

## Assembly Instructions

### Wing Assembly - Left Wing

- 1. Start by tacking waxed paper over the left wing portion of the plans. Glue the balsa trailing edge to (1) sheet of 1/8" x 3" balsa sheeting. This will be the bottom trailing edge sheeting. Be sure to keep the trailing edge straight, and at this time make the trailing edge sheet for the right wing also.
- 2. Pin a 1/4" sq. x 38-1/4" Bass shim on top of the plan immediately behind the main spar. This will shim up the front of the ribs and keep the wing straight. The next step is a very important one, so use extra care and make sure you have it correct. Compare (1) rib to the plan to determine which side is the top and which side is the bottom. Notice that the airfoil is different on the side and on the bottom, and that the top side of all ribs have a "T" marked on them.
- 3. Now make the center ribs. Glue (1) solid and (1) slotted partial rib together and then glue the slotted side to the inside of the center rib; be sure to make (1) right hand and (1) left hand center rib.
- 4. The ribs can now be glued into position at this time, starting at the center of the wing. Use a Micro-Lite™ plywood spar web to set the center rib dihedral angle; use a square to the rib to the trailing edge, and use it to square the other ribs vertically.
- 5. Glue on the top spar and the leading edge. Again, make sure that you have the correct angle on the center rib. Be careful not to use too much glue on the spar joints, because the spar webs will be glued to the sides of the spars between each rib.
- 6. The next step is to install the wing compression blocks for the wing bolts in position as shown on the plans at the trailing edge, and between the first two ribs, using the pre-cut compression blocks in the kit. Please note that these blocks are made from pre-cut Balsa trailing edge stock and a piece of 1/8" x 2" x 2-3/8". Once the wing compression block is installed, you can glue on the top trailing edge sheeting 1/8" x 3" balsa.
- 7. Now you can sheet the top front leading edge portion. Use the 1/8" x 5" sheet that you will have to make using (1) 1/8" x 3" and (1) 1/8" x 2". Glue the two sheets together to make a 5" wide sheet. Be sure to keep (1) edge straight for this will be a panel line in the wing that you will be gluing cap strips to. You will have to wet the wood to make it curl before you attempt to sheet the wing. Start at the spar, hold the sheet back 1/16" from the rear portion of the spar and attach the sheet to spar and the ribs.
- 8. Now put the cap strips on the ribs for this side, and that will complete this side. When the glue dries, take the wing off the board and turn it over, then remount it to the building board. Add the bottom spar and center section spar webs. (Note the center section spar webs are Micro-Lite™ plywood and are cut to size, you will be putting spar webs on each side of the main spar in the first two center section spacings of the ribs.) At this time, sheet this side of the wing. After the sheeting has dried on this side, you can glue in the spar webs. Use the pre-cut 1/8" x 3" and 1/8" x 1-7/8" balsa to make up all the other spar webs for the webs, which are 4-7/8". Finally, add the cap strips.

- 9. Now assemble the wing tips. Start by gluing together the 3/8" x 1" balsa strip and the 3/8" x 3" pre-cut wing tip piece. Once these have dried, glue the 1/16" x 3" pre-cut wing tip parts cross grain across the two pieces and then glue a 1/16" x 1/2" balsa strip to each side of the 3/8" strip. Now glue the wing tip to the wing panel, being sure to keep it straight and square to the wing. Glue a piece of 3/4" triangle stock (3/4" long) to the front portion of the tip to round off the front of the tip on the top and the bottom of the tip.
- 10. After the glue has dried, take your sanding block and sand the center section rib smooth where the other wing panel will butt up against it.
- 11. The final step for this wing panel is to cut the balsa rib material between the spars on the first two ribs. This is easily done using a X-acto knife and a small file. When this is done, you will have a cavity for the main spar dihedral brace to slip into. Don't worry if the brace is loose in the cavity, it's supposed to be that way.

### Right Wing

- 1. Build the right wing the same way that you built the left wing, except the dihedral angle will be opposite on this wing panel. Assemble the plywood dihedral brace by gluing the pre-cut 1/8" thick and 1/4" thick dihedral braces together.
- 2. Now it's time to join the wing panels together. Block up each panel at the last rib 1-3/4", and make sure you have a good close joint at the center section. Mix up a batch of slow cure epoxy. Coat the inside of the cavity for the brace and slip it in. The brace is a loose fit in the cavity so you can get epoxy all around it. Coat the center rib on both wing panels and the cavity on the opposite wing. Slip the two wing panels together on the brace and wipe off the excess epoxy that will ooze out. Set the wings down on waxed paper, block up each wing at the last rib 1-3/4", and wait for the epoxy to cure. You now have one of the strongest wings in the world.
- 3. When this has dried, you should locate the hole for the wing dowel. The dowel will be located in the center of the wing center joint and in the center of the leading edge. Drill a 1/2" dia. hole about 1" deep and then check to see that you are centered on the rib slots. Once centered, drill to the main spar. DO NOT go through the main spar. Once the dowel is fitted, remove it. Do not glue it in until after covering.
- 4. Sand the leading edge to a nice round shape.
- 5. Next, fiberglass the center section with the 6" fiberglass cloth supplied in the kit. Cut the opening in the center section for your aileron servos when the fiberglass has dried. Lightly sand your wing and it will be ready for covering.
- 6. Next, fit the ailerons and cut the slots for the hinges, using one of the 1/4 scale hinges available. At this time, make up the aileron torque from 5/32" music wire, using the pre-bent wire supplied in the kit and the brass tubing. Attach the brass tubing to the wire and then flatten the end of the tube and solder it to the tubing, then drill holes for a clevis in it. This completes the wing construction. Give your wing a final light sanding, and it is now ready for covering.

## Stab

- 1. Cover the stab plan with waxed paper, and build the framework directly over the plan. Make sure the 1/4" balsa center piece is located correctly.
- 2. Once the framework has dried, glue it to the 3/32" top and bottom sheeting supplied in the kit. This makes a very strong warp-free structure. Now, that was easy.
- 3. Cut your slots for hinges and fit the elevator blades. Sand a bevel on the elevators to get a 1" deflection each way when you move the blade. Set the stab assembly aside for now.

## Fin & Rudder

- 1. Cover the plan with waxed paper and build the framework directly over the plan.
- 2. Once the framework has dried, glue it to 3/32" top and bottom sheeting supplied in the kit. This will make a strong and warp-free structure, just like the stab.
- 3. Cut your slots for the hinges, using at least two hinges in the top portion of the rudder and fin. Sand a bevel on the rudder blade to allow as much travel as you can get.
- 4. Locate the holes for your control horn, drill them at this time, but do not mount the horn at this time.

## Fuselage

- 1. Start the fuselage assembly by removing the fuselage side parts from the box. Note that the sides are made up by gluing three pieces together: FS1, FS2, and FS3. Glue the side pieces together, being careful to keep the top front and bottom rear edges parallel to each other. Make two sides, matching them together to keep them the same size.
- 2. Mark the locations for the firewall, bulkheads, and all internal parts on the sides. Using the firewall pattern on the plans, locate and drill the holes for the motor mount, fuel lines and the throttle pushrod in the firewall.
- 3. Using a slow set epoxy, glue the 3mm Micro-Lite™ plywood fuselage doublers in place, being carefully to allow 1/4" at the front of the side doubler for F1 as shown on the plans, and being careful to match the contour of the wing saddle. Finish sanding the wing saddle on the fuselage sides at the leading edge. Make sure to make one right side and one left side. At this time, also install the rear doubler and 1/4" sq. stringers on each fuselage side.
- 4. Cut a hole in the top of F3 for fuel tank access. At this time, glue F3B to the bottom front of F3. Locate the wing dowel hole on F3 by referring to the plans, and mark its location on F3. Drill a 17/32" dia. hole through F3A and F3B at this location. Using a slow cure epoxy, glue F1 and F2 together, allow 1/8" on each side of F2 for the Micro-Lite™ plywood doubler to fit into. Pin F1, F2, F3, & F4 into place on the plan, making sure they are 90 degrees vertical to the plans. Glue the fuselage sides to the formers. Make sure that the sides are 90 degrees vertical to the plans. When this has dried, glue former F5 and the tail post in, being sure to keep the fuselage straight on the center line.
- 5. At this time, glue the wing hold down blocks in, using epoxy and 3/4" triangle stock as shown on the plans. At this time, glue in a 3" long piece of 3/4" triangle stock to each fuselage side, to gusset the landing gear plate just in front of F3.
- 6. The next step is to install the fuel tank floor, using 1/4" sq. for side rails and 1/8" balsa for the compartment flooring. Locate the floor to suit your tank size.

- 7. Now install the 1/4" sq. balsa cross bracing on the top and bottom of the fuselage, so you can glue the fuse sheeting to it. After the glue has dried, sand the top and bottom edges and then glue the sheeting on as the plans show it. Prior to sheeting the bottom of the fuse, install your pushrods and brace them every 6 inches. When you have installed the pushrods and your radio, check it to see that everything is working correctly. Now that that's done, you can sheet the bottom of the fuselage using 1/8" balsa, be sure to put it on cross grain as shown on the plans. Mount the main landing gear using #10 x 3/4" long tapping screws. Be sure to mount the main landing gear square to the center line of the fuse.
- 8. The next step is to pre-shape the corners of the fuselage, if you do it now the fuse will be easier to handle. Once satisfied with the fuse, it's time to mount the stab and fin.
- 9. Glue on the stab, using slow cure epoxy, being sure to keep it square and true. Measure the tips of the stab to the center of the fuse at the firewall to make sure that it is square to the fuse center line.
- 10. When the stab has dried, you can mount the fin using a slow cure epoxy. The fin fits flush at the end of the fuse. Be sure to keep the fin square. Add the 1/2" cove molding which serves as a gusset.
- 11. The last step is to give the fuselage a good sanding prior to covering. Round the corners as before and fill the gaps with vinyl spackle. Remember that the finish will only look good if the airplane is sanded properly, since the covering will not hide your mistakes.

## Wing Mounting

Now that everything is done, you can mount the wing. Be sure to keep it square and horizontally level. Drill through the wing, staying perpendicular to the wing, into the wing hold down blocks using the tap size drill for the 1/4"-20 wing bolts. (Drill size #7). When you're done with drilling the tap size, take the wing off and drill a 9/32" dia. through the holes you just drilled into the wing. Do this in the WING ONLY. These holes will now serve as clearance holes for the 1/4" wing bolts. At this time, tap the holes in the wing hold down blocks using 1/4"-20 tap. Be sure to follow the holes (keep the same angle of the wing).

## Covering

Your airplane can now be covered. The framework is strong enough for all of the mylar coverings such as Monokote, etc.

## Flying

Make sure the model balances at the C.G. (which is 4-3/4" from the leading edge) called for on the plans. Double check everything, make sure it is ok, for a 1/4 scale size model poses a much bigger danger if it should crash, so you want to be a little more careful with this model.

Recommended control surface throws are as follows:

- Elevators - 1" each way
- Rudder - all you can get
- Ailerons - 3/4" each way

Flying quarter scale models is different than flying the smaller models. Be aware of the fact that if the airplane should stall, it will require a longer drop to gain airspeed, so maintain your altitude until you get the feel of the model. Once accustomed to the feel of the model, it will be as aerobatic as you can make it. When it comes to the landing, the thick wing will slow the airplane down for a nice docile landing.

Happy landings, and we at Midwest Products wish you the best of luck flying your Giant Sweet 'n Low Stik!

# Giant Sweet 'n Low Stik

Page 3  
5/84

## Wood Parts List

### Fuselage Parts

1	Fuselage Bottom Rear Sheeting	1/8" x 4" x 36"	
1	F5	1/8" x 1-7/16" x 2-7/16"	
2	Rear Stab Doubler	1/8" x 3" x 11"	Die-Cut
2	Fuselage Top Front Sheeting	3/16" x 2-7/8" x 27-1/2"	
2	Fuselage Top Rear Sheeting	3/16" x 3" x 22-7/8"	Tapered
2	FS2 Fuselage Side	1/4" x 3-7/8" x 41-5/8"	Jig-Sanded
2	FS3 Fuselage Side	1/4" x 1-15/16" x 40-3/8"	Jig-Sanded
2	FS1 Fuselage Side	1/4" x 4-9/16" x 19-5/8"	Jig-Sanded
2	Bottom Front Sheeting	1/4" x 2-3/4" x 6-3/8"	
4	Fuselage Stringers	1/4" x 1/4" x 24"	
2	Fuselage Stringers	1/4" x 1/4" x 36"	
1	Tail Post	13/32" x 3/4" x 2-1/8"	Tapered
1	Gusset Material	3/4" x 36"	Triangle
2	Servo Rails	1/4" x 3/8" x 4-3/4"	Maple
2	Wing Hold Down Blocks	1" x 1" x 2"	Maple
1	F3	3mm x 4-3/4" x 6-1/2"	Micro-Lite™ Ply
1	F4	3mm x 4-3/4" x 5-13/16"	Micro-Lite™ Ply
2	Fuselage Doubler	3mm x 7" x 31"	Micro-Lite™ Ply - Die-Cut
1	Tailwheel Mount Plate	1/8" x 1-5/8" x 5"	Plywood - Jig-Cut
1	F1	1/4" x 5" x 4-5/8"	Plywood - Jig-Cut
1	F2	1/4" x 4-3/4" x 4-21/32"	Plywood - Jig-Cut
1	Landing Gear Mount Plate	1/4" x 3" x 5-1/2"	Plywood
1	F3B	1/4" x 1-1/2" x 4-3/4"	Plywood
4	Landing Gear Attach	#10 x 3/4"	SMS
2	Axles	10-32 x 2"	RHMS
4	Axle Attach	10-32	Hex Nuts
1	Main Landing Gear	1/8"	Aluminum
1	Tailwheel Wire	1/8" x 8-1/2"	Music Wire
2	Windshield Stock	.040 x 3-7/8" x 8"	Butyrate

### Wing Parts

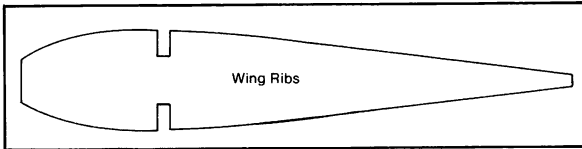
4	WT-4	1/16" x 3" x 4-11/16"	Jig-Cut
4	WT-3	1/16" x 1/2" x 16-3/4"	
4	Leading Edge Wing Sheeting	1/8" x 2" x 38-1/4"	
8	Wing Sheeting - Leading & Trailing Edge	1/8" x 3" x 38-1/4"	
2	Wing Sheeting	1/8" x 3" x 31-1/4"	
4	Center Section Wing Sheeting	1/8" x 1-5/8" x 21"	
18	Wing Ribs	1/8" x 3" x 16-1/4"	Die-Cut
12	Spar Webs	1/8" x 3" x 2-7/8"	
12	Spar Webs	1/8" x 1-7/8" x 2-7/8"	
8	Cap Strips	1/8" x 3/8" x 36"	
2	Tapered Trailing Edge	23/64" x 1/2" x 38-1/4"	
2	WT-1	3/8" x 1" x 19-25/32"	Jig-Cut
2	WT-2	3/8" x 3" x 3-5/8"	Jig-Cut
2	Wing Leading Edge	1/2" x 1-1/4" x 38-1/4"	Jig-Cut
2	Ailerons	1/2" x 2-1/8" x 34-5/8"	Tapered
2	Wing Compression Blocks	11/16" x 2" x 2-3/8"	Tapered
2	Wing Compression Blocks	1/8" x 2" x 2-3/8"	
4	Spars	3/8" x 3/4" x 38-1/8"	Spruce
1	Wing Shim	1/4" x 1/4" x 38-1/4"	Bass
4	Center Section Spar Webs	3mm x 4-15/16" x 2-7/8"	Micro-Lite™ Ply
4	Center Section Spar Webs	3mm x 2-7/16" x 2-7/8"	Tapered Micro-Lite™ Ply
2	Center Rib Reinforcing	3mm x 3-1/2" x 8"	Micro-Lite™ Ply - Die-Cut
1	Wing Bolt Mounting Plate	1/8" x 3/4" x 5-1/2"	Plywood
1	Dihedral Brace	1/8" x 1-3/8" x 15"	Plywood - Jig-Cut
1	Dihedral Brace	1/4" x 1-3/8" x 15"	Plywood - Jig-Cut
1	Wing Dowel	1/2" dia. x 5-1/2"	Dowel
2	Wing Bolts	1/4-20 x 2"	RHMS
1	Center Section Reinforcing	6" x 37"	Glass Tape
1	Left Aileron Arm & Bearing	5/32"	Music Wire
1	Right Aileron Arm & Bearing	5/32"	Music Wire
2	Aileron Arm Fitting	5/32" x 1-1/2"	Brass Tube

## Stabilizer Parts

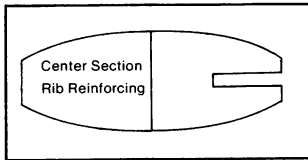
2	Stab Sheeting	R1	3/32" x 3" x 27"	
2	Stab Sheeting	R2	3/32" x 2-1/4" x 27"	
2	Stab Sheeting	R3	3/32" x 3" x 30"	
2	Stab Rib Stock		1/8" x 1/4" x 36"	
2	Stab Perimeter Stock		1/4" x 1" x 36"	
1	Stab Center Piece		1/4" x 3-1/2" x 6"	Jig-Cut
2	Elevator Blade		7/16" x 2-1/2" x 13-3/4"	Jig-Cut
2	Stab/Fin Gusset		1/2" Cove Molding x 8"	Pine

## Rudder Parts

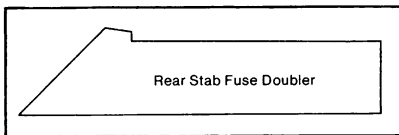
2	Rudder Sheeting	R1	3/32" x 2-1/2" x 7-3/16"	
2	Rudder Sheeting	R2	3/32" x 4" x 9-9/32"	
2	Rudder Sheeting	R3	3/32" x 4" x 9-7/8"	
2	Rudder Sheeting	R4	3/32" x 3" x 12-3/4"	
2	Rudder Sheeting	R5	3/32" x 3-1/8" x 11"	
2	Rudder Rib Stock		1/8" x 1/4" x 36"	
2	Rudder Perimeter Stock		1/4" x 1" x 36"	
1	Control Horn Reinforcing Plate		1/4" x 1-1/4" x 1-1/4"	Bass



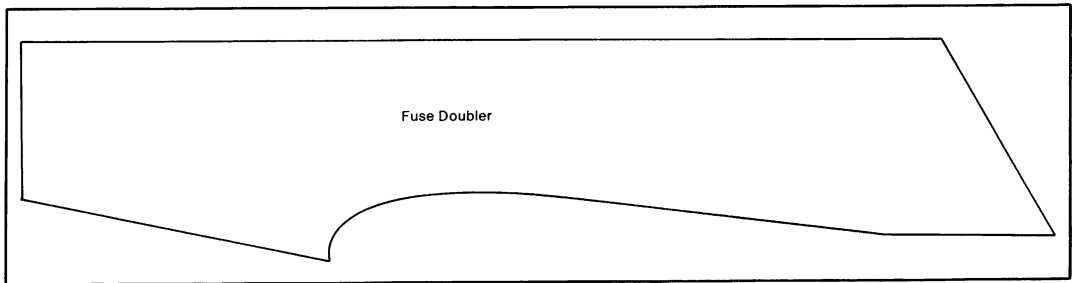
D.C. #1 - 1/8" x 3" x 16-1/4"



D.C. #2 - 3mm x 3-1/2" x 8" Micro-Lite™ Plywood



D.C. #3 - 1/8" x 3" x 11"



D.C. #4 - 3mm x 7" x 31" Micro-Lite™ Plywood