Kobo/XCSoar Setup And Operation Notes - www.50k-or-bust.com

These notes relate to the use of a Kobo mini ebook reader modified to run XCSoar. They are my best shot at the time of writing. I cannot guarantee they are correct or represent ideal solutions but will correct and update them as and when I can. Please inform me of any errors or better solutions you may find. The index for other Kobo/XCSoar notes can be found at:

http://www.50k-or-bust.com/Kobo XCSoar/Kobo XCSoar.htm

XCSoar is optimised for use on a colour display for sailplane flying. It is very complicated and can be difficult to set up and very confusing. The object of these notes is help with some of the more obscure elements.

N.B. – See "XCSoar Altimeters and Guages Notes" for details of specific gauges.

N.B. - These notes have been upgraded for XCSoar 6.8. The main difference in earlier versions is that items shown here in Config 1 are in Config 2.

Touch Screen Problems

The touch screen works by a grid of infra red beams criss crossing the front layer of the screen. This has the advantage that it can be operated fairly easily by a gloved finger but it is not without its problems.

1) Anything, even something transparent, touching the screen will activate it. Just brushing across it with a riser when launching is enough. One way of combating this is to make a cover which can be removed after launching. The cover will have to be spaced from the screen in order not to trigger the touch screen itself.

2) Any small bits of grass lying on the screen may continuously activate it. Keep it reasonably clean. There have been reports of insects activating it.

3) Any water on the screen seems to stop it working. I recently got a few bits of snow on the screen which was OK until they melted at which point the touch screen became inoperable. It only takes a very small amount of water which may not be easily visible to stop it working. Wiping it dry seems to make it work again without the need to re-start the program.

These oddities can take a bit of getting used to but despite them I think it is quite a good system.

Device Driver Settings

For the XCSoar program on your Kobo to receive information from the GPS chip it has to be told the format of the data.

1) Start XCSoar on your Kobo. Select Config 1 and then "Devices"

2) Select device A:

3) Select "Edit" and set to the following:

Port: ttymxc0
Baud rate: 9600
Driver: generic

If that does not work you can check that the GPS chip is communicating with XCSoar.

1) Select Config 1 and then "Devices"

2) Select "Monitor"

You should see a screen with data from the GPS chip scrolling up it.

These settings are different for the Bluefly vario version.

Accessing Kobo and XCSoar Data Files Directly
(From Windows 7 or 10 Computer)

Connect the Kobo to the computer with the USB lead.

On XCSoar opening screen select "System".

On "System" screen select "Export USB Storage" - A dialogue box will appear

"Your PC has now acces to the data partition until you close this dialogue."

 and a File Explorer window should appear labelled "KOBOeReader".

When finished moving files click "OK" on the dialogue box on the Kobo system screen and the connection will close.

Accessing Kobo and XCSoar Data Files Through Kobo eReader Program
(From Windows 7 or 10 Computer)

On XCSoar opening screen select "Nickel". This boots the device into the Kobo

ereader program.

Connect the Kobo to the computer with the USB lead.

If the Kobo ereader has been set up a window "Computer Detected" will come up on the Kobo. Select "Connect" and a window should come up on the computer "KoboeReader". Select option " Open window to view files"

If the Kobo ereader has not been set up a window "Welcome to Kobo!" will come up on the Kobo. - Select - "Don't have a Wi Fi network?" and a window should come up on the computer "KoboeReader". Select option " Open window to view files"

The folder "XCSoarData" is the location where you should put mapping, airspace and other XCSoar data files and it is where you will find logs and other files created by the XCSoar program.

After ejecting the ereader from the computer switch the Kobo off by sliding the on/off switch and holding it for a few seconds. The screen should come up "Powered off". When next switched on it will come up with the XCSoar opening screen.

Windows 10 Connection Problems

On my particular computer the USB port system sometimes seems to get confused and not able to "see" the Kobo. For some reason making a print on my USB connected printer seems to fix this.

"Expert" Setting

Because XCSoar is so complicated its writers have made it so you can have two levels of access to setup parameters, "normal" which limits access and "expert" which allows access to everything. If you cannot access something you think you need it may be because "expert" is not activated. I leave mine in "expert" mode all the time. To set "expert" mode use Config 1 / System , and tick the "expert" box. Some of the parameters mentioned below can only be accessed in "expert" mode.

File Organisation

Subfolders can be put in the XCSoarData folder to help organise data files. XCSoar looks inside all subfolders in XCSoarData when new files are selected. You can have subfolders organised by , say, country, area or sites.

N.B. The locations of selected files are saved in the configuration file(s). If

you move a file from one folder to another you must re-select the file in XCSoar otherwise it will not be able to find it. When a file is selected or re-selected the configuration file is updated.

File Troubleshooting

If a file just doesn't seem to work first try re-selecting it and if that does not work try downloading another copy or a new version.

Configuration Files (.prf)

Configuration files can each hold a different setup for your Kobo. If there are more than one in the XCSoarData folder in the Kobo you will be able to select them after selecting "Fly" or "Sim" from the XCSoar opening screen. On initially setting up a Kobo there will be only one called default.prf .

In XCSoar 6.8 and later you can create a new configuration by using a simple editor:

1) From the startup screen select "FLY"

2) Select the "Profile" box.

3) Use "Copy" to create a copy of your existing profile which will then be available as an independent setup.

Profile files can also be copied from your Kobo to your computer and to other Kobos.

Map and Airspace Files

Links to files suitable for XCSoar can be found on the XCSoar site http://www.xcsoar.org/ with most airspace files available from http://soaringweb.org/ .

UKHeights File

In addition to files showing airspace a file is available which can be loaded as "More Airspaces" (make sure the "Expert" box is ticked!) showing the maximum height which can be freely flown in particular areas in the UK. This does not appear clearly or at all if not set up correctly. It is created as blocks of class G airspace so has to be set up appropriately. There is a function associated with the airspace called "Use Black Outline" which needs to be set to "on".

Config 1 / System / Map Display / Airspace. / "Unknown" at the top of the list needs to be set to "Display".

Config 1 / System / Map Display / Airspace / Use Black Outline - Set to On. (Affects all airspace)

The following should affect class G airspace only. I cannot understand how this works so if you figure it out please let me know.

Config 1 / System / Map Display / Airspace / Colours / Class G
Change Border Colour (Choose Darkest)
Change Fill Colour (Choose Darkest)

Airspace Clip

Airspace above a selected height can be hidden to reduce clutter on the display.

Config 1 / System / Map Display / Airspace / Airspace display – select "Clip"
Config 1 / System / Map Display / Airspace / Clip altitude – select clip alt.

Waypoint and Landables Visibility

Waypoints loaded from a file may not be visible. Try the following.

Config 1 / System / Map Display / Waypoints / Label visibility - Select all

Coastline Not Visible When "Terrain" Is Switched Off

The coastline is not on the "Topographical" layer of the UK map file, only the "Terrain" layer. If the terrain is turned off the coastline is not visible on the map. I put a development ticket in to XCSoar requesting the coastline should be put on the topographical layer. Unfortunately it was rejected.

However, the coastline can be made visible without ground terrain (hills and stuff) being visible by modifying the terrain settings.:

Config 1 / System / Map Display / Terrain

Terrain Display: On
Terrain colors; White
Terrain contrast: 0 %
Terrain brightness: 0 %

Ground Track Line

This shows the track you are making across the ground. You can show or hide it by using:

Config 1 / System / Map Display / Elements / Ground Track (On / Off)

Glider Polar

The glider polar is in the form of a .plr file which has to be placed in the XCSoarData directory. To use this file an aircraft identity has to be created:

Config 1 / Plane / Edit / Polar / Import – Select polar - OK

Generate a registration – Sailplane pilots will enter the registration but for paragliding I use the glider type instead – OK

In "Planes" a .xcp file will be created – Press "Activate"

The file may not activate until XCSoar is restarted.

Screen Choices

In flight different screens are selected by a left-right or right-left swipe gesture. Screens available to the pilot are selected by:

Config 1 / System / Look / Pages

This shows a list of selected pages to which other pages can be added or deleted. Pages with "(Auto)" in the name will automatically change their InfoBoxes and other displayed information depending on whether XCSoar detects the aircraft is circling, cruising or in a final glide. Personally I find too much automation of what is shown rather confusing. You can also choose what appears on each page by using the "Main area", "Infoboxes" and "Bottom area" boxes.

The following System page is for choosing the infoboxes on any page:

Config 1 / System / Look / InfoBox Sets

Competition Tasks

Apparently the competition format of PG and HG tasks is different from that of sailplanes so the unit is not very suitable for HG or PG competitions. I have no idea if any attempt is being made to sort this out.

Logging

Auto logging on XCSoar is not very good for paragliders because start and stop detection is based on GPS ground speeds more appropriate to sailplanes. If you launch in a strong wind it may not detect the launch immediately and if you are flying about and then find yourself gale hanging it may detect that as a landing.

I prefer to set the auto logger (Config2/System/Setup/Logger/Autologger) to "Start Only". Once on the hill I keep the Kobo switched on which also keeps the GPS running. When I get home I look at the trace to get the individual flight times. With the auto logger set for "Start Only" the logger can still be started manually.

.IGC Log Files

The .IGC log files created by XCSoar are not currently accepted for PG and HG leagues or records. If using XCSoar the best way to obtain logs for competition and league entries is probably to have a separate GPS as an independent logger.

Log File Dates

The names of .IGC log files contain the date on which it was logged generated from the GPS time. e.g. 2014-11-30-XCS-AAA-01.igc

However the file date associated with it comes from the Kobo system time. To ensure this matches it is necessary to make sure the date and time are set correctly in the Kobo e reader settings.

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