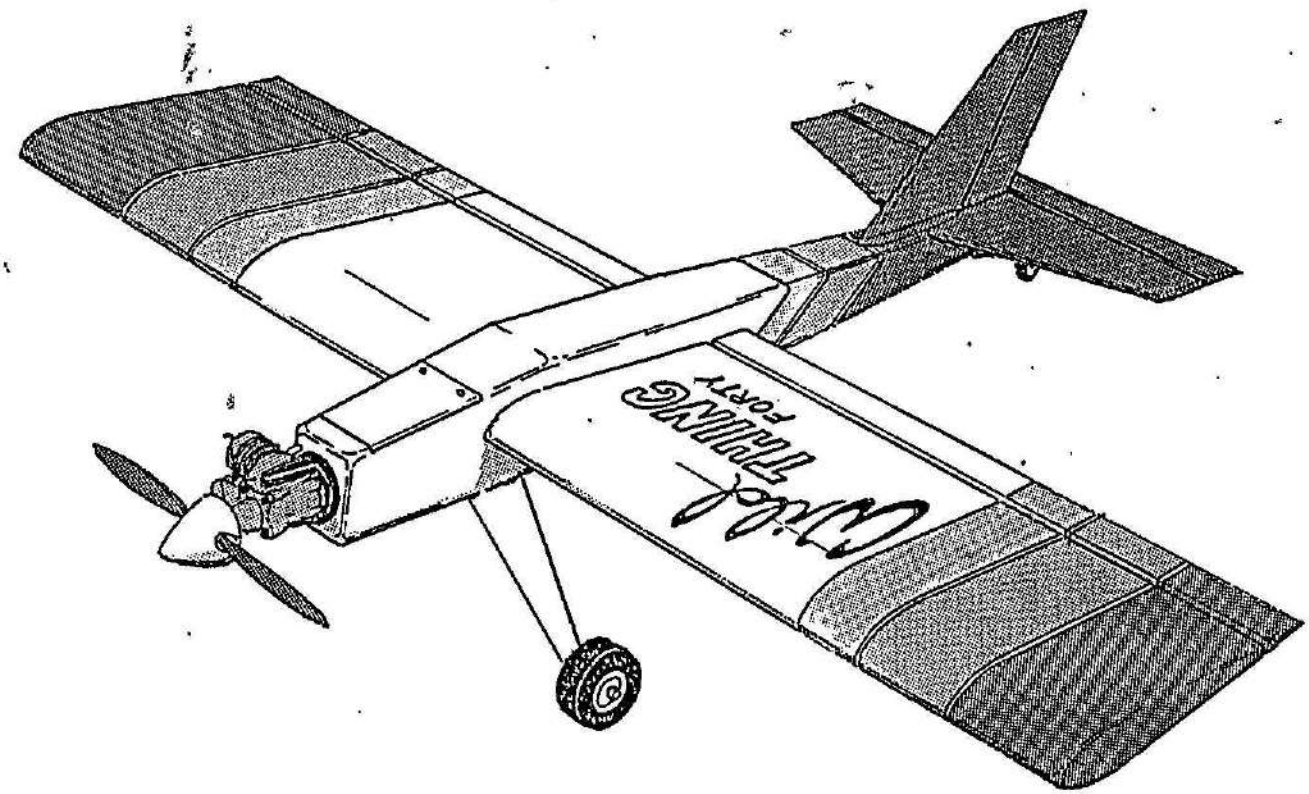
QUALITY AIRCRAFT

Wild THING .40



Construction Manual

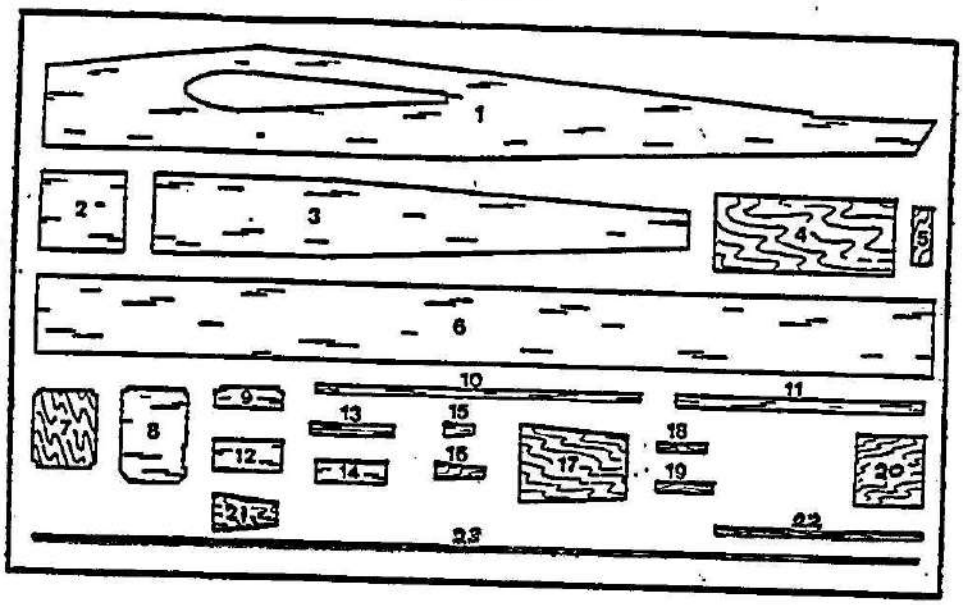
Wild Thing .40

Parts List

Note: All parts are balsa unless otherwise noted.

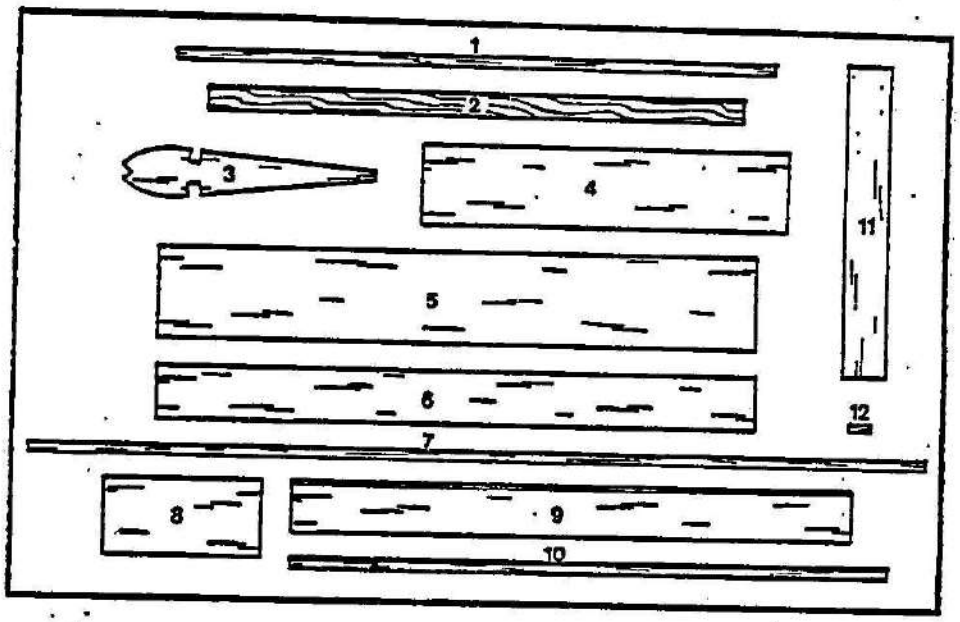
FUSELAGE

1...1/8" Fuselage Side (2)
2...1/8" Top/Front Sheeting
3...1/8" Top Sheeting
4...1/16" Ply Bottom Hatch
5...1/16" Ply Hatch Tongue (2)
6...1/16" Sheet Fuse Doubler & Bottom Sheeting (2)
7...1/4" Lite Ply Firewall
8...1/8" Front Bulkhead
9...1/8" Top Support
10..1/8"x 3/8" Fuse Stiffener & Stab Support (2)
11..1/8"x 1/2" Rear Bulkhead Sides & Bottom
12..1/8" Rear Bulkhead Top
13..1/4" Triangle Gear Support (2)
14..1/8" Top Cross-grain Piece
15..1/8" Rear Upper Joiner
16..1/8" Ply Rear Lower Joiner
17..1/8" Lite Ply Top Hatch
18..1/8"x 3/8" Spruce Bottom Hatch Screw Support
19..1/8"x 3/8" Spruce Top Hatch Screw Support
20.. 3/16 Ply Gear Plate
21.. 1/16" Ply Tailwheel Mount
22.. 1/8"x 1/4" Spruce Stringers (2)
23.. 1/8" Stringer (3)



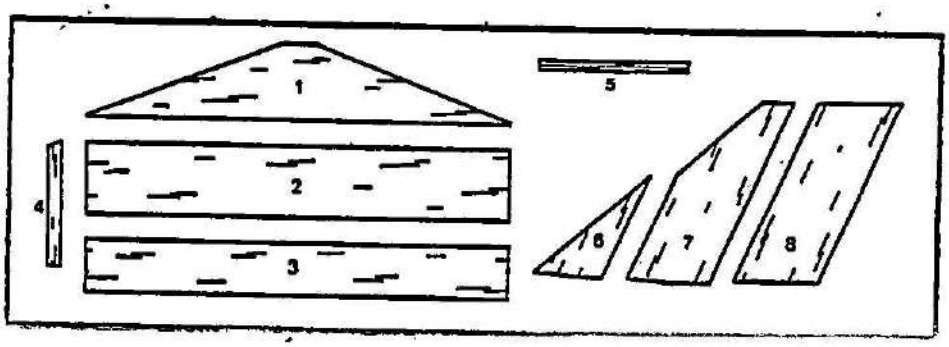
WING

1...3/8" Spar & Leading Edge (6)
2...1/8" Ply Wing Brace
3...1/16" Wing Rib (14) & 1/8" Wing Rib (4)
4...1/8" Wing Tip Sheet
5...1/16" Forward Sheeting (4)
6...1/16" Rear Sheeting (4)
7...1/16"x 3/8" Cap Strips (4)
8...1/16" Center Sheeting (4)
9...3/8"x 2" Aileron (2)
10..1/4" Tapered Trailing Edge (2)
11..1/16" Servo Box Material
12..1/8"x 1/4" Spruce Servo Base (4)



TAIL

1...1/4" Forward Stab
2...1/4" Rear Stab
3...1/4"x 2" Elevator
4...1/4"x 1/2" Stab/Elevator Tip (2)
5...1/4"x 6" Triangle Fillet (2)
6...1/4" Forward Fin
7...1/4" Rear Fin
8...1/4"x 3" Rudder



Wild Thing .40

Construction Checklist

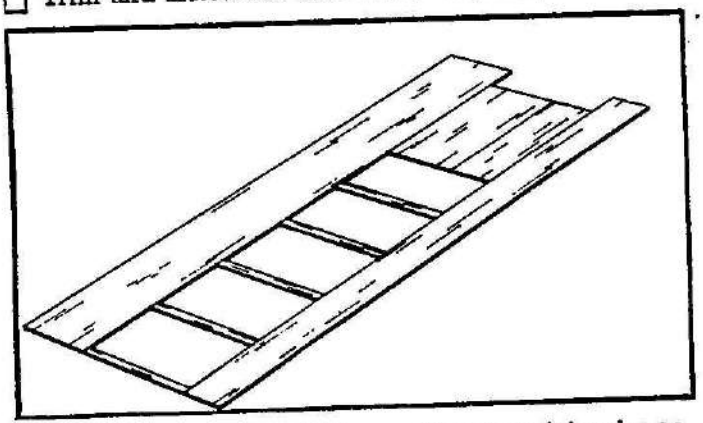
WING

Note: The two wing halves are built identical. so only one half is shown on the plans. Build one wing half using the following steps, then repeat the process for the other half.

☐ Pin the bottom 1/16"x 35/8" leading edge, and 1/16"x 2" trailing edge to the plans.

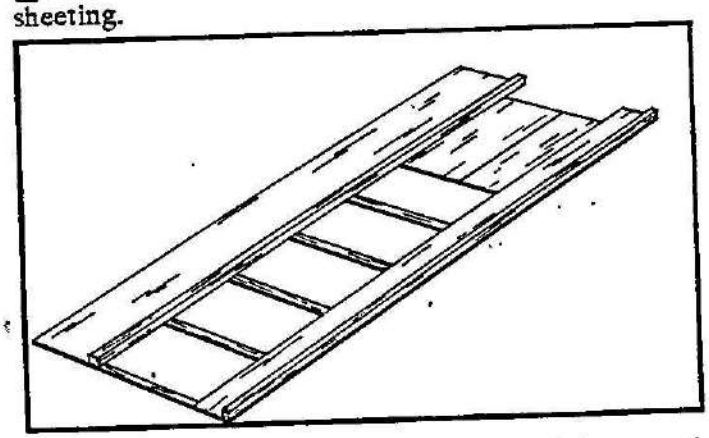
☐ Using the supplied 1/16"x 3"x 63/8" sheets, piece together the center section sheeting. Ensure that the end closest to the wing center lines up perfectly over the inside edge of the 1/8" rib.

☐ Trim and install the 1/16"x 3/8" cap strips.



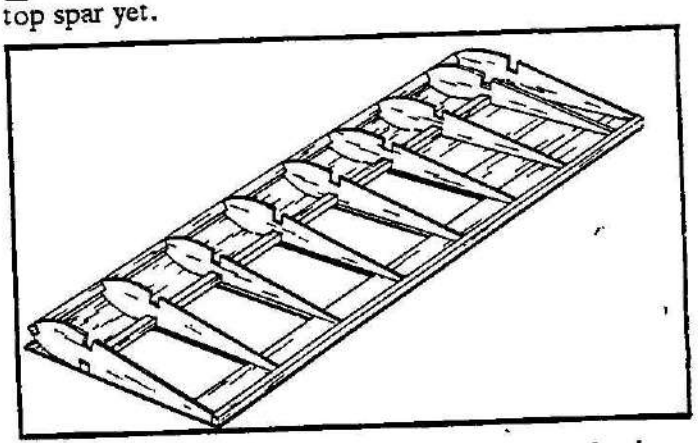
☐ Secure the bottom 3/8" spar. Use a straightedge to ensure that it is aligned.

☐ Affix the 1/4" custom-cut trailing-edge to the rear sheeting.

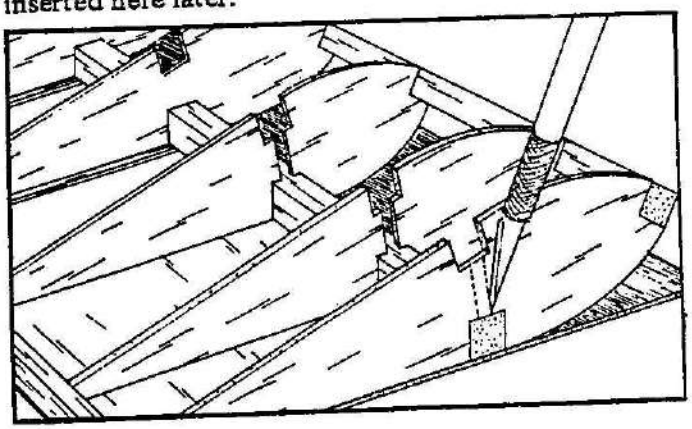


☐ Add all of the 1/16" and 1/8" ribs. Sand the rear of each rib to achieve a snug fit against the trailing-edge. Carefully align the two center 1/8" ribs over the plans, and ensure that they are exactly perpendicular to the spar/sheeting (these ribs will serve as part of the inner fuse walls later).

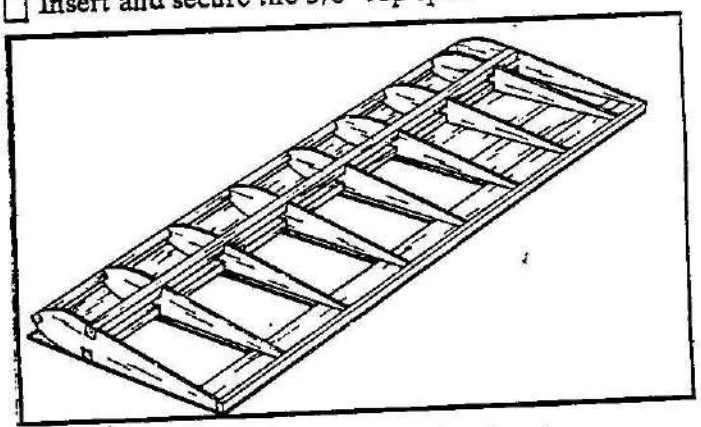
☐ Secure the 3/8" front spar. **Do Not** install the top spar yet.



☐ With a sharp X-acto blade, carefully cut a slot in the first four ribs, a little wider than 1/8", between the spar cut-outs. The 1/8" ply wing brace will be inserted here later.

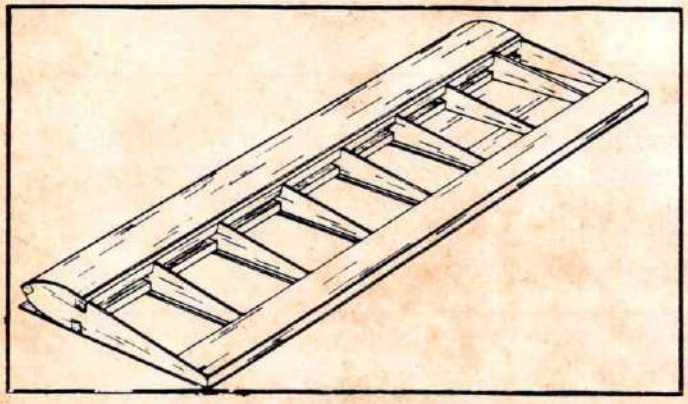


☐ Insert and secure the 3/8" top spar.



☐ Attach the 1/16"x 2" trailing edge sheeting. Remember to rearrange your pins so that they are accessible later.

☐ Bind the leading edge sheeting to the spar, and wrap it over the ribs, securing it to the top of the ribs and to the leading edge spar. (NOTE: dampening the outside of the sheeting with water or ammonia will allow it to bend easier.)



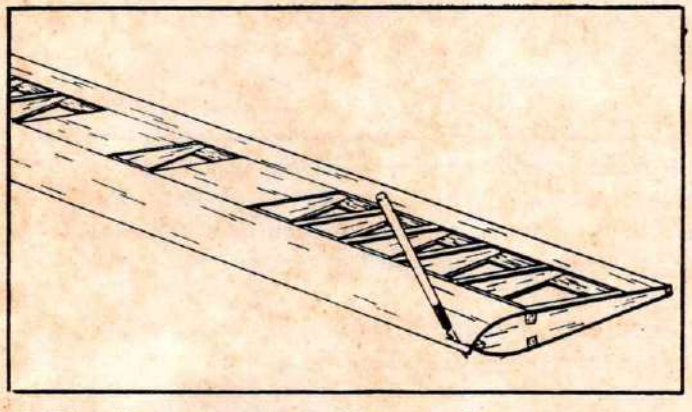
☐ Add the cap strips and cenrer sheeting.

☐ Remove the wing from the building board.

☐ Trim the excess top sheeting from in front of the leading edge spar.

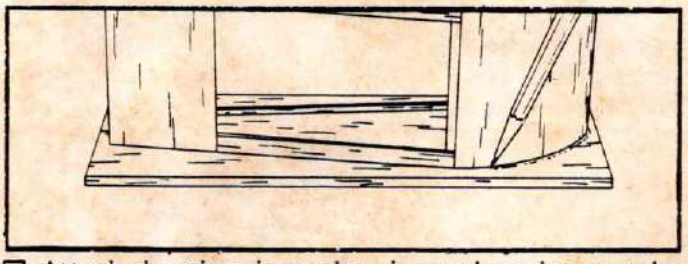
☐ Wrap and secure the bottom sheeting to the ribs and leading edge sheeting.

☐ Trim the excess sheeting from the front and round the leading edge.



☐ Trim the excess spar and sheeting from the wing tip, and block sand it smooth.

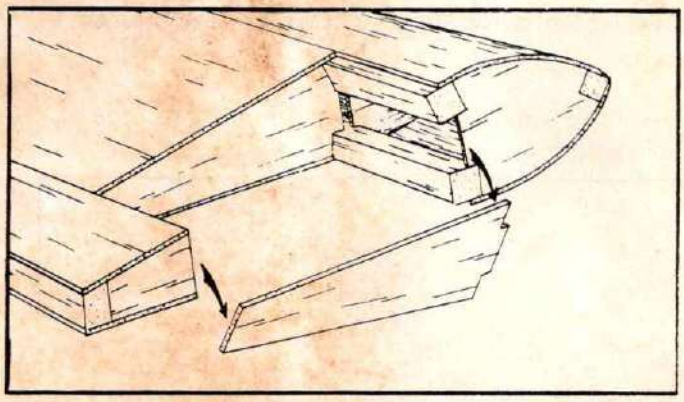
☐ Trace the wing tip pattern onto the 1/8"x 3"x 143/4" balsa sheet, and cut it slightly oversized.



☐ Attach the wing tip to the wing and sand to match. Round the edges to about a 1/4" radius (except for the rear where the aileron joins.

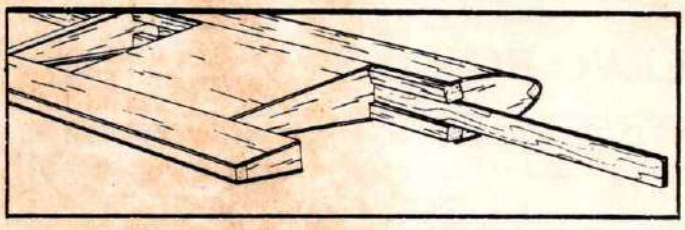
☐ Block sand the excess spar/sheeting from the wing center section.

☐ With a sharp X-acto blade, remove the middle of the center 1/16" rib.



☐ **Repeat the previous steps for the opposite wing panel.**

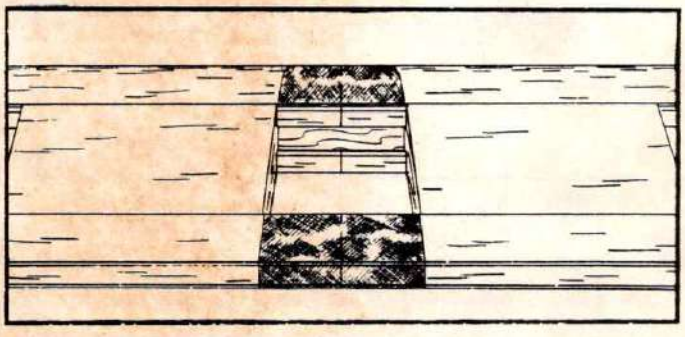
☐ Trial fit the 1/8" ply wing brace, and block sand as necessary.



☐ Work the ply wing brace into the slots between the balsa spars and pull the wing halves together. Check to make sure there is no twist or dihedral (by laying the wing on a long flat surface).

☐ When satisfied, apply thin C/A liberally to the center section , and to all parts of the ply spar that are assessable. Tilt the wing as necessary to allow the C/A to run into the inaccessible areas (under the sheeting).

☐ Apply the 21/2" nylon reinforcing cloth to the center section, wrapping it around the entire wing, then securing it with thin C/A or Epoxy (thinned slightly with lacquer thinner). When dry, cut out the open portion of the center section.

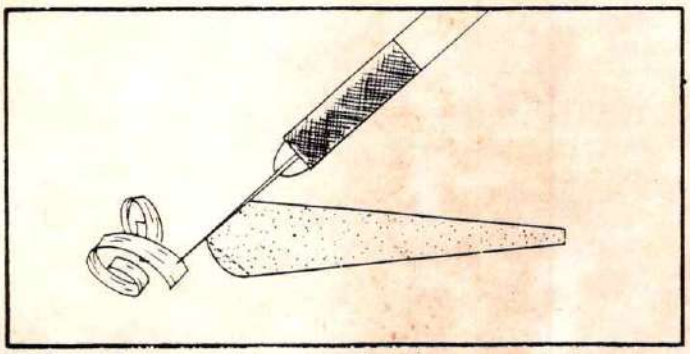


AILERONS

NOTE: The ailerons come with a rounded leading edge. This will give a mild roll rate, and probably satisfactory for sport flyers. For a faster roll rate, the leading edge should be beveled, as follows :

☐ Draw a centerline along the leading edge of each aileron.

☐ Bevel the leading edge about 45o on either side of the centerline.



☐ Round the outside ends slightly to match the wing tips. Leave the inside ends (wing center) flat.

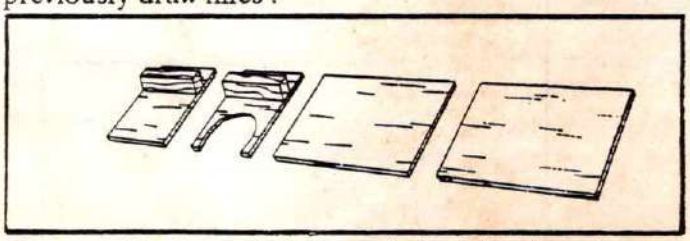
SERVO BOX INSTALLATION

NOTE: The use of dual aileron servos is **very highly** recommended to obtain best performance. Not only is there less slop and greater torque with this set-up, but you have the capability of incorporating flaperons (coupled with the elevator) if you have a computer radio.

☐ Choose the servos you will use for your ailerons, and cut the supplied 1/16"x 12"x 13/4" into four side and four end pieces to suit the servos.

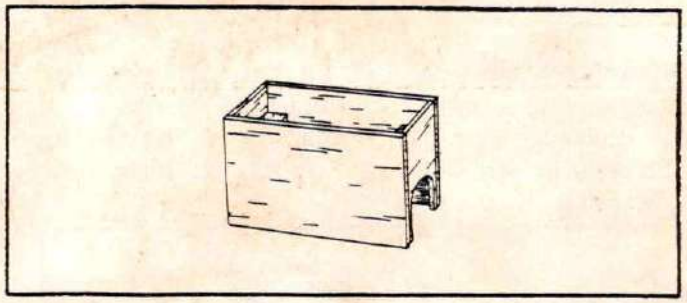
☐ Measure the distance from the top of the servo case to the bottom of the mounting lug, and draw respective lines on the end pieces.

☐ Sand the 1/4"x 1/8"x 7/8" spruce pieces to the same width as the balsa end pieces, and secure them at the previously draw lines .



☐ Assemble the end pieces and the side pieces into a box shape.

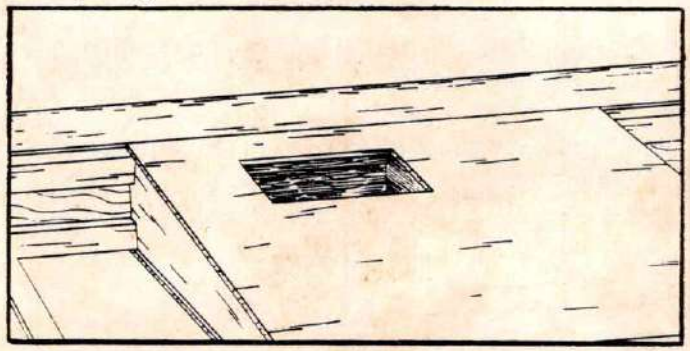
☐ Trim away the bottom of one end for the aileron wire to exit.



☐ Decide on the location of your servos on the wing, by measuring the depth of the servo and the depth of the wing at various locations. (I.E: Small servos may be mounted fairly close to the ailerons, while larger servos might have to be mounted near the main spar, where the depth is the greatest.)

NOTE: The servo may be mounted either perpendicular, or parallel, to the servo. While a perpendicular mounting might provide slightly less "slop" (the servo can't rock back and forth), we prefer a parallel mounting, as this takes less span-wise balsa, therefore less strength, out of the balsa sheeting.

☐ Cut the box shape out of the sheeting, allowing for a fairly snug fit.

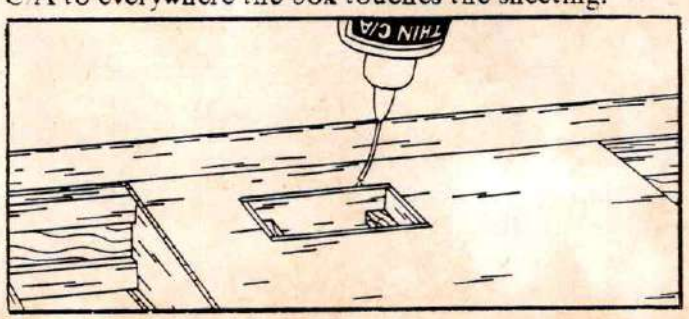


☐ Reach through the hole with your X-acto knife, and notch out a hole in the inside rib for the servo wire to pass through. Working from the center of the wing, cut out similar holes in the 1/8" center ribs.

☐ Trial fit the box into the hole, pushing it in until it touches the opposite sheeting.

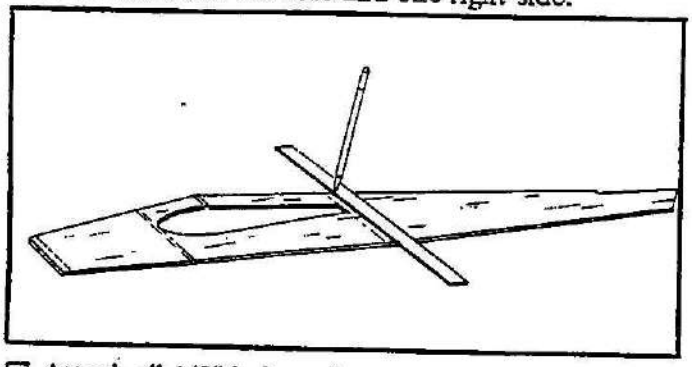
☐ Note how the bottom of the box lines up with the opposite sheeting, the remove the box and block sand it until it fits flush against the opposite sheeting. This will take a few attempts to get it just right.

☐ When you're satisfied, replace the box in the slot (make sure the slot for the servo wire is toward the center section), and liberally apply thin and/or medium C/A to everywhere the box touches the sheeting.



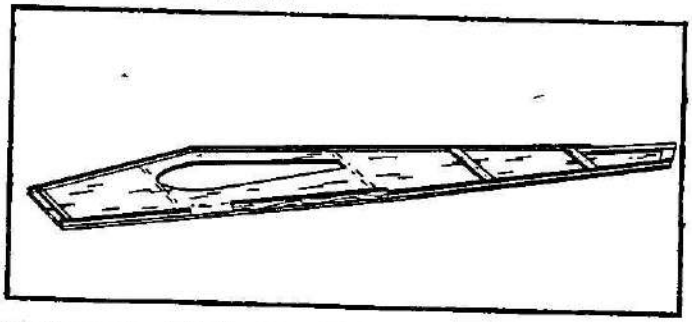
PREPARING THE FUSELAGE SIDES

☐ Lay the fuse sides over the plans and mark the firewall, bulkhead, and vertical support locations. Be sure to make one left side and one right side.

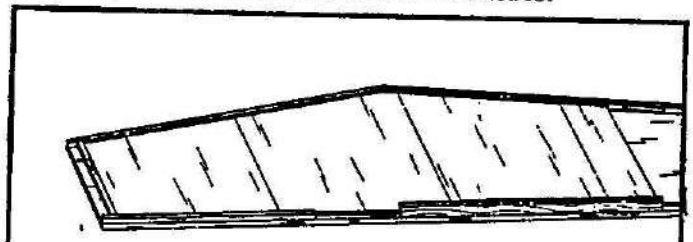


☐ Attach all 1/8" balsa stringers and the 1/4"x 1/8" hardwood stringers to their appropriate locations.

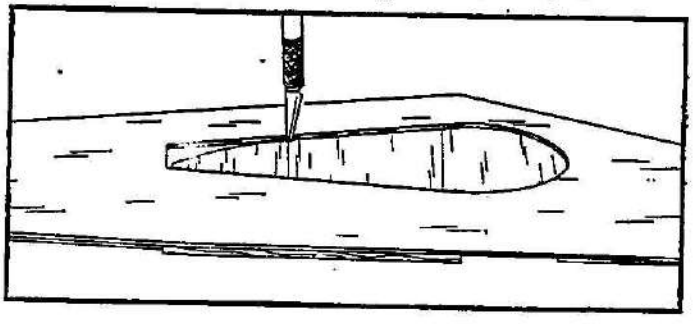
☐ Glue the 1/8"x 3/8" vertical stiffeners and stab supports to both sides.



☐ From the 1/16"x 3"x 36" sheet, trim to fit the fuse doubler pieces, and secure to the fuse sides.



☐ Working from the outside of the fuse sides, trim the 1/16" balsa out of the wing saddle.



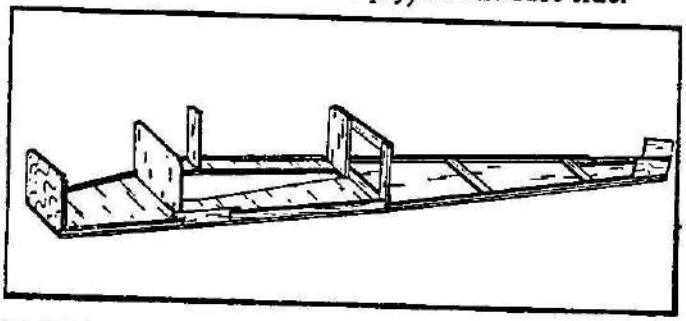
☐ Attach the 1/4" triangle pieces above where the landing gear plate will be inserted.

☐ Assemble the rear bulkhead out of the 1/8" pieces.

☐ Attach the front bulkhead, top support and rear bulkhead to one fuse side, aligning them exactly 90o to the fuse side.

☐ Tack-glue the firewall to the same fuse side, so that it can be aligned when the fuse sides are joined.

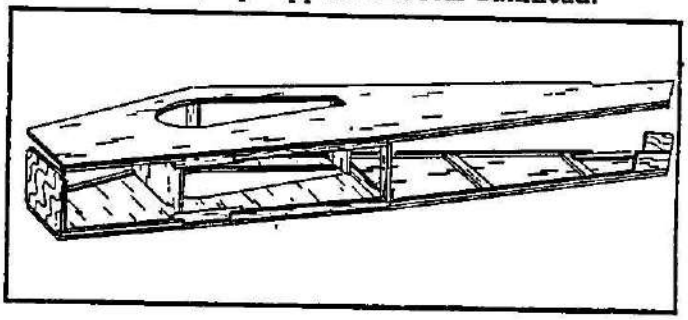
☐ Attach the two rear fuselage joiners (the top one is balsa, and the bottom one is ply) to one fuse side.



☐ With a sharp X-acto blade, cut a few relief slots in the 1/8" stringers immediately behind the rear bulkhead. This will allow the fuse sides to bend easily.

JOINING THE FUSELAGE SIDES (use a fuselage jig, if available)

☐ Join the fuse by securing the other fuse side to the front bulkhead, top support and rear bulkhead.

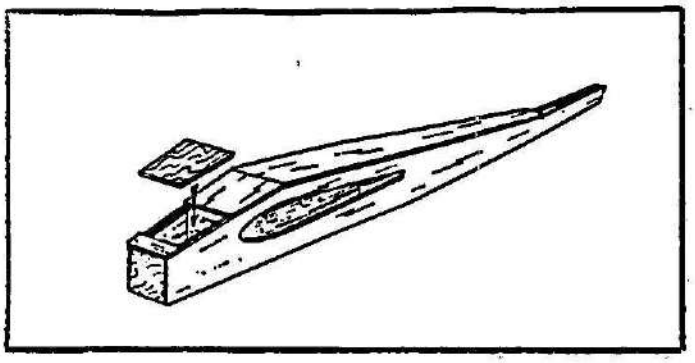


☐ Pull the front of the fuse together and secure the 1/4" ply firewall.

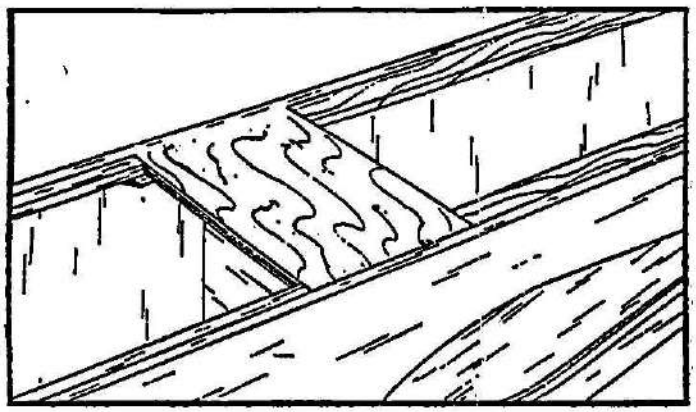
☐ Draw the rear of the fuse together, securing the sides at the rear joiners.

☐ Attach the top/front and top/rear 1/8" sheeting.

☐ Place the 1/8" lite ply hatch temporarily in place, then secure the 1/8" cross-grain balsa to the fuse, just ahead of the hatch (leaving about a 1/32" gap).



☐ Secure the 3/16 ply landing gear plate in its location on the bottom of the fuse.

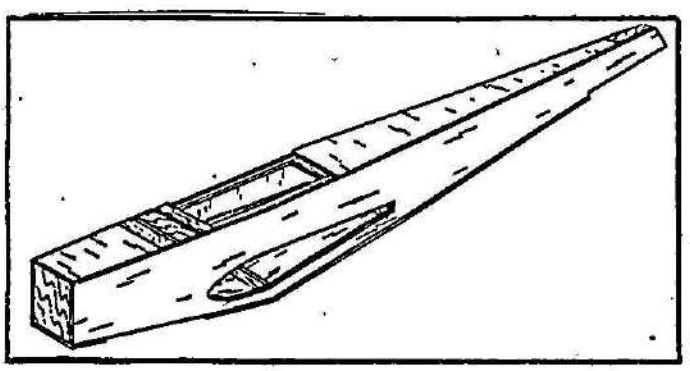


☐ Affix the 1/16" ply tailwheel mount to the bottom/rear of the fuse.

☐ Glue the 1/8" ply screw retainer in place between the 1/8"x 1/4" stringers.

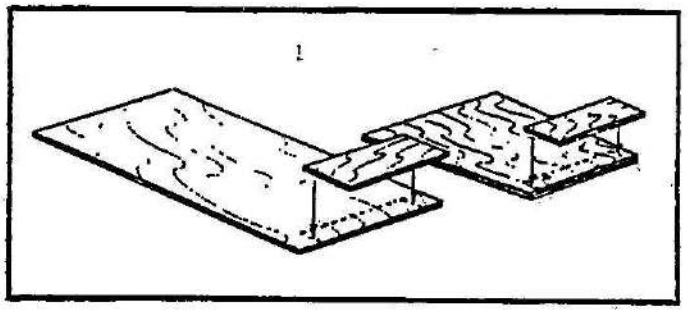
☐ Place the 1/16" bottom hatch temporarily in position, then begin sheeting the fuse bottom with the 1/16" balsa (cross-grain). Continue sheeting back to the front of the 1/16" tailwheel mount.

☐ Sheet the bottom/front of the fuse from the front of the 1/16"gear piece, to the front of the firewall.

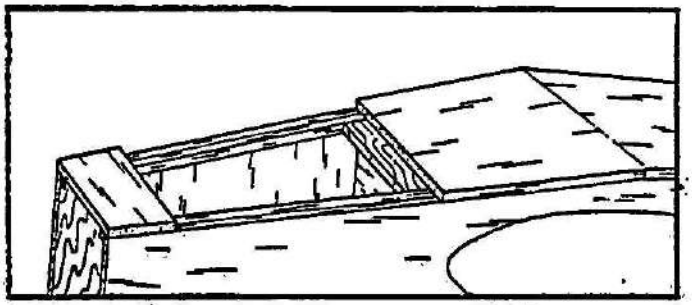


Hatches

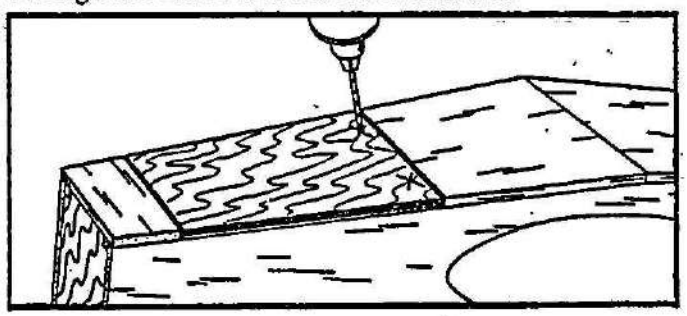
☐ Prepare both hatches (the top 1/8" lite-ply and the bottom 1/16" ply) by attaching the appropriate 1/16" ply hatch tongues.



☐ Glue the 1/8" ply screw retainer to the rear of the tank compartment.



☐ Put the top hatch in place, and drill two 1/16" holes through the hatch and the screw retainer.



☐ Remove the hatch and ream out the holes in the hatch slightly.

☐ Repeat the process similarly for the bottom hatch. except that 4 holes will have to be drilled.

☐ Temporarily secure both hatches to the fuse with the supplied sheet-metal screws.

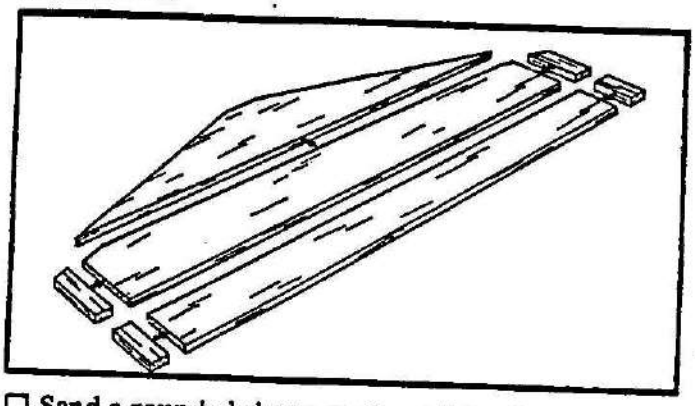
☐ You may round all the fuselage corners (except where the stab joins the fuse) slightly, for a little cosmetic improvement. Round the top to about a 3/8" radius, and the bottom to about a 1/4" radius.

TAIL ASSEMBLY

Note: All tail parts are 1/4" balsa

☐ Join the stab front to the stab rear.

☐ Add the 1/4"x 1/2" cross-grain tips to both the stab and elevator.



☐ Sand a rounded shape on the stab leading edge (except for the center) and tips, and the elevator tips.

☐ Bevel a "V" shape on the elevator leading edge, and taper the rear slightly.

☐ Join the fin front to the fin rear.

☐ Sand and bevel the fin and rudder similar to the stab and elevator.

LANDING GEAR

☐ Attach main landing gear with THREE screws at the positions shown on the plans. Install the main wheels Use 8-32 x 1-1/2" bolts and nuts for main gear axles.

FINAL ASSEMBLY

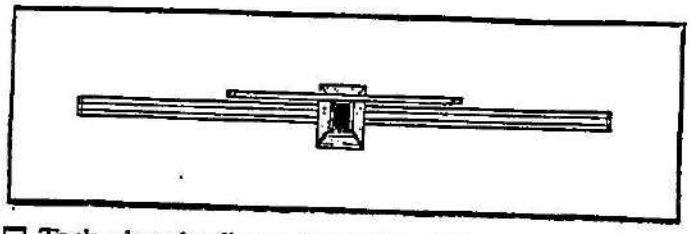
☐ Slide the wing carefully into the slot in the fuse, trimming the fuse slightly if necessary.

☐ Looking through the bottom hatch, align the wing so that the inside of the center wing ribs align with the inside fuse walls.

☐ Compare that alignment by measuring each wing tip from the rear of the fuse. Readjust so that both sides are equal. Try to keep the inside aligned as much as possible, but the priority should be having the wing exactly perpendicular to the fuselage.

☐ Secure the wing permanently with thin and/or medium C/A.

☐ Trail fit the stabilizer and compare its alignment with the wing. Trim the high side of the fuse until the stab is exactly parallel to the wing, than secure the stab in place.

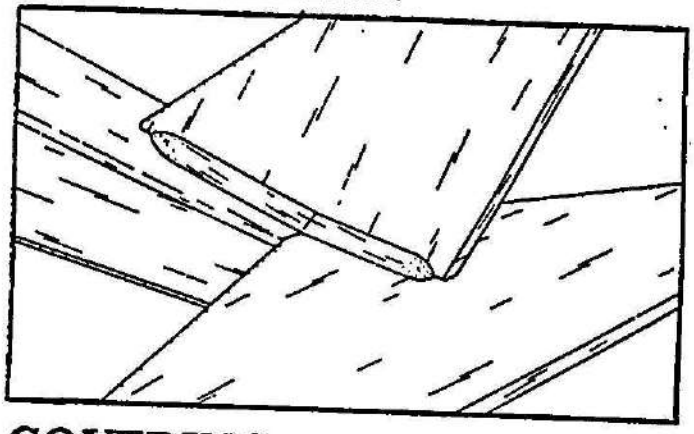


☐ Tack-glue the fin to the stab and fuse top, and align it to exactly 90o from the stab. Add thin C/A when the alignment is correct.

☐ Cut a slot in the 1/4" triangle stock where it will bend at the intersection of the stab and fuse top.

☐ Trim and sand each end of the triangle stock to a point at the 90o corner.

☐ Glue both triangle stock pieces securely into the corners at the base of the stab.



COVERING

☐ Final sand the entire aircraft with 320 or 400 grit sandpaper.

☐ Cover with your favorite iron-on film. Chose contrasting colors between the top and bottom to help your orientation during the wild gyrations you'll be tempted to perform.

☐ Fuel proof all exposed areas, and inside the radio compartment close to where the hatch meets the fuse.

HINGING

☐ Cut slots in the control surfaces and adjoining aircraft surfaces with an X-acto blade.

☐ Slip the supplied hinges into the slots and temporarily mount all control surfaces

☐ Check each surface for minimum gap, but insure you still have sufficient control throw

☐ When satisfied, apply Thin C\A to all hinges.

MOTOR MOUNTING

☐ Drill holes in the firewall where shown for the engine mount, fuel lines, and throttle cable. Fuel-proof these holes.

☐ Insert the tank into the tank compartment, packing it on all sides with foam. A KRAFT 6oz tank is recommended.

☐ Mount the engine on the supplied mount, and attach the muffler , prop and spinner (to check the C.G., although the muffler and prop will probably have to be removed later to hook up the throttle cable).

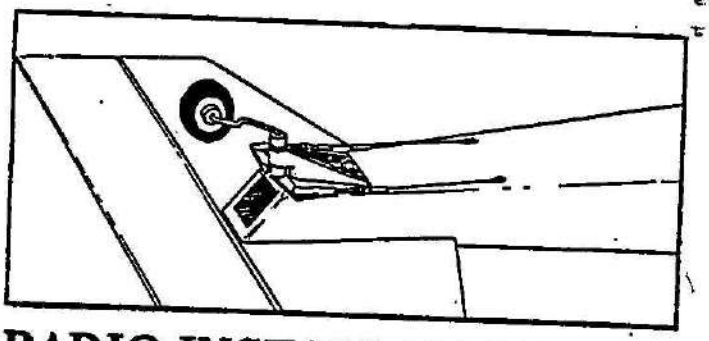
TAILWHEEL

Note: Because of the angle of the rudder, we found it was much easier to run separate cables to the tailwheel for steering, rather than using a wire connected to the rudder. Using separate cables allows the tailwheel to be mounted further rearward than the rudder, and also allows the tailwheel to have either more, or less , throw than the rudder, while using the same servo. If you don't need ground steering, you may elect to not hook up the tailwheel, and either let it free-swivel, or lock it straight.

☐ Assemble and mount the tailwheel as shown on the plans.

☐ Fabricate the pull-pull cables by slipping the cable through the eye of the rigging coupler, and crimping the cable with the cable clamps. Thread a nylon kwik-link over the couplers and secur e the kwik-links to the ends of the steering arm.

☐ Drill 2 1/16" holes in the bottom of the fuse (don't forget to fuel-proof them), and feed the cables through them, and into the radio compartment area.



RADIO INSTALLATION

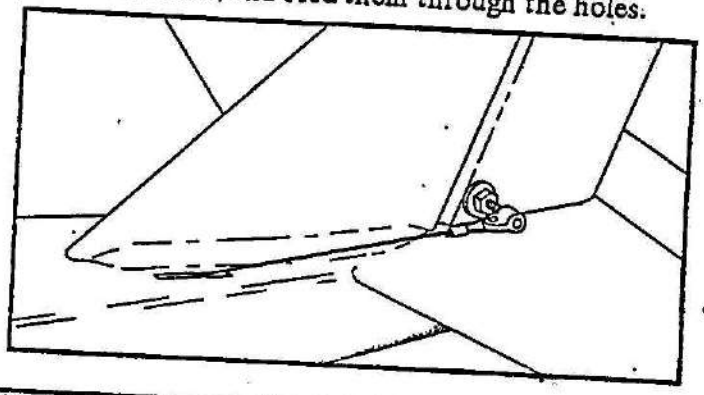
☐ Adjust the radio to achieve the correct C.G., and mount it conventionally.

Note: Since you may have 4 cables running from the rudder servo, try to position the elevator servo so that the elevator pushrod will run down the center of the fuse, between the rudder/tailwheel cables.

☐ Use a straight-edge between the rudder servo and the pull-pull linkage on the rudder to determine roughly where the cables should exit the top of the fuse.

☐ Cut slots for the cables in this location, about 1/16" wide and 1/2" long.

☐ Assemble the cables/couplers for the rudder, similar to the tailwheel, and feed them through the holes.



Note: On a pull-pull set-up, only one end of the cable needs to be adjustable. You should alternate the rudder and tailwheel so that they are adjustable on different ends, to prevent them from binding. (i.e: The rudder is adjustable at the servo end, and the tailwheel is adjustable at the tailwheel end.)

BEFORE FLYING

☐ Set up the control throws to your choice of Wild, or Mild, as shown on the plans. If you use dual rates, you may set them both up, then start on the lower rate until you're comfortable.

☐ Check the C.G., both fore-and-aft, and side-to side.

CAUTION

The *Wild Thing .40* is NOT a racer, so don't set it up for high speed. It may bear some resemblance to a Quicky 500 racer, but if you try to fly it at those types of speeds, it will probably self-destruct!

The *WT.40* is designed for quick, tight maneuvering, at low to moderate speeds. This is perfect for fun-flys, or exciting sport flying. You should control your speed with your choice of props.

Use no greater than 5" of pitch (i.e: 11x4, 11x5, 10x5, etc). This will give plenty of climb and crisp maneuvering, while holding the speed to a sub-sonic level!

FLYING

☐ Only one last checklist item: **ENJOY!**

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