

# ROBINHOOD 25

## CONSTRUCTION MANUAL



**Specifications:** Wingspan: 51 in. • Wing Area: 400 sq in.  
Airframe Length: 33 in. • Weight: 3-3.5 lb.

### Using the Manual

Be sure to read each step thoroughly before you start the step. Test-fit the parts together to make sure they fit properly. If necessary trim to fit.

Beside each step you will notice a check box (or two). These are so you can keep track of your progress while building your kit. For steps that have two boxes, as in the construction of the left and right wing halves, these steps must be performed two times.

- Your **Old School Model Works** aircraft 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 model, if not assembled and operated correctly, could possibly cause injury to yourself or spectators, and damage to property.
- You must assemble this model according to the instructions. Do not alter or modify this model, as doing so may result in an unsafe or un-flyable model. In a few cases the instructions may differ slightly from the photos. In those instances the written instructions should be considered as correct.
- You must take time to build straight, true and strong.
- You must use a R/C radio system that is in first-class condition, a correctly sized power system and components (electronics, batteries, wheels, etc.) throughout the building process.
- You must correctly install all R/C and other components so that the model operates correctly on the ground and in the air. (Installation shown in the manual is a suggestion. You may have to adjust the mounting steps to accommodate the size of your radio equipment.)
- 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.



- If you are not an experienced pilot or have not flown this type of model before, we recommend that you get the assistance of an experienced pilot in your R/C club 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.
- While this kit has been flight tested to exceed normal use, if this model will be used for extremely high stress flying, such as racing, or if a power system larger than one in the recommended range is used, the modeler is responsible for taking steps to reinforce the high stress points and/or substituting hardware more suitable for the increased stress.

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



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# WARNING

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

***A Radio-Controlled 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 (Academy of Model  
Aeronautics) approved flying sites, following all  
instructions included with your radio, powerplant,  
electronics and batteries.***

- Inspect your model before every flight to ensure it is airworthy.
- Be aware of any other radio frequency user who may present an interference problem.
- Always be courteous and respectful of other users in your selected flight area.
- Choose an area clear of obstacles and large enough to safely accommodate your flying activity.
- Make sure this area is clear of friends and spectators prior to launching your aircraft.
- Be aware of other activities in the vicinity of your flight path that could cause potential conflict.
- Carefully plan your flight path prior to launch.
- Abide by any and all established AMA National Model Aircraft Safety Codes.

**IMPORTANT!!!** Two of the most important things you can do to preserve the radio controlled aircraft hobby are to avoid flying near full-scale aircraft and avoid flying near or over groups of people.



WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## INCLUDED ITEMS

### Wood parts included in this kit:

- 1 - LP1 - Laser Cut 1/8" x 6 x 24 sheet
- 1 - LP2 - Laser Cut 1/8" x 6 x 24 sheet
- 1 - LP3 - Laser Cut 1/8" x 6 x 24 sheet
- 1 - LP4 - Laser Cut 1/8" x 6 x 24 sheet
- 2 - BP1A & 2 - BP1B - Laser Cut 1/8" x 3 x 24 sheet
- 2 - BP2A & 2 - BP2B - Laser Cut 1/8" x 3 x 24 sheet
- 2 - BP3A & 2 - BP3B - Laser Cut 1/8" x 3 x 24 sheet
- 4 - BP4 - Laser Cut 1/16" x 4 x 24 sheet
- 5/16" x 5/16" x 36" balsa strips (2 pieces)
- 1/4" x 1/4" x 36" balsa strips (10 pieces)
- 1/4" x 1/2" x 36" balsa strips (1 piece)
- 3/16" x 3/16" x 36" balsa strips (6 pieces)
- 3/16" x 1" x 36" balsa strips (2 pieces)
- 3/16" x 3/8" x 36" basswood strips (6 pieces)
- 1 - 1/4" x 6" wooden dowel.

### Hardware parts included in this kit:

- 1 - Pre-bent landing gear (front)
- 1 - Pre-bent landing gear (rear)
- C/A type hinges for control surfaces
- 4 - control horns
- 4 - wheel collars 1/8" I.D.
- 4 - 1/8" plastic landing gear straps
- 8 - flexible plastic straps
- 2 - 1/4-20 x 1-1/2" wing bolts
- 10 - 2-56 x 1/2" machine screws
- 35 - 2-56 x 3/4" self tapping screws
- 4 - 4-40 x 3/4" bolts and matching t-nuts
- 1 - Clear plastic sheet for windscreen and windows
- 4 - 1/4" x 1/16" Neodymium disc magnets

### Other items included in this kit:

- 2 - Rolled plans (fuselage and wing)
- 1 - Construction Manual

## ITEMS NEEDED

### Hardware needed (not included in the kit)

For some of these items there is more than one option which will require a bit of decision making ahead of time. There isn't a right or a wrong choice, so choose the items that work best for you.

Our engine size recommendation range is a .25 two-stroke or an electric motor with similar power output, such as the E-Flite 25. Remember that the Robinhood 25 is a fun-scale model that is intended to fly at scale-like speeds, so prudent throttle management should be practiced.

Here is a list of additional parts needed to complete and fly this kit, all of which must be purchased separately. Again, we would recommended supporting your local hobby shop.

- Powerplant:
  - if Electric (.25-sized brushless motor, 60amp ESC, 3S LiPo)
  - if Glow (.20-.25 engine, 4-6 ounce tank, fuel tubing)
- Propeller
- Engine/Motor mount and mounting hardware
- Receiver - (4 channel minimum)
- Servos with 40-70 in./oz. of torque
  - 1 each for elevator and rudder; 1 for each aileron if using ailerons (4ch.); 1 for throttle (if using a glow engine)
- "Y" servo harness
- Pushrods (two 5" for ailerons, two 24" for elevator & rudder, one 12" for throttle if glow powered)
- Clevises for the pushrods (8 if electric, 10 if glow).
- 2 - 3" diameter wheels
- 1 - tailwheel assembly
- Covering

### Additional Required Building Tools and Adhesives

- Drill & assorted drill bits
- Hobby knife and new, sharp blades
- Sandpaper: coarse (80 or 100 grit) & medium (150-200 grit)

- Pencil or pen
- Ruler
- String (18" length)
- T-Pins
- Waxed paper
- Building board
- 6 and 30 minute epoxy
- Adhesives of your choice. We recommend thin and medium CA (cyanoacrylate) viscosities
- Epoxy brushes and mixing sticks
- Threadlocking compound
- Torch or soldering iron, solder and flux
- Canopy glue

## Before Starting Assembly

Closely inspect the supplied laser cut parts for damage. If you find any damaged or missing parts, contact us within 60 days from purchase.

When removing the laser cut parts from their sheets, you'll notice the parts are held in place by several small "tabs". These tabs are uncut pieces of wood and can sometimes make it difficult to remove a part. Rather than breaking and/or splintering the wood by forcing out the part, we recommend removing any laser cut parts from their sheets by using a hobby knife with a new, sharp blade. A quick cut of the tab will allow the piece to be removed with no damage. Sand any tab remainders flush with the part so there will be no problem aligning them later.

It's best to not remove parts from their sheets until they are needed. Refer to Appendix A of this manual as a reference to what all the laser cut parts look like and are called.

**Also, BP1, BP2, BP3 & BP4 sheets have been changed to 1/2 sheets. Combine a BP1A and BP1B sheet, it will give you the full BP1 sheet. The same for BP2, BP3 and BP4.**

For each step, we highly recommend that you dry fit the parts in each step first. Lightly sand as needed to ensure a good fit. Once you're satisfied with the fit, then and only then, glue the parts in position.

**IT IS VERY IMPORTANT THAT YOU ASSEMBLE THIS ROBINHOOD 25 KIT IN THE ORDER DESCRIBED. SKIPPING FORWARD IN THE STEPS COULD LEAVE YOU WITHOUT THE PROPER LENGTHS OF WOOD TO FINISH THE KIT. WE'VE INCLUDED ENOUGH WOOD TO EASILY COMPLETE THIS KIT, BUT YOU MUST TAKE CARE TO PROPERLY MEASURE AND NOT WASTE WOOD WHEN CUTTING.**

## Online Supplementary Photos

We realize that the smaller black-and-white photos in this manual might not show some of the steps as clearly as you might want. So we've anticipated this and made these photos available on our website. You can either scan the QR code or type this address into your browser:



[www.oldschoolmodels.com/mpics/rh25](http://www.oldschoolmodels.com/mpics/rh25)

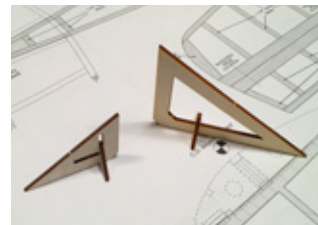
## Let's begin construction by working on the left (port) wing of your Robinhood 25.

### □ Prepare your work area

You'll need a flat building surface that is a minimum of 36" long. Position the left wing plan over the surface and tape into position. Tear off a length of waxed paper long enough to cover the left wing plan and tape that into position, over the plan.

### □ Step 1 - Alignment triangles

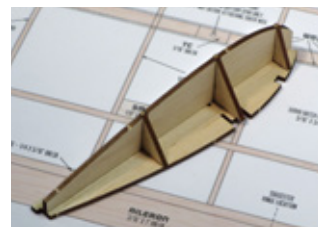
Pre-cut into LP3 are two triangles, one inside the other. These can be used to vertically align any of the parts in the construction of your Robinhood 25. LP3 also includes two foot pieces that can be used with the triangles to hold both triangles vertical hands-free.



We recommend using the smaller triangle in the wing construction as it's small enough to fit between the ribs.

### □ □ Step 2 - Wing Assembly (outer wing tip)

The wing panels are constructed from the outside (tips), in towards the center (root). Remove parts T1, T2, T3, R6 and R7 from one of the BP1 sheets. Slide T1, T2, & T3 in place on R7 to make the R7 assembly. Then, position R6 as shown here and gently push the R7 assembly into place. Note that the positioning of R6 is important as you will make a left and a right side. Once satisfied with the fit, glue everything in place.



### □ □ Step 3 - Wing Assembly (cut & drill lower spar)

The lower spar is a one of the 3/16 x 3/8" basswood strips. Position over the plan, measure the length and cut, leaving an extra 1/2" or so past the R1 position.

### □ □ Step 4 - Wing Assembly (drill lower spar)

Measure, mark and drill the 1/8" hole into the lower spar, as shown on the plans. Tap in a 4-40 t-nut firmly into this hole and then capture the nut in place by gluing one TC from



BP4. The hole in TC should be centered over the hole in the t-nut, and the edges of TC should align with the edges of the spar. Make sure to keep the glue out of the threads of the t-nut.

### □ □ Step 5 - Wing Assembly (position lower spar)

Making sure that the TC is facing upwards, attach the spar over the plans, using a couple small drops of medium CA instead of t-pins. Be sure it is aligned properly and is straight over its entire length. The alignment of this spar is critical as the rest of the wing panel is based off this single piece.





### ☐ ☐ **Step 6 - Wing Assembly (attach R6)**

Position the R6/R7 assembly in position. Make sure it is vertical and pin the rear tab to the building board. Do not glue yet.

### ☐ ☐ **Step 7 - Wing Assembly (attach first WB3s)**

Remove two WB3 sheer web pieces from one of the BP4 sheets. Fit as shown, one in the front of the spar, one in the rear. Make sure that the tabs in WB3 slide into the slots in R6 as this will guarantee that R6 is held in vertically. When satisfied with the fit, glue R6 and both WB3 pieces to the bottom spar.



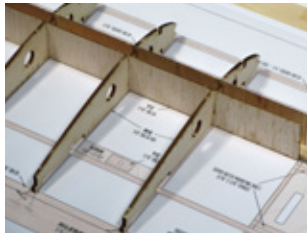
### ☐ ☐ **Step 8 - Wing Assembly (attach two R3)**

Now you'll need two R3 ribs from BP3 and four WB3 sheer webs from BP4. Position one R3 up against the ends of the WB3 pieces from the last step. Once located properly, pin the rib's rear tab to the board, then fit two WB3s in place. When satisfied with the fit and location, glue these pieces in place. Working your way inward, attach the other R3 and WB3 pieces in place.



### ☐ ☐ **Step 9 - Wing Assembly (attach two R5)**

Next you'll need two R5 ribs from BP3 and four WB3 sheer webs from BP4. Position one R5 up against the ends of the WB3 pieces from step 8. Once located properly, pin the rear tab to the board, then fit two of the WB3s in place. When satisfied with the fit and location, glue these pieces in place. Working your way inward, attach the other R5 and WB3 pieces in place.



### ☐ ☐ **Step 10 - Wing Assembly (attach two R4s)**

Now you'll need two R4 ribs from BP2 and four WB3 sheer webs from BP4. Position one R4 up against the ends of the WB3 pieces from step 9. Once located properly, pin the rear tab to the board, then fit two of the WB3s in place. When satisfied with the fit and location, glue these pieces in place. Working your way inward, attach the other R4 and WB3 pieces in place.



### ☐ ☐ **Step 11 - Wing Assembly (attach two hatch rails)**

Cut two 3" long pieces cut from the leftover 3/16" x 3/8" basswood cut for the bottom spar. These will be hatch mounting rails and slide into the holes in both R5 ribs, then are glued into position. Even if building as a 3 channel, we advise installing these.



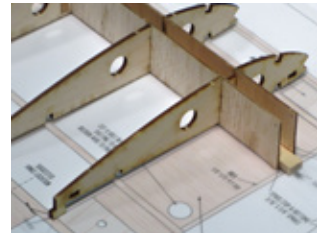
### ☐ ☐ **Step 12 - Wing Assembly (attach R3)**

Locate one R3 rib from BP3 and two WB2 sheer webs from BP4. Position R3 up against the ends of the WB3 pieces from step 10. Once located properly, pin the rear tab to the board. Lightly tack the R3 to the WB3 pieces. Once the glue has set, you will cut away the center of the R3 rib, leaving a box as shown in the photo. Then fit two of the WB3s in place. When satisfied with the fit and location, glue these pieces in place.



### ☐ ☐ **Step 13 - Wing Assembly (attach R2)**

Locate one R2 rib from LP4 and two WB1 sheer webs from BP4. Take care when removing R2 from the sheet as it has two slots pre-cut between where the spars would fit. These slots will allow the center portion of R2 to be removed later on, but make sure R2 remains as a single rib for now.



Position R2 up against the ends of the WB2 pieces from step 12. Once located properly, pin the rear tab to the board. Again, lightly tack the R2 to the WB2 pieces.

### ☐ ☐ **Step 14 - Wing Assembly (attach R2)**

Fit two of the WB1s (from BP4) in place. Note that the WB1s have a slight angle on one end and there is a small circle engraved. This angled side should face the inner (root) rib, with angle tapering upwards (circle on top). When satisfied with the fit and location, glue these pieces in place.

### ☐ ☐ **Step 15 - Wing Assembly (attach R1)**

Locate one R1 rib from LP4 and take care when removing it as it also has two slots pre-cut between where the spars would fit. These slots will allow the center portion of R1 to be removed later on, but make sure R1 remains as a single rib for now.



Position it up against the ends of the WB1 pieces from step 14. Once located properly, pin the rear tab to the board. Lightly tack the R1 to the WB1 pieces.

### ☐ ☐ **Step 16 - Wing Assembly (cut leading edge)**

Measure and cut one of the 1/4" square balsa strips to create the leading edge. Press it into position and glue to all the ribs.



### ☐ ☐ **Step 17 - Wing Assembly (cut upper sub-spars)**

Measure and cut a 3/16" square balsa strip to create the upper sub-spar. Press it into position and glue to all the ribs.

### ☐ ☐ Step 18 - Wing Assembly (cut trailing edge)

Measure and cut one of the 5/16" balsa strips to create the trailing edge. Glue to all the ribs.



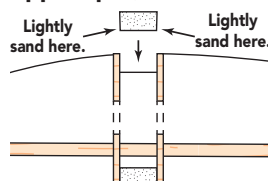
### ☐ ☐ Step 19 - Wing Assembly (create dihedral box)

Carefully cut away the center of the R1, R2 & R3 ribs, leaving a box as shown in the photo. Carefully sand the inside of the box so the edges are smooth and flush. This forms three sides of the dihedral box and needs to be smooth and free from edges so the dihedral braces will slide in smoothly when joining the wing halves later.



### ☐ ☐ Step 20 - Wing Assembly (cut upper spar)

Lightly sand the edges of the bottom face of the spar as shown in the drawing to the right. This will help the spar slide in easier.



This next part takes a bit of time, so we recommend against using an instant setting glue. If you are using CA, use a thicker formulation that gives you a bit of working time.

Measure and cut one of the 3/16" x 3/8" basswood strips to use as the upper spar. Apply glue to the top of the ribs where they will contact the upper spar.

Working from the tip rib (R6), carefully press the upper spar into position. This will be a tight fit and might require "wiggling" the spar from side to side to slip in-between the sheer webs. Be sure to press the spar completely into the slot in each rib, making it flush with the sheer webs.

Now wick thin C/A along the spar to sheer web joints (front and back) along the entire length of the spar

When fitting the upper spar to make the top of the dihedral box, be careful not to drip excess glue into the box formed between R3, R2 and R1.

### ☐ ☐ Step 21 - Wing Assembly (lower sub-spar)

Carefully remove the wing half from the board and flip it over. Measure and cut two of the 3/16" square balsa strips to create the lower sub-spars. Press them into position and glue to all the ribs.



### ☐ ☐ Step 22 - Wing Assembly (SMR install)

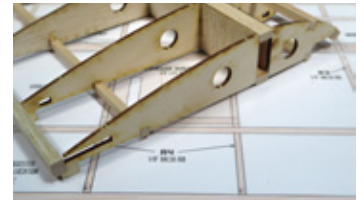
Locate one SMR from LP4 and one TC from BP4. Using the same technique as in Step 4 - install a 4-40 t-nut and TC on to SMR. Once ready, the SMR is glued into place spanning the



gap between the R5 ribs, with the TC towards the inside of the wing. Also add glue it to where SMR touches the lower sub-spar for a bit of extra support.

### ☐ ☐ Step 23 - Wing Assembly (sand R1 flush)

Take a bit of time to sand the inside edge of the R1 rib flush - removing excess length of the spars, sub-spars, leading and trailing edges.



### ☐ Step 24 - Wing Assembly (right wing construction)

Set the left (port) wing half aside and begin work on the right (starboard) wing half. Tape the right wing plan and fresh wax paper on your board. Then follow steps 1 through 23 to complete the right wing half. Once finished, then move on to step 25 to complete the wing assembly.

### ☐ Step 25 - Wing Assembly (install WH5)

Locate WH5 from sheet LP4 and the left wing panel. The tab on the end of WH5 will push into the slot in R2, and WH5 will then fit into the cutout on R1. Glue into position, but be careful not to get any excess glue on the outside of R1.



### ☐ Step 26 - Wing Assembly (install WH6)

Locate WH6 from sheet LP4. Again, using the left wing half, this piece will slide into the slot in R1, just to the front of the trailing edge. Push it through until the tab is located in the slot of R2. Glue to R2 and to the inside of R1, again making sure no glue is on the outside of R1.



### ☐ Step 27 - Wing Assembly (DH1/DH2 install)

Be sure to have some paper towels and rubbing alcohol handy to clean up any drips and/or fingerprints that might occur during this step.

Start with left wing panel and the center section. Locate two balsa DH2's from BP1 and DH1 from LP4. Note that these pieces only fit properly one way. Similar to the WB1's from earlier, the



DH2's have a small circle engraved in them, and this circle should be positioned to the top and center of the wing.

These three pieces form a "sandwich" of sorts with DH1 fitting between the DH2's, then sliding into the dihedral box in one of the wing halves. Test fit the parts into the slot as shown here. The brace should snugly slide into each wing exactly half way. Also, the WH5 and WH6 pieces should slide through R1 and into R2.

After test fitting, it's time to install it permanently with the help



of some 30 minute epoxy. Remove the DH2 and DH1 parts, then mix up enough 30 minute epoxy to Carefully spread a thin layer of epoxy on the inside of the dihedral box of one wing half, and both sides of one half of DH1.

Put a DH2 on the front and back of DH1 where you applied the epoxy. Be careful to note the circle's position on each DH2. Then slide the DH1/DH2 sandwich into the wing's box, making sure that DH1 is angled upwards, toward the top of the wing. Push it in so exactly half of DH1 is inside the wing half (both DH2's should be flush with R1 when seated properly).

Wipe off any excess epoxy with the paper towels and rubbing alcohol mentioned earlier in this step.

### ☐ Step 28 - Wing Assembly (join 2 wing halves)

Once the epoxy has cured from the previous step, it's time to join the two wing halves. Locate the other DH2's from BP1 and test fit them into the right wing half, as you did before.

Note that when you test fit the pieces, together, the wing halves should touch in the middle, with both R1 pieces lining up with no twists.

After test fitting, it's time to join the wing halves permanently with a bit more 30 minute epoxy. Remove the DH2 and DH1 parts and apply the epoxy as you did in the previous step, but also coat the joining face of R1.

Now repeat the process you used in the previous step to attach the DH1/DH2 sandwich in the right wing's box.

Any twist in the alignment of the panels cannot be fixed after the epoxy cures and will lead to a poor flying model. As the two wing halves are close to mating, be sure that the tabs on WH5 and WH6 slide into the tabs on R2.

Using a couple of clamps, hold R1 ribs firmly together between the two wing halves. Wipe off any excess epoxy and remove the clamps only after the epoxy has fully cured.

Also be sure to add glue to WH5 and WH6 where they key into the R2's.

### ☐ Step 29 - Wing Assembly (install WH6 and WH7)

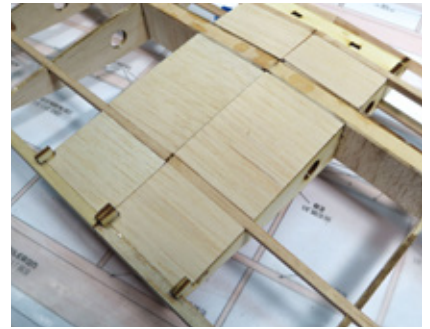
Once the epoxy has cured from the previous step, position the wing with the top up and the trailing edge closest to you. Locate the 4 WH7's from the BP2 sheets. Glue one WH7 on top of WH6 on the left side of center, making sure that the holes line up, then one on the right. Now glue a second WH7 on top of the first one on the left side, then one on the right.



### ☐ Step 30 - Wing Assembly (center sheeting)

Now the center sheeting is applied to the underside of the wing's center section.

Flip the wing so the bottom is facing up and apply the sheeting from the center (R1) out to R2, one half at a time. If you look closely you'll find that R1 and R2 are recessed slightly to allow this sheeting to fit flush with all the spars and trailing edge.



Using the surplus 1/16" sheeting from the BH4 sheets, measure and cut the sheeting to cover the opening between the R1 and R2 ribs. You will need 3 pieces per side:

- Two front sheets - these cover the gap between the lower-front sub-spar and the front sheer webs
- Two mid sheets - these cover the gap between the rear sheer webs and the lower-rear sub spar.
- Two rear sheets - these cover the gap between the lower-rear sub spar and the trailing edge.

The rear sheets will have to be notched to clear the two tabs at the back of R1 and R2.

Once satisfied with the fit, glue each of these sheeting pieces into position.

If building as a 4ch model (with ailerons) the mid sheets will need a hole cut into each of them to allow the aileron extension wires to exit the wing (see plans). You can cut these now, or after the sheets are installed.

### ☐ Step 31 - Wing Assembly (remove tabs)

Remove the rear tabs on each of the ribs. The balsa tabs will typically snap off, depending on the amount of glue used to attach the trailing edge. The tabs on the plywood ribs (R1 & R2) will need to be sawed/sanded to be removed.

### ☐ Step 32 - Wing Assembly (sanding)

It's time sand the wing to the proper shape. Start with a coarser grit (80-100) to round the leading edge, shape the trailing edge, and round the edges of the wing tips. Take care not to remove too much, too quickly - you can always take more off, but you can't put it back on!

Switch to a finer grit (150-200) to smooth out the entire wing.

### ☐ Step 33 - Wing Assembly (attaching WH1-WH4)

The front of the wing is held in place with a unique assembly that we're going to build now. Position the wing with the bottom surface up, and the leading edge facing you. Also locate both WH1's, the WH2, WH3



and WH4 from the LP4 sheet. Also, cut a 1-1/4" length from the included 1/4" dowel and round off one of the dowel's ends. These pieces all interlock together so we suggest dry fitting these components the first time.

In the rounded part of the WH1's and WH2 is a 1/4" dia. hole. Slide the non-rounded end of the 1/4" dowel through one of the WH1's and push it through so it extends a 1/4" out of the opposite side. Next push the WH2 on, and finally the other WH1. By lining up the WH1's and the WH2, you'll see that their tabs will now slide into the slots in WH3. Once WH3 is in position, the remaining tabs on WH2 can now be slid into WH4, and then into WH5, already installed on the wing.

After you see how all these pieces go together, disassemble them and re-assemble using glue. Make sure that the WH1's and WH2 pieces are perfectly in line before the glue sets. Then make sure that WH3 fits flat against WH4, and in turn, WH4 fits flat against WH5 as you're gluing them together.

#### ☐ **Step 34 - Wing Assembly (sanding)**

You'll need to take a bit of the edges off the corners of WH3, as it protrudes a bit from the curvature of the wing rib R2 on each side. Also, do not sand down any of the WH1/WH2 assembly as the wood that protrudes from the bottom of the wing's surface is needed for strength.

#### ☐ **Step 35 - Wing Assembly (Optional strings)**

This step is optional, but could make the aileron servo installation a bit easier, once the wings are covered. Cut two 12" lengths of string, one for the left wing, and one for the right. Remember that hole cut in the lower sheeting, middle section in step 30? Starting with the left wing panel, push the thread through this hole, then through the circular holes in R2, R3, and R4. The string will now extend from the servo bay, out through the bottom of the wing. Tape both ends of the string so they won't pull out. Do the same for the right panel.



**This completes assembly of the Robinhood 25 wing.  
Now it's time to start construction of the fuselage.**

#### ☐ **Prepare your work area**

Now tape the fuselage side plan and a fresh piece of waxed paper on your building board.

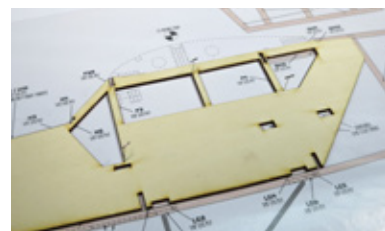
#### ☐ **Step 36 - Fuselage Assembly**

The fuselage sides are made by first constructing the right side, then building the left side on top of the right side. Because of this, you'll need to pay attention to where pins are used during the construction of the right side, so they won't interfere with aligning the left side parts.

#### ☐ **Step 37 - Fuselage Assembly (FRS)**

Construction starts with the right side of the fuselage. Locate FRS from sheet LP1. Pin FRS in position over the plans, but do not pin

through the wood. Instead, use a few pins around the outside of FRS as shown in the photo. Mark the side facing up as "right" in small letters, as a reference for later.



#### ☐ **Step 38 - Fuselage Assembly (top longeron)**

Measure and cut the top longeron from 1/4" square strip. Pin in position and glue to FRS.

#### ☐ **Step 39 - Fuselage Assembly (bottom longeron)**

Take one of the complete 1/4" square strips and begin to pin in place to form the bottom longeron, working from the tail of the fuselage, forward. This piece is curved and will require several pins along its length to hold in place. This piece ends at F3. Once in position, glue to FRS.



#### ☐ **Step 40 - Fuselage Assembly (vertical supports)**

Measure and cut the vertical support pieces from 1/4" square strip, using shorter lengths first. Take care to match the angles for a good fit. Pin these in position and glue into place.

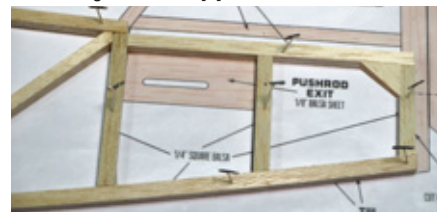


#### ☐ **Step 41 - Fuselage Assembly (diagonal supports)**

Measure and cut the diagonal support pieces from 1/4" square strip, using shorter lengths first. Take care to match the angles for a good fit. Pin these in position and glue into place.

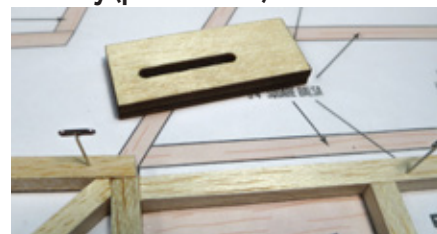
#### ☐ **Step 42 - Fuselage Assembly (stab support)**

Measure and cut the horizontal support for the stab and its two vertical supports from 1/4" square strip. Pin in position and glue into place. Remove two G gussets from BP3. Glue together to form a 1/4" thick piece. Glue in place.



#### ☐ **Step 43 - Fuselage Assembly (pushrod exit)**

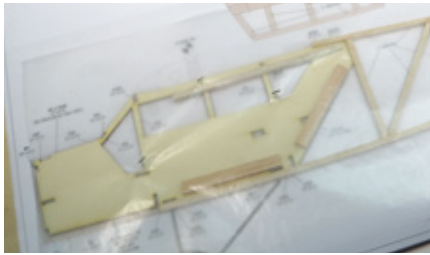
Locate two of the EXIT pieces from sheet BP2. Glue one on top of the other, then pin in position and glue into place.





#### ☐ **Step 44 - Fuselage Assembly (prepare for left side build)**

As mentioned before, the left side is built on top of the right side you've just assembled. To do this, make sure that all that make up the left side pieces will be able to lay flat against the assembled right side. This might mean removing pins that held some of the right side pieces to the building board. Typically this can be done quite easily and the pieces will still be held in place by the already cured glue.

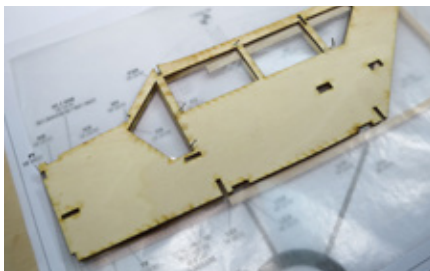


You should have several leftover pieces of the 1/4" square strip and laying around. Place several of these on top of FRS as shown in the photo. These will be the spacers necessary to locate FLS properly, 1/4" above FRS.

Also, cut a sheet of waxed paper to cover the right side and place it in position. This will protect the right side as you build the left side.

#### ☐ **Step 45 - Fuselage Assembly (FLS)**

Building the left side starts by locating FLS from sheet LP3. Pin FLS in position over the plans, but do not pin through the wood. Instead, use a few pins around the outside of FLS as shown in the photo. Note that FLS is slightly longer than FRS around the firewall, to build in a bit of right thrust. Because of this, to properly line up FLS, use the window cutouts and the rear portion as reference.



#### ☐ **Step 46 - Fuselage Assembly (top longeron)**

Measure and cut the top longeron from 1/4" square strip. Pin in position and glue to FLS.

#### ☐ **Step 47 - Fuselage Assembly (bottom longeron)**

Take a complete 1/4" square strip and begin to pin in place to form the bottom longeron. Again, this piece is curved and will require several pins along its length to hold in place. This piece ends at F3. Once in position, glue to FLS.

#### ☐ **Step 48 - Fuselage Assembly (vertical supports)**

Measure and cut the vertical support pieces from 1/4" square strip, again using shorter lengths first. Take care to match the angles for a good fit. Pin these in position and glue into place.



#### ☐ **Step 49 - Fuselage Assembly (stab support)**

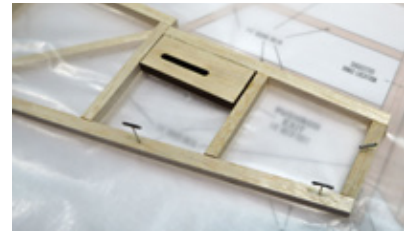
Measure and cut the horizontal support for the stab from 1/4" square strip. Pin in position and glue into place.

#### ☐ **Step 50 - Fuselage Assembly (diagonal supports)**

Measure and cut the diagonal support pieces from 1/4" square strip. Take care to match the angles for a good fit. Pin these in position and glue into place.

#### ☐ **Step 51 - Fuselage Assembly (pushrod exit)**

Once the glue has cured, remove the left side and flip it over. Locate the remaining two EXIT pieces from sheet BP2. Glue together, then pin in position and glue into place so it is flush against the left side. Remove two G gussets from BP3. Glue together to form a 1/4" thick piece. Glue in place. (Not shown for clarity.)

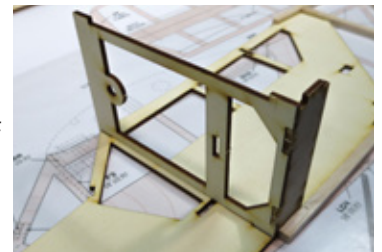


#### ☐ **Step 52 - Fuselage Assembly (right side)**

Place the right side of the fuselage back on your work surface, in the same position as it was when you assembled it.

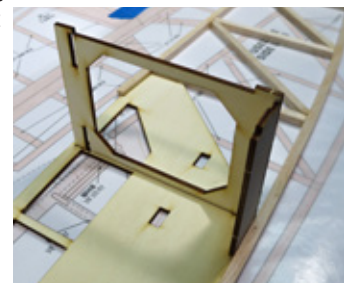
#### ☐ **Step 53 - Fuselage Assembly (F3 and LG1)**

Locate F3 from sheet LP2 and LG1 from sheet LP1. You'll see that the notched side of LG1 fits into the slots on the bottom of F3. This in turn will fit into the fuselage as shown on the plans. Also note that LG1 is slightly tapered, so when F3 and LG1 are glued in place, F3 will not be perfectly vertical. When satisfied with the location and fit of these pieces, glue into place on FRS.



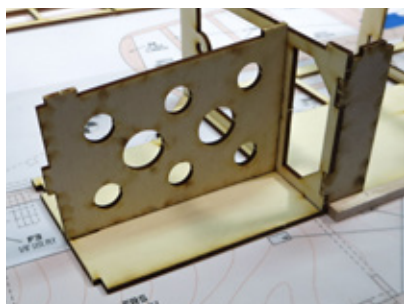
#### ☐ **Step 54 - Fuselage Assembly (F4 and LG4)**

Locate F4 and LG4 from sheet LP2. As in the previous step, LG4 fits into the notches on the bottom of F4, then into the fuselage as shown on the plans. When satisfied with the location and fit of these pieces, glue into place on FRS.



#### ☐ **Step 55 - Fuselage Assembly (TF)**

Locate TF from sheet LP2. You'll notice a small circle engraved in the corner on the shorter end of the piece. This designates the front and right side of TF. Slip the tab in the rear of TF into the slot of F3, then the tabs in the right side of TF into the corresponding





slots on FRS. TF must fit flush with the fuselage side, and former F3. When satisfied with the location and fit of TF, glue TF to FRS, but not to F3 at this time.

#### ☐ **Step 56 - Fuselage Assembly (attach left side)**

Now the left side of the fuselage is glued in place. The tabs from F3, LG1, and TF should all slide into the slots in the left side. (Don't worry about fitting F4 and LG4 just yet.)

When properly fitted, the two sides will taper in towards the nose.

When satisfied with the fit of all these tabs, glue the left side into place, and glue TF to F3.



#### ☐ **Step 57 - Fuselage Assembly (attach left side)**

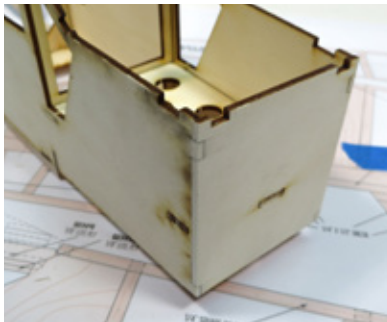
Locate F3A from sheet LP2. This glues in place at the top of F3, on the backside to strengthen the part. Make sure it is properly aligned, then glue in place.

#### ☐ **Step 58 - Fuselage Assembly (attach F4 and LG4)**

Once the glue has dried from the previous step, it's time to mate up the tabs in F4 and LG4 to fit into the left side of the fuselage. This requires bending both sides in towards each other with a little pressure. When satisfied with the fit of the tabs, glue these parts in place.

#### ☐ **Step 59 - Fuselage Assembly (attach F2)**

Locate F2 from sheet LP2. This fits on to the front of the fuselage, making up the back half of the firewall. The slots in F2 fit into the tabs on the left and right fuselage sides. The slot in the center of F2 is where the tab on the end of TF slides into. F2 should fit flush all the way around.



When satisfied with the fit, glue in place.

#### ☐ **Step 60 - Fuselage Assembly (F2 support)**

From a bit of left over 3/16" x 3/8" x 36" basswood strip, cut two 1-1/4" pieces and two 1" pieces. These will be used to support the joint between F2 and the fuse sides.

The longer pieces are used above TF, up against the corner where F2 and the fuse sides meet. The shorter pieces are used below F2. We recommend using epoxy to glue these pieces in.



#### ☐ **Step 61 - Fuselage Assembly (attach H2 or H2A)**

Now is the time to make a choice. Will you hold on the front hatch with a couple of screws or with magnets? There's not a right or wrong answer and we've included parts for either scenario.

If you're using screws, locate both H2As from sheet LP1. If you're using magnets, locate both H2s from sheet LP1.

Whether you choose H2 or H2A, they are installed the same way. These are placed just behind F2, on each side of the top of the fuselage. When satisfied with the fit of the tabs, glue these parts in place. We recommend installing the magnets in these pieces before gluing them in position.



If you choose to use wood screws, you can increase the thickness of the H2As by gluing a couple of H2Bs on the underside of H2A. Make sure to glue the same amount on both sides.

We chose to use 2-56 machine screws with matching 2-56 t-nuts. The H2Bs are not needed in this case. Drill out the holes in both H2As and press the t-nuts in from the backside.

#### ☐ **Step 62 - Fuselage Assembly (attach H4 and H5)**

Locate H4 and H5 from sheet LP1. H5 goes across the fuselage, making the bottom frame of the windscreen. Refer to the photo as it should be installed the correct way.

Once H5 is in place, H4 is glued to the back of H5, making for a stronger cross-brace.



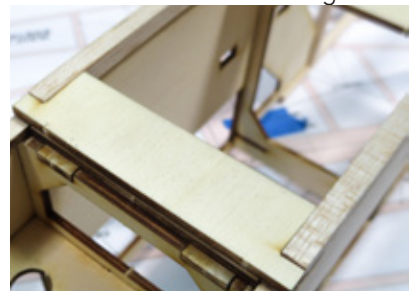
#### ☐ **Step 63 - Fuselage Assembly (BF)**

Locate both BF pieces from sheet BP2. Flip the fuselage over as these are glued to the underside of the fuselage sides, in the space between the bottom longerons and the back of F2. They should also be fitted so they are flush with the fuselage sides. When satisfied with the location and fit of these pieces on each side of the fuselage, glue them in place.

#### ☐ **Step 64 - Fuselage Assembly (LG2, LG3)**

While the fuselage is upside down let's do a bit more work underneath.

Locate LG2 and LG3 from sheet LP1. LG2 is glued to LG1, between the bottom longerons on each side of the fuse. LG3 will glue on top of LG2, but requires you to notch out a bit of each bottom longeron to clear the LG3's tabs. Be careful to only cut out as much as needed. Test fit LG3 first, then when the fit is good, glue it into place.



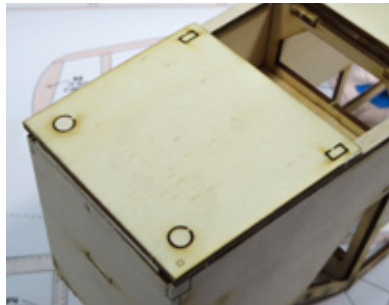
### ☐ Step 65 - Fuselage Assembly (LG5, LG6)

Locate LG5 and LG6 from sheet LP2. LG5 is glued to LG4, between the bottom longerons on each side of the fuse. LG6 will glue on top of LG5, but requires you to notch out a bit of each bottom longeron to clear the LG6's tabs, similar to what you did in the previous step. Test fit LG6 first, then when the fit is good, glue it into place.



### ☐ Step 66 - Fuselage Assembly (H1 or H1A)

Remember what choice you made to hold on the hatch - screws or magnets? Well this choice also comes into play with the next step. Locate either H1 or H1A from LP1. If you chose screws, you'll need H1 for this step. If magnets, you'll need H1A.



Note - Don't punch out the slots and circles cut into the piece you choose. They should remain in place for this step. Each piece has a circle engraved on it noting the front, right corner. Line up the part on the bottom of the fuselage, flush with sides of the fuselage, and with F2. Check the fit and once satisfied with the alignment, glue it into place.

### ☐ Step 67 - Fuselage Assembly (1/8" sheeting)

Using a bit of the leftover 1/8" sheet from BP3, measure and cut a piece of 1/8" sheet to cover the gap between the back of H1 and the front of LG3. This should be cut so the grain is crossway (running from the left to right sides). Check the fit and once satisfied with the fit, glue it into place.



### ☐ Step 68 - Fuselage Assembly (F1)

Locate F1 from sheet LP2. This is the front half of the firewall and is glued into place by laminating it to F2 (using epoxy). The bottom should be flush with the H1 (or H1A piece you installed the last step, and it should also be flush with the sides of the fuselage. Coat the front of F2 with a thin layer of epoxy and clamp F1 in place until the glue fully cures.

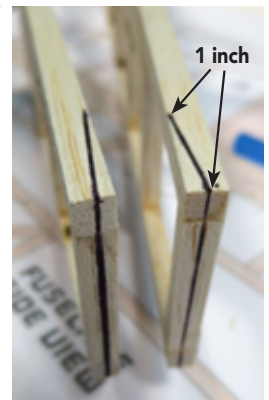


### ☐ Step 69 - Fuselage Assembly (creating rear taper)

Work now moves to the rear of the fuselage to join the fuselage sides so they taper together. To do this, you'll need to sand away

equal amounts of balsa on the insides of both sides.

Using a ruler and straight-edge, measure and draw the guides as shown in the photo (1/2 way on the verticals, tapering in about 1" down the fuselage. These marks will show exactly how much wood should be sanded away on the insides of each fuselage side, so they will taper correctly. Although you can cut this with a saw or hobby knife, sandpaper makes quick work of this, but use caution not to remove too much.



### ☐ Step 70 - Fuselage Assembly (joining rear)

Once the rear of each side has been properly tapered, they can now be glued together. Make sure both sides are in perfect alignment before the glue sets up.

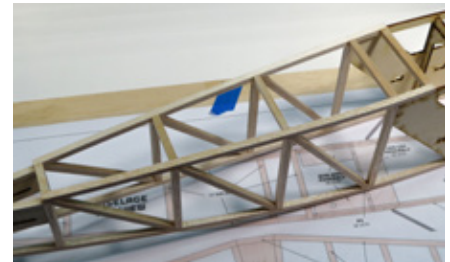
### ☐ Step 71 - Fuselage Assembly (TW)

Locate both TWs from sheet LP1. Glue both TW pieces together, stacking them on top of each other. Once the glue cures, glue this TW assembly in place, as shown in the plans, between the bottom longerons, flush with the bottom of the fuselage.



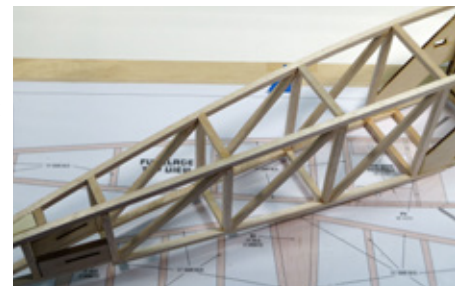
### ☐ Step 72 - Fuselage Assembly (top cross braces)

Refer to the plans where it shows the top view of the fuselage for the next two steps. Measure and cut the fuselage's top cross support pieces from 1/4" square strip. Take care to match the angles for a good fit. Pin these in position and glue into place.



### ☐ Step 73 - Fuselage Assembly (bottom cross braces)

Now flip the fuselage over to measure and cut the fuselage's bottom cross support pieces from 1/4" square strip. Again, take care to match the angles for a good fit. Pin these in position and glue into place.



### ☐ Step 74 - Fuselage Assembly (rear wing mounts - left)

Locate both WH8s, both WH9s and both WH10s from sheet LP3. These are used to create the rear wing mounts. Starting with the left side first. WH10's tabs fit into the back of F4 and inside the rear window of each fuselage side. WH8 lays on top of WH10, with its tab also fitting up against the top of the rear windows' frame.



WH9 then lays on top of WH8. Each of these pieces should be epoxied in position for maximum strength. Use a small clamp to hold the WH8-10 lamination in place while the glue cures.

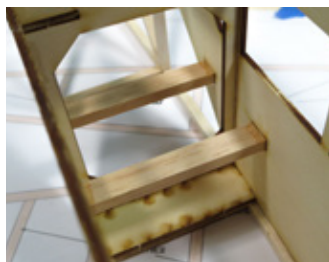


#### ☐ **Step 75 - Fuselage Assembly (rear wing mounts - right)**

Using the remaining WH8, WH9 and WH10 repeat this assembly on the right side, making a mirror image of the left.

#### ☐ **Step 76 - Fuselage Assembly (servo rails)**

Using some of the leftover 3/16" x 3/8" basswood strip, measure and cut the front and rear servo rails. These are pushed through the rectangular cutouts on both sides of the fuselage. Glue these into place.



#### ☐ **Step 77 - Fuselage Assembly (block sanding)**

Before attaching the tail pieces, now would be a good time to block sand the fuselage. Make sure each of the sides are smooth and remove any extra wood from your cuts. A little extra work now will pay off nicely after your Robinhood 25 is covered.

**Now it's time to start construction of the tail surfaces.**

#### ☐ **Prepare your work area**

Position the horizontal stab /elevator plan side over the surface and tape into position and cover with waxed paper.

#### ☐ **Step 78 - Stab/Elevator (S1 & S2)**

Locate the two S1's from BP1 and the four S2's from sheet BP2. Carefully stack the two S1's and glue them together to form a single 1/4" thick S1. Take two of the S2's, stack and glue them to form a single 1/4" thick S2. Do the same with the remaining S2 pieces.



#### ☐ **Step 79 - Stab/Elevator (stab trailing edge)**

Measure and cut the stab's trailing edge from a piece of 1/4" x 1/2" strip. Pin this in position.



#### ☐ **Step 80 - Stab/Elevator (S1 install)**

Take the S1 assembly, position and glue it in place.



#### ☐ **Step 81 - Stab/Elevator (S2 installs)**

Take one of the S2 assemblies, position and glue it in place on the left tip of the stab. Then do the same with the other S2 on the right tip of the stab.

#### ☐ **Step 82 - Stab/Elevator (leading edge)**

Measure and cut the stab's leading edge pieces from a piece of 1/4" square strip. Pin these in position and glue into place.



#### ☐ **Step 83 - Stab/Elevator (stab ribs)**

Measure and cut the stab's internal ribs from a 1/4" square strip. Take care to match the angles for a good fit. Pin these in position and glue into place.

#### ☐ **Step 84 - Stab/Elevator (elevator leading edges)**

Once the glue has set, remove the stab from the plans, then measure and cut both elevator leading edge pieces from 1/4" x 1/2" strip. Be sure to cut the notches on the inner sections where the joiner will attach. Pin these in position.



#### ☐ **Step 85 - Stab/Elevator (joiner)**

Measure and cut the elevator joiner to length from the included 1/4" dowel. Glue this in position.



#### ☐ **Step 86 - Stab/Elevator (trailing edges)**

Measure and cut the elevator's trailing edge pieces from 1/4" square strip. Pin these in position.

#### ☐ **Step 87 - Stab/Elevator (inner edges)**

Measure and cut the inner edge pieces for both elevators from 1/4" x 1/2" strip and the trailing edge pieces from 1/4" square strip. Pin these in position and glue into place.

#### ☐ **Step 88 - Stab/Elevator (elevator tips and ribs)**

Measure and cut the elevator's tips and internal ribs from a 1/4" square strip. Take care to match the angles for a good fit. Pin these in position and glue into place.



### ☐ Step 89 - Stab/Elevator (finished)

Once the glue has set, remove the finished elevator from the plans.

### ☐ Prepare your work area

Position the fuselage side plan over the surface and tape into position. Cover it with waxed paper and tape that over the plan.

### ☐ Step 90 - Fin Assembly (RD1 )

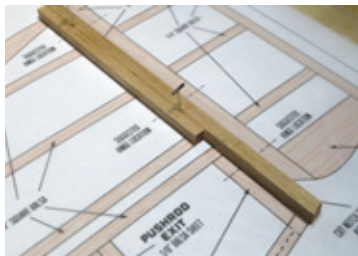
Locate both RD1 pieces from sheets BP1. Carefully stack them and glue them together to form a 1/4" thick RD1 piece.



### ☐ Step 91 - Fin Assembly (fin trailing edge)

Measure and cut the two pieces of 1/4" x 1/4" square that make up the trailing edge of the vertical fin.

Pin the longer (rear most) piece in position, then glue the shorter piece in place as shown on the plans.



### ☐ Step 92 - Fin Assembly (RD1 install)

Take the RD1 assembly, position and glue it into position.

### ☐ Step 93 - Fin Assembly (bottom edge)

Locate two RD2's from sheet BP2. Carefully stack them and glue them together to form a 1/4" thick RD2 piece. Pin in position as shown on the plans glue in place.

### ☐ Step 94 - Fin Assembly (leading edge)

Measure and cut the fin's leading edge from 1/4" square strip. Pin in position and glue into place.

### ☐ Step 95 - Fin Assembly (fin ribs)

Measure and cut the fin's internal ribs from a 1/4" square strip. Take care to match the angles for a good fit. Pin these in position and glue into place.

Remove two G gussets from BP3. Glue together to form a 1/4" thick piece. Glue in place.



### ☐ Step 96 - Rudder (leading edges)

Once the glue has set, remove the vertical fin from the plans, then measure and cut the rudder's leading edge, made from two pieces of 1/4" x 1/4" strip glued together. Pin in position.

### ☐ Step 97 - Rudder (RD3 & RD4)

Locate both RD3 and RD4 pieces from sheets BP1. Carefully stack both RD3's and glue them together to form a 1/4" thick RD3 piece. Stack both RD4's and glue them together to form a 1/4" thick RD4 piece.



### ☐ Step 98 - Rudder (RD3 & RD4 install)

Take the RD3 and RD4 assemblies, position and glue them into position.

### ☐ Step 99 - Rudder (trailing edges)

Measure and cut the rudder's trailing edge pieces from 1/4" x 1/4" strip. Pin and glue in position.

### ☐ Step 100 - Rudder (rudder ribs)

Measure and cut the rudder's internal ribs from a 1/4" square strip. Take care to match the angles for a good fit. Pin these in position and glue into place.



### ☐ Step 101 - Rudder

Once the glue has set, remove the finished rudder from the plans.

### ☐ Step 101 - Fuselage Assembly (sanding tail pieces)

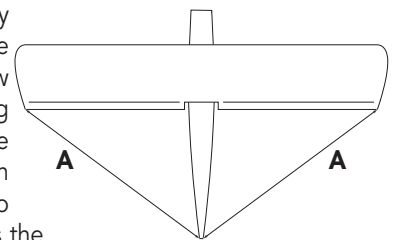
Also take the time to sand the horizontal stabilizer, elevator, vertical fin and rudder pieces. The leading edge of each piece should be rounded. Slowly work this rounded edge around the tips of the stab and elevator, as well as the vertical fin and rudder.

### ☐ Step 102 - Fuselage Assembly (front wing hold fit)

Now it's time to attach the wing to the fuselage. Dry fit it in place and make sure that the dowel fits nicely into the pre-cut hole in F3. If the fit is a bit tight, lightly sand (or use a reamer) to enlarge the hole slightly. Do this a little at a time as you don't want a sloppy fit. The fit should be so that the dowel can easily be inserted/removed without force.

### ☐ Step 104 - Fuselage Assembly (fuse/wing alignment)

To align the wing properly on the fuselage, push the dowel into the F3 and allow the wing to sit in the wing saddle of the fuselage. The wing is perfectly aligned with the distance from left wing tip to the rear of the fuselage is the same the distance when measured from the right wing tip.



With the wing aligned, drill two 3/16" holes for the wing bolts. Using the precut holes in the WH6/WH7 assemblies as a guide (already installed in the wing), drill down through the WH8/WH9/WH10 assemblies on each side of the fuselage.

Use caution to make sure the wing does not move until both holes are drilled.

### ☐ Step 105 - Fuselage Assembly (tap WH8/WH9/WH10)

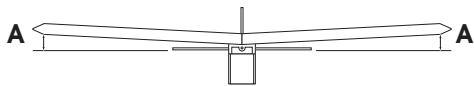
Remove the wing from the fuselage. Using a 1/4-20 tap, use it to tap both holes drilled into the WH8/WH9/WH10 assemblies. Use thin CA to wick into the threads to harden the wood. Once the glue has cured, run the tap through one more time to clear out any glue that might be in the cuts.

Drill the through-holes in the wing with a 17/64 drill so the wing bolts can slip through easily.



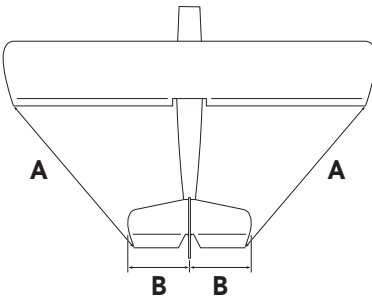
### ☐ Step 106 - Fuselage Assembly (level stab)

To attach the stab, first bolt the wing in place. Then lay the stab on the stab support. Look at the fuselage straight on, from the nose (or tail) and make sure that the stab is level with the wings. If not, remove the stab and gently sand the stab supports a little at time. Check the stab and re-sand the supports if needed.



### ☐ Step 107 - Fuselage Assembly (attach stab)

Once leveled, ensure that the stab is aligned with the wing by measuring the distance from the left wing tip to the left tip of the stab. Compare this to the distance between the right wing and stab tip. Slide the stab a bit until these two measurements are equal. Make a couple of marks where the stab touches the fuselage so you can place it back in the same position. Remove the stab, apply glue on the stab supports and the rear face of the last fuselage cross brace, then attach the stab in place.



### ☐ Step 108 - Fuselage Assembly (elevator hinging)

The elevator will be a captive piece once the vertical fin is installed in the next step, now is the time to make the necessary slots/holes needed to hinge the elevator to the stab. We recommend 4 hinges, 2 per side. DO NOT GLUE THE HINGES IN AT THIS POINT. Once hinged, you might also want to cover the elevator and stab with the covering material of your choice. It's certainly not mandatory, but it is easier to cover before it is held captive to the fuselage.

### ☐ Step 109 - Fuselage Assembly (attach vertical fin)

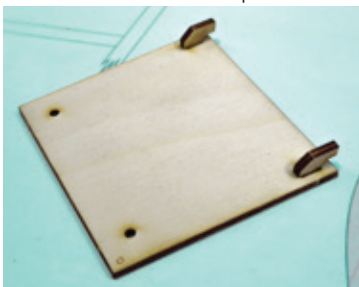
Align and glue the vertical fin in place, making sure to also glue on the trailing edge where it meets the back of the fuselage. Be careful not to get any glue on the elevator joiner. Use the large triangle from sheet LP4 to insure the fin is a perfect 90° to the stab.



### ☐ Step 110 - Fuselage Assembly (front hatch)

To complete the fuselage, you'll need to assemble the hatch using the H1 or H1A piece you chose, as well as the two H3 pieces from sheet LP1.

First, test fit the hatch (H1 or H1A) in place on the fuselage noting the engraved circle should be on the right side of the fuselage. You'll notice that the back end of the hatch needs to be sanded slightly to match the angle of H5.



Carefully sand this to match, test fitting along the way.

When satisfied with the fit, place the hatch over a small piece of wax paper, making sure that is upside down. Glue one H3 in each of the two slots on the rear of the hatch, making sure that the H3 pieces point towards the rear of the hatch as shown.

Test fit the hatch in place and gently sand the H3 pieces if necessary to give a solid, slop-free hold.

If you chose to use magnets, glue those in place now. If you chose screws, fit the hatch in place, then using the two pre-cut holes in the front of the hatch as a guide, drill through the H2A pieces with a 1/16" bit, and harden the wood with a bit of thin CA. Use two supplied 2-56 x 3/4" self tapping screws.

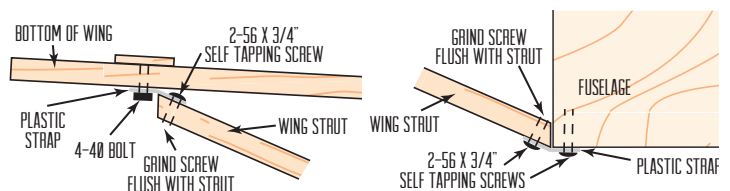
### ☐ Step 111 - Optional wing struts

The full-scale Curtiss Robin featured wing struts as necessary structural pieces. In the Robinhood 25, they are optional. If you would like to incorporate them, they are made from the remaining two lengths of 3/16" x 3/8" x 25" basswood. On the prototype model, the front struts were cut to 14" long and the rear struts to 13.5". Measure, cut and trim as necessary to fit your model.



The included flexible plastic straps should be attached to both ends of each strut so that half of each strap extends past the end of the strut. Note that the strap that attaches to the wing is fixed to the top face of the strut, while the fuselage strap is attached to the bottom face. Mark the position of each mounting hole, drill with a 1/16" bit, and harden the wood with a bit of thin CA.

Attach the straps using the supplied 2-56 x 3/4" self tapping screws. Grind off the excess of the screw so it's flush with the strut for a clean look - as shown here:



There are already 4-40 t-nuts in position on the underside of the wing from back in Step 4. Using the included 4-40 x 3/4" bolts, attach the top of the struts to these mounting points. (The holes in the top straps will need to be drilled using a 1/8" bit so the 4-40 bolts can pass through.)

The bottom of the struts attach to the tabs on LG3 and LG6. You'll need to drill 1/16" holes, then harden the wood with a bit of thin CA and attach them with the supplied 2-56 x 3/4" self tapping screws.

Also, take a bit of time to round the edges of the struts to not only make them look better, but make them more aerodynamic.

### ☐ Step 112 - Hinge the rudder

Make the necessary slots/holes needed to hinge the rudder to the stab. We recommend 3 hinges as shown on the plans.

### ☐ Step 113 - Cut and hinge the ailerons

Measure and cut the correct length and shape for each 3/16" x 1" strips to make the ailerons. Although not necessary, you can sand them to a tapered shape if you prefer.

If building a 3ch. model, glue these to the trailing edge to simulate the shape of the wing. If you are using ailerons (4ch.) round the leading edge of both ailerons, just as you did the elevator and rudder. When finished shaping, make the necessary slots/holes needed to hinge the ailerons to each side of the wing. We recommend 3 hinges per aileron.

### ☐ Step 114 - Optional cabin floor.

Using a bit of the leftover 1/16" sheet, measure and cut to make a floor between the fuselage sides. The pieces would rest on the bottom longerons and span the distance between LG1 and LG4.

This should be cut so the grain is crossway (running from the left to right sides). Check the fit and when satisfied, glue it into place.



**This completes the airframe assembly of the Robinhood 25.**

### ☐ Step 115 - Main gear assembly (prep)

It's time to assemble the main landing gear. You'll find the front and rear pieces included in the kit. Place the included nylon landing gear straps in position - 2 for the front, 2 for the rear. These straps are mounted to LG3 and LG6. Position the gear strut wires so they are centered on each piece, then mark and drill 1/16" holes where the straps should mount, then attach them using the supplied 2-56x3/4" self tapping screws.



### ☐ Step 116 - Main Gear Assembly (soldering)

With the gear pieces mounted, rotate the front wire so it is perpendicular to the fuselage. Then rotate the back wire so it meets the front wire as shown here. Both pieces of wire need to be lightly sanded and cleaned where the wires touch, both on the left and right side.

After cleaning, carefully and tightly wrap this joint with wire as shown here using. We used 26 gauge wire, but other thicknesses can be used. Starting on one side, lightly brush on a bit of



flux over the entire wire-wrap, then use a small torch (or a soldering iron) to securely solder the wire wrap in position, securing the front and rear landing gear wires into a solid, one piece unit.

When finished, do the same to the other side of the gear and you should have something like this when finished.

### ☐ Step 117 - Tailwheel mounting

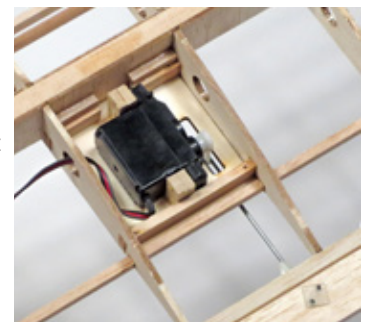
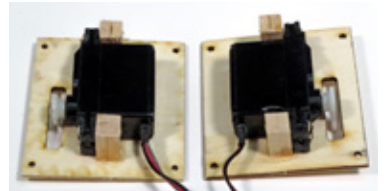
Mount your choice of tailwheel to the bottom of the fuselage. It should mount to the bottom of the plywood TW assembly, already installed.

### ☐ Step 118 - Aileron servo hatches

From leftover 3/16" x 3/8" x 36" basswood strip, cut eight 3/4" pieces. Make a mounting post by laminating two pieces, gluing the 3/8" sides together to make a 3/8 x 3/8" square post. Make 3 similar posts from the remaining pieces, sanding the ends flat.

Position the aileron servo on the bottom of the aileron servo cover so the servo arm output shaft is centered in the opening. On the bottom of each aileron hatch, glue one post on each side of the servo as shown in the photo.

Note that the left hatch is a mirror image of the right hatch.



Now fit the servo hatches into position on the bottom of the wing. Using the pre-cut holes as a guide, drill four 1/16" mounting holes into the 3/16" x 3/8" basswood mounting strips installed earlier. Harden the wood with a bit of thin CA and you can use the attached supplied 2-56 x 3/4" self tapping screws to secure them in place.

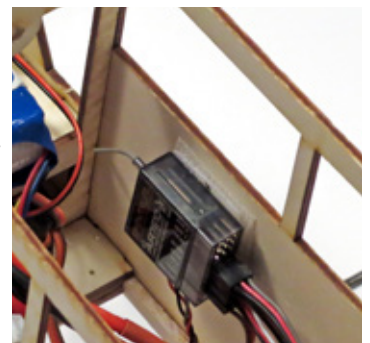
### ☐ Step 119 - Radio and Pushrod Installation

Although you can install the radio after covering your model, we find it easier to get everything in place before covering. This way you have unblocked access inside the fuselage and wings to get the servos, extensions, and pushrods in place.

Shown here are several photos with sample installations in the wing and fuselage.

Make sure that when installing the control horns, they are placed in-line with the pushrods, and that the line of holes where the clevises attach are positioned over the hinge line.

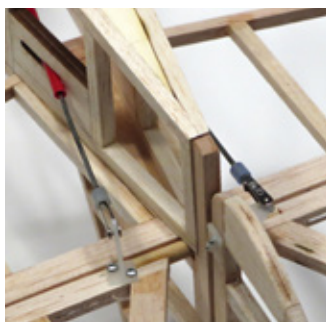
For the average pilot, we recommend that clevises are





attached to the outermost hole on each control horn.

Finish the installation of your radio gear by adding the receiver, flight pack battery and the switch. We mounted the receiver to the fuselage side using a bit of self-adhesive hook-and-loop (not included).



The flight pack battery is installed under the TF and the switch can be installed on the side of the fuselage where desired.

## ☐ Step 120 - Power system

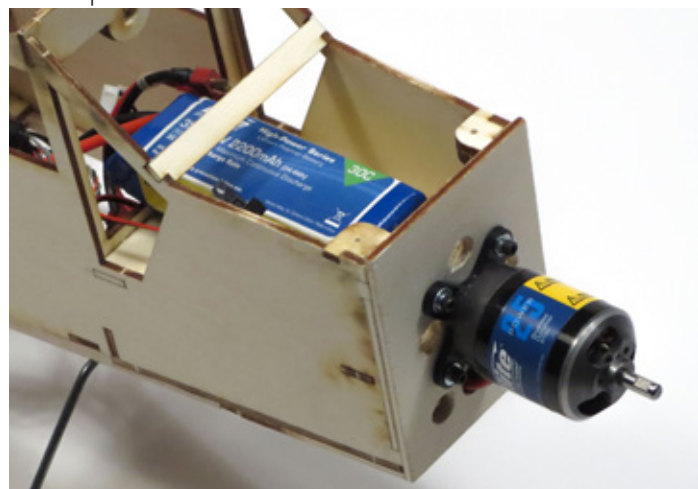
Installing your power system of choice is up next. We'll show photos for electric and glow installations. Note that these are suggestions only as your power system might vary from what's shown here.

We mentioned this earlier, but it bears repeating. Our engine size recommendation range is a .25 two-stroke or an electric motor with similar power output (paired with a 60amp ESC and 3s LiPo). Remember that the Robinhood 25 is a fun-scale model that is intended to fly at scale-like speeds, so prudent throttle management should be practiced. While this kit has been flight tested to exceed normal use, if this model will be used for extremely high stress flying, such as racing, or if a power system larger than one in the recommended range is used, the modeler is responsible for taking steps to reinforce the high stress points and/or substituting hardware more suitable for the increased stress.

### **Electric power**

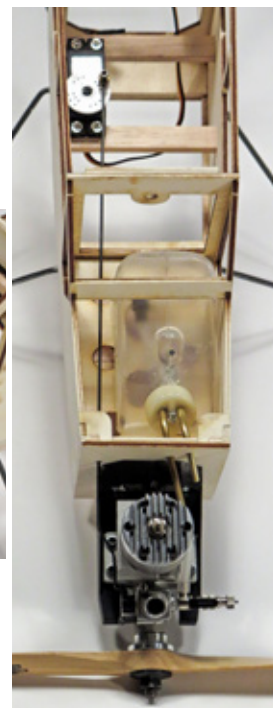
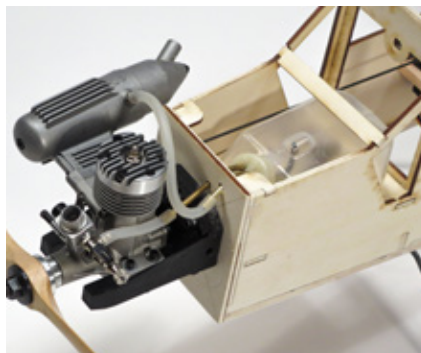
The motor mounts to the center of the firewall and a hole will need be drilled to allow the wires to pass through into the fuselage. Also a few cooling holes are needed for internal battery cooling.

The ESC mounts underneath the TF battery tray and the motor's power battery mounts to the tray. Both the ESC and battery are held in place with more self-adhesive hook-and-loop.



### **Glow power**

The engine mounts so the crankshaft is positioned at the center of the firewall. Holes will need be drilled for the throttle pushrod and fuel lines to pass through into the fuselage.



## ☐ Step 121 - Covering

Now it is time to cover the Robinhood 25. Remove the powerplant, main gear, the tailwheel, pushrods, and any other components that would get in the way of applying the covering.

Double check that all surfaces are smooth and ready to cover. Sand as necessary, then cover the entire airframe with the covering/finish of your choice.

Note that if you're powering with an electric motor, you'll need to make an hole for the cooling air to escape the rear of the fuselage. We choose to cut the covering away in this area, on the underside of the fuselage.

When the covering is complete, re-attach all the components you removed earlier in this step.

### **Logos, numbers, etc.**

If you want to use graphics similar to the ones we used, Old School Model Works has teamed up with Callie Graphics as a supplier for pre-cut vinyl. They are a very well known provider of custom graphics for R/C models.

We have supplied them with the artwork needed to cut the correct size logos. You can order straight from them, choosing the colors that work for you. Contact Callie Graphics at this link: <https://callie-graphics.com> or scan the QR code on the previous page.



*Note that Callie Graphics is not affiliated with Old School Model Works, nor does Old School Model Works generate any income from this partnership.*

## ☐ Step 122 - Attach the Control Surfaces

Now is the time to attach all the control surfaces to the airframe, by gluing the hinges in position.

☐ **Step 123 - Attach wheels.** Use the included 1/8" i.d. wheel collars to hold each wheel (not included) on the axles (one on each side of the wheel). For a maintenance free installation, file a small flat on the axle where the set screw of the wheel collar touches. Also use a touch of thread-locking compound to keep the screw from loosening over time.

☐ **Step 124 - Windows.** Finishing the assembly of the RH25 are the windows. On the fuselage plans we have included a template for the side windows and the front windscreen. Cut the windows from the included plastic sheet, making sure to cut it slightly oversize then trim as necessary. Attach each window to the fuselage with canopy glue.

**This completes the assembly of the Robinhood 25 fuselage. Now you'll need to adjust the control throws and check for balance.**

☐ **Step 125 Recommended C.G. setting:**

An important part of preparing the aircraft for flight is properly balancing the model. This is especially important because of the various motor/battery combinations that can be used.

## CAUTION! DO NOT SKIP THIS STEP!

The recommended Center of Gravity (CG) location for the RH25 is measured back 2.7" from the leading edge of the wing, and you'll see this marked on the fuselage plan with this symbol.

If necessary, move the battery, receiver, and/or add weight to either the nose or the tail until the correct balance is achieved. Stick-on weights are available at your local hobby store and work well for this purpose.

C.G. BALANCE POINT



### Recommended Control Throws:

The amount of control throw should be adjusted as closely as possible using mechanical means, rather than making large changes electronically at the radio.

By moving the position of the clevis at the control horn toward the outermost hole, you will decrease the amount of control throw of the control surface. Moving it toward the control surface will increase the amount of throw. Moving the pushrod wire at the servo arm will have the opposite effect: Moving it closer to center will decrease throw, and away from center will increase throw. Work with a combination of the two to achieve the closest or exact control throws listed.

**Aileron 1/2" up/down**

**Elevator 1/2" up/down**

**Rudder 3/4" left/right**

*(Expert tip: Once the control throws have been set, cut a few pieces of medium silicone fuel tubing (or heat shrink tubing) to go around each of the clevises. This will keep them from opening during flight.)*

### Preflight:

Charge both the transmitter and receiver pack for your airplane. Use the recommended charger supplied with your particular radio system, following the instructions provided with the radio. In most

cases, the radio should be charged the night before going out flying.

Check the radio installation and make sure all the control surfaces are moving correctly (i.e. the correct direction and with the recommended throws). Test run the engine and make sure it transitions smoothly from idle to full throttle and back. Also ensure the engine is tuned according to the manufacturer's instructions, and it will run consistently and constantly at full throttle when adjusted.

Check all the control horns, servo horns and clevises to make sure they are secure and in good condition. Replace any items that would be considered questionable. Failure of any of these components in flight would mean the loss of your aircraft.

### Range check your radio before flying

Before each flying session, range check your radio. This is accomplished by turning on your transmitter with the antenna collapsed. Turn on the radio in your airplane, but do not attach the arming switch.

With your airplane on the ground, you should be able to walk 30 paces away from your airplane and still have complete control of all functions.

If not, don't attempt to fly! Have your radio equipment checked out by the manufacturer.

### Warranty Information

**Old School Model Works** guarantees this kit to be free from defects in both material and workmanship at the date of purchase. This warranty does not cover any parts damage by use or modification. In no case shall **Old School Model Works'** liability exceed the original cost of the purchased kit.

If you find any damaged or missing parts, contact us within 60 days from purchase to receive replacement(s). Further, **Old School Model Works** reserves the right to change or modify this warranty without notice.

In that **Old School Model Works** has no control over the final 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 product, the user accepts all resulting liability.

### Limit of Liability

In the use of this product, our only obligation shall be to replace such quantity of the product proven to be defective. The user shall determine the suitability of the product for his or her intended use and shall assume all risk and liability in connection therewith.

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 un-opened condition.



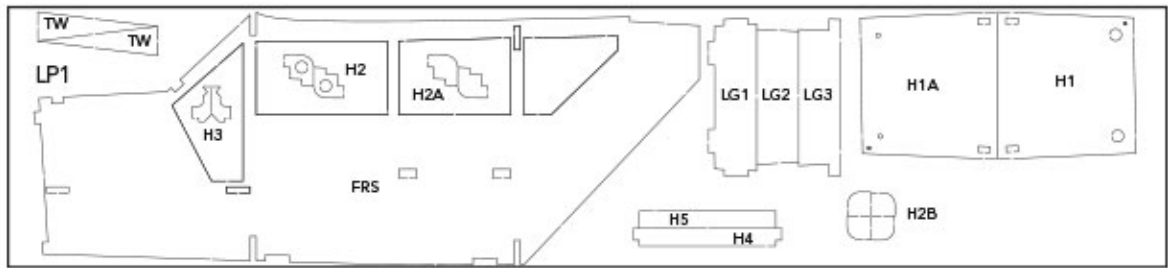
For more information on all of our other products, as well as the latest news from Old School Model Works:

Please check out our website: [www.oldschoolmodels.com](http://www.oldschoolmodels.com)



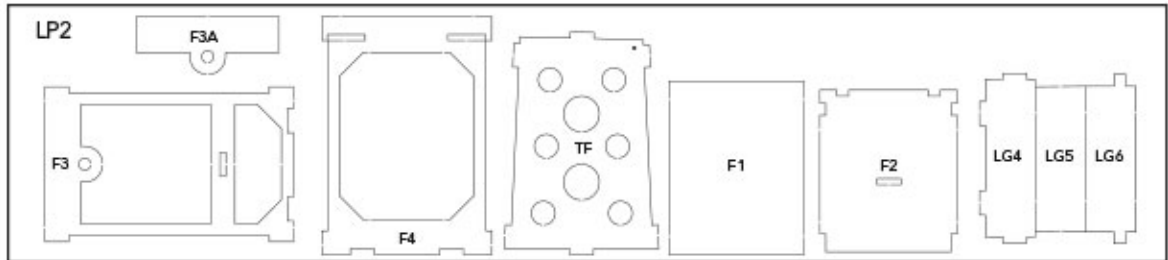
# LP1

1/8" Lite Ply



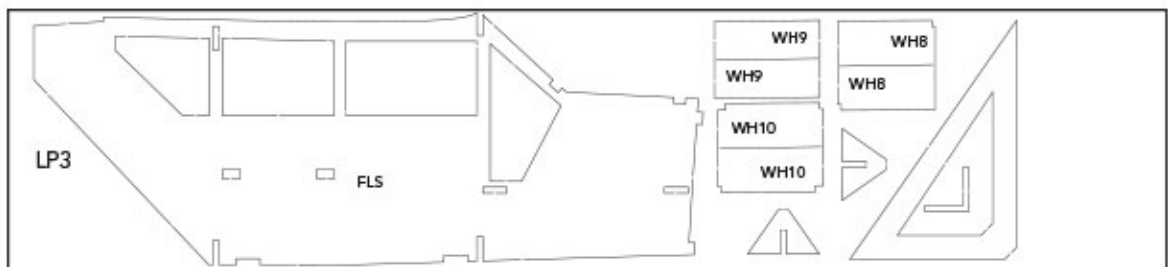
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1/8" Lite Ply



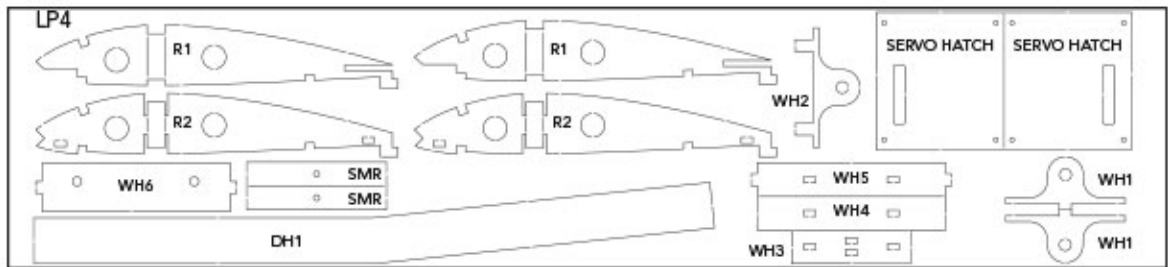
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1/8" Lite Ply



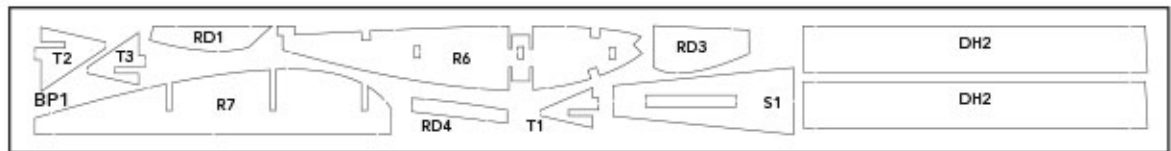
# LP4

1/8" Lite Ply



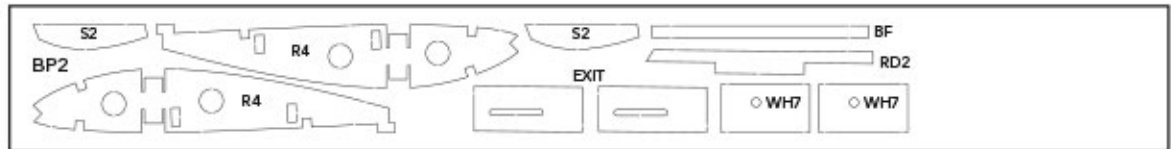
# BP1

1/8" Balsa



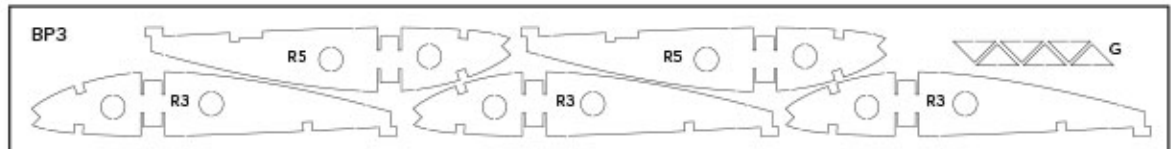
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1/8" Balsa



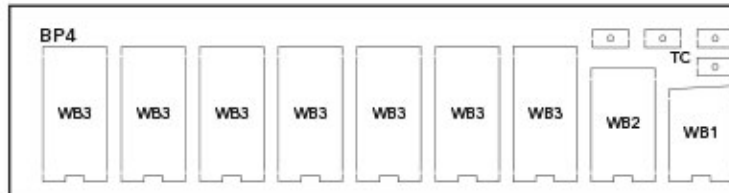
# BP3

1/8" Balsa



# BP4

1/16" Balsa



As of this printing, you are required to register with the FAA if you own this product. For up-to-date information on how to register with the FAA, visit <https://registermyuas.faa.gov>. For additional assistance on regulations and guidance of UAS usage, visit <http://www.knowbeforeyoufly.org>.

