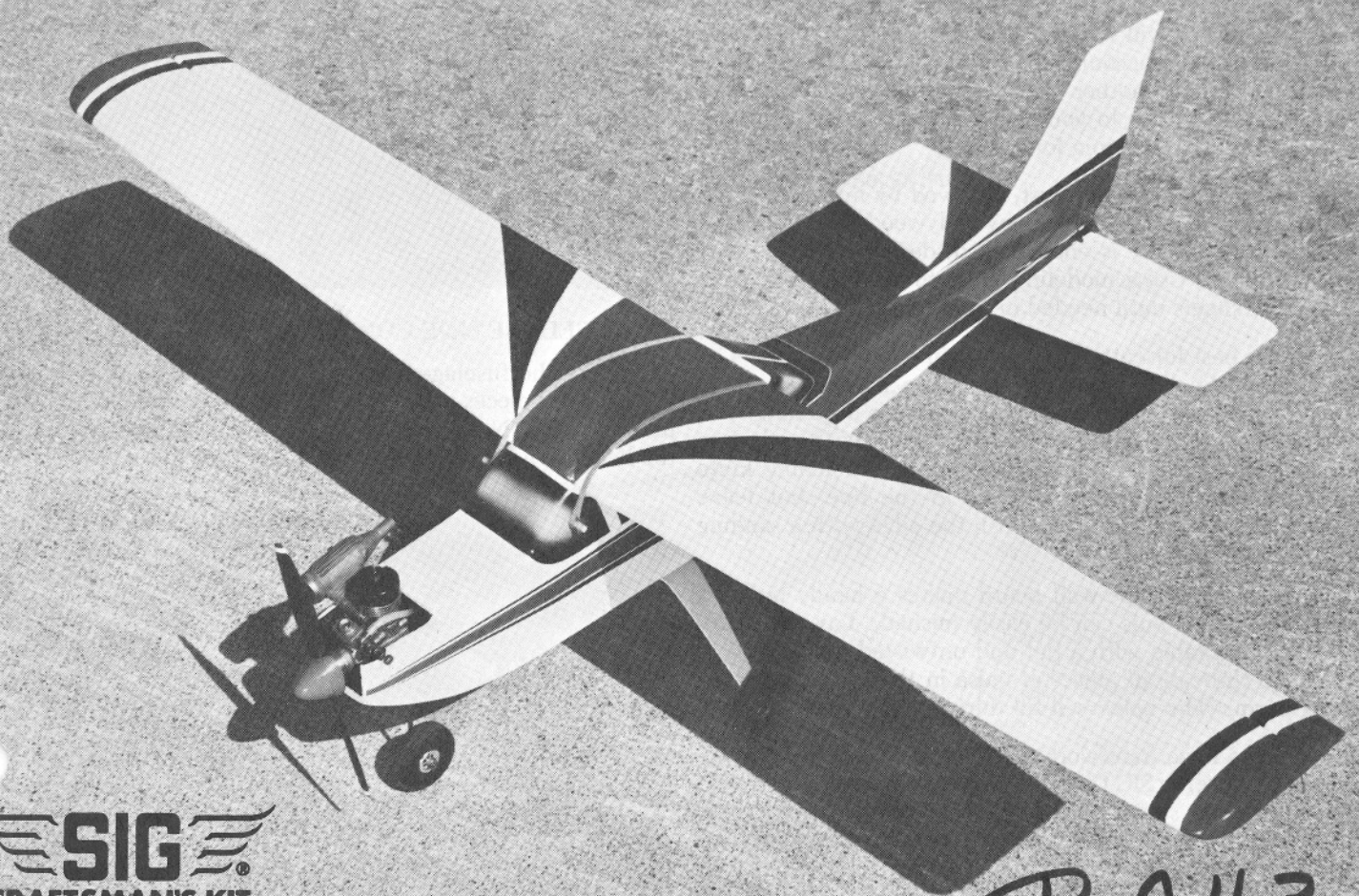


COLT



BUILDING AND FLYING INSTRUCTIONS



SIG
CRAFTSMAN'S KIT

RC43



The Colt, quick and easy to build, is good for flying in confined areas or as an all-around sport model. Although it is not recommended as a trainer, it can be handled by relatively inexperienced pilots with low number of RC flying hours.

For best results, install 3 channel radio equipment in the Colt to operate the throttle, rudder and elevator. Or you can install 4 or more channel equipment and use only 3 of the channels (see note in Radio Installation section). The fuselage is large enough to carry a standard battery pack and servos. One or two channel equipment could be used in the Colt, but with less flexibility in control (rudder and elevator with 2 channels; rudder only with 1 channel). We do not recommend 1 or 2 channel operation except by fliers well experienced with that type of limited control.

The kit is arranged so that no separate full size plan is needed. The center section of the booklet does show some full-size patterns which will be helpful during construction. A preliminary study of the instructions and drawings of the construction steps will make it clear where several building operations may be accomplished at the same time. While one part is drying, another part can be started. References to right and left refer to your right and left as if you were seated in the cockpit facing forward.

Cut all long pieces of balsa first, followed by medium length and all short pieces last. Remove plywood die-cut pieces carefully. If difficulty is encountered, do not force the part from the sheet. Use a modeling knife to cut it free. Leave parts in the sheets until needed in construction.

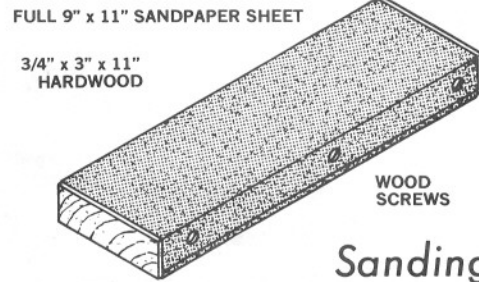
A jig saw is best for cutting out the printed sheet parts. Cut just outside the lines, leaving all of the line on the part. When fitting a part into place in the structure of joining with an adjacent part, use the sanding block to bring the edges to an exact fit. If a jig saw is not available, a modeling knife may be used. Don't cut too close to the line, but leave enough margin to true up and finish the edge with a sanding block.

A piece of Celotex type wall board makes a handy building board, into which pins can be easily pushed. Lay the building board on a table with a flat and untwisted top. Pins can be pushed through all pieces of balsa in the kit without any lasting harm. The holes will fill during sanding and dopping.

GLUES: The basic framework may be glued using SIG-BOND (water-based glue) or SIG CA (cyanoacrylate adhesive). Areas subjected to unusual strain, such as the firewall and landing gear mounts, should be glued with SIG Kwik-Set (5-minute epoxy) or regular SIG Epoxy.

(1.) PRELIMINARY

The first construction requirement is to make (if you don't already have one) a large sanding block that will take a full sheet of 80 grit sandpaper. You will find it to be an almost indispensable tool for many operations.

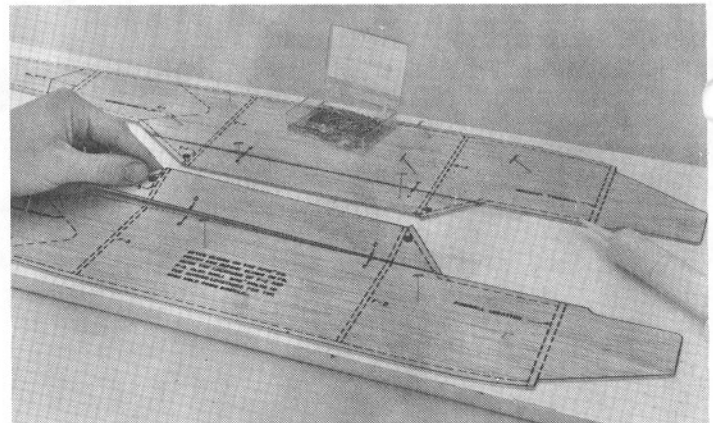


Sanding Block

(2.) PRINTED FUSELAGE SIDES

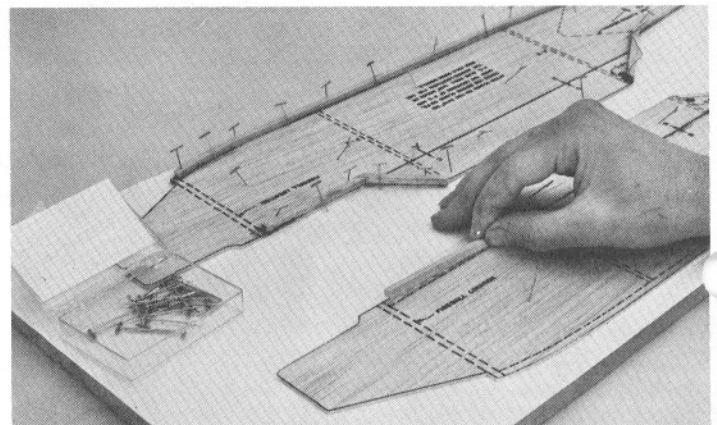
(a.) The internal framework of the fuselage is built directly on the printed balsa sides. Cut out the right and left fuselage sides from the sheets. Don't cut too close to the printed outline, leave a little wood for trimming and sanding flush with the framework after it is glued in place on the side.

(b.) Carefully join the two pieces that make up one fuselage side. Note that there is a distinct right and left. Match the connecting key letters accordingly.



(3.) FUSELAGE SIDE CONSTRUCTION

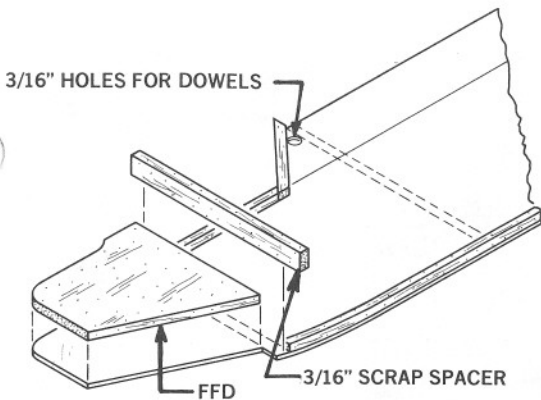
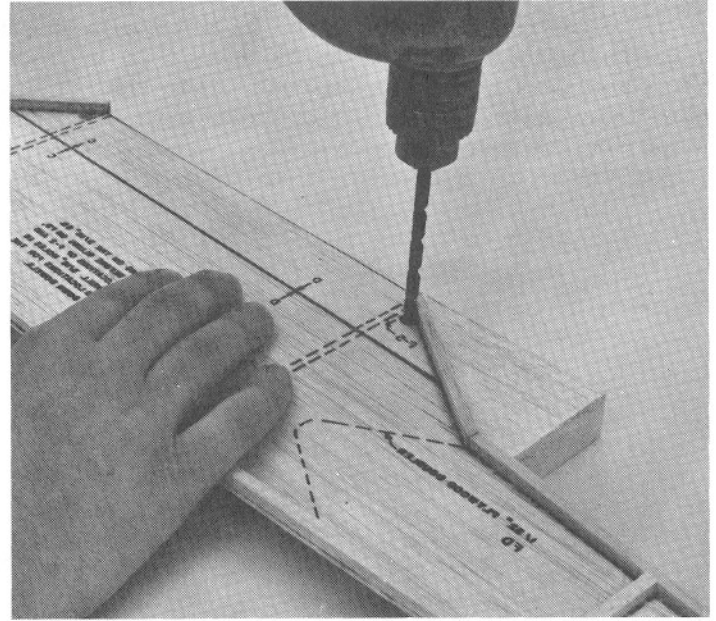
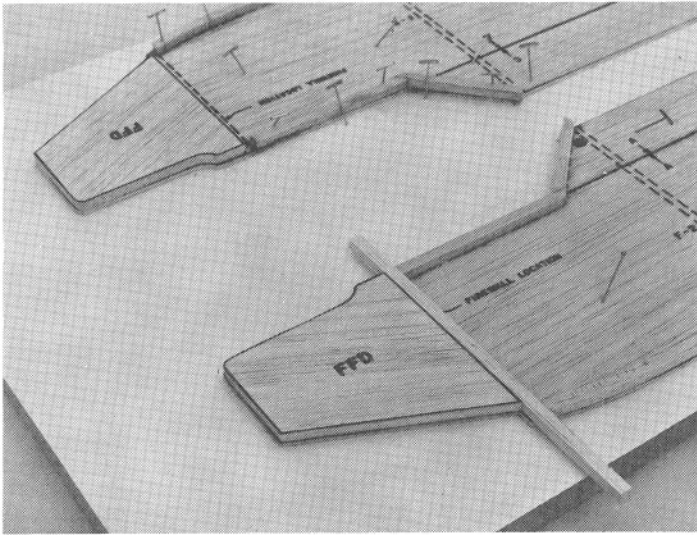
(a.) Pin the fuselage sides down on a flat building board and glue the pieces of 3/16" sq. to the top and bottom of the fuselage side. Note that the bottom 3/16" sq. piece stops at the back of the firewall location.



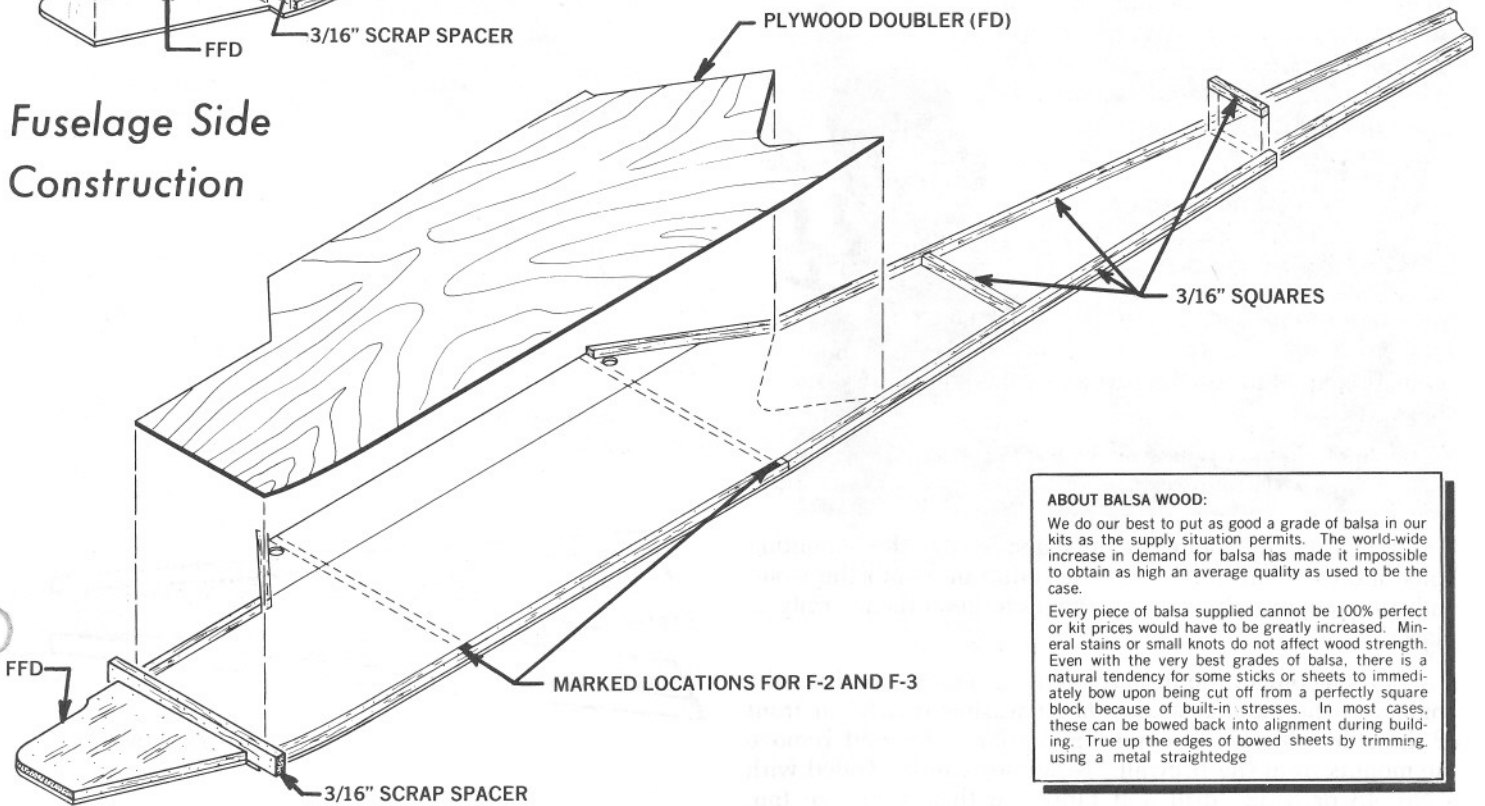
(b.) Add the vertical 3/16" sq. pieces.

(c.) Glue the 3/16" front fuselage doubler (FFD) in place on the front of the fuselage side using epoxy. Use a piece of 3/16" scrap balsa as a spacer to obtain the proper distance for a correct fit of the firewall later.

(d.) Remove the sides from the board and drill a 3/16" hole in each of the four marked positions for the wing hold down dowels. This marks the location for redrilling from the outside later.



Fuselage Side Construction

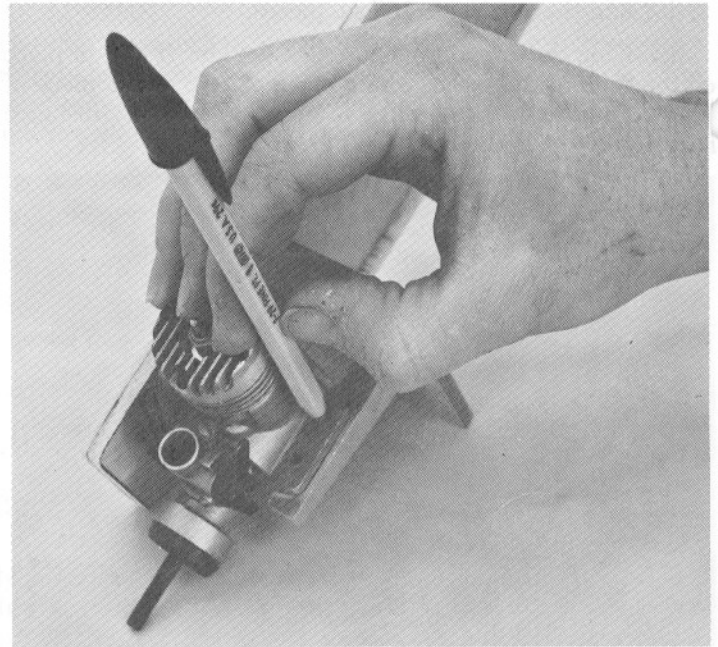
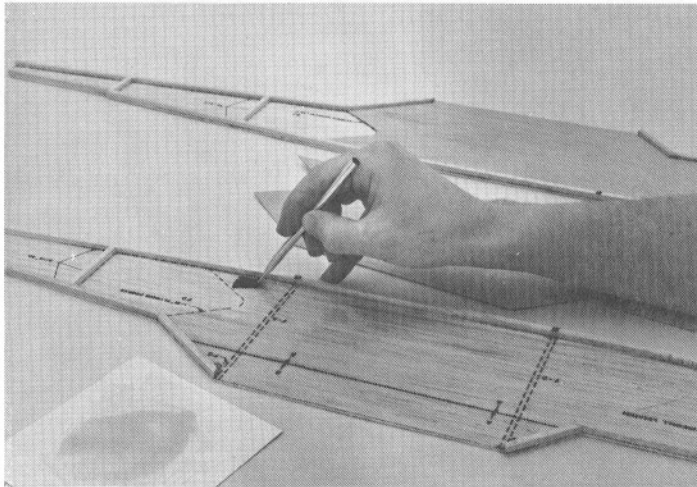


ABOUT BALSA WOOD:
 We do our best to put as good a grade of balsa in our kits as the supply situation permits. The world-wide increase in demand for balsa has made it impossible to obtain as high an average quality as used to be the case.
 Every piece of balsa supplied cannot be 100% perfect or kit prices would have to be greatly increased. Mineral stains or small knots do not affect wood strength. Even with the very best grades of balsa, there is a natural tendency for some sticks or sheets to immediately bow upon being cut off from a perfectly square block because of built-in stresses. In most cases, these can be bowed back into alignment during building. True up the edges of bowed sheets by trimming, using a metal straightedge.

4

(e.) Since the addition of the 1/32" plywood doubler (FD) will cover up the printed positions of the fuselage formers the location of these must be marked on the face of the bottom 3/16" sq. with a pencil.

(f.) Again use a piece of 3/16" sq. scrap as a spacer while gluing the 1/32" plywood doublers (FD) in place. Use epoxy glue - don't use Sig-Bond, white glue, or any other water base glue for this operation since the water in the glues may cause the parts to curl.

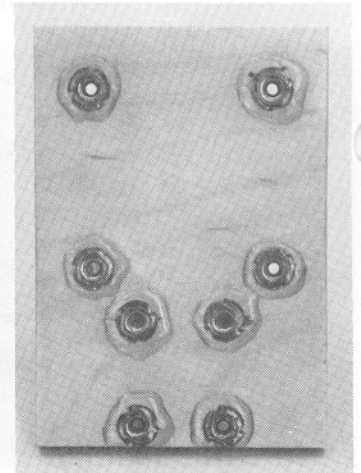
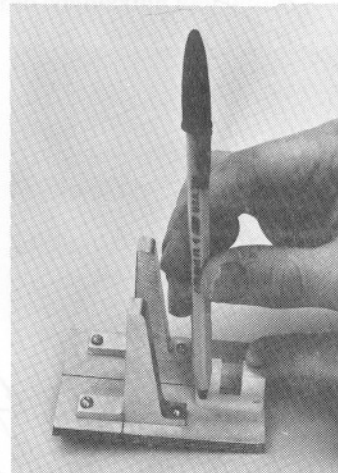
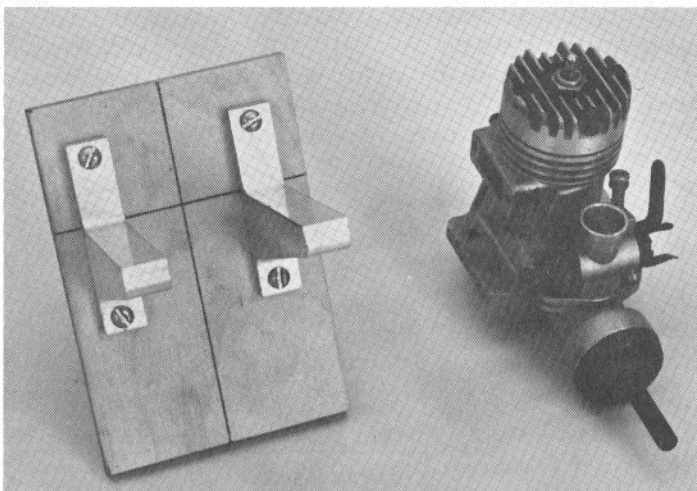


(e.) Position the nose gear bracket as shown on the full size pattern on page 11 of this book. Drill out the holes with a 9/64" drill and mount the blind nuts in the same manner as those for the engine mounts.

(4.) FIREWALL ASSEMBLY

(a.) The firewall is made by gluing the two 3/32" x 2-3/8" x 3-3/8" pieces (F1A & F1B) together. Use Sig Epoxy Glue for its strength and fuel-proof qualities.

(b.) Using the full size pattern in the booklet center section, locate and mark the vertical center line and thrust line on the front of the firewall. Check the width of the engine that you intend to use and determine the exact spacing between the engine mounts. Now locate the mounts on the firewall accordingly. Mark the locations of the mounting holes and drill out to accept the 4-40 blind nuts.



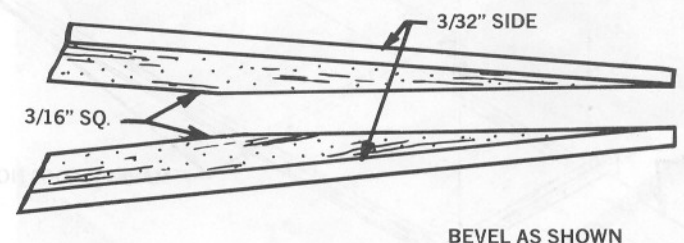
(5.) JOINING THE FUSELAGE SIDES

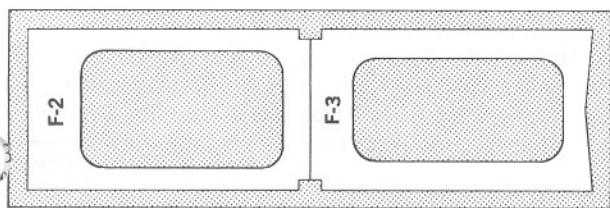
(a.) In the center section of this booklet will be found a full size drawing of the top view of the fuselage. Remove from the book and join the halves at the connecting key letters. This can now be taped down to a flat building surface.

(b.) With a sanding block, bevel the rear ends of the fuselage sides as shown.

(c.) Put on the motor mounts and screw the mounting bolts into the blind nuts. Pull the blind nuts into the wood and spread epoxy glue over the edges to keep them firmly in place.

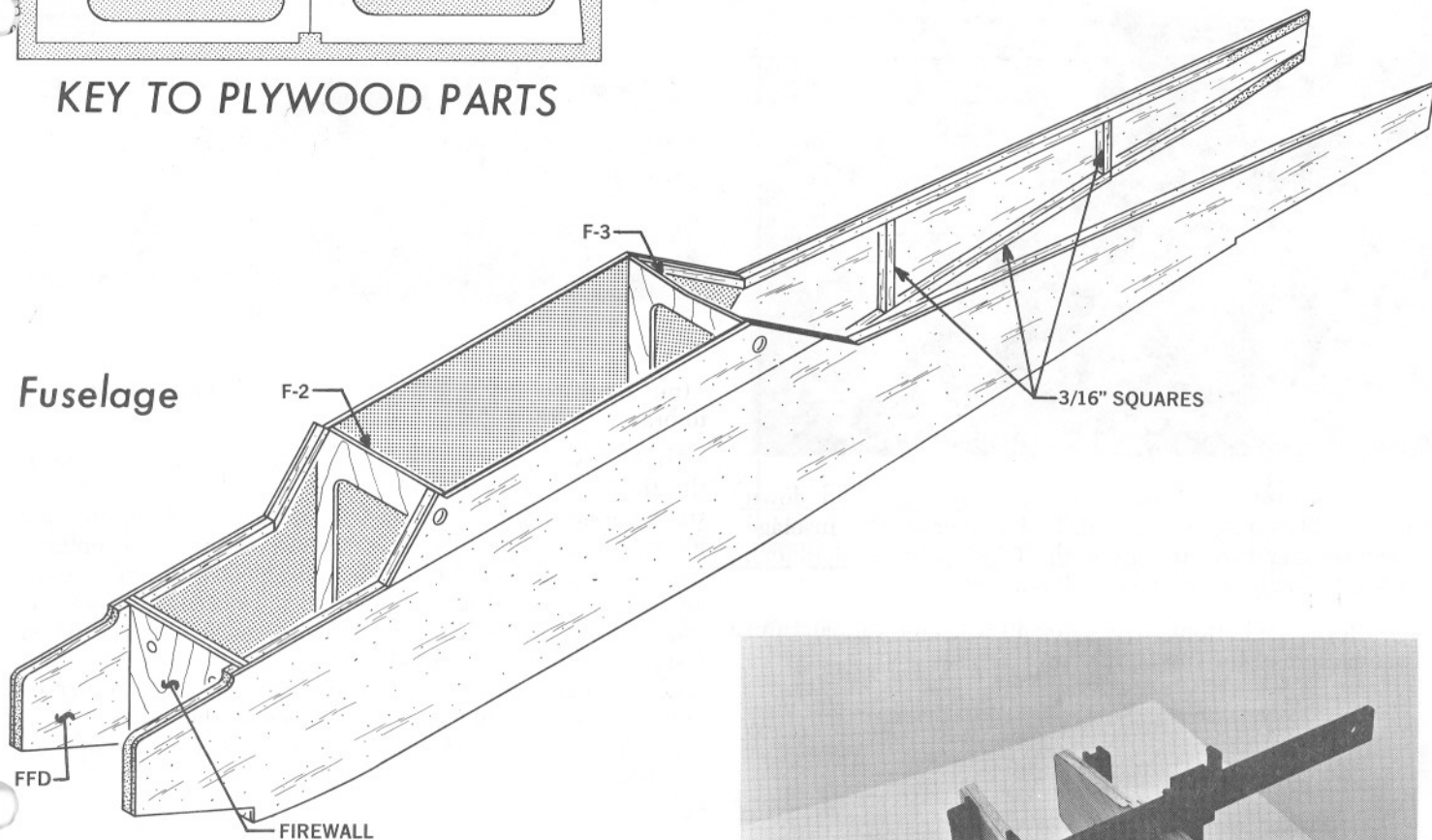
(d.) Using one of the fuselage sides as a guide, position the engine on the mounts so the thrust washer is 3/8" in front of the side. Mark the engine mounting holes and remove the mounts from the firewall. Now they can be drilled with a No. 43 or 3/32" drill and tapped with a 4-40 size tap.



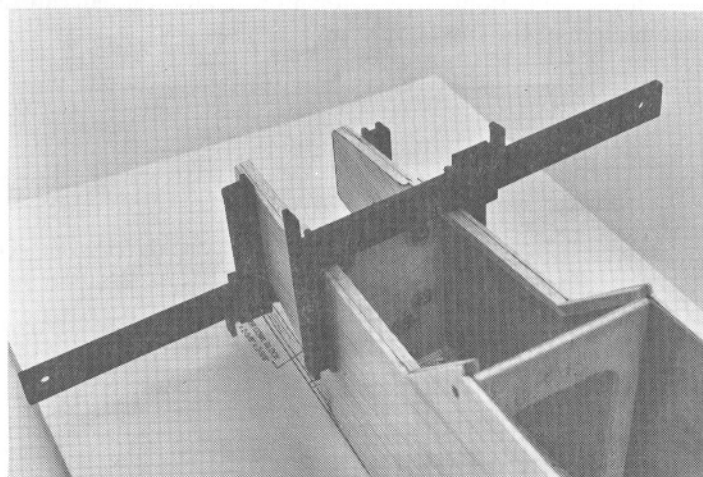


KEY TO PLYWOOD PARTS

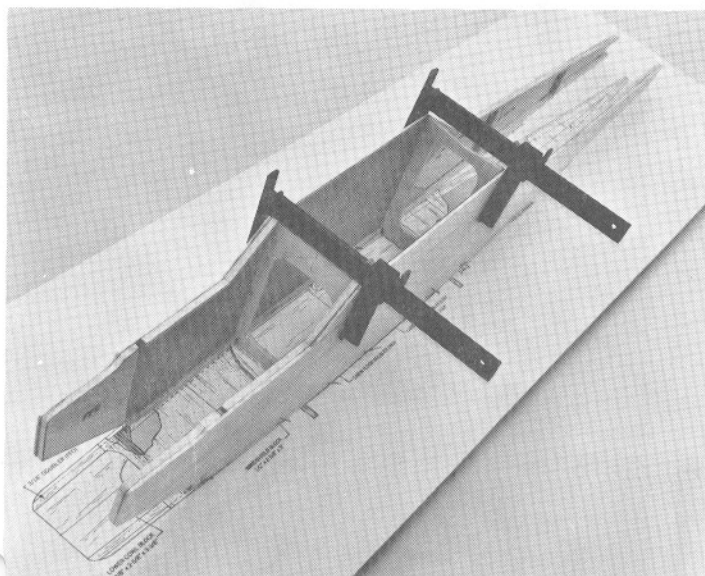
Fuselage



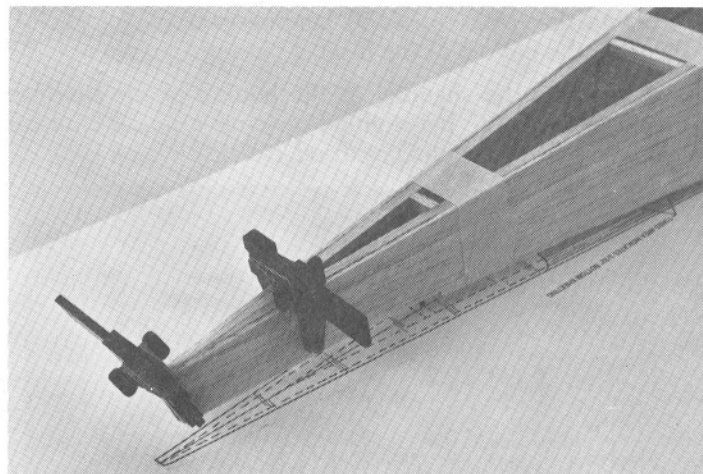
(c.) Pin the fuselage sides in place over the top view drawing and glue formers F2 and F3 in place. Use clamps or masking tape to hold the pieces until dry. Check and make sure the sides are properly aligned over the drawing before the glue dries.



(e.) Glue the rear ends of the fuselage sides together making sure the joint is directly over the center line.

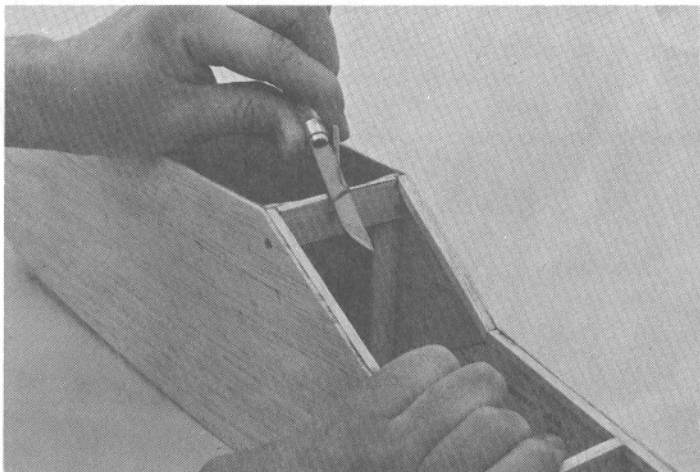


(d.) Glue the firewall in place with epoxy. Pull the sides together at the front with clamps, rubber bands or tape, making sure the fuselage is directly over the center line before the epoxy sets.



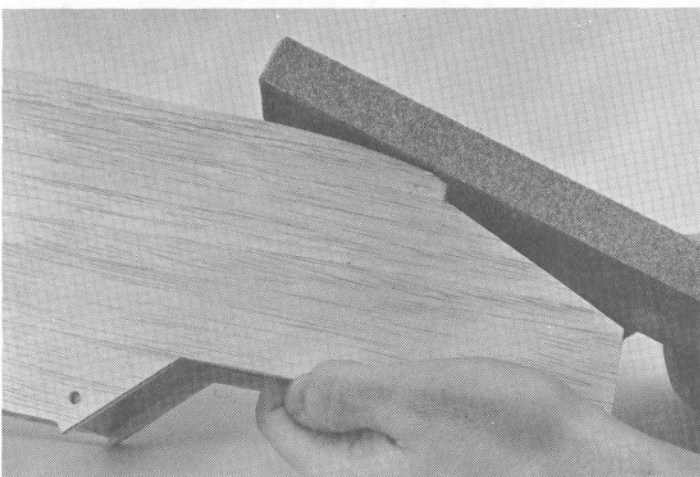
(f.) Cut to length and glue in place the 3/16" sq. cross pieces that are shown between formers F-3 and the rear of the fuselage. See top and side view drawings.

(g.) Glue balsa former F-5 in place on the back of F-3. Bevel to match the angle of the rear window. When dry, the fuselage can be removed from the board.



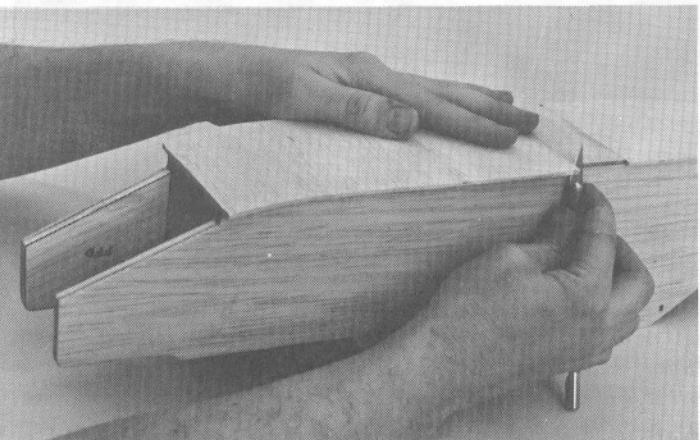
(h.) Drill out the 3/16" holes for the wing hold down dowels. These were partly drilled earlier in the fuselage construction and covered up by the 1/32" plywood doublers. Drill very slowly so the wood will not split.

(i.) Bevel the bottom of the firewall to match the curvature of the bottom of the fuselage.

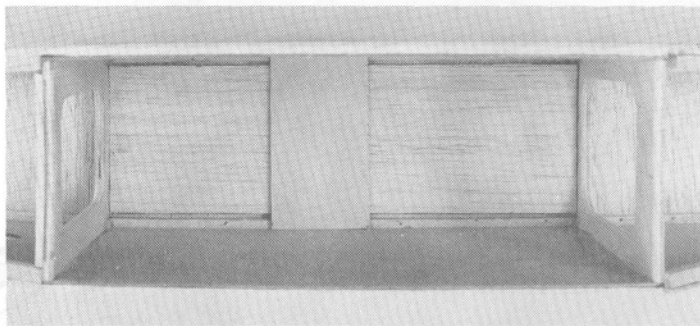


(j.) Glue the 3/32" plywood landing gear mount (LGM) in place on the bottom of the fuselage, using epoxy.

(k.) Complete the sheeting of the bottom of the fuselage with pieces of 3/32" balsa glued on cross-grain. Trim off excess wood after the glue has dried.

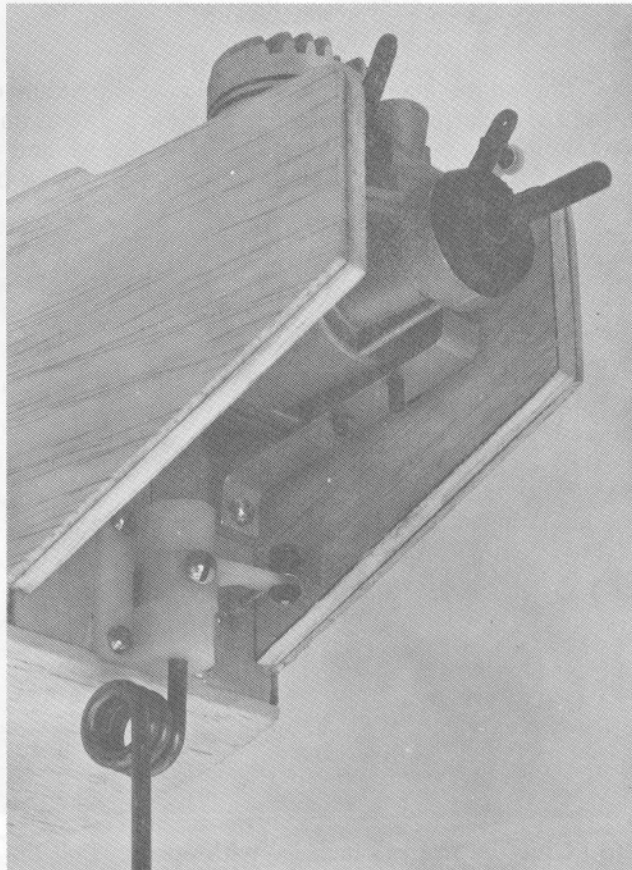


(l.) Glue the 3/16" balsa bottom doubler (FBD) in place using epoxy. After this is set, glue the 3/32" plywood landing gear mount doubler (GMD) in place directly over the landing gear mount. Use epoxy for this operation also.



(m.) Add 3/8" triangular stock braces behind the firewall to brace it to the fuselage sides.

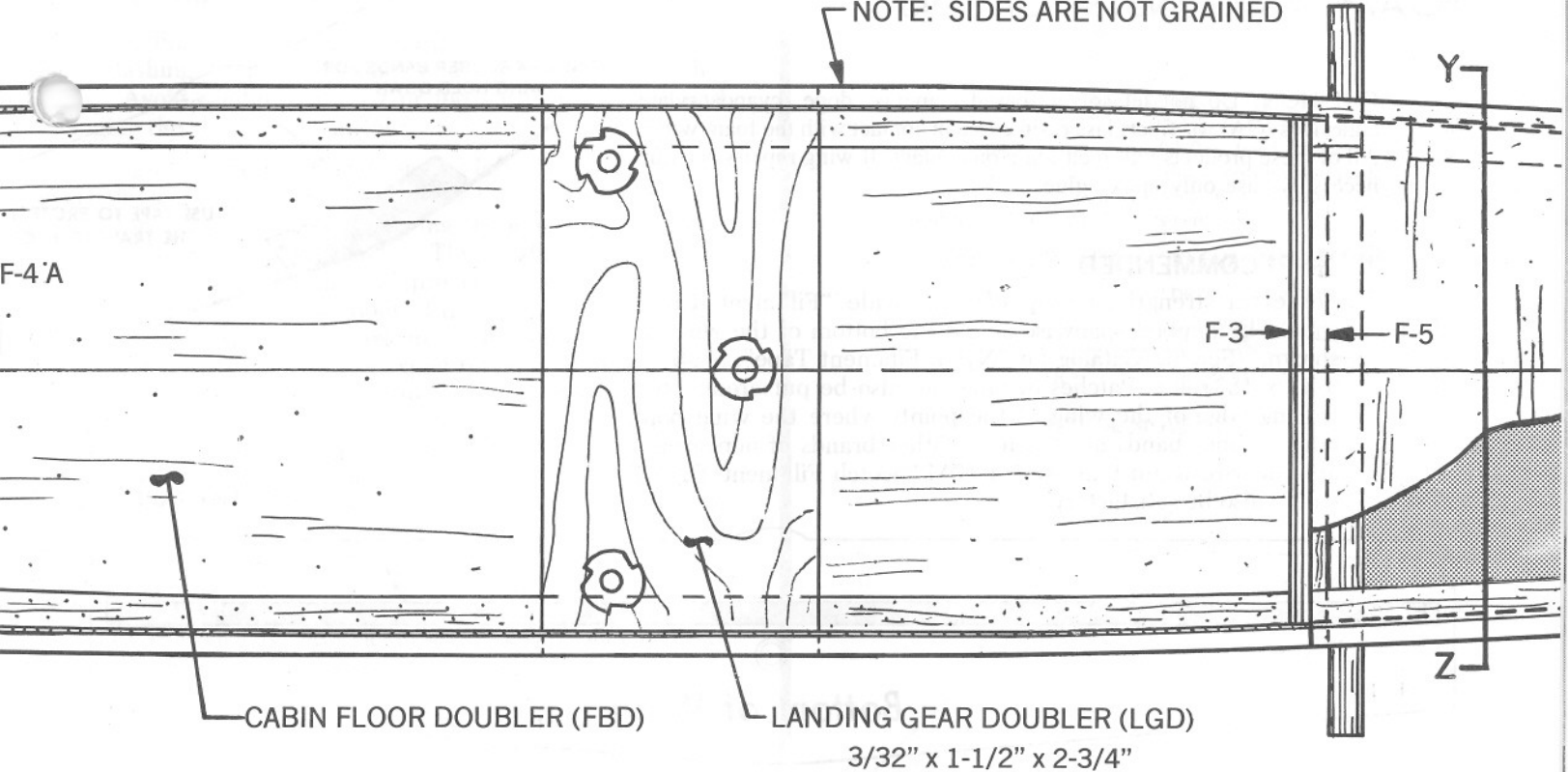
(n.) This is a good time, while easy access to the front of the fuselage is still possible, to fit the tank (See Tank Installation Section) and make sure the battery will fit through F-2 to go under the tank. It may be necessary to enlarge part of the hole in F-2 to make enough room for the battery and tank to be slid in and out of the nose compartment as required. It is also handy to have access to the nose when installing the cable pushrods to the nose gear steering arm and the engine throttle. To complete this job, the servos must be mounted temporarily in place so the pushrod positions can be accurately located (See Radio Installation and Landing Gear Sections).



(o.) Cover the top of the fuselage with 3/32" sheet balsa with the grain running crosswise. Trim off the excess wood after the glue has dried.

NOTE: SIDES ARE NOT GRAINED

F-4'A



CABIN FLOOR DOUBLER (FBD)

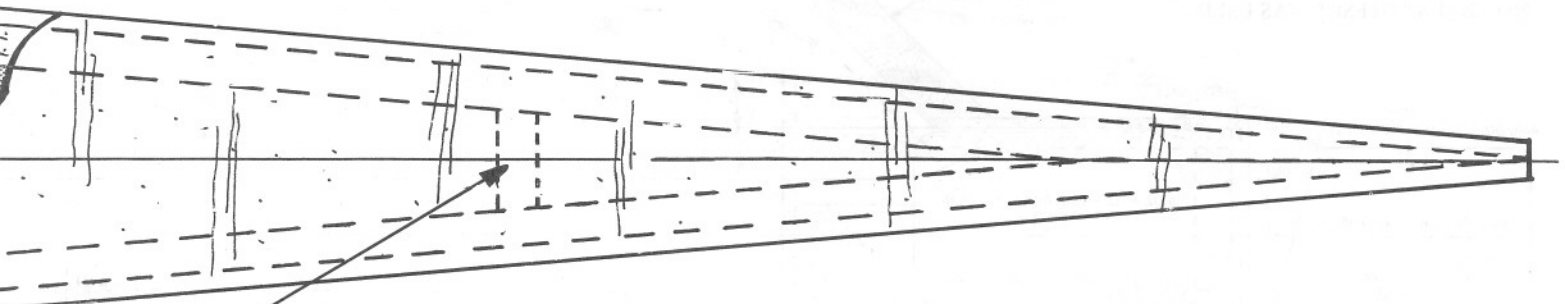
LANDING GEAR DOUBLER (LGD)

3/32" x 1-1/2" x 2-3/4"

FULL SIZE FUSELAGE TOP VIEW

This top view is the only full-size plan required to build the Colt. Remove from the book and join the halves of the fuselage plan at Y and Z.

M SHEETING

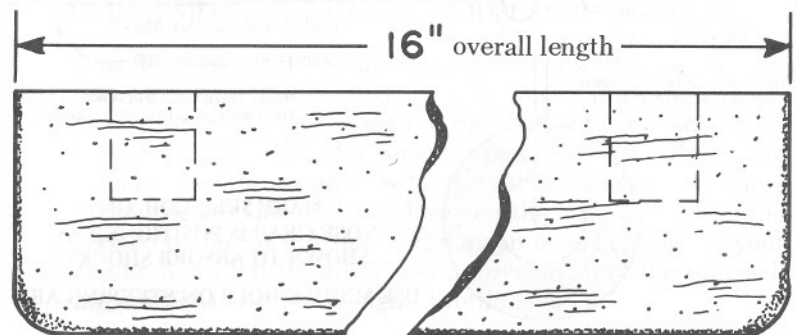


PIECES

ELEVATOR PATTERN

Elevator is cut from 3/16" x 1-1/4" balsa, using this pattern for the tips.

GO EASY ON FINISH ON THE TAIL & REAR FUSELAGE. AN EXTRA OUNCE TAKES SEVERAL OUNCES ON THE NOSE TO COUNTERBALANCE.



Check mount spacing of the engine you are planning to use before glueing mounts in place. The mounts are spaced for smaller engines. If a larger engine is being used, it may be necessary to widen mounts to obtain crankcase clearance.

FOAM WING INSTRUCTIONS

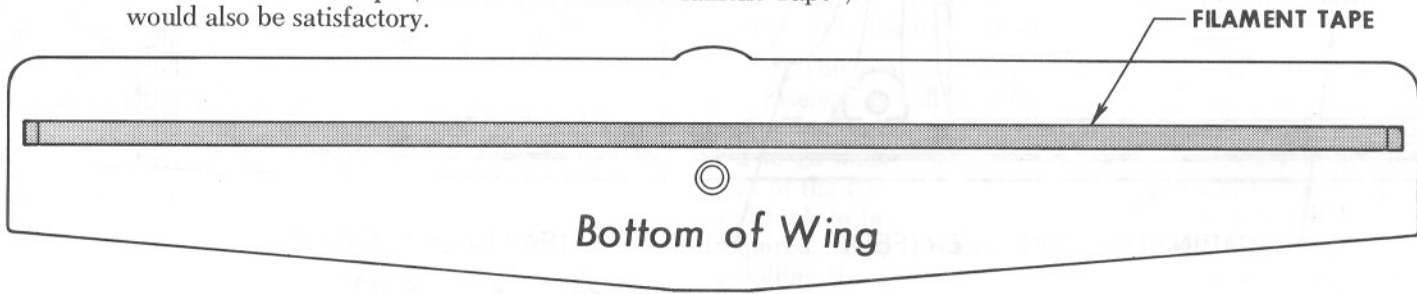
CAUTION: Do not let solvent-based cements, dope, cyanoacrylate adhesives (CA), or fiberglass resin come in contact with the foam wing. All of these products will melt foam on contact. If wing repairs become necessary, use only epoxy glue.

* RECOMMENDED

For extra strength, a strip of 3/4" wide "Filament Tape" should be applied spanwise across the bottom of the wing as shown. (See Sig Catalog for "Nylon Filament Tape", SH-571, 3/4" x 18' roll.) Patches of tape can also be put around the trailing edge of the wing at the points where the wing hold down rubber bands are located. Other brands of non-stretchable, tear-resistant tape (such as 3M "Scotch Filament Tape") would also be satisfactory.

USE # 64 RUBBER BANDS FOR WING HOLD DOWN

USE TAPE TO PROTECT THE TRAILING EDGE

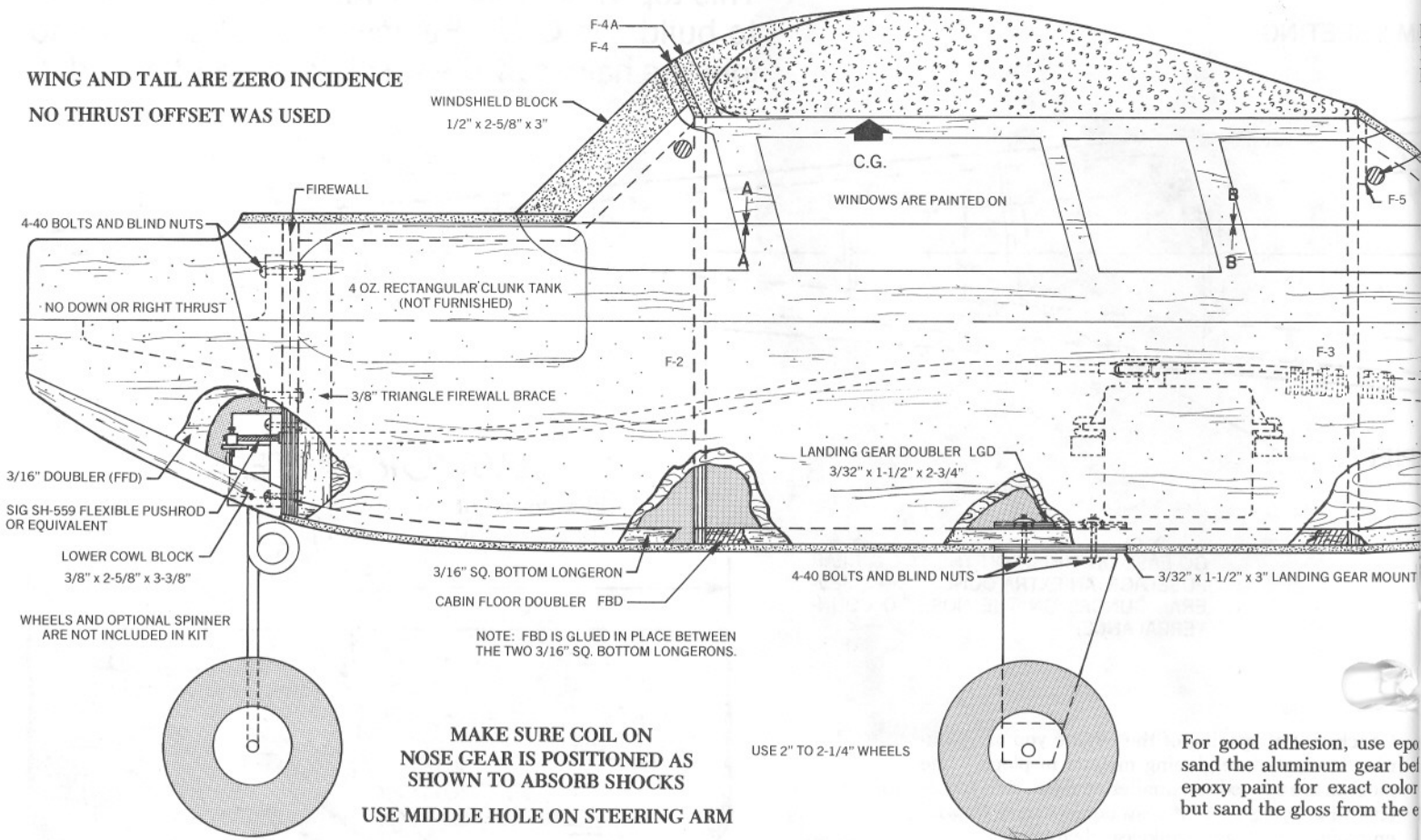


FUSELAGE SIDE VIEW

SCALE: 1/2 ACTUAL SIZE

REMOVE THIS CENTERSPREAD FROM

WING AND TAIL ARE ZERO INCIDENCE
NO THRUST OFFSET WAS USED



FINISHING THE FOAM WING:

Use a sanding block with 250-400 grit paper to remove any mold flashing from the leading and trailing edges of the wing. Avoid sanding too long or too hard in one spot and changing the shape of the airfoil.

The wing is fuel resistant and may be left unpainted. However, this is not recommended as painting will greatly increase the life of the wing. The wing of the prototype model was painted with Sig Plastinamel. This product is ideal since it is compatible with foam and provides a glossy and fuel proof finish. The white portions of the prototype wing were also painted with Plastinamel to avoid the possibility of stains and finger prints that can spoil the appearance of raw, unpainted foam. Plastinamel must be applied with a brush, but smoothes out readily. It will go through a mechanical drawing pen, so the decorations can be drawn on the model with a ruler and French curves. This provides guide lines for filling in with a brush. Because of the beaded surface of the foam, masking tape does not work and therefore drawing the color scheme on and filling in with a brush is the recommended procedure.

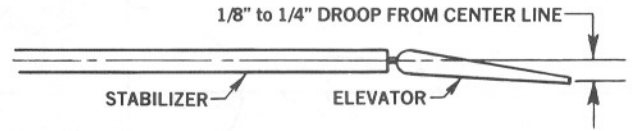
CAUTION: Do not use any other paint on the foam wing without first carefully testing it on a scrap for compatibility.

The wing may also be covered with a LOW-TEMPERATURE type iron-on covering, such as Sig Supercoat covering material.

IMPORTANT: ELEVATOR SETTING

On most Colts the "neutral" or fly-level position of the elevator is with 1/8" to 1/4" of down elevator droop. To test fly, adjust the elevator pushrod link so that when the transmitter elevator trim lever is in full up position, the elevator is zero-zero or level with the stabilizer. Takeoff in this full up trim position. The model will climb steeply, so feed in down trim with the transmitter trim lever until the model flies level. Land and observe this position of the elevator. Adjust the elevator pushrod as required to keep this flight-checked "neutral" position when the transmitter elevator trim lever is centered.

TYPICAL "NEUTRAL" ELEVATOR SETTING



CONTROL MOVEMENTS.

For test flying, the following are suggested:
 Rudder - 1/2" each way from neutral
 Elevator - 5/16" each way from neutral

THE BOOKLET !

BALANCE - 2" BACK FROM LEADING EDGE. DO NOT FLY WITH BALANCE POINT BEHIND THIS POSITION.

3/16" WING HOLD DOWN DOWEL

3/32" SHEET TOP

3/16" SQ.

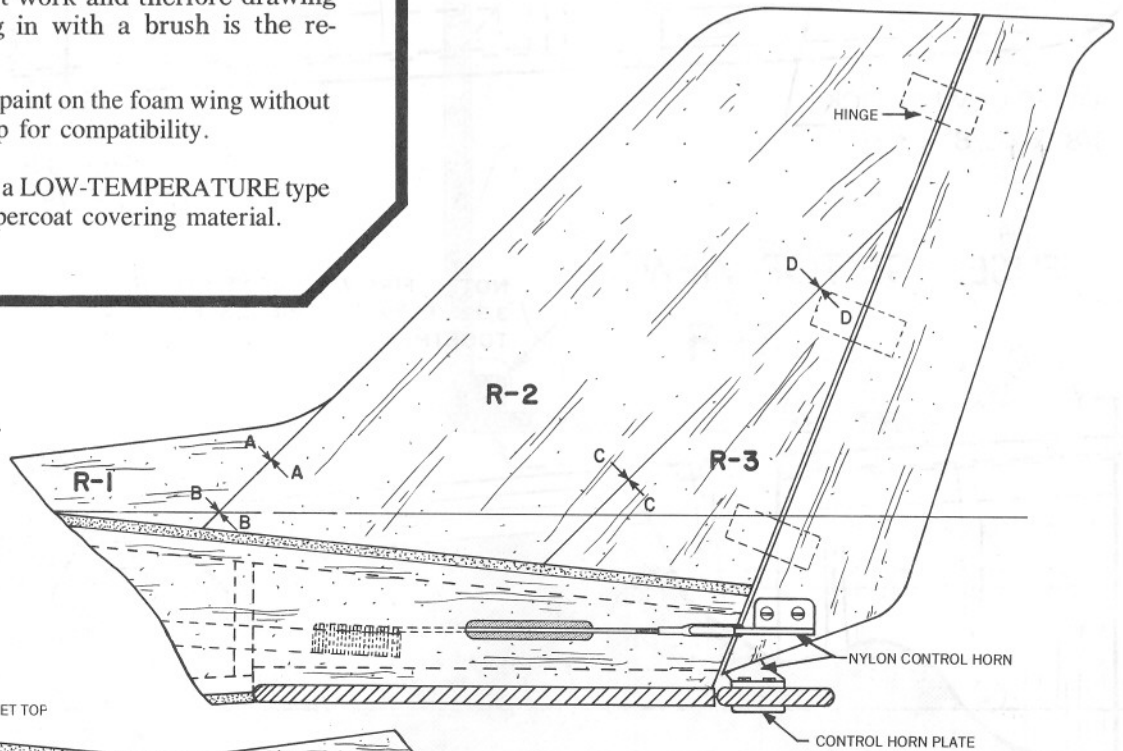
1/4" SQ. PUSHROD

FD

1/32" PLYWOOD DOUBLER

PUSHRODS MUST MOVE WITHOUT BINDING OR OVERLOADING SERVO

...y paint on the landing gear. Fine ...re painting. Dope will go over the ...match with the rest of the model, ...oxy paint first.

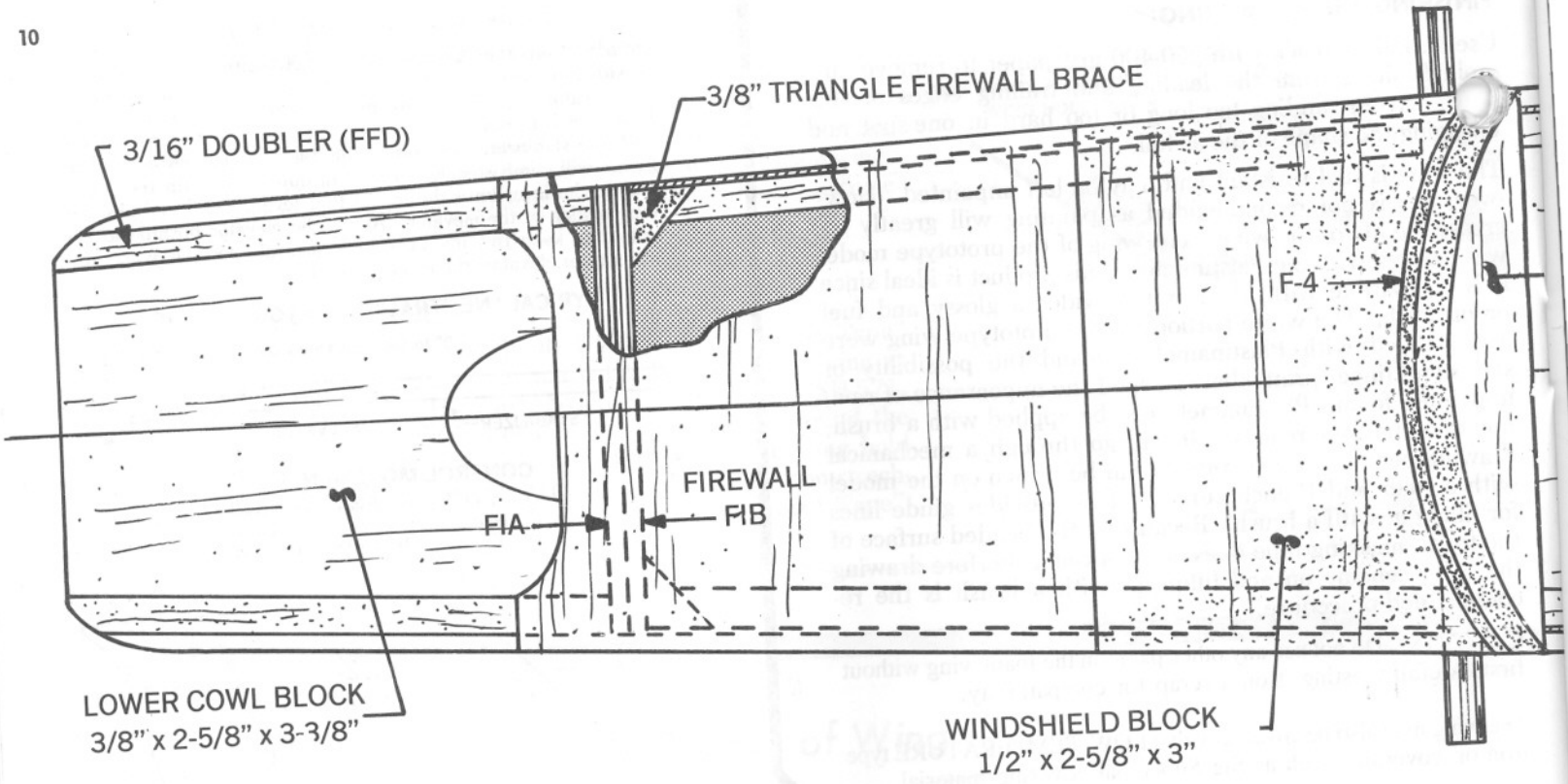


Fuselage Side View

SCALE: 1/2 ACTUAL SIZE

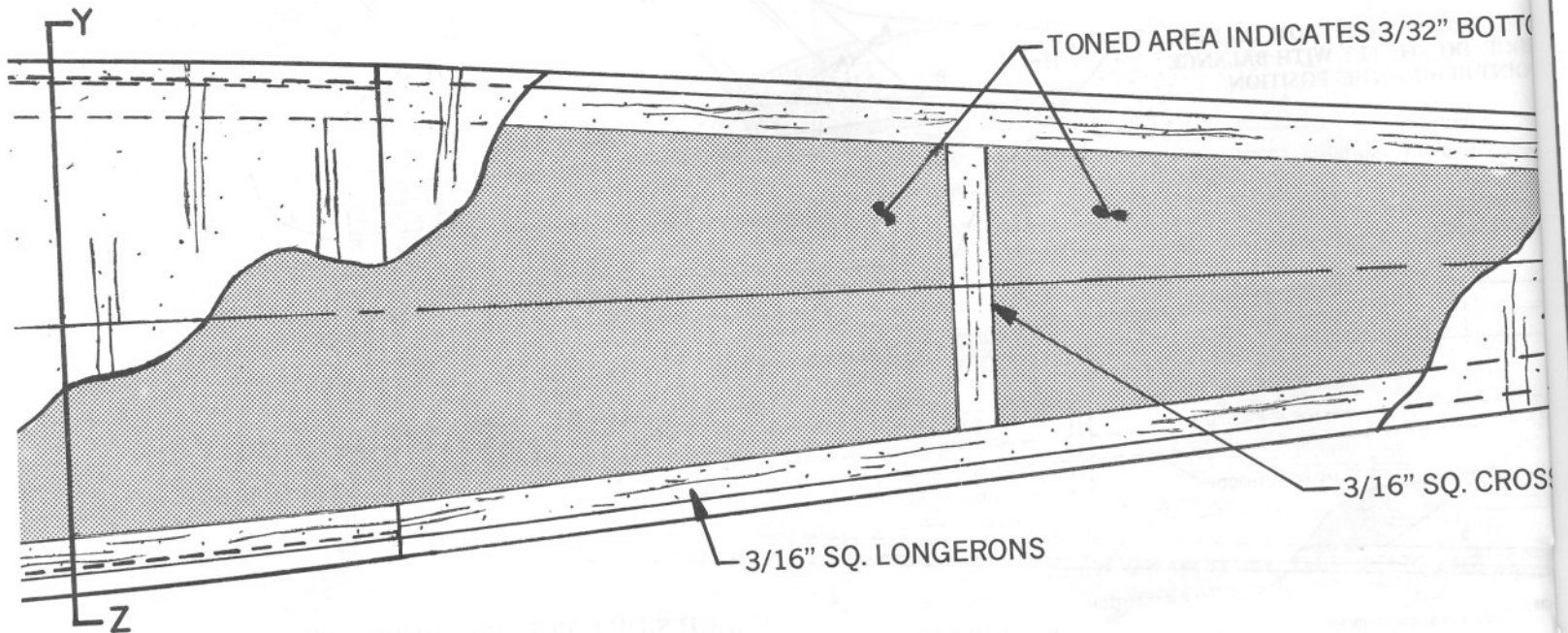
WHICH SIDE FOR THE RUDDER PUSHROD?

This depends on the position of the control arm on the carburetor of the engine used. If it is on the right (most common), use the servo nearest the right side of the fuselage for motor control. Use the servo nearest the left side of the fuselage for the rudder, with the rudder pushrod coming out on the left side of the rudder and the nose wheel steering hooked up on the left side of the nylon gear bearing. If your engine has a left throttle hookup, reverse all of the preceding positions given for a right throttle hookup.



FUSELAGE TOP VIEW

NOTE: FIREWALL CONSISTS OF 2 3/32" PLYWOOD PIECES EPOXIED TOGETHER.

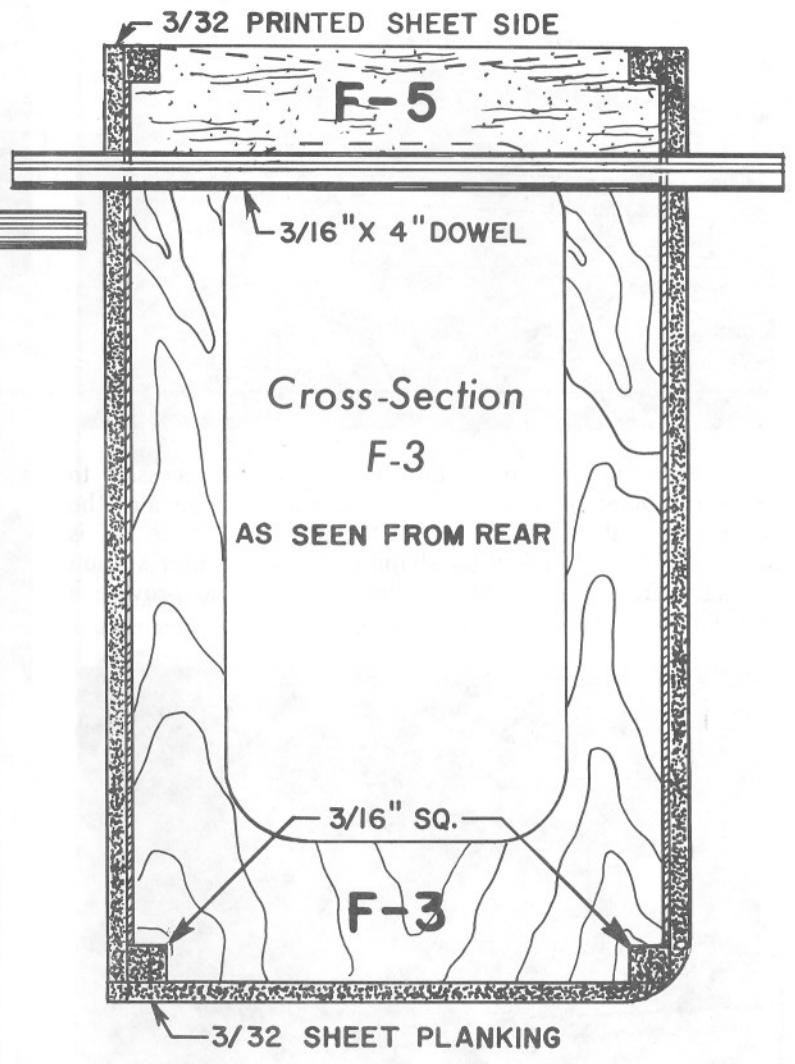
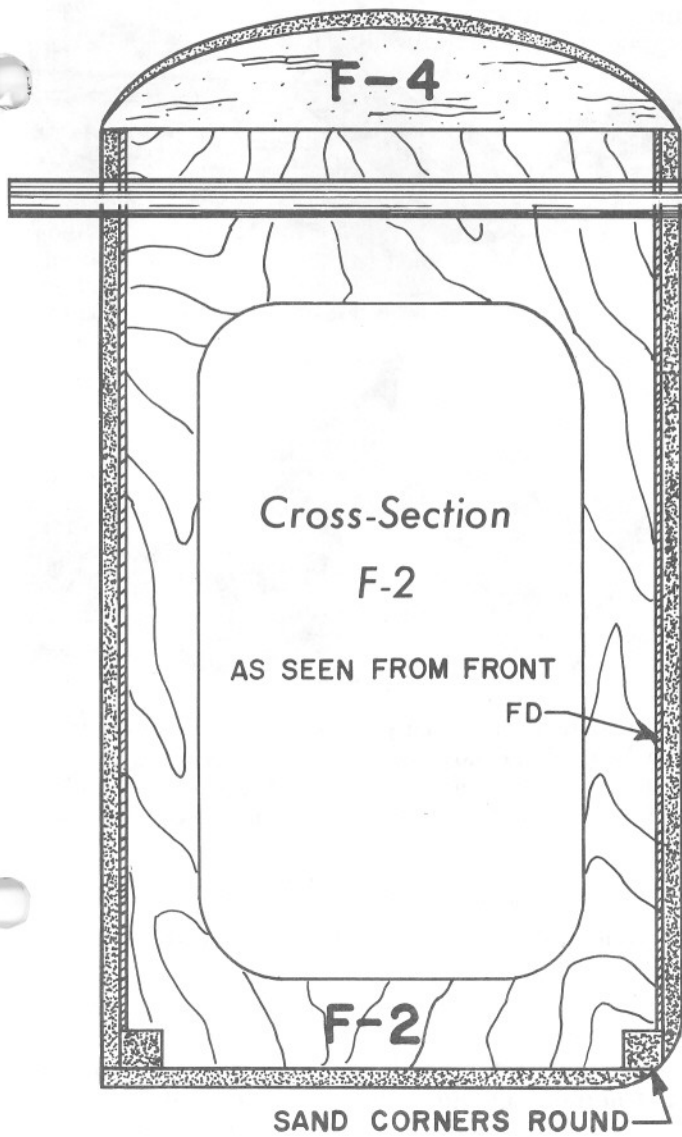


COLT

RC-43 *Designed by Jeff Foley*

SIG

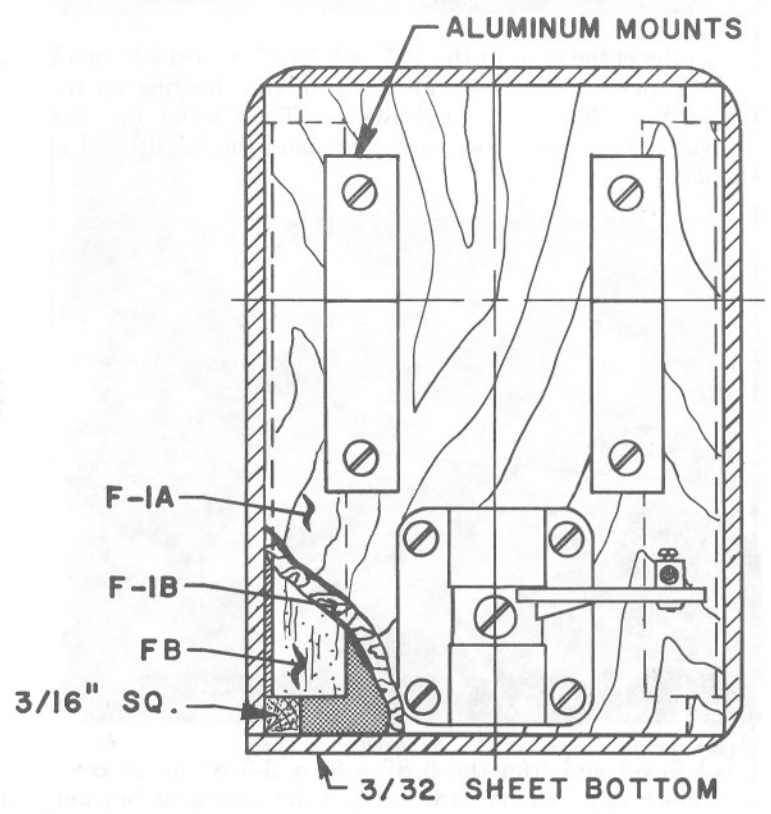
CRAFTSMAN'S KIT



FULL SIZE FUSELAGE CROSS-SECTIONS

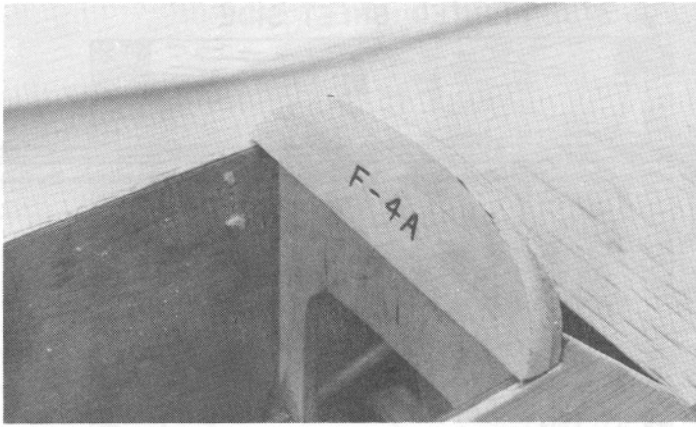
WARNING-DANGER!
 DO NOT FLY MODEL AIRPLANES NEAR ELECTRIC POWER LINES. INSTANT DEATH CAN RESULT FROM CONTACT WITH, OR FLYING TOO CLOSE TO, ELECTRIC POWER LINES.

LIMIT OF LIABILITY
 In use of our products, SIG Manufacturing Co.'s only obligation shall be to replace such quantity of the product proven to be defective. User shall determine the suitability of the product for his or her intended use and shall assume all risk and liability in connection therewith.

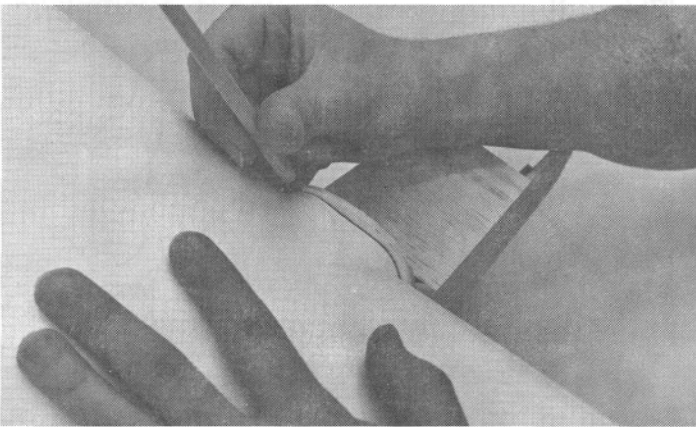


Cross-Section Firewall

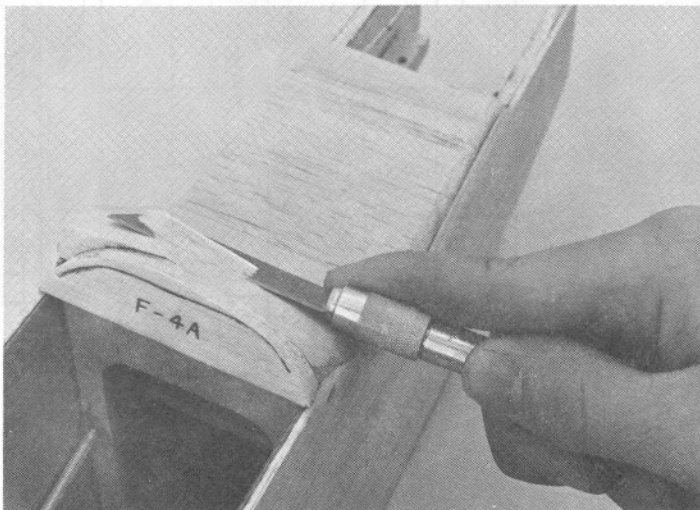
(p.) Glue formers F-4 and F-4A together.



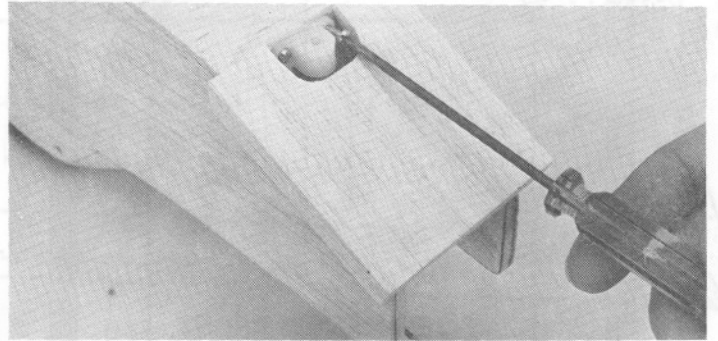
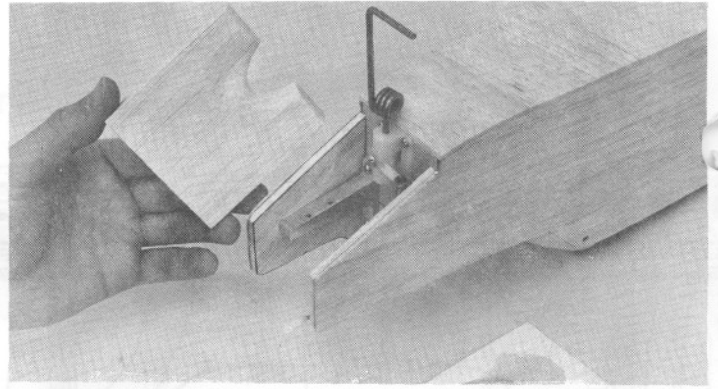
(q.) Bevel the bottom of the F-4 assembly as necessary to achieve a good fit against the top of the fuselage and the wing's integral center fairing. Glue in place. Note F-4 is slightly oversize to allow for shaping it to the center section fairing. Trace around the fairing onto F-4A to provide a guide line to carve the windshield by.



(r.) Bevel the ends of the 1/2" x 3" x 3" windshield block to fit in place under F-4 and on top of the sheeting on the fuselage as shown in the drawing. Then using the line drawn on F-4A as a guide, carve and sand the windshield to shape.



(s.) Bevel and trim the 3/8" x 3" x 3-3/8" lower cowl block as necessary to fit around the nose gear bracket and flush against the firewall. Make the cut out approxi-



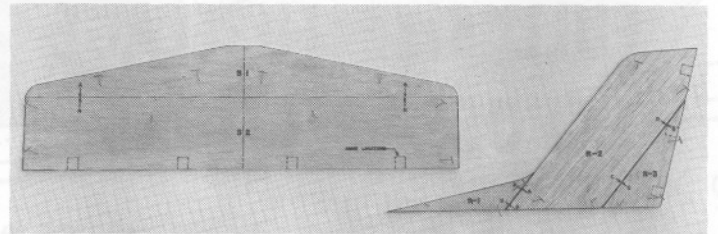
mately as shown. Note that you must allow for access to the bottom bolts of the nose gear block through this opening. Also, it may be necessary to hollow out the inside slightly to allow for movement of the steering arm. Epoxy the block in place.

(t.) Carve and sand the fuselage to shape.

(u.) Glue the 3/16" wing hold down dowels in place.

(6.) TAIL SURFACES

(a.) The parts of the tail surfaces are printed on balsa sheet. Cut them out with a sharp modeling knife or jig saw. Dress down the mating edges with a sanding block so that a neat fitting seam is achieved. Pin down the sections of the tail surfaces on a flat surface and glue them together connecting key letters appearing on the patterns to aid alignment of the mating parts.



(b.) Cut the elevator from the 3/16" x 1-1/4" piece provided, using the pattern in the center of the book to shape the ends.

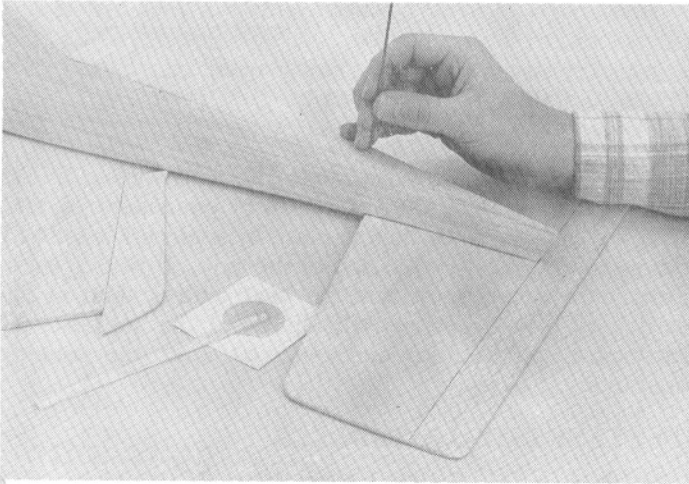
(c.) Sand the tail surfaces smooth and round the edges as shown in the side view.

(7.) GLUING ON THE TAIL

(a.) With the wing in place on the fuselage, align the stabilizer by sighting from the front of the airplane. If it doesn't sit squarely on the tail platform of the fuselage, sand the platform until it does.

(b.) To insure that the stabilizer is solidly glued to the fuselage, puncture a series of 1/16" holes with a pointed wire in the stabilizer and platform where they make contact. Have the holes at a slight angle to each other. Work epoxy glue into the holes on both the stabilizer and platform and carefully pin in place. Make sure the stabilizer is lined up with the wing before the epoxy sits up.

(c.) Draw a center line of the fuselage where the fin goes and punch a series of 1/16" holes in the fuselage and the fin. Work epoxy into the holes and glue the fin in place on the centerline. It is also suggested that a small fillet of epoxy glue be put on each side of the fin to brace it to the fuselage.



(8.) COVERING

Remove the fuel tank, engine mounts, nose gear bracket, etc. from the wooden airframe so it can be covered. Sig Supercoat Iron-On Plastic Covering material is recommended for this model because it's lightweight and easy to apply. You can even use Supercoat Covering on the foam wing to make it match the fuselage (see pages 8-9 for more info on finishing the foam wing). You'll need one roll of material to cover the fuselage and tail. Trim colors can be applied easily using Sig SuperTrim Self-Adhesive Trim Sheets and Sig SuperStripe Striping Tape.

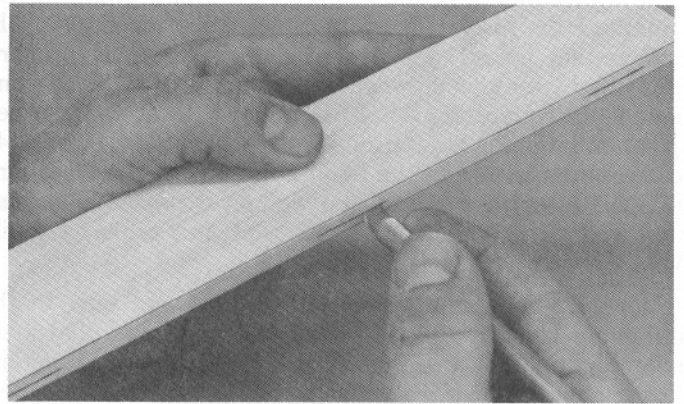
A good covering job starts with good surface preparation. Your covering material won't hide poor workmanship. Fill any small surface gaps with a lightweight filler or spackling paste. Sand the entire model smooth with 220-grit sandpaper, then again with 360 or 400 grit sandpaper.

Since it's too difficult to apply covering material to the engine compartment, it must be fuel-proofed using several coats of clear dope or a thin coat of epoxy glue. Finish off the engine area with a few coats of colored Sig Supercoat Dope. (Most of the Sig Supercoat Plastic Iron-On Covering colors have a matching Sig Supercoat Dope color.)

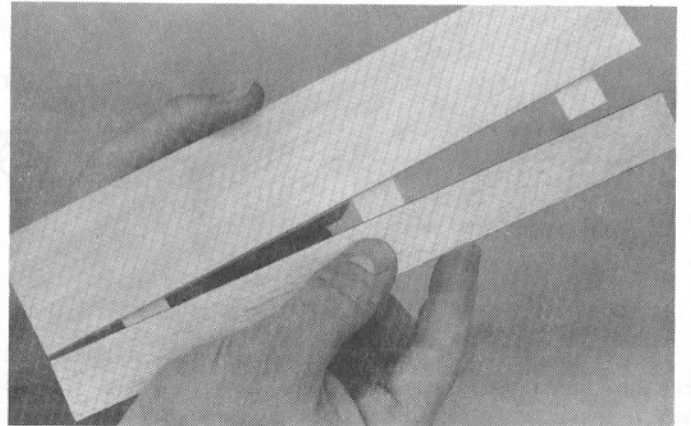
If this is your first attempt at covering, be certain to read the two pages of step-by-step, photo-illustrated instructions that are included with each roll of Sig Supercoat. If you choose another brand of covering material, be sure to read the manufacturer's directions (supplied with the covering) and follow them carefully.

When applying trim colors, we recommend that you make the top of the airplane appear noticeably different from the bottom. A big sunburst or wide stripes on the top of the wing will help you recognize the model's attitude in flight. Once the model is covered, the hinges can be installed as described at the right.

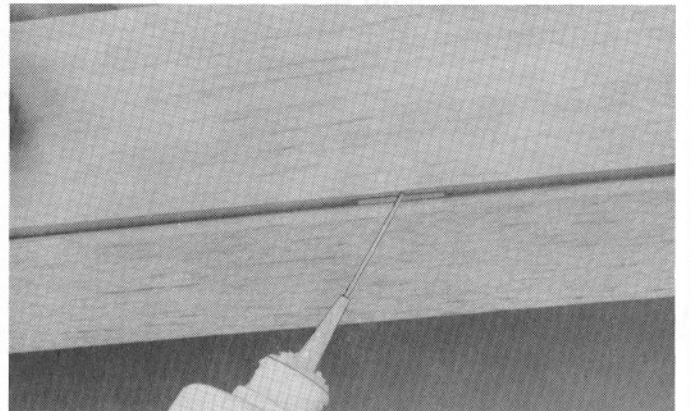
INSTALLING EASY HINGES



1.) Using a No. 11 X-Acto blade (or similar) cut a slot approximately 1/2" in depth and slightly wider than the hinge. After all slots have been cut, insert an EASY HINGE halfway into each slot in one of the pieces to be hinged. Then carefully slide the matching model part onto the other half of the hinges. You'll find it easiest to slide the part onto the hinges at an angle, one hinge at a time.



2.) At this point the surface to be hinged is attached but not glued. Align the two surfaces and adjust the gap between them as required. For best control response, the gap should generally be as small as possible but big enough to allow the control surface to move to the maximum deflection that you will require.

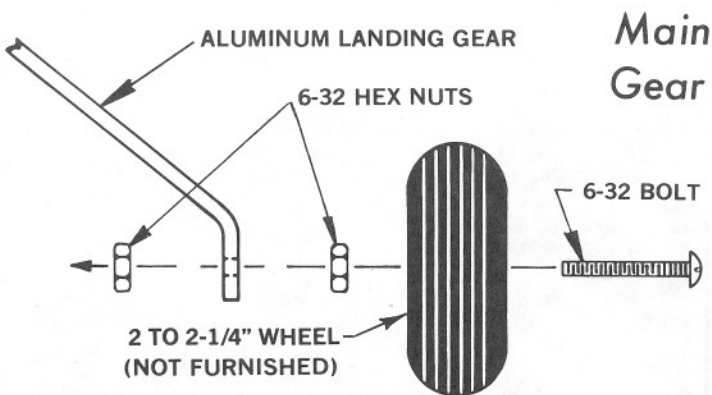


3.) Place 3 or 4 drops of any brand cyanoacrylate adhesive (thinnest variety) directly onto the EASY HINGE in the gap. You will notice that the glue is quickly wicked into the slot as it penetrates both the wood and the hinge. Continue this process, gluing the same side of all of the hinges. Then turn the surfaces over and repeat the gluing process on the other side of each hinge. After the glue has cured, approximately three minutes, the joint can be flexed. You may notice a slight stiffness in the joint. This can be eliminated by flexing the surface to full deflection each direction a couple of dozen times. Don't worry about shortening the life of the hinge as they are almost indestructible.

(9.) LANDING GEAR

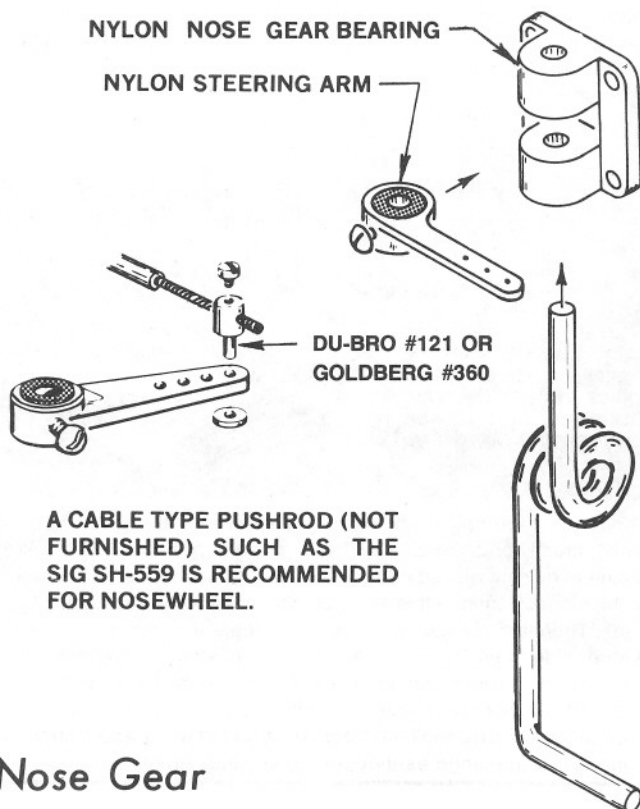
(a.) Hold the aluminum landing gear in position on the bottom of the fuselage, and then mark the locations of the 3 mounting holes. Make sure that the gear is properly positioned over the plywood l.g. mount LGM. Drill completely thru pieces LGM, FBD and GMD at the marked spots. Enlarge the holes inside the fuselage (GMD) to 9/64" to accept the shanks of the blind nuts. Epoxy the blind nuts to GMD after they have been tightened down. By using blind nuts, the gear can be removed and replaced easily when desired.

(b.) Assemble the wheels, axle bolts and nuts to the aluminum landing gear as shown here. After initial loopy assembly, tighten both nuts securely against the aluminum gear leg, leaving enough length to the bolt so that the wheel can turn freely.



Main
Gear

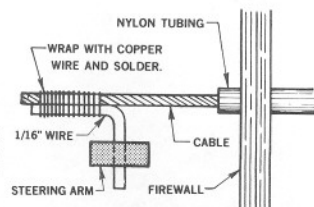
(c.) The 1/8" nose gear wire is held in the nylon bearing by the steering arm screw. Angle the arm forward so that when the servo pulls it back for a left turn, the arm will clear the face of the firewall.



Nose Gear

(d.) The Sig SH-559 Flexible Cable Pushrod is (not furnished) is recommended for linking the nose gear steering arm to the rudder servo. Run the nylon outer tubing through the firewall at the right spot to connect with the nylon steering arm. Epoxy around the tubing so the hole is oil proof. (Note: For the Colt, one Sig SH-559 pushrod package is long enough for both the nose gear and engine throttle hook-ups. An extra solder clevis, SH-527, will be needed.) For the actual hook-up of the cable to the nylon steering arm, we recommend either the Du-Bro E-Z Connector # 121 or the Goldberg Pushrod Connector # PC-1. Or you can make a fitting from 1/16" wire as shown in the accompanying "Alternate Method" drawing.

ALTERNATE METHOD OF HOOKING
PUSHROD CABLE TO NOSE GEAR
STEERING ARM.



(e.) Hold the nose wheel onto the axle wire with 1/8" wheel collars such as Du-Bro # 139 or equivalent. Or, the nose wheel can also be held in place by soldering a 1/8" I.D. flat metal washer onto the end of the axle. If you do solder, protect the wheel hub from the heat with a shim of light cardboard placed between the hub and the washer. The cardboard can be torn and removed after the soldering operation.

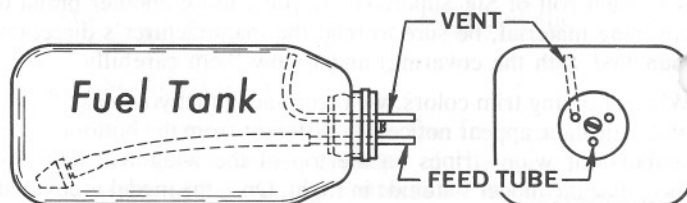
(10.) TANK INSTALLATION

(a.) A 4 oz. plastic clunk-type RC tank should be used. The tank can be mounted two ways: by either boring a 7/8" dia. hole thru the firewall to allow the entire tank cap to stick thru; or by making 2 smaller holes to allow only the brass tubing to stick thru the firewall. The prototype used the latter with no problems. Which ever way is used, keep the tank centerline as high as possible.

(b.) Use G.E. Silicone Seal or a similar product, to seal around the tank cap or vents on the front of the firewall to prevent fuel from seeping into the fuselage. Should it become necessary to remove the tank from the fuselage, the silicone can be broken loose and replaced when the tank is put back in. If Sig heat-Proof Fuel Tubing, which will not deteriorate in glow fuel, is used for the pickup line in the tank, the tank will seldom have to be removed.

(c.) Temporary cross-pieces from scrap balsa should be glued across the fuselage to support the rear and bottom of the tank. Or it may be kept in place by stuffing foam rubber under and around it.

NOTE: The Colt's engine is not enclosed in a full cowling, so only one vent line is needed in the fuel tank. With a single vent set-up, refuel the tank by disconnecting the "fuel feed" tube from the carburetor and put the fuel into the tank thru it. When fuel runs out the "vent" tube, the tank is full.



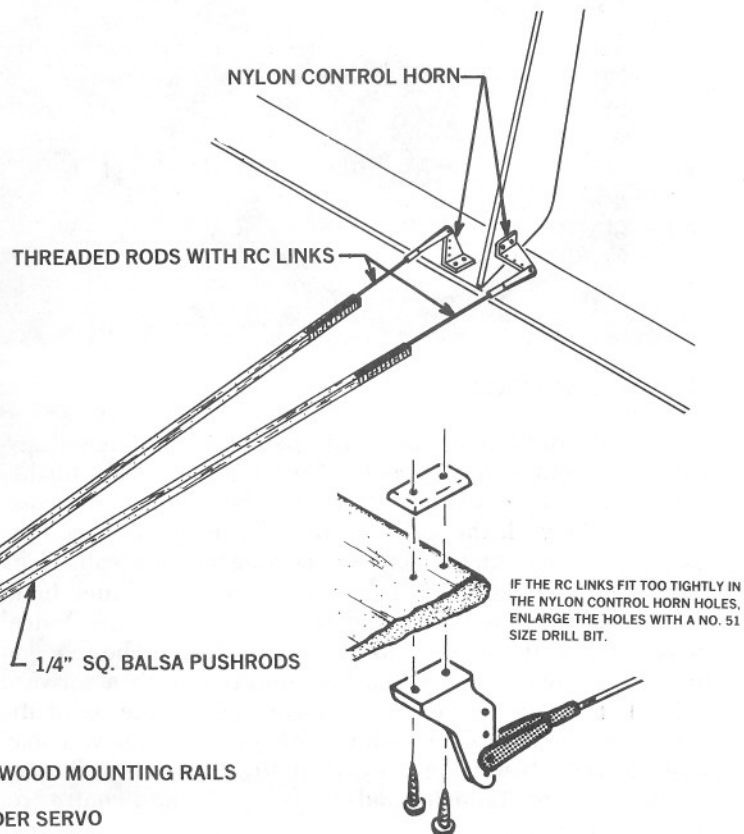
EXTEND VENTS TO OUTSIDE OF MODEL WITH FUEL LINE TUBING.

(11.) RADIO INSTALLATION

The receiver battery pack should be wrapped in foam rubber sheet, held on with rubber bands and placed as far forward as possible, under the tank. It is a good idea to put the package in a small plastic bag, taped shut around the battery cable to protect the battery from accidental fuel leakage.

The receiver should be similarly wrapped in foam rubber to protect it from engine vibration. Cover it with a plastic bag also. Stow this package under or just in front of the servos. Make certain that the receiver will stay in place during aerobatic maneuvers.

The most convenient method of installing the servos is on the plastic mounts which most radio equipment manufacturers offer with their units or as an accessory. These hold the servos and are then screwed to hardwood mounting rails glued into the fuselage. Usually, instructions for using these mounts are included with them.



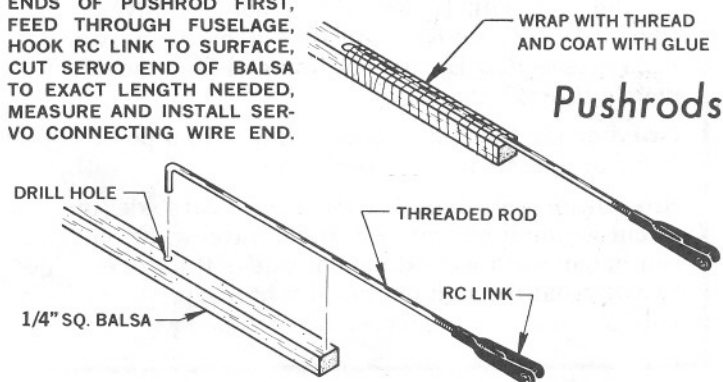
The pushrods for the fuselage are pieces of firm 1/4" sq. balsa. The 1/16" wire ends are wrapped with thread and coated with epoxy glue. Use the RC links at the tail end so that trimming adjustments can be made quickly.

Cut a slot on the left fuselage side, 1/4" x 1-1/2", in the position shown on the center section drawing. Bring the rudder pushrod through this slot by bending the rod slightly to clear. The elevator pushrod should be installed in the same manner on the other side.

A variety of quickly detachable pushrod retainers are available from the Sig Catalog for hooking the pushrods to the servos. Avoid metal-to-metal contact in linkages because this may produce harmful interference.

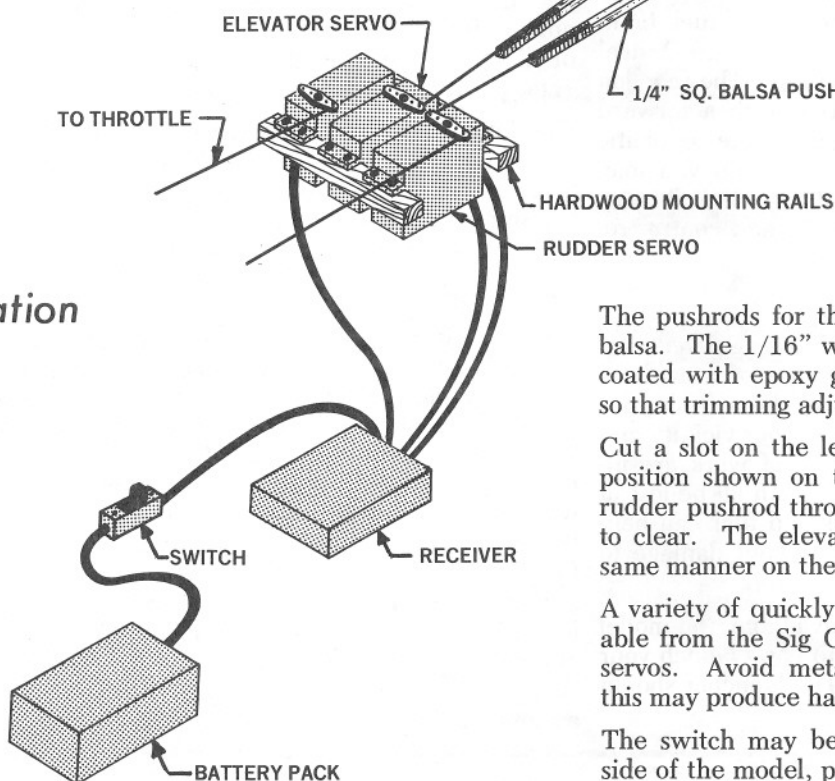
The switch may be mounted wherever convenient on the side of the model, preferably the side away from the engine oil.

MAKE CONTROL SURFACE ENDS OF PUSHROD FIRST, FEED THROUGH FUSELAGE, HOOK RC LINK TO SURFACE, CUT SERVO END OF Balsa TO EXACT LENGTH NEEDED, MEASURE AND INSTALL SERVO CONNECTING WIRE END.



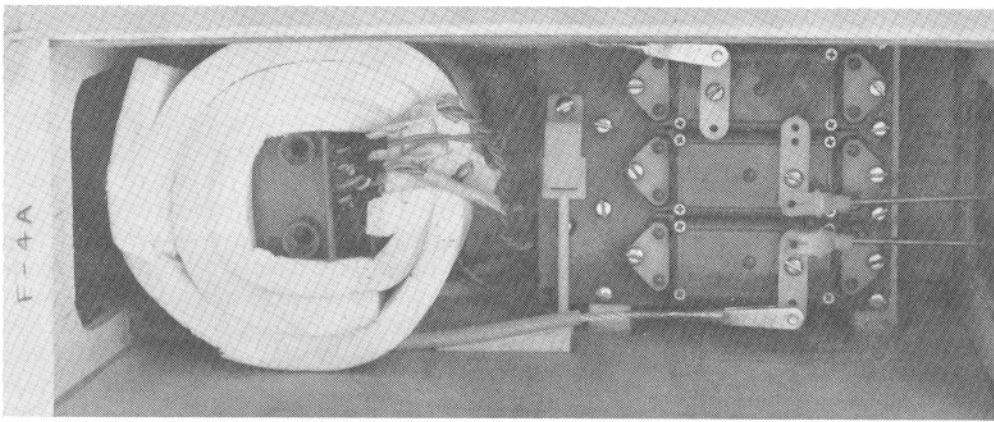
USE RC LINKS AT THE TAIL END SO THAT TRIMMING ADJUSTMENTS CAN BE MADE QUICKLY.

Radio Installation



Servos for which plastic mounts are not available, can be screwed directly to the hardwood rails, three abreast as shown in the accompanying drawing. With rubber grommets installed in the servo mounting holes, mark the spots for drilling the pilot holes for screws. Space the servos at least 1/8" apart and do not have them contacting the hardwood mounting rails except on the grommets. Using a washer on the wood screws, mount the servos to the rails. Do not tighten the screws down against the grommets since this will cause vibration to be transferred to the servos. The washer should rest against the grommet without compressing it.

The nylon control horns for the rudder and elevator should now be installed in positions shown on the drawing. The rods can then be adjusted accordingly.



Typical 3 Channel Radio Installation

(12.) BALANCING

The Center of Gravity position is shown in side view drawing in the center of this book. Do not balance any further back than this point even if lead must be added to the nose. Trying to fly with the C.G. too far back is much more dangerous than the slight increase in wing loading caused by adding nose weight. Balance with an empty fuel tank. When slightly nose heavy the model will be a great deal more stable and less likely to stall or snap roll. The reaction to control movements is also less sensitive with a forward C.G. so it is not as easy to over control. Some aerobatic ability may be sacrificed with a forward C.G. so you may wish, after test and familiarization flight, to move it rearward. Do this gradually and check results and control response in the air.

(13.) FLYING

If you are a newcomer to model flying it is suggested that you not attempt flying without the assistance of a modeler with experience. Contact your local model club or ask your hobby dealer for the names of good fliers in your vicinity and a suitable location for flying. Many hours of work are involved in the construction of a model and it can all be lost in a moment of beginner's indecision. A skilled flier can help you get past the first critical test flights without damage to the model and give instruction in proper control.

If a good, smooth take-off surface is not available, the model may be hand-launched. Do not attempt to hand launch your own model and fly it at the same time. The launcher should

hold the model just behind the landing gear with the left hand and under the tail with the right, run into the wind at a fast trot and thrust the model forward with the nose slightly down in a spear-throwing motion. It is not necessary to achieve a lot of velocity in the launch - it is more important that it be released smoothly and with wings level. The model may dip slightly and then should begin climbing at a slight angle. If it does not begin to climb after about fifty feet of flight, the pilot should apply a small amount of up elevator to lift the nose.

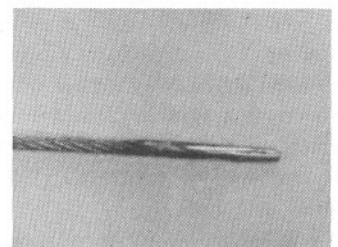
Use the rudder to keep the wings level and headed straight into the wind until 75 feet of altitude is obtained. Keep first turns gentle and not steeply banked. Stay up wind of the transmitter. Use trim levers on your radio equipment where necessary to obtain straight and level flight with the control sticks in neutral position but don't attempt to make these adjustments until the model is at a good altitude. Throttle back at altitude to find out the model's characteristics in a gliding condition so that some indication is seen of what to expect during the landing approach. It is a good idea to make several practice landing approaches at a good altitude to get the feel of the model for this approaching critical maneuver. Make your final and complete landing approach while your engine still has plenty of fuel remaining so that the engine is not liable to stop before completion of the flight. This will allow application of power if the approach is being undershot. Notice the percentage of missing landings at an RC flying field. Those undershot greatly outnumber those missed by overshooting. So if an approach that looks a little high is maintained, chances are good that a spot-on landing can be made.

PREPARING CABLE PUSHRODS

To keep ends of the cable from unraveling during handling, tin the end with solder. Use a non-corrosive paste flux (shown here is Kester, available at hardware stores) and rosin core solder. Have a hot iron and flow the solder completely through the cable.

Grind or file the end smooth. Bring it to a point so that it will easily insert into the pushrod fittings.

After the proper length is arrived at, sweat solder the area to be cut so that it will not fray and unravel while being cut. It can be cut with a good pair of side-cutting pliers, filed in two, ground through on the edge of a grinding tool, or cut with a silicon cutting wheel on a motor tool.



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