My quest to find and build an Oldtimer Glider

My name is Geoffrey Malone and I live in Canberra, Australia. I have been a modeller for some 60 years and commenced RC flying about 45 years ago. Some 36 years ago I joined the Society of Antique Modellers (SAM1788) Australian chapter. One of the events flown by SAM is Oldtimer glider. The rules for this event state that this must be a glider pre the end of 1950. I searched and examined many possible gliders that fitted the criteria. Them one day on a Youtube video I saw John Woodfield slope soaring a beautiful sleek and elegant glider from the cliffs near his home in England. I immediately decided that this would be the one I would build.

Further research identified this glider as a 1946, Fillons “Champion” with a wingspan of 111 inches. Fillon was the name of the gentleman that designed and draw the original plan/drawing for this model back in 1946 as a free flight. Now to find a plan. I discovered that Aeromodeller Magazine in England many, many years ago had featured this glider in an article with a A4 plan. All plans that are featured in the magazine, although the magazine is no longer published, are still available from their plans service. I proceeded to connect to their site and search their plans library and located a full size plan of the Champion glider. I immediately ordered the plan and waited for delivery to me here in Australia.

Finally some weeks later the plans arrived consisting of three full size sheets. I proceeded to take these to my local plans service (Office Works) and had the plans enlarged to 120 inch wing span as this was to be my final construction size. Initial perusal of the plans indicated the following:

- The Fuselage was open oval formers with external longerons
- All the way around the fuselage to the rear of the main wings was fully sheeted
- There was no elevator or rudder information as it was designed as free flight model
- The main wings were swept back tapered, under cambered with curved tips for the last third of their length
- There was a complex shoulder section as part of the fuselage that the wing joiners slotted into
- A fixed tow hook was located at the end of a front skid
- The tailplane was also an under cambered section

So many things to consider and design to enable this to be a successful radio controlled model. Being a fixed slot in main wing design made it imperative that it had a full moving elevator operated by internal bell crank and push rod to enable fine trimming of incidence for a good flat glide. I draw in a new stab post for the split point to provide for a hinged rudder that would have a closed loop cable system.

Redesign elements taken care of it was down to the building. I started with the most critical fuselage former being the one containing the slot in wing joiners that I constructed out of 1.8mm aluminium sheet. These had built in dihedral and were located by a three-layer ply sandwich leaving slots in the centre section. Proceeded to cut out all the other oval fuselage formers including notches to locate the final external longerons. Assembly of these relied on a jig that held the bottom longeron, front skid and nose support section. With all the formers in place and aligned I added the crutch formers that would flow into the main wings. I proceeded to sheet back to the rear of the main wing. This was done by soaking balsa sheets in water and a small amount of bleach before folding them around the fuselage, pinning/securing and glueing with a water based glue.

This technique was also used to create all wing tips, stab, rudder and rear skid all in one piece by laminated eight 1mm layers of balsa around a readymade form before cutting them and glueing them to the frame. The shoulder block and bell crank that would hold the full moving elevator was glued in the stab followed by the fitting of a control push rod. A plastic tube was installed to run the closed loop rudder cables through at a later date. All the longerons were then glued in place. Carried out some final sanding and smoothing of sheeted areas and transition to longerons ready for covering.

I first masked off and spray painted the sheeted surfaces on the front half of the fuselage. Covered the shoulder/crutch formers for the main wing with black solar film and yellow micafilm that required adhesive to secure on the balsa. Same with the back half of the fuse that was covered in one yellow micafilm piece starting at the bottom and overlapped at the top. Completed stab, rudder and skid in black solarfilm. Covered the two plugin elevator sections in yellow micafilm. I then covered the two main wings with a combination of yellow micafilm, black solarfilm and large clear centre panels of laminating film. This covering added considerable strength and rigidity to the main wings. Covering complete.

I fitted standard size servos for both the full moving elevator and a closed loop cable rudder system. Added a battery, switch and 4 channel receiver. Carried out control surface movement checks and COG balancing before taking the glider out for its maiden flight. Launched it via a bungy system and glided off the top. A little up trim and I was away thermalling with a beautiful and majestic old timer glider.

This was a very challenging scratch build only for the experienced builder that took about 240 hours over a period of five months whilst in Covid isolation but it gave me great satisfaction in completing the Champion model and finally seeing it fly so beautifully.