

Hand-made Formers

Building a fuselage without CAD

It was a quick and easy decision to participate in **AUFWIND**'s design contest (see report in the next issue), and a suitable model was found right away also, but now came the challenge of getting it all done in the time allowed. I had another woody project on the bench at the time, and then there is such a thing as life outside of model building. That's why CAD was out, in large part because I hadn't worked with it before.

On the other hand, I did have a three-view from Martin Simons' glider encyclopedia (page 122 of Segelflugzeuge „1945-1965“), which only showed cross sections of the head former and the canopy main former. So I had no choice but to design my own fuselage using a copier, paper, pencil, and a variety of rulers and curves. In the process I almost forgave the nasty teaching assistant who, in fourth semester of „geometry rendering,“ made our life difficult, because she was so particular. For the lack of a decent plan, I had to trust the inspiration that I can „invent“ the needed formers as I go along.

Soon, I had the idea to use 0.8-mm music wire held down with some pins as a ruler to draw curves with.

Photo Captions:

Page 60:

Picture 1: Drawing formers using the pinned-down 0.8-mm music wire as a ruler.

Picture 2: The landing gear former had to be „invented.“

Picture 3: The two forward formers also had to be drawn with the music wire ruler.

Page 61:

Picture 4: The result is great, the formers fit perfectly. At this stage, I also corrected the main former.

Picture 5: These are the templates for the foil covering.

This way I drew the formers after some calculations from slightly enlarged copies (see picture 1). The basic fuselage structure with the forward „keel board“ and the cockpit rim was done quickly, and the landing gear and forward fuselage formers now were to be figured out using cardboard templates (see picture 2). While preparing these templates a light went on: with two pieces of music wire – 1.2-mm now for added stiffness – some clamps and rubber bands, I changed the fuselage contours until they looked about right, and I could mark the proper contour points in the slots of the templates (see picture 3). For fine-tuning the outlines, I again used my 0.8-mm music wire ruler (see picture 4).

When covering the fuselage with „Oracover“ foil, I also applied my idea: using the photos as a guide, I made cardboard templates using the 0.8-mm music wire method (see picture 5).

The final result will be introduced in the report on the contest results in a later edition of AUFWIND.

Herbert Eberbach