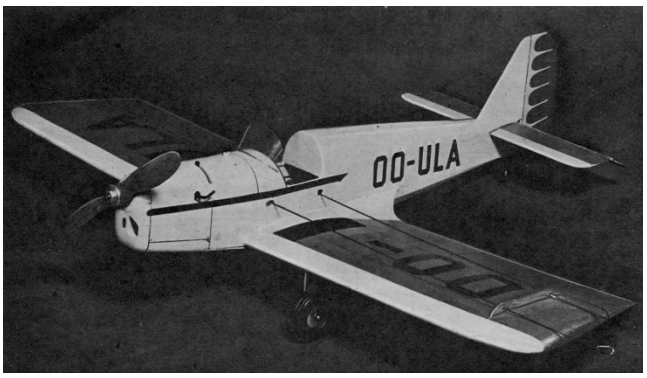
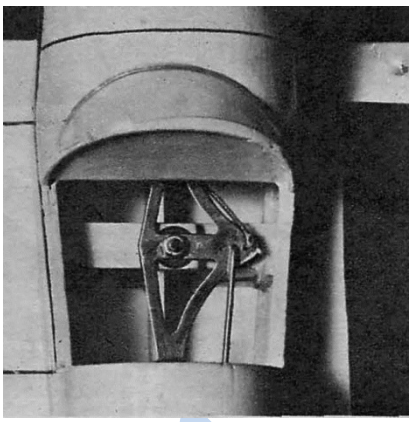
Tipsy Junior





Bell-crank detail seen through cockpit opening of Tipsy's fuse.

Scale? Roger! A good stunter? You betcha! Takes McCoy, OK, Bantam 19, even .29 motors. By Aubrey Kochman.

How many times at a control-line stunt contest have you heard the expression, “It sure does everything in the book, but it doesn’t look like an airplane to me.” Or, “It’s a beautiful model but I’d hate to see it crack up, it sure must have taken plenty of time to build.”

With these thoughts in mind, I set out to find a model that would be a perfect scale model, or as near to scale as practical, a good stunt ship and a cinch to build. Things didn’t look too well until I ran across the Tipsy Junior. It looked like the answer, and after carefully scaling up the plans, I found that this definitely was an ideal stunt model.

The Tipsy was designed by O. E. Tips who has been associated with the design of successful light aircraft since the middle thirties. The registration letters show that the airplane was licensed in Belgium. It is an ultra-light aircraft, having for a power plant a 60hp four cylinder in line inverted air cooled Walter Mikron, while another version is fitted with a 36hp J.A.P. horizontally opposed twin cylinder engine.

The model as presented here was scaled up from the three-views to a size that would take a Bantam or McCoy 19 fully enclosed, except for the glow plug, and have good performance with either engine. A Bantam powers the model shown and construction was planned to keep the weight to a minimum without sacrificing strength. Choose your wood with this thought uppermost and you should have little trouble in keeping the weight to about 15 ounces. If you like to fly control line with models that look like the real thing and yet are not too fussy about exact scale, engines like the Ohlsson 23 or 29, McCoy 29 or OK 29 may be used if the nose of the model is widened just enough to take the engine and the cylinder head is allowed to protrude either in an upright or inverted position.

To begin construction you will first have to scale up the drawings. Better still, order a set of full size plans from Air Trails. In either case start by laying out the two sides on sheets of quarter grained balsa 3/32" x 2" x 21". Check both the top and side views when doing this as you will lose almost 1/2” in fuselage length if you work only from the side view. With the two sides cut to shape, cement the 3/32"-square longerons and uprights directly on to the sides.

Next cut through the longerons and lightly score the sides at the points in the fuselage where, seen from the top view, it bends sharply just forward of the cockpit at former 4 and again at former 3. Apply glue at these breaks and start cementing in the cross braces top and bottom where the formers are shown.

When completed this should give you a square box-like crutch on which the formers are glued. All formers are cut from 3/32" quarter-grained stock. The stringers are added and these are cemented to the formers and lined up to give a neat appearance and a smooth covering job. The bottom stringers may now be added as far forward as former 8A and extended into the bottom center section of the wing, after it is in place; or you may choose to leave them off and add them in one piece later on.

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The motor mounts are next. These should be cut from any close-grained hardwood. Apply plenty of cement and set them in place. While the cement is still not dry, place your engine in position and check to make certain there is no up or down thrust but that there is a slight amount of right thrust (to the outside of the circle). Now carefully remove the engine without disturbing the mounts, and after the cement is dry apply a second coat.

Next install your favorite stunt tank between formers 3 and 4, and plank this section allowing the filler tube to protrude. If the filler tube is too short, as was the case in the original model, leave a small opening in the planking and later on enlarge this opening so that a piece of neoprene tubing fits snugly through it onto the filler tube. Don't forget to fill in the stringers between formers 5 and 6. The full scale airplane is planked here, so the model is, too.

The nose blocks are carved from soft balsa, with the bottom one carved first. Hollow it out as shown and cement it in place. The front block is cemented in place and carved to conform with the general outlines. Split this block on the line of thrust. The top piece becomes part of the engine hatch, so we make the hatch next. Pin former 2 against former 3, and former 1 to the nose block. Start planking both sides. When enough planks have been added to insure against any distortion, remove the pins and complete the planking. If these simple instructions are followed you will have a very snug-fitting hatch that will not necessitate the use of dress snaps. However, they are shown on the plans, if required.

Add the top piece of the nose block to the hatch and with this section in position on the model, sand the planking and nose block into a smooth unit. Later on, when you temporarily install the engine to make the necessary holes for exhaust, needle valve, etc., you can cut the cooling hole and the hole for the glow plug.

With the fuselage thus far completed, build the tail surfaces. Make these from fairly light 1/8" quarter-grained balsa. Cut them to outline shape and sand smooth. Add the control horn as shown and apply the cloth hinges to the elevators. Cement the stabilizer in place and then the rudder. Add the soft balsa blocks to each side of the rudder and carve and sand to conform with the top turtle deck. Make the push rod; secure it to the control horn and pass it through the fuselage at the point shown. It will to operate smoothly without rubbing the fuselage side. When it is working smoothly, mount the bell-crank on a piece of hardwood as shown (a piece of the motor mount wood will do), connect the push rod and move the bell- crank fore or aft until the elevators are in neutral along with the bell-crank. If the crank unit has to be moved from its position on the plan more than 1/8" in either direction, make a new push rod.

The wing is a simple sparless type, and no difficulty should be encountered in its construction. Just make certain it is perfectly true without warps. To gain in performance, some of the scale dihedral was taken out. 5/8" in each tip' allows for inverted flight and yet does away with the droopy look of most stunt ships. The section, however, remains authentic.

Use plenty of cement when installing the landing gear and tail wheel.

To install the wing, first crack a piece of 1/4" square to coincide with the dihedral angle. Cement this piece to former 8A as shown. The trailing edge butts up against this piece. It may be necessary to trim away the lower edge of the fuselage side at this time, to allow the wing to fit flush with no incidence as shown. When in its correct position, without incidence and lined up square with the stabilizer, add the other piece of 1/4" square under the trailing edge.

Now finish up the fuselage stringers allowing them to taper into the wing center section in a smooth curve, as seen on the side view. Push a piece of neoprene tubing onto the overflow tube from the tank and let it extend out the bottom of the model. A piece of 3/32" sheet, with allowance made for the tubing to pass through it, is now cemented in place. This piece is also tapered off into the wing center section. Round the edges of this piece.

Hold the engine in place and cut all necessary holes. Remove the engine and go over the model with fine sandpaper, to insure a smooth covering job. The entire model is covered with gas model grade

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Silkspan. If applied wet, but not dripping, you will find little trouble in getting around the so-called double curves, and you will be able to use larger pieces. When completely covered, give the entire model two or three coats of clear dope.

The wing fillets are made of heavy paper such as Bristol board. Take care in fitting them and you will be more than repaid for your patience with many “ohs” and “ahs” on the flying field. One coat of clear dope is sufficient on the fillets.

The full scale ship and our model is painted as follows: Fuselage is bright yellow (Testors fuel-proof dope is perfect). The fin is also yellow with the thin tapering scallops extending on to the rudder, which is "silver. The wing and stabilizer are silver with a yellow leading edge 5/8" wide on the stab and 3/4" wide on the wing. The registration letters and the stripe on the fuselage are dark blue.

Two coats of colored dope were found sufficient for a beautiful finish. On the wing, one coat of silver was brushed on and the second coat, thinned out considerably, was sprayed on with an ordinary Flit gun. Aileron and cowling markings were done with India ink and a ruling pen. Don’t forget to paint inside the cockpit and engine cowl. When the dope is completely dry, a piece of copper wire or soft wire of any kind is bent to form the windshield frame. Bend the ends over sharply and push them through the planking. Spot cement this wire in place, and the celluloid windshield to the frame.

Use four 1/2" round-head wood screws when mounting the engine, if you use a Bantam or McCoy 19. Use screws slightly larger and heavier with a bigger engine. Don’t worry about their pulling out under normal engine running. They prevent bent crankshafts on crashes by pulling loose. To re-install the engine again, either use a heavier gage screw, or fill the hole with Plastic Wood and when hard use the same size screw used originally.

With your Tipsy completed you now possess a scale control-line model that is different in appearance, simple to build and capable of every stunt in the book.

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