

Project News

Projects that inspire others to build their own aircraft

Compiled by **Mike Slaughter**

This month's *New Projects* and *Cleared to Fly* lists may not be long but they feature a healthy variety of types, which will either be enjoying the sky this season or, hopefully, featuring in *Project News* over the years ahead.

Just about every aircraft will pass through many owners throughout its lifetime, but it's fairly common for projects to have two, three or even more builders. Such changes of constructor are hardly surprising, as life's random and unpredictable course can't always be foreseen when commencing a build.

It must be doubly difficult when circumstance forces the parting of a cherished project after many years of hard work, such was the situation with one of the aircraft featured this month. When Bob Dawson purchased the structurally complete Europa XS, G-NHRJ, aka *Snow Goose*, he committed to not only keep the original builder up to date with the project's progress, but also take him flying in the aircraft once it'd been completed.

By Bob's own admission, all of the hard work had already been finished when he collected the Europa, but as is often the case with



a stalled project, the passage of time required a fair amount of additional toil just to stand still. A backlog of ten years' worth of mods had built up, rubber parts required replacement and, of course, Mode-S and 8.33kHz had forced its way into our lives. On top of all that, Bob decided that it was out with the steam in and in with the glass, finally concluding that he'd completely replace the Europa's panel, wiring et al.

Another Europa featured this month, G-SNOZ, is a classic monowheel which originally started being built in 1993 and was taken on as a project, third-hand, by Phil Bayliss in 2008. It's a fine looking example and I hope that Phil and his son are now using it to enjoy the fabulous scenery of Wales and beyond.

In contrast, David Shrimpton reveals herein how he and his wife came to own the same aircraft three times, namely a much travelled, truly European motorglider which they just can't seem to get away from!

Don't wait to be asked, get in touch with *Project News* and tell your story, report a milestone or just send a picture. Simply email projectnews@laa-archive.org.uk to share your story!

G-NHRJ (PFA 247-13112) EUROPA XS

BY BOB DAWSON

I THINK THE ORIGINAL idea to build an aircraft came after I'd just assembled one of the early versions of PilotAware. I'd enjoyed doing it so much, I reasoned that there couldn't be much of a difference between building a cigarette box-sized electronic component and full-sized flying machine – right? Actually, I'd toyed with the idea

since being re-introduced to flying by my Europa-owning friend Roger Mills, back in 2009. We'd met purely by chance through mutual friends earlier that year, when Roger happened to mention that he was a pilot, and had his own aircraft. Learning to fly powered aircraft had been an ambition of mine since I gained my three solos and little green *Gliding*



Bob's rather tight but tidy garage workshop.
(Photo: Bob Dawson)



(Above) **Bob's revised, all electronic instrument panel.**
(Photo: Bob Dawson)



(Left) **The Snow Goose assembled and ready for test-flying.**
(Photo: Bob Dawson)

License with the Air Training Corps as a boy back in the sixties, so I quickly prevailed upon Roger to take me up in his aircraft.

It'd always been my intention to learn to fly when I retired, but this reintroduction to flying convinced me that gaining a PPL would be a really good 60th birthday present to myself. Besides, at the time, I had no intention of retiring, so reasoned that I mightn't last to fulfil that ambition if I didn't do something about it sooner rather than later.

I decided that I'd left it too late in life to spend a couple of years suffering the vagaries of the English weather, so in 2011 I looked for a fast-track way of getting my PPL, and settled on a course run at Ormond Beach Airport, Florida. I reckon that this was the best birthday present I'd ever had, and really enjoyed my time there. While training, I wrote a blog for my family, so they could follow my progress, which can still be seen at www.rjdawson.co.uk/flying/blog. I duly returned from Florida with a PPL, having had the time of my life, and then I set about learning to fly!

For the next five years, in between flights with Roger in his Europa, I hired Cessna C150s and C152s, and Piper PA-28s – the type I learnt on – and then joined a syndicate flying C172, C182 and Socata TB10.

Fortunately, my retirement came somewhat sooner than expected, and after six months of adjusting to a slower pace of life, the idea of taking on a build project started to ferment. I'd always glanced at the aircraft for sale ads in various aviation magazines, and with perfect timing, an advertisement appeared for a part-built Europa. I contacted the owner, Dennis Lowe, and headed off to examine the aircraft. I asked LAA Inspector Neil France to join me, as I didn't have enough experience to judge the build quality myself.

Dennis had started to build the aircraft back in 1999, and had christened it the *Snow Goose*. Just about all of the hard work was complete, including the engine installation and paint job. Work on the project had stalled in about 2005, when Dennis suffered some health problems, and despite his wish to continue the build, the time had come when he realised the torch had to be passed onto someone new.

Neil was impressed with the work which had already been done, so after a short negotiation, Dennis and I shook hands on the deal. One of the stipulations Dennis had made was that, upon completing the build,

I'd take him for flight, which I was more than happy to agree to. As a build workshop hadn't yet been sorted out, I rapidly set about cleaning, painting and preparing the floor of my garage, ready to accommodate the *Snow Goose*. Finally, the day arrived for me to collect the aircraft – the wings were to be transported in Roger's monowheel trailer and, as the Europa is a tri-gear and the fuselage wouldn't fit, I'd hired a low-loader to bring that back.

Dennis's wife had a tear in her eye as we departed home to Sheffield but I promised to keep him informed and involved in the rest of the project. Dennis had kindly included lots of specialist tools and equipment with the deal, and these were to prove very useful. As I'm sure has been experienced by many other builders, the looks from my neighbours when I rolled up with an aircraft was a sight to behold.

I purchased the aircraft in November 2014 and shortly after that I was made aware of a Rotax Engine Course at LAA HQ in Turweston, so I promptly signed up. The course was run by Kevin Dilks of SAS, and was both enjoyable and informative. Meeting Kevin was another positive side effect of this course, and he was a great help with the engine-related issues I encountered along the way. I remember chatting to one of the other participants, who enquired when I expected to have my aircraft flying. "Twelve months", I said, confidently. "Good luck with that," he replied.

FROM STEAM TO GLASS

Dennis had already done the majority of the work on the *Snow Goose* but had stopped in 2005, so the task left to me was to undertake the various mods issued since then. Some were fairly trivial, such as replacing the control columns with the cranked versions, while others proved more intensive. All the rubber hoses required replacement so I decided to use the silicon variety for the coolant hoses in the engine bay.

The work on the tailplane retention was particularly trying, and Neil's expertise was very welcome there. Roger helped me with the fibreglass work, which was something I hadn't done before, and I was grateful for Kevin's assistance with replacing the spring retainers on the Rotax 912ULS. I removed the engine to carry out the undercarriage mounting frame strengthening, and also undertook the replacement of the nose

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gear bungee with springs. In addition, I repositioned the gas struts for the doors.

However, the majority of my work on the *Snow Goose* was to involve the complete redesign of the instrument panel. Dennis had done a great job in the original design, but it was all steam gauges, and a complicated electrical circuit. He had given me a hand-written, six-page wiring diagram but, unfortunately, one page was missing! I spent weeks trying to work my way through it before finally deciding that if I were ever to understand the wiring to my own satisfaction, I needed to start again from scratch. I already knew that a new radio would be required, together with a Mode-S transponder, so I decided to build a completely new electronic panel.

Visits to AeroExpo and the LAA Rally at Sywell gave me an opportunity to review the various makes and models of EFIS on offer and I finally decided on the 10in Dynon SkyView as the major display component for the panel. I originally drew out my proposed layout on a full-sized template, but decided I needed something a bit more practical for the final positioning and laser cutting that would be required. I found a free computer design tool called DraftSight (www.tinyurl.com/DraftSightDownload) and used it to create both the instrument panel and the wiring diagram.

Having designed the layout, I found a local arts charity which had a laser-cutting machine capable of handling an MDF panel so that I could try out my layout before committing to the final design. I was then able to pass on an electronic 2D design to a company which used it to laser-cut the panel from aluminium.

Of course, although I'd decided on an electronic panel, I knew that I'd require a backup for the airspeed and altitude instruments, so had built a couple of 2.25in holes into my design to accommodate them.

A week after the panel was cut, the LAA announced that, in future, it'd accept approved electronic instruments for the backup function, so I decided to go the whole hog and settled for an MGL ASX-1 combined Altitude/ASI. That particular one came without a built-in battery backup, but I had fun on the Matronics AeroElectric Forum discussing, and finally designing, a suitable unit. However, the combined unit left me with a redundant hole in the panel, which I've covered with a blank.

I've incorporated a SmartASS-3 speed advisory unit and PilotAware in the final design, both plumbed in behind the panel. As another backup, I also made space for a 7in tablet for navigation, which will be removable for flight-planning, using my preferred option, SkyDemon.

At long last, the *Snow Goose* was ready to take flight. I'd found a suitable trailer on the internet a few months earlier, so on a cold and inhospitable day during January of this year, I transported the fuselage one day, and the wings and tailplane the next, to Gamston/Retford Airport, in order to start flight testing. Test Pilot Tony Hather's comment after the initial flight on 21 February was that "she flies beautifully, very stable in all three axis". I now look forward to completing the shake-down of the aircraft and its components, and getting the full Permit to Fly in time for this summer's flying season.

My thanks go to Dennis Lowe for the original build of a superb aircraft, Roger Mills, LAA Inspectors Neil France and Kevin Dilks, and Karen at Europa Aircraft for help and advice along the way. The camaraderie of the Europa Pilot's Club proved inspirational, as has the advice and assistance gleaned from various online aviation forums.

On my first visit to see the *Snow Goose*, Neil said that, in his experience, there were builders or flyers. I assured him that I fell into the latter category but am now on the lookout for my next project so I think I may have been converted!