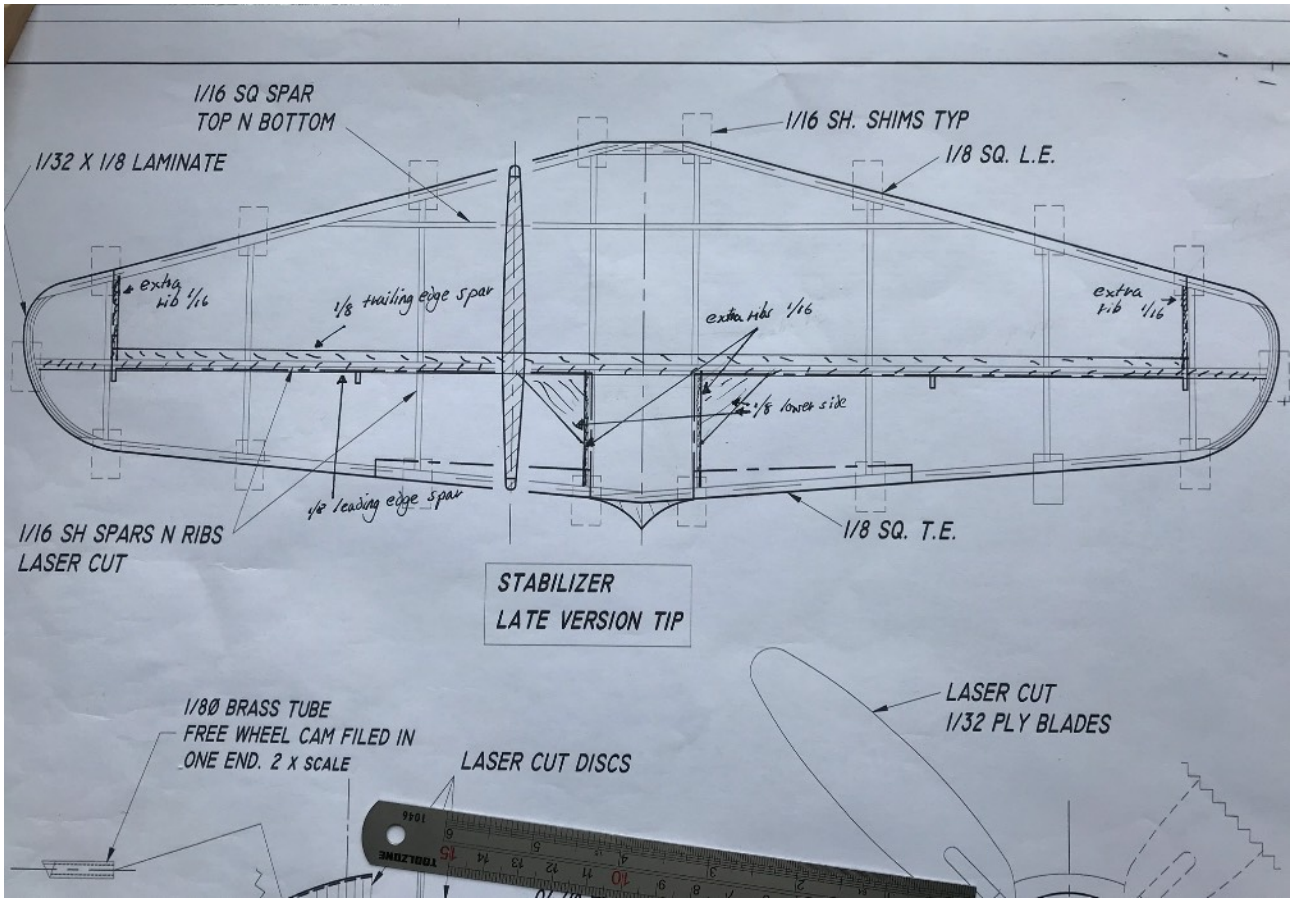
De Havilland Hornet build, part 4

Getting back to the build after a spell of fine weather, I had decided to do something simpler to get back in the flow.

The tailplane was an obvious choice. Without building it I can't be sure how its intended to fit to the fuselage.

This is where inexperience shows. I have built and added moving elevators to many free flight tailplanes before, but never one that reduces to half thickness at the tips, or to the front and back for that matter. This one is 1/4" at its centre section, 1/8" centrally on every outer edge.

So it needs 1/16" support at every edge joint; has no support at intermediate joints; laminated wing tips; an additional spar to form the leading edge of the elevator and some additional ribs to separate out the elevator. Plus provision for the elevator leading edge aerodynamic balances.

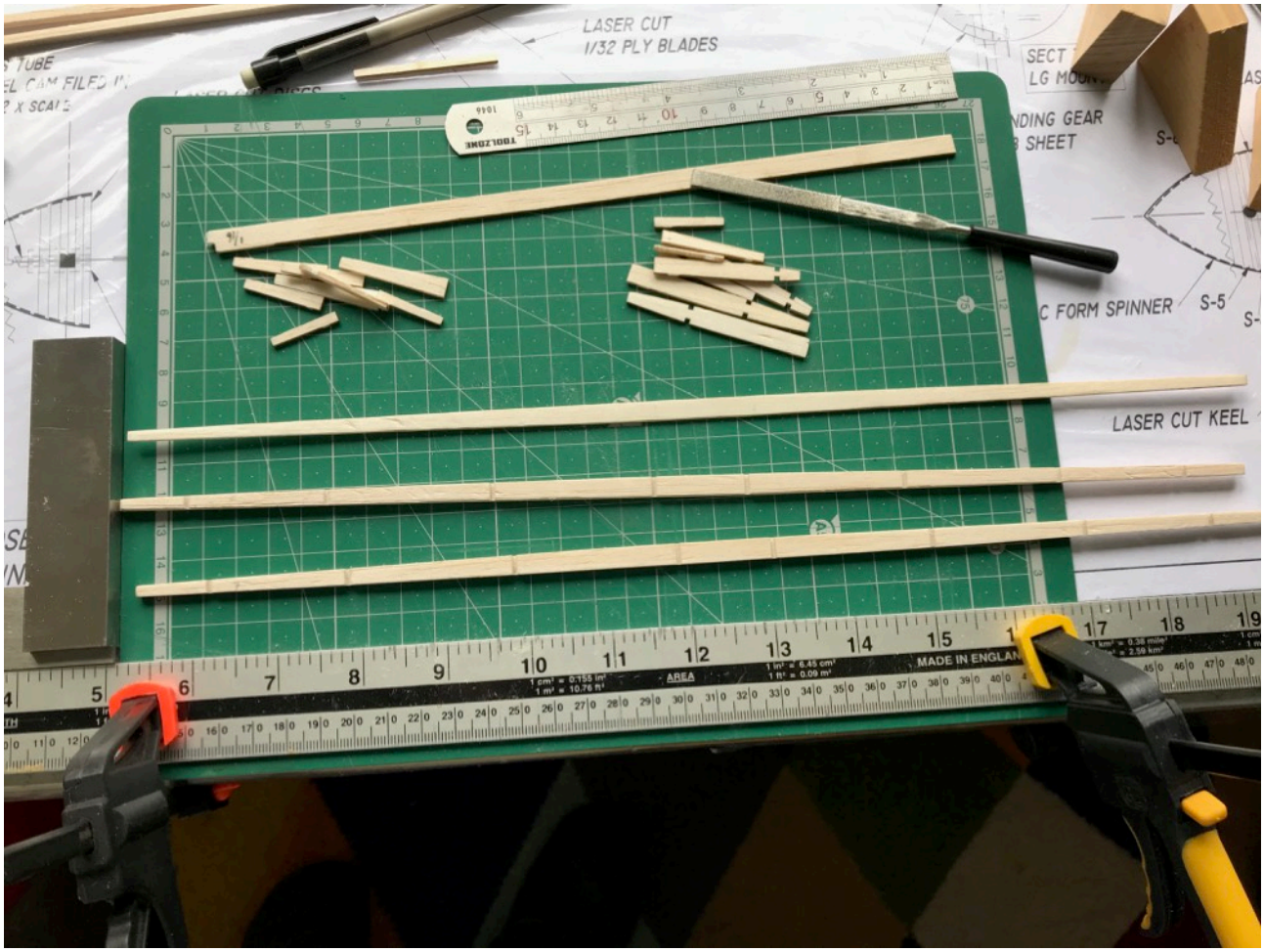


It would have helped if I had drawn the adaptations on the plan before starting.

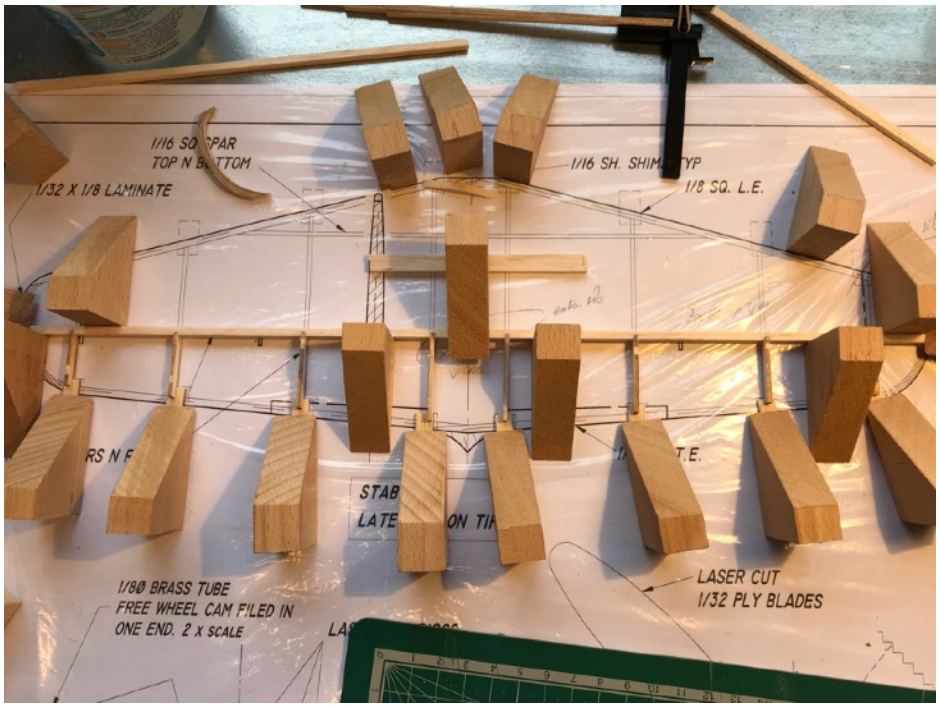
But, I was already occupied by the challenge of shaping two new aerofoil shaped spares from 1/8" sheet rescued from the laser cutting selvage. That's a considerable weight increase over the 1/16" soft balsa spar provided, but this proved really useful in shaping the replacements and avoided additional glue. These parts have to be exact before adding the ribs, or there is no chance at all of the tailplane/elevator sitting flat.

As I now had ribs that were consistently too long, I sanded slots into the spars to absorb some length and add strength.

In the end I found that a couple of metal rulers, one to guide the file, a thinner one beneath the

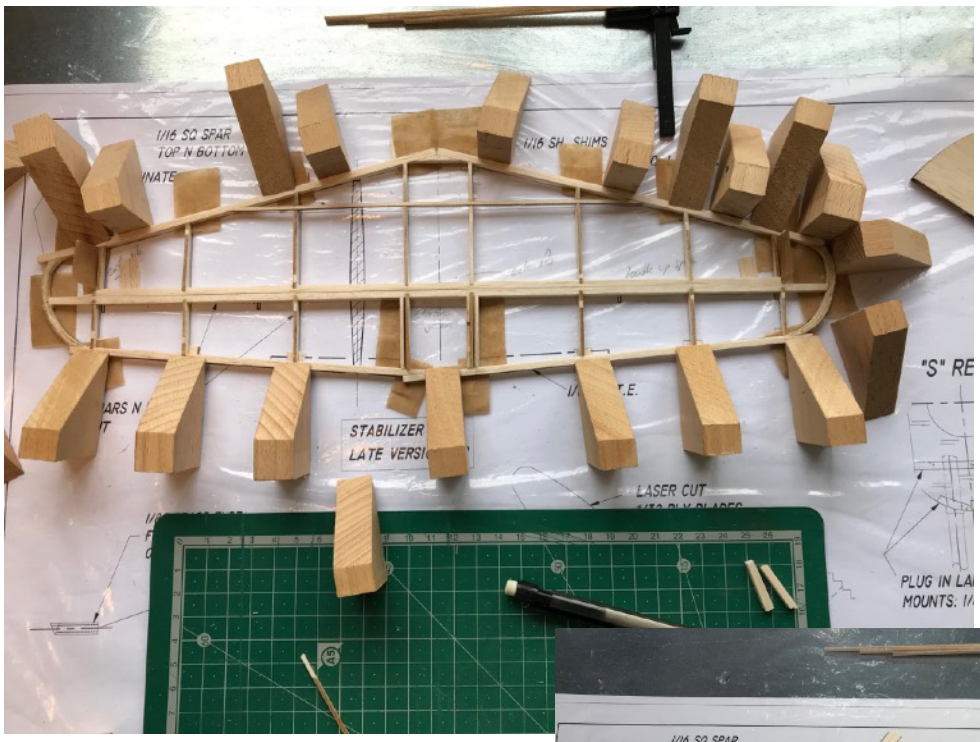


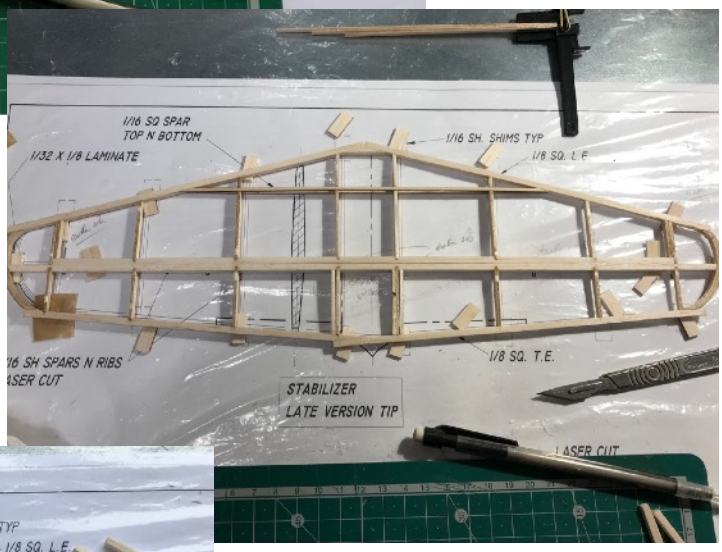
spar, aided flat and level 1/16” slots. It still left me with a tiny bit of each rib to loose, but at least sanding to fit is a familiar operation.



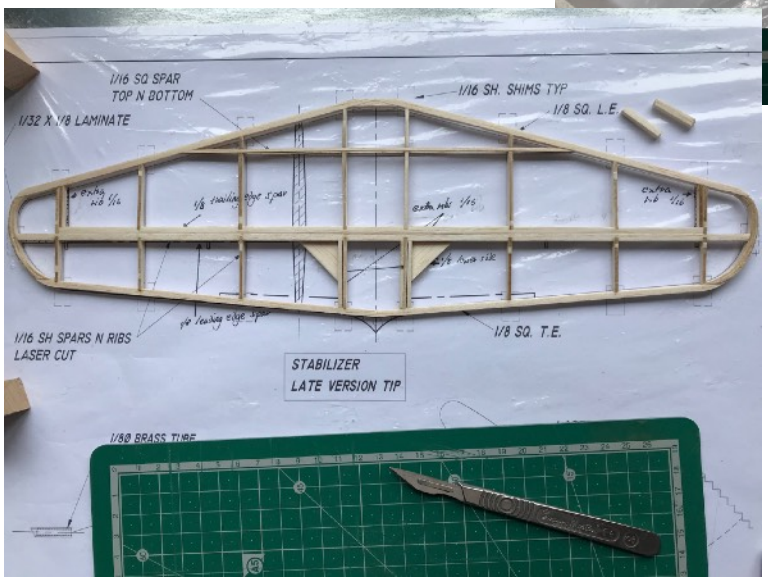
Gluing it all together almost defeated my steel and magnetic building board. There just isn’t room between the parts to retain the spars; prop all of the edges; fit each rib centrally on the spar and leading/training edges.

So, elevator first; then aerodynamic balance pieces (locking in the leading edge temporarily; then the tailplane. Even then 1 forward lower spar (spar of 1/16 sq balsa!) had to wait and be glued ‘in hand’.





Finally the whole thing emerged from the board to have rough overcast reduced and await sanding.



Major lesson - draw the intended changes on the plan before building the piece. That way all of the figuring out and interdependent gluing challenges would at least have been thought about in advance. I would probably have put the elevator in the right place too.