Mini-Bipe

By Lou Roberts

A ½A sport biplane for fledgling C/L flyers.

PHOTOGRAPHY: LOU ROBERTS

Mini-Bipe is a simple, effective C/L ship (**above**). All sheet construction and author's foolproof alignment method almost insures success. Bellcrank mounts in slot in fuselage and because it's in the open it can easily be worked on (**below left**). Planform of Mini-Bipe easily seen here (**below right**).

For more years than I now care to remember, I have been involved in building Free Flight models. My last experience with Controline flying was back in Hal deBolt's era.

Being an ardent fan of FM's "Fledglings" column, Earl Van Gorder's versatility became contagious and I found myself restarting my modeling career in U-Control.

After building and flying a simple .049 kit model, I began to acquire some of the old skills back and lay awake at night pretending I was flying like Bob Hunt (at my age my reflexes have left me pretending).

Having always liked the charm of biplanes and being of nostalgic character, I decided a two-winger was the next step for my U/C rebirth! After shopping at the local hobby shops and finding no ½ ukie biplane kits, I decided to ply my limited designing skills and create my own two-winger.

Because my flying skills are still relatively basic, I wanted a model to learn with and at the same time allow me to advance to intermediate flying. For these reasons I decided to design the biplane with a 15″ wingspan to give sufficient speed for good line tension (still over 100 square inches area with two wings) and a long tail moment to make it more docile to control. I also reasoned that a simple, all sheet stock, profile model would not only be faster to build but also quicker to repair, if crashed. With these very basic ideas, the model was created and with a few minor changes, has become a very pleasing little flying machine.

My construction comments are quite basic because the plan is practically self-explanatory. The wings and tail surfaces are cut from ⅛″ hard sheet. The upper and lower wings are identical in size and shape with the exception of the pilot version cutout and cabane strut cutouts in the upper wing. Care should be taken in making the wing strut and cabane strut cutouts to assure a tight fit - more glue does not always mean more strength! The tail surfaces are cut from the same sheet stock and cloth hinges are installed. The hinges suggested on the plan are a guide for the beginner as is all the hardware marked on the plan.

The fuselage is cut from 3/16″ hard sheet and care should be taken in locating the wing, tail and bellcrank cutouts as well as the cabane strut notches.

The firewall, bellcrank mount, wing struts and cabane struts are all cut from ⅛″ plywood. The firewall should be grooved 1/16″ deep as shown on the plan to accept the landing gear and drilled to suit the engine used. The bellcrank mount should be drilled with a 1/16″ bit and two of the wing struts should be drilled likewise for lead-out guides. Also, two ¼″ x ¼″ hardwood pieces should be cut to serve as engine mount braces.

The tail skid and landing gear are bent from 1/16″ diameter music wire and the 1″ diameter rubber wheels are secured by collars or drops of solder.

Now that all of the parts have been cut out, notched, grooved and drilled as marked on the plan, a thorough sanding is required, rounding all edges in the process.

Next come what are probably the most important steps - assembly. Unless all parts are assembled squarely with 0° settings on wings and tail, the performance and trimming will be affected. The exception here being the stagger of the upper and lower wings which should fall into place, if all parts were cut out carefully.

Here is a tip on wing assembly. Glue the lower wing to the fuselage making sure it is perfectly square. While this is drying, glue the cabane struts in the cutouts of the upper wing, making sure they are perfectly square. After these are dry, glue the cabane struts in the fuselage notches, check for squareness and let dry thoroughly. Next, slide the wing struts through the cutouts, glue and you should have a perfectly aligned wing and fuselage assembly.

Install tail, engine mount and bellcrank mount squarely and the assembly is completed.

Finally comes the finish. The prototype was finished in white with red tissue stripes after the entire model was given three coats of clear dope mixed with baby powder to thoroughly fill the wood grain (does this hint at my age or does this hint at my age?). After the color coats and tissue stripes, you can add one or two coats of clear dope for shine and protection. Upon completion, install the engine and control hardware of your choice.

Before getting to flying the Minibipe, a few words about powerplants. If you have flown very little or perhaps not at all, I would suggest using a Cox .049 Babe Bee as shown on the plan. This will slow the speed and control response considerably compared with a more powerful engine. For the rest of the builders of the Minibipe I would suggest a Cox .049 Tee Dee as this engine was used on the prototype and produces much more speed and control response.

Now, last, but certainly not least, my suggestions on flying. Balance the model as marked on the plan. For those of you flying a Minibipe with a Babe Bee engine, use 30′ lines. For the Tee Dee powered two-winger, use 40′ lines. The model does equally well with hand launch or R.O.G. start. With the Tee Dee engine, the model is fast and very responsive. Do not let the long tail moment fool you - it does very tight loops.

As for trimming, I will say that identical planes have similar characteristics, but there are variations within these characteristics. If you really want to know how to trim a ukie, read Bob Hunt's recent C/L Stunt columns in F.M. - better you learn from a master!

I hope you have as much fun with the Minibipe as my wife and I have had. (Yes, I said, "my wife"!) We've both learned to fly ukie and we're no longer kids. For us, ukie flying began and re-began at 45!