

Flight decks new technology as a tool

Steve Uzochukwu investigates which instruments top pilots are using, and why

PHOTO: HUGH MILLER



DURING THE NORTH-SOUTH CUP THIS YEAR A REQUEST CAME UP ON THE TVHGC LIST SEEKING ADVICE ABOUT CHOOSING AND SETTING UP AN INSTRUMENT to cover airspace and record a trace, and whether to use an all-in-one or separate devices. In the past we've looked at the "How-to" side of setting up GPS-based devices [See Connecting a GPS to a computer, Parts 1 and 2; Skywings May/August 2011], but not so much the "Why?" or the "What works for me".

In a polite but vigorous debate on the TVHGC list a lot of very interesting information was freely given. The discussion revolved around the fact that in order to get big distances in some parts of the UK now, unrestricted airspace must be used to the fullest extent possible. Some examples came up from the North-South Cup.

Tim Pentreath and Kirsty Cameron led a debate on the need for exact positioning, and Tim offered these two slides to back up his argument. The first image (Fig. 1) was made from an IGC file dropped onto Tom Payne's superb XCPlanner web app; the second (Fig. 2) is a KML file downloaded from the Leonardo flight database, then loaded into Google Earth set up with Lloyd Bailey's excellent 3D airspace layers.

Fig. 1: Close to the Redlands ATZ

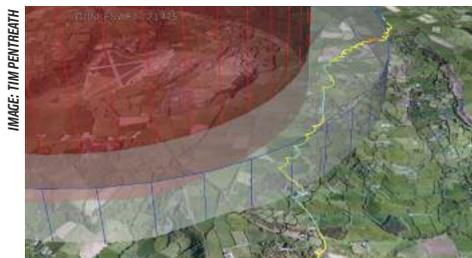


Fig. 2: Above the Dunkeswell ATZ yet clear of its drop zone

In the first example Tim maximises a thermal close to Redlands Airfield near Swindon, only leaving it on the parachute drop zone boundary. In the second he is able to thermal above the Dunkeswell ATZ yet remain clear of its parachute drop zone. Both flights ended up being over 100km; having very accurate GPS information allowed him to continue the flight. With the sort of margin you need with a half-mill paper map he could have been on the ground.

During the discussion it became obvious that there is a wide diversity in the solutions that the high-scoring XC pilots in the UK use. Letting them tell us about the sort of flights they like to do, what they use and why, would give some insight into how we, as pilots, interact with the instruments we choose.



"My objectives are straight-line flights rather than triangles and out-and-returns - I like to travel across scenery and catch the train home! Hugh Miller

about 10km south-west of Milton Keynes and approximately 200ft beneath the 5500ft airspace.

I bought the Flymaster in 2010 before I went to the British Open in Slovenia. It's brilliant for competition tasks and XC flying alike. The key features are a very sensitive vario, the marker to help you find a thermal again if you lose it, the wind speed and direction indicator and the super-easy interface for creating and navigating competition tasks. It has always been reliable and I've never had any problems downloading tracklogs from it. It has now been superseded by the NAV but it's still a great instrument and I'm certainly not looking to replace it any time soon.

What I've been trying to find for a couple of years now is a decent airspace map for XC flying. There have always been options - eg, Garmin Montana 600, Airspace Aware, XCSoar on Android devices, LK8000 on various car satnavs - but they've either been expensive or overly complicated for my needs. But earlier this year I came across the iPhone app Flyskyhy, and I now believe I've found pretty much the perfect airspace mapping/warning set-up.

The map is very clear and it's easy to operate (ie. zoom in/out) with a capacitive stylus whilst wearing thick gloves. You can click on an airspace to see its upper and lower heights, and the warnings when you're approaching airspace are hard to ignore! You can import waypoints into the app and create routes too. When you consider it's also got IGC file export, live tracking and a logbook, you can see that it's brilliant value at £11.97.

The main omission is the lack of a snail trail, but I know the developer is working on this at the moment. Once this is implemented, and once the UK XC League accepts Flyskyhy IGC files I'll be able to retire my trusty Garmin - it'll be nice to have one less gadget to charge up! Of course the downside of using a satnav, tablet or smart phone is that you have to use an external battery, as having the screen on and GPS running will flatten your battery in about three hours. But during a recent six-hour flight my external 10,000mAh battery was at 50% when I landed, whilst my iPhone remained fully charged.

Tim Pentreath

I learnt to fly with Dave Ward-Smith and Rob Stimpson of Parapente Wales back in 1989, and have been hooked ever since. My first XC was a 4.1km flop over the back of Fan Gyhirych in 1990 on a Harley Contrail. In June this year I broke my previous personal best open distance of 124km with a 163km flight across three counties on my Sigma 8, landing a few miles north of Budel

I've competed in various British Opens over the last 15 years, starting in the days when you had to find the turnpoints without the help of GPS units (they hadn't been invented), and then take photos of them. This year will be the first time I've entered both rounds of the British Open.

I've had a number of varios and Garmins over the years, but my setup since 2010 (with the exception of the iPhone) has been the simple ball compass, the Garmin GPSmap 76C, and the Flymaster B1 Nav. The Garmin (with Simon Headford's airspace maps and Ben Friedland's heights layer) has been like a faithful dog over the years -

always there and always reliable - but the screen is oh-so-small, and it's not the easiest to read. But I continue to use it as a backup tracklog recorder, and also for the snail trail which is essential to judge whether you're going to come up against airspace ahead of you. My set-up (Fig. 3) is pictured during the North South Cup. I was

IMAGE: TIM PENTREATH



Fig. 3: Tim Pentreath's flight deck

Fig. 4: Gordon Rigg's flight deck



Flyskyhy (£11.97 with airspace and waypoint in-app purchases) - www.flyskyhy.com

Anker 10000mAh external battery (£25.99 from Amazon) - tinyurl.com/ankerastro3e

Capacitive stylus (£1.99 for 10 from eBay) - tinyurl.com/capacitivestylus

Gel case (£1.79 from eBay) - tinyurl.com/iphone5gelcase

Tim is very happy to be contacted via his blog with questions about the specific setup of each instrument - <http://flyaszent.wordpress.com/>

Gordon Rigg

My instruments are just the Flytec 6030 and a backup GPS (Fig. 4), with a backup Solario on my helmet. 90% of the top hang glider pilots use the 6030, because it is the only one with a pitot-static ASI (windmills do not work at all well at our high glide speeds). There is very little diversity in instrumentation at the top level of hang gliding; every one of the UK Worlds team uses the 6030.

The latest software gives us excellent airspace info too, with audio alarms. To press the buttons in flight I recommend a small slit on the inside bend of the thumb on the glove. This enables you to get your thumb out and press the buttons, but when you grip the bar the slit closes and doesn't let the cold air in. Getting the right arrow buttons in the middle of the touch pad can be very difficult with thick gloves. I have seen people add lumps of hot melt glue to the middle of the pads!

I had a Mio with LK8000 but sold that after the latest 6030 software for airspace was released. The 6030 works superbly. You will see the top few hangies always cross the goal line at three feet and 80km/h with no turns from over 20km out. The downside is that, with everyone using the same instruments we can get over 70 gliders in goal in the same five minutes. I wish some of them used worse instruments!

Gordon is nine times British Hang Gliding Champion and held the British distance record from 1989 to 1999 at 245km. His "How to" guide for airspace on the 6030/Compeo which can be found at: <http://bhgcinfo.wikidot.com/tutorials:setting-up-your-6030>.

Hugh Miller

I've been flying since 1992 and am a complete XC fanatic. I'm having a great spring so far with three 100-milers including a new 209km declared-goal record with Kirsty and Mark Watts. My objectives are straight-line flights rather than triangles and out-and-returns - I like to travel across scenery and catch the train home! I am very untechnically minded; this is the first year I've got my instruments sorted and learnt how to upload flights to the league. Mark did it for me before that.

I use a Garmin 76 which I've had since 2005, and Adrian Thomas set that up for me. I usually set goals, however ridiculous, as I like flying to somewhere rather than just away from take-off. So I use distance-to-goal. I also use 'turn' - when you're attempting a long crosswind flight, like Combe to the Dyke, I want that to be showing goal at least 30 degrees to the right on each glide so I know I'm pushing hard enough east. I also use 'ETA at goal' - it might seem mad, but during the 209km goal flight it was telling me I'd land at 6:30, so I knew it was achievable and worth cracking on with.

Another critical one is 'GPS altitude' - I keep an eye on that and when within 500ft of an

airspace ceiling will crack on, giving it a wide berth. It's very easy to get sucked only 50 - 100 ft in, and that invalidates the flight. I really enjoy the challenge of getting round airspace. For sure it increases the pilot workload massively, but it's very satisfying when you squeeze through a tight gap. I am forever zooming in and out.

I'm going to get a second GPS, or maybe the Flyskyhy app, so I can have one set for the 800 metres around me and one set to 10km to save the work there. I also fly with a standard CAA airmap, and also Ben Friedland's brilliant Simple Airmap (www.simpleairmap.co.uk). It is a fantastic stripped-down airmap, giving actual heights over ATZs, and I look at both maps frequently during glides.

My vario is a Flymaster B1 Nav with the audio sounding at 0.1 m/s up and 1.2 m/s down. Brett Janaway set up my fields for that. I haven't managed to enter a route since - I should probably learn! I also have a back up Flyte Park vario. I used it as my main vario till I realised how undamped it is. The picture [heading photo, page 36] was taken during a 65km flight from Caburn to Maidstone, mostly under Gatwick's 2500ft ceiling. Very good fun - you just had to keep pushing, catching low save after low save!

Hugh Miller's flight deck



A big "thank you" to these pilots for giving us an insight into their planning, navigation and use of instruments. Don't forget to have a paper map somewhere in case you have a battery disaster. If you are unsure about setting up your device it's worth asking around; having it malfunction could land you in trouble. If you don't know what you are doing, find someone who does!

Many pilots will be grateful to the likes of Richard Bungay, Richard Hunt and Adrian Thomas for this sort of advice either in real

life or on forums. Don't forget that the information in your instrument needs to be up to date. It's also important to look at the "Why?" element of your flying, and to remember that if you only need a GPS to know where you are, rather than submit a trail, or have a moving airspace map, the choice is a lot wider - many of the simple GPS units will fit the bill.

Part 2 will have further insights into the flight deck set-ups the top pilots use.