

STRATO-BLASTER™

I N S T R U C T I O N S

Welcome to the exciting world of rocket-boosted, radio-controlled model aircraft. The Estes Strato-Blaster is a high performance model designed for the **experienced R/C builder/flyer**. It requires the use of a **mini type R/C system** (see radio installation). Model rocketry experience would be helpful, but not necessary as this kit will provide you with some basic instruction in the safe use of Estes rocket engines and accessories.

BEFORE YOU START

- Read all instruction before you begin building.
- You will need the following tools and accessories to complete your model:

A hobby knife with extra blades
(X-acto #11)

A razor saw

An assortment of sandpaper (80 to 320
grit)

A steel straight edge

A small right triangle

Masking tape

A sanding block or T' bar sander

A Dremel-type hobby drill with 1/16",
1/8", 3/16" (with 1/8" shank) drill bits,
mini-drum sander accessory

Razor plane (optional)

Glue: To build this kit, we recommend the use of Cyanoacrylate adhesives (C/A), both the thin and gap filling formulas. Use the appropriate accelerator when required.

WARNING: Most C/A glues will "attack" styrene foam. They should never be used to adhere anything to your wing cores. Follow all manufacturer's safety instructions with all adhesives. Note: Plastic compatible C/A glues and accelerator are available. Consult your hobby dealer.

You will also need a small amount of two part Epoxy type glue. The 5 to 30 minute cure formulas are best. Water-based aliphatic resin glue such as "Titebond" can be used as well. We also recommend the use of a contact adhesive or a slow cure Epoxy when applying the balsa wing skins to the styrene foam wing cores. (See Wing Construction).

FINISHING CHOICES

To finish your model we suggest the use of any of the iron-on type "heat shrink" model aircraft covering materials. Because of the styrene foam wing cores, the "low temperature" type should be used. The use of iron-on materials requires the use of a tacking iron and heat gun.

You may wish to paint your model. Keep in mind, however, that weight is your "enemy". A finished Strato-Blaster should weigh between 13 and 16 ounces. Filler, primers, and paint add weight fast. (See Final Finish).

PARTS IDENTIFICATION:

This kit contains:

Foam wing set

Molded high-impact fuselage

Hardware set

- 12" x 2-56 threaded push rods (2)
- Nylon clevises (4)
- E/Z type connector with set screw and keepers (2)
- E/Z type connector, brass part only
- Nylon aileron torque rod ends (2)
- 2" x 2" hinge material
- Aileron torque rods (1 set)
- Elevator control horn with screws
- 1/16" I.D. x 3/4" brass tube
- 1/16" x 2" piano wire

Small parts set:

- Rocket engine tube (white)
- Metal engine retainer clips (4)
- Engine mount oversleeve (Black)
- Engine stop ring (Green)
- Empty engine casing
- Engine spacer (orange)
- Launch lug tube
- Plywood .049 motor mount
- Wooden dowel 3/16" x 2 1/8"
- Wooden servo mount 1/8" x 1/4"
- 2-56 brass couplers (2)

Control cable with sheath

1/4" x 1" balsa tapered aileron stock (2) (Figure 1)

1/8" x 3/8" x 17" tail boom caps (4) (Figure 2)

1/4" x 3/8" x 22" leading edge & sub spar (4) (Figure 3)

1/32" x 3" x 22" balsa wing skin (6) (Figure 4)

1/8" die-cut tail boom sides (Figure 5)

1/8" die-cut vertical stabilizers (Figure 6)

1/8" die-cut horizontal stabilizer & elevator (Figure 7)

1/16" die-cut plywood parts (Figure 8)

(canopy stiffeners and radio compartment frame)

Decal

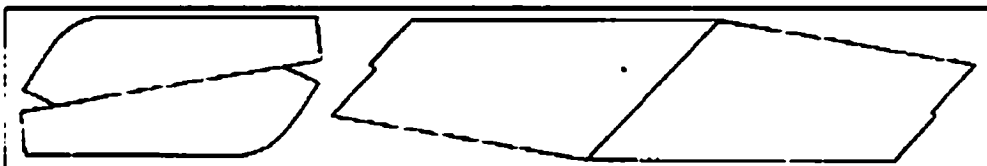
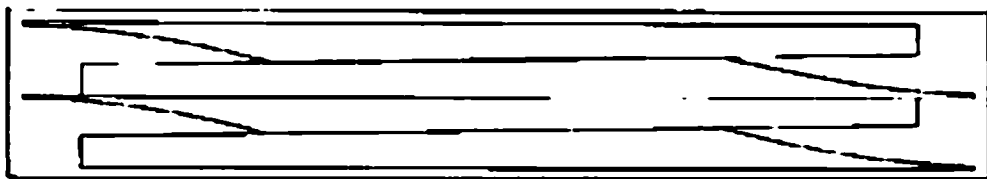
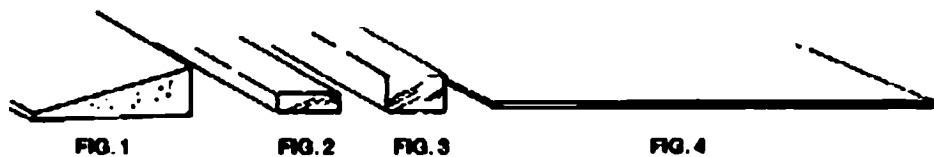


FIG. 7

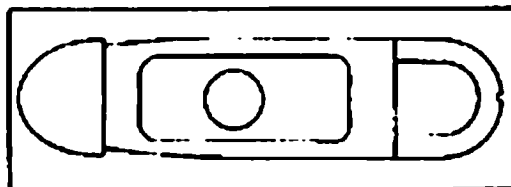


FIG. 8

WING CONSTRUCTION

Locate the six pieces of 1/32"x3"x22-1/2" balsa sheet. These will be used to "skin" the wings. Lay them out in two groups of three pieces each. Fit the pieces together edge to edge. You may need to straighten the edges using a steel straight edge and a sharp hobby knife.

• Tape the pieces together over the seams on one side only. Turn the taped sets over and use thin C/A to glue them together. Run the adhesive along the seams. It will "wick" in and glue the joint. After it cures, turn the sets back over and remove the tape.

• Remove the foam wing cores from their bedding. Lay them on the skin sets as shown in Figure 1.

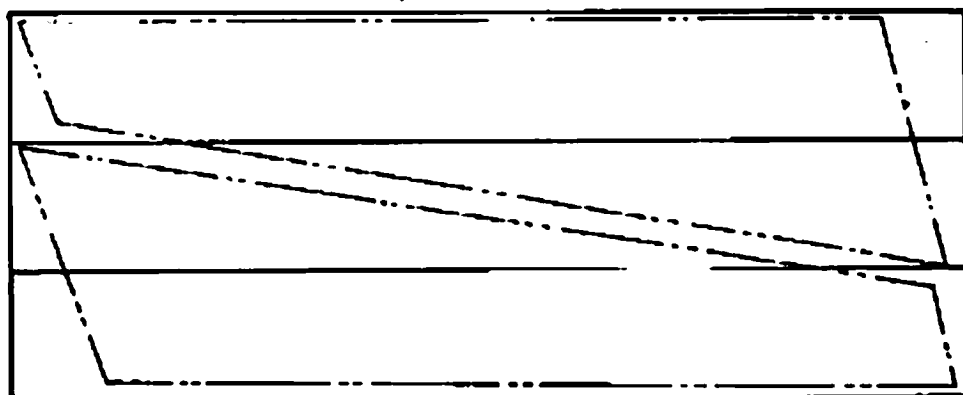
(Do not throw the core bedding away! It will be used later in this wing construction section)

Cut two skins from each set. Leave at least 1/8" margin around each skin. Sand all four skins to remove fuzz and excess glue.

• Lightly sand the styrene foam wing cores (use 220-280 grit paper) to remove any irregularities that might exist.

1

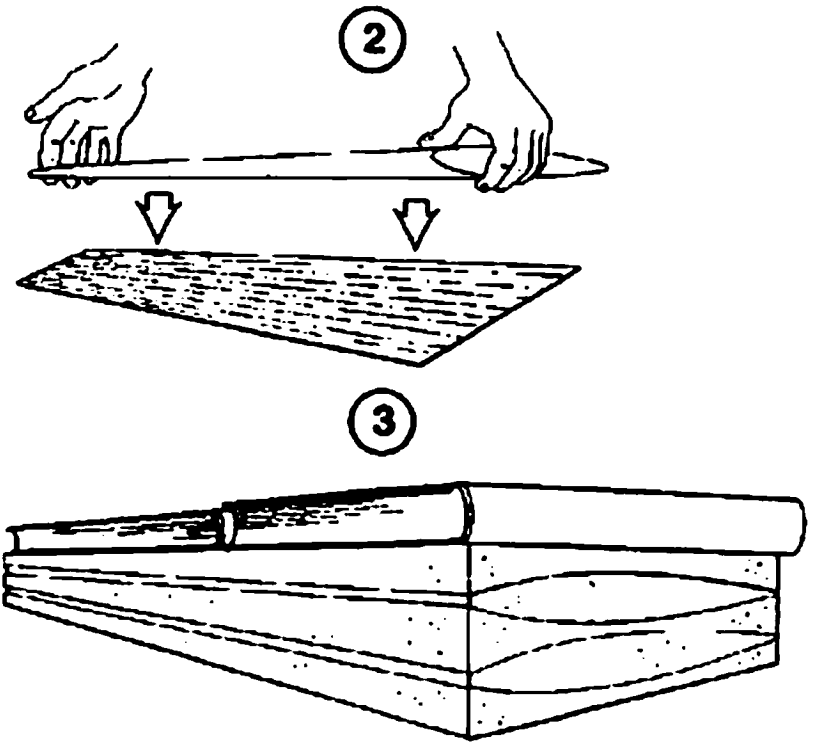
SKINS ———
WING OUTLINES - - - - -



SPECIAL NOTE: If you choose to run your antenna down the span of the wing as shown on the right wing of the reference drawing in the center section of this instruction booklet, do the following: Cut or sand a small groove on the top surface of one wing core as indicated (about 3/32"x3/32"). This will provide a channel through which you can retrieve the antenna after your model is completed. If you allow your antenna to trail behind the model as is commonly done with other R/C kits, you run the risk of damaging it during launch from the engine exhaust.

- Lay a piece of waxed dental floss in the groove before applying the wing skins. Use it to pull the antenna wire through the wing during the radio installation.

- Glue the wing skins to the Styrofoam cores. This is a very important step. Here are two methods that we feel work best:



Contact Adhesive Method

Several spray adhesives and brushable adhesives will work for this step, such as 3M "77", Dave Brown Products "Sorghum", Sig Brand "Core Bond", and more. Ask your hobby dealer for a recommendation.

- Label the wing cores left, right, top, and bottom.
- Label the wing skins in left and right sets and mark the sides to which glue will be applied.

- Lay both wing cores top side down on a flat surface that is protected from overspray with newspaper. Lay the left and right bottom wing skins face down as well. Spray a light coat of adhesive on all surfaces.

Warning: Too much adhesive may damage the cores. A complete but light coat works best.

- Wait at least 60 seconds, then pick up a core, locate it over the correct skin and lay it gently down glue to glue (Figure 2). Repeat for the second wing. Now spray the top of the cores and the underside of the top skins.
- Wait at least 60 seconds, pick up the cores and locate them over the skins and place them together glue to glue.

- Quickly place each wing and skin assembly back into the Styrofoam bedding that protected the wing cores during shipment. Carefully align all the foam edges on all four sides. Place the whole assembly on a flat surface and weight it down with evenly distributed books or other heavy flat objects. Allow to cure for several hours. This method assures flat straight wings with 100% glue to glue contact. (Figure 3)

Epoxy Method

Several brands of epoxy glue will work for this method. We highly recommend the use of no less than two hour cure time. Small mixing cups will prove handy here. Mix the epoxy thoroughly according to the directions.

- Apply the epoxy to the surface of the right wing bottom skin and spread it using the edge of a piece of card stock or a balsa scrap. Do your best to spread a very thin (paper thin) even coat over the entire surface of the skin.
- Pick up the right foam core, align the bottom surface over the skin. Gently set it down on the glue covered surface. Don't worry about total skin-to-core contact yet.

- Repeat this process for the left wing.
- Mix the third and fourth batch of epoxy and apply them in turn to the correct side of the left and right top wing skins.
- Place the skins on the appropriate wing core.
- Quickly place each wing and skin assembly back into the Styrofoam bedding that protected the wing cores during shipment. Carefully align all the foam edges on all four sides. Place the whole assembly on a flat surface and weight it down with evenly distributed books or other heavy flat objects. Allow to cure for several hours. This method assures flat straight wings with 100% glue to glue contact. (Figure 3)

- Carefully cut and sand the excess balsa wing skins flush to the cores on all four edges of both wings.

- Glue the 1/4" x 3/8" x 22" balsa leading edge and sub spar pieces to the wings as shown. Epoxy or aliphatic resin works best here. The sub spar should be glued flush to the bottom of the wing. (Figure 4)

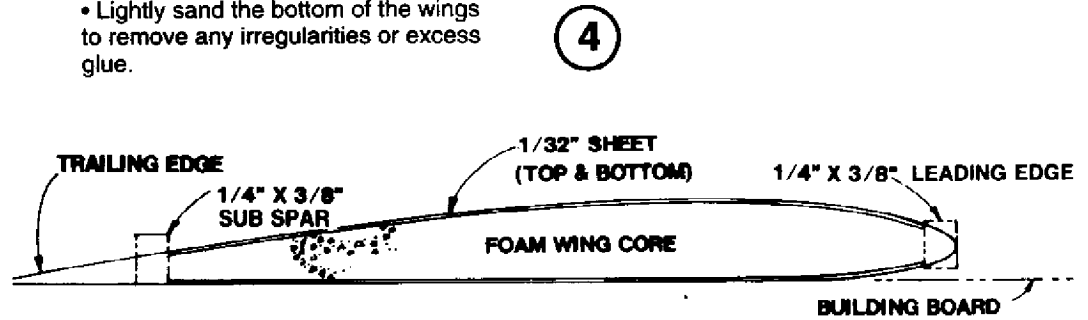
- **Spot glue** the 1/4" x 1" x 22" trailing edge stock so that it is flush to the bottom surface of the wing as well. **You will be removing the trailing edge pieces later.** Three or four tiny spots will do.

- Sand the leading edge to shape, being careful not to damage the upper or lower wing skins.

- Now, with the wing on a flat surface, sand the top of the sub spar and trailing edge stock. Again be very careful so as not to damage the wing skin. When you are finished you should have two wings with uniform airfoils from root to tip.

- Lightly sand the bottom of the wings to remove any irregularities or excess glue.

- Mark the trailing edge stock to identify it as either right or left wing. Snap or cut the spot glue joints to free the trailing edge stock from the sub spar. Set them aside.



IMPORTANT: Position the wings together root to root over the reference drawing (center two pages of this instruction book). This is done to confirm the correct sweep angle. Use a sanding block or "T" bar to carefully make any required adjustments before final joining.

JOINING THE WINGS

- Epoxy the wings together top side up on a flat surface. Tape the wings together across the glue seam to insure proper alignment while the epoxy cures. Use enough epoxy to insure 100% surface to surface contact.

COMPLETING THE WINGS

- Locate the two pieces of trailing edge stock. Position them over the reference drawing, mark and cut off the inner end of each as indicated. Also cut away the small area of sub spar near the center of the wing as shown for aileron torque rod clearance.

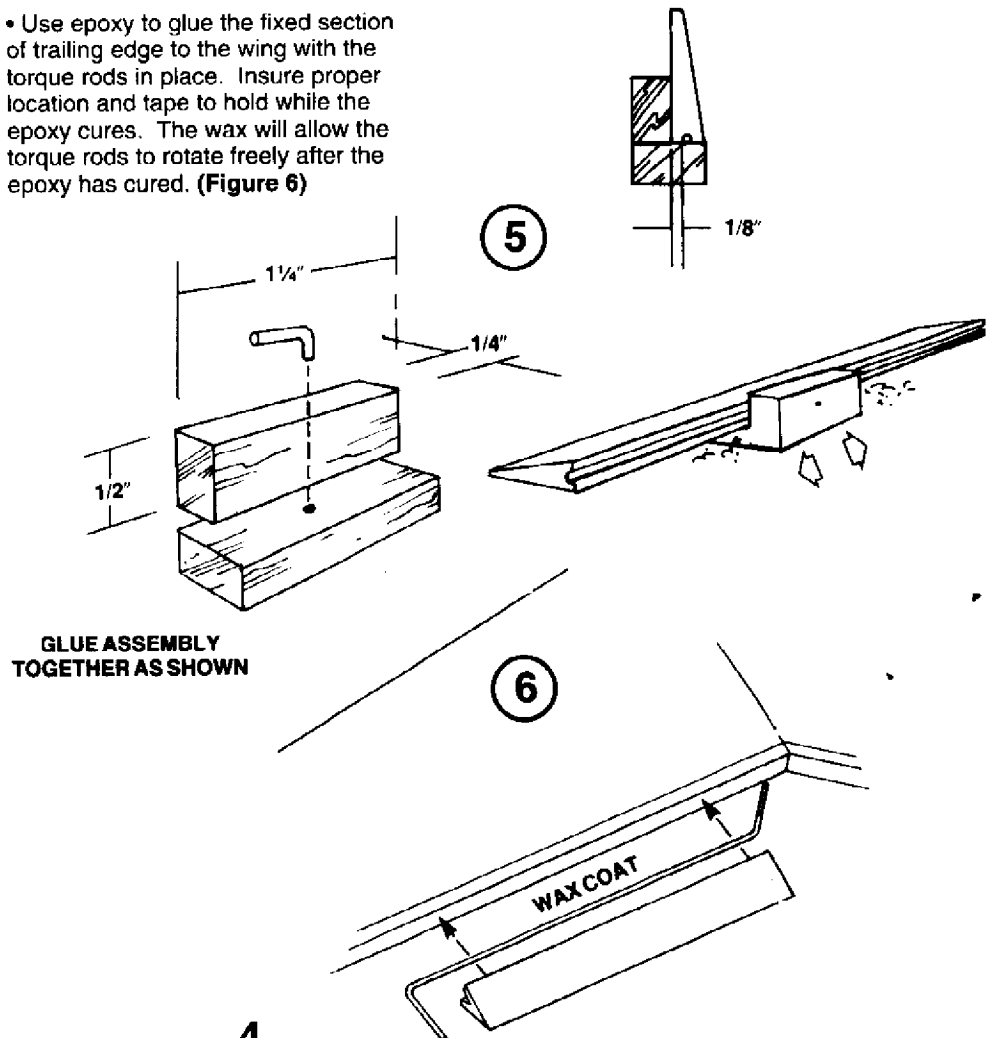
- Cut the sections of trailing edge which are shown between the fuselage sides and the ailerons. These pieces will be glued in place and provide a bearing for the aileron torque rods. The remaining portion of the trailing edge stock for each wing will be used as ailerons.

- Carefully cut a groove in the upper front face of the torque rod bearing sections of trailing edge. These grooves will accept the aileron torque rods. The groove can be made easily with the simple tool show in Figure 5. Use some scrap hardwood from your wood pile and a small piece of the control rod cut from a long rod provided in this kit.

EXTREMELY IMPORTANT:

- Using an ordinary wax candle, rub the surface of the torque rods thoroughly. Make sure to completely coat the long portion of the wire between bends.

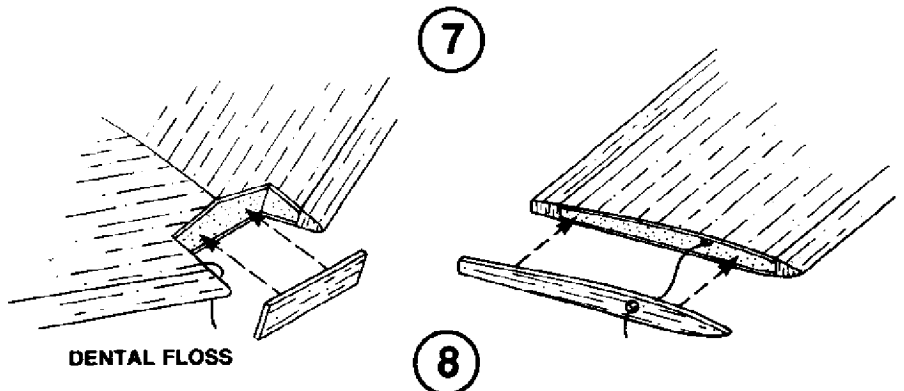
- Use epoxy to glue the fixed section of trailing edge to the wing with the torque rods in place. Insure proper location and tape to hold while the epoxy cures. The wax will allow the torque rods to rotate freely after the epoxy has cured. (Figure 6)



- Referring to the wing center section detail, cut the notch in the wing leading edge center section as shown. (Locate the end of the dental floss for future use).

- Using 1/8" scrap balsa, cap the exposed foam at the front of the notch as shown (Figure 7). Also cap the exposed foam at each wing tip with scrap plywood. Be sure to provide an exit hole for the antenna.

NOTE: Use the "throw away" portion of the die-cut sheets as scrap for the preceding step.

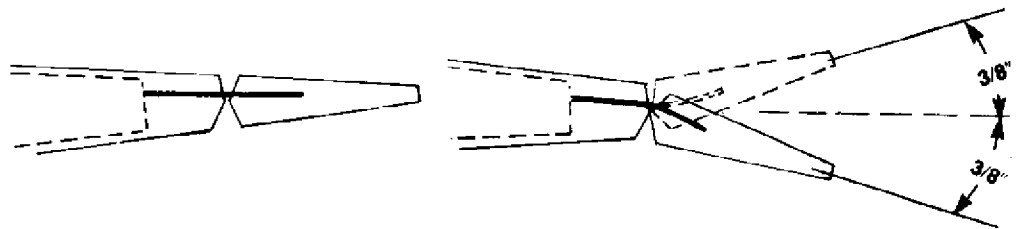
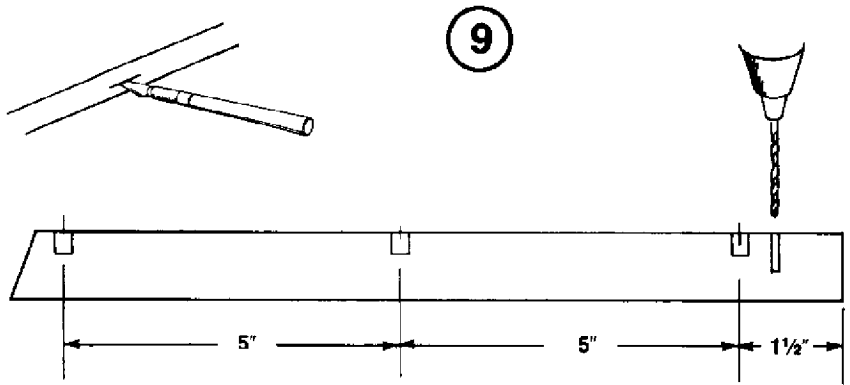
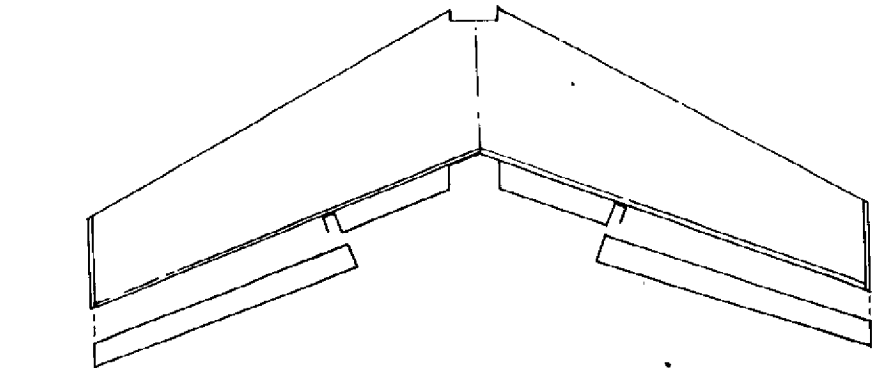
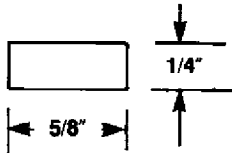


- Cut the ailerons to length and sand to conform to Figure 8.

- Mark the hinge locations and using a hobby knife, cut the hinge slots as shown (Figure 9). Note that the front edge of each aileron is beveled to allow for up and down travel after assembly.

- Use the full-size reference drawing for correct measurements. Drill a hole at the inboard end of each aileron to accept the torque rod. (You will have to cut the end of the rod off to match the plans). **Note: The location of this hole is critical.** When the ailerons are in place with the hinges and the torque rods installed, the threaded ends should end up 1 1/2" apart at the center of the wing.

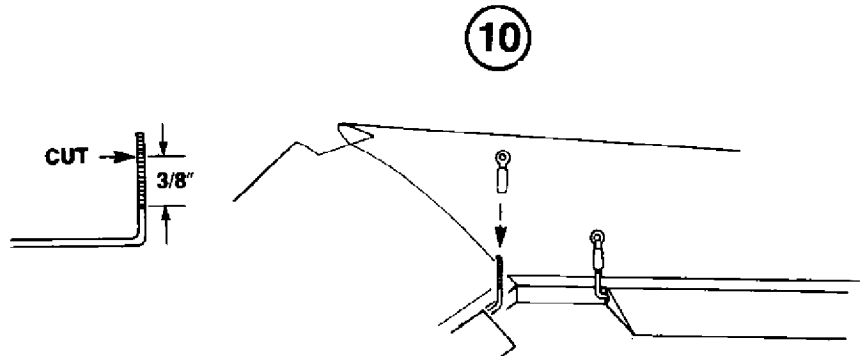
- Cut six hinges from the special hinge material provided in this kit. **NOTE:** The proper hinge size is 1/4" x 5/8".



- Assemble your wings and ailerons to confirm proper alignment and movement. **Do not glue the hinges at this time.** The ailerons should travel at least 3/8" up and 3/8" down.

- Cut the threaded end of the aileron torque rod so that about 3/8" of threads remain.

- Install the nylon rod ends. Use a drop of machine oil so that the ends will rotate freely after installation. This is essential for friction free control movement. (Figure 10)



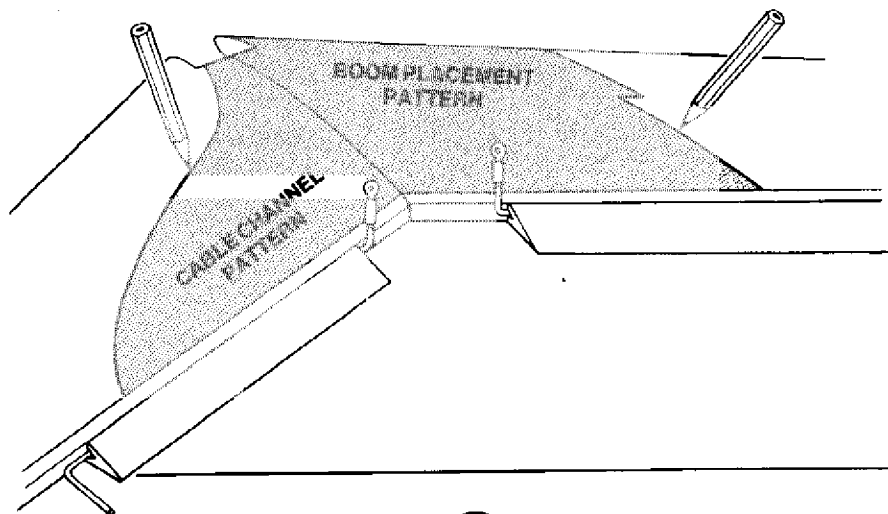
ELEVATOR CONTROL LINKAGE

It is necessary to inlay the elevator control cable and sheath into the left wing of your model. This is done by cutting a channel through the wing skin and installing the control cable assembly. The cable runs from the radio compartment in the fuselage through the wing in an "s" pattern, and down the inside of the left tail boom to the elevator.

- Transfer the cable channel pattern from the reference drawing to the wing of your model. Trace the channel center line as well as the wing center and trailing edge lines (indicated by arrowheads) onto a piece of typing paper. Cut your pattern along all lines and carefully match it to your wing. Mark the control cable channel line on your wing. Correct placement is critical. (Figure 11)

- Also trace the boom placement pattern. Cut it out in the same manner and transfer the boom line to each wing by lining the pattern up to the wing center line and flipping from the right wing to the left. These lines are important to mark now and will be used later in the construction.

11



CUT THE CHANNEL

- Cut through the wing skin along the channel line. **Helpful hint:** Use two #11 X-acto blades to fashion a special tool to cut your control channel. Refer to Figure 12. Tape the blades to a scrap piece of 1/16" balsa as shown. Straddle the channel line with the two blades and complete a cut through the wing skin about 1/8" deep.

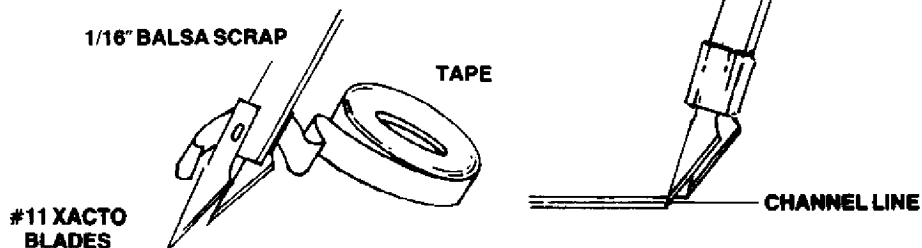
- Remove the skin pieces between your cuts and scratch the foam from the channel to a depth of 1/8".

- Use epoxy to glue the yellow plastic cable outer sheath into the channel. **Tip:** Mix a small amount of epoxy in the bottom corner of a plastic sandwich bag. Cut the corner of the bag and squeeze the epoxy into the channel. Remove the steel cable from the sheath and place the sheath only into the channel. Allow 3" to extend out from the front of the wing. Push the cable sheath into the epoxy. Make sure it is submerged well into the epoxy and below the wing skin surface. Quickly wipe excess epoxy from the wing surface. Use tape to hold the cable in place while the epoxy cures.

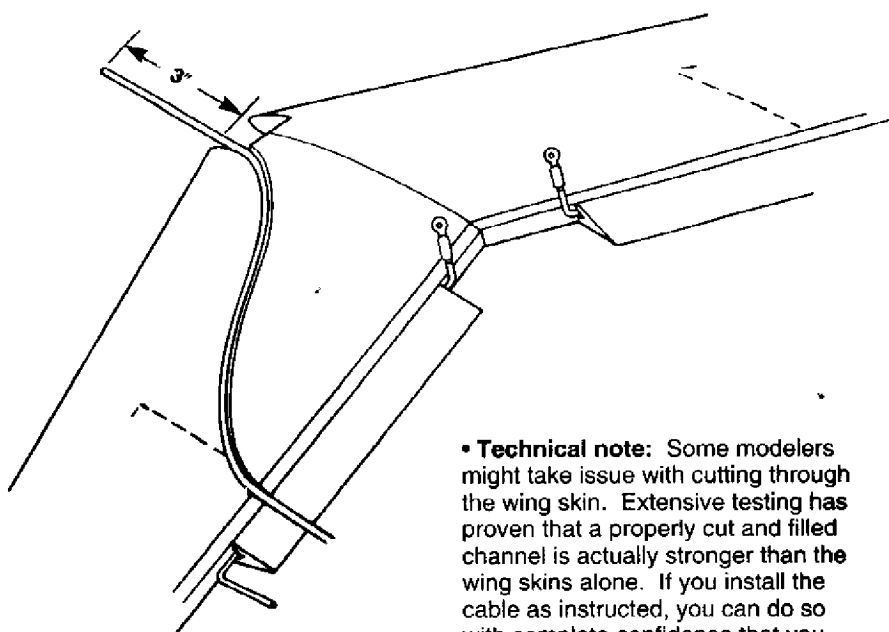
- **NOTE:** The cable sheath should exit the front and rear of the wing parallel to the bottom of the wing and parallel to the wing center seam. See Figure 13.

- Use a second coat of epoxy to fill any voids in the channel and to fill it to the level of the wing skins. Sand the cured epoxy flush to the wing skin to finish.

12



13



- **Technical note:** Some modelers might take issue with cutting through the wing skin. Extensive testing has proven that a properly cut and filled channel is actually stronger than the wing skins alone. If you install the cable as instructed, you can do so with complete confidence that you are not degrading the structural integrity of your wing.

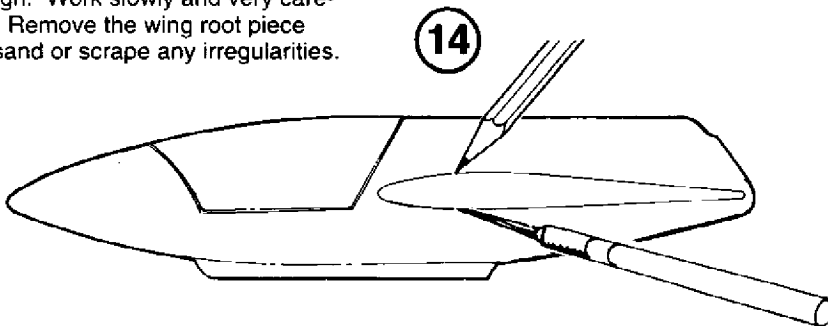
FUSELAGE PREPARATION

Your Strato Blaster kit provides you with a molded high-impact styrene plastic fuselage. It requires a minimum of preparation and guarantees a stylish, strong, and repairable focal point to your finished model.

Score repeatedly, do not attempt to cut completely through in one cut. After several passes with your knife, you will eventually break through. Work slowly and very carefully. Remove the wing root piece and sand or scrape any irregularities.

CUTTING THE WING ROOT OPENINGS

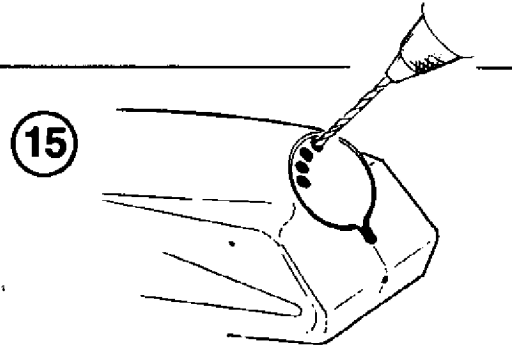
The fuselage has been molded with an outline of the wing root on each side. Use a pencil or ball point pen to outline the wing roots. This makes them easier to see when cutting. Use a sharp #11 X-acto blade and carefully score the plastic along the root outline. (Figure 14)



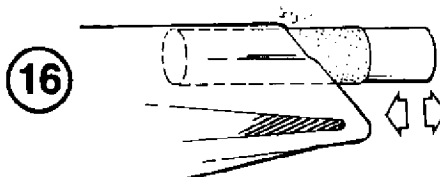
CUTTING THE ROCKET ENGINE HOLE

You must cut a hole in the rear of the fuselage for the rocket engine mount. The shape of this hole is molded as a raised area on your fuselage. Because the plastic is very thick in this area, the best way to remove it is to first drill a ring of 1/8" holes within the defined area, cut from hole to hole and remove the center of the ring. (Figure 15)

sander. Finish the hole by wrapping a piece of coarse sand paper around the heavy wall brown paper tube provided in your kit (**this tube is used on your .049 conversion mount, so do not damage it**). Use this "sanding tool" by passing it in and out of the hole at the angle depicted in Figure 16.



The correct size hole when finished will accept the 4" long white paper tube. Cut the 1/8" wide x 1/4" long slot just below the hole. This slot will provide clearance for the metal engine retainer clip.



Carefully sand the hole to shape with a hobby drill equipped with a drum

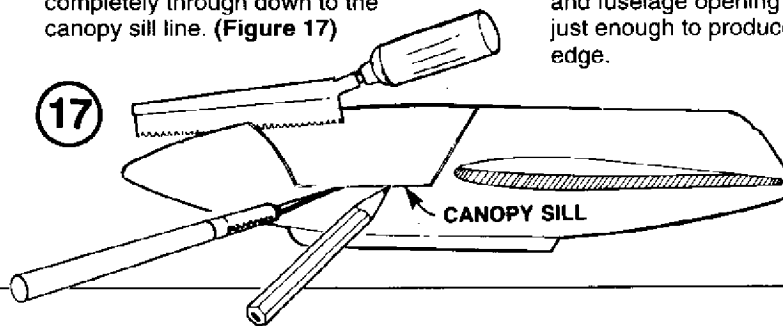
CUT THE CANOPY FREE

This step requires care. The aesthetics of your model and the canopy fit will depend on how well this step is accomplished.

Mark the canopy outline as you did for the wing roots. Mark between the two parallel lines to help see your intended cut line

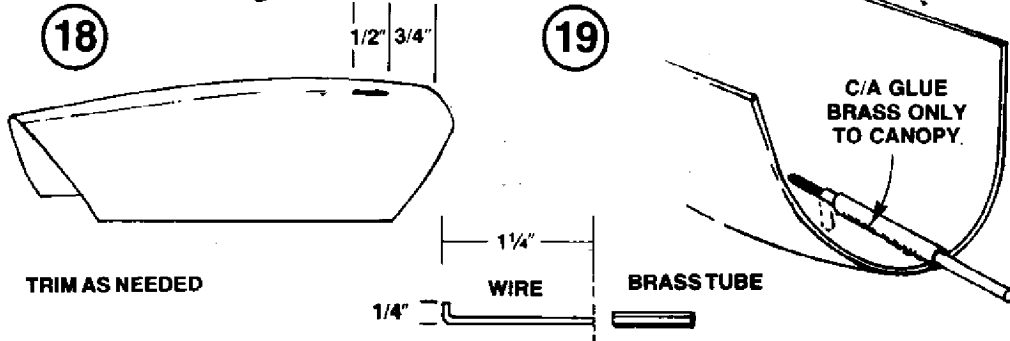
Use a razor saw to cut along the front and rear canopy lines. Carefully follow the curve of the fuselage. Cut completely through down to the canopy sill line. (Figure 17)

Use a sharp knife point along each sill line. Score repeatedly until you break through. Sand both the canopy and fuselage opening edges. Sand just enough to produce a smooth edge.



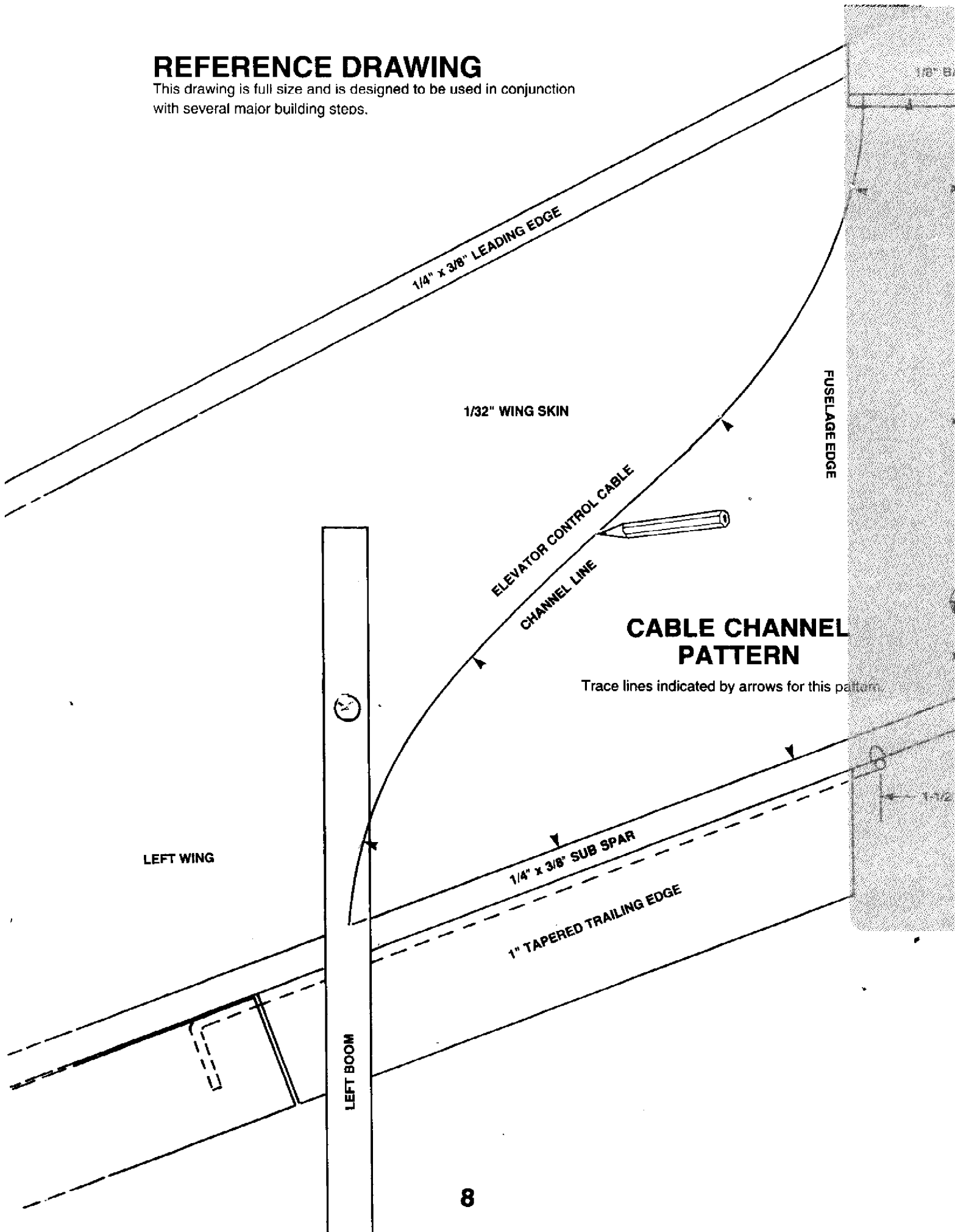
CANOPY LATCH

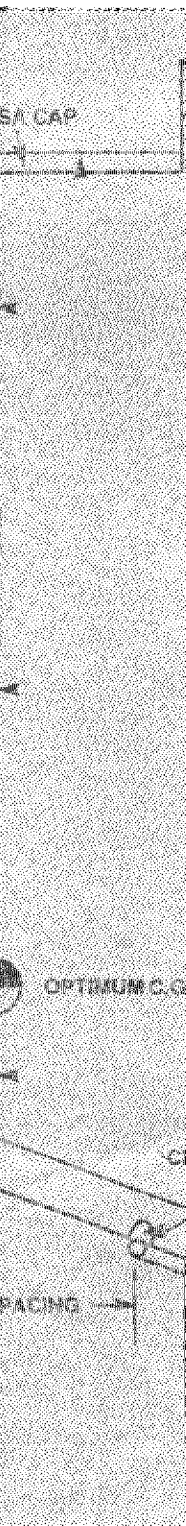
Cut a 1/16" x 1/2" slot 3/4" forward of the rear edge of the canopy along the mold seam on top (Figure 18). Locate the 3/4" x 1/16" I.D. brass tube and the 1/16" x 2" piano wire. Bend the piano wire as shown in Figure 19. Fit the wire into the brass tube. Install as indicated.



REFERENCE DRAWING

This drawing is full size and is designed to be used in conjunction with several major building steps.





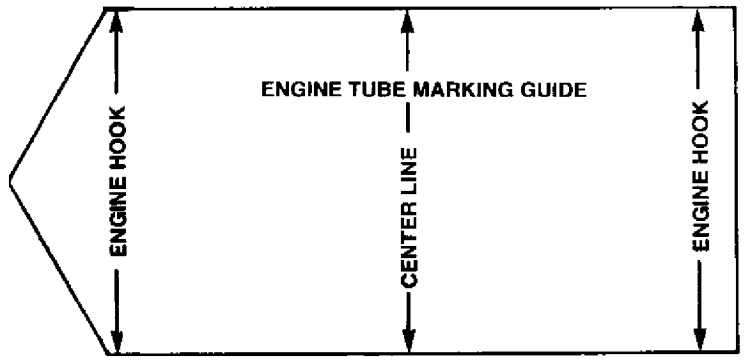
FUSELAGE EDGE

BOOM PLACEMENT PATTERN

Trace lines indicated by arrows for this pattern.

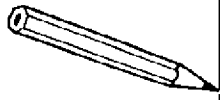
CLEARANCE NOTCH

PACING



Carefully cut out and use with engine mount assembly instructions.

OPTIONAL ANTENNA CHANNEL



BOOM LINE

3/16" DOWEL

RIGHT WING

RIGHT BOOM

AILERON TORQUE RODS

AILERON

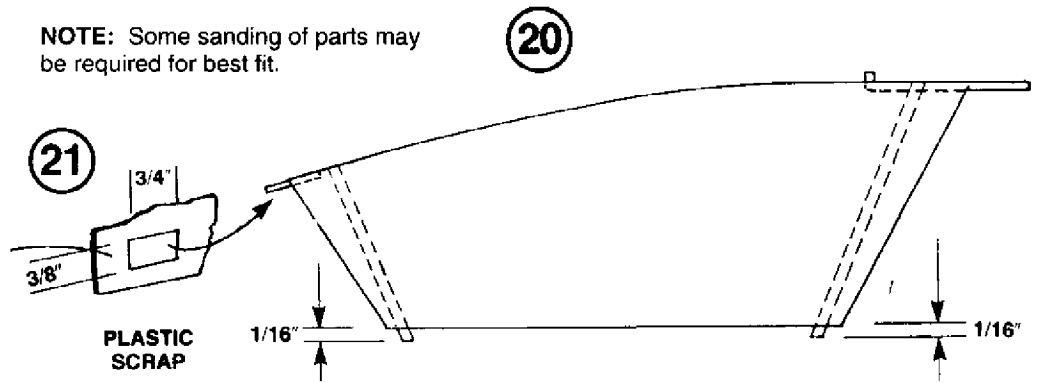
CANOPY STIFFENERS

- Locate the plywood die cut parts. Punch out the plywood disc in the middle of the sheet and save it. Remove the radio compartment frame and canopy stiffeners.

- Install the canopy stiffeners as indicated in **Figure 20**.

- Use a piece of plastic from the wing root cut-out. Cut a $3/8" \times 3/4"$ piece. Install as shown in **Figure 21**.

NOTE: Some sanding of parts may be required for best fit.

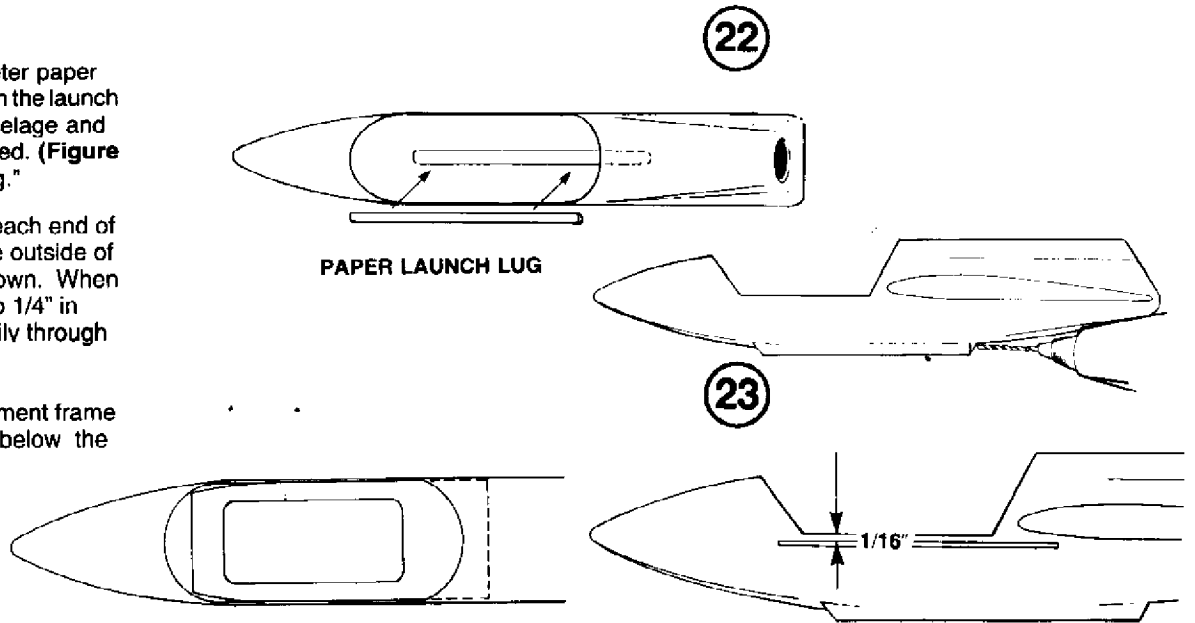


LAUNCH LUG

- Locate the small diameter paper tube (5 1/2" long). Place it in the launch lug channel inside the fuselage and glue it securely as indicated. (**Figure 22**) This is the "launch lug."

- Cut a $1/4"$ hole through each end of the launch lug boss on the outside of the plastic fuselage as shown. When finished a launch rod up to $1/4"$ in diameter should pass easily through the assembly.

- Install the radio compartment frame inside the fuselage, $1/16"$ below the canopy sill. (**Figure 23**)



ROCKET ENGINE MOUNT ASSEMBLY

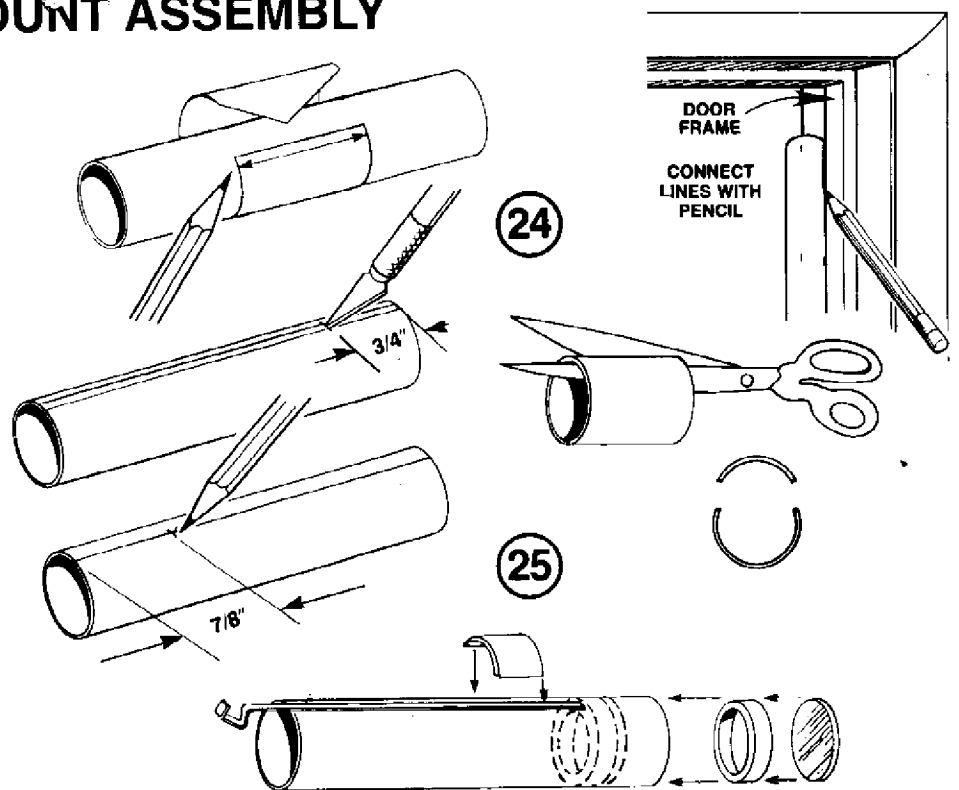
- Locate the white 4" long paper tube, the black paper tube, the green heavy wall paper ring, the metal engine retainer clip, and the plywood disk.

- Wrap the marking guide found on the reference drawing page around the white tube. Mark the tube at the three locations indicated on the guide. (**Figure 24**)

- Use a door frame moulding to mark the tube at those three points from end to end. Cut a slot $3/4"$ from one end of the tube between the twin lines as shown. Place a mark $7/8"$ from the opposite end of the tube along the single line. Cut out a segment of the black tube as shown.

- Assemble the mount by gluing the parts together as shown. (**Figure 25**)

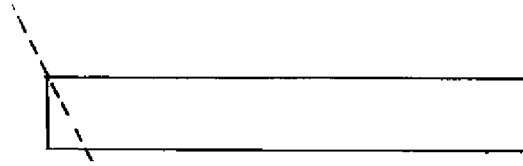
NOTE: Do not glue the metal retainer to the tube except at the point where it enters the tube at the slot. Epoxy is best here.



TAIL BOOM ASSEMBLY

- Locate the die-cut balsa boom sides and the four 1/8"x 3/8" x 17" boom caps.

26

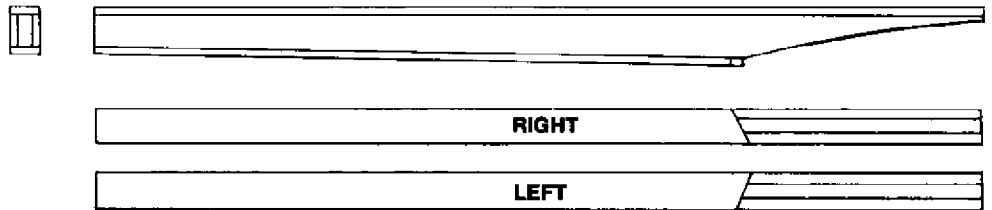


- Trim two of the boom caps to a length of 16 3/4" and the remaining two to a length of 11 3/4". The two 11 3/4" pieces will need one end cut at an angle as well. After cutting to length refer to Figure 26 and trim the angle as shown.

FABRICATE THE BOOMS

- Glue the boom components together as indicated in Figure 27.

27



IMPORTANT: You must make a left and right boom. The angled bottom caps are assembled as mirror images.

Tip: Pieces of the scrap 1/8" x 3/8" make good spacer shims to separate the die-cut sides as you assemble the booms. Do not glue the spacers between the sides. Complete booms are hollow. Mark them "left" and "right".

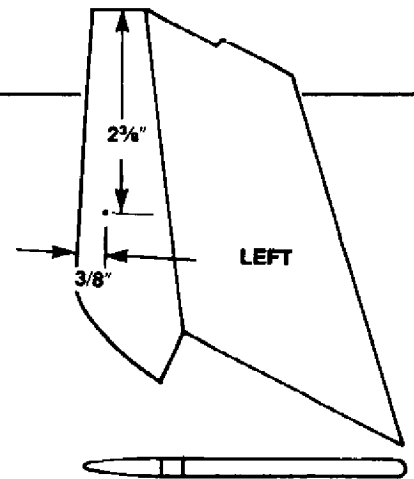
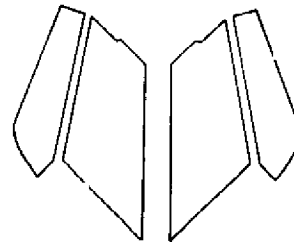
- You may want to round the edges of the booms by lightly sanding. Do this after you install the tail surfaces.

VERTICAL STABILIZER ASSEMBLY

- Locate the die-cut vertical stabilizer sheet and carefully remove the four components.

- Drill a 1/16" hole in one assembly as indicated. Mark that assembly as "left". Mark the undrilled assembly "right".

28



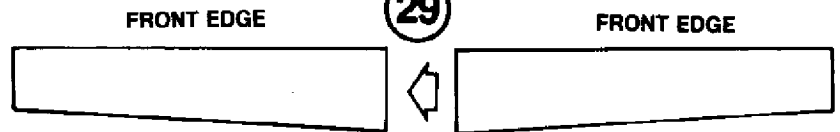
- Glue the components together as indicated in Figure 28.

- Sand the leading and trailing edges to shape.

HORIZONTAL STABILIZER AND ELEVATOR ASSEMBLY

- Locate the die-cut components. Glue the left and right elevator halves together as indicated in Figure 29. Be certain that the front edge is straight.

29



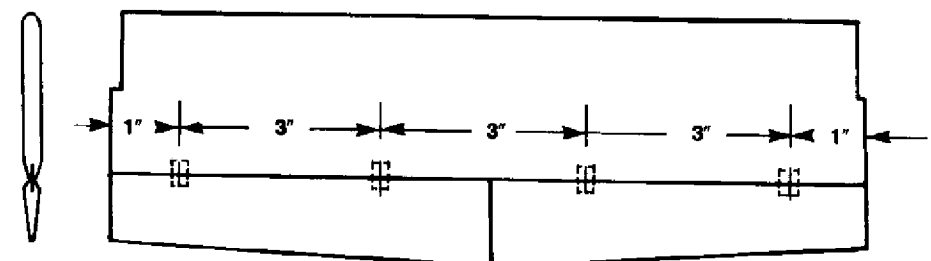
31

- Align the stabilizer and elevator as shown. Mark and cut the four hinge slots. (Figure 30)

30

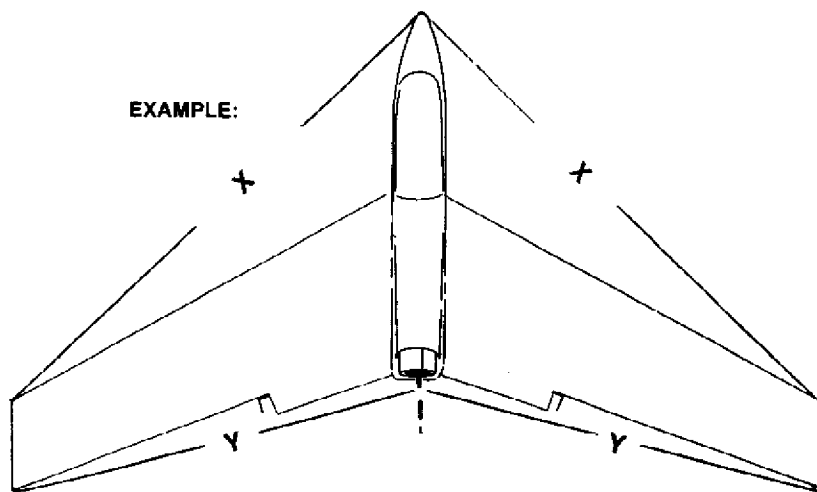
- Cut the four hinges from the remaining hinge material (1/4" x 5/8"). Do not glue hinges in place at this time.

- Shape the edges of the stabilizer and elevator as shown in Figure 31.



JOIN THE WING TO THE FUSELAGE

- Insert the right wing through the left wing cut out of the fuselage. Rotate the linkages and guide the cable sheath carefully through the opening. Measure the distance from wing tip corners to the fuselage nose and tail center line to insure accurate fuselage to wing placement. Use gap filling C/A or epoxy to secure the joint. You may wish to use a filling compound to dress up the joint.

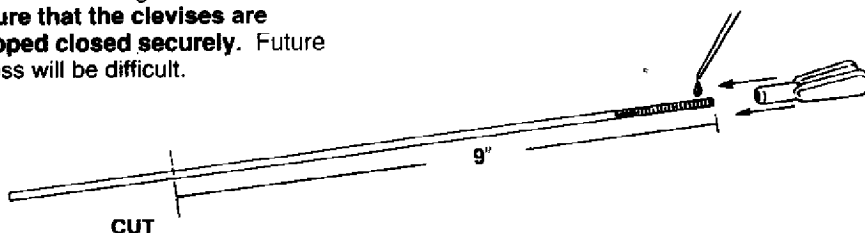


MAKE A PAIR OF AILERON PUSH RODS

- Locate the two 12" x 2-56 threaded metal rods and the two nylon clevises from your hardware set. Use a drop of machine oil so that the clevis will rotate freely after installation (Figure 32)

- Cut each rod to a length of 9" (you may need to cut more off of each rod during the radio installation).

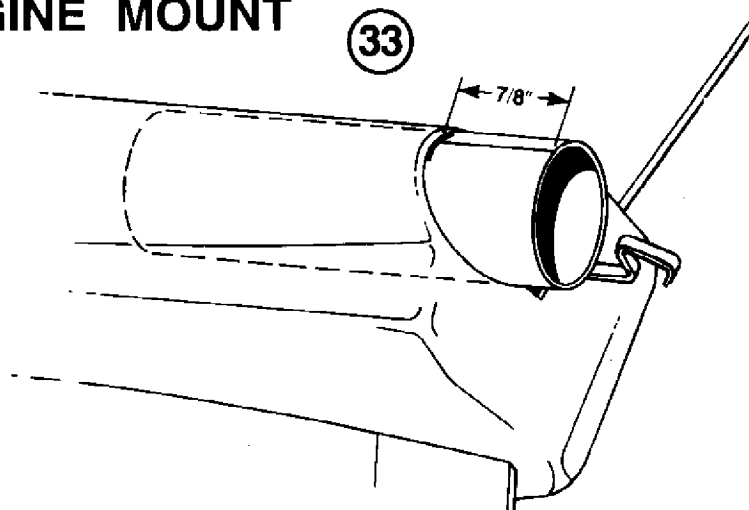
- Insert the rods into the fuselage, clevis end first, through the canopy opening. Attach the clevises to the torque rod ends. Work through the opened rocket engine mount hole. **Ensure that the clevises are snapped closed securely.** Future access will be difficult.



INSTALL THE ROCKET ENGINE MOUNT

- Carefully insert the rocket engine mount assembly through the hole in the fuselage to test fit. Position the mount so that the 7/8" mark aligns with the edge of the fuselage. (Figure 33)

- Remove the mount and sand the inside upper surface of the fuselage to insure a good glue joint. Apply gap filling C/A to the sanded surface and relocate the mount. You should be able to see the single line on the engine mount through the plastic fuselage. Align the mark with fuselage molding seam along the top. Careful alignment is advised.



SUGGESTED FINISHING METHODS:

You now have the basic components ready to finish. We finished our prototypes in the following manner: Fill and prime the booms and tail components. Prime the fuselage and 1/2" out on each wing root. (Mask a straight line on each wing 1/2" from the fuselage). **Then assemble the booms and tail components as per the forthcoming instructions.**

AFTER ASSEMBLY

Mask off the bare balsa covered wings and apply the finish paint to the primed surfaces. (Go easy, paint adds weight). Then cover the wings and ailerons with low temperature iron-on covering. Trim to the painted

areas; install the ailerons and proceed to the radio installation instruction. You may wish to cover the entire airplane with iron-on covering. **Remember that the only acceptable glue joint is a "wood-to-wood" joint.** So, if you cover your pieces separately, you **must remove the covering material at all glue joints.**

TAIL SURFACES

- Glue the vertical stabilizers to the horizontal stabilizer as shown in **Figure 34**. Ensure a 90 degree angle at these joints. Be sure to place the left and right verticals correctly.

- On a flat surface, glue your finished assembly to the booms as shown in **Figure 35**. Use caution to properly fit parts and check for alignment.

- The booms must be parallel and measure 11" apart to the outside at each end of the assembly.

Attach the finished tail assembly to the wing.

- Position the booms on the wing so that the bottom boom caps make contact with the wing trailing edge. The inside of each boom should line up with the boom line on each wing.

- You will need to feed the elevator control cable sheath down the hollow center of the left boom as you fit the tail assembly to the wing. (**Figure 36**)

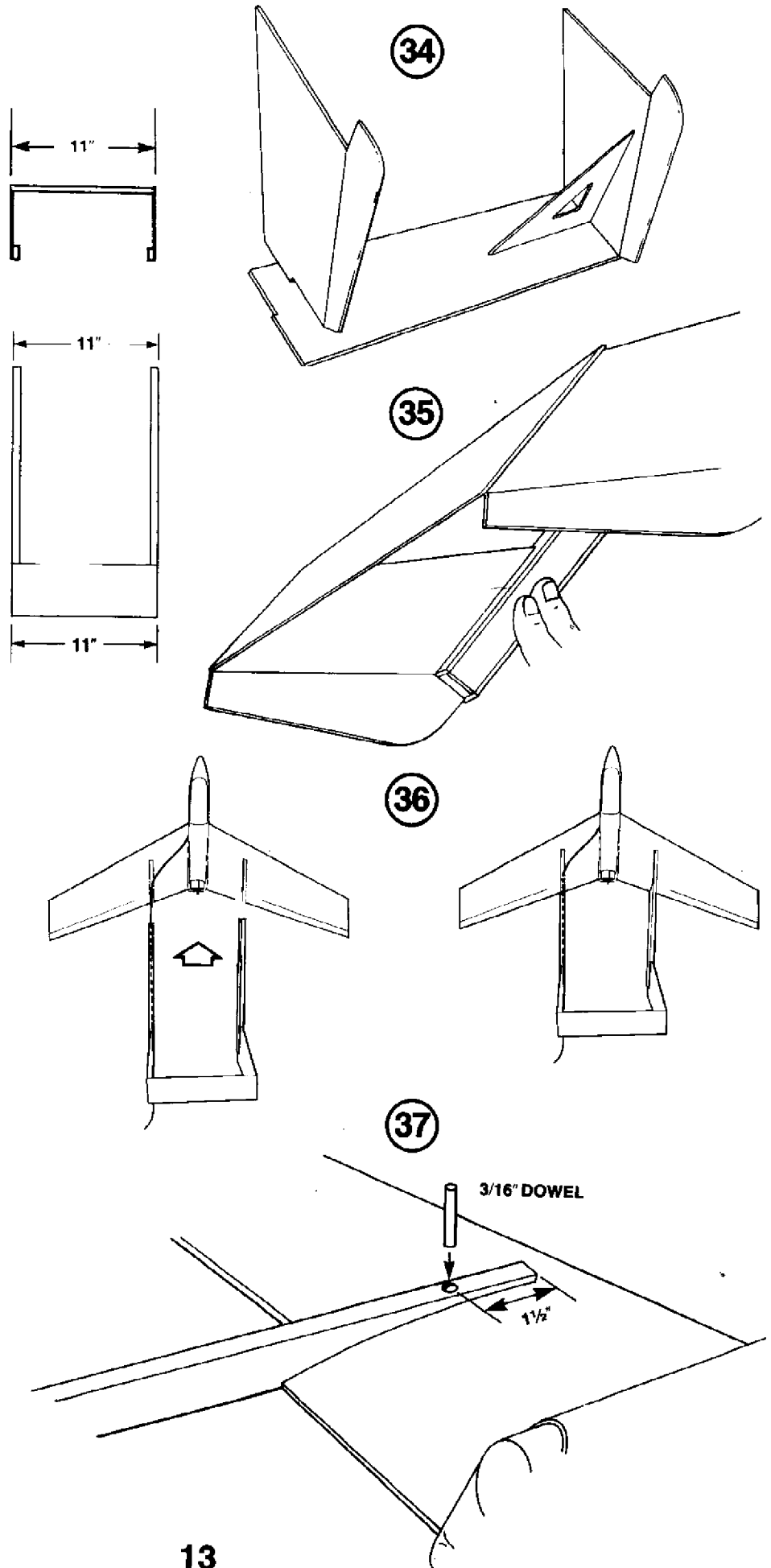
- Some sanding of the "saddle" at the forward end of the boom may be required for a good fit to the airfoil curve of the wing. When a good fit is obtained, glue the booms to the wing with a thin C/A or epoxy. **NOTE: Do not force the fit between the wing and booms. This may distort the tail assembly.** Before a permanent glue joint is done, check for parallel booms and straight tail surfaces.

- Use cut pieces of the 3/16" x 2 1/8" wooden dowel to 'pin' the booms. Drill a 3/16" hole 1 1/2" from the front of each boom. Carefully drill completely through the wing. Epoxy the dowel in place and sand flush to the top and bottom. (**Figure 37**)

- You may now install the elevator and hinges if you have used iron-on covering or if you have primed but not painted your model. Insert the four hinges into the hinge slots and position the elevator.

- Move the elevator up and down 1/2" in each direction to ensure proper movement.

- Apply 2 or 3 drops of **thin** C/A glue on the top and bottom of each hinge at the seam between the stabilizer and elevator. The glue will wick into the hinge and slot and **bond instantly**, so make sure your placement is correct.



FINAL ASSEMBLY

PAINTING YOUR STRATO-BLASTER™

• Now you may mask and paint your model. Use fuel proof paint, if you plan to fly your model with the glow engine conversion.

• When your paint finish has dried you may now cover your wings with the iron-on covering of your choice. Cover up to the painted areas. **Use care when applying and shrinking the material. Heat may disturb the painted surfaces.**

INSTALL THE AILERONS

• Use iron-on covering to finish the ailerons. Install them in the same manner as you did the elevator.

Note: DO NOT GLUE the aileron torque rod end into the aileron.

ELEVATOR CONTROL CABLE HOOKUP

• Locate the nylon control horn and screws. Cut the horn as shown in **Figure 38**.

• Locate one of the 2-56 threaded brass tubes. Solder or C/A glue to the end of the brass-plated cable.

NOTE: Insert the cable through the tube flush to threaded end. (Figure 39)

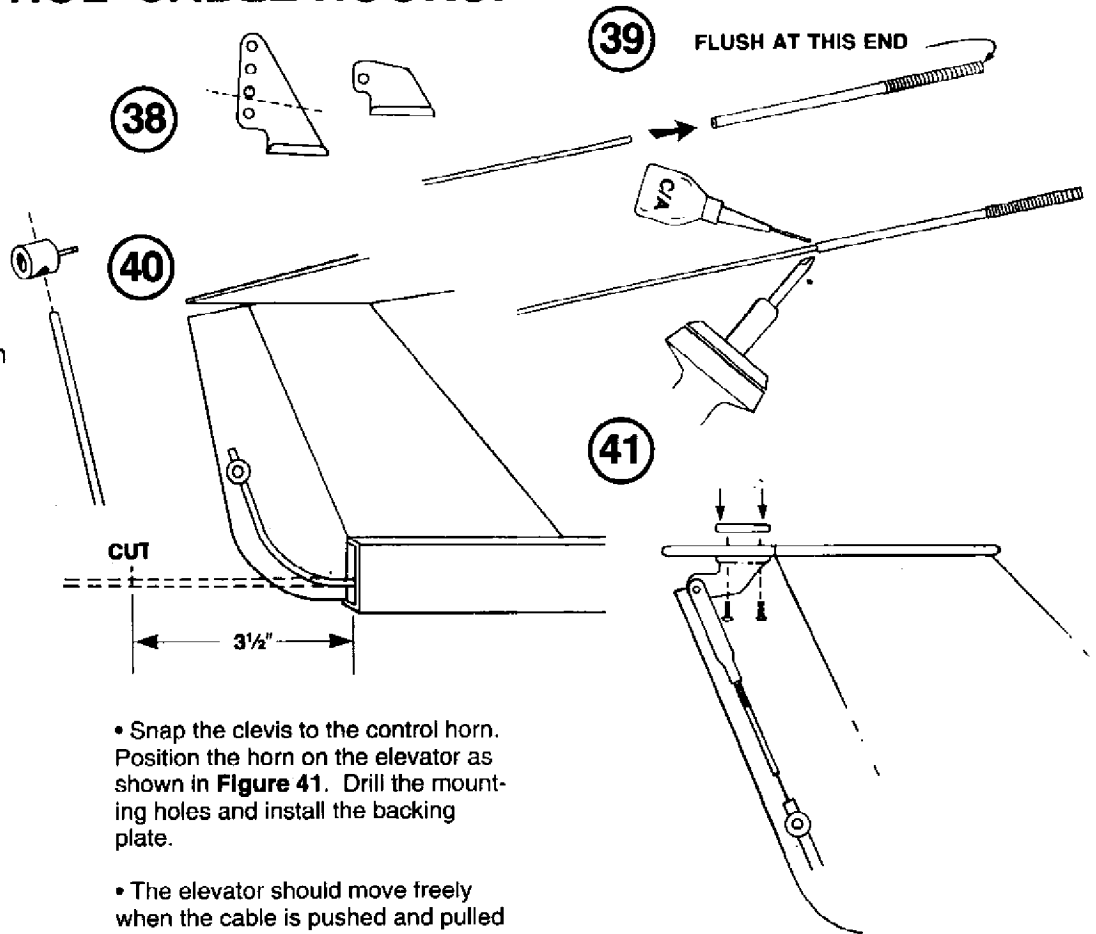
• Cut the plastic sheath off 3 1/2" from the rear of the boom.

• Locate one of the brass E-Z type connectors.

• Feed the plastic through the hole in the E-Z connector and position the stem of the connector in the 1/16" hole in the vertical stabilizer as shown in **Figure 40**. Adjust the cable sheath as shown 1/8" above the brass E-Z connector. Use thin C/A to permanently bond the components.

NOTE: Do not allow C/A to flow down the inside of the sheath.

• Locate a nylon clevis and install it on the thread brass cable end. Feed the cable into the sheath at the left vertical.



• Snap the clevis to the control horn. Position the horn on the elevator as shown in **Figure 41**. Drill the mounting holes and install the backing plate.

• The elevator should move freely when the cable is pushed and pulled in the radio compartment.

RADIO SYSTEM INSTALLATION

Radio Systems Suitable for the Strato Blaster

The following manufacturers and others produce flight systems suitable for use in your Strato Blaster. Ask your hobby dealer for further information. **Futaba, Airtronics, J.R., Cox, Hi-Tech RCD, Cannon, Royal, and others.**

Radio installation depends largely on the brand and size of your system. We used Futaba S-133 servos, R-114H receiver, NR-4K 250 mA H Nicad Battery pack.

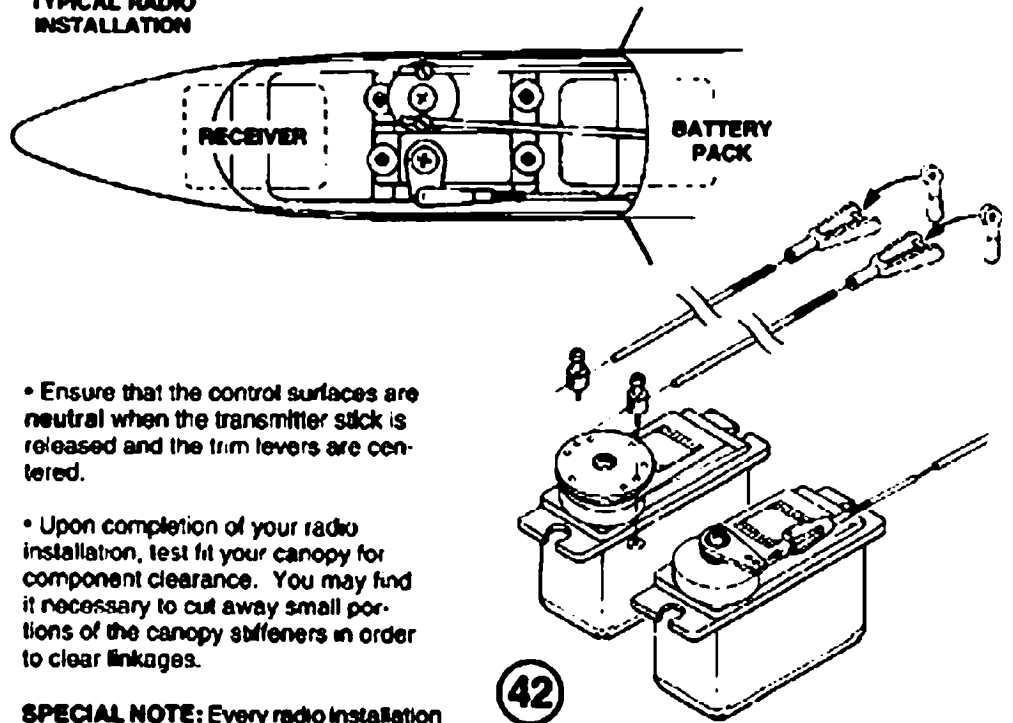
• Use the 1/8" x 1/4" x 4" spruce servo mount rail provided in this kit to fabricate mounts for your servos.

• In the interest of weight reduction, we plugged our battery directly into the receiver at flight time. If you choose to use a switch harness, we suggest that you leave it inside the fuselage. Mount it with double sided tape for security.

• The aileron push rods are connected with E-Z type connectors. They make aileron adjustment quick and easy at the servo end of the push rod. See **Figure 42**.

• Install a 2-56 threaded brass tube at the servo end of the elevator control cable (trim cable as needed). Use the remaining nylon clevis to complete the connection to your elevator servo. (**Figure 42**)

TYPICAL RADIO INSTALLATION



• You may need to cut some of the plastic elevator control sheath to allow for servo clearance. Cut as little as possible.

• The next step is to ensure correct control surface movement. Connect all radio components according to the manufacturers directions.

• Activate the system. Moving the control stick to the right will raise the right aileron and lower the left. In flight, a right bank will result. Moving the control stick left will raise the left and lower the right aileron. In flight, a left bank will result. Full aileron deflection should be no less than 1/4" up and 1/4" down. (We find this adequate for all around control. You may adjust to suit).

• Pull the control stick back and the elevator will raise and so will the airplane's nose when in flight. Push the stick forward and the elevator moves down pushing the nose down. Full elevator deflection is about 1/2" up and 1/2" down.

• Ensure that the control surfaces are neutral when the transmitter stick is released and the trim levers are centered.

• Upon completion of your radio installation, test fit your canopy for component clearance. You may find it necessary to cut away small portions of the canopy stiffeners in order to clear linkages.

SPECIAL NOTE: Every radio installation will vary. It is not uncommon to cut the radio compartment frame in order to accommodate various systems.

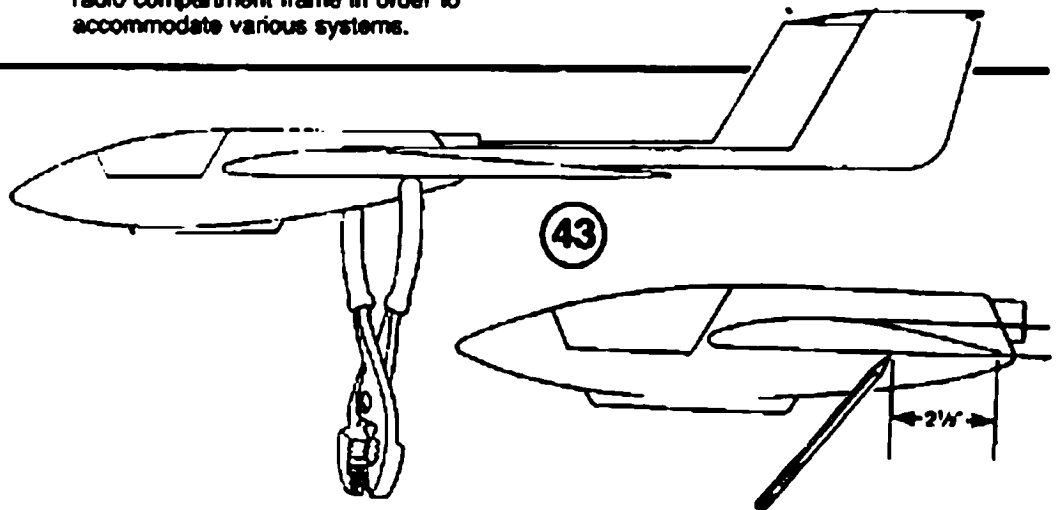
BALANCE

Perhaps the most important part of the flight preparation is the correct location of the center of gravity or CG.

• Place marks on the wings 2 1/2" forward of the trailing edges on each side of the fuselage.

• Install a fresh rocket engine.

• Balance your model by holding it atop the ends of plier handles, placed exactly on the marks. (Figure 43) Add weight fore or aft to bring your model into proper balance.



PRELAUNCH TEST GLIDE

• A test glide before your first rocket boosted flight is **MANDATORY**. A straight-ahead throw into a light steady head wind is best. Tall grass or sand is a wise choice for your model's first landing. The throw should be brisk with the controls set at neutral for the ailerons and elevator.

• Your model should fly relatively straight with a long descending glide. It should demonstrate immediate control input response. If so, use these control settings for your first boost launch. If not, make the necessary adjustments to produce a well-controlled glide. Although a glide test is not necessary every time you fly, one should be conducted occasionally, especially after repairs have been made.

PREFLIGHT CHECKLIST:

• Verify all batteries have been properly charged.

• Verify that no one else is transmitting on your frequency. Do this before you turn your transmitter on.

• Conduct a control movement check.

• Walk away from your glider to a distance of about 150 feet. With your transmitter antenna collapsed, conduct a radio range check.

• Make sure the airborne and transmitter antennas are fully extended, the radio gear is secure, and the canopy is completely closed.

• If you have any doubts about your ability to test fly your Strato Blaster, we suggest that you ask for the assistance of an experienced R/C pilot before you go to the next step.

• Conduct your test glides.

ROCKET-BOOSTED LAUNCH

The Estes Pro Series launching system can be used to fly your Strato Blaster. In addition to the launch pad and launch controller, your rocket glider requires a 1/4" diameter launch rod and D-11P or E-15P rocket engines, igniters and igniter plugs.

NOTE: The heavy wall orange paper tube provided in this kit is to be used with Estes D-11P engines. Insert it ahead of the engine as a spacer
USE ONLY THE ROCKET ENGINES RECOMMENDED.

- We also recommend the use of a D-11 P engine for your first flight.
- Set the launch rod at about 20 degrees below vertical.
- Position the launcher so that the Strato-Blaster has its belly to the breeze. For your first flights, launch in calm or still conditions. After you gain some experience in flying your Strato Blaster, you can launch in windier conditions and at more vertical launch angles. Never launch in gusty or high wind conditions.
- Load the engine into the Strato Blaster with the igniter installed as per instructions.
- See the engine instruction sheet for the NAR safety code. Also see the Estes catalog for Tech Tips and safety information before launching
- Stand to the side of your Strato-Blaster at launch. This will help with orientation as your model boosts skyward.
- Make sure your radio is on, the spectators are safety away from the launch site, and the launch controller indicates "A GO".
- Give an audible countdown from T-5 seconds, have a qualified helper press the launch button and you're off!
- Be sure to have your helper remove the continuity key and place it on the launch rod while you are flying.
- Your launch should be fairly straight up with little to no control input required. As your model reaches apogee, push the nose over into level flight and you're soaring!
- If your launch was other than straight up, make very small trim adjustments until straight launches are achieved.

Happy Boost Gliding!

SPECIAL NOTE:

Those of you modelers who will undoubtedly choose to build your own launching system should bear in mind the following:

Use a 1/4" steel launch rod at least 48" long. Be absolutely sure that the base on your home made pad is stable and resistant to wind gusts

You should use a blast deflector to divert flame and hot gasses away from flammable materials such as wood or dry grasses

Helpful safety & flight tips:

Familiarize yourself with the AMA Model Aircraft Safety Code and the NAR Safety Code for model rocketry. Read these before attempting to fly your model.

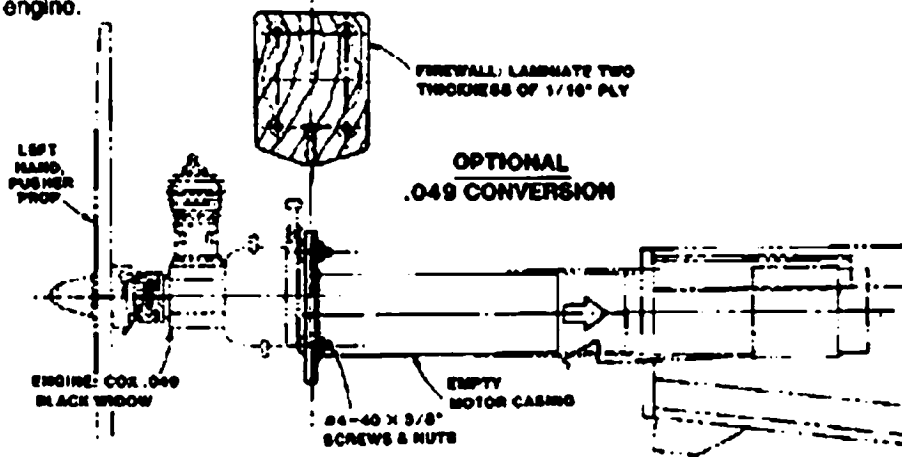
- Inform others in the area before launch.
- Fly at approved sites only.
- Have a qualified assistant operate the launch control.
- Avoid large control inputs during boost.
- You can expect launches of up to 300 feet with 'D' and 500 plus with 'E' engines.

OPTIONAL POWER CONVERSION .049 GLOW ENGINE

Here's a way to expand the flying fun with your Strato-Blaster.

Your kit includes the necessary components to provide a mount for the Cox "Blackwidow" .049 glow fuel engine.

A reverse pitch propeller or reverse starter spring is required. The .049 mount simply slips into the rocket engine tube built into your Strato-Blaster. Epoxy all components together. Check for the correct C.G. and you are ready to fly. (Read and comply with all safety instructions concerning the Cox .049 engine)



TIPS:

- Hand launch your .049 powered Strato-Blaster with a brisk throw into the prevailing breeze.
- With a properly tuned engine, you can expect 3 to 4 minute engine runs before the fuel is spent.
- Fly over vacant areas only, never over the heads or in the direction of spectators.

- Set the propeller so that it will stop in a horizontal position. This will help prevent prop damage upon landing.

For assistance, call Estes' toll-free number: 1-800-525-7561.



STRATO BLASTER™

STRATO BLASTER™



PN 37613



Make 2 of each black Section



Ailerons and cross member