Man on a Mission

Steve Kember starts building his Mission M108 at Lambert Aircraft's builder-assist facility in Belgium

The Lambert team pictured during a tea (and cake) break. I am the tired old boy sitting down. Filip Lambert is smiling on the left of the picture because he has just got the biggest piece of cake. Steven Lambert is fourth from left, holding Lambert junior

As a PPL(A) who flies a C172 or PA-28 from Biggin Hill, I had often admired the freedom and comparative informality enjoyed by farm strip pilots. One such pilot, a longstanding friend, offered me the use of his strip and space in his hangar, but as the runway length was short – compared to Biggin, at least – my choice of aircraft would have to be carefully considered.

The specification meant STOL, certainly, and folding wings would be an advantage to avoid hogging too much of the hangar. Group A, rather than a microlight, was also a requirement, as I would like to keep my current licence, and, who knows, I might want to revalidate the IMC one day. I viewed and rejected various aircraft, for a variety of reasons, and then I stumbled across the Lambert Aircraft Mission M108 at an LAA Rally. This high-wing (folding) 600kg mtow aircraft is of traditional rag-and-tube construction but with some exciting state-of-the-art features – a glass cockpit and a fuel-injected engine.

It was clear soon after meeting Filip and Steven Lambert that they are engineers and aircraft enthusiasts rather than salesmen, thank goodness. A short Internet investigation of the Lambert Aviation pedigree told me my instincts were correct; Filip is a Cranfield University-trained aeronautical engineer who, in 1993, won a Royal Aeronautical Society Design Competition with his composite four-seat Mission M212, which he ultimately took through to UK Approval with LAA. The M108 is a Group A version of the M106 450kg microlight, which the company also sells. It is similar to the EuroFox in that it is a European development of the KitFox genre, Filip having put significant design input into what was originally an Eastern European product.

Filip and brother Steven, an aircraft engineer, established Lambert Aviation in 1996 and, apart from their kit aircraft, offer a range of skills to the aviation industry including design, prototyping, component manufacture and avionics installation.

I booked my flying club's PA-28 so that I could visit the Lambert Aircraft engineering facility at Kortrijk-Wevelgem. Its hangar is a cross between an operating theatre and how I imagine an F1 McLaren workshop to be: clean, spacious and well-organised. One trial flight later and the decision was made; I wanted an M108 but the prospect of constructing a workshop at home and spending every evening and weekend for the foreseeable future putting the thing together was going to be a problem – for me, an insurmountable problem. I do not have the sort of job that would allow that indulgence. There wasn't even the option of buying second-hand, they do not exist yet. I and two other Brits are the first three UK customers since the LAA approved the type for UK build.

Happily for me though, the LAA has also approved an M108 Factory Build Assist Programme. The scheme will allow me to build at least 51% of the aircraft at the Lambert Aircraft facility, with all the correct jigs, tools and guidance available – it builds the aircraft to sell in ready-to-fly form as well as selling the kits. So, hopefully I will get most things right first time. There's also the incentive of having an example of the finished aircraft on view, just to quicken my pulse every time I get within 20ft of the thing.

The basic plan is that you spend a week at the factory and get the aircraft covered. Then the factory takes over and does the painting for you. You then return to complete as much of the build as you want over a second week, before taking home a well-advanced project that will not present too many problems completing. This was clearly the answer to my route to aircraft ownership.

WEEK ONE

The first week of my Factory Build Assist programme – the alarm clock sounded so early it was nearly the night before, but the compensation was that this was the start of my 'Boy's Own Adventure'. I was off to build my own aeroplane at Wevelgem Airport in Belgium, about a 90-minute drive from Calais.

Even the thought of staying in the chosen hotel, the Bell X, was exciting. To quote from its website, 'During the Second World War, the Germans and Italians occupied the building. The rear part served as the local Kommandantur (office of the commandant) and it was partly destroyed by the bombardment of 18 April 1943 executed by English airplanes. The front part was used as a Mess by the Luftwaffe. The building was severely damaged as a result of the bombardment executed by the Allies (by using B-17 bombers) on 14 May 1943. In 1944, it was used by the RAF who were subsequently replaced by Belgian military authorities until 1947.'

Folders and cheques had been exchanged with the LAA and a build manual had been collected from Filip Lambert a few weeks before my visit. As I have an engineering background, I could see that the build was going to be possible without too much drama. Mercifully, Filip Lambert seemed to be very comfortable with the administration so he would steer me through this as part of the assist programme.

This first week was concerned with covering the airframe. The previously inspected powder-coated airframe was 'keyed' with an abrasive pad and three coats of glue applied to relevant parts of the structure, each being allowed to dry before the application of the next coat. A methodical approach is required here, as it would be easy to lose track of what has been coated and what has not. I fixed Post-it notes to each component and marked them after each application of glue. The fabric, Diatex, was stuck to the airframe, shrunk with an iron and coated with dope – easy! Errr, well almost!

I started with an elevator. The fabric was placed on the structure and lightly clipped or held in position with weights. Working from the middle out to the edges, glue was applied and worked through the fabric to the airframe. Doing the edges and corners required a bit of experience to make the job tidy, and the experience stepped forward in the form of Steven Lambert. Steven had an instinct similar to the instructor that took me through my IMC Rating; both of them could spot the trend towards the error that I was about to make! As well as having Steven handy, I also had access to a seemingly bottomless tool kit. The right-shaped iron, a thermometer and a 6.45mm reamer to prepare the control surface pulley mounting brackets, control-surface shaped templates for fabric cutting, etc. The list goes on. Best of all was the jig on which to mount the fuselage, which enabled it to be rotated about its longitudinal axis. This meant no need to lie on the concrete floor of a draughty garage! Access to all areas made the job an absolute joy. And the finished article was easy to envisage as I only had to stroll to the front of the hangar to view the company's M108 demonstrator.

This first week was hard work, the days were, frankly, long – but immensely satisfying. And my skeletal heap of tubes is already morphing into my aircraft. I can't wait for week two! ■

Fuselage mounted on rotatable jig for ease of access

Plenty of tressles, plenty of room, makes work a joy

Clipping the fabric to the control surface before gluing

Yours truly doing a spot of ironing