MASS. GENERAL

BOSTONIAN

By PERRY PETERSON . . . A good flying outdoor Bostonian, based loosely on the 1929 General Aristocrat. Excellent for beginner competition.

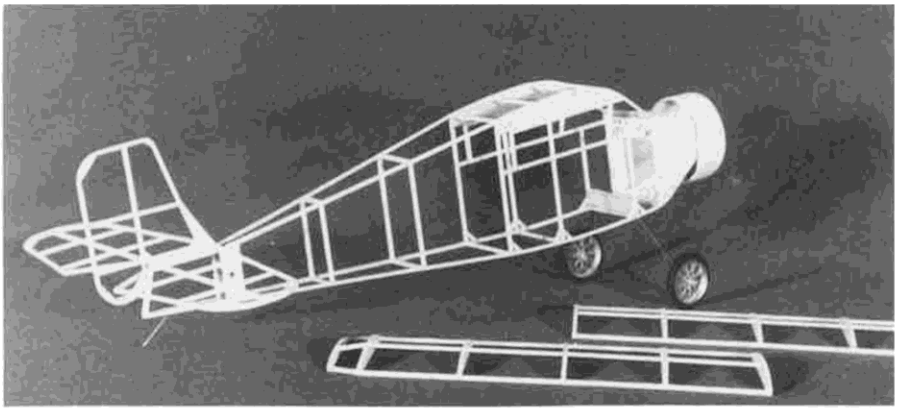
• Aircraft manufactured during the 'Golden Age' of aviation (between World War I and World War II) have always been popular with modellers. This Bostonian model is somewhat patterned after the General Aristocrat, a between-the-wars favorite.

If you have not built a Bostonian model, I urge you to try one. However, I must warn you in advance, they can become addictive! I truly have not had more pure relaxed modelling enjoyment than when building and flying Bostonians.

This Bostonian was built as an outdoor model conforming to the 14 gram rules. If you plan to build for the 7 gram indoor event, you will need to use lighter materials.

CONSTRUCTION

Cover the plans with thin kitchen wrap and build the sides, one over the other in the usual box fuselage fashion. Use medium weight 1/16 square balsa for the longerons. Uprights aft of the landing gear, except for the motor peg retainer area, are light weight 1/16 square balsa. When the glue is dry, separate the frames and glue together at the tail post. Add the cross pieces working from back to front, making sure the sides are square with the building board and symmetrical, following the plan top-view. The 1/16 square cross pieces aft of the landing gear should also be light weight balsa.



Bones photo shows simple, light construction. Cowl ring helps hide the long nose moment needed for good flying characteristics. Those Hungerford spoke wheels really add a lot of class, as do the dummy engine cylinders, which are made from bendable plastic drinking straws. As for the abbreviated name, our author originally wanted to call the model "Boston General," until research revealed that the hospital of note in Boston is called Massachusetts General. The fuselage wasn't long enough to hold all the letters, hence the abbreviation.

Cut the forward fuselage pieces F-1, F-2, and F-3 from very light weight 3/32 sheet balsa and glue in place. Cut F-4 from medium weight 1/16 sheet balsa. The cowl ring is 1/16 balsa sheet cut to size, soaked in ammonia and wrapped around a small medicine bottle. The form does not need to be the exact size as long as it is close to the diameter needed. When dry, glue the ring ends together and then glue to F-4. I used the back side of a balsa model rocket nose cone for the crankcase (which is also the removable nose block). The crankcase could also be made from a block of soft balsa. Drill a 1/8 hole for a small Peck-Polymers thrust button, allowing for 2 degrees down thrust.

The dummy cylinders are from drinking straws with a short accordion type bendable section. Cut the bendable section to length, then cut in half to simulate cylinders with cooling fins. The only straws like

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this I could find were flashy colored party straws, but that was no problem as they needed to be painted black anyway. Glue these in place on the front of F-4, allowing just enough clearance for the crankcase (nose block) to be removed for stretch winding.

Bend the landing gear from .020 music wire using the pattern shown on the plan. Sandwich the top of this wire between two L-1's and clamp well until the glue dries. Most any wheels will work as long as they are at least 3/4-inch diameter. I used 1/8 x 1-inch Hungerford nylon spoke wheels.

Build the wings and tail surfaces over the plans. Don't forget to angle the inboard wing ribs slightly for dihedral (there should be a half-inch dihedral under each wing tip). Use very light weight C-grain 1/16 balsa sheet for the wing ribs and firm 1/16 square strips for the leading and trailing edges. The tail surfaces should be built from medium 1/16 square balsa stock.

COVERING

Mix Elmer's white glue with 50% of water and brush this solution around the framework of the area to be covered by the first piece of tissue. Lay the tissue over this area and gently pat down and carefully remove the wrinkles with moistened fingers. When the glue is dry, trim the excess tissue with a new sharp razor blade. When everything is covered in this manner, it is time to shrink the tissue. Use a spray bottle with an adjustable spray nozzle. Adjust for a fine mist and spray just enough so the tissue will sag a little. Do not saturate. Drying can be hurried with a blow dryer.

Brush on a couple of coats of non-shrink clear dope with 50% thinner added. I used non-shrink nitrate dope from Oldtimer Model Supply. Two coats are plenty for the wings and tail surfaces. Add a third coat to the fuselage.

The red crosses were cut from red tissue and doped over the white tissue of the model. The red lettering on the fuselage is instant lettering rubbed on to clear acetate self-stick laminating material, which was then trimmed to the edge of the lettering and applied to the model. This must be done after the last coat of dope has been applied. The GAC logo below the side windows was drawn on self-stick acetate and applied to the model. The self-stick acetate cannot be moved once it is applied so be careful to position it exactly the first time. The door outlines, vent louvers on the cowl and the movable wing and tail surface outlines were drawn on with a Sharpie pen.

Cut the windows from the thinnest acetate material you can find. Clean all finger marks from the acetate and glue in place with R/C-56 glue used sparingly.

Glue the wings and tail surfaces to the fuselage, making sure that everything is straight and true. The bottom of the inboard wing ribs rest on the 1/16 square balsa wing guides shown on the plans. The wings need half-inch dihedral in each wing tip.

FLYING

My Mass General flew right off the building board and is happy flying either right or left, depending on which way I aim the thrust. It is a very stable and docile performer and looks great in the air.

My outdoor flight trimming procedure is to get the plane to glide first, by adjusting the tail surfaces as needed. I like to test the glide of outdoor models by putting in just enough turns in the motor to let the model make a slow gentle descent to the ground. I usually start with about 100 hand winds (use a 12 to 15 inch loop of 3/32 to 1/8 FAI rubber for this model) and launch so the model will leave my hand in a line parallel to the ground. Make sure you do not throw the model upward into a stall. Once a satisfactory glide has been established, I trim the powered portion of the flight with thrust adjustments. Begin powered flights with no more than 200 winds.

Watch each flight carefully and remember exactly what the plane did so you can make the correct flight adjustments. Increase down thrust to correct a power stall. Any tendency to spiral under power to the right or left should be corrected by increasing opposite side thrust. Rudder and elevator were used to establish the proper glide, so if we need to change the tail surfaces to trim powered flight, the glide could be upset and we may need to start all over. When flights are satisfactory, add another 50 turns and fly again. By increasing power in small steps like this, there will be much less chance of damaging your model before you have it properly flight trimmed. •