CNv Encoder Operation

**Upper Left (UL) Encoder**
Navigates left/right to desired screen.
Normal rotation scrolls through all screens sequentially.
A fast CCW spin always displays the Cruise/Climb screen.
A fast CW spin always displays the Settings Screen

**Lower Right (LR) Encoder**
Controls vario volume in Cruise/Climb Screen.
Changes Flight parameters (MC, Bugs, Audio Volume, etc.).
Supports Setup parameters (Glider Model, Weight, Constants, etc.).
Selects Display Screen Set (Flight, Settings, or Info).

### Flight Screens

- **Climb Screen**
  - 20 Second Climb Average - The top row displays the average climb rate for the last 1.2 .. 20 seconds
  - Total Climb Average - The lower row shows the average climb rate for the total climb duration. Max duration is one hour.
  - Both values are reset to zero when the manual cruise/climb switch is cycled.
  - When automatic C/C switching is in use the screen typically switches to Climb at about 45 degrees or one eighth of a turn. The two averages and the timers however are reset after the first few degrees of any turn so that if/when the vario goes into climb mode the averages (and the timers) display values from the first point at which turning was detected.

- **Cruise Screen**
  - The Netto value is the calculated vertical speed of the airmass based on the last 1 – n seconds of cruise flight where n = cruise time constant. The timer shows duration from the start of the current glide.
  - Average can be N or RN, depending on option chosen in Utility.
  - The STF is dynamic using selected flight parameters (polar, ballast, bugs and MC) and vertical air mass motion.
  - Each chevron corresponds to a five knot difference between the indicated airspeed and the speed-to-fly.
  - Wind direction and velocity are displayed lower right.

- **Mac Cready Screen**
  - The MC Value is adjusted using the LR encoder.
  - The STF is calculated using the MC setting, ship polar, dry weight, ballast, and bug % entered by the pilot. This is the STF in neutral air.

### Winds Screen
- The solid black arrow shows the direction of the wind relative to the ground track.
- Tail wind is displayed on the left side of the screen - a tail wind of two knots is depicted.
- The wind strength is 8 kts and is blowing from 352 degrees.

### Home Screen
- The coordinates for HOME and the elevation of the home field must be entered using the configuration utility.
- In this example, the glider has to turn right ~ 90 degrees to get home, but is 427 below the altitude required to arrive with zero margin.
- The arrival height differential is the distance to ground plus the margin set in margin screen.

### Ballast Screen
- Ballast may be liters or US gallons as set in the CNv Utility.
  - For US gallons the AUW of the ballasted glider is computed and displayed in lbs.
  - For liters the AUW of the ballasted glider is computed and displayed in kg. AUW = Dry Weight + Ballast

### Bugs / Clean Screen
- Estimated bug coverage is adjusted using the LR encoder.
  - 100% = no bugs.
  - The impact on L/D is displayed for reference

### Glider Settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALT</strong></td>
<td>2,684 ft</td>
</tr>
<tr>
<td><strong>GPS</strong></td>
<td>2,625 ft</td>
</tr>
<tr>
<td><strong>OAT</strong></td>
<td>55 °F</td>
</tr>
<tr>
<td><strong>ALT (Manual)</strong></td>
<td>1,486 ft</td>
</tr>
<tr>
<td><strong>OAT (Manual)</strong></td>
<td>55 °F</td>
</tr>
<tr>
<td><strong>Margin Height</strong></td>
<td>+700 ft</td>
</tr>
<tr>
<td><strong>Dry Weight</strong></td>
<td>365 kg</td>
</tr>
<tr>
<td><strong>Dry Weight</strong></td>
<td>365 +000 kg</td>
</tr>
</tbody>
</table>

**Notes**
- Dry weight is the manufacturer’s weight of the empty ship + instruments + pilot + chute + all other baggage. i.e. the actual weight of the ship with you in it - sitting on the takeoff grid - not including ballast.
A representative set of polars is available. Polar (glider) is selectable using the lower encoder. Any new polar may be defined using the configuration utility.

### Vario Settings

#### Pointer Response

Pointer Response is adjusted using the LR encoder. 2.5 seconds is the default. Pointer and Audio time constants are independently adjustable.

#### Audio Response

Audio Response is adjusted using the LR encoder. 2.5 seconds is the default. Pointer and Audio time constants are independently adjustable.

#### Cruise Response

This time constant controls the behavior of the STF chevrons and the netto (or relative netto) averages on the display.

#### TE Source

TE Probe or Electronic TE is selected using this screen set. The LR encoder toggles between two screen options:

1/ Use TE probe
2/ No TE probe

The option selected here determines which TE compensation adjustment screen (following) will be displayed.

#### TE Probe Compensation

This screen appears next with a CW turn of the UL encoder if the ‘Use TE probe’ option is selected above.

#### TE Electronic Compensation

This screen appears next with a CW turn of the UL encoder if the ‘No TE probe’ option is selected above.

#### UTC

The LR encoder is used to enter the UTC offset required for a correct local time display.

--- or ---

#### Tools

<table>
<thead>
<tr>
<th>LOGBOOK</th>
<th>PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides view of prior flight dates, duration and take-off time.</td>
<td>Allows selection of a profile from multiple options created in the PC utility and transferred to the CNv using the USB stick.</td>
</tr>
</tbody>
</table>

--- or ---

#### Gear / Spoiler Warning Activation

- Screen allows activation / deactivation of Gear and Spoilers Warnings.
- Switch connections from the gear and spoiler actuators must be made to the ADC.
- The warning will flash over the top of all screens until gear or spoiler retraction is completed.

--- or ---

#### ZERO POINTER

Screen allows pilot to position the mechanical pointer at the zero position.

--- or ---

#### Volume

Audio Level (volume) is adjusted using the LR encoder. The Lower Right encoder always functions as a volume control on the Cruise/Climb Screen.

#### Backlight

Backlight brightness level is adjusted using the LR encoder. Pilot can adjust the CNv screen backlight from 0 - 100%.

--- or ---

#### OAT

- The outside temp can be entered – if the outside temp probe is not installed.

--- or ---

#### ADC Connections

3/4, 5/6, and 7/8 pairs may be used for gear and spoiler warnings; manual cruise/climb switching; and an OAT. 7/8 can support both OAT and C/C control but ONLY if a momentary switch is used for C/C control.

The CNv PC Utility assigns function. Refer to release notes for details.