



Flying Dog House



Specifications

Wingspan:	24"
Weight:	6 - 7 lbs.
Radio:	4 Channel w/ Elevon Mixing
Engine:	.46 - .61 two-stroke / .52 - .72 four-stroke

An Aerobatic Scale Flying Dog House

The Flying Dog House has been known to be one of the most difficult airplanes to build and fly. Through many months of trial and error, FlyingThingZ has finally developed the Flying Dog House. Not only is it easy to assemble, it is easy to fly, and fully aerobatic and surprisingly durable.

We set out to develop the Dog House with a few simple goals in mind. Create a plane that is easy to assemble, fun to fly and aerobatic. Everyone told us it would be impossible with this particular bird. Well, we proved them all wrong. Who says you can't teach an old dog new tricks. This Dog House is capable to doing anything you dish out at it. To top things off, it is also one of our most durable aircrafts. It can take a beating and go right back up for more.

Low speed flying is great, with huge elevons and tons of surface area, it will crawl along at a 30 degree nose high angle under full control! To speed up all you need to do is give it gas! It flies smooth, stable, and responds great. Most say that it flies like a low wing sport plane. Landings are slow and predictable, there is no stall, only a nose high mush and a slow "helicopter like" decent. It will even hover into a slight breeze! All in all you can't find a plane that gets you more attention, is as fun to fly, and rare as this one.

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Warranty Information

FlyingThingZ, Inc. guarantees this model to be free from defects in material and workmanship at the date of purchase. This warranty does not cover any parts damaged by use or modifications. In no way shall FlyingThingZ, Inc. liability exceed the original cost of the purchased model. Further, FlyingThingZ, Inc. reserves the right to modify this warranty without prior notice.

In that FlyingThingZ, Inc. has no control over the final stages of assembly or material used for the final assembly, no liability shall be assumed nor accepted for any damage of the final user-assembled product. By the act of using the final product, the user accepts all resulting liability.

We, as a kit manufacturer, provide you with a top quality kit and manual, but the quality and flying characteristics of your finished model depend on how you build it; therefore, we cannot in any way guarantee the performance of your completed model and no representations are expressed or implied as to the performance or safety of your completed model.

If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return this kit immediately, in new and unused condition, to the place of purchase.

Warnings and Safety Precautions

READ THROUGH THIS MANUAL BEFORE STARTING ASSEMBLY. IT CONTAINS IMPORTANT WARNINGS AND INSTRUCTIONS CONCERNING THE ASSEMBLY AND USE OF THIS MODEL.

AN RC AIRCRAFT IS NOT A TOY! IF MISUSED, IT CAN CAUSE SERIOUS BODILY HARM AND DAMAGE TO PROPERTY. FLY ONLY IN OPEN AREAS, PREFERABLY AT AMA (www.modelaviation.com) APPROVED SITES. FOLLOW ALL INSTRUCTIONS INCLUDED WITH YOUR RADIO AND ENGINE.

- You must assemble the model according to the instructions. Do not alter or modify the model, as doing so may result in an unsafe or unstable aircraft. In a few cases the instructions may differ slightly from the images provided. In these cases, the written instructions should take precedence.
- Take your time to build straight, true and strong.
- You must use an R/C radio system that is specifically designed for aircraft frequencies, properly tuned and in first class working condition. The correctly sized engine displacements and miscellaneous components should be used throughout the building process as specified on this manual.
- Check the operation of your model before each flight and insure that all equipment is fully operational and all hardware is secure. Be sure to check all linkage connections and parts that may become dislodged during flight.
- This kit is not intended as a trainer. If you are not an experienced pilot, you should fly the model only with the help and supervision of a competent, experienced R/C pilot.

Before Starting the Assembly Process

Before beginning assembly of the Flying Dog House, remove all parts from their packages for inspection. Inspect all hardware, fuselage parts, wing components and foam for damage. If you find any damaged or missing parts, please contact us directly.

FlyingThingZ, Inc.

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Oceanside, CA 92054

USA

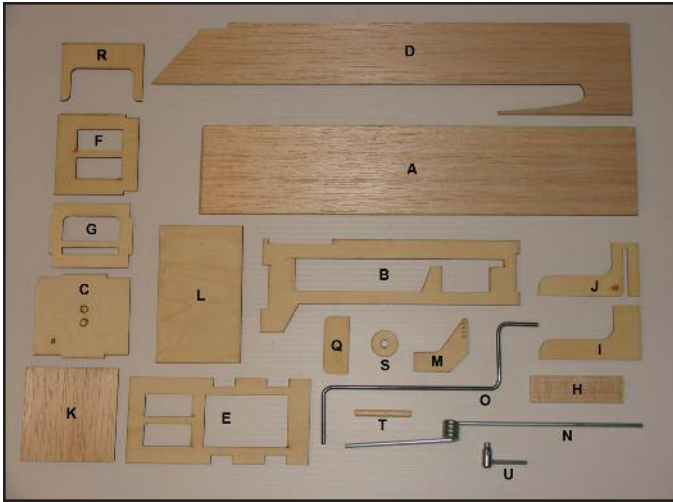
760-713-6502

www.flyingthingz.com

Using This Manual

This manual is divided into sections to aid in the assembly process. It provides an easier more concise layout allowing for breaks between each major section. Additionally, check boxes have been provided next to each step to help keep track of the completed assembly process. Steps with two check boxes indicate that the step is repeated, such as for a right and left wing panel, control linkages or fuselage side. Remember to take your time and follow the directions carefully. The Flying Dog House needs to be built as straight as possible. Failure to build the house sides and roof according to the manual will result in unpredictable flight characteristics.

Kit Contents



Wood Parts Not Shown

- 1/4" x 18" Balsa Triangle
- 1/16" x 4" x 36" Balsa Sheet
- 2 - 1/4" x 1/4" x 18" Balsa Stick

Part#	Description	Qty.
A	Fuselage Hatch	1
B	Fuselage Reinforcements	2
C	Firewall (F1)	2
D	Fuselage Sides	2
E	Rear Servo Tray	1
F	Forward Servo Tray	1
G	Fuselage Cross Brace (F2)	1
H	Hatch Tongue Plate	2
I	Gear Block Piece	6
J	Notched Gear Block Piece	2
K	Rear Fuselage Plate	1
L	Lower Ply Fuselage Plate	1
M	Control Horn	2
N	Nose Landing Gear	1
O	Main Landing Gear	2
Q	Hatch Tongue	1
R	Hatch Bolt Plate	1
S	Ply Washer	4
T	2" Wood Dowel	4
U	Adjustable Axle	1

Kit Contents (Not Shown)

Part Description	Qty.
Wing Core	1
Foam Elevons	2
House Sides	2
House Roof	1
Roof I-beams (slotted)	2
Roof to Side I-beams	2
Dog Cutout	1

Additional Kit Contents (Not Shown)

Part Description	Qty.	Part Description	Qty.
3/4" x 4-40 Bolts	1	6-32 x 1 Bolt	4
4-40 Blind Nut & Washer	1	#6 Washer	4
Landing Gear Straps	4	#6 Lock Washer	4
Nose Gear Hardware Pack	1	12" Carbon Fiber Rod (4mm)	12
5/32" Wheel Collars	6	15" Carbon Fiber Rod (4mm)	10
6-32 Blind Nut	4	24" Fiberglass Rod (6mm)	2

Additional Kit Requirements

- 3 - 2.5" to 3.5" Wheels
- Motor Mount (Great Planes CPMG1091 Recommended)
- 2' Medium Fuel Tubing
- Prop Suited to Engine
- 2" Filament Strapping Tape
- Engine - .46 to .61 two-stroke or .52 to .72 four-stroke
- Rubber Foam
- Low Temperature Covering Material
- FlyingThingZ Covering Kit (Coming Soon)
- 2 2-56 Pushrods with Clevises
- 2 4-40 Pushrods with Clevises
- 8oz. to 10oz. Fuel Tank
- 2" Spinner
- 4 Channel Radio with Eleveon Mixing
- 3M Super 77 Spray Adhesive

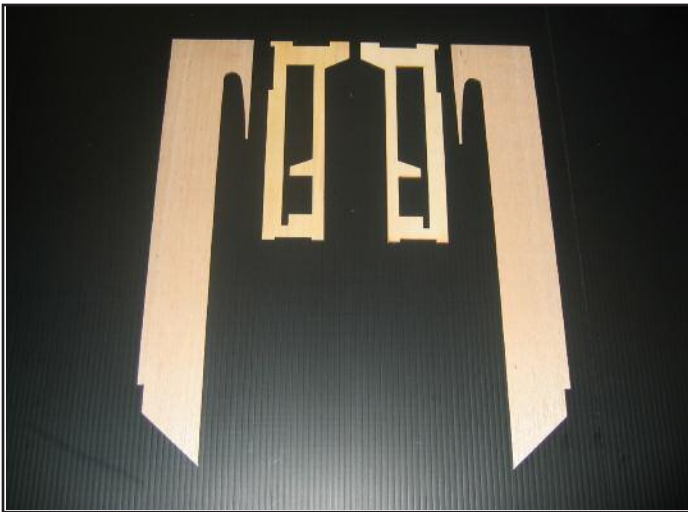
- Thin, Medium and Thick CA
- 5 minute and 30 minute Epoxy
- CA Accelerator
- White or Carpenter's Wood Glue
- Small Square
- #80, #120 and #220 Sand Paper
- Sanding Block
- Hobby Knife with Extra #11 Blades
- Pen, Pencil or Marker
- Assorted Screw Drivers
- Building Pins
- Razor Saw
- Miter Box
- Masking Tape
- Clamps or Clothespins
- Wire Cutters
- Needle Nose Pliers
- Scissors
- Wax Paper
- Paper Towels
- Ruler
- Mixing Sticks
- Threadlock
- Denatured Alcohol
- Rotary Tool or Dremel
- Router Attachment for Rotary Tool or Dremel
- Rubber Bands
- Dead Center Engine Mount Locator
- Hex Wrench Set
- Assorted Drill Bits
- Electric Drill

Required Tools and Adhesives

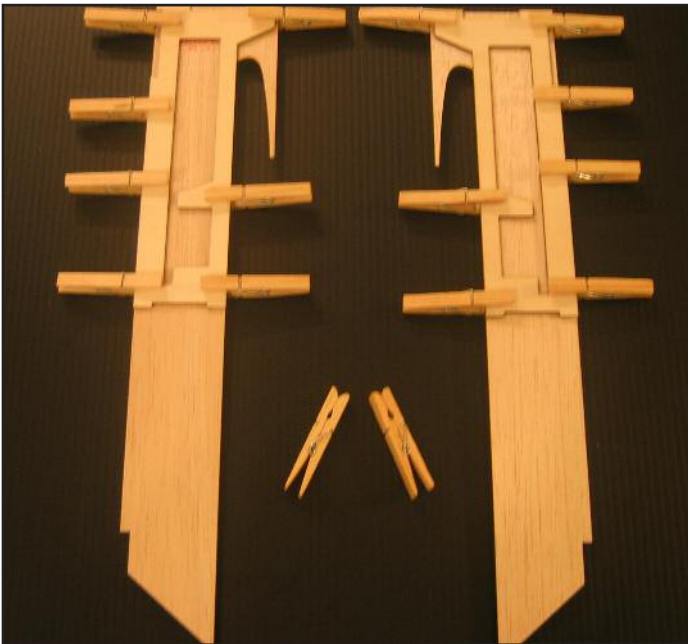
Unless a specific glue is specified, use your best judgement when joining parts. **CA WILL EAT FOAM. DO NOT USE CA TO BOND ANY PARTS TO FOAM.**

Most of the tools listed herein come in handy when assembling parts provided by this kit. Although they are not all necessarily required, they do make the process easier. You may substitute tools and other equipment listed here as long as they serve the same purpose in a similar fashion.

A. Fuselage Assembly



- ❑ A1. Start by lining up the two fuselage sides and the two ply fuselage reinforcements. Take note of the orientation to assure a right and left fuselage side is created when assembled.

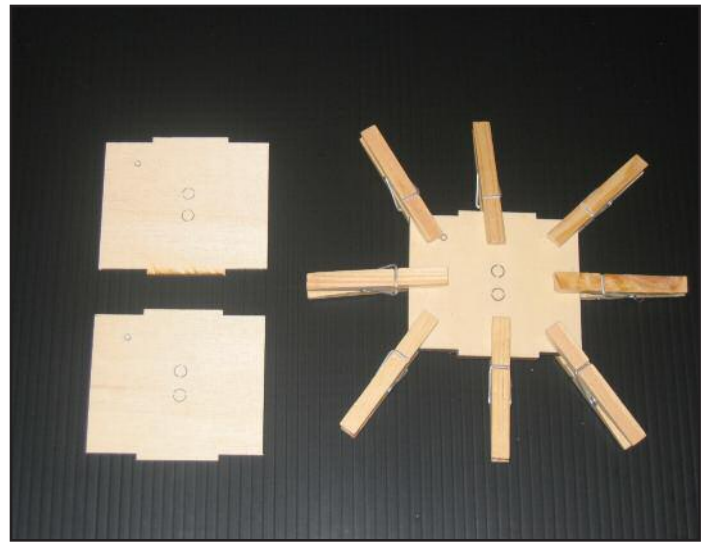


- ❑ A2. Utilizing cloths pins, glue the fuselage reinforcements onto the two fuselage sides. Line up the edges of the reinforcements until they are flush with the three edges of the fuselage sides.

You need to make a decision here.

We have provided pilot holes for our recommended motor mount setup (Great Planes Adjustable Engine Mount .60 - 1.20 - CPMG1091). Even if you are using a .46 engine, we recommend this motor mount setup for balancing purposes. If you decide to go with another setup, you will need to line up the motor mount after it has been mounted onto the wing. Continue with steps A4 if you decide to use our recommended setup.

If you decide to use a different motor mount than specified in this manual. The firewall holes should not be removed. Use epoxy on the front and back of the firewall to hold the cutouts in place.



- ❑ A3. Glue the two ply firewall pieces utilizing clothe pins to hold the parts together. Verify the orientation of the holes on the firewall as they will play a vital role later on.

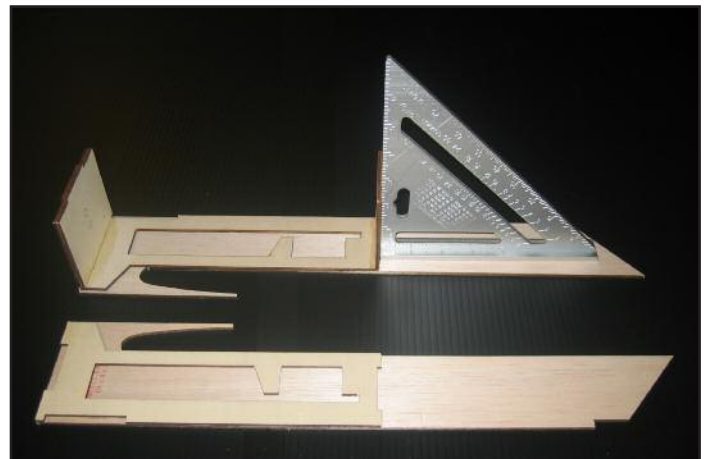
Hints and Tips

You can substitute rubber bands or masking tape to hold parts together. Flat parts can be sandwiched between books; just make sure they don't get stuck to the books.

You can make your own square by cutting a triangle out of cardboard exactly at 3" x 4" x 5". If your measurements are correct, this should make a perfect 90-deg angle.

Cut several paper towels into 4 pieces and soak them in alcohol. Store them in a plastic zip bag to keep them from drying out. You can use them to wipe up any excess epoxy while you work.

- ❑ A4. Place a drop of thick CA on the back of the provided 6-32 blind nuts and hammer into each hole as shown in the image.

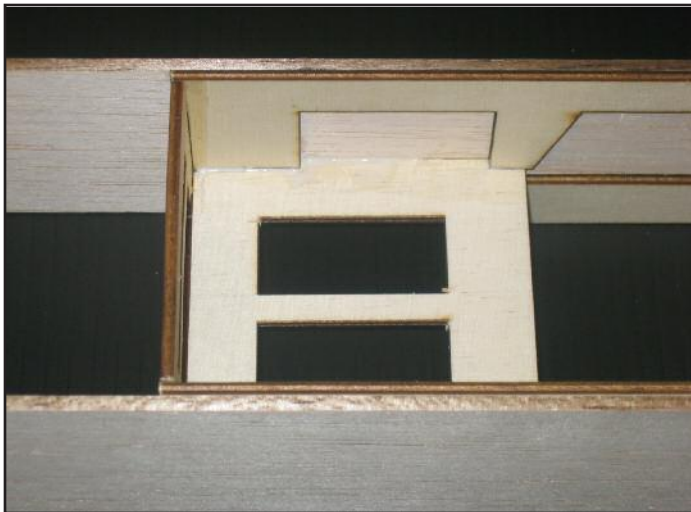


- ❑ A5. Glue the fuselage cross brace (F2) to the back of the fuselage reinforcement. Make sure the smaller opening is facing towards the top. Assure that the brace lines up with the notches on the back of the reinforcement. Use a square to assure the brace is 90-deg. to the fuselage side.

❑ A6. In the same fashion, glue the firewall (F1) to the front of the fuselage reinforcement. Assure that the firewall lines up with the notches in the front of the reinforcement. Again, use a square to assure it's at a perfect 90-deg. angle to the fuselage. The small holes on the firewall should be towards the top when laid out as shown in the photo above.



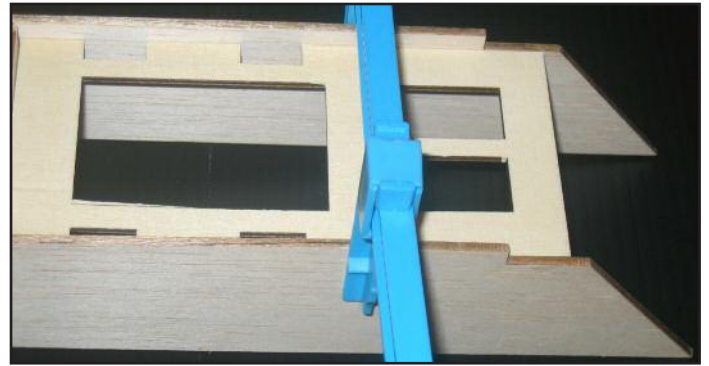
❑ A7. Using clamps, glue the two fuselage sides together. The firewall and cross brace should line up with the notches on the other side of the fuselage reinforcement. Make sure pressure is applied where the cross brace and the firewall meet the fuselage sides. Make sure to apply pressure on the bottom part of the firewall as well to create a strong bond.



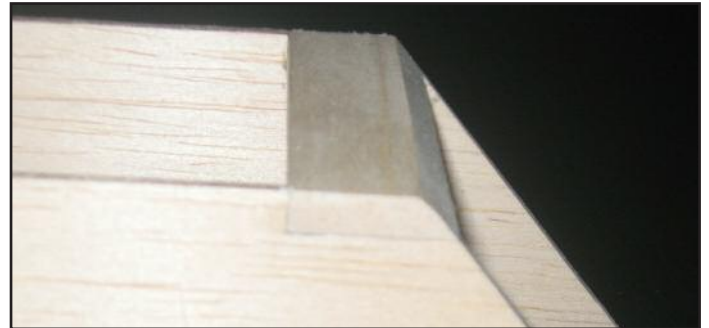
❑ A8. Carefully glue the forward servo tray between the two fuselage sides. Make sure the back end butts up against the fuselage cross brace, and against the tabs on the fuselage reinforcements.



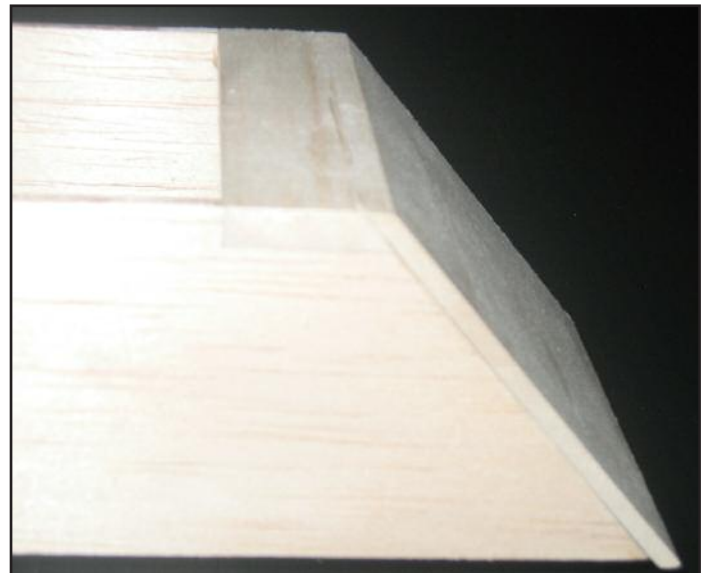
❑ A9. Slide the hatch bolt plate against the firewall. Line up the flaps flush against the top of the firewall and clamp down as the glue sets. Make sure the hatch bolt plate is on top of the fuselage.



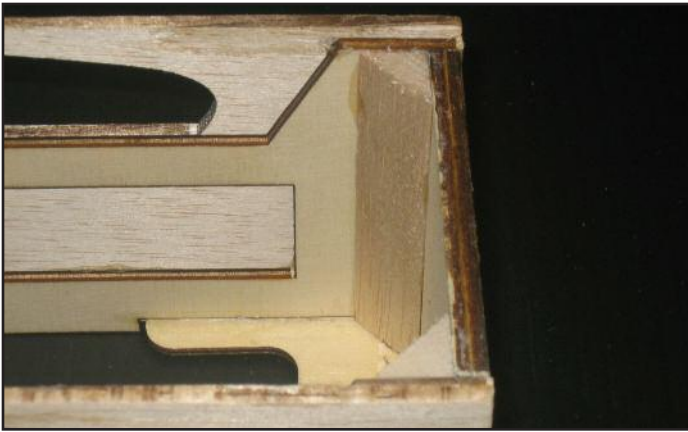
❑ A10. To prepare the rear part of the fuselage, use the rear servo tray as a spacer and clamp down the two fuselage sides. DO NOT glue the rear servo tray at this time, it is only being used as a spacer.



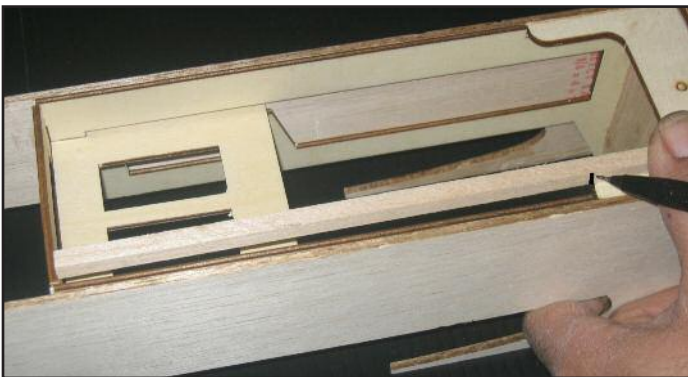
❑ A11. Size and cut a hatch tongue plate and glue it to the notches on the back of the fuselage. Sand the edges flush with the sides of the fuselage. Sand the rearward part of the hatch tongue plate to match the angle of the fuselage as shown in the image above.



❑ A12. Glue the rear fuselage hatch plate to the back of the fuselage. Sand the top of the fuselage rear plate flush with the hatch tongue plate. Leave a 1/8" overhang on the bottom of the rear fuselage plate.



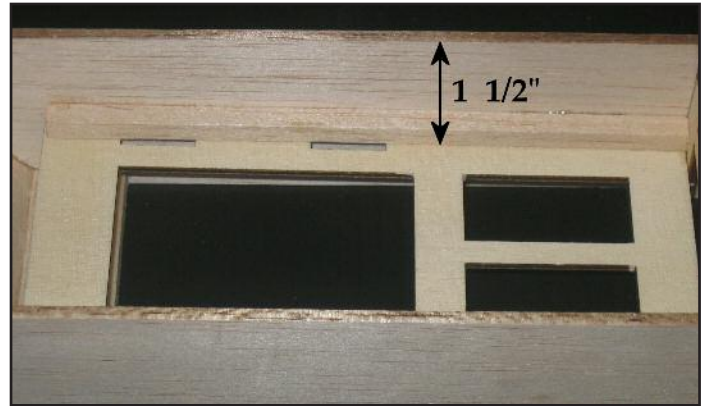
□ A13. Cut two pieces of balsa triangle to fit flush with the top of the firewall. Glue the triangle onto the sides of the fuselage, firewall and hatch bolt plate.



□ A14. Line up a piece of $1/4 \times 1/4$ balsa stick against the fuselage cross brace (F2). Scribe a line where the balsa stick lines up with the hatch bolt plate. Cut the balsa stick along the line.

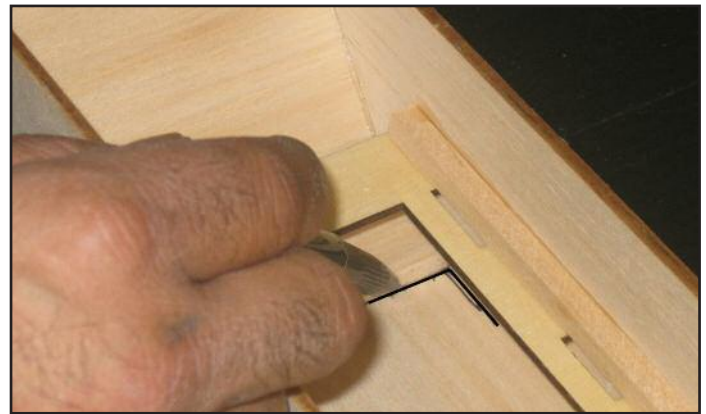


□□ A15. Lay the fuselage assembly onto the fuselage hatch. Make sure the hatch is flush along the sides of the fuselage and the firewall. **Glue the balsa stick onto the hatch only.** The balsa stick should only be glued to the hatch. Avoid getting glue on the fuselage sides. Repeat on the other side.



□ A16. Flip the fuselage around until the bottom is facing up. Glue the rear servo tray 1 - 1/2 inches from the bottom of the fuselage. Make sure the tray is up against the fuselage cross brace (F2).

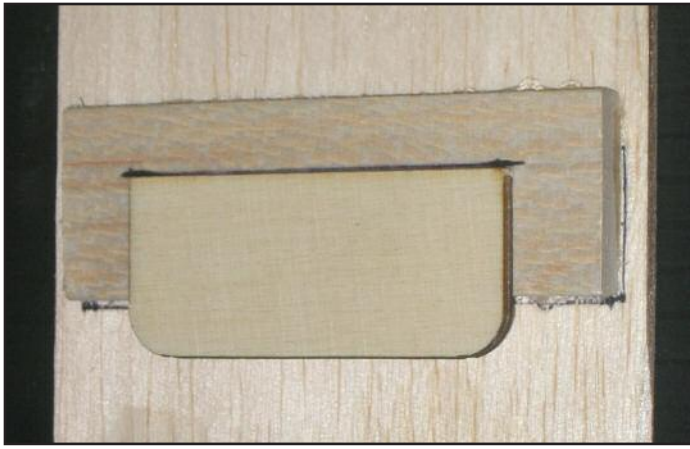
□ A17. Cut two pieces of $1/4 \times 1/4$ balsa stick the same size as the servo tray. Glue the balsa sticks to the sides of the fuselage, the rear servo tray and the fuselage cross brace. Cut the balsa stick at the notches on the servo tray, you'll need these notches to mount your radio gear later.



□ A18. Reinstall the fuselage hatch and flip the fuselage around so that the bottom is facing up. Draw a line onto the fuselage hatch across the hatch tongue plate. Extend the lines about $1/2''$ along the sides of the fuselage.



□ A19. Cut a piece of the hatch tongue plate down to 3". Center and glue it onto the fuselage hatch $1/8''$ of an inch from line mark made on the previous step.



- ❑ A20. Glue the ply hatch tongue onto the hatch tongue plate. Make sure it is centered and 3/8" from the front of the hatch tongue plate. The lip should protrude towards the back of the fuselage hatch. When the hatch is inserted onto the fuselage, the fit should be snug. With the fuselage hatch installed, sand the back edge of the hatch flush with the rear fuselage plate.



- ❑ A21. Cut several pieces of the 1/16" balsa sheet. For added strength make your cuts against the grain. When installed on the fuselage bottom, the grain on the 1/16" balsa sheet should be running along the width of the fuselage, not it's full length.



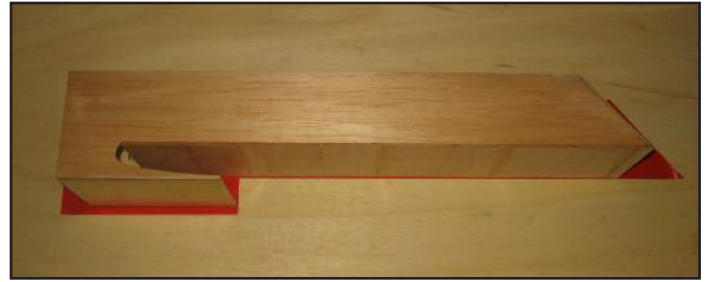
- ❑ A22. Glue the 1/16" balsa sheets onto the bottom of the fuselage. Sand all the edges flush with the sides and back end of the fuselage. Remember, the grain on the 1/16" sheeting should run along the width of the fuselage.

- ❑ A23. Along the front of the fuselage, glue the lower ply fuse plate flush with the edges of the fuselage sides and the firewall.

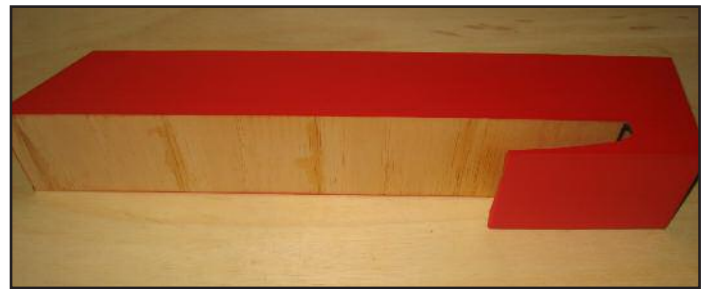
- ❑ A24. Sand all rough edges of the fuselage to obtain a nice smooth finish. All parts should be flush with each other at all corners and edges.

- ❑ A25. Fuel proof the firewall and internal components using either epoxy or polyurethane.

The next steps outline covering the fuselage with our precut, self adhesive vinyl covering. If you have elected to use another material such as Monokote, the process will be very similar. Please follow the manufacturer's instructions on using their material for covering.



- ❑ A26. Lay a piece of the precut vinyl shaped like the fuselage on your workbench. Place the fuselage onto the vinyl and cut slits into the vinyl at the corners of the fuselage. Fold the corners over onto the fuselage and trim any excess. Leave approximately 1/8" overlap. Cut out the opening on the bottom of the fuselage where it saddles onto the wing.



- ❑ A27. Flip the fuselage over and do the same on the other side. In the image above, you can see the cutout on the fuselage/wing saddle mentioned in step A26.



- ❑ A28. Cover the firewall and hatch bolt plate in the same manner as the fuselage sides. Extend the covering onto the bottom front of the fuselage right below the firewall. Do not cover the 1/16" balsa sheeting on the bottom of the fuselage. This needs to be exposed due to the fact that it will be epoxied to the wing in a later step. In the same manner as the firewall, apply vinyl covering to the rear fuselage plate.



□ A29. In the same manner as the fuselage sides, cover the fuselage hatch. Cut slits in the corners to make folding over easier. Leave a 1/8" overlap on the bottom of the hatch.



The fuselage is now complete.

B. Preparing the Foam

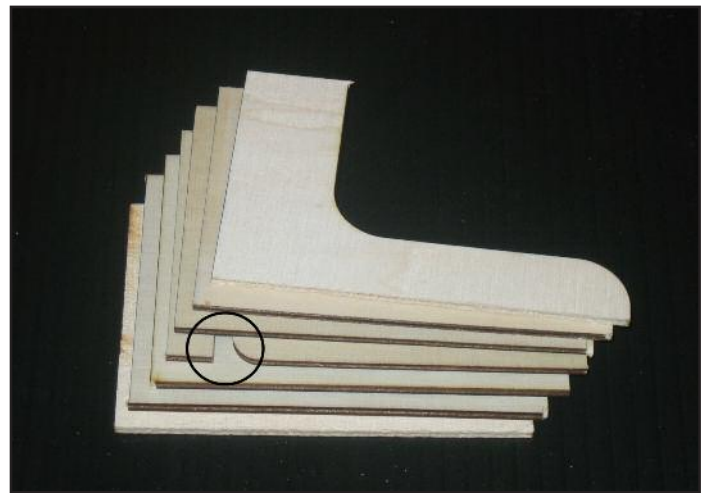


□ B1. Sand the foam using #120 grit sand paper on a sanding block. The foam should have a smooth texture after sanding is completed. Be extremely careful not to distort the foam in any way. Sand edges and curves very lightly. Enough pressure should be applied to smooth out the foam, not to change its shape.

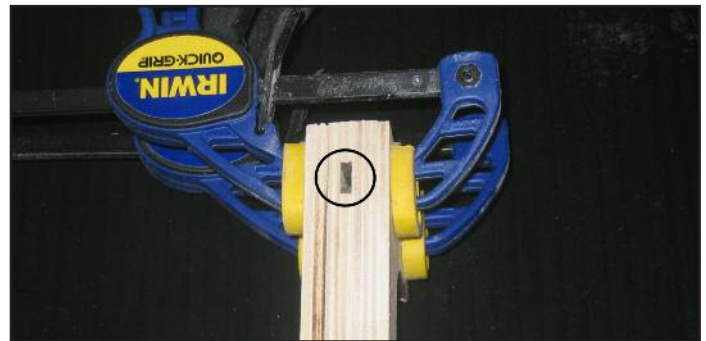
When sanding the leading edge's airfoil, remove the sand paper from the block and sand around the contour of the airfoil. Be careful not to distort the airfoil. Doing so will make the wing inefficient.

Smooth out all foam pieces in the same manner.

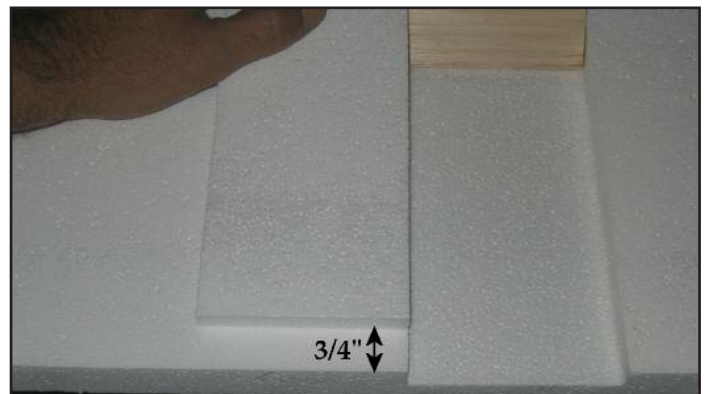
C. Wing Preparation



□ C1. Line up the gear block pieces and the notched gear block piece as shown in the image above. The layout should be three gear block pieces, a notched gear block piece, three more gear block pieces.



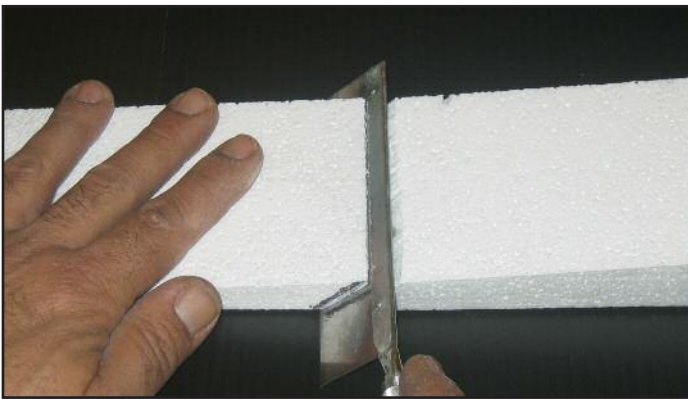
□ C2. Glue the pieces together to form one gear block with a notch in the middle as shown in the image above. Use clamps to keep the assembly together as the glue sets. Once the glue has set, sand all edges flush for a smooth finish.



□ C3. Remove the foam center insert from the wing core. Temporarily install the fuselage into the leading edge of the wing core and lay the foam center along the side of the fuselage. Place the foam center 3/4" from the trailing edge of the wing. **DO NOT GLUE THE FUSELAGE AT THIS TIME.**



❑ C4. With the fuselage in place and the foam center piece $3/4$ of an inch from the trailing edge, make a mark along the back of the fuselage onto the side of the foam center piece. The mark on the foam center piece should be at the same angle as the fuselage back plate.



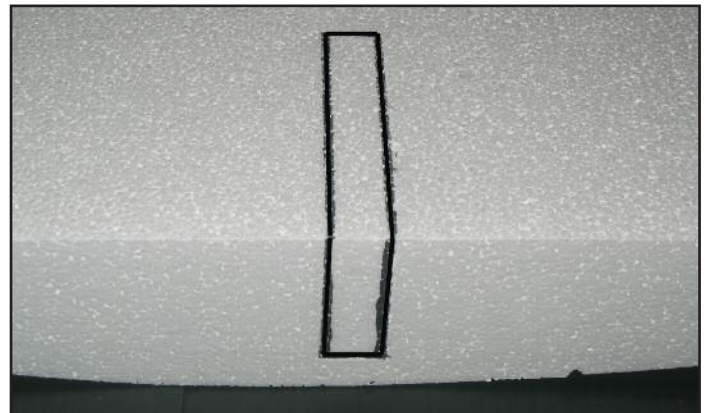
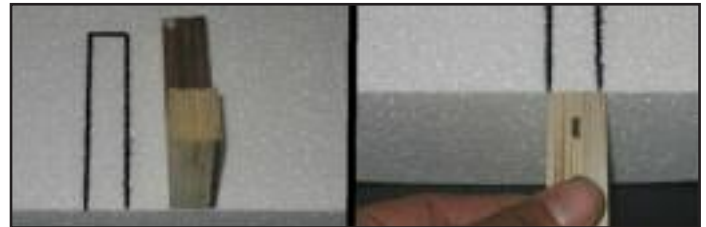
❑ C5. Extend your line all around the foam center. Using a hobby saw or sharp hobby knife, cut along your line marks. Sand the backing where the cut was made and check to make sure the angle of the cut is the same as the angle of the fuselage back plate.



❑ C6. Reinsert the cut foam center piece along the fuselage back plate. If there is any excess overhang on the trailing edge, make a mark and cut the excess until the back is flush with the trailing edge. Sand as necessary to obtain a nice flush fit. Remove the fuselage and glue the foam center piece flush with the trailing edge. Fill any gaps with a light wood filler.



❑ C7. Lay the wing core with the bottom facing up. From the leading edge make a mark on the wing at $8''$ and $8\ 3/4''$. To obtain an accurate measurement, you can butt the leading edge of the wing against a square, then butt the ruler against the same square. You can also use a wall on the leading edge to serve the same purpose if a square is not available.



❑ C8. Lay the assembled gear block between the marks scribed on the bottom of the wing core. Extend the lines around the outside edges of the assembled gear block. In the same fashion, scribe marks along the side of the wing core following the smaller edges of the assembled gear blocks.



❑ C9. Using a rotary tool with a router attachment cut the foam inside your line marks. The top portion should be at a depth of 11/16th of an inch. The side portion of the cut should be set at 1" depth. Make sure you start your cuts inside your lines and test fit the gear block often. The final fit should be snug and flush with the edges of the wing core. When you are satisfied with the fit, glue the gear blocks into place.

The next steps outline covering the wing with our precut, self adhesive vinyl covering. Be extremely careful when using a heat applied covering. High heat will distort the foam and permanently ruin the wing shape. These steps are best performed with some help. Apply a thin coat of Super 77 Spray Adhesive before covering any foam parts.



❑ C10. Cut a strip of vinyl to 27" long. Starting on the bottom of the wing, scribe a mark near the leading and trailing edge 11 3/4" from one side of the wing. Carefully lay the first piece of covering along the two marks centered on the wing. Squeeze out any air bubbles starting in the middle and work your way out towards the edges. Overlap the trailing edge, but do not go onto the top of the wing. Cut off any excess at the trailing edge. For the leading edge, only overlap to the very tip of the leading edge. Cut off any excess beyond the tip of the leading edge. The sides of the wing should have about 1/8" overhand on the sides. You may need to cut slits into the vinyl to follow the contour of the wing.

❑ C11. Repeat for the other half of the wing bottom. The two pieces of vinyl covering should leave an overlap in the middle approximately 1/4".



❑ C12. On the wing's top, scribe a mark 11 3/4" from the side of the wing on both the leading and trailing edge. Using another piece of vinyl cut at 27" lay the covering along the marks on top of the wing. Squeeze out any air bubbles starting in the middle and work your way out towards the edges. Cut away any excess vinyl over the wing center cutout leaving approximately 1/8" overlay. Fold over the excess into the center cutout area. Wrap the covering 1/2 through the back of the trailing edge and cut off any excess. Wrap the covering beyond the leading edge to the bottom of the wing approximately 2" and cut off any excess.

❑ C13. Repeat for the other half of the wing top. The two pieces of vinyl covering should leave an overlap in the middle approximately 1/4".

D. Elevon Assembly

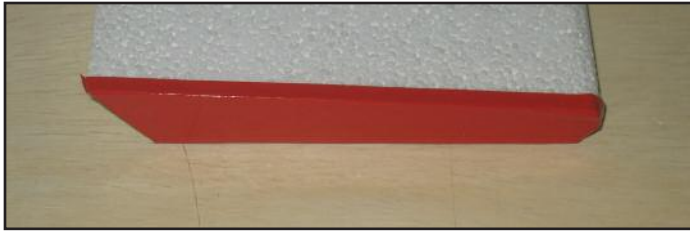


❑ D1. Lay out the left elevon and make a line 2" long that is 1" away from the right side. On the right elevon, do the same, but measure the 1" from the left of the elevon. Make sure they are on the forward part of the elevon as shown in the photo above.

❑ D2. Using a rotary tool or drill, make a 1/16" slot on the 2" line. You may want to use a square to assure your cut is perfectly straight. Test fit the control horns, they should fit snug and should be flush with the edges of elevon. The edges of the control horns should match the contours of the elevon. Sand as necessary to obtain a good fit.

DO NOT GLUE THE CONTROL HORNS AT THIS TIME.

The next steps outline covering the elevons with our precut, self adhesive vinyl covering. Be extremely careful when using a heat applied covering. High heat will distort the foam and permanently ruin the elevon's shape. Apply a thin coat of Super 77 Spray Adhesive before covering any foam parts.



❑ D3. Start by covering the outside edges of the elevons. Cut slits into the vinyl around edges to help fold over the curves. Overlap 1/8" of the covering around all the edges.

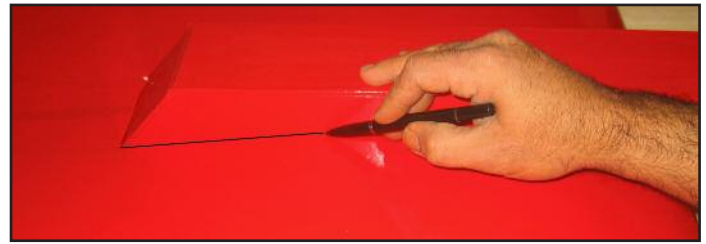


❑ D4. Using a larger piece of covering, wrap the elevon in the vinyl. Cut away all excess.



❑ D5. Find the location of the control horn slots. Using a hobby knife, cut a slit into the covering over the control horn cutout. Using epoxy, glue the control horns in place. The controlhorn should be painted prior to installation. This will help to conceal the control horns and protects them against the fuel and exhaust.

E. Final Wing Assembly



❑ E1. Temporarily attach the fuselage to the wing. Use a felt tip non-permanent marker to outline the shape of the wing onto the fuselage.



❑ E2. Cut out the covering approximately 1/8" down from the line your created and remove the covering from this area. Wipe up any marker lines with a rag and alcohol.

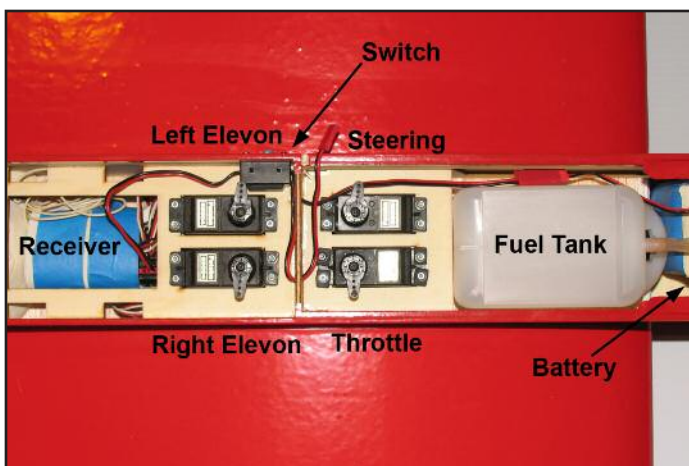


❑ E3. Use a liberal amount of 30 minute epoxy on the wing's center cut out and the bottom of the fuselage. Slide the fuselage into the wing until the back of the fuselage is flush with the back of the wing center piece. Make sure the fuselage saddle is seated well on the leading edge of the wing. Wipe up and excess epoxy before it dries.

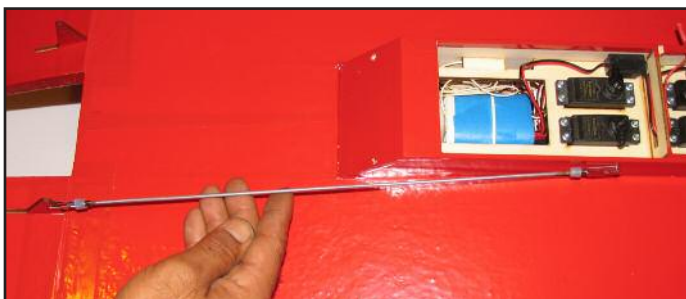


❑ F4. Use a strip of 2" filament tape (strapping tape) to attach the elevons to the trailing edge of the wing.. Use one strip of tape on the top and one on the bottom of the elevon joint. Make sure the tape follows the contours of the elevon for a silky smooth operation. Apply a strip of the appropriately colored vinyl over the strapping tape. You can also use an alternative hinging method if you prefer. Be cautious if you use CA hinges as the CA will eat the foam and create a weak bond for the elevons.

F. Radio Installation

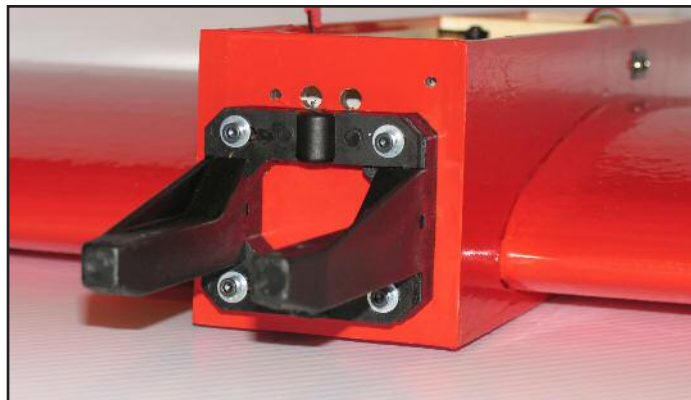


❑ F1. Lay out the servos as shown in the image above. Use a dead center tool to make the pilot holes for the servo's self tapping screws. Use your radio manufacturer's instructions on installing the rubber grommets on your servos. Wrap your receiver in foam and place it into the rear servo tray opening. The battery is placed in the compartment right behind the firewall. Wrap the fuel tank with 1/2" foam and place directly behind the battery and firewall.

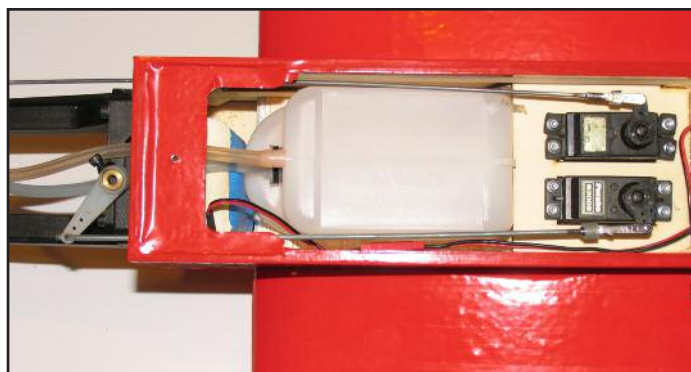


❑ F2. Attach a clevis to a 4-40 rod and attach it to the elevon control horn. Find an appropriate location to enter the fuselage either on the side of the fuse or out the back. The best location for the exit point will put the least amount of strain on the servo.

❑ F3. Drill a 1/8" exit hole for the rod and make your final connections from the elevon control horn to the outer most hole on the servo horn.



❑ F4. Install the motor mount using the provided 6-32 bolts, #6 washers and #6 lock washers. The bolt should go through the lock washer first, then the washer. Use a threadlocking compound on the bolt to prevent it from coming loose due to vibration.



❑ F5. Attach a clevis to a 2-56 rod. Insert the rod through the hole on the side of the throttle arm of your engine and connect it to the outer most hole on the throttle servo horn. The other end will be attached to the throttle arm once the engine has been installed.

❑ F6. Attach a clevis to a 4-40 rod. Insert the rod through the opposite hole of the throttle and connect it to the outer most hole on the steering servo horn. Align the steering control horn so that is approximately 45 degrees from the firewall and make a mark on the control rod where it lines up with the outer most hole of the steering control horn. Make a Z bend at this location and insert the steering horn onto the rod. Final adjustments will be made once the steering wheel is installed.

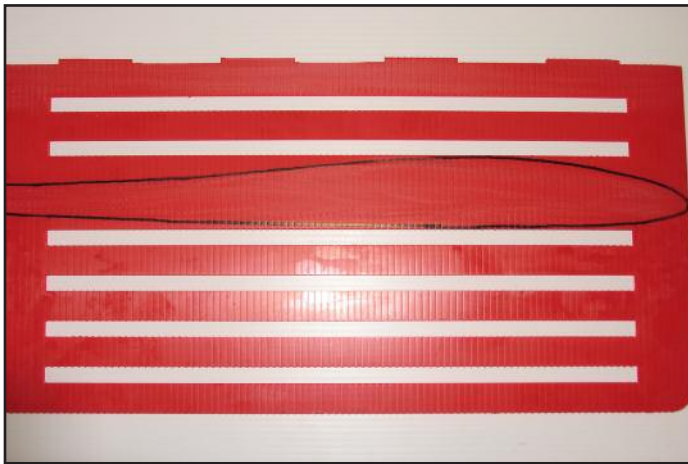
G. Attaching House Sides and Roof:

❑ G1. Using a sharp hobby blade, follow the laser paths on the house sides, roof, dog and i-beams of the Dog House. It is important that you do not cut outside of the provided lines as it will hinder the parts structural integrity.



❑ G2. This step is extremely important. The measurements on this step will determine how well this aircraft will fly. Being off by 1/16" is more than enough to cause problems with trim.

Using the edges of the cut outs as a guide to line your ruler up. Measure from the very bottom of the house side. For the back part of the wing, measure exactly 6 - 3/8" and make a tiny mark. For the front part of the wing, measure 6 - 3/16" make another tiny mark. The ruler should be perfectly lined up with the edges of the cut outs. Remember, the more precise you are with this step, the straighter and easier your aircraft will be to fly.



❑ G3. Place the bottom part of the wing on the marks. Make sure the front of the wing is on the mark that is 6 - 3/16" from the bottom of the side panel. The trailing edge of the wing should line up with the mark that is 6 - 3/8" from the bottom of the side panel. Using a pen or marker, trace around the edges of the wing core. Using 80 grit sand paper, scuff up the area within the lines you just created.

❑ G4. Also scuff up the top portion of the side panel as it will be glued to the roof and the support I-beams. Use one of the I-beams as a guide.



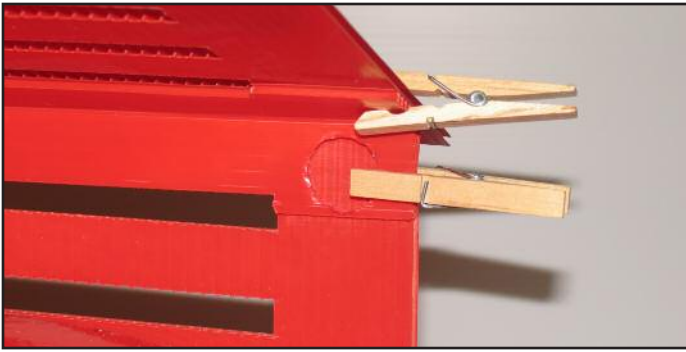
❑ G5. Using a liberal amount of 30 minute epoxy, attach the wing to the side panel. Line the wing up within the lines you previously created. Use a square to make sure the wing is at a 90 degree angle to the side panel. Place some weights on the opposite side of the wing to help seat the wing onto the side panel.



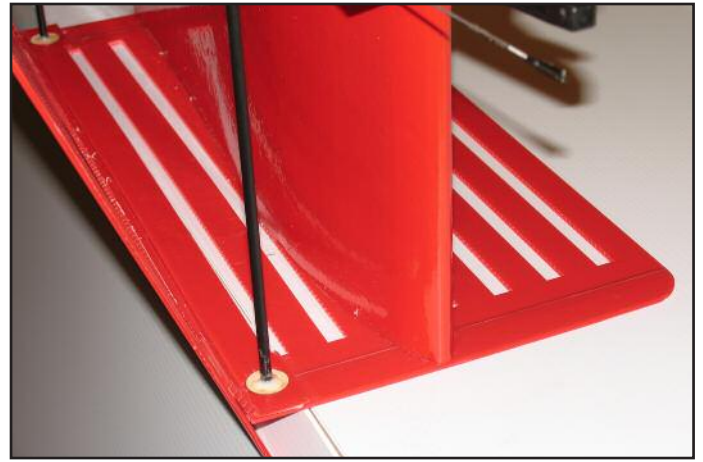
❑ G6. The I-beams have little slits marking the center of the beam. Fold the pieces on these marks and remove the plastic material from the top portion of the beam as shown in the image above. This will make it folder over easier. Scuff up the plastic material with 80 grit sand paper on both outside edges of the I-beam.



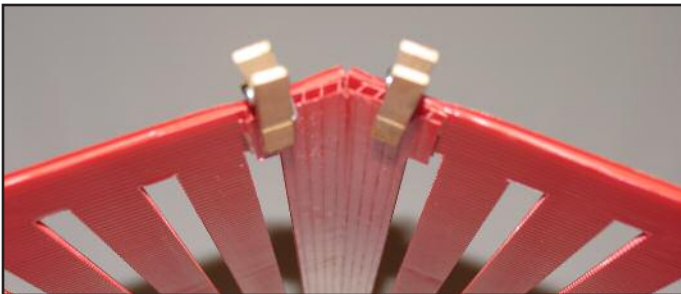
❑ G7. Insert a carbon rod into the four corners of the side panels one inch from the roof tab. This will tighten up the structure of the house sides.



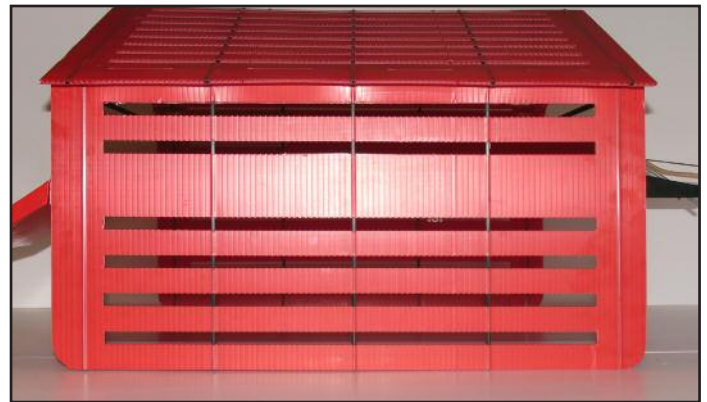
❑ G8. Using a liberal amount of epoxy and close pins, attach the two outer I-beams (with the holes towards the side panel) and roof. Make sure the roof top and side panel portion of the I-beam are butted up against the edges. Use close pins along the roof and side panel to hold the I-beam in place as the glue sets. Remove any excess epoxy with towels soaked in alcohol. Remove any excess plastic material with a sharp hobby knife before the glue sets and hardens.



❑ G11. Lay the Dog House on it's side. Using a liberal amount of epoxy, glue the rod and ply disks in place. Make sure to glue both the ply disk and the rod at the same time. Use a book or other weight to hold the rod in place as the glue sets. Paint the disks red to help conceal them.



❑ G9. Using a liberal amount of epoxy and close pins, attach the roof I-beams. One on top, and one on the inside of the roof. Make sure the I-beams are butted up against the edges of the roof. Use cloth pins along the length of the roof to hold the I-beams in place as the glue sets. Remove any excess epoxy with towels soaked in alcohol. Remove any excess plastic material with a sharp hobby knife before the glue sets and hardens.



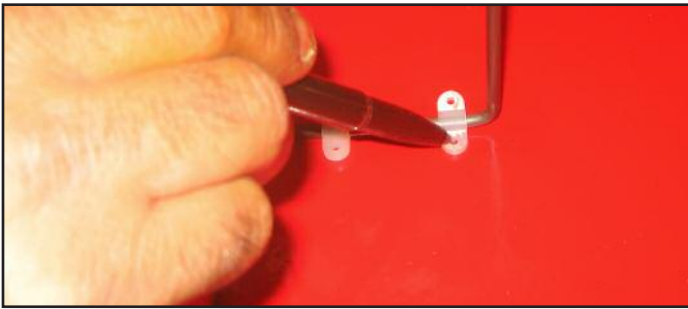
❑ G12. Place all the other rods throughout the house side panels and roof as shown. The outer roof rods should line up with the rods inserted into the outer side panels. All other rods should fall within the middle of the tabs that connect the roof and side panels to each other. The rods should be spaced out evenly.



❑ G10. Measure the inside of the side panels. Dry fit the carbon support rod and make sure the side panels don't flex. The panels should be rigid with the rod in place, but should not bow or flex. Sand the rod ends down to obtain a good fit.

❑ G13. Use a 1/4" drill bit to create holes in the foam that is 2" deep. Insert the wood dowels into the provided pilot holes all the way into the foam with epoxy. Make sure the dowel is flush with the house sides. Paint the exposed dowel red.

H. Final Assembly



❑ H1. Use a 5/32" drill bit to clean out the cutout on the landing gear block located under the wing. Drill only deep enough for the 5/32" rod to fit. Use a dead center tool to make pilot holes using the provided main gear mounting brackets as a guide.



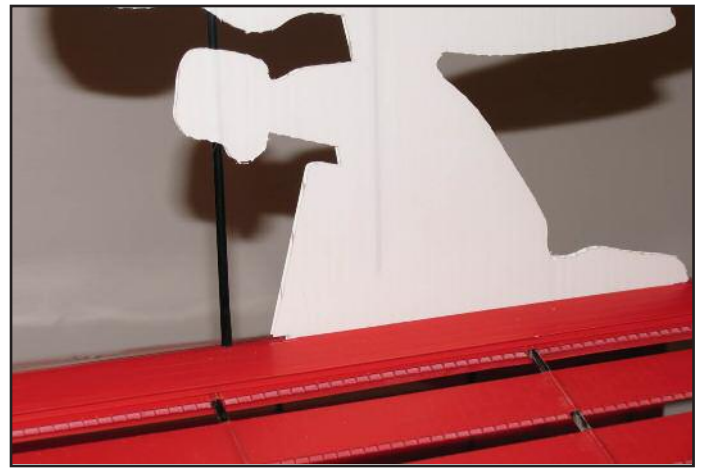
❑ H2. Install the rear landing gear wire using the provided gear straps. Temporarily slide a wheel collar into the landing gear rod, then a wheel then another wheel collar. Mark the locations of the wheel collars. Using a dremel or rotary tool, grind a flat spot onto the landing gear wire so that the wheel collar set screws have something flat to bite into. Reinstall the wheel and wheel collars.

❑ H3. Install a wheel collar above the coil on the front landing gear wire. Make a mark on it's location and remove the wheel collar. Using a rotary tool, grind a flat on the wire and reinsert the wheel collar.

❑ H4. Slide the landing gear wire through the motor mount hole and then through the steering horn. Make a mark at the location where the steering horn meets the wire. Using a rotary tool, grind a flat on the marked area. Reinsert the wire and tighten down the bolt on the steering control horn. The control horn should be at a 45 degree angle to the firewall (F1).

❑ H5. Insert a wheel onto the adjustable axle using a wheel collar on the outside of the wheel. Slide the axle onto the landing gear wire. The height of the wheel need to be adjusted until the leading edge of the wing is at about 5 degrees up. If the front of the wing is not pointing upwards 5 degrees, it will have a hard time taking off from the ground.

❑ H6. Once the height of the adjustable axle has been determined, remove it and grind a flat on the wire. Do the same for the wheel and reinstall the axle and collar. Tighten down on all the set screws.



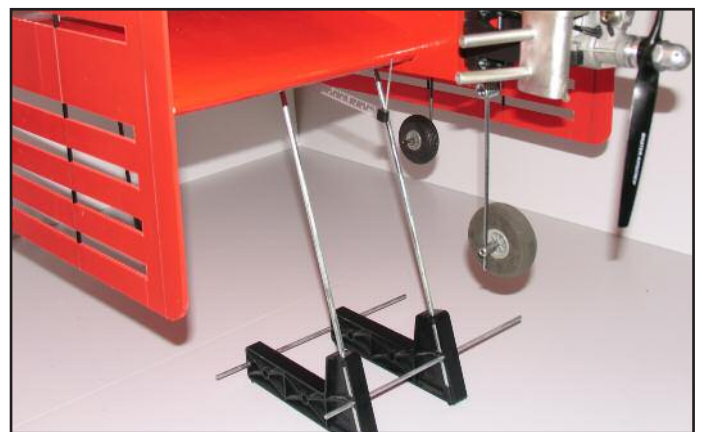
❑ H7. Using a liberal amount of epoxy, glue the dog through the slits in the roof of the dog house. The bottom of the dog should be flush with the top of the roof. Insert the remaining rods through the middle of the dog and through the hands and nose of the dog.

J. Control Throws & Center of Gravity (CG)

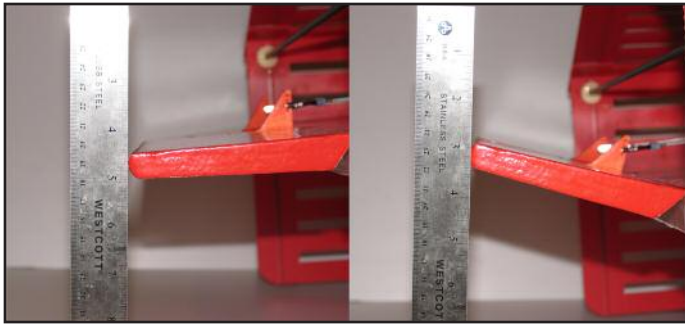
The next step will require that you balance the airplane and install the engine in the same step. Place your propeller, spinner and muffler onto the engine exactly as it will be used for flight. All other radio gear and battery should be in place prior to doing this setup. The plane should be balanced without any fuel in the tank. Use rubber bands or tape to hold the engine in place.

The balance point on this plane is 6" from the leading edge of the wing. As you become more familiar with the flight characteristics of the plane, you can move the CG towards 7" from the leading edge to make it more aerobatic.

More than any other factor, the CG can have the greatest effect on how this model flies and may determine if your first flight will be successful or not. **DO NOT OVERLOOK BALANCING YOUR MODEL.** Failure to properly balance this model may make it unstable and possibly unflyable.



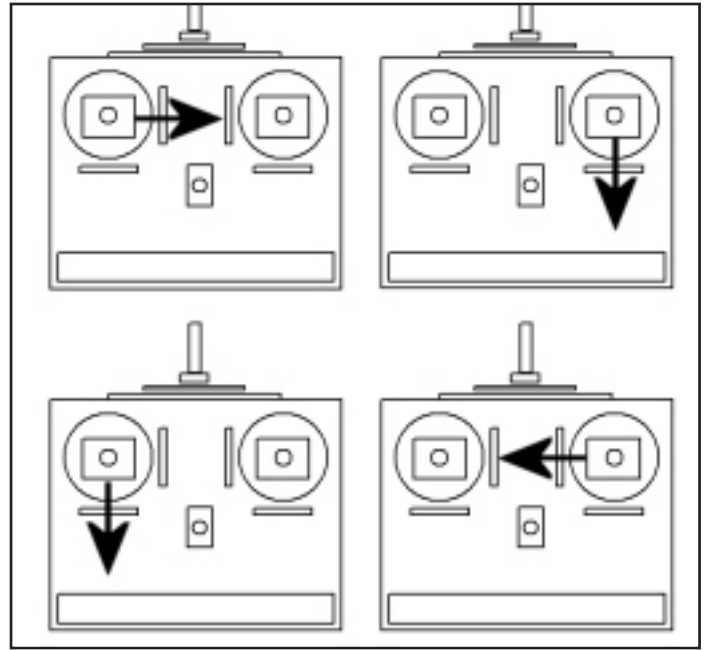
❑ J1. Place the Dog House on the balance point and move the engine on the motor mount until it balances perfectly. Make a mark where the engine should be. Bolt down the engine and retest the balance again. Make any adjustments using weights where appropriate to bring the balance point to 6".



- ❑ J2. Use a ruler to set the throws on the elevons. The elevators should be set at 3/4" and the ailerons should be set at 1 1/2" of travel. Find a suitable start point on the ruler and adjust the throws until you have achieved the desired travel both up and down.

I. Radio Setup

- ❑ I1. Turn on the transmitter then the receiver and center the trims. If necessary, remove and adjust the control clevises or the servo control horns to obtain a centered position.
- ❑ I2. For straight and level flight, the dog house's elevons should be set at 2 degrees of down elevator.
- ❑ I3. Make certain that the controls surfaces respond in the correct direction as shown in the diagrams. If any of the controls respond in the wrong direction, use the servo reversing function in your transmitter.



Left Stick Throttle: When moved up, the carburetor should open fully. When brought down, the carburetor should close.

Left Stick Rudder: When turned right, the steering wheel should turn right. When turned left, the steering wheel should turn left.

Right Stick Elevator: When moved up, both elevons should move down. When moved down, both elevons should move up.

Right Stick Aileron: When moved right, the left elevon should move down and the right elevon should move up. When turning left, the left elevon should move up and the right elevon should move down.

Note: Check all control surface movement looking at the model from behind.

Pre-Flight Checklist

- Fuelproof all areas exposed to fuel or exhaust residue such as the wing, fuselage, control horns and firewall.
- Check the CG according to the measurements provided in this manual
- Be sure the battery and receiver are securely mounted and covered in protective foam.
- Make sure your receiver antenna is fully extended and there is a strain relief in place to prevent it from being pulled from the receiver housing. Do not cut any excess antenna wire.
- Use a threadlocking compound on all metal to metal fasteners such as nuts, bolts and set screws.
- Add a few drops of oil to the wheel axels so that they spin freely.
- Make sure all hinges are secure.
- Reinforce holes for wood screws with CA where appropriate.
- Confirm all controls operate freely and in the correct direction. Make sure that throws are set as specified in this manual.
- Make sure there are silicon retainers on all clevises, and the servo horns are secured to the servo.
- Make sure all your wire connections are secure and in good physical condition.
- Make sure your fuel lines are connected and are not kinked.
- Balance your propeller to assure minimal vibration. Make sure the prop nut is fully fastened.
- Place your name, address, AMA number and telephone number on or inside your model.
- Cycle all battery packs and make sure they are fully charged before flying.
- Range check your radio at the flying field before the first flight following the radio manufacture's instructions.

Flight Characteristics

Take Off: Line up on the runway and slowly advance the throttle. Apply some down elevator to keep the dog house from taking off before obtaining take off speed. In crosswinds, it's more important to apply enough down elevator to keep the dog house from flipping over. Once flight speed is achieved, slowly add up elevator to take off. The Dog House will easily lift off and climb as long as enough speed is obtained on the ground.

Low Speed Flight: The Dog House will float around nicely at slow speeds. Expect a high nose angle at slower speeds. Practice slow speed high nose attitudes up high in preparation for landing. Get used to this angle in the air up high as it will play a vital roll for landing.

High Speed Flight: With a .46, the Dog House really moves through the air even at 1/2 throttle. It remains steady and predictable.

Aerobatics: The Dog House will loop, roll and fly inverted. Make sure all initial aerobatics are performed high to get a feel for any unusual tendencies before bringing it down on the deck.

Landing: If setup according to this manual, the Dog House will come in slow with a high angle of attack. When landing, the elevons do little work. Adjust the throttle as necessary to flare at the bottom of your approach. Practicing this up high will make landings a snap.

2005 Official AMA National Model Aircraft Safety Code

Effective January 1, 2005

GENERAL

1. A model aircraft shall be defined as a non-human-carrying device capable of sustained flight in the atmosphere. It shall not exceed limitations established in this code and is intended to be used exclusively for recreational or competition activity.

2. The maximum takeoff weight of a model aircraft, including fuel, is 55 pounds, except for those flown under the AMA Experimental Aircraft Rules.

3. I will abide by this Safety Code and all rules established for the flying site I use. I will not willfully fly my model aircraft in a reckless and/or dangerous manner.

4. I will not fly my model aircraft in sanctioned events, air shows, or model demonstrations until it has been proven airworthy.

5. I will not fly my model aircraft higher than approximately 400 feet above ground level, when within three (3) miles of an airport without notifying the airport operator. I will yield the right-of-way and avoid flying in the proximity of full-scale aircraft, utilizing a spotter when appropriate.

6. I will not fly my model aircraft unless it is identified with my name and address, or AMA number, inside or affixed to the outside of the model aircraft. This does not apply to model aircraft flown indoors.

7. I will not operate model aircraft with metal-blade propellers or with gaseous boosts (other than air), nor will I operate model aircraft with fuels containing tetranitromethane or hydrazine.

8. I will not operate model aircraft carrying pyrotechnic devices which explode, burn, or propel a projectile of any kind. Exceptions include Free Flight fuses or devices that burn producing smoke and are securely attached to the model aircraft during flight. Rocket motors up to a G-series size may be used, provided they remain firmly attached to the model aircraft during flight. Model rockets may be flown in accordance with the National Model Rocketry Safety Code; however, they may not be launched from model aircraft. Officially designated AMA Air Show Teams (AST) are authorized to use devices and practices as defined within the Air Show Advisory Committee Document.

9. I will not operate my model aircraft while under the influence of alcohol or within eight (8) hours of having consumed alcohol.

10. I will not operate my model aircraft while using any drug which could adversely affect my ability to safely control my model aircraft.

11. Children under six (6) years old are only allowed on a flightline or in a flight area as a pilot or while under flight instruction.

12. When and where required by rules, helmets must be properly

worn and fastened. They must be OSHA, DOT, ANSI, SNELL or NOCSAE approved or comply with comparable standards.

RADIO CONTROL

1. I will have completed a successful radio equipment ground-range check before the first flight of a new or repaired model aircraft.

2. I will not fly my model aircraft in the presence of spectators until I become a proficient flier, unless I am assisted by an experienced pilot.

3. At all flying sites a straight or curved flightline must be established, in front of which all flying takes place. Only personnel associated with flying the model aircraft are allowed at or in front of the flightline. In the case of airshows, demonstrations, or competitions, straight lines must be established. An area away from the flightline must be maintained for spectators. Intentional flying behind the flightline is prohibited.

4. I will operate my model aircraft using only radio-control frequencies currently allowed by the Federal Communications Commission (FCC). Only individuals properly licensed by the FCC are authorized to operate equipment on Amateur Band frequencies.

5. I will not knowingly operate my model aircraft within three (3) miles of any preexisting flying site without a frequency-management agreement. A frequency-management agreement may be an allocation of frequencies for each site, a day-use agreement between sites, or testing which determines that no interference exists. A frequency-management agreement may exist between two or more AMA chartered clubs, AMA clubs and individual AMA members, or individual AMA members. Frequency-management agreements, including an interference test report if the agreement indicates no interference exists, will be signed by all parties and copies provided to AMA Headquarters.

6. With the exception of events flown under official AMA Competition Regulations rules, after launch, no powered model may be flown outdoors closer than 25 feet to any individual, except for the pilots and helpers located at the flightline.

7. Under no circumstances may a pilot or other person touch a model aircraft in flight while it is still under power, except to divert it from striking an individual.

8. Radio-controlled night flying is limited to low-performance model aircraft (less than 100 mph). The model aircraft must be equipped with a lighting system which clearly defines the aircraft's attitude and direction at all times.

9. The operator of a radio-controlled model aircraft shall control it during the entire flight, maintaining visual contact without enhancement other than by corrective lenses that are prescribed for the pilot. No model aircraft shall be equipped with devices which

allow it to be flown to a selected location which is beyond the visual range of the pilot.

FREE FLIGHT

1. I will not launch my model aircraft unless I am at least 100 feet downwind of spectators and automobile parking.
2. I will not fly my model aircraft unless the launch area is clear of all individuals except my mechanic, officials, and other flyers.
3. I will use an effective device to extinguish any fuse on the model aircraft after the fuse has completed its function.

CONTROL LINE

1. I will subject my complete control system (including the safety thong where applicable) to an inspection and pull test prior to flying. The pull test will be in accordance with the current Competition Regulations for the applicable model aircraft category. Model aircraft not fitting a specific category shall use those pull-test requirements as indicated for Control Line Precision Aerobatics.
2. I will ensure that my flying area is clear of all utility wires or

poles and I will not fly a model aircraft closer than 50 feet to any above-ground electric utility lines.

3. I will ensure that my flying area is clear of all nonessential participants and spectators before permitting my engine to be started.

SPECIALIZED SUPPLEMENTAL SAFETY CODES

Specialized supplemental Safety Codes exist for the following:

RADIO CONTROL COMBAT (#525)

GENERAL RADIO CONTROL RACING (#530)

GIANT SCALE RADIO CONTROL RACING (#515-A)

GAS TURBINE OPERATION (Note: Special waiver required) (#510-A)

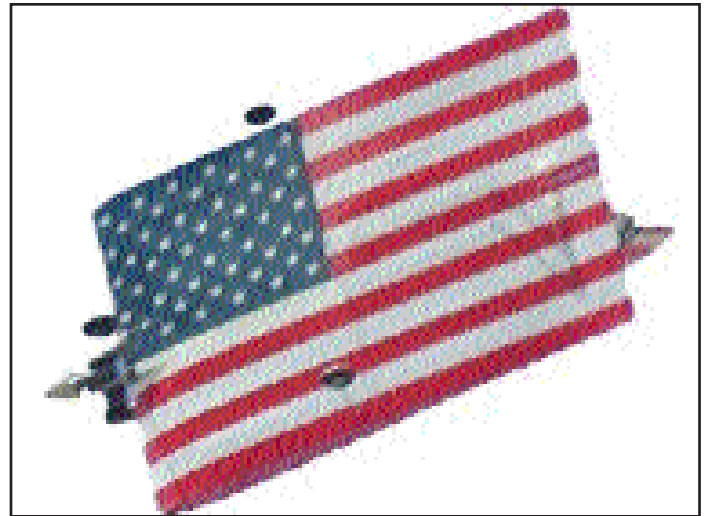
These special codes and appropriate documents may be obtained either from the AMA Web site or by contacting AMA Headquarters.

Other Unique and Fun Kits from FlyingThingZ



Witch Wilga

Wing Span: 72" • Weight: 5 - 7 lbs.
Channels: 2 - 3 Channel Radio
Engine: .46 - .51 two-stroke or .53 - .72 four-stroke



Flag Ship .40

Wing Span: 24.5" • Weight: 4.5 - 5 lbs.
Channels: 4 Channel Radio with Elevon Mixing
Engine: .40 - .60 two-stroke or .45 - .72 four-stroke



The Indy Sport is easy to build, even for people that don't do much building. Check our online manuals for details on this build project. The design is straight forward and only requires simple hobby tools and glues. A complete fully illustrated instruction manual guides you step by step through the building process. We recommend this kit to anyone who wants a different looking, easy to fly plane. Building is a weekends work and can be finished with your choice of covering and paints. The kit can be built and ready to fly in less time than many ARF's!

Just like any other airplane in your arsenal, simply apply throttle and pull back on the elevator once the car is up to speed. Fly the car slow to show it's sponsors with little fear of stalling. At high speeds the Indy Car tracks like it's on rails. With the elevons, virtually any aerobatic maneuver is possible.

With a few in the sky at the same time and a good announcer on the mic, you can duplicate those popular Sunday races from Daytona. Some club members are also using Indy Sport Cars for combat. With the Indy Sport Cars sleek looks and sharp lines, it will redefine the meaning of aerial racing.

Indy Sport Car \$99.99

Wing Span: 24.5" Chord: 29" Weight: 6.0-7.0 lbs.
Channels: 4 Engine: .46-.61 two stroke .52-.72 four stroke



While the Sky Cutter may look a little bit different, the construction techniques used are the same as most other planes. The average modeler will have no problem. The instruction manual details the whole build process step by step. To view our online manual, click here. An average modeler should have no problem assembling the Sky Cutter.

Take offs are a breeze as the Sky Cutter takes to the air with ease. Simply apply power and pull up slightly on the controllers once speed has built up. High speed or slow, the Sky Cutter can fly at any speed and still retain a constant and steady flight path. Landings require a little finesse as the Sky Cutter will come in at a high alpha angle. With a combination of power and elevator, it will touch down softly.

The Sky Cutter is fun and easy to build. With top quality laser cut balsa, plastic and plywood; beautiful CNC cut foam cores and parts, it is the ultimate high tech kit! All in all you can't find a plane that gets you more attention, is as fun to fly, and rare as this one.

Sky Cutter .40 V2 w/ Red Covering Kit \$139.99

Wing Span: 24.5" Chord: 29" Weight: 5.5 - 6.0 lbs.
Channels: 4 Engine: .46-.61 two stroke .52-.72 four stroke



Witch Wilga is easy to build, even for a beginner. Check our online manuals to get an idea of how simple she is to assemble. The design is straight forward and only requires simple hobby tools and glues. A complete fully illustrated instruction manual guides you step by step through the building process. The sail (wing) is all sewn and ready to fly, and the body, arms, legs and head are laser cut and ready for finishing and final assembly. The kit can be built and ready to fly in less time than many ARF's!

Witch Wilga is hand launched and takes to the sky easily. With the huge wing area, she will float and come to a virtual stop in mid air. She can do high speed dives and even loops. Since Witch Wilga is such a floater, anyone can easily fly her with just rudder and elevator controls. Landings are also easy, just remember that throttle is needed as the elevator has very little effect at low speeds.. She comes down slow and our landing gear will let you touch down, and protect your engine and prop.

Witch Wilga is a sure bet during Halloween or any other Fun Fly. She incredibly easy to assemble and fly. Watch as people are amazed at how steady she is in the air. One pilot even got a ticket for obstructing traffic when cars on the highway stopped in amazement just to watch Witch Wilga flying around.

Witch Wilga \$99.99

Wing Span: 72" Chord: 32" Weight: 6.0-7.0 lbs.
Channels: 3 Engine: .46-.61 two stroke .52-.72 four stroke



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