

CNv 3.8 Release (CNv 3.8.6278, April 2021)

Introduction – ClearNav Variometer (CNv) 3.8

This is a major release, following on from the last major release 3.6.4250 (Feb 2017) and maintenance release 3.6.4512 (April 2018).

CNv 3.7 ?

This was an internal release as it only included groundwork to enable future enhancements and included no direct benefits to users.

General Comments

The 3.8 release incorporates all changes made since the last public release, 3.6.4512.

Please read the 3.6 release notes which are still relevant.

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

The main changes in this release are:

- Support for the new Colour display *
- Support for the ClearNav remote controller *
- A new (additional) user interface.
- Many of the screens have been reworked and make better use of the high resolution of the NavDisplay (aka digital display / square display).
- An enhanced licensing system

** requires new license(which will be supplied with new colour displays / remote controllers)*

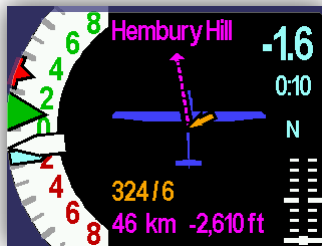
Colour Display

The new colour display is a 57mm behind the panel display with two clickable encoders (aka knobs) on the bottom corners.

Compared to the existing displays it has a more powerful processor and more in the way of memory meaning it is capable of running more demanding applications with better, colour graphics and more processing.

For now the colour display runs a similar application to the other displays with some notable exceptions:

- The main screen can show:
 - A variometer dial with supplementary information



Navigating towards Hembury Hill, 46km out, 2,610ft (well) below glide.

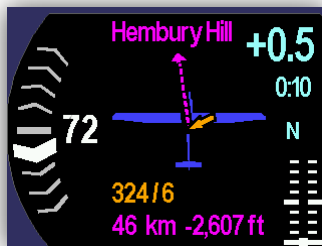
MC setting 3 (kts)

The last climb was 0.9 (kts)

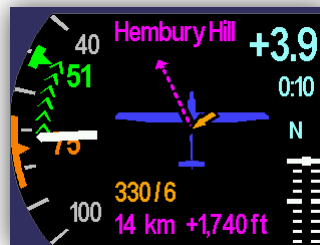
Netto average -1.6 kts for the last 10 seconds

Wind 324° at 6 (kts) – a light wind from our right

- Speed to fly chevrons



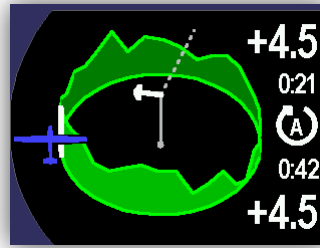
- A new speed-to-fly visualisation



This shows the **block speed** (based on MC and the polar), the classic speed-to-fly (based on MC, polar and the current airmass). Speed direction (speed up/ slow down) is done with coloured chevrons and the user should be able to correlate the vario audio / STF tones (or quiet) with what they are seeing on the screen.

In future this visualization is likely to have a white background and may be on a “vario” scale as opposed to a “IAS” scale...

- The thermal assistant has two versions
 - A smaller version inside the variometer dial
 - A full screen version (also available with this is the thermal map)



ClearNav remote controller

Any display can be paired with a ClearNav remote controller. People using this will quickly find it is the most intuitive way to interact with the vario/display and works nicely with both the new and old user interfaces. Up to two remotes can be paired (eg: for a two seater with display front and back and a remote front and back).

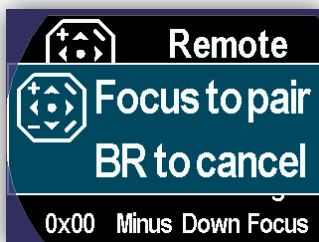
The remote controller does not have to be plugged into the display it is paired with – it only needs to be on the CAN bus.

Instructions for pairing a remote controller to a display:

1. Go to the Tools menu
2. Find the “Remote Controller” screen



3. Click the right encoder (or the GO button)



4. Click the yellow “focus” button on the remote controller and you should end up



To forget the pairing on the display, go to the same screen and click the right encoder twice (or the GO button twice).

New User Interface

A new user interface sits over the top of the existing UI. The old user interface operates much as before, with a few minor exceptions

The ClearNav ribbon

Available in most places, a toolbar, similar to the “ClearNav ribbon”, can be brought up.



At present the following tools are available: MC, STF band, Volume, Ballast, Bugs, Mark, Active Task change leg, Vario Scale, Cruise option, Brightness, Climb/cruise override. This list is likely to change and may be user-configurable in the future...

Basic instruction on how to get into the ribbon and use it follow – other than that it is fairly intuitive.

- ❖ Colour display :
 - click the left encoder to show/hide the ribbon
 - rotate the left encoder to change the selected tool
 - use the right encoder to use the tool (rotate clockwise/anticlockwise typically changes a setting or selected item, clicking invokes action)
- ❖ Digital display :
 - press-and-hold GO to shown/hide the ribbon (available most places in the user interface)
 - ALSO click the Left button to shown/hide the ribbon (for convenience, BUT only available on the flight screen)
 - Use the left/right buttons to change the selected tool
 - use the up/down/GO buttons to use the tool (up/down typically changes a setting or selected item, clicking GO invokes action)
- ❖ For a remote controller paired to a display :
 - click the MENU button to shown/hide the ribbon
 - use the left/right buttons to change the selected tool
 - use the up/down/GO buttons to use the tool (up/down typically changes a setting or selected item, clicking select invokes action)

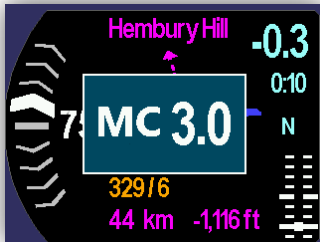
The ribbon automatically hides if the user takes no action for a few seconds.

Popup notifications

Pop-up notifications (settings changed, info, warnings, errors) make it clearer when things have changed and reduce clutter on some of the screens. For 2-seaters it makes it much more obvious that the other pilot has changed something.

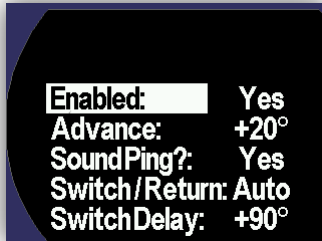
The latest software makes extensive use of these notifications and more use of them is likely in the future.

A couple of examples:



Other enhancements

- Many screens have had a makeover with:
 - improved graphics
 - automated layout and sizing
 - more consistent layout
 - more consistent controls
- Most screens on the NavDisplay make use of its high resolution – the icons, bitmaps and fonts are much more refined
- The thermal assistant settings are now on a completely separate screen (Vario Settings/TA Settings)



- The software update mechanism has been improved (but is still not perfect!).
- The licensing mechanism now includes the ability to enable specific (new) functionality or to enable it for a period of time
- A new tool “Climb/cruise override” allows for the overriding of the normal climb/cruise switching mechanism. It allow forced climb mode or forced cruise mode. This is only available on the new user ribbon.
- The NavDisplay main flight screen controls have been removed. The up/down buttons vary MC and the other functionality which was there is now on the new user ribbon. Please get used to using that!
- Many people had complained about noise the vario makes on the ground. To appease them, after about 10 seconds on inactivity (no movement etc) the vario goes into “**Auto mute**” and goes quiet. Normal vario sounds resume as soon as movement is detected or any of the following change – MC, volume, C/C switch.
- Improved availability of GPS data after hot start
- The navigation calculations are done more frequently resulting in smoother drawing of various navigation-related elements (arrows, direction bug, map rotations etc)
- If a USB flash drive failed to mount within a certain time, then try again with a longer delay. This might help more flash drives work reliably. *More work may be done in this area...*

Other enhancements – mainly applicable for support / testing

- Added ability to extract the profile from the vario to USB flashdrive (ask if needed!)
- Added ability to extract the license from the vario to USB flashdrive (ask if needed!)
- Software editions:
 - For most people there is only the “standard” edition
 - But a few people will be licensed for the “tester” edition with additional features and functionality for testing

Bug fixes

- GPS leap seconds are stored when the change (very rarely) and recalled at startup. This prevented a jump of a few seconds in the FR (flight recorder) logs if the unit had not been on for very long before recording commenced. This fixes the “OLC Implausible Time Records” problem.
- Complete fix / workaround for the volume problem which occasionally happen if the vario was power-cycled quickly
- Landable fields in waypoint database : When loading CUP files CUP code 3 ("Outlanding") should be mapped to the LANDPOINT attribute. The equivalent of this is already done in STX format. People would typically use this for known landable fields or airstrips. NOTE: these are not mapped to turning points (at present)
- Navigation MRU (most recently used) list was not working as intended
- The active task screen now always preselects the current leg
- The active task was deactivated when the vario had been off for a long time. It shouldn't have!
- Review Settings screen – the dry weight rounding was incorrect
- The fifth time a flash drive was inserted the mount failed

Behind the scenes

- A completely different toolset is use to build the software
- Various communications / messaging enhancements

An explanation about licenses

The new, enhanced, licensing system allows for additional capabilities and functionality to be paid for / licensed / enabled for those who want them. It also allows for time-limited trials for people to try things out. Existing systems and their XC licenses will continue to work with the new software, but without access to some of the new capabilities / functionality.

[before people start throwing their hands in the air]

As a rule of thumb existing functionality will continue to be available, along with improvements and bug fixes. Examples of this are the variometry, winds, navigation, and the user interface.

Completely new capabilities and functionality will tend to need a new license. New CNv systems will come with the new license, with all the current new functionality enabled.

If new capabilities become available which requires additional hardware (eg: the colour display or remote controller) then the necessary license will be supplied with the hardware.

If new capabilities become available which require hardware modifications or calibration at the factory / by a trusted agent then this will typically be chargeable and the necessary license will be supplied as part of this work.

Some new capabilities may be available in software and enabled with a new license.

It also helps us with development / testing, allowing developers and people who are helping out with testing to have access to new functionality which is not intended for others users.

The above is guidance in the way we intend to use the new licensing system going forward. If it works as intended then everyone will be happy and we won't have to change it. However, we reserve the right to change our licensing policy in the future.