ONE 70 TOON

by Tom Binkley

I have always been intrigued, fascinated and inspired by model airplane plans. I so enjoy looking at and studying them that I have "wallpapered" my workshop with my favorite model plans. Some older models call out to be built and flown to take me back to my childhood dreams. Other plans inspire creativity.

In November of 1975 Fred Reese published plans for "The Littlest Stick", then the smallest of the long line of very popular "Ugly Stick" variants at 19 ¾" span. It was powered by a Cox .010 engine and was guided by the popular Ace Baby actuator for rudder only control.

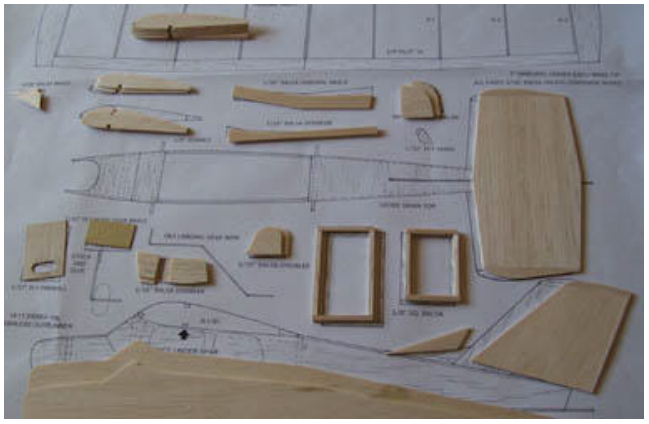
The design has enjoyed a measure of popularity through the years, as it is irresistibly cute and flies well. Today most are flown with electric power and RET control by micro digital systems.

I had enough "ugly" models in my fleet, but I just couldn't stop looking at the Littlest Stick plans. Then the inspiration came. I overlaid the Littlest Stick plans with a fuselage plan of a popular light plane. The lines were remarkably similar, enough so that I was able to quickly redraw the fuselage and rudder to the shape presented here. I then redrew the wing plan with familiar tapered outer panels. Not exactly scale, sort of "cartoon" scale. Thus the “One 70 Toon.”

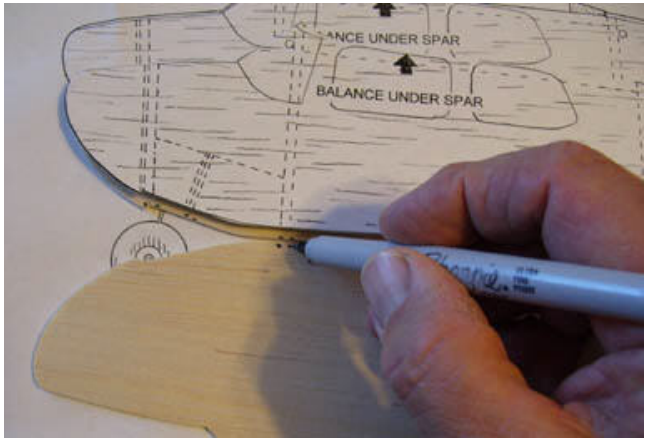
The One 70 Toon is simple and easy to build. Light weight contributes to excellent flight performance so I chose 2.2 gram servos, a 4 gram receiver and 6 gram ESC. It is powered by the popular 18-11 2000 kV 10 gram motor. With a 370 2S battery and 5030 prop it draws 14W providing plenty of power.

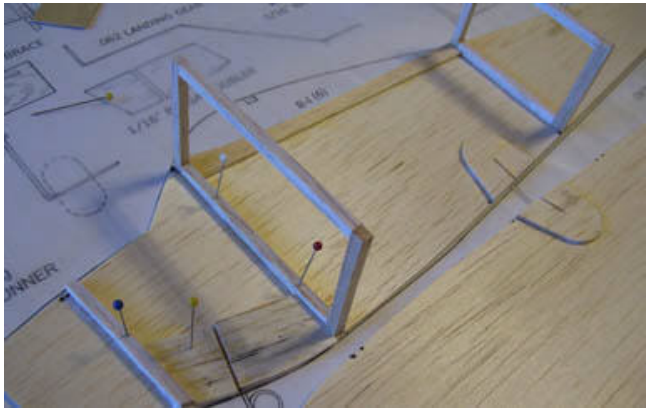
The Littlest Stick was never intended to be a trainer, likewise, One 70 Toon is a bit too fast and responsive for a beginner. Construction is easy and quick, the airplane is rugged and durable. Let's build one.

Start construction by cutting out all the parts. I use templates made from photo copies of the parts glued to cereal box cardboard.

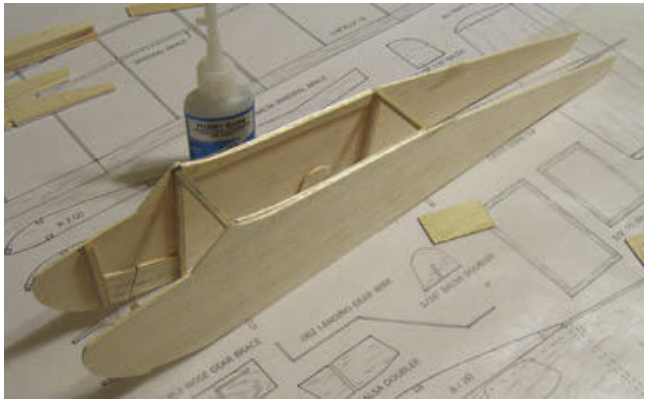


With parts in hand, glue all fuselage doublers and 1/8" balsa firewall braces accurately in place on fuselage sides. Make a right and a left side.

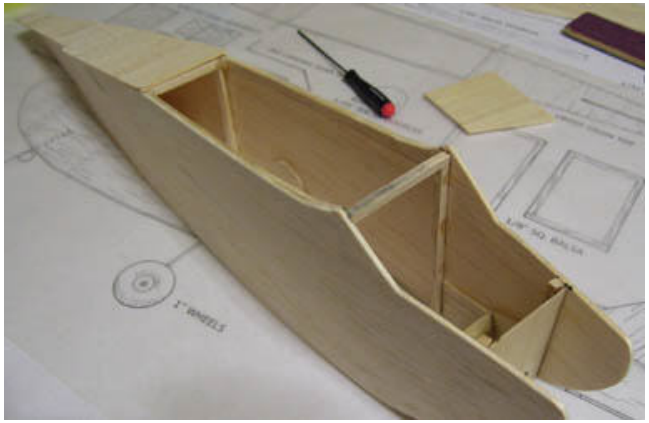


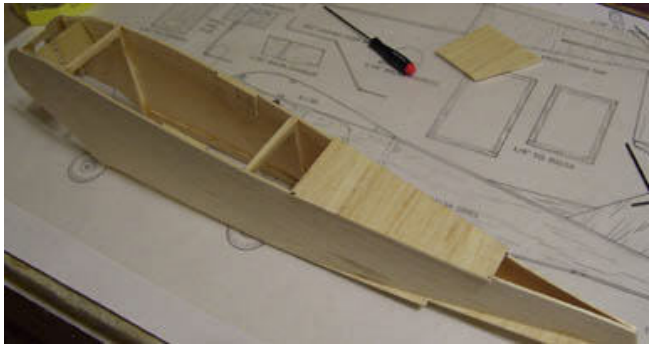


Next glue the two bulkheads first to one fuselage side, then to the other paying careful attention to alignment. Pull the tail together and glue.

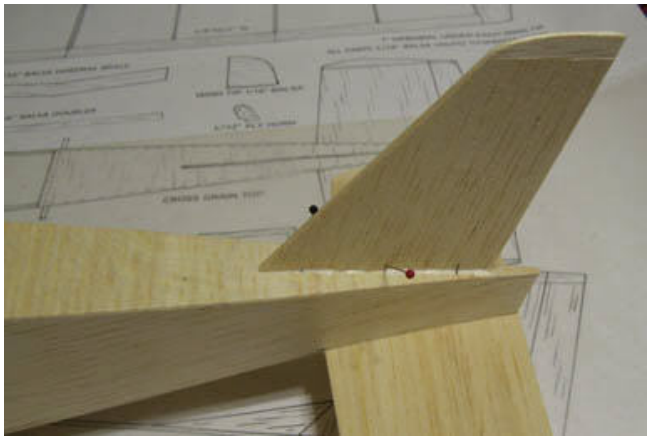


Form the nose gear wire and bind it to it's ply plate using sewing thread and Ca. And install. Pre-drill motor mount holes in the firewall and glue it in place. The fuselage top and bottom are cross grain and can be added, then sand everything smooth.





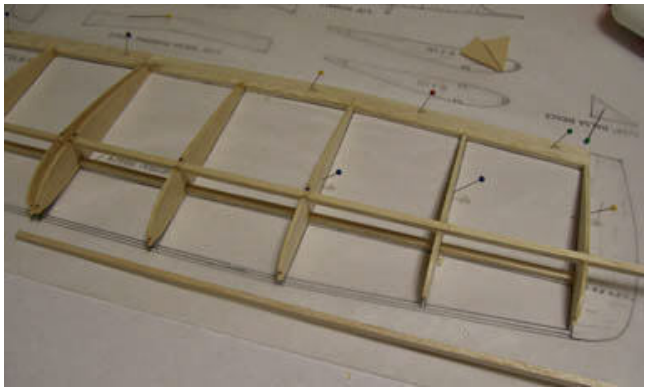
Make the rudder/fin and elevator/stab, sand a bevel on mating hinge edges and finish sand. Glue the stab and fin to fuselage straight and square as viewed from above and from behind. Spray fuselage, rudder and elevator with two thin coats of lacquer or other clear sealer.



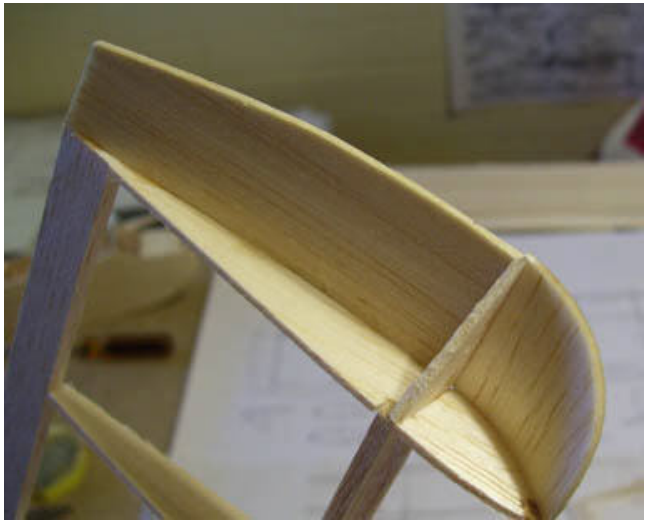
My fuselage trim is colored tissue paper applied with Minwax Polycrylic, using an artist's brush. This method is quick , easy and non-toxic. Tissue paper from a craft store comes in a wide variety of refreshing colors.

Make a cardboard window template and draw the window outline with a black permanent marker, gently so as to not mar the soft balsa. Then fill in windows with a mixture of blue and silver acrylic craft paint. Install 1/8" wing dowels.

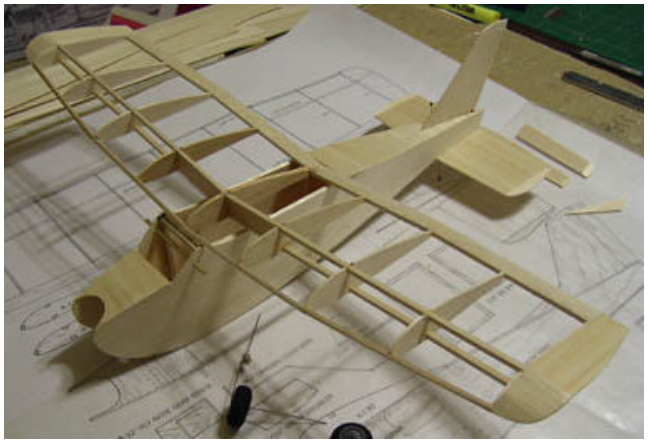
Form main landing gear wires. Drill a small hole in each side of the fuselage, on one side just ahead of the vertical slot in the landing gear doubler, and on the other side just behind. Insert the wires, making sure they are seated in the vertical slots. Secure with liberal amounts of thick Ca. Attach wheels.



Assemble wing over wax paper covered plans. First lay bottom spar and trailing edge in place, add ribs, top spar and leading edge.



Glue the rear half of the wingtip and it's triangular brace, then wet top of front wingtip piece, gently bend to fit rib curvature and glue it in place. Sand wing tips to shape.



Raise one wing panel two inches and add dihedral brace. Finish sand and cover with SoLite.

Since the One 70 Toon fuselage is small it is good to shorten the wires from the ESC to the motor so the ESC fits neatly in the nose. Install motor/prop/ESC. Use clear cellophane tape to hinge rudder to fin and elevator to stab.

With the model built, covered and assembled, trial fit the battery, servos and receiver in cabin and install wing with 2 #19 rubber bands. Shift location of components as needed to balance model under spar. Then install components accordingly.

I epoxied both servos to left fuselage side, cut exit slots in rear of fuselage and installed .032 wire push rods and 1/32”ply horns.

Harden off the fuselage floor, or even add a 1/64” plywood scab and attach receiver to right side of fuselage and battery to cabin floor, with hook and loop fastener.

Set rudder to 1/2“ total travel and elevator to 3/8“. Check that there are no warps. Range check radio and confirm that model balances under the spar.

At full throttle One 70 Toon will ROG in a few feet. In the air my One 70 Toon handles exactly like I expected. It is a little pitch sensitive but generally very stable.

It rolls well and easily, handles a good breeze and is very responsive without being twitchy. It has remarkably good performance on 14W and easily flys 15 minutes on a charge. It is fun to fly and it looks so cute!
Thanks Fred.

Editor's Note - And here are a few flight photos to get you interested in building this little cutie.