XCSoar and Airspace

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30th March 2018
(updated August 2018, Feb 2019, May 2019)

Outline

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2. XCSoar preliminaries
   - install apps from Play Store
   - background map and waypoints
3. Airspace on XCSoar
   - fixed airspace
   - notams
4. Using XCSoar

Why use a moving map?

- shows where you are
- warns when close to airspace
- reduces workload
- essential at, say, FL120
- "strongly encouraged" for CCE
- shows more than chart does
- makes task flying easier
- records your flights
- BGA says so!

But, you still need a current chart for XC flying...

Legal requirement, gives "bigger picture", works if the batteries fail.
NB Nothing to stop you adding relevant lines to your paper chart.

Hardware and software

XCSoar runs on Android:

- Phone or tablet with built-in GPS
- Yotaphone: e-ink screen and built-in GPS
- E-readers: eg Kobo – need to supply GPS signal

Other options: SeeYou Mobile on Oudie, Nano[4] flight recorder
EVFR basic on Android or iPhone

Decide how to mount device in the cockpit and how to power it.

See also fasvig.org/nav: advice and guidance from FASVIG.

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Installing XCSoar and other apps needed

This is for Android devices. Start by going to the Play Store.

1. install XCSoar
2. install a file manager
   (eg File Manager from "ZenUI, ASUS Computer Inc.")
3. install Spine

Spine is for notams. Not mandatory... but why wouldn't you?

Background UK map (1) – from within XCSoar

Recent versions of XCSoar allow data download within the app.
(But it's not clear where the files come from.)

- Double tap on XCSoar screen to bring up the menu
- Config...
- ...System...
- ...Site Files...
- ...Map database...
- ...Download...
- Select UK_HighRes.xcm

Very easy... but personally I prefer the standard resolution file, which loads faster.

BGA waypoints (1) – from within XCSoar

- Double tap for menu
- Config...
- ...System...
- ...Site Files...
- ...Waypoints...
- ...Download...
- Select United Kingdom.cup

Again, very easy... but I prefer the BGA file that includes waypoint details.

Also, the download doesn't work for me!
You can get this file from xcsoar.org though.

Background UK map (2) – from XCSoar website

Do this on your Android device if possible, to make step 5 simple.
(Otherwise you have to transfer the file to the device.)

1. Go to xcsoar.org
2. Follow Maps, Waypoints,... then Download Maps
3. Click on the UK map and select Standard Map
4. Save UK.xcm file
5. Move the UK.xcm file to XCSoarData folder

I will do all file moves together at the end.

BGA waypoints (2) – from soaringweb

soaringweb.org/TP/BGA

1. Scroll down page...
2. Files formatted for downloading and importing into your programs
3. Click on ☞
4. Download SeeYou version
5. Move the .cup file to XCSoarData

Additional resources

Turning Point Search – very useful for checking TP locations.
tpselect software, runs on Windows.

Another useful waypoint file

Landable fields database from Aboyne's website.

1. Go to members' page: ~~deesideglidingclub.co.uk/members.html~~
2. FIELD LANDING DATABASE link at bottom of page
3. Takes you to a soaringweb page – pick SeeYou file as before
4. Move deeside.cup file to XCSoarData

Update, Feb 2019

Aboyne have a new website and that link doesn't work now.
They're not maintaining the file anymore.

May 2019 Addendum

Alternative Waypoint and OutLanding files

Paul Ruskin – airfields and outlanding fields, with R/T frequencies.

- See members.gliding.co.uk/2018/05/01/uk-airports-strips-fields-and-frequencies-file/
- You can join his mailing list to get notified of updates
- Includes TP list with frequencies for airfields that are TPs...
- ...use this instead of the soaringweb one?

Customising waypoint files

These are all text files and you can edit them if you wish.
I munge my waypoint file, because I prefer trigraphs on the map.

Title,Code,Country,Latitude,Longitude,Elevation,Style,Direction,Length,Frequency, Description
"Aboyne Bridge","AB1",UK,5704.213N,00247.239W,450ft,1,,,,"Turn Point, Road Br over R Dee, S side of village bet A93 and B976, 2NMl E of airfield, under CTA base 3000. Easy to find and on chart."
...
CodeTitle,Code,Country,Latitude,Longitude,Elevation,Style,Direction,Length,Frequency,Description
"AB1 Aboyne Bridge","AB1",UK,5704.213N,00247.239W,450ft,1,,,,"Turn Point, Road Br over R Dee, S side of village bet A93 and B976, 2NMl E of airfield, under CTA base 3000. Easy to find and on chart."
...

For N560 crossing, add extra waypoints to .cup file

"DAVOT VRP",DAVOT,,5720.700N,00405.483W,0.0m,9,,,,"N560 reporting point"
"ERSON VRP",ERSON,,5627.800N,00418.400W,0.0m,9,,,,"N560 reporting point"
"FOYLE VRP",FOYLE,,5608.567N,00422.933W,0.0m,9,,,,"N560 reporting point"
"GUSSI VRP",GUSSI,,5712.783N,00407.450W,0.0m,9,,,,"N560 reporting point"
"INBAS VRP",INBAS,,5642.000N,00414.983W,0.0m,9,,,,"N560 reporting point"
"LAGAV VRP",LAGAV,,5653.583N,00412.167W,0.0m,9,,,,"N560 reporting point"
"NESDI VRP",NESDI,,5707.300N,00408.800W,0.0m,9,,,,"N560 reporting point"

Make XCSoar pick up the files

Step 1: Move map and waypoint files into XCSoarData folder

- Open file manager app
- Steps for Asus File Manager:
  1. go to Downloads
  2. select each file to move (long press on first, then tick boxes)
  3. tap 3-dot menu (top right) and select Move to
  4. Internal storage, then scroll to XCSoarData
  5. tap ok
- Process will be slightly different in other apps, but same idea

Make XCSoar pick up the files

Step 2: Go into XCSoar.

1. Double tap ... Config ... System ... Site Files
2. Tick the Expert box at bottom left
3. Tap Map database and pick UK.xcm
4. Tap Waypoints and pick your BGA TPs .cup file

5. If you downloaded the Paul Ruskin AFandOL file or the DGC fields database:
   - Tap More waypoints and pick UKAFandOL....cup or deeside.cup

   (Use "Watched waypoints" too, if you want both files.)

Map and waypoint data should now be displayed in XCSoar.

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UK airspace (1) – from within XCSoar

- Double tap for menu
- Config...
- ...System...
- ...Site Files...
- ...Airspaces...
- ...Download...
- Select UK_Airspace.txt

Very simple... but no direct link to ASSelect so **may** not be latest.
(Same applies to SeeYou, according to Alan Sparrow.)

UK airspace (2) – from ASSelect

asselect.uk (Also linked from soaringweb.org/Airspace/UK)

1. Configure as desired, for example:
   - **Main** tab:
     - no ATZ A/F, Gliding A/F, Microlight A/F: Class F
     - Obstacle: Include
     - leave rest as defaults
   - **Extra** tab:
     - wave boxes and up-coming RA(T)s
     - P600/SCOTTISH TMA LOA
   - **Opts** tab:
     - Exclude home: Portmoak (so no warnings about home site)
2. Click Download button and save date-stamped .txt file
3. Move the .txt file to XCSoarData

For more details see HOWTO_download_airspace.pdf.

With suggested selections and default XCSoar settings

Shows unlicensed airfields, ILS feathers and other gliding sites.

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Configuring Spine

Open the Spine notams app, go to Settings.

- If London FIR omitted, remember to re-enable on expeditions
- Set Home airfield
- Set Range
- OPTIONAL – Filter out the cranes:
  - Filters ... Select category to change ... Other Information
  - Choose subjects to delete ... Obstacle
- File save settings:
  - File save format ... TNP
  - Directory to save in ... XCSoarData
  - Set file name ... notams.air
  - Your name
  - Airspace type for TNP ... Class B

Now download notams and Save file (to create notams.air).

I use Class B for notams for same reason ASSelect uses Class F for airfields: avoids confusion with other airspace.

August 2018 Addendum

Newer versions of Spine

No Directory option in latest Spine File save settings.

It saves to Download – and then you have to move the file.
To save straight to the right place...

Open the Spine notams app, go to Settings.

- File save settings:
  - Set file name: ../XCSoarData/notams.air
  - Other settings as before.

Configure XCSoar for notams

Open XCSoar.

1. Double tap ... Config ... System ... Site Files
2. Tap More airspaces and pick notams.air

Important

The notams.air file is overwritten each time you Save file in Spine. If you don't update it, old notams will be shown.

Putting notams on your moving map

Once configuration is done, the following is all you need each day.

Open the Spine app, tap Download Notams.

1. Tap Included only
2. Read them one by one
3. Tap Show chart to see map display
4. When finished, Save file

Today's notams are now waiting for you when you load XCSoar.

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Getting the most out of XCSoar

Before you get airborne...

Read the user manual and/or work through all the menu options.
Try SIM mode.

- My tips
  - set Portmoak as Home
  - check the Airspace warning settings
  - set the InfoBox Sets how you want them, eg nearest airspace
  - set Trail length to Long
  - set Landable symbols to Traffic lights
  - store the Club Tasks so you can load them easily when airborne
  - practice locally first – XC workload is high
  - don't let fiddling with it spoil your lookout!

Digging deeper with XCSoar

- **Loads** of info at xcsoar.org
- Configure different settings for racing tasks or AAT
- Use Profiles for different setups
  - different aircraft or pilots
  - different airspace filters for weekend?
- Waypoint and airspace files can be edited
- Connect to your flarm:
  - flarm radar
  - task declaration with IGC logging
  - eg SoarTronic via Bluetooth

The sky's the limit...

Questions?