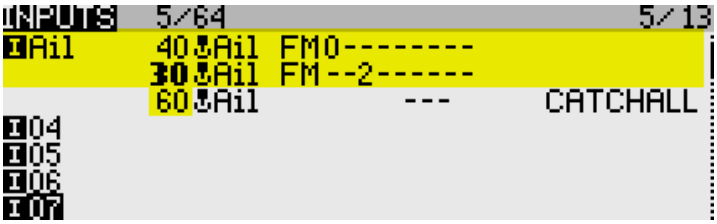
7 CUSTOMISATIONS

This section describes various simple customisations. Apply these after the basic setup is complete and backed up.

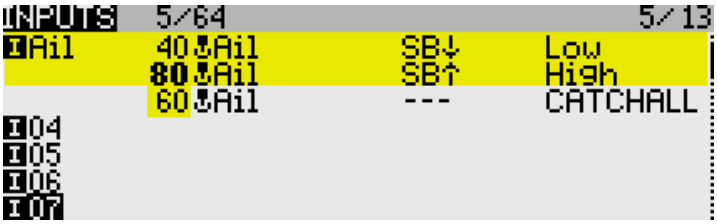
7.1 ADDING MULTIPLE RATES

There is no dedicated rates menu in EdgeTX. Instead, you add extra lines in the **INPUTS** menu, each specifying a different rate. You can associate each line with a flight mode (recommended), or a dedicated rate switch.

Example 1: Aileron rates per flight mode: FM0 40%; FM2 30%; other fm's: 60%



Example 2: aileron rates switch via SB.
SB↓ 40%; SB↑80%; remaining position (SB—): 60%



Safety note: In the examples above, you'll see that the last line (labelled 'CATCHALL') has no conditions attached. The Catchall line must be the last in a group – it acts as a fallback in case none of the previous lines match. *When adding a new line, always add it above the Catchall line.*

Flight mode numbers:

Flight mode	Name	Flight mode	Name
FM0	Thermal1	**FM4**	Cruise
FM1	CAL	**FM5**	Speed2
FM2	Power	**FM6**	Speed1
FM3	Landing	**FM7**	Thermal2

How EdgeTX handles rates and expo
Starting with the first Input line in a group (rudder/elevator/aileron), EdgeTX reads the flight mode and/or switch. If these correspond to the actual FM and switch states, EdgeTX uses the rate and expo values specified in that line.

If there is no match, EdgeTX advances to the next line and repeats the test. The cycle is repeated until either a match is found or the end of the input list is reached. If no match is found in any line, the control will be inoperative. As a defence against this possibility, the last line should be a 'CATCHALL' with all flightmodes checked and no switch.

Note: If both flight mode and switch are specified in the same line, both must be satisfied for the line to be active.

7.2 ADJUSTING BRAKE STICK DEADBAND

The brake control incorporates some deadband at the idle end to help prevent accidental deployment. The default value should be fine for most pilots; however, it can be adjusted as follows:

1. Go to Curves menu
2. Open Curve4:CCt
3. Adjust pt2:x. Decrease value to increase the deadband. Default value is 90.

7.3 SELECTING THE ARMING METHOD

There is a choice of three arming/disarming methods, so you can choose your own balance of security and ease of use. The choice is stored in logical switches L4 and L5.

Safety note: If you're not 100% confident with data entry, then consider sticking with the default setup.

Method 1 (default): stick in corner, pull momentary switch

This method uses the momentary arming switch **Mom.** It is the most secure and is recommended for beginners and sport flyers.

- *To arm*: motor lever **Mot** at idle. Full back on elevator stick, full right aileron. Pull momentary switch **Mom** and hold until confirmation
- *To disarm*: pull **Mom** until disarm confirmation

Settings: Logical switch L4: set V1 = L30
Logical switch L5: set V1 = L31

Method 2: Long pull momentary switch

This method is better suited if you may need to re-arm in flight.

- *To arm*: motor lever off. Pull momentary switch **Mom** until arming confirmation
- *To disarm*: pull **Mom** until disarming confirmation

Settings: Logical switch L4: set V1 = L35
Logical switch L5: set V1 = L36

Method 3: 'Smart' switch

This method offers quick arming and disarming via a 'smart' 2-position switch – it's smart because the motor is disarmed at startup *regardless of the switch position.* So switch checks are not required at startup. To use this method, first set the source of the **ArS** input to a spare 2-pos switch.

This method is inherently less secure than the first two and is for experienced flyers only.

- *To arm*: motor lever off, switch **ArS** up then down.
- *To disarm*: **ArS** up

Settings: Logical switch L4: set V1 = L38
Logical switch L5: set V1 = L39

8 MAKING YOUR OWN MODS

If you wish to make your own modifications, please study the Excel documentation carefully and make sure you understand the implications of any changes. Recommended workflow as follows:

1. Setup your model as described in this manual
2. Backup your work
3. Apply your modifications incrementally, testing and backing up as you go along.

9 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 EdgeTX.

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

If in doubt, don't fly!!

10 CONTACT

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