XCTrack

Version 0.9.4.5 PRO Beta onwards

(Used in conjunction with Solid Explorer SE)

An introduction to:

Menu system

Setting up preferences

Designing screen layouts – **EX 1**

Working with waypoints – **EX 2**
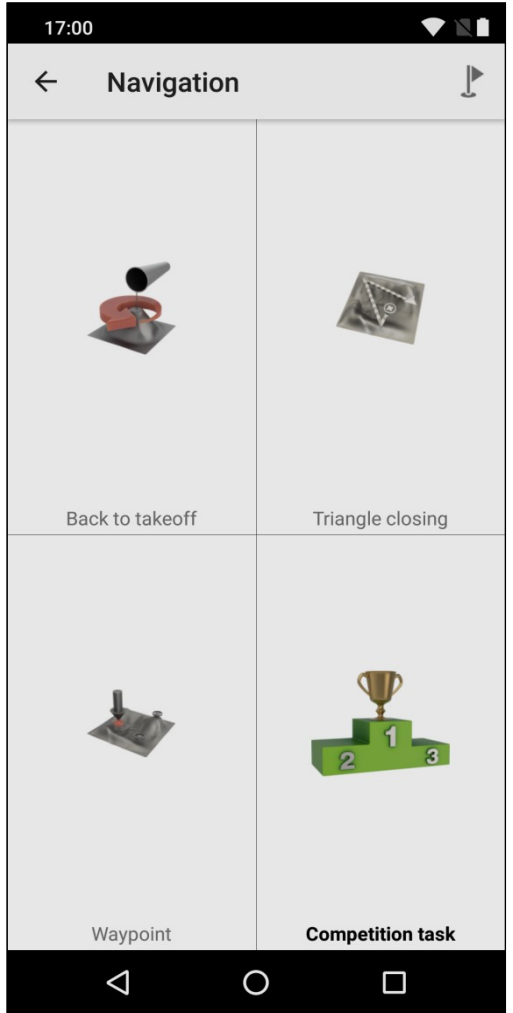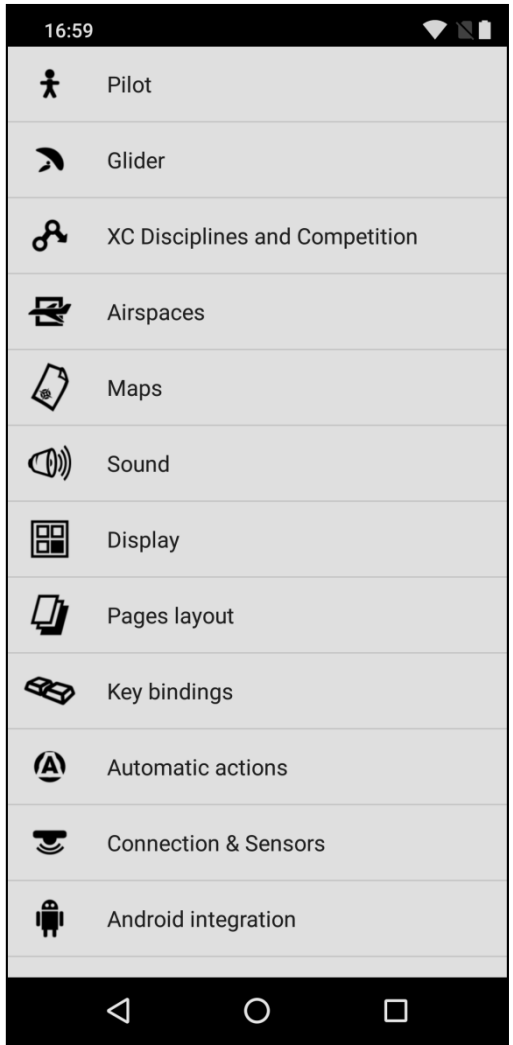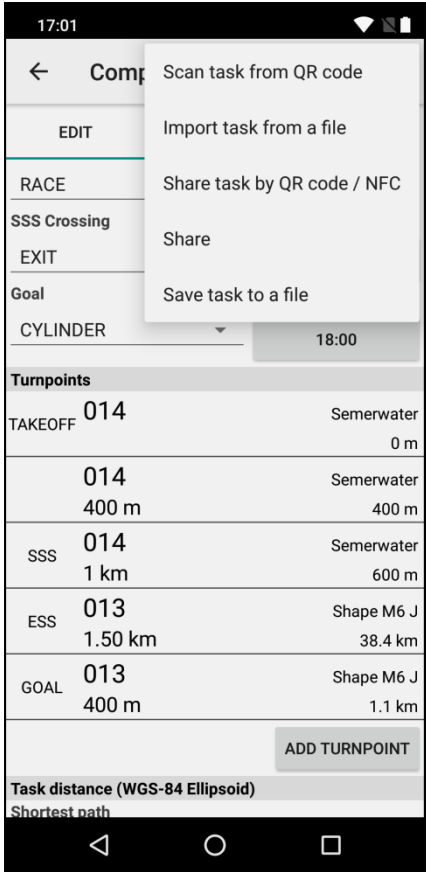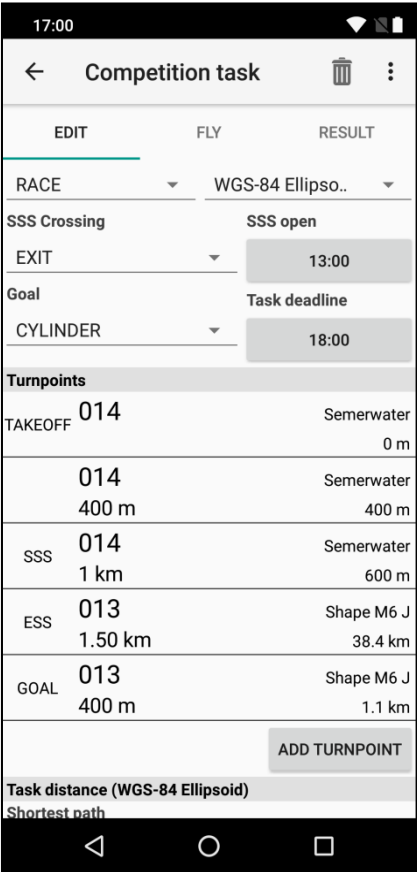
Creating tasks – **EX 3**

Mapping

Action buttons

Sharing information

Electronic Conspicuity

Additional notes

MENU SYSTEM

16:59

Navigation **Tracklogs** **Customize**

Preferences **Quit**

↑ 7192 ft
→ 3 km SE

16:59

Add Widget | Configure Wid… | Bring to Front | Send to Back | Delete Widget

AIRSPACE (set at 5k)

N57

7500 ft STD - 19500 ft STD

↑ 7192 ft
→ 3 km SE

16:59

- Pilot
- Glider
- XC Disciplines and Competition
- Airspaces
- Maps
- Sound
- Display
- Pages layout
- Key bindings
- Automatic actions
- Connection & Sensors
- Android integration

17:00 ← **Navigation**

Back to takeoff | Triangle closing

Waypoint | **Competition task**

17:00 ← Competition task

EDIT | FLY | RESULT

RACE | WGS-84 Ellipso…

SSS Crossing
EXIT

SSS open
13:00

Goal
CYLINDER

Task deadline
18:00

Turnpoints

TAKEOFF	014	Semerwater	
			0 m
	014	Semerwater	
	400 m		400 m
SSS	014	Semerwater	
	1 km		600 m
ESS	013	Shape M6 J	
	1.50 km		38.4 km
GOAL	013	Shape M6 J	
	400 m		1.1 km

ADD TURNPOINT

Task distance (WGS-84 Ellipsoid)
Shortest path

17:01 ← Comp…

EDIT

RACE

SSS Crossing
EXIT

Goal
CYLINDER

Scan task from QR code

Import task from a file

Share task by QR code / NFC

Share

Save task to a file

18:00

Turnpoints

TAKEOFF	014	Semerwater	
			0 m
	014	Semerwater	
	400 m		400 m
SSS	014	Semerwater	
	1 km		600 m
ESS	013	Shape M6 J	
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ADD TURNPOINT

Task distance (WGS-84 Ellipsoid)
Shortest path

XCTrack tips and guidance (0.9.4.5 beta PRO)

(with Solid Explorer)

The great strength of xctrack is that it is infinitely configureable.

You can:

Set up as many screens as you wish – but don't go mad!

Give each screen a specific focus – labelling it may help too.

When designing a screen don't overload it – keep it simple and practical

Different display options have diff power consumption. E-ink and B/W are lowest (10%/hr); High def white (15%/hr) … using 4000mAh battery.

ALL map functions could be on many screens – but for clarity, drop some functions to more easily view – airspace, a task, thermalling etc

Auto switching between screens is great if you love it – or annoying if you don't.

Moving between screens in the air – finger, pen on lanyard or gloved 'tip'.

Gesture commands (few) … zoom in/out/pan …. or use auto zoom

Auto optimisation is great for TP xc flights or maxing triangles – if are into xc.

EX 1. BUILD A SCREEN for a TASK MAP and an XC MAP.

A task map may have widgets like – Next TP, Dist to Next, Dist to Goal, Glide to Goal. Plus the mapping you prefer and North to top.

An xcmap may have widgets like – optimisation, FAI information/sectors, groundspeed, wind direction and speed, current glide, altitude. Plus full mapping. Top bar – battery %, GPS, time.

A thermalling screen – keep to very basics – increase size.

Working with screens in preferences. Add, delete or change position. Starting with a blank is best. Put screen order for most useful position in terms of use.

WAYPOINTS

To create routes you need waypoints. These can be put into the xctrack 'waypoints' folder in several ways.

1. Create a site, area, comp or day set in wpt format (will accept others). I use xcplanner set to free flight preferences. PC to device … direct, email or build on the device. Give the set a clear name.
2. Create on the device in two ways. Either – scan, long press, create, name and store. Or - in navigation add a new one and insert the coordinates and store.

Working only with the waypoint set you want.

To avoid lots of waypoints only activate the ones you want on the day.

Navigation, waypoints, flag, files – tick the ones you want – only those will show during task building. The ones you create on the device are stored in xctrack – internal.wpt

EX 2. Inserting waypoints

Manually insert the following waypoints.   Start: N54.252872   W2.261322

Finish: N54.116467   W1.564267

Using screen marker insert a waypoint for. Start: Semerwater

Finish: Shap M6 junction (just west side of M6)

Tasks can be inserted:

a) Manually from your waypoint list (see waypoint tips)
b) Directly from xcplanner using the 'share' command in xcplanner
c) By downloading a xctsk file from xcmap (either an NCT or create your own). If using xcmap the wp's from xcplanner need to be in gpx format.
d) By sharing with or to a friend via BT, QR/NFC, email …. or saved for future use. Comps can instantly share a task.

EX 3. Creating a route or task.

Create the following task to comply with the rules and guidance.

1. Take off Semerwater with 400m EXIT cylinder and a 1K SSS cylinder.
2. Goal at Shap M6 junction of 400m, with a 1.5k ESS
3. Race task
4. Race start time - 1300hrs
5. Task deadline -   1800hrs
6. Is in WGS-84
7. Task distance 40.5k optimised.

SSS – Start of Speed Section
ESS – End of Speed Section

Tip – enter the take-off twice, the second time at 400m.

Come out of edit and set 'FLY' – check the task map. Does it look correct?

The active line is a deeper blue, the next cylinder is green BEFORE tagging.

If you set up a 'TASK DETAILS' page it will show there in written form.

DEVICES

Xctrack is an Android only app. What device you run it on is up you, the only differences to consider are:

Battery size – the bigger the better – at least over 3500mAh.

Comparison.	Leagoo M8 Pro (£83)	Cubot P20 (£132)
Battery	3500mAh	4000mAh
Screen	5.7" (actually bigger)	6.1"
Screen	Lower res (Gorilla glass)	HD screen – brighter
Weight	(both about the same)	
Processing power	OK	Fast
GPS	OK	v quick to connect

Sunlight readability is good – screens now far better. Should be at 90 degrees to eyes so worth adjusting your flightdeck if it's a bit laid back.

MAPPING

You can add varying degrees of mapping to xc map and task pages but NOT the thermalling page. For clarity the thermalling page is best left blank but with thermal information as you see fit (eg tracklog length, line thickness, last thermal, etc). Set the scale to what you work best with. Adding the wind and bearing arrows is useful to stop you drifting out of a thermal – but it's not a precise art. Sometimes gut instinct works well in thermalling too.

Maps:

Airspace – updates are done automatically – set parameters as you see fit.

(Airspace audio warnings, clip heights, messages and scale are whatever suits you.)

Terrain – basically shows the contours. Set all maps to N up. It saves constantly refreshing and battery life

Roadmaps – shows all towns, villages roads, rivers and even tracks – good detail (especially if you land out in a strange place).

Scale(?) – either auto or manual as you feel best.

Action Buttons (for specific uses) – 1 sec press.

Camera (direct to your device camera)

Phone (you can insert the contact name here if you wish – retrieve, wife, mate, etc

Map zoom (+ or - ….. as opposed to gesture)

Navigation (manual advance to waypoints)

Vario (if you BT and use and external vario or barometric sensor))

Free text widget (you can be quite creative with it as a background for widgets).

SHARING.

You can share the following:

Config files – your layouts by going into preferences/testing and debug.

Tasks – via QR/NFC, BT or email

Waypoints – from SE (waypoints folder) highlight WP set and BT/NFC or email set to another device.

NOTES

i) Xctrack files contain a G and C record for the xcleague, BUT set your details in preferences correctly.


2019-03-25-XCT-ECL-01.igc

ii) A basic stats and replay facility exist similar to the xcleague one.

iii) Unless you BT from an xctracer, skydrop, bluefly or similar, then you still need a vario as most devices don't have a barometric sensor or not with the high degree of accuracy required. Tests with a Skydrop and Bluefly are very precise however.

iv) Consider (if you feel you need extra power) a small 'Urban Revolt' as opposed to a heavy extra battery. It will provide an extra 3 hrs or act as a back-up for your phone if you use tracking.

v) Transparency setting is on almost every widget – 100% is full overlay.

ELECTRONIC CONSPICUITY (EC)

Many of the latest instruments are equipped with EC … xctracer max, Skytraxx 2.1 and 3.0, Oudie 5 COMP etc. Some are Flarm Rx and Tx, other FANET + so they have FLARM Tx only. The PRO version of xctrack is available for a small donation and gives you a few extra features. One feature is the ability to inbed a website. In the example shown 'gliderradar' has been used to show live positional tracking of other aircraft equipped with FLARM. An additional 'add blocker' widget (airspace proximity in this case) has been to cover (opaque) the annoying adds at the bottom. Two additional widgets are also visible at the

top – ground speed and windspeed (full transparency). It can be whatever you choose.   The diamond symbols are the ground stations. (NOTE: My callsign is EDC)
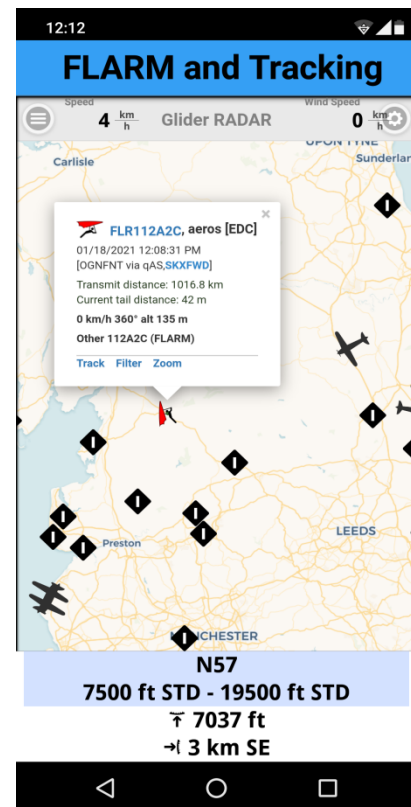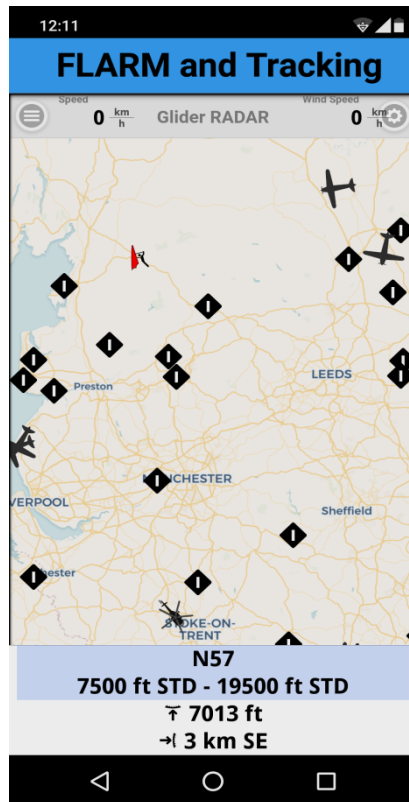

The mapping and various parameters can be changed. Unfortunately, there is no paraglider symbol (?) … so you have to settle for a hang glider. Aircraft can be tracked for a period you set, (it shows a tracking line for the previous time period) useful not only in knowing their current position, but heading .
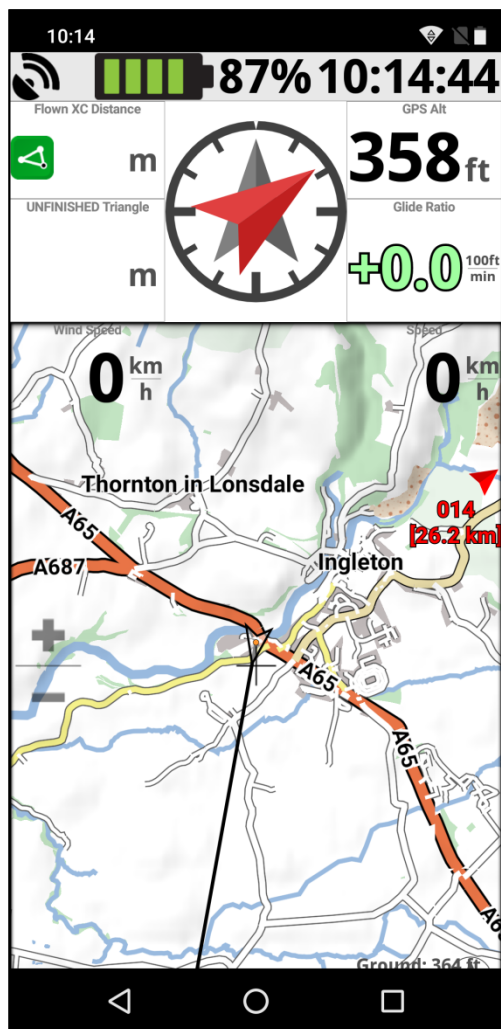
Screenshots of my six layouts and the fields relating to each

MAIN XC SCREEN
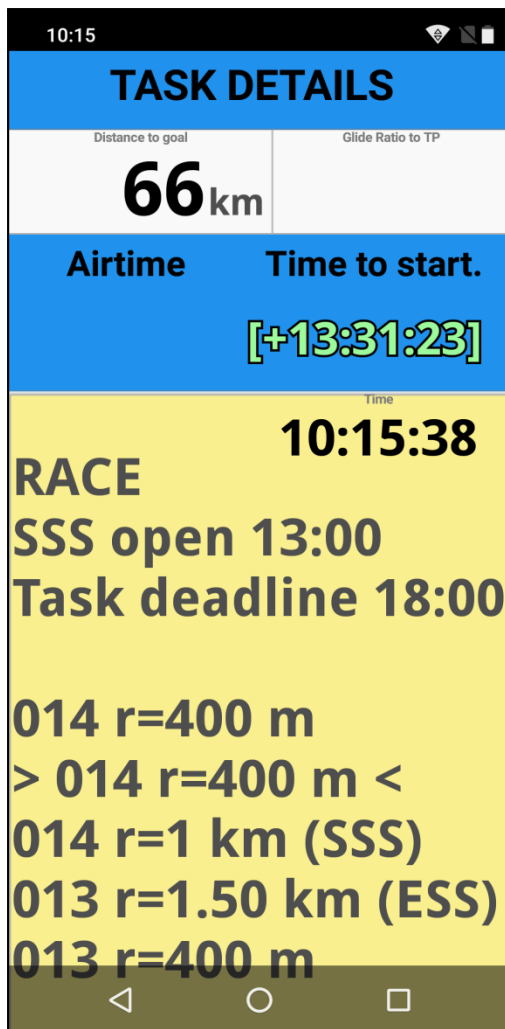
i)   Header – battery + time + gps.

ii)   Header Fields - xc and FAI live optimisation,   gps height, current glide/vario.

iii)   Mapping – terrain, airspace and roadmap.

iv)   Overlay fields – windspeed, ground speed.

v)   Compass rose – next TP, heading and wind. (whatever you choose)
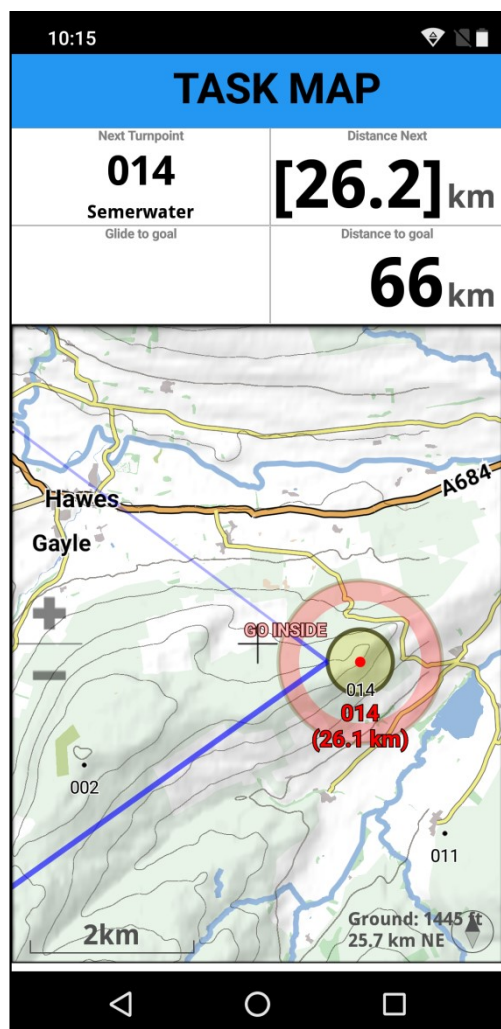
TASK MAP SCREEN

i)   Header fields – next TP, dist to next TP, dist to goal, glide to goal.

ii)   Mapping – terrain, airspace, roadmap with task details in red.

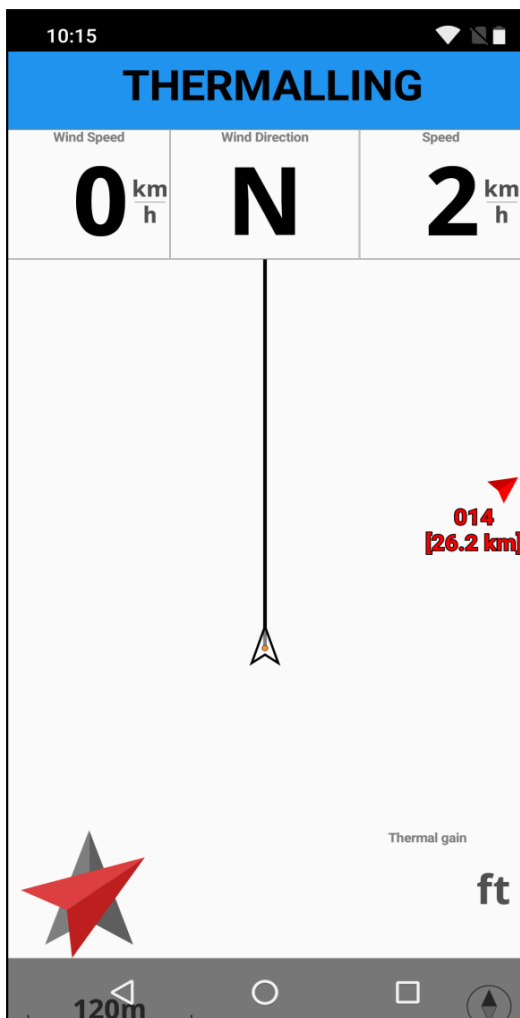iii)   Overlay field – current glide sitting under glide to goal.

(Mapping note – task can stand out more clearly if airspace – if not applicable is removed, roadmap is removed – only terrain may be relevant in a hilly area).

TASK DETAIL SCREEN

10:15

TASK DETAILS

Distance to goal	Glide Ratio to TP
66 km	

Airtime	Time to start.
	[+13:31:23]

Time
10:15:38

**RACE
SSS open 13:00
Task deadline 18:00**

**014 r=400 m
> 014 r=400 m <
014 r=1 km (SSS)
013 r=1.50 km (ESS)
013 r=400 m**

i) Header fields - dist to goal, dist to next TP.

ii) Blue fields – airtime, Time to start

iii) Yellow field – current time and all task details and progress through task.

(Note: task open default time is 12:00hrs. If you are doing an xc and leave the start before then it will not advance, as it won't regard the start cylinder crossing as valid. Suggest set start to 0900hrs to be on the safe side).

THERMALLING SCREEN

10:15

THERMALLING

Wind Speed	Wind Direction	Speed
0 km/h	**N**	**2** km/h

014
[26.2 km]

Thermal gain

ft

120m

i) Header fields - wind speed, wind direction, ground speed.

ii) Main field – a blank thermalling screen. Wind direction at thermalling height and drift heading.

iii) Overlay field – thermal gain in feet.

AIRSPACE SCREEN

i) Header field - airspace details (upper), height and distance proximity (lower).

ii) Action buttons – camera , phone. (Note: phone can be set to a specific contact if required).

iii) Mapping – airspace, terrain – roadmap would complicate it – keep simple.

iv) Overlay field – GPS height (as GPS height do not rely on – use another instrument to be accurate).
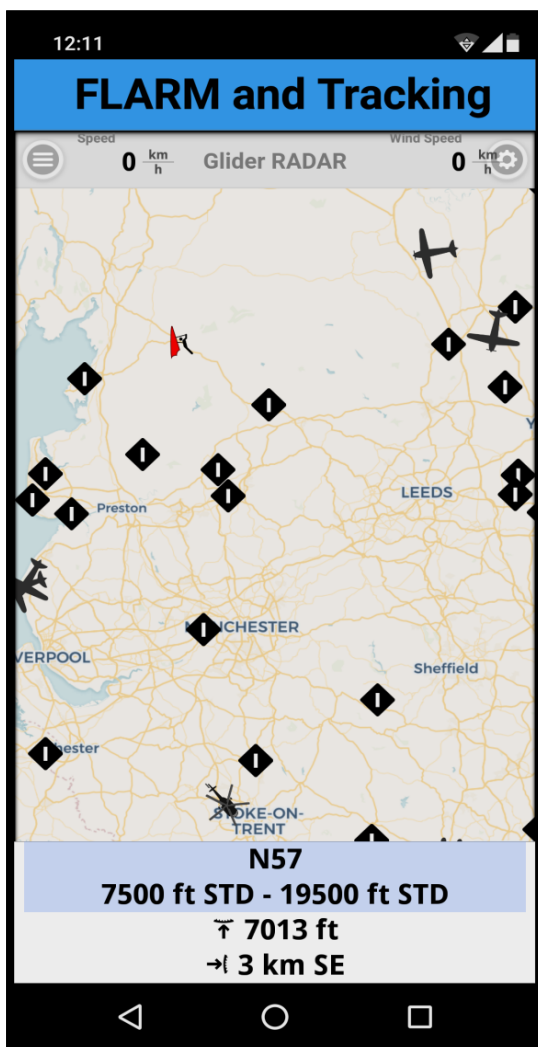
ELECTRONIC CONSPICUITY SCREEN

An additional screen should you have the PRO version and an instrument with FLARM or FANET +.

See notes above.

These screenshots are provided solely as an example, everyone has their own way of doing things. The config file for these is available by emailing me to save you doing it all from scratch – however, you may learn more by doing it yourself.

If you load the config file make sure you have the relevant roadmaps, terrain and airspace maps loaded on you device – the config doesn't include all mapping files – just the layout.

Development note.

XCtrack began life in 2012 as a basic (but still well developed) navigation app specifically for hg and pg pilots – developer Petr Chromec. He just 'disappeared' late 2014 – never to be heard of again?

Ondrej Palkovsky/Jarda Balas took over development in March 2016 and have continued it ever since offering very responsive support