ClearNav Vario

CNv 3.6 Release - General Comments

The 3.6 release incorporates all changes made since the last public release, 3.3.3899. This includes the final versions of changes made during the 3.5.x beta releases.

To use all the features in this release, you **MUST** use a **profile** which has been produced from the **CNvUtility 3.6.2** which is also available on the ClearNav website. See the CNvUtility 3.6.2 Release Notes and Instructions.

Be sure to follow the Instructions for software and Utility installation.

The improvements in this release have been focused on supporting the pilot in flying faster – better cruising, better support for the decision of when to stop and climb, improved cruise/climb transition, and better cruise/climb averages.

For more details please see the online manuals:

https://clearnav.net/main/cn-vario_manual.html
https://clearnav.net/main/cn-vario_manual_xc.html
https://clearnav.net/main/cn-vario_manual_xc_nav.html

Recommended Initial Setup

- Create a profile in the CNvUtility 3.6.2 or onwards. On the Vario page, select the set of options as shown in the in the illustration in the CNvUtility Release Notes.
- In the CNv (Vario Settings Ribbon) set the cruise time constant to 10 seconds. This affects the cruise averages, the rate of change of the STF number, and the initial climb average after switching to climb.
- Also in the Vario Settings Ribbon, set the audio and pointer time constants to a value between 0.6 – 1.0 seconds.
- After gaining some experience with this software, the various settings may be adjusted to meet your needs.

Underlying Variometry Improvements

- Cruise averagers redesigned to work in a similar way to climb averagers
- Speed-to-fly driven by improved cruise averagers
- Relative netto is now polar-based
- Speed-to-fly dead band options
- Initial climb average improved

New Variometry features

- Cruising speed-to-fly support
    - block speed option (target speed based on MC, glider polar and wingloading; audio deadband selectable)
    - classic speed-to-fly with selectable audio deadband
- Deadband control screen (none, narrow, medium, wide) for block speed and other audio deadbands
- TE option for audio, pointer and cruise average
- Pre-empt Climb option – when flying slow enough in good air, TE audio is used and a TE average is displayed
- Circle average (instead of 20 second average) results in a more stable climb average.

Thermal Assistant

- TA Settings now appear on one screen. Pressing the "GO" button cycles through the options.
- The "Switch" and "Return" options are combined into one setting which can be "Auto" or "Manual".
- A new setting "Switch Delay" can be set at 90/180/270/360 degrees. Previously the "Auto" switch to the TA occurred at 270 degrees. Regardless of the above setting, the best direction arrow will not be displayed until a 270 degree turn has been accomplished.

Vario Audio improvements

- Audio frequencies aligned so when switching between netto, relative netto, and TE, there is no noticeable transition. Relative Netto is still recommended for cruise audio.
- New speed up/slow down tones
    - Speed-up tone: a distinctive, insistent "bom-bom-bom-bom" when flying too slowly for the airmass
    - Slow-down tone: a "bib-bip…..bib-bip…." every 4 seconds if you are flying too fast for the airmass

Other enhancements

- User setting for low voltage warning which is useful for non-lead acid batteries
- NavDisplay, Analog Display and all gps-driven graphics updated at 5Hz
- Some fast changing numbers are now displayed slower to make them more readable (eg: averages)
- Climb mode may be triggered using the left arrow button on the NavDisplay Flight Screen. (Click for momentary climb, or press and hold for forced climb)
- Thermal Map tool accessible from the Thermal Assistant screen by the up or down arrows. Pressing Go when viewing the map will access setup choices.

- Added the ability to set the primary role for a display. This allows pilots with multiple displays to set the startup screen for each display. Ex. Navigation Screen. More roles may follow…
- The software updates have been speeded up – the displays update approximately half as long
- Other slight improvements to the software update to make the chance of failure less likely

Bug fixes

- Waypoint STX file reader fixes - lower case now works in $fields:
  - "$ALTITUDE_UNIT feet"
  - "$LATITUDE" and "$LONGITUDE" north
- Task declaration from SeeYouMobile/Oudie now works when a turning point name is > 20 characters.
- Task declaration from SeeYouMobile/Oudie sometimes failed when changing command mode, as the new prompt was sent twice. Now the prompt (eg "dow>") is only sent once. This fix might cause problems if other 3rd party software relies on the incorrect behavior.
- Fix for a rarely occurring bug that could impact serial communications with a ClearNav or third party device.
- Vario could crash if equipped with two displays connected to one ADC and both displays configured with the Thermal Assistant enabled.
- A low voltage dip could turn the display(s) off. Now they will restart when the voltage recovers.
- Fault Code 7 (SD card) was sometimes triggered incorrectly.
- SFR ENL issue if CNv power cycled with engine running.
- Various minor bug fixes.
- A very rare CAN messaging bug which, as far as we know, caused no noticeable effects to users