

Duraflly Excalibur 2 servo wing setup for FrSky Taranis v1.0



This OpenTX v2.0 setup was created for the Duraflly Excalibur warmliner, but should work well for any warmliner or hotliner with a servo in each wing. In this setup the model has ailerons connected via channels 2 and 3, with the V-tail servos on channels 4 and 5.

There are two variants in the EEPE file – a standard version usable with any transmitter mode, and a modified version to help for right handed mode 1 (throttle right) flyers with launching.

Standard version (Model name – Excalibur):

- 7 flight modes (6 effective) accessed by a combination of switch SE (Takeoff, Acro and Thermal), switch SA (Acro-hi, Acro-med and Acro-low) and RS slider (Landing; overrides all other flight modes):
 - Throttle management by flight mode (max throttle = 75% in Takeoff, 90% in Thermal and Landing, 100% in Acro modes).
 - Triple rates in Acro on switch SA; all other flight modes have a single rate.
- Custom throttle curves (Curves 1, 4) to remove non-linear ESC response (will need to be tuned).
- Differential 15% (needed to eradicate negative differential associated with mechanical setup).
- Landing mode:
 - Custom curve (5) gives throttle from 0-90% in top half of throttle stick throw only.
 - Bottom half of throttle stick throw reflexes ailerons as spoilerons (curve 6).
 - Beep at mid throttle (transition point)
 - Coupled aileron to rudder mix activated automatically (30%).
 - Differential suppression in landing mode (negative diff applied gradually as spoilers deployed; curve 7)
- Ailerons droop 15% in thermal mode.
- Adjustable snapflap (elevator to flap) mixing:
 - Snapflap volume adjustment on S2.
 - Snapflap off when SG↑.
- Sticky throttle cut (Thr at zero AND switch SF↓) with pre-flight check reminder.
- Max power warning after 25 seconds at full throttle to avoid motor overheating.
- Flight countdown timer (reset by throttle kill on switch SF) and total model time timer
 - Timer set at 3.30 of throttle on time.
- Flight time remaining called out by short press of switch SH.
- RSSI called out by long press of switch SH.
- Speaker volume adjustable via pot S1.
- Model name announcement on start-up/selection.



Optimised Mode 1 version (Model name – ExclbrMd1):

This has all the same features as the standard version, but with a few tweaks to allow right handed mode 1 pilots whose throttle is on the right hand stick to launch the model more easily. Changes vs. the standard version:

- Adjusted sticky throttle cut incorporates 4 checks before throttle activated (activation only if Thr at zero AND Switch SE↑ AND slider LS <-90 AND switch SF↓)
- Throttle up for launch on LS (Takeoff flight mode):
 - Takeoff mode automatically selected and called out when throttle activated.
 - Throttle stick has no effect below $\frac{3}{4}$ travel in Takeoff mode, but throttle can be added via slider LS to 75% for launch.
 - After launch moving the throttle stick above $\frac{3}{4}$ travel automatically selects Acro flight mode and disables throttle on LS.
 - Takeoff mode cannot be reselected in flight - only by activating the throttle cut and setting the throttle stick to zero AND switch SE↑ AND slider LS <-90 AND switch SF↓ is it re-enabled.

Audio callouts and model image - both versions

All changes are confirmed verbally when activated, and the sound files used are attached with the EEPE – simply paste them into the Sounds folder on your Taranis. A model image for the Excalibur is also included in the ZIP file to copy into the BMP folder on your SD card. Happy flying!

Matt Brett, Jan 2017

Pre-flight checks / Disclaimer

Although this setup has been tested in flight and in OpenTX Companion, ***it is up to you as the pilot to ensure all controls respond as expected under all conditions.*** I cannot be held responsible for any bugs in the setup or documentation, so please remember to check all aspects of your model setup thoroughly before flying!