

# Skeeter 30 Phat Boy

*Electric Kit 3D Aerobatic Model*

## Instruction Manual



WING SPAN	30 in
WING AREA	315 sq. in
LENGTH	30 in
WEIGHT RTF	12-14oz.
MOTOR	300-350 class electric
BATTERY	3cell 750-1200mah LiPo

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

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## Introduction

**Remember: Take your time and follow the instructions to end up with a well-built model that is straight and true.**

If you have not flown this type of model before, we recommend that you get the assistance of an experienced pilot for your first flights. If you're not a member of a club, your local hobby shop has information about clubs in your area whose membership includes experienced pilots. In addition to joining an R/C club, we strongly recommend you join the AMA (Academy of Model Aeronautics). AMA membership is required to fly at AMA sanctioned clubs. There are over 2,500 AMA chartered clubs across the country. Among other benefits, the AMA provides insurance to its members who fly at AMA sites and events. Additionally, training programs and instructors are available at AMA club sites to help you get started the right way. Contact the AMA at the address or toll-free phone number below:

### Academy of Model Aeronautics

5151 East Memorial Drive

Muncie, IN 47302-9252

Tele. (800) 435-9262

Fax (765) 741-0057

Or via the Internet at: <http://www.modelaircraft.org>

## Protect your model, yourself and others. Follow these important safety precautions!

1. This airplane should not be considered a toy, but rather a sophisticated, working model that functions very much like a full-size airplane. Because of its performance capabilities, this plane, if not assembled and operated correctly, could possibly cause injury to yourself or spectators and damage property.
2. 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 unflyable model. In a few cases the instructions may differ slightly from the photos. In those instances the written instructions should be considered correct.
3. You must take time to **build straight, true and strong**.
4. You must use an R/C radio system that is in first-class condition, and a correctly sized engine and components (fuel tank, wheels, etc.) throughout the building process.
5. You must properly install all R/C and other components so that the model operates properly on the ground and in the air.
6. You must check the operation of the model before **every** flight to insure that all equipment is operating and that the model has remained structurally sound. Be sure to check clevises or other connectors often and replace them if they show any signs of wear or fatigue.
7. If you are not already an experienced R/C pilot, you should fly the model only with the help of a competent, experienced R/C pilot.
8. While this kit has been flight tested to exceed normal use, if the plane will be used for extremely high stress flying, such as racing, the modeler is responsible for taking steps to reinforce the high stress points.

**Note:** I, as the kit manufacturer, provide you with a top quality kit and instructions, but ultimately the quality and flyability of your finished model depends 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.

## Decisions you must make

### Motor Selection

There are several motors that will work well in this plane.  
I suggest the Torque 30T-980, up to the Torque 20T/1030.

### Radio Equipment

This plane will require a good 4-channel radio with 4 servos and a 4 or 5 channel micro RX.

## Additional Items Required

### Hardware

- ☐ Four-Channel Radio with four Servos (4 or 6 gram)
- ☐ "Y" Harness for Aileron
- ☐ Motor - See Motor Selection
- ☐ Propeller(refer to your motor's instructions for proper size)

### Building Supplies and Tools

- ☐ 2 oz. Pro CA – Thin
- ☐ 2 oz. Pro CA – Medium
- ☐ 1 – 2 rolls of covering material
- ☐ Covering iron and heat gun
- ☐ #1 Hobby Knife Handle
- ☐ #11 Blades

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For additional information, please  
contact:

[info@kalteisen.com](mailto:info@kalteisen.com)

or

Private Messages to Quicker  
on the ProBro website or  
RC Groups

## Kit Contents

Before starting to build, use the Kit Contents list to take an inventory of this kit to make sure it is complete and inspect the parts to make sure they are of acceptable quality. If any parts are missing or are not of acceptable quality, or if you need assistance with assembly, contact our support staff. When reporting defective or missing parts, use this contents list.

- Plastic cowl
- Plastic canopy
- 2 sets of plastic wheel spats
- Misc balsa and hardwood sticks
- Printed manual
- Printed plans
- Wire for landing gear
- Laser cut wood sheets, shown below

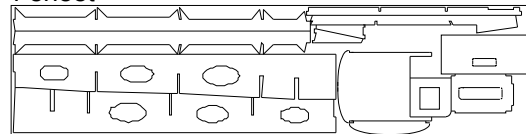
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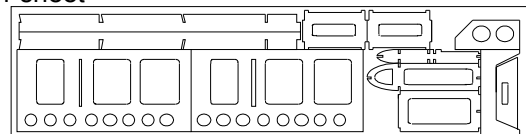
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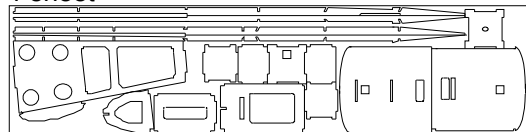
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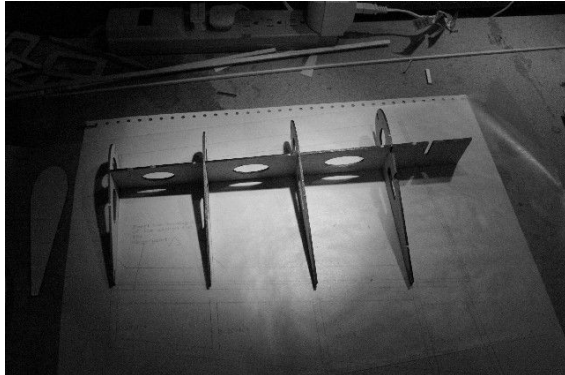
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*We are constantly improving our designs, so you may notice some slight differences in the parts in the pictures to the actual parts that you have been given in this kit.*

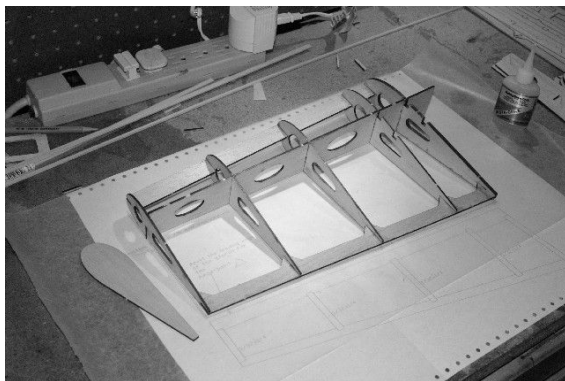
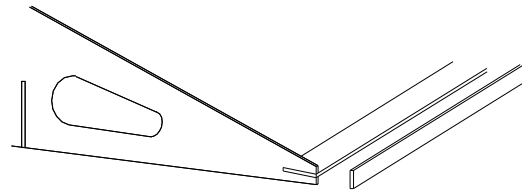
## Wing Build

Lay out all the pieces to one of the wings, then dry fit them together, fitting the ribs onto the spar, then slide in the leading edge and then the trailing edge. When all pieces are together and the wing is square you can wick in thin CA into each joint.

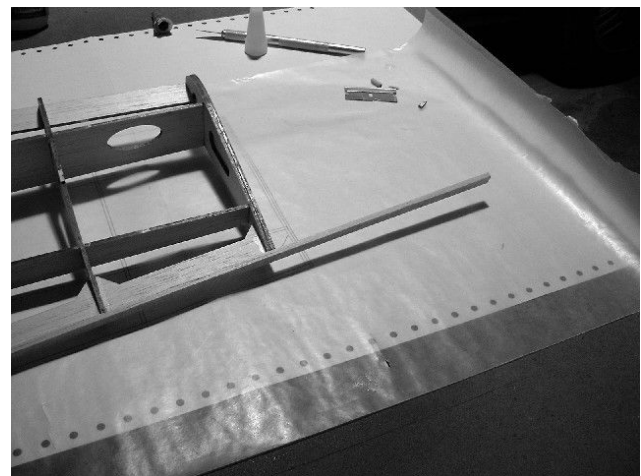


Glue the trailing edge strip to the trailing edge of the wing. Glue the entire long strip on, then trim it when the glue sets.

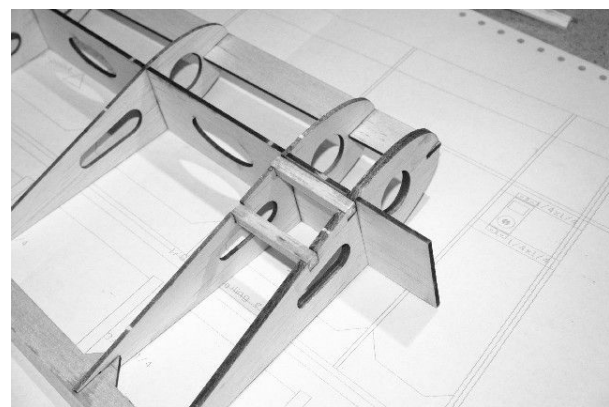
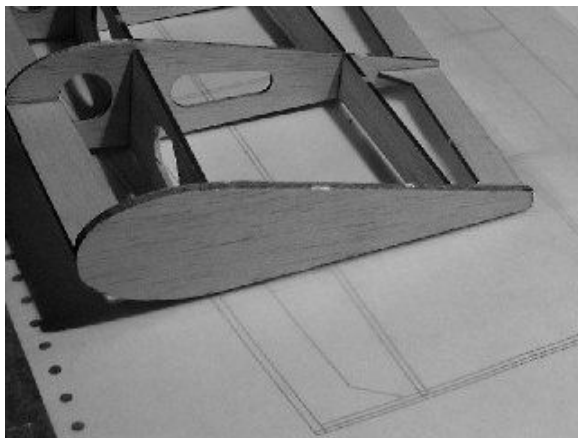
The stick is placed on the trailing edge standing on edge, not flat.



Glue on the end caps



Add the 2 balsa 1/4x1/4 center servo mount sticks.

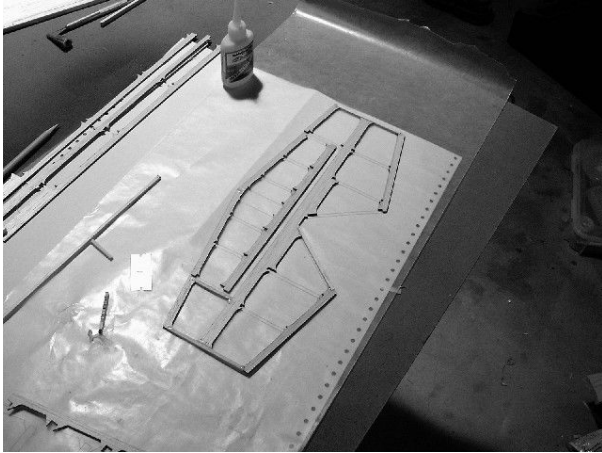


Repeat for the other wing.



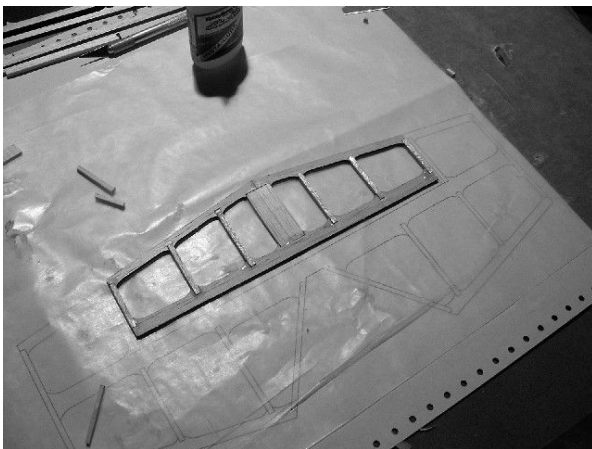
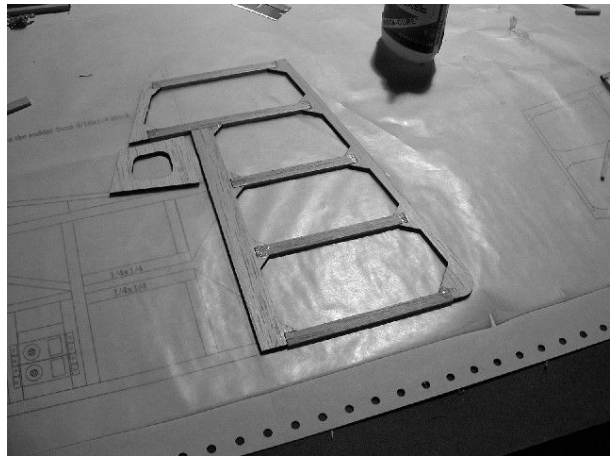
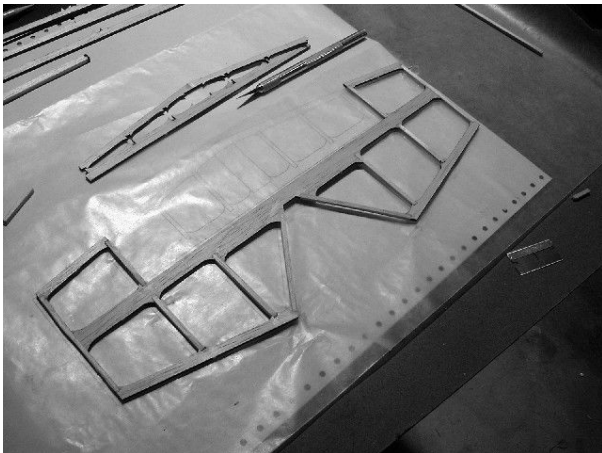
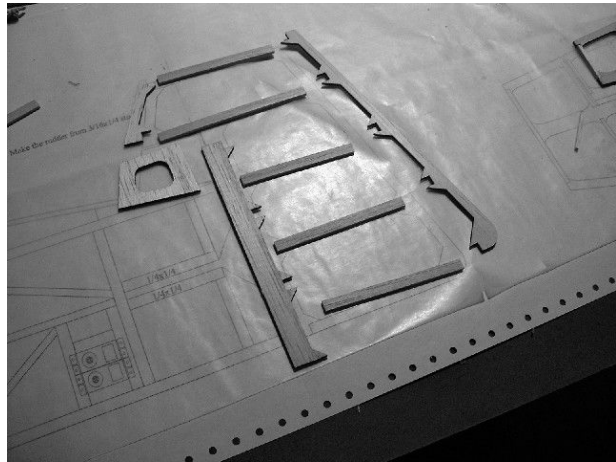
## Horizontal Stabilizer, Elevator and Rudder Build

Find and lay out the laser cut pieces of the HStab and elevator. Cut all the sticks now, fit them together and glue.



The rudder is built just like the HStab and elevator. Find and lay out the laser cut pieces, then cut the sticks, fit them together and glue.

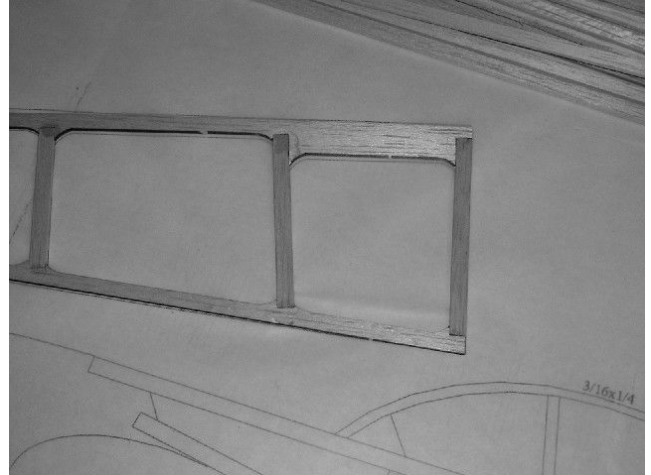
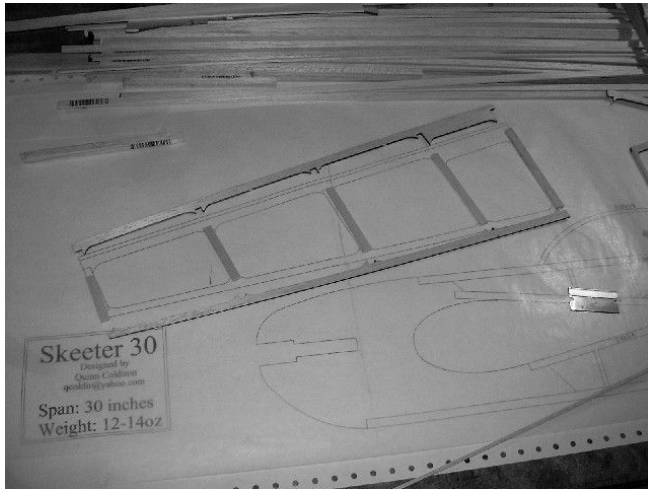
***An optional modification is to glue the laser cut VStab part to the rudder and not to the fuselage for more rudder area. I like to do this.***



The leading edge of the elevator and rudder will need to be sanded to a bevel edge for the hinge point.

## Aileron Build

Find and lay out the laser cut pieces of the 2 ailerons. They will be built one at a time. Cut all the sticks now, fit them together and glue. Repeat for the other aileron.



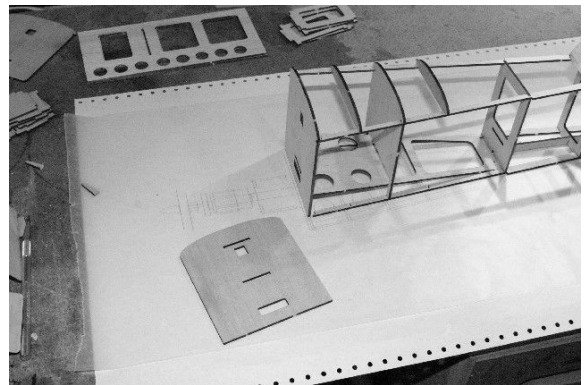
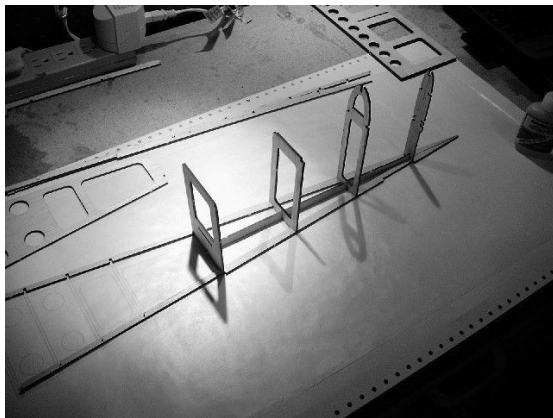
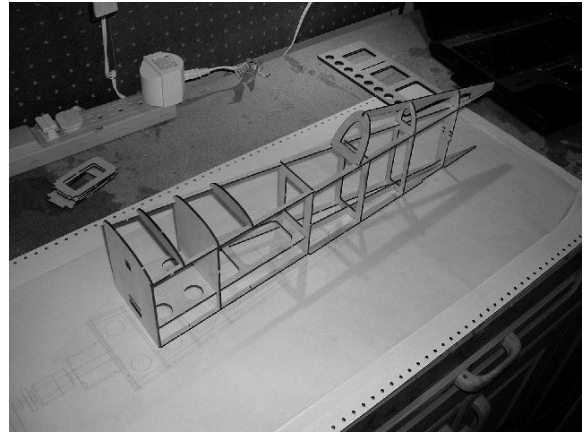
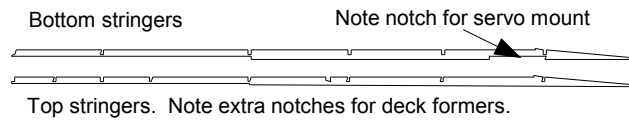
The leading edge of the ailerons will need to be sanded to a bevel edge for the hinge point.



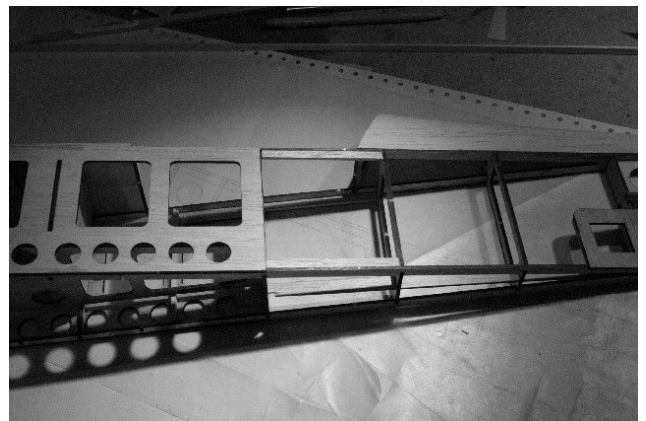
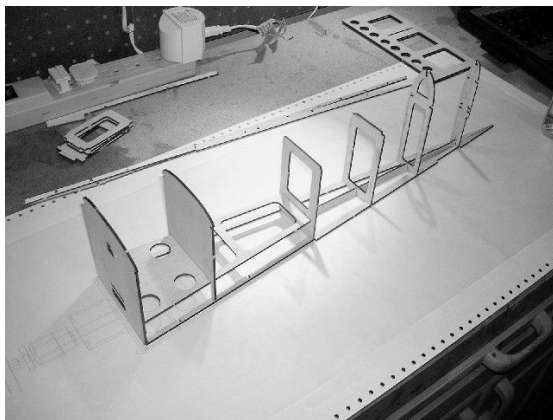
## Fuselage Build

Find and lay out all the pieces for the fuselage. Lay them all out on the plans. You should be able to dry fit most of the parts together. Do this to make sure you get all the parts together in the right direction.

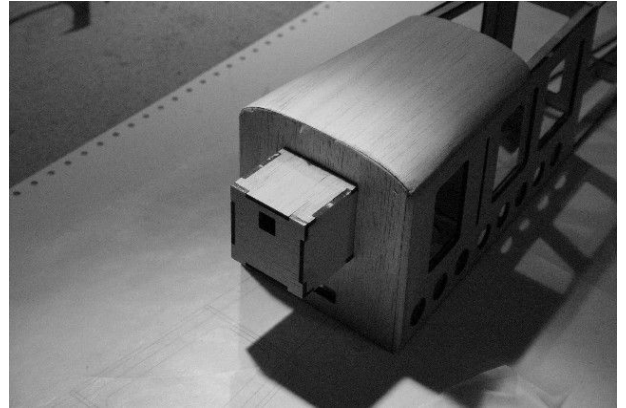
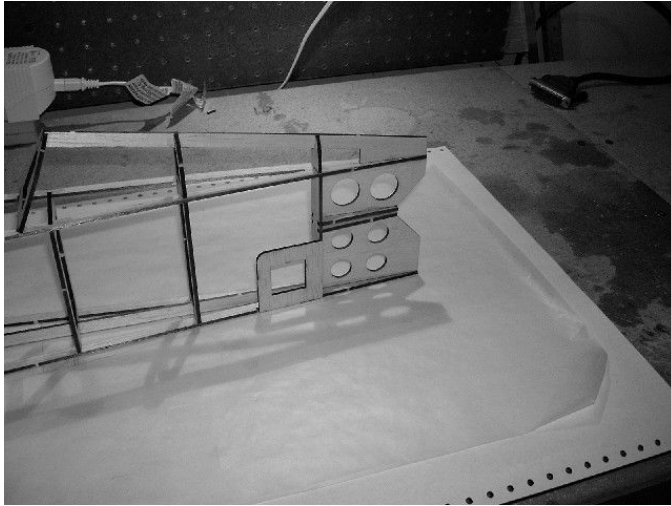
**NOTE: The center laser cut stick in the bottom of the fuse has a notch cut in it. THIS GOES IN THE AFT SECTION OF THE FUSE NEAR THE SERVOS.**



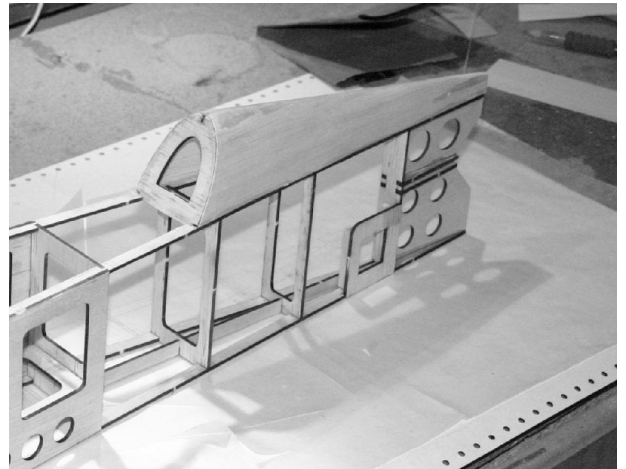
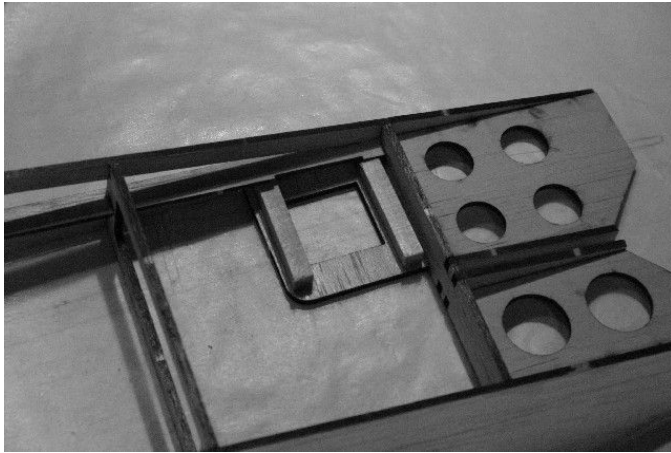
Put on the 2 side sheets. The little circles go to the bottom.



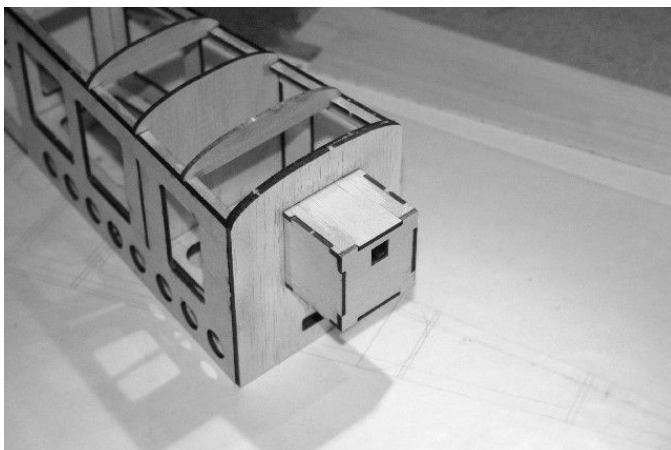
Add the tail parts and the tail servo mount part, and add 1/4x1/4 square hardwood rails for the servo screws



Sheet the turtle deck behind the cockpit area with 1/32 sheeting.



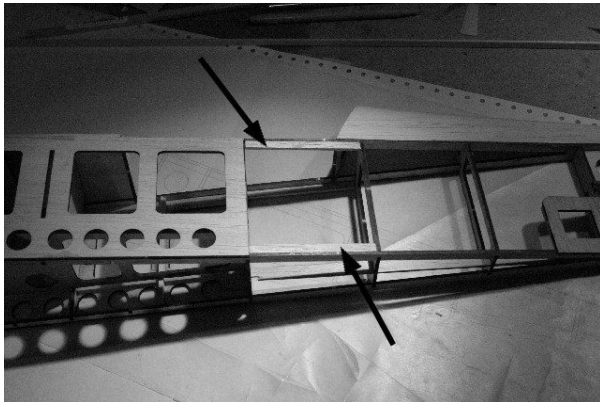
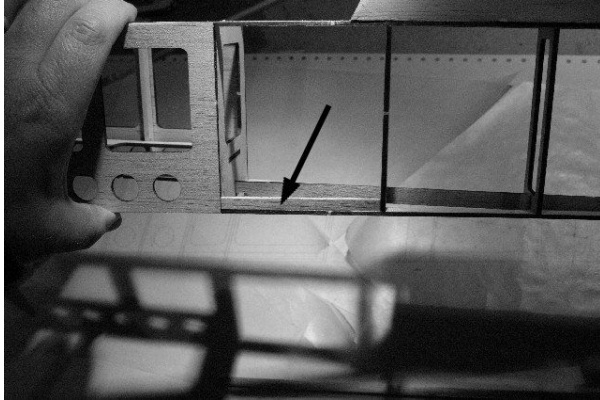
Sheet the front deck with 1/32 sheeting. Only go back to the 3<sup>rd</sup> bulkhead, which is the 2<sup>nd</sup> half bulkhead. ***Also, at this time you can jump ahead to the motor box if you want. This picture shows the gearbox style motor mount already installed.***



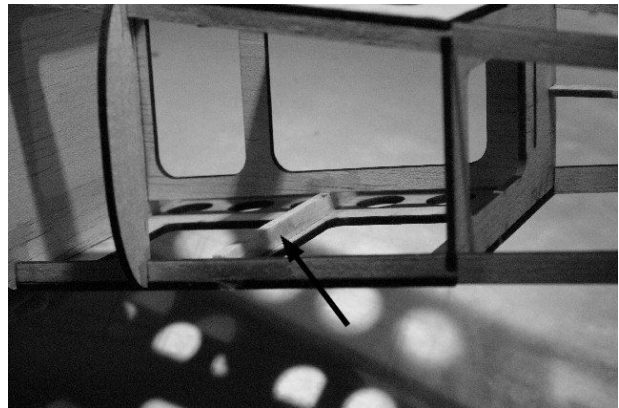


Additional reinforcements are now needed.

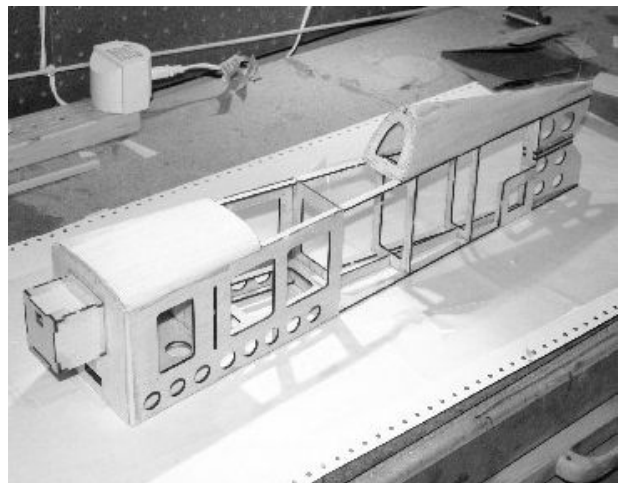
Add 4 balsa 1/4x3/32 supports to the main fuse stringers, just after the sheeting. This will help with the g forces and fuse stress.



Next, we need to add 2 internal supports to help with the stress that the wings will put on the center fuselage.



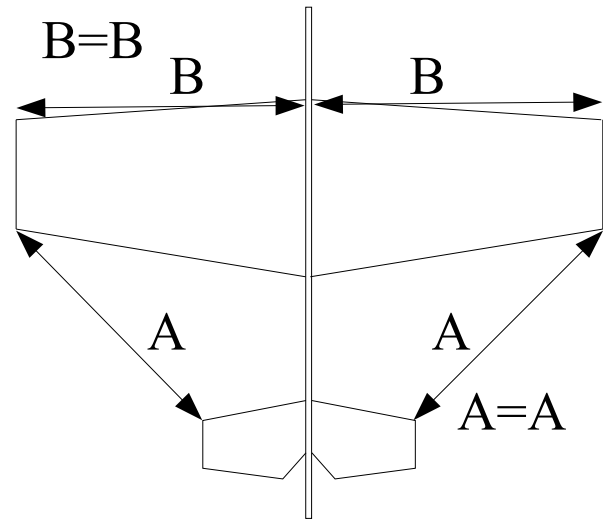
Finished fuselage



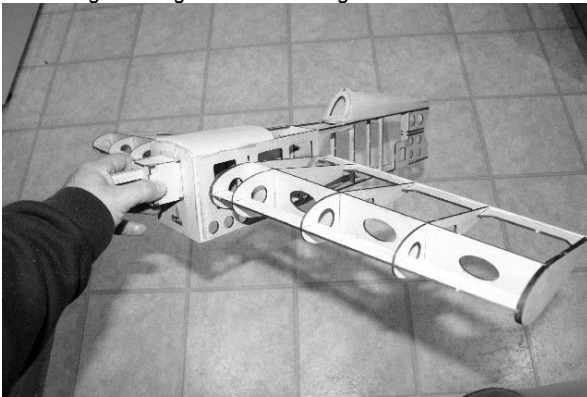
## Final Assembly and Covering

will not talk in detail on how to cover your plane. Many online resources can be found, and many different covering materials are available. I do recommend that you cover the individual pieces before the final assembly.

After covering the pieces it is time to mount the wing and horizontal stabilizer. I usually mount the main wing first. Slide it into the fuse and square it up by using a string or ruler to measure the distances to the wingtips from the fuselage and from the wingtips to the tail of the fuse. If everything matches and the wing is square then using a pen or pencil to mark the wing. The main wing is mounted by sliding the spar into the slot in the fuselage sheeting. Using a white glue, like Elmer's, generously drip glue onto the internal fuselage bulkhead where the spars will rest. Slide both wings into the fuse and adjust until they are level with each other and square to the fuselage. When happy with the fit, wick in thin CA in the spar slot to hold the wing in position until the white glue sets up. Do the same on the other side.

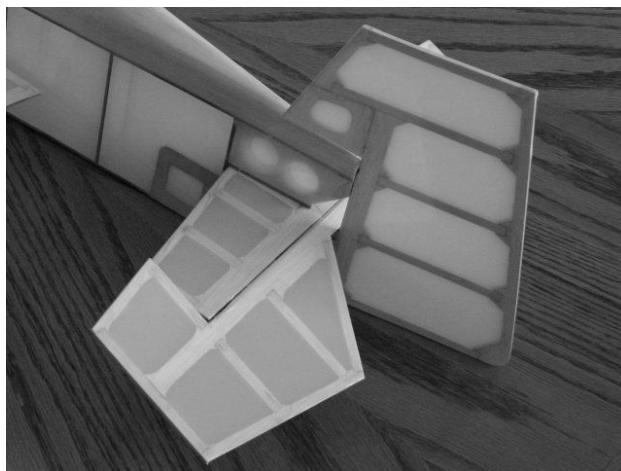


*Trial fitting the wings before covering*



Now, mount the horizontal stabilizer by trimming away the covering where it slides into the fuselage. Square it up and wick in the thin CA to mount.

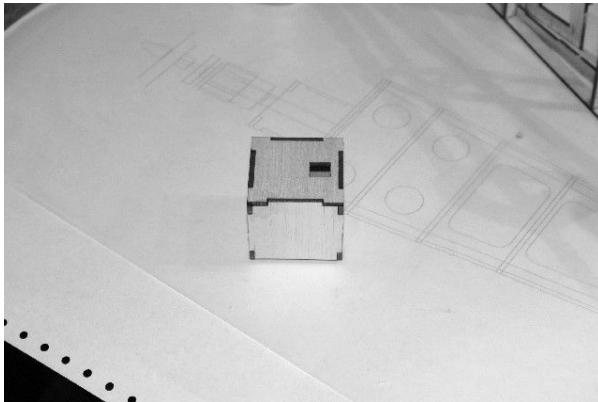
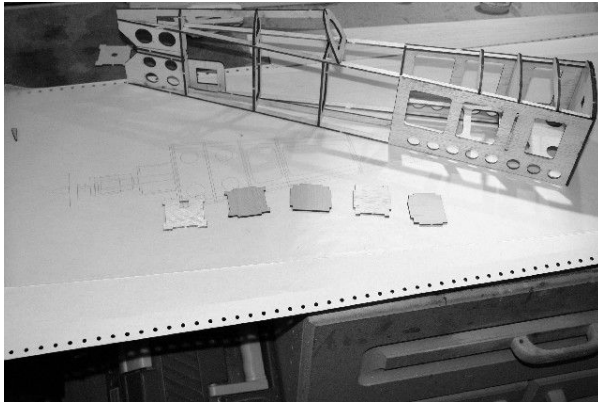
When you have mounted the wing and horizontal stabilizer you can install the control surfaces. The kit includes some plastic "Floppy Disk" hinges, made from floppy disk material. These can be installed in the same manner as traditional CA style hinges. I recommend 3 on each aileron, 3 on the rudder and 2 on each side of the elevator.



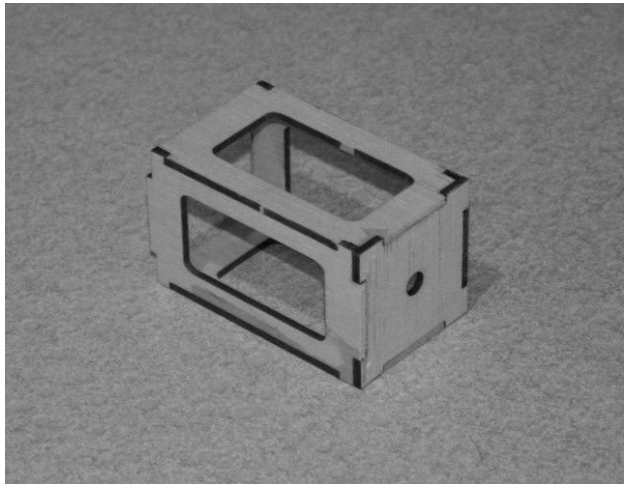
## Motor Installation

Select the proper motor mount box for your style of motor.

Gearbox motor mount box.



Outrunner motor mount box



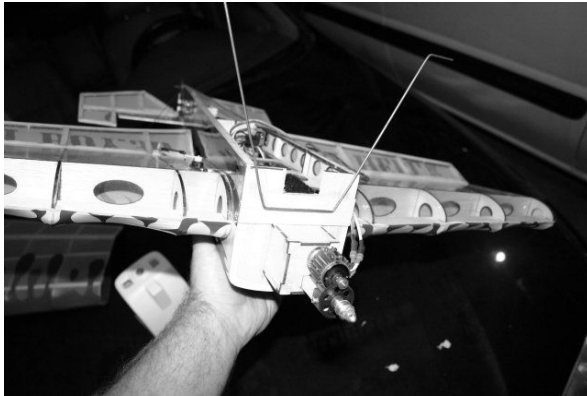
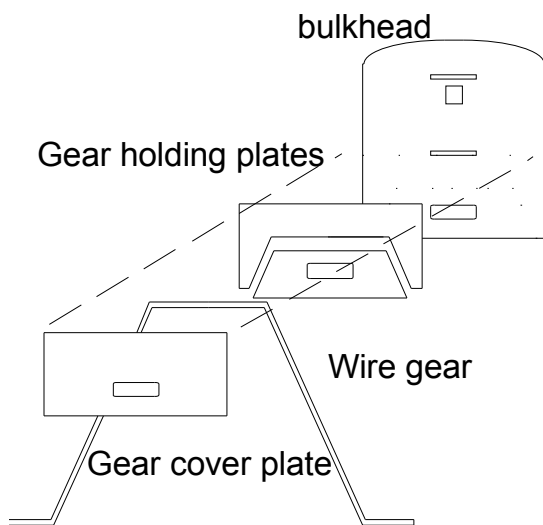
Gearbox motor box mounted on the airframe.



## Landing Gear

The Landing gear will be the last thing we install before we balance the model.

Bend the wire gear according to the template on the printed plans. Locate the wood mounting blocks, and glue them to the firewall.



Mount the wheels and wheel spats. The spats can be glued on using contact cement, such as Goop brand cement.

## Plastic Parts

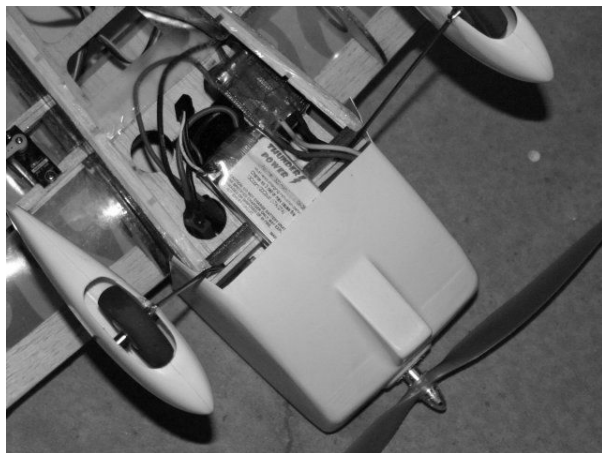
The cowl, canopy and wheel spats are vacuum formed from .030 styrene and PETG for a balance of light weight and strength. You will need to cut these parts free and trim them to fit your model. The parts are formed to the general shape of the factory build models, but since you have just custom built your Skeeter 30 Phat Boy, some variance will be evident.

The parts can be held on with screws or clear tape, but please keep in mind that weight is your first concern. Clear tape, such as Scotch tape or packing tape is your lightest option. All of your test models flew with these parts help on with either Scotch tape or clear packing tape.

The cowl and wheel spats are molded from .030 clear PETG, which is easily painted with most major brands of spray paint. Paint it on the inside for a high gloss finish that will not chip or crack. The canopy is formed from .030 PETG clear plastic and can be left clear, or painted from the inside for a high-gloss finish.

## Mount Battery

Mounting the battery and balancing the model go hand-in-hand. Position the battery in the radio bay in the belly of the plane in the proper location to set the CG where you want it. You may find that you need the battery to stick into the cowl area, just under the motor mount. The picture below shows this, and shows how to remove some of the firewall to allow the battery to stick into the cowl area. Use sticky-back Velcro to hold the battery in position. You may need to use a Velcro strap that loops through the circle holes in the mount plate for additional battery restraint.



## Balance Your Model

Note: This section is VERY important and must NOT be omitted! A model that is not properly balanced will be unstable and possibly unflyable.

1. The balance point (C.G.) is located **3.25 inches back from the leading edge of the wing**. This is the balance point at which your model should balance for your first flights. After initial trim flights and when you become more acquainted with your plane, you may wish to experiment by shifting the balance backward to change its flying characteristics. Moving the balance aft makes the model more agile with a lighter, snappier "feel" and often improves knife-edge capabilities. In any case, please start at the location we recommend.

2. With all parts of the model installed (ready to fly) and an empty fuel tank, lift the model at the desired balance point and observe the tail of the aircraft. If the tail drops, the model is "tail heavy" and you must add weight to the nose to balance the model. If the nose drops, it is "nose heavy" and you must add weight\* to the tail to balance the model.

Note: Nose weight may be easily installed by using a "spinner weight." Tail weight may be added by using "stick-on" lead weights.

## Laterally Balance Your Model

IMPORTANT: Do not confuse this procedure with "checking the C.G." or "balancing the airplane fore and aft." Now that you have the basic airplane nearly completed, this is a good time to balance the airplane laterally (side-to-side).

Here is how to do it:

1. Make sure the battery is installed.
2. With the wing level, lift the model by the engine propeller shaft and the fin post (this may require two people). Do this several times.

If one wing always drops when you lift the model, it means that side is heavy. Balance the airplane by adding weight to the opposite, lighter wing tip.

Note: An airplane that has been laterally balanced will track better in loops and other maneuvers