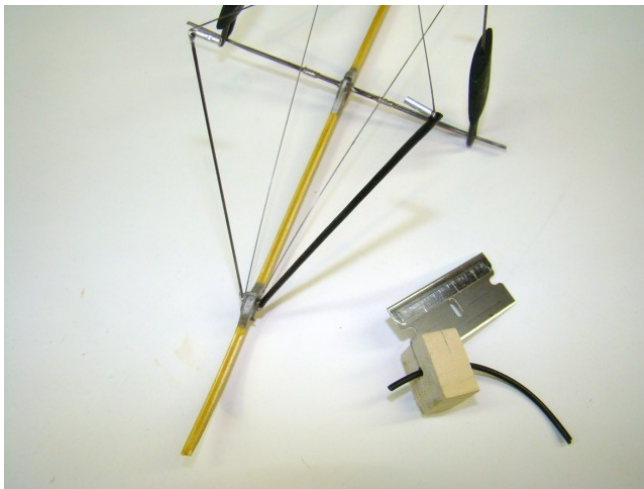


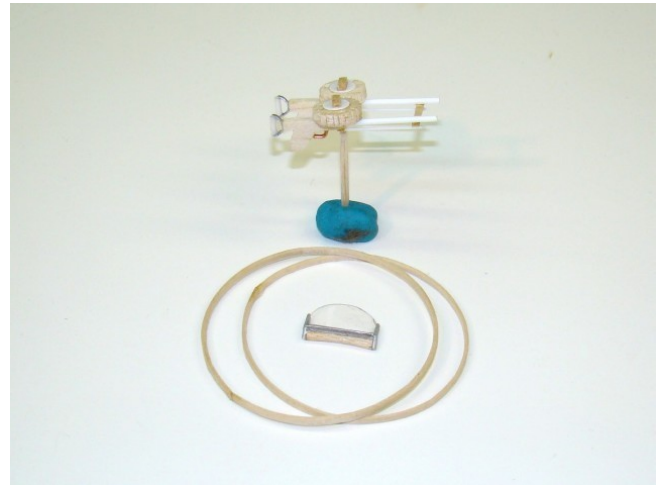


For me, it's just easier to make all the small scale tidbits and sub-assemblies and trial fit them to the fuselage before adding the wings. After I'm satisfied with them, they are then removed, put someplace safe, and installed permanently at the very end of the build, mainly because personal experience has shown that if left on initially, I would just knock them off.



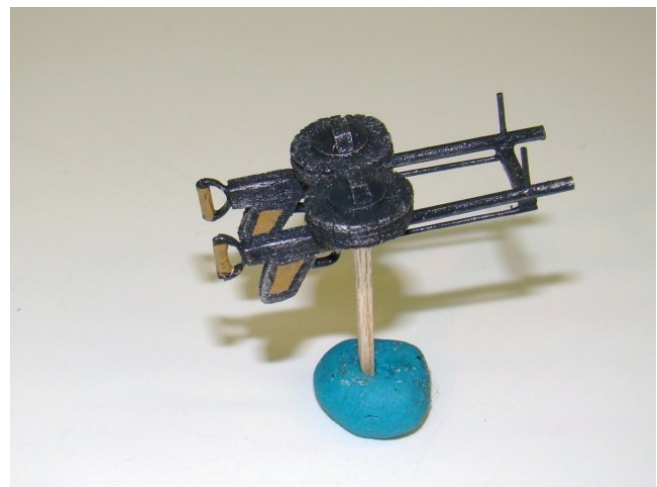
*The landing gear assembly*

I was obsessing a bit on how to finish the landing gear legs on the Avro. I didn't want them to look too "thick" as they are made of thin steel tubing. The plans called for card stock which I thought was an okay option as was covering with balsa wrapped with tissue paper. I thought both methods might have looked a bit bigger than I would have liked. In the end, I opted for covering with the insulation stripped from copper wire. Using a homemade tool that I originally made for producing cockpit combing gave me a simple way to add just a bit of width to the landing gear.

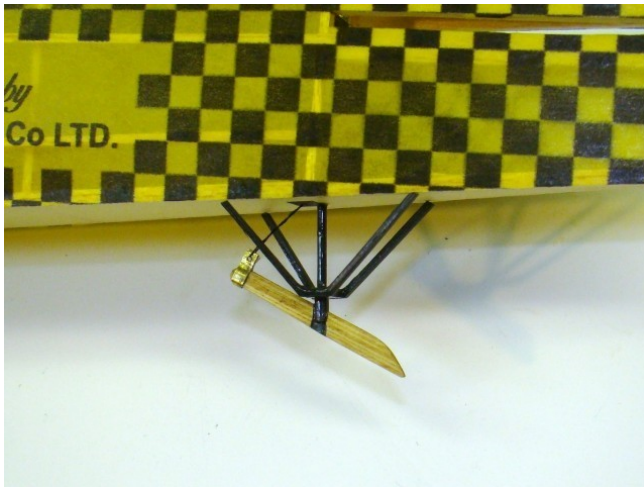


*Construction of the twin Lewis machine guns*

So prominent on the Avro are its twin Lewis machine guns. It's one of the reasons I've always been drawn to this particular piece of the Rhinebeck collection. A reasonable facsimile was fabricated by rummaging through my scrap box looking for anything that could be used. Soaking some thin balsa strips in a water and ammonia solution and wrapping around a piece of pvc pipe gave me the basic rings for the Scarff ring. After assembling, some scale black paint and dry brushing gave it a good scale appearance without having to go overboard. At the same time I made up two windscreens and cut the two foot holds in the side of the Avro's fuselage.



*Twin Lewis machine guns, painted*



The tailskid and its mount were composed of bamboo and basswood. A small piece of brass sheet was wrapped around the end of the tailskid, and copper wire was added to mimic the cable that travels up inside the fuselage that I presume attaches to a shock cord.

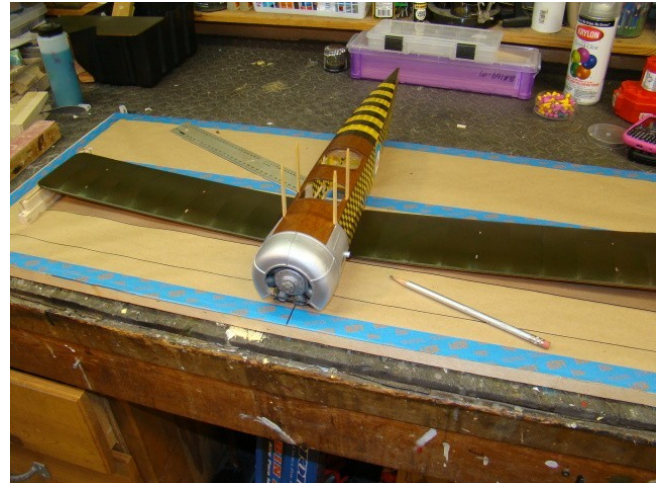


*Painting on the roundels*

Originally my thought was to use tissue for making the roundels, but slipped back to my standard practice of painting them on. The appropriate size stencils were cut out of clear shelf paper and applied. First, I like to lay down a coat of white lacquer paint as it bonds nicely to the doped tissue and resists any pull up of paint when masking over it. Other than the white lacquer, I prefer Tamiya brand acrylic paint for ease of use. After all the markings are applied, I give the parts a very light coat of Krylon Crystal Clear to give all the doped and painted surfaces an even amount of sheen which makes for a more scale appearance.



I don't think there is anything left to do but put it all together. In order to add the wings, I first pinned down the fuselage to the building board. The lower wing trailing edges hang below the bottom longerons, so a small platform was made to raise the fuselage up a tad off the building board. After what seemed like a dozen or so dry runs, the wings were glued on, propping up the wing tips with balsa to give me the desired one inch dihedral plus the height of the fuselage platform.

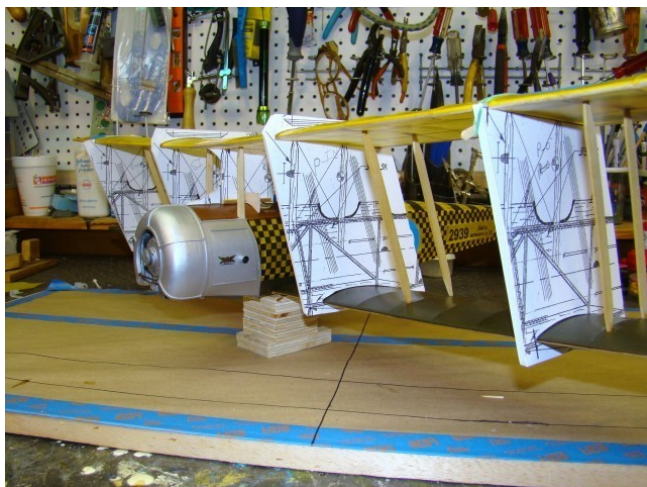


*Mounting the bottom wing*

Mounting the top wings of biplanes always gave me fits until I discovered an easier way to go about it. Seeing that the plan showed the desired incidence, copies were made of the plan's side view and glued onto foamboard to make jigs to hold the wings in alignment while adding the struts. After cutting out the wing profiles with an X-ACTO knife, I gently slipped the jigs on to the wings and checked the incidence. Perfect! In order to lift the top wing to ease the struts into their



sockets, the top of the jigs were sliced open, and then reattached using craft sticks glued to the jigs and rubber bands to securely hold the top wing in alignment. Then it was a simple matter of first gluing the cabanes into the upper wing and then the struts. After drying overnight, the foamboard jigs were simply cut away.



*Top wing alignment*

As I had left the tissue off the top wings center section in order to ease the wing installation, I installed it now.



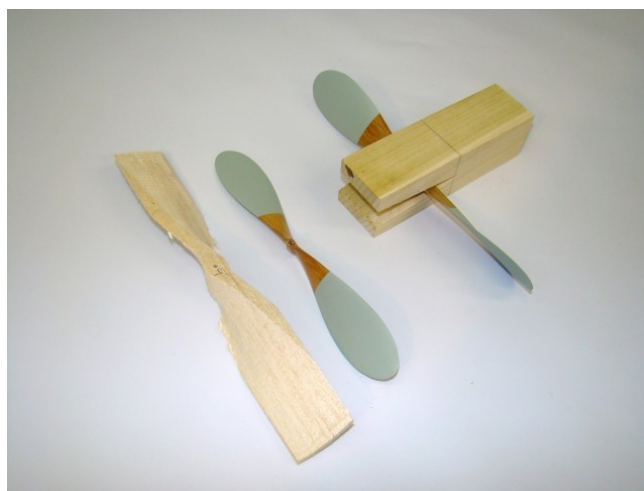
*Rigging the model*

I can't seem to explain away the love/hate relationship I have with rigging a model. As much as I enjoy rigging a model, it can be downright maddening at times. My choice of rigging material is a product called "Stretch Magic" found in most craft stores in the beading aisle. I find it much better than thread or monofilament. I usually don't go too crazy with the details and just drill holes directly through the struts and attach with CA

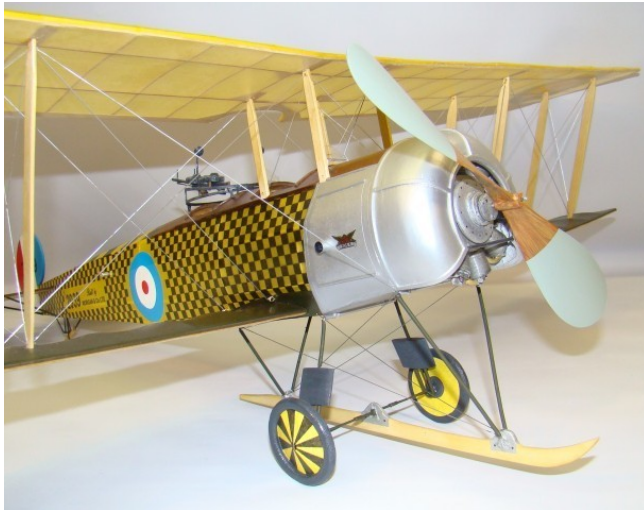
glue. Where I can't easily get to an anchor point, I install small eyelets to attach the rigging. Stretch Magic comes in both black and clear. I prefer the clear and color it by running a silver Sharpie marker over it after installation.

The landing gear with its wheels was attached for the last time using a very small amount of epoxy. By using epoxy, if it should ever have to be removed, the tip of a soldering iron touched to the wire will melt the epoxy making removal effortless. The stabilizer and rudder were checked for alignment and glued on using Ambroid glue. The tailskid, windscreens and Scarff ring with guns were attached with a slight amount of craft glue.

With a thirty inch wingspan, this plane really could use a larger propeller than the front skid will permit. The plans called for a prop with a maximum diameter of eight inches, but by slightly lengthening the front landing gear legs, I was able to trim down a nine and three quarter inch Pecks prop down to just under nine inches which has been re-pitched. Whether this plane flies or not all comes down to getting the right prop and rubber motor combination, so I'm in the process of prepping some different props to try out at the flying field. Four loops of one-eight rubber seems like a good starting point for a motor.



*Propeller Construction*



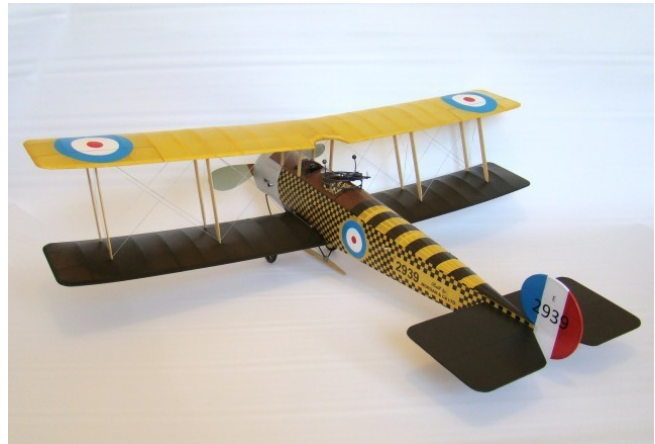
*The Avro with prop and landing gear installed*

All built up, I'm happy to say that the Avro weighs only 101 grams including the plastic prop, but minus rubber. At this point, she balances right at the designer's C/G mark, but with a forward peg I shouldn't have to add much ballast after installing the rubber motor.

All in all, it was a very fun build and a very personal one for me. I've waited years to build a free flight model of the Rhinebeck Aerodrome's Avro 504K in the hopes that I could do it justice. Only question now is, . . . what build is next?

Go [here](#) for part one of this article.

Here are some more views of the finished product.



If you'd like to see a lot more pictures of this build and in higher resolution they are in our Photo Galleries [here](#):

- [Building an Avro 504K - Part 1](#)
- [Building an Avro 504K – Part 2](#)