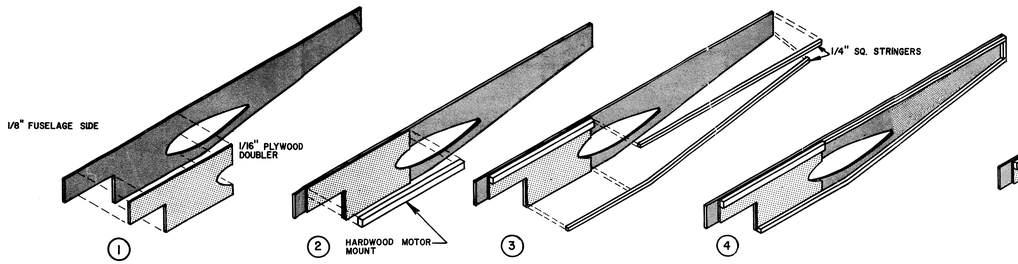
SIG
CRAFTSMAN KIT



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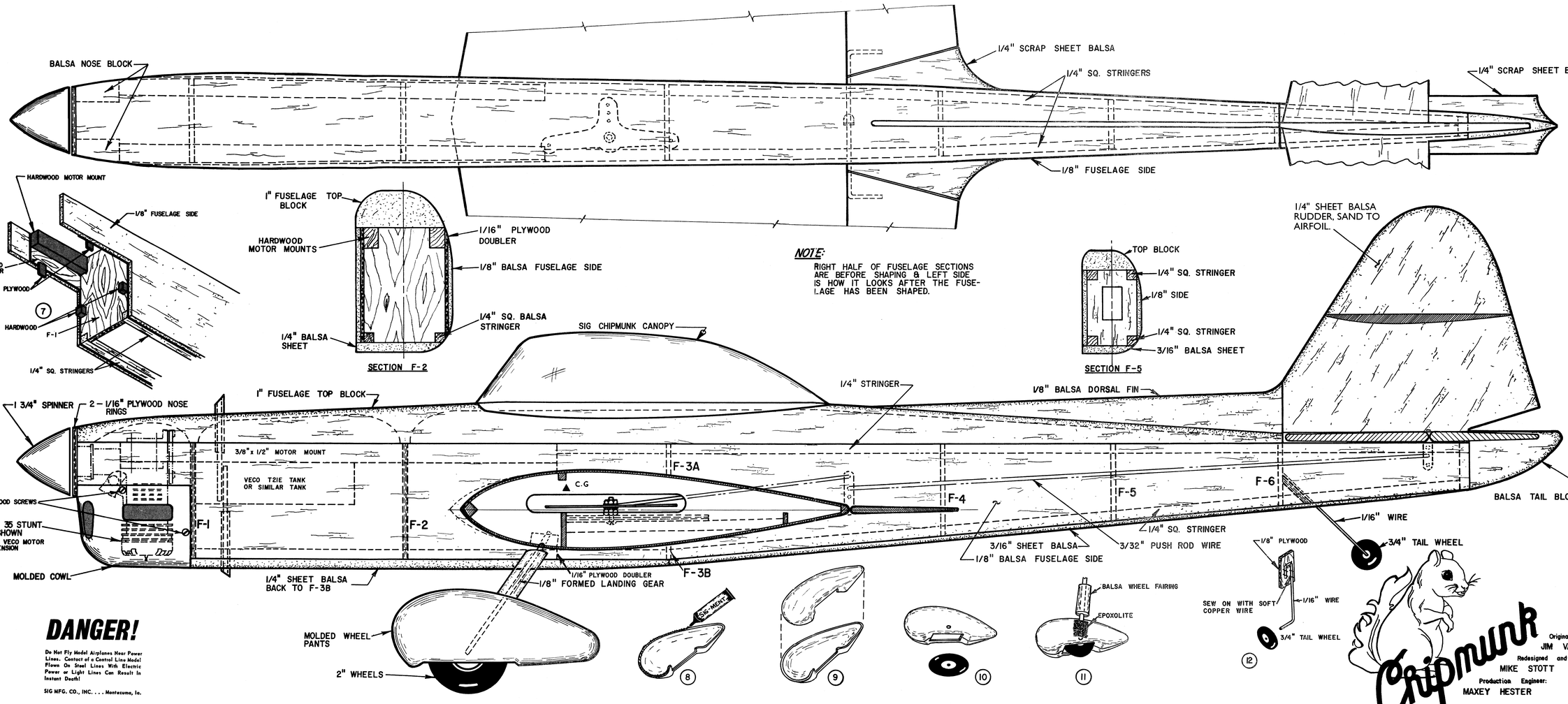

DANGER!

Do Not Fly Model Airplanes Near Power Lines. Contact of a Control Line Model Flown On Steel Lines With Electric Power or Light Lines Can Result In Instant Death!

SIG MFG. CO., INC. . . . Montezuma, Ia.

Chipmunk

Originally Designed By:
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Redesigned and Drawn By:
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Production Engineer:
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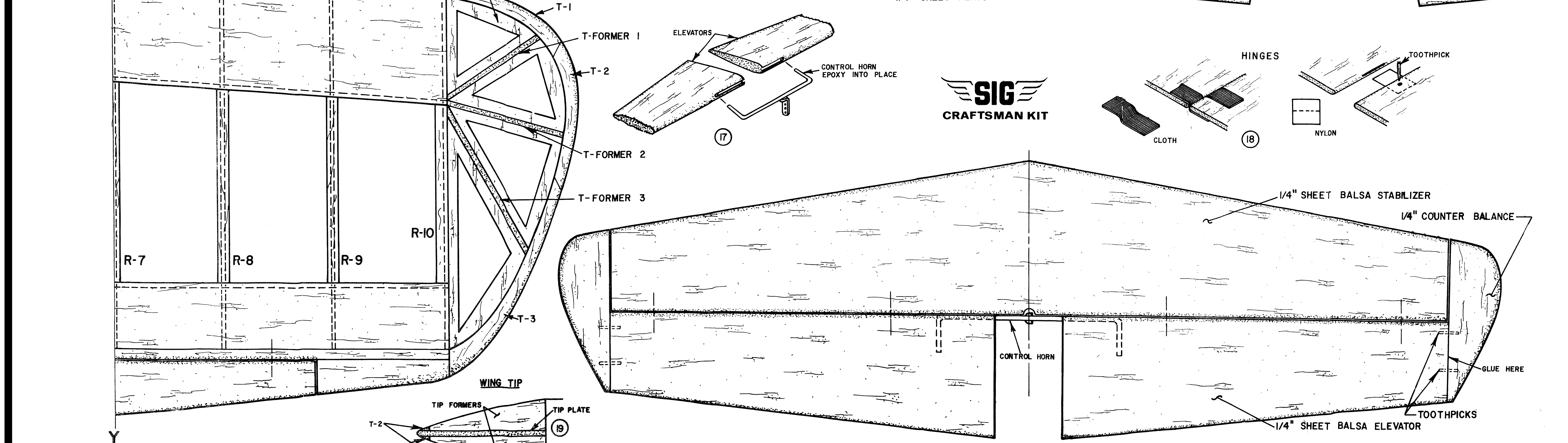
SIG MANUFACTURING CO., Inc.: MONTEZUMA, IOWA

KIT NO. CL-3



(1.) Using Sig-Ment, cement the 1/16" plywood doublers to the 1/8" fuselage sides, making sure you have a right and left side. At the same time glue the hardwood motor mounts to the 1/16" plywood doublers. (Sig epoxy works best for this, or Sig-Bond). See sketches #1 and #2.

(2.) Cut 1/4" square sticks from the 3 ft. stock provided and glue to the top and bottom of the fuselage sides. Then cut a 1/4" square to fit in the back of the fuselage sides as shown on the plans. (Sig-Ment or Sig-Bond is recommended for this work). See sketches #3 and #4.

(3.) Lay fuselage sides over plans and mark where F-1 through F-6 go on the fuselage sides.

(4.) Set F-1 and F-2 in place on one fuselage side and glue into place, again using Sig Epoxy (use epoxy wherever there is going to be much stress). After the glue has dried, glue the other fuselage side to F-1 and F-2, making certain the fuselage is square and properly aligned. Pull the tail ends of the fuselage together and glue, holding with rubber bands or clamps until the glue dries.

(5.) Take F-3A, F-3B, F-4, F-5 and F-6 and slide them into place and glue, using Sig-Ment or Sig-Bond. At this time glue in the 5/8" x 1-1/8" x 1-1/8" nose blocks, as well as the plywood tail wheel support.

(6.) After the glue on the bulkheads has dried, sand the top of the fuselage perfectly flat, getting rid of any high spots.

(7.) Drill the hardwood engine mounts for the engine you are going to use and install the blind nuts with epoxy, making sure you do not get any glue in the threads. Glue the 1/16" plywood rings together. Mount the engine temporarily and glue the plywood nose ring to the balsa nose blocks, making sure that the prop shaft is in the center of the ring.

(8.) Remove engine and permanently mount tank to the hardwood motor mounts behind F-1.

(9.) Tack glue on the fuselage top block and permanently glue on the 3/16" and 1/4" sheet balsa bottom. After these have dried, set the engine cowling in place and mark around it so you will know where to sand to.

(10.) Shape fuselage down to what is shown on the plans. See sections F-2 and F-5. NOTE: Right half of fuselage sections are before shaping and left half shows how the fuselage should look after shaping. Do not be afraid to shape fuselage into the 1/8" square stringers as this is the reason they are there.

(11.) Take off the top block and hollow out as shown on the plans. A good tool for this is an X-Acto Router bit used in one of the large X-Acto handles. One of the most important things in making a good stunter is keeping it light, so hollow out all that you can.

(12.) Set fuselage aside until final assembly.

WING

(13.) Start by cutting the 1/16" x $1\frac{1}{2}$" trailing edge to the proper length and splicing them together. After it has dried, lay over plans and mark where the ribs go. Next pin it down to a flat surface. Insulation board as obtained at most lumber yards make a good building surface and will readily take pins. Pin 1/8" x 1/4" spar over end of trailing edge as shown in sketches #13 and #14.

(14.) Mark 1/8" x 1" bottom spar where ribs go by laying it over the plans. Then place R-11, R-15 and R-10 in place. See sketch 13. Glue 1/8" x 1" bottom spars together. Do not glue ribs in at this time.

(15.) Place the rest of the ribs in their proper places. Glue the $\frac{1}{4}$" square leading edge into place. Set in 3/16" square top spar and glue spars into place. Do not forget to glue R-3A and R-2A in place. Add top trailing edge and allow to dry.

(16.) Glue in $\frac{1}{4}$" square bracing at R-1 for bellcrank floor to rest on. Mount bellcrank on plywood floor and epoxy to $\frac{1}{4}$" square bracing.

(17.) Sheet leading and center section with 1/16" x 3" balsa. Sheet leading edge back to the top and bottom spars.

(18.) Add wing tips to wing by first building up the tip plate with T-1, T-2 and t-3 on both sides. Then glue tip plates to wing and add T-Formers 1, 2 and 3 to both sides. See sketch #19.

(19.) Glue on $\frac{1}{4}$" square trailing edge cap. Splice at center of wing. See sketch #15.

(20.) Cut out for hardwood landing gear blocks and epoxy the blocks into place. See sketch #16.

(21.) Cut 1/16" x $\frac{1}{4}$" cap strips to fit over ribs and glue in place.

(22.) Lay flaps over plans and cut to proper length and glue $\frac{1}{4}$" sheet at end of wing to trailing edge cap. See plans.

(23.) Sand and Shape flaps. Drill a hole for the control horn to slide into. Epoxy control horn in place. See sketch #17.

(24.) Glue counter-balance to elevator. Use toothpicks to help hold counter-balance in place.

(25.) Sand and shape stabilizer and elevators. Epoxy control horn in place. See sketch #17.

(26.) Hinge elevators to stabilizer at hinge lines. Cloth hinges are optional, using Sig-Ment to hold the material to the wood. Nylon hinges are supplied with the kit. Slot stabilizer and elevator for nylon hinge to slide into. Insert the nylon hinge and drill a hole through balsa and nylon. Glue a toothpick in the hole. See sketch #18.

FINAL ASSEMBLY

(27.) Place flaps in the fuselage then slide the wing through the fuselage. Tack glue the wing in place with Sig-Ment. After it has dried make sure it is square with the fuselage. Then permanently glue the wing in place with epoxy.

(28.) Hinge flaps to wing at hinge line the same as you did with the elevators. See sketch #18.

(29.) Install formed 3/32" short pushrod from bellcrank to control horn on flaps and solder retaining washers as shown on plans.

(30.) Install formed 3/32" long pushrod in elevator control horn and solder retaining washer. Slide pushrod through F-6, F-5 and F-4, connect to control horn and solder retaining washer to the pushrod.

(31.) Level flaps and then slide stabilizer back and forth until the elevators are level. Tack glue stabilizer in place. After it has dried, check once more to make certain the elevators are level with the flaps. Another important check is to make certain the wing and stabilizer are straight with each other. See sketch #20. After making the above checks, permanently glue stabilizer to fuselage.

(32.) Now you can permanently glue on the top block. Also install rudder and dorsal fin.

(33.) Assemble wheel pants next. Glue the two halves of the wheel pants together with Sig-Ment, using the cement liberally. See sketches #8 and #9. When dry, drill the hole for the axle and slide the landing gear through the pants with the wheel in place. See sketch #10. To hold the pants in place on the gear, apply Sig Epoxolite over the gear leg onto the back side of the pants. See sketch #11. When the Epoxolite is dry, sand smooth and paint.

FINISH

(34.) Sand entire model carefully. Fill dents and seams with Sig Epoxolite. Again sand the entire model until all surfaces are smooth. Remember that you can't hide poor workmanship with paint.

(35.) Give the entire model two coats of Sig Supercoat, brushed on. Sand each coat with fine Garnet paper or Tri-M-Ite paper.

(36.) Cover entire model with Silkspan. We have found that the best method is to apply the silkspan wet. Cover in sections, cutting the paper just enough larger than the surface to be covered so that it can be pulled up tight. On the wings, start with one half, preferably the bottom, and stretch the wet silkspan up tight. Dope around the edges and allow to dry. If any wrinkles appear, redope the edge until it can be pulled up tight, then when it is again dry give the entire surface a coat of dope. Use clear Supercoat for all such applications. Cover the fuselage and tail in the same manner.

(37.) Brush on two coats of Supercoat clear dope, sanding between each coat. Be sure not to sand into the Silkspan, being particularly careful around corners and edges. Add Epoxolite fillets at this time.

(38.) Brush or spray on from one to three coats of Sig Sanding Sealer. This is the most important part of a good finish, but sanding sealer also adds weight, so sand well. Apply the first coat and sand most of it away, letting it fill the low areas, etc. Apply the second coat, again sanding the major portion away. Low or rough spots will appear as darker areas. Check for any of these after the second coat and if necssary apply the third coat, again sanding away the bulk of the material.

(39.) Brush or spray on one coat of clear dope, then brush or spray on your color. If you have done a good job of preparing the surface, one or two coats of color will be sufficient. If you brush, be sure to thin the dope until it flows out smoothly. Many paint jobs are ruined by trying to brush dope without thinning it properly. Don't add too many coats of color because it adds weight rapidly. Add trim colors. Spray a light mist coat of clear after the trim colors are dry. After the mist coat drys, spray a heavy coat of clear over the entire plane and the job is finished. The mist coat of clear is insurance against the coat of clear softening the trim colors and causing them to "bleed."

(40.) Install landing gear by drilling a 1/8" hole in the hardwood landing gear blocks as indicated. Drill this at an angle as shown on the plans. Insert the landing gear in the groove, place the retaining strips over the 1/8" wire and secure with screws.

(41.) Use $\frac{1}{4}$" wood screws to hold the engine cowling in place. See sketch #7 on the plans.

SIG MANUFACTURING CO., Inc.; MONTEZUMA, IOWA

KIT NO. CL-3