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THE **STEMME** ISSUE

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TAKE FLIGHT - with proven security



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In late 2019, with the impending birth of my new glider looming, I received the email I'd been dreading from the manufacturer asking me to specify the design of the panel.

I'd started gliding in 2010 with just paper maps, perhaps novel for a millennial, but was quickly donated a Volkslogger which I flew my first competitions with only navigating by the distance and bearing around my AAT tasks. I'd been lent a PDA with WinPilot on it but without any manuals I wasn't able to figure out what to do with it.

Another pilot showed me the basics of XCSOAR and lent me another PDA, which was a total revolution for my flying - many pilots find XCSOAR unintuitive, but I took to it like a duck to water and quickly became a power user, even going so far as editing the source code to add customisations and special functionality for my own racing.

I've persisted with XCSOAR up until just recently, with an Open Vario in my panel and XCSOAR on my phone, and generally been quite happy with it.

Designing a new panel from scratch though gave me the opportunity to revisit the landscape and reconsider what I wanted from my instruments for the foreseeable future.

I HAD A NUMBER OF CONCERNS:

- Longevity of the platform - I'd been burnt before buying hot new instruments which received a couple of years of software updates before being quietly discontinued with no updates and in some cases no support.

- Weather integration - Many of you may have heard of my software platform SkySight, which provides soaring weather forecasts for glider pilots. We have an API for this data which allows device manufacturers to show forecasts to our subscribers on their screens in the cockpit, which is the ultimate application of weather data for meteorological navigation. I couldn't be left behind on this revolution.

- Continuity of features - Competition rules keep changing, and some devices have been keeping up with the changes better than others. XCSOAR didn't have support for the looming "Start Windows" and PEV marker starts with waiting periods, and now being in gainful employment my time to implement these features myself had dwindled. I needed a platform I could rely on to follow the latest twists and turns to our rules the I.G.C. is coming up with each year.

Given the above constraints, there were only two choices for me, the Naviter Oudie, or the LXNAV 90xx series.

The Oudie is probably the longest continuously supported soaring device on the market, certainly it predates my gliding career and continues to exist in largely the same form factor today, with incremental improvements.

The LX9000/9050/9070 is a more ambitious device, closer to an all-in-one instrument package than a navigation device, with the variometer included and possibility to control the radio and transponder all from the same device.



LX9000 Variometer



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Photo sent to me by a subscriber using the wave forecast in flight

I have tried LX devices before, but coming from XCSoar I didn't like the use of the remote stick or buttons as the primary means to control the device, finding it clumsy to manipulate things like turning points inside an AAT sector. Fortunately LXNAV had just released a new revision of their device including a touchscreen so with the last obstacle removed I fell towards the LX9000 - whilst being considerably more expensive than the Oudie, the larger screen and ability to update the weather information in-flight was too much of an advantage to ignore.

Six months later, my new glider (AVIONIC Diana 2-FES) was arriving soon, so I had a skim read of the user manual and downloaded "LX Styler", the LX tool for setting up the user interface of your device, kind of designing your panel-with-a-panel.

Typically pilots seem to install their instruments in portrait configuration, presumably because situational awareness of what is coming up directly on track is more important to them than what is left or right. Unfortunately the shape and size of the panel in the Diana 2 portrait is a very inefficient use of space, so I went for landscape.

With this constraint in mind, I designed a slightly hare-brained user interface in LX Styler, with my Gauges "circling the square" so I had an equidistant view of airspace and terrain relative to my position. I consulted with Uros of LXNAV on the best setup for displaying the weather information from SkySight on the device, and his advice was to setup multiple pages one-below-another, each with a different weather chart. So I've set it up such that under my "Task" page, I can scroll down to Realtime Satellite, XC Speed, Convergence, Wave

three km, Wave five km, Cumulus etc etc.

The downside of the large flexibility offered by the device is that considerable time needs to be spent to set up the various pages, gauges and charts to get full value from the instrument, but the time invested is well spent. The LX Styler tool makes it much easier than trying to do it on the device, although the touchscreen on the device is a game-changer coming from the previous system of knobs and buttons. Now with everything setup and the glider delivered, it was time to actually get to flying. The "Flap Tape" feature quickly became my best friend while learning to fly the Diana 2 - no more memorising speeds and transition points, quite tricky in a glider with the zero-flap speed varying from 160 kph to 220 kph(!) across its range of possible wing loadings.

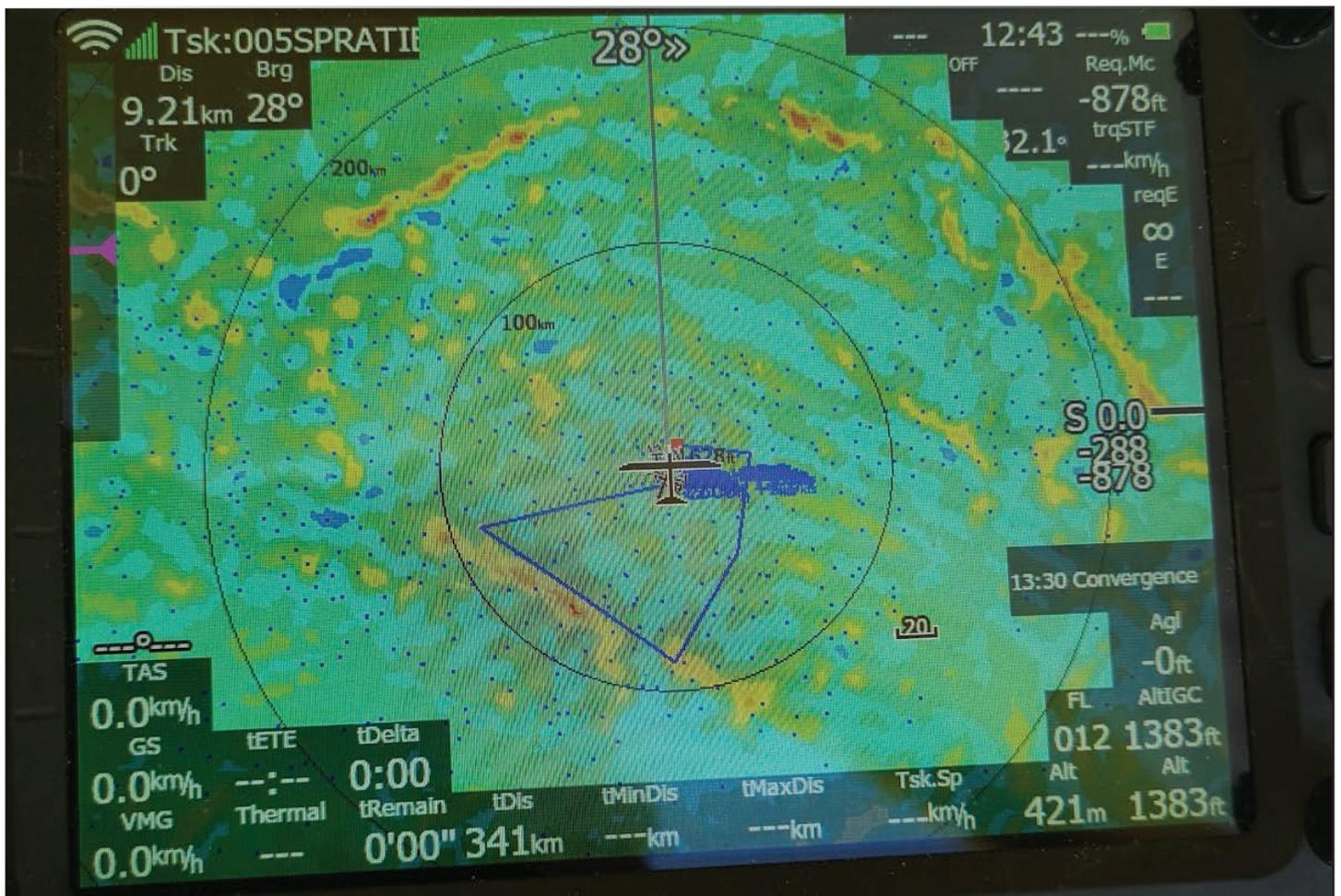
I am extremely fussy about my variometers, and fitting the LX9000 in rather than the LX9050 mandated sacrificing my precious 57mm mechanical Winter, but with the adjustable controls of the LX V8 I've found a configuration I'm happy with.

I was warned repeatedly about forgoing the LX Control stick and relying on solely the touchscreen for manipulating the device in flight, but so far it hasn't been a problem for me, and I feel much closer to home coming from XCSoar. Panning and moving turn points is now easy, especially important with the weather overlays. I have very long arms though, so this may not be the right choice for all shapes and sizes of pilots and gliders.

Starting to fly competitions with the glider and instrument, one of my favourite new features was the automatic download of tasks from SoaringSpot, and the ability to automatically submit my flights from the glider after landing. No more cross checking the task

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My infobox arrangement

details to the task sheet six times in the sun, or fiddling around with SD cards and laptops after landing. I just click load on the grid and it goes.

The weather forecasts, as expected (as designed) are a game changer - live satellite picture updating every 15 minutes in flight is crucial on AAT tasks. There's simply no better way to analyse the conditions in an AAT sector 150km away than having the satellite photo overlaid when you need to choose where to make your turn. Satellite pictures are only for the present though, and I often check the forecast for cumulus and XC Speed for +1 or +2 hours to make a decision as well. On racing tasks the advantage is less, but it can be useful still to judge the risks I want to take now if it looks like it is starting to storm elsewhere in the task, or for judging development on track while deciding on my start time.

Occasionally in competition tasks there is an opportunity to utilise a convergence or wave line in flight, and having these charts at the ready can be a huge advantage. In the four contests I flew this year I had two days where I was able to utilise this for a real advantage that I simply wouldn't have had just from preflight planning.

I always tried to fly with my phone in hotspot so I could utilise the forecasts in real-time, but when phone signal was not available the majority of the benefit is still there simply with the information preloaded before takeoff.

My glider is now on a boat on the way to Australia where I'm planning to better test the envelope later this year, and once I've refined my workflow I'll be posting a series of videos on how I recommend to get the most out of your device to the SkySight YouTube channel.

Matthew Scutter



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