VintageTx Converted Transmitters - Quick Start Guide

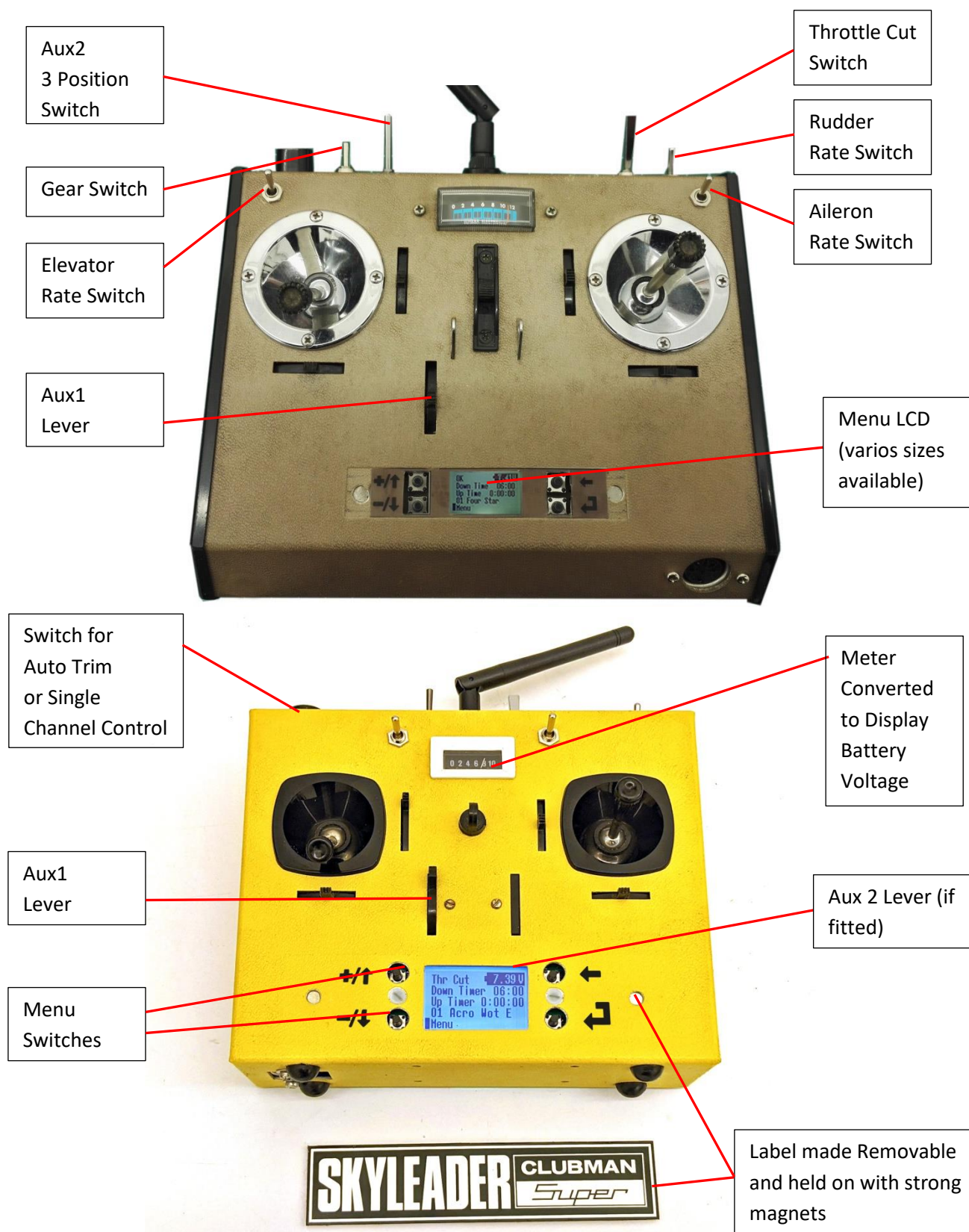

Aux2
3 Position
Switch

Gear Switch

Elevator
Rate Switch

Aux1
Lever

Throttle Cut
Switch

Rudder
Rate Switch

Aileron
Rate Switch

Menu LCD
(varios sizes
available)

Switch for
Auto Trim
or Single
Channel Control

Aux1
Lever

Menu
Switches

Meter
Converted
to Display
Battery
Voltage

Aux 2 Lever (if
fitted)

Label made Removable
and held on with strong
magnets

Figure 1. Typical VintageTx Modified Transmitters

Table of Contents

Specification

- 8 channels
- LCD 128x64 graphics display with LED backlight and 4 programming switches
- 10 model memories
- 10 character model names
- Auto-trim setting on Aileron, Elevator and Rudder via a pushbutton (trainer/buddy-box switch)
- Trim memories on Aileron, Elevator, Rudder and Throttle tick-over
- Separate inputs for electrical trims as found on many sets with open gimbal sticks such as Kraft, Pro-Line etc.
- Sub trims on all output channels
- End point adjust on all output channels
- Dual Rates and Expo on Aileron, Elevator and Rudder
- Servo Reverse on all output channels
- Freely configurable output order/assignment for all channels
- 8x programmable free mixes (Pmix)
- "Servo slow" on any channel as a Pmix option, adjustable from 0 to 10 seconds
- Elevons (delta and flying wing) mix
- V-tail mix
- Aileron to rudder mix (coupled aileron/rudder)
- Aileron differential mix
- Throttle Curve Mix
- Single channel compound escapement emulation with optional 2 or 3 position blip throttle and optional kick up (or down if preferred) elevator
- Single channel sequential escapement emulation with optional beeps to indicate next direction
- Up and Down timers that can run independently of each other
    - Up timer (selectable on rudder rate, throttle cut or gear switch)
    - Down timer with countdown alarm (adjustable on/off as % of throttle joystick position or rudder rate, throttle cut or gear switch)
- Operation from 6.0V to 12.0V to suit to suit 2S Lipo or Li-Ion, 2S/3S LiFe and 6S-8S NiMH. If using 2S LiFe ensure the 2.4GHz module will operate at 6.2V, their usable minimum.
- Digital voltage read-out with low battery alarm (adjustable to suit the battery used)
- Output for the existing meter with trimmer adjustments to give full scale meter at the nominal maximum battery voltage to suit most brands
- Inactivity alarm (adjustable1-15 minutes)
- Throttle Lock with arm/reset. On power-up or when a different model memory is selected, the transmitter will output closed throttle until the joystick has been closed to reset/arm.
- Two Throttle Cut modes: Throttle Cut and Throttle Limit.
    - Throttle Cut mode operates when the switch is active
    - In Throttle Limit mode, when the switch is operated, the throttle will not go beyond this point, so I/C models can be safely carried out to the patch without worry if the throttle joystick is inadvertently opened, the motor will not go past the limit.
- The throttle joystick can be "swapped" with Aux1, Aux2 or the Gear switch. This is used when flying powered gliders so that what would be the throttle joystick for a powered aircraft can be used for flaps/spoilers/crow and the motor controlled by the Aux1, Aux2 or the Gear switch, with the throttle reset/arm, throttle cut and countdown timer still working
- Alarm if the trims are not centred at start up or a different model is selected
- Tested with the following modules: FrSky™, LemonRx™, OrangeRx™, Spektrum™ DM8, DM9 (case removed), Jumper 4IN1 Multi-protocol (case removed), Jeti TU and Futaba™ TM-7 and TM-8 (case removed).

Introduction

This "Quick Start Guide" covers just the basics of a VintageTx converted transmitter. Please refer to the "User Manual" for full details.

Every VintageTx converted transmitter will have a slightly different layout, so there may be some small differences in the switch and auxiliary layout between the instructions and your transmitter, but the programming will be identical.

Home Menu

Status / Alarms		Battery Voltage
Model 1 Selected (Mini Pulse in this case)		Down Timer (6 minutes left)
Cursor at "Menu Select"		Up Timer (Not yet started)

Figure 2. Home Menu Showing the Various Parameters

The Home Menu is displayed when the transmitter is powered on. It displays the parameters that are commonly needed, the transmitters' status/alarm, battery voltage, down and up timers and which model is selected. The timers and the model select can be accessed directly from the Home Menu.

Status/Alarms.

There are various statuses and alarm messages that can be displayed at the top left of the display on the home menu and some have an audible alarm. If there is more than one alarm or message the one with the highest priority will be displayed, but in reverse text to indicated there are other messages or alarms active, but not displayed. To view all status/alarm messages use the cursor keys +/↑ and -/↓ to move the cursor in line with the status and press the ↵ key. Press the press ← key to return to the main menu.

Down and Up Timers

There are separate down and up timers that run independently. They can be adjusted and reset directly from the Home Menu.

To select the Timer Adjust Menu, use the cursor keys +/↑ and -/↓ to move the cursor in line with the timer and press the ↵ key.

To reset a timer, again use the cursor keys +/↑ and -/↓ to move the cursor in line with the timer to be reset and press ← key for 2 seconds.

Model Select from the Home Menu

The Home Menu shows which of the 10 models is currently selected. To change models, use the the cursor keys +/↑ and -/↓ to move the cursor in line with the model selected and press the ↵ key.

Selecting the Menu's

The Menu's for programming are accessed directly from the Home Menu. Use the cursor keys +/↑ and -/↓ to move the cursor in line with the Menu (the cursor is usually there by default) and press the ↵ key.

Programming Basics

Cursors

The cursor can take one of three forms, the "Select Cursor", the "Underline Cursor" and the "Edit Cursor".

The Select Cursor

Figure 3. Home Menu with the "Square" Cursor

The "Select Cursor" (rectangular) selects sub-menus or other options by pressing the ↵ (enter) key. In Figure 3 above, pressing the ↵ key will open the Main Menu.

The Underline Cursor

Figure 4. Trim Menu with the "Underlined" Cursor

An "Underlined" cursor can be moved by the cursor keys +/↑ and -/↓ to the value to be edited/altered. When the cursor is at the value to edit, press the ↵ to select the "Edit" cursor. In Figure 4 the cursor is lined up to edit the Aileron Trim. If the ← key is pressed, you will return to the previous menu.

If the cursor is moved up or down with the +/↑ or -/↓ key and it reaches the top or last entry, it will either wrap around or if the menu is one of multiple menus (such as rates/expo) it will roll to the next page.

The Edit Cursor

Figure 5. Trim Menu with the "Edit Value" Cursor

The "Edit" cursor has the value to be updated highlighted (reversed text) as in Figure 5 above. It can be incremented or decreased with the cursor +/↑ or -/↓ keys.

If the +/↑ or the -/↓ key is pressed and held, the cursor or the value "auto repeat" and increases or decreases without having to press the keys repeatedly.

If the +/↑ or -/↓ keys are pressed simultaneously together the value is reset to its default value.

Once finished press either the ↵ or ← key. The cursor will return to "underlined" cursor and the cursor can be moved up/down again.

The edited values don't get saved to EEPROM (the non-volatile storage that is saved when the power is turned off) until you press the ←key to leave the menu. If you have entered a value, but don't want to save it, turn the transmitter off. WARNING - do not do this with a running engine or with an electric powered aircraft with the battery connected, as if the failsafe is not set correctly the motor could start unintentionally.

Menu Organisation

The Main Menu is split into two pages with all the main options such as trim, sub-trim, reverse, rates/expo, end point adjust etc. as sub-menu's. The menu structure is graphically shown in Figure 6 on the following page.
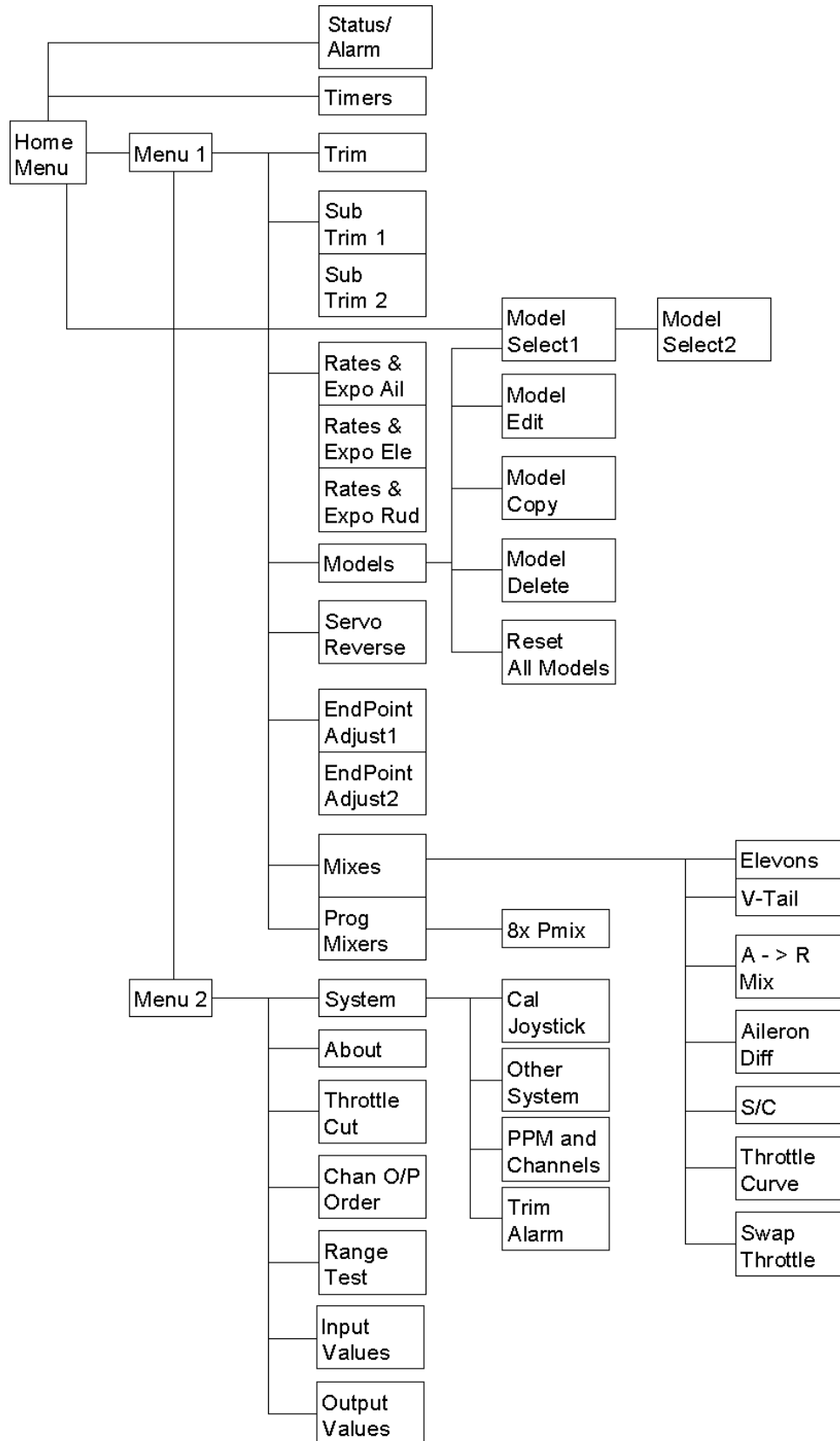
Status/
Alarm

Timers

Home Menu — Menu 1 — Trim

Sub Trim 1

Sub Trim 2

Model Select1 — Model Select2

Rates & Expo Ail

Rates & Expo Ele

Rates & Expo Rud

Models — Model Edit

Model Copy

Model Delete

Reset All Models

Servo Reverse

EndPoint Adjust1

EndPoint Adjust2

Mixes — Elevons

V-Tail

Prog Mixers — 8x Pmix

A - > R Mix

Aileron Diff

Menu 2 — System — Cal Joystick

About

Throttle Cut — Other System

Chan O/P Order — PPM and Channels

Range Test — Trim Alarm

Input Values

Output Values

S/C

Throttle Curve

Swap Throttle

Figure 6. Menu Structure

Main Differences to Other Computer Transmitters

Joystick trims

The biggest difference between a VintageTx converted transmitter and a modern computer transmitter is the joystick trims, on a retro set they're mechanical and on a modern set they're switched/digital. This does make slight differences to how you use the VintageTx transmitter.

The Issues with Mechanical Trims

There is no denying that mechanical trims can have some disadvantages on a computer transmitter:

- If rates and/or expo are selected it makes the mechanical trims less sensitive/effective
- If the mechanical trims are off-centre for one model, unless they are re-centred they will have an effect on all other models selected,.

The above issues are solved if all models are flown with the mechanical trims centred. The VintageTx transmitter tries to make this as easy as possible.

Features Provided to Overcome the Above Trim Problems

The VintageTx has trim memories just the same as any other modern computer transmitter, they are just set in a different way. A VintageTx converted transmitter needs a push button switch or sprung toggle switch that is used for "Auto Trim". Many retro transmitters have a push switch fitted for the "Buddy Box", but if one was not originally fitted, a push switch or sprung toggle switch will need fitting (available as an accessory).

Trainer/Buddy-Box Switch used for "Auto-Trim"

Figure 7. Switch used to automatically set the

When you press the switch, it adds/subtract the amount the joysticks/trims are from neutral to the trim memories. There should be a short bleep confirming the press. If there is a long bleep it indicates that one or more of the Trim memories is at its minimum or maximum value and can't be altered further.

Once pressed you'll find you should be able to return the trims to centre and the model will be in trim. It is as easy as the switched/digital trims on most modern computer transmitters, just different.

Alarm If the Transmitter is Turned On with the Trims Not Centred

Figure 8. Transmitter Switched On with Trims not Centred (Up Elevator Trim in the above)

If you turn on the transmitter or select another model with the trims not centred, it alarms and indicates which trim is not centred (A, E or R) and which direction the trim is from centre, in Figure 8 above it is indicating that the elevator trim is not centred and is in the "up trim" position.

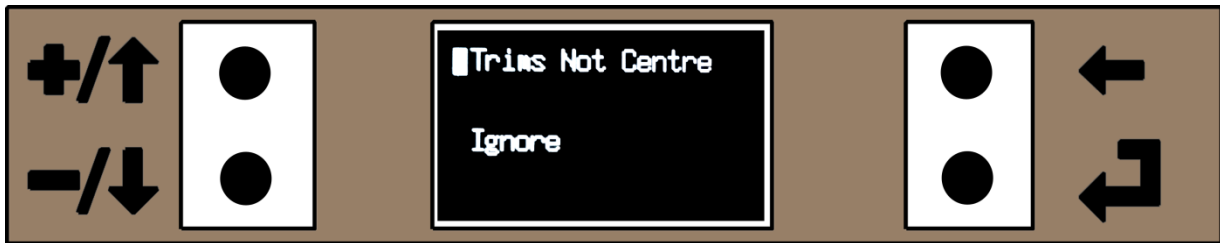## Selecting Another Model Memory with the Trims Not Centred

Figure 9. Selecting Another Model Memory with the Trims Not Centred

If you try to select another model memory with the trims non centres, it also alarms and displays a warning message (similar to when the transmitter is turned on with the trims not centred), with the option to ignore or return or you can centre the trims and the alarm message is cancelled.

If you return to the home menu, the trim which is not centred will be displayed. It is suggested that if the trims were moved there to trim the selected model, the "Auto Trim" switch is pressed, then the trims returned to neutrac/centre.

Advantages of Mechanical Trims

Mechanical trims on retro sets do have a number of advantages over modern digital trims. When test flying a model, they are far quicker to operate, especially to the maximum. And once they have been moved, it is easy to "feel" their positions, which is not possible with digital trims. They can also be used to trim models where there is a trim change with engine on and off such as vintage models (though this trim change can be "programmed out" with Pmix).

Throttle Trim

The Trim memory for the throttle channel is labelled "Tick Over" and it only adjusts the tick-over setting, not the whole throttle range. To set an engine up, use the End Point Adjusts to mechanically limit the carburettor movement, then use the "Tick Over" trim to get the tick over set correctly.

Throttle Trim on Electric Powered Model

With an electric powered model, the throttle output with the throttle joystick closed and the mechanical trim up maybe enough to start some ESC (electronic speed controllers) and motor. Therefore it is quite normal to have the "Throttle Trim" set to -127, to ensure the joystick has to be opened a few "clicks" before the motor starts.

Throttle Cut

The Throttle Cut function is used to stop an electric motor from running. For I/C powered aircraft, Throttle Cut is not required as the engine can be stopped by closing the throttle joystick and trim fully (this gives the same output as the Throttle Cut), but it may be preferred due to familiarity using it on other transmitters. But it is definitely recommended to use Throttle Cut on electric powered aircraft so that if the throttle joystick is inadvertently advanced, the motor will not start.

 It is activated with the selected switch on and the throttle joystick is closed (with trim in any position), but once active can only be turned off with the throttle joystick closed, so if the throttle is advanced with the Throttle Cut switch on and then the switch is turned off, Throttle Cut will remain on. The user can select from the throttle cut switch, rudder rate switch or gear switch to control the Throttle Cut. Remember that Throttle Cut for an electric powered aircraft is just another level of safety, but it should never be used as a substitute for having the model properly restrained or other safety procedures ignored. The only way to make the motor on electric powered models completely safe is to disconnect the battery.

Throttle Limit

Throttle Limit is provided as an alternative to Throttle Cut for I/C powered aircraft as Throttle Cut is not needed to stop an I/C engine as the mechanical throttle trim can be used. When the selected switch is operated, the throttle output will be limited to that output setting as a maximum, even if the throttle joystick is opened further or is fully opened. The throttle can be reduced however.

Throttle "Lock" at Power On

When the transmitter is powered on or a different model is selected, with the throttle joystick open, it will beep an alarm and will "lock" the throttle output "fully closed" until the throttle joystick is fully closed to "enable" it. Once "enabled" the throttle joystick will work as normal. This feature can be disabled for flying gliders when using the "throttle" joystick for flaps of spoilers.

Wing Types

Many transmitters offer various different model "wing types", the VintageTx encoder has only one type, the ubiquitous "two servo wing" with two aileron servo's, one on the right hand aileron the other on the left hand aileron (right and left aileron channels).

If there is only one aileron servo, then just ensure that the aileron differential mixer is set to 0 (which it is by default), then you can use either right or left aileron channels for the ailerons.

If more complex wing types are required such as a "4 servo wing" with two aileron and two flap servos, then these have to be programmed with Pmix (programmable mixers), flapperon and crow/butterfly mixes are possible. See the examples in the "User Manual" for full details.

Alarms and the Sounder

As the VintageTx display will probably be hidden behind the manufacturers label or in the rear of the transmitter (behind the back cover), extensive use is made of the sounder to indicate various alarms or other status information such as the countdown timer.

To differentiate between the different alarms and status information, each has an individual on/off pattern as follows:

Alarms
- **Low Batt** (Low Battery Voltage): 0.22 seconds On, 1.1 seconds Off, continuous
- **Trims** (Trims not Centred) : 0.22 seconds On/ Off, continuous
- **Inactive**: 0.88 seconds On, 1.1 seconds Off, continuous
- **Thr Cut/Limit** and **Thr Lock** (Throttle Lock, Throttle Limit and Throttle Cut): 0.88 seconds On, 0.22 seconds Off, continuous (these two alarms have been grouped together as they have the same effect). The sounder for the Throttle Cut and Throttle lock can be inhibited

Status Information

The Status information events that bleep the sounder are the following:

Down Timer.

- There are two down timer sounder modes, Elec (electric) and I/C.
- For Elec sounder mode the following bleeps:
    - Every minute above 3 minutes: 0.2 seconds single bleep
    - 3, 2 and 1 minutes: 0.66 seconds on/off for the number of minutes
    - 30 and 20 seconds: 0.33 seconds on/off three/two times
    - 10 seconds down to zero: 0.33 seconds on/off continuous while the throttle is open
    - At zero seconds: 1.9 seconds on
    - Down timer elapsed: 0.33 seconds on, 1.87 seconds off continuous while the throttle is open
- For users who find the above sounder too intrusive, the I/C sounder mode can be set so that it only bleeps:
    - Every minute: 0.2 seconds single bleep
    - 10 seconds down to zero: 0.33 seconds on/off continuous while the throttle is open
    - At zero seconds: 1.9 seconds on

Up Timer.

- Every minute: 0.2 seconds single bleep
- On ten minutes 0.8 second single beep
- Single Channel Sequential.
- When right will be selected next: 0.2 seconds on, 2 seconds off
- When left will be selected next: 2x 0.2 seconds on, 2 seconds off

Auto Trim switch pressed.

- When AutoTrim pressed and Trim memories are not to their limits: 0.1 seconds on
- When AutoTrim pressed and Trim memories are to their limits: 1.1 seconds on

Power On.

- On for 0.2 seconds to confirm it has powered up successfully.

Only one alarm will sound at a time, with the priority as above and the Status Information sounder bleeps are disabled when there is an alarm condition, so there is only ever one sequence of bleeps.