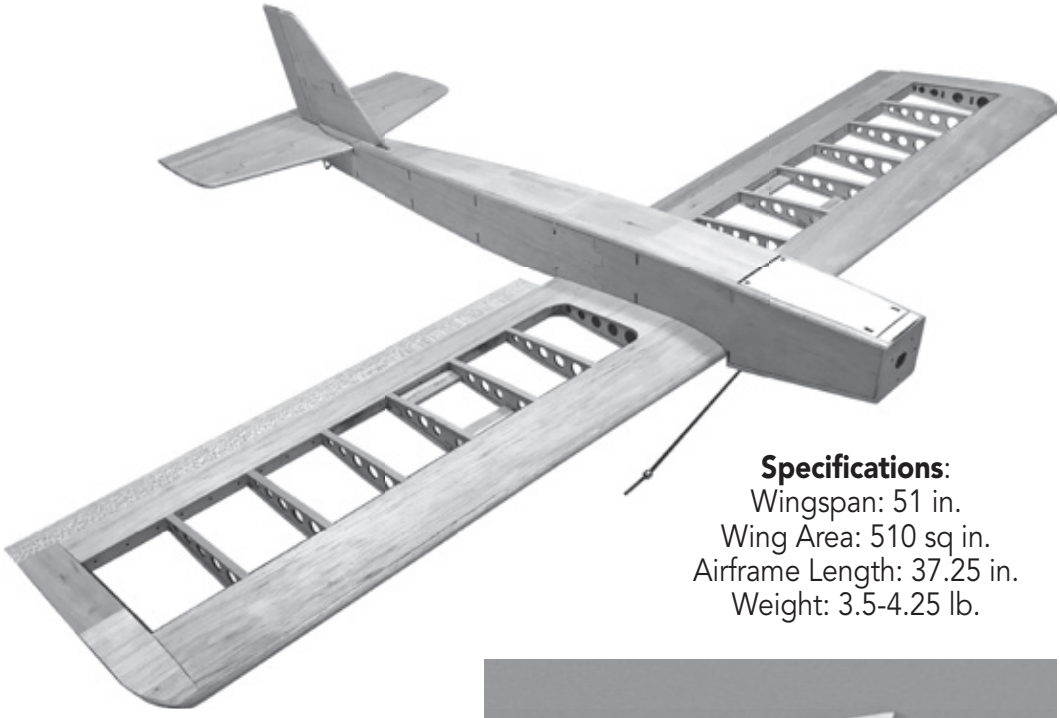
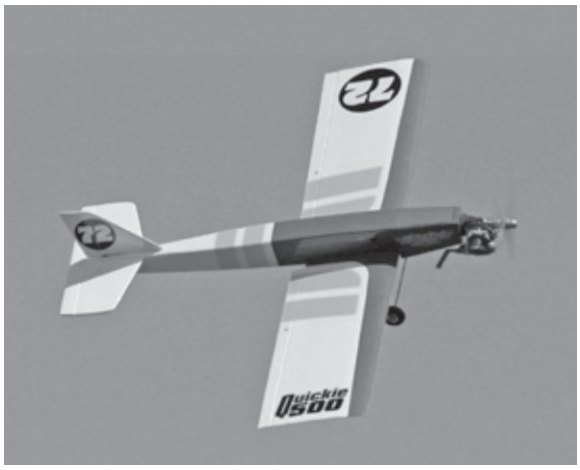
Quickie 500

CONSTRUCTION MANUAL



Specifications:
Wingspan: 51 in.
Wing Area: 510 sq in.
Airframe Length: 37.25 in.
Weight: 3.5-4.25 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.

Old School MODEL WORKS

www.oldschoolmodels.com

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.

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 - BP1 - laser cut 1/8" x 4 x 24 sheet
- 1 - BP2 - laser cut 1/8" x 4 x 24 sheet
- 1 - BP3 - laser cut 1/8" x 4 x 24 sheet
- 1 - BP4 - laser cut 1/8" x 4 x 24 sheet
- 1 - BP5 - laser cut 1/8" x 4 x 24 sheet
- 1 - BP6 - laser cut 1/8" x 4 x 24 sheet
- 2 - BP7 - laser cut 1/8" x 4 x 24 sheet
- 2 - BP8 - laser cut 1/8" x 4 x 24 sheet
- 1 - BP9 - laser cut 3/32" x 4 x 24 sheet
- 1 - BP10 - laser cut 3/32" x 4 x 24 sheet
- 1 - BP11 - laser cut 3/32" x 4 x 24 sheet
- 2 - BP12 - laser cut 1/16" x 4 x 24 sheet
- 2 - BP13 - laser cut 1/16" x 4 x 24 sheet
- 1 - BP14 - laser cut 1/4" x 4 x 4 sheet
- 1 - CAP - laser cut 1/16" x 2 x 24 sheet
- 4 - 1/16" x 4 x 24 sheet
- 2 - 5/16" x 5/16" x 36" balsa strips
- 1 - 1/4" x 1/2" x 36" balsa strips
- 2 - 1/4" x 1/4" x 36" balsa strips
- 4 - 1/4" x 1/8" x 36" balsa strips
- 2.5 - 5/16" x 1-1/4" x 36" tapered balsa strips
- 4 - 3/16" x 3/8" x 24" basswood strips
- 1 - 1/4"x 6" wooden dowel

Hardware parts included in this kit:

- 2 - Pre-bent main gear wires
- Tail skid wire
- C/A type hinges for control surfaces
- 4 - control horns
- 2 - wheel collars 1/8" I.D.
- 2 - plastic gear straps
- 2 - 1/4"-20 wing bolts
- 10 - 2-56 x 1/2" machine screws
- 15 - 2-56 x 3/4" self tapping screws

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.

We strongly recommended supporting your local hobby shop.

- Powerplant:
  .40 sized 2-stroke glow engine (or similar electric system)
- Propeller
- Engine/Motor mount and mounting hardware
- 6 ounce Fuel Tank and fuel tubing
- Receiver - (4 channel minimum)
- 4 servos - we recommend mini servos all around, although modifications can be made to use other sizes. In our prototypes we used Tactic TSX25's).
- "Y" servo harness (for ailerons)
- Pushrods (two 5" for ailerons, two 24" for elevator & rudder, one 10" for throttle)
- 10 Clevises for the pushrods.
- 1 pair of 2-1/4" or 2-1/2" diameter wheels
- Covering

Additional Required Building Tools and Adhesives

- Drill & assorted drill bits
- Hobby knife and #10 blades
- Sandpaper: coarse (80 or 100 grit) & medium (150-200 grit)
- Pencil or pen
- Ruler
- T-Pins

- Waxed paper
- Building board
- 2-part epoxy (6 or 15 minute)
- Epoxy brushes and mixing sticks
- Wood adhesives of your choice. We use medium CA (cyanoacrylate) viscosities, but aliphatic resin and/or carpenter's glues will work just as well and give longer working time.
- Thin CA for attaching the included hinges

Before Starting Assembly

Although an easy to build kit, our Quickie 500 kit is not for the novice builder. We are assuming the builder is used to constructing balsa kits and has the techniques and skills necessary to do so.

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 #10 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.

You'll notice a check box next to each step. Check these off as you go along so you don't miss a step. Note that some steps (in building the wing) have two boxes - this means that the step will be done twice - once for each wing half.

There could be a step or two which leaves you a bit puzzled. If this happens, step back and study the photo(s) for that step - both in this manual and online.

All photos shown in this manual are of different prototype Quickie 500s. Several pieces may have changed slightly with improvements we've made so parts may look a little different in some steps.

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/q500

IT IS VERY IMPORTANT THAT YOU ASSEMBLE THE QUICKIE 500 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

Let's begin construction by working on the starboard (right) wing of your Quickie 500.

☐ **Prepare your work area**

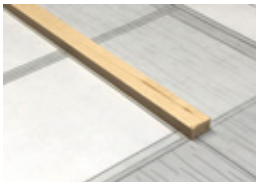
You'll need a flat building surface that is a minimum of 30" long. Position the starboard wing plan over the surface and tape into position. Tear off a length of waxed paper long enough to cover the right wing plan and tape that into position, over the plan.

☐ **Step 1 - Alignment triangles**

Pre-cut into LP1 are two triangles, one inside the other. These can be used to vertically align any of the parts in the construction of your Q500. LP1 also includes two foot pieces that can be used with the triangles to hold both triangles vertical hands-free.

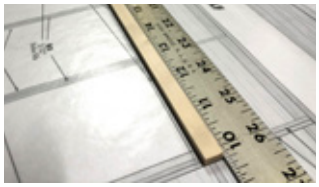
We recommend using the smaller triangle in the wing construction as it's small enough to fit between the ribs.

☐ ☐ **Step 2 - Wing Assembly (position lower spar)**



Using a length of 3/16 x 3/8" basswood, measure and cut it to form the lower spar. Attach it over the plans, using a few small drops of medium CA along it's length (or you could use t-pins).

Be sure it is aligned properly and is straight over it's entire length. The alignment of this spar is critical as the rest of the wing panel is based off this single piece.



Use a yardstick or long straight-edge to ensure this piece is straight.

☐ ☐ **Step 3 - Wing Assembly (R6)**

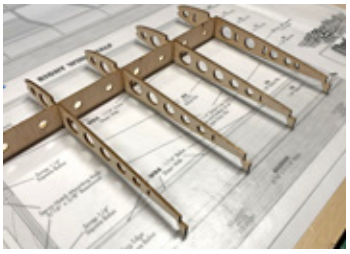
Locate one of R6 ribs from BP9/ BP10 and one of the SB4 sheer webs from BP12.

We find it easiest to glue SB4 to BP10 first with a touch of thin CA; making sure it's 90° as shown in the first picture. Then position R6 in place on over the plans as shown, making sure it is completely pushed onto the bottom spar.

☐ ☐ **Step 4 - Wing Assembly (R5 ribs)**

Locate three R5 ribs from BP9/ BP10 and three SB4 sheer webs from BP12.

Using the same techniques as you used to attach the R6 rib in the last step, glue each of the R5 ribs in place, one at a time as shown here.



☐ ☐ **Step 5 - Wing Assembly (SB7)**

Locate three SB7 rear webs from BP12. These are installed into each of the attached ribs, into the pre-cut slots at the rear of these three ribs.

☐ ☐ **Step 6 - Wing Assembly (R4 ribs)**

Locate two R4 ribs from BP9/ BP10 and two SB4 sheer webs from BP12.

Attach them in place as shown.

☐ ☐ **Step 7 - Wing Assembly (SB7)**

Locate two SB7 rear webs from BP12. These are installed into each of the attached ribs, into the pre-cut slots at the rear of these two ribs.

☐ ☐ **Step 8 - Wing Assembly (R3, SB3)**

Locate one R3 rib from BP11 and two SB3 sheer webs from BP12.

Glue both SB3's to R3, making sure you attach them to the left side of the rib, as shown here. Also make sure they are both 90° to the rib.

Now glue R3 in place as shown, making sure it is completely pushed onto the bottom spar.

☐ ☐ **Step 9 - Wing Assembly (R3, SB2)**

Locate one R3 rib from BP11 and two SB2 sheer webs from BP12.

Glue both SB2's to R3, making sure you attach them to the left side of the rib, as shown here. Also make sure they are both 90° to the rib.

Now position R3 in place as shown, making sure it is completely pushed onto the bottom spar.

☐ ☐ **Step 10 - Wing Assembly (SB7)**

Locate two SB7 rear webs from BP12. These are installed into each of the attached R3 ribs, into the pre-cut slots at the rear of these two ribs.

☐ ☐ **Step 11 - Wing Assembly (R2)**

Locate one R2 rib from BP11 and two SB1 sheer webs from BP12.

Note that both SB1's have a small circle engraved in them. This designates the top and the edge that attaches to R1.

Glue both SB1's to R2, making sure you attach them to the left side of the rib, as shown here. Also make sure they are both 90° to the rib. Now glue R2 in place as shown, making sure it is completely pushed onto the bottom spar.

☐ ☐ **Step 12 - Wing Assembly (R1)**

Locate one R1 rib and two WH4 wing-peg supports from LP1. You'll also need one SB5 sheer web from BP12.

Note that both WH4's and SB5 have a small circle engraved in them. This designates the top and the edge that attaches to R1.

We strongly suggest you dry fit all these parts together first, as it's a bit more involved than the previous steps.

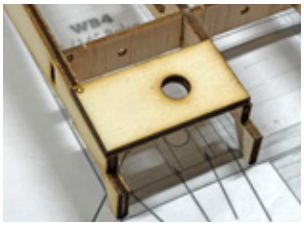
Slide R1 in position, making sure the SB5 tabs are inserted into the pre-cut slots in R1 & R2. You'll also need to insert the WH4's and SB5 in place, making sure they are all properly aligned and all tabs are fully seated.

When properly installed, the R1 rib will have a very slight angle (1.5°) which is half of the total dihedral that's built into the wing.

☐ ☐ **Step 13 - Wing Assembly (WB1)**

Locate one WB1 from LP1.

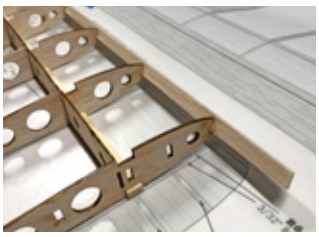
Note that WB1 has a small circle engraved designating the side that faces rib R1.



Glue this piece in place as shown, in the pre-cut "step" on the back of the R1 and R2 ribs.

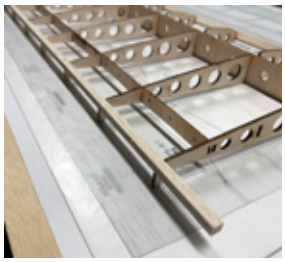
☐ ☐ **Step 14 - Wing Assembly (leading edge)**

Locate one of the 5/16" square balsa strips. This is used as the wing's leading edge. It will need to be trimmed to length, but leave it slightly oversized so it extends roughly 1/8" past R1 and about a 1/4" past the wing tip shown on the plans. Glue this in place, making sure it is securely glued to each rib.



☐ ☐ Step 15 - Wing Assembly (trailing edge)

Locate one of the 1/4" square balsa strips. This is used as the wing's trailing edge. It will need to be trimmed to length, but leave it slightly oversized so it extends roughly 1/8" past R1 and about a 1/4" past the wing tip shown on the plans. Glue this in place, making sure it is securely glued to each rib.

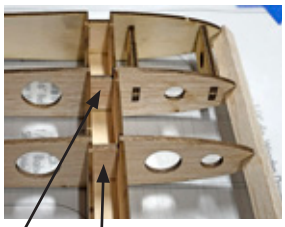


☐ ☐ Step 16 - Wing Assembly (R2 & R3 cutouts)

Now it's time to cut-away the center of two ribs - R2 and R3 next to it. Here are the before and after photos to help show what needs to be done.

Make sure that the area is completely clean and smooth, as later on this will be a channel where the dihedral brace will slide through. The cleaner it is now, the easier it will be to slide in the brace when it's time.

Take your time and use a gentle touch in this step as you don't want to cut more than you should, nor do you want to damage the sheer webs in these spots as it could weaken the wing or cause a misalignment.



R2 & R3 before cutting

After cutting

☐ ☐ Step 17 - Wing Assembly (upper spar)

Locate another of the 3/16" x 3/8" basswood strips. This is used as the upper spar. It will need to be trimmed to length, but leave it slightly oversized so it extends roughly 1/16" past R1 and ends at the outer edge of R6. Glue this in place, making sure it is securely attached to each rib and completely pushed into the pre-cut slots of each rib.

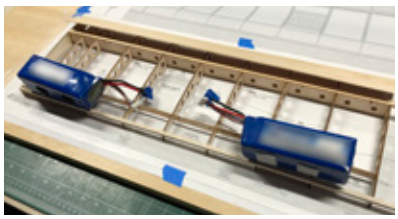
☐ ☐ Step 18 - Wing Assembly (upper leading edge sheeting)

Locate one of the un-cut 1/16" x 4" x 24" balsa sheets. You will need to split this in to two pieces for the upper leading and trailing edge sheeting.

Measure and cut a 1-5/8" x 24" strip and put that aside. The remaining portion will be the leading edge sheeting.

It's best to glue the forward edge of the sheeting to the leading edge first.

To apply constant and firm pressure along the length of the sheeting we advise using a yardstick or long straight-edge. Place the thin edge of the straight-edge it on top of the sheeting and hold (or tape in place) it until the glue cures.



Carefully position a couple of weights on the rear of the wing to keep it in place while attaching the sheeting. We used a couple of larger LiPo packs, but most anything with a little weight will work.

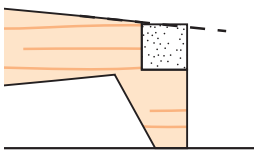
Once the glue holding the front edge of the sheeting has cured, apply glue to the ribs where the sheeting will attach, as well as the upper spar. Then gently wrap the sheeting around the curvature of the wing ribs.

Note: using the same straight-edge, apply constant and firm pressure to the sheeting by slowly working from the leading edge, pushing the sheeting on to the ribs. Slowly work your way back to the rear of this piece of sheeting, until it is attached to the upper spar.

☐ ☐ Step 19 - Wing Assembly (upper trailing edge sheeting)

Before attaching the trailing edge sheeting, lightly sand the trailing edge.

As you can see in this diagram, not much needs to be removed - just enough to allow the continuation of the airfoil shape.



Once sanded, use the 1-5/8" strip of 1/16" sheeting you cut away in the previous step as the trailing edge sheeting.

You will need to cut out a notch around WB1 as shown here, before you glue this piece in position. Take your time to get a good fit, then apply glue to each of the ribs, the trailing edge and all of the rear sheer webs. Then attach the sheeting in position.

☐ ☐ Step 20 - Wing Assembly (upper WS sheeting)

Locate two WS pieces from BP13. These pieces are glued together to form a single piece of center sheeting, as shown in the photo.

We've purposely made each piece slightly longer than needed, to allow you to adjust their length to get a perfect fit between the leading and trailing edge sheeting. To adjust the length, place each piece in position, then trim as needed on the narrower area, where the two pieces overlap.

When edge gluing the sheeting pieces together, first make sure the edges are flat (give a quick, swipe or two with a sanding block). Then tape the two pieces together with a piece of tape. As you lift the sheeting from the board you'll see that the tape will act as a hinge allowing you to put a small amount of adhesive in the joint. When the adhesive is applied, place the sheeting back down on the waxed paper, so that it's flat. When cured, you'll now have a single, longer piece of sheeting after you remove the tape.

When finished, glue this piece in place, making sure it is securely glued to each of the ribs, the upper spar, and the leading/trailing sheeting.

☐ ☐ **Step 21 - Wing Assembly (top cap strips)**

Included in the kit is a piece of 1/16" x 2" x 24" sheeting that is pre-cut into 1/4" strips. These strips are to be used as cap-strips for the wing.

Carefully measure and cut cap strips to cover the exposed R3, R4 and R5 ribs (but NOT R6), These strips will cover the ribs between the leading and trailing edge sheeting. These strips should also be centered on each rib.

☐ ☐ **Step 22 - Wing Assembly (reinforce glue joints)**

Remove the wing from the building board and make sure that all of the wood to wood joints are securely glued together. Especially check that all of the sheer webs are glued to the ribs and the spars. If not, run a thin bead of glue where needed.

☐ ☐ **Step 23 - Wing Assembly (wing dowel marks)**

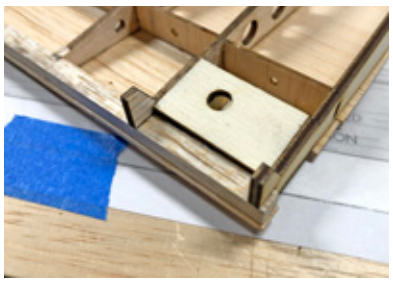
With the wing flipped over, mark where the leading edge will need be cut to allow the wing dowel to be inserted in a later step.

☐ ☐ **Step 24 - Wing Assembly (WB3)**

Locate four of the WB3 pieces from LP1. These are glued in place as shown, with two up against the R1 and R2 ribs, the other two on the outer edges of the circular cutout in WB1.

☐ ☐ **Step 25 - Wing Assembly (WB2)**

Locate WB2. It is glued in place as shown, on top of the WB3 pieces installed in the previous step.



Note that WB2 has a small circle engraved designating the edge that faces to R1.

Make sure it is securely glued to each WB3 as well as the RB1 and RB2 ribs.

☐ ☐ **Step 26 - Wing Assembly (tab removal)**

Now it's time to remove the tabs from the bottom of the trailing edge. These should be carefully cut away, then sanded so they allow the continuation of the airfoil's shape as shown here.

Removed tab before sanding

Because R1 is made from ply, we found it easiest to first use a pair of side-cutters or a saw to remove the majority of the tab, then sand.

After sanding

☐ ☐ **Step 27 - Wing Assembly (aileron servo rails)**

Locate the leftover 3/16" x 3/8" basswood strips you cut when creating the spars.

Measure and cut two lengths to span the width between the R4 ribs, leaving an extra 1/8" or so on each side.

Slide these pieces into the pre-cut slots in the ribs, forming the servo rails. Glue these in position.

☐ ☐ **Step 28 - Wing Assembly (hinge supports)**

Using scrap 1/4" square balsa, cut 4 pieces to form hinge supports. These are glued to the inside of the trailing edge, as we show on the plans, to give more surface area for the hinges to attach.

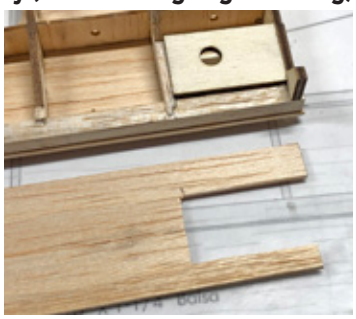
☐ ☐ **Step 29 - Wing Assembly (lower leading edge sheeting)**

Using the same techniques you did when cutting and installing the upper sheeting, locate another of the un-cut 1/16" x 4" x 24" sheets. Make a cut to form a 1-5/8" x 24" strip and put that aside.

Weigh down the wing as before, then glue the leftover strip to the underside of the leading edge. Then, apply glue to the ribs and spar so you can attach the rest of the sheeting to the wing.

☐ ☐ **Step 30 - Wing Assembly (lower leading edge sheeting)**

Lightly sand the trailing edge to allow the continuation of the airfoil shape. Now use the 1-3/4" strip of 1/16" sheeting you cut away in the previous step as the trailing edge sheeting.



You will need to cut out a notch around WB2 as shown here, before you glue this piece in position. Take your time to get a good fit, then apply glue to each of the ribs, the trailing edge and all of the rear sheer webs.

☐ ☐ **Step 31 - Wing Assembly (lower WS sheeting)**

Locate two WS pieces from BP13. These pieces are glued together to form a single piece of lower center sheeting.

Using the same techniques you used to cut and install the upper WS sheets, trim, glue and install these WS piece to form the lower center sheeting.

☐ ☐ **Step 32 - Wing Assembly (bottom cap strips)**

Measure, cut and glue strips of 1/16" x 2" x 24" sheeting for the bottom cap-strips.

Use the same techniques as you used when applying the top cap strips earlier in the build.

☐ ☐ **Step 33 - Wing Assembly (trim strip)**

You should have spare lengths of 5/16" or 1/4" square balsa, trimmed from the leading edge.

Use these pieces to make a strip that will be glued to the basswood mounts for the aileron hatches. They should run the width between the cap strips and be flush with the outer surface of the cap strips - as shown here.

These is not a structural pieces. Instead they are trim pieces that aid in covering later on, as you'll have to cut out the covering in this area to install the servo and hatch.

☐ ☐ **Step 34 - Wing Assembly (R7)**

Locate one R7 rib from BP9/ BP10. This are glued to the face of R6 as shown, to double up the piece.

Take care not to get any excess glue into the rectangular pre-cut slots of R6 and R7, as they need to be open for the next step.

☐ ☐ **Step 35 - Wing Assembly (T1-T5)**

Locate one set of T1 - T5 tip supports from BP1. Pay attention to the order they are installed (T1 nearest the leading edge, back to T5 closest to the the trailing edge.)

When properly installed, the notch on each piece should go through both the R7 and R6 ribs. Glue these in place.

☐ ☐ **Step 36 - Wing Assembly (T6, T7, and T8)**

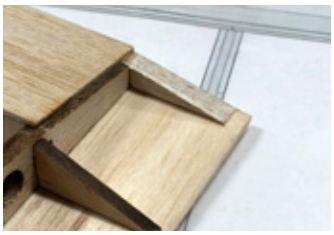
Locate one T6 & T7 from BP12 and one T8 from BP13. These are all used to form the upper tip sheeting.

Using the same technique to join sheeting as you did to join the WS pieces together in step 20, glue T6 to T7, then T7 to T8.

Note that the grain of T6 and T7 will be with the length of the wing, while T8 will be against it. This allows T6 and T7 to easily bend to over the leading edge.

Test fit first, then when satisfied with the fit, glue this sheeting in position, making sure it is firmly glued to each tip support, the top of R7 as well as the leading and trailing edge pieces.

☐ ☐ **Step 37 - Wing Assembly (trim trailing edge)**



Refer to this photo to aid in trimming the trailing edge piece. It needs to be angled as we've shown here so it will allow the sheeting (installed in the next step) to be correctly installed.

☐ ☐ **Step 38 - Wing Assembly (lower tip sheeting)**

Using **scrap** 1/16th sheeting ***(NOT sheeting from the other 1/16" x 4" x 24" sheets)***, cut a few pieces to form a length that will run from T1 back to the trailing edge. We suggest you cut the pieces slightly oversized just in case they are slightly mis-aligned. (You can easily remove the extra when sanding.)

Note the grain will run with the length of the wing as shown here.

Test fit first, then when satisfied with the fit, glue this sheeting in position, making sure it is firmly glued to each tip support, R7 as well as the leading and trailing edge pieces as it twists from front to rear.

☐ ☐ **Step 39 - Wing Assembly (T9)**

Locate four T9 pieces from BP14. These are stacked in the empty space between T1 and the leading edge.

Note that the pieces used in the photo might look a bit sloppy compared to your pieces. These were hand-cut from scrap for the prototype - your's are laser-cut.

Glue these in place as shown. You'll need to slightly notch the rear edge of the leading edge strip to allow the the front T9 to slot into place.

Wing Assembly (port wing)

Set the starboard wing half aside and begin work on the port (right) wing half. Tape the port wing plan and fresh wax paper on your board. Then go back and follow steps 2 through 39 to assemble the port wing half. Once finished, then move on to step 40 to complete the wing assembly.

Note that when building the port half, some of the parts will need to be glued to the opposite side (sheer webs, etc.). Always refer to the plans to make sure you're gluing the parts together in the correct way.

☐ **Step 40 - Wing Assembly (tip sanding)**

You will need to sand the tip to shape at some point - either now, or once the wing is completed. We chose to get most of the rough sanding done before joining the wings halves so we could more closely compare the shape of the port and starboard tips.

You should end up with a couple of matching tips that look pretty close to these photos.

☐ **Step 41 - Wing Assembly (R1 cutout and sanding.)**

On the root rib (R1) you will now need to cut out a square hole. This will be between the pre-cut slots for the sheer webs, as we've shown here. Do this for both wing halves.

Before cutting

We carefully used a rotary tool to do most of the work, then cleaned up everything with a hobby knife. Do not cut into the sheer webs as you can weaken them.

After cutting

Now take a little time and block sand the root (R1) ribs to remove any protruding sheeting and/or sticks. You'll need both of these ribs to be sanded perfectly flat so they will properly butt-up against each other in a couple steps.

☐ **Step 42 - Wing Assembly (D1, D2)**

Locate D1 from LP1 and both D2s from BP7.

These pieces are laminated together with a thin layer of epoxy to form the wing's dihedral brace.

D1 will be sandwiched between both D2s. To insure it stays perfectly aligned, clamp or weigh down this assembly until the glue fully cures.

☐ **Step 43 - Wing Assembly (join wing halves)**

Now test fit the dihedral brace into the wing slots. You will probably have to do a bit of sanding on the brace to allow it to easily fit into each slot. Don't take off too much, too fast. Carefully sand as necessary to make sure everything fits properly and the R1 ribs in each wing half are touching along their entire length when assembled into a single wing. Take your time and get a good fit that doesn't require a lot of force.

After test fitting, join the wing halves permanently with a bit more 30 minute epoxy. Remove the dihedral brace and apply the epoxy into the pockets in each wing half and also coat the faces of each R1. Slide all the dihedral brace into one of the wing halves, then slide remaining wing half in place. Using a couple of clamps (or tape), hold wing halves firmly together. Wipe off any excess epoxy and remove the clamps only after the epoxy has fully cured.

Remember, any twist in the alignment of the panels cannot be fixed after the epoxy cures and will lead to a poor flying model.

If you choose to overpower and/or race this Q500, a thin layer of fiberglass cloth (not included) should be added around the perimeter of the center seam to add strength.

☐ **Step 44 - Wing Assembly (cut holes for servo wires)**

On the plans you'll see a callout suggesting a spot where a hole needs to be cut in each side of the top WS sheeting. This hole allows the aileron servo wires to pass through the sheeting and exit the wing. Make these roughly 1/2" to 3/4" in diameter.

☐ **Step 45 - 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 port wing, one for the starboard. Starting with the port wing panel, push the thread through this hole just cut in the previous step, 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 easily pull out. Do the same for the starboard panel.

☐ **Step 46 - Wing Assembly (wing dowels)**

Remember those marks you made on the leading edge of the wing halves, showing where the holes for wing dowels should be cut? Well it's time to cut those holes.

First, locate the 6" length of 1/4" dowel. Cut two 2-1/2" lengths and round one end of each dowel, as shown in the photo.

Now cut the holes into the leading edge of the wing, making cure they are centered on the leading edge strip. Cut the holes a bit undersized, then gradually enlarge the holes into you get a nice, snug fit. Test fit the dowels and note the feel as the dowel slips through both internal WH4 pieces.

Place glue on the lower part of the dowel and insert the dowel through both WH4s, leaving approximately 1/3" of the dowel exposed.

This completes assembly of the Quickie 500 wing.

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

☐ **Prepare your work area**

Now tape a fresh piece of waxed paper on your building board.

☐ **Step 47 - Horizontal Stab (ST1A, ST1B, ST2A, ST2B)**

Locate ST1A from BP4, ST1B from BP5, ST2A from BP6 and ST2B from BP3.

Each pair of these pieces are glued together (A to B) to form a stabilizer sheet as you see here.

Make sure the pieces are held perfectly flat while the glue is curing.

☐ **Step 48 - Horizontal Stab (stab trailing edge)**

Locate the 1/4" x 1/2" balsa strip. Measure and cut the trailing edge of the stabilizer, then glue it to one of the two stab sheets you created in the previous step (it doesn't matter which one.)
When gluing it, make sure the stab sheet is held against the building surface so it will be flat.

☐ **Step 49 - Horizontal Stab (stab completion)**

Now glue the other stab sheet in place, making sure both sheets are perfectly aligned. Again, clamp or weigh down the pieces until the glue cures.
Also make sure that the pre-cut slot remains free of glue.

☐ **Step 50 - Vertical Fin (VF1A, VF1B, VF2A, VF2B)**

Locate VF1A, VF1B, VF2A, and VF2B from BP2. Just as you did with the stab sheets, make a set of vertical fin sheets, as shown here.

☐ **Step 51 - Vertical Fin (VF1A, VF1B, VF2A, VF2B)**

Using the 1/4" x 1/2" balsa strip, measure and cut the trailing edge of the vertical fin, then glue it to one of the two fin sheets you created in the previous step (it doesn't matter which one.)
When gluing it, make sure the fin sheet is held against the building surface so it will be flat.

☐ **Step 52 - Horizontal Stab (vertical fin completion)**

Now glue the other fin sheet in place, making sure both sheets are perfectly aligned. Again, clamp or weigh down the pieces until the glue cures.

☐ **Step 53 - Rudder (RD)**

Locate both RD from BP7. Using the 1/4" x 1/2" balsa strip, measure and cut the leading edge of the rudder, then glue it to one of the RD pieces.
Then glue the other RD in place, making sure both RD pieces are aligned.

This completes assembly of the Quickie 500's tail surfaces. Now it's time to start construction of the fuselage.

☐ **Prepare your work area**

Position the fuselage side plan over the surface and tape into position. Tear off a length of waxed paper long enough to cover the plan and tape that into position, over the plan.

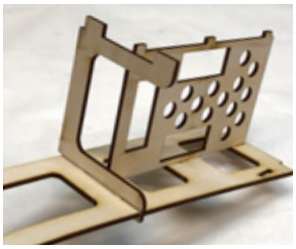
☐ **Step 54 - Fuselage Assembly (fuselage sides)**

Locate both FS2As from BP8 and FS2Bs from BP7.
Glue one FS2A to one FS2B to form a fuselage side sheet. Then do the same to create the other side sheet.
Make sure the joints are perfectly flat while the glue cures.

☐ **Step 55 - Fuselage Assembly (FS1, TR)**

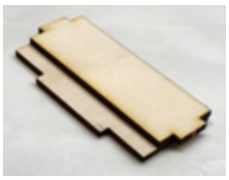
Locate TR from LP1 and one FS1 from LP2.
Note the orientation of TR - the large servo cutouts will face forward, while the lightning circles will face aft.
Glue TR to FS1 as shown, making sure it is 90° (use the included triangle to help get this right).

☐ **Step 56 - Fuselage Assembly (F4)**



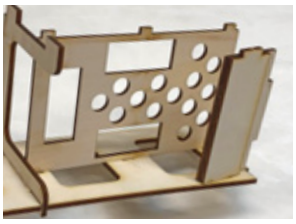
Locate F4 from LP2. Glue this in place as shown, making sure F4's tabs are fully inserted through FS1.

☐ **Step 57 - Fuselage Assembly (WH1, WH2)**



Locate WH1 and WH2 from LP2.
These two pieces are laminated together as shown here, making sure that the edges of both pieces are perfectly aligned.

☐ **Step 58 - Fuselage Assembly (WH1, WH2)**



Glue the WH1/WH2 assembly in place as shown here, making sure the large tab on WH2 faces the rear of the assembly (refer to photo).
The WH1 should be facing you when held in this orientation.

☐ **Step 59 - Fuselage Assembly (FS1, F5)**

Locate the other FS1 and F5 from LP1. FS1 is glued in place to form the other side of the fuselage box as shown. Make sure that all the tabs are fully inserted and that all pieces are securely glued together.
The attach F5 in place to form the rear end of the fuselage box. *Note that*

the large WH2 tab will fit into F5 to aid in alignment and strength.

☐ **Step 60 - Fuselage Assembly (F3)**

Locate F3 from LP1. Glue this in place as shown, making sure that the end with the two holes is on the bottom of the fuse (where the wing-saddle cut-outs are).

☐ **Step 61 - Fuselage Assembly (F3B)**

Locate F3B from LP1. This is used to double-up the wing holes in F3. Glue this in place on the front of F3 (in the tank area), making sure that the holes are perfectly lined up.

☐ **Step 62 - Sanding (attach fuse sides)**

Now the balsa sub-assemblies are glued to each side of the plywood fuselage box. The sides are aligned by the tabs that extend out of the fuselage box.

We recommended gluing one side at a time. Make sure that each fuse side is held flat on your work surface and properly glued to the sides of the fuselage box (FS1).

☐ **Step 63 - Fuselage Assembly (F6, F7, F8)**

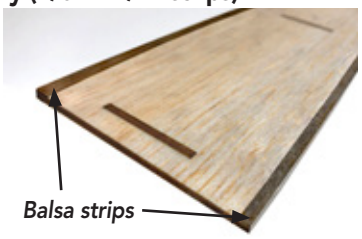
Locate F6, F7 from BP1 and F8 from BP2.

Each of these need to be strengthened by adding a strip of balsa to the top and bottom as we show here.

Cut these pieces from the scrap 3/32" wood not used in BP9, BP10 and BP11. When gluing these scrap strips in place, make sure that their grain runs cross-ways to the grain in the formers.

☐ **Step 64 - Fuselage Assembly (1/8" x 1/4" strips)**

Locate BS from BP1 and two of the 1/8" x 1/4" balsa strips. Measure, cut and glue these strips so they are on top of BS, along the outer edges and matching the curvature of BS as shown on the shaded areas in this photo.



☐ **Step 65 - Fuselage Assembly (BS)**

Each of the F6, F7 and F8 formers are glued into place as shown here, making sure they are all 90° to the surface of BS.

Glue them to BS as well as the strips you just installed in the previous step.

☐ **Step 66 - Fuselage Assembly (BS)**

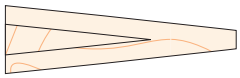
Now the BS assembly is attached to the fuselage to form and align the rear half.

First attach BS by pushing the large tab on the bottom of F5 into the pre-cut slot on the front end of BS.

Then working one former at a time, carefully push the tabs in F6, F7 and F8 into the pre-cut notches in each fuselage side.

☐ **Step 67 - Fuselage Assembly (TW1, TW2)**

Locate TW1 and TW2 from LP1. These are glued together, centering TW1 on top of TW2, with their short, flat edges lined-up.



Then this assembly is glued to the back of the fuselage as shown here.

☐ **Step 68 - Fuselage Assembly (F1, F2)**

Locate F1 and F2 from LP2. F2 is glued in place on the front of the fuselage as shown here. We recommend using some epoxy for strength here. Don't overdo it as we'll add more to strengthen this area later on.

Use a bit more epoxy to glue F1 to the front of F2. Clamp in place while the glue cures.

☐ **Step 69 - Fuselage Assembly (1/8" x 1/4" strips)**

Locate two more of the 1/8" x 1/4" balsa strips. These are cut and glued to go along the top edges of the fuselage sides. They run from the front of the stab mount at F8 all the way up to the firewall (F2).

☐ **Step 70 - Fuselage Assembly (WH3)**

Locate eight WH3 from LP1 and LP2. Two assemblies are made by gluing stacks of four pieces together as shown. Take care to align the parts as you stack them.

☐ **Step 71 - Fuselage Assembly (WH3)**

Now the two WH3 assemblies from the previous step are now glued inside the fuselage, on top of the each side of the WH1/WH2 piece that was installed earlier.

☐ **Step 72 - Fuselage Assembly (H2, H3)**

Locate both H2s and both H3s from LP2. These form the hatch hold-down plates. Glue one H2 to H3, then glue the other H2 to H3 to form a left and a right piece. Then glue these in place, into the top notches of F3, and parallel with the fuse sides as shown here.

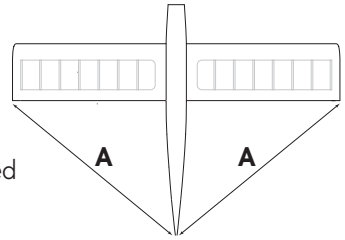
☐ **Step 73 - Fuselage Assembly (H4)**

Locate H4 from LP2. It is glued in place on the top of the firewall, between the balsa strips as shown here. Make sure it is flush with the top edges of both fuselage sides.

☐ **Step 74 - Fuselage Assembly (wing alignment)**

To align the wing properly on the fuselage, place the wing in position, by pushing the wing dowels into the pre-cut holes in F3. Lightly sand if necessary for a smooth fit.

Then allow the wing to rest in the wing saddle. The wing is perfectly aligned when the distance from the left wing tip to the rear of the fuselage is the same the distance when measured from the right wing tip.



☐ **Step 75 - Fuselage Assembly (drill wing bolt holes)**

With the wing aligned, drill two 3/16" holes for the wing bolts, using the pre-cut holes in WB1 as a guide. Carefully push the bit down through both WB1 and WB2 before drilling. Once the bit is resting on the surface of the un-drilled WH1/WH2/WH3 assembly in the fuselage, then carefully drill through the WH1/WH2/WH3 assembly. Use caution to make sure the wing does not move until both holes are drilled.

When drilling, take your time and make sure the drill is held so the bit is perpendicular with the wing's sheeting. This will make it so the wing bolt goes in at an angle, but the screw's head will be flat on the wing surface.

Remove the drill, remove the wing and clean up around the new holes you drilled. Then run a 1/4x20 tap through the WH1/WH2/WH3 assembly so that the wing bolts will thread into this block. If you don't have access to a 1/4x20 tap, you can also use a 1/4x20 steel screw.

A few drops of thin CA will help strengthen and secure the threads you've cut after they've been tapped.

If you prefer, you can also use 1/4x20 t-nuts instead of threading into the wood (not included). To use these you will first have to enlarge the holes you just drilled to 1/4".

☐ **Step 76 - Fuselage Assembly (stab support)**

Using some scrap 5/16" square balsa, cut two pieces to use as internal stab supports as shown here. They should both be flush with the top edges of the fuselage.

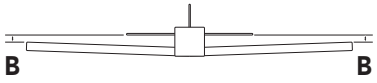
☐ **Step 77 - Fuselage Assembly (round stab/fin leading edges)**

Before installing the vertical fin and stab into the fuselage, take the time to sand them and round off the leading edges of both pieces. It's much easier to do this now than to try it after they're installed.

☐ **Step 78 - Fuselage Assembly (stab alignment)**

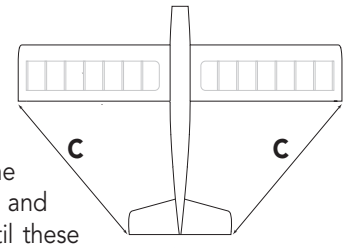
Although we've done everything possible to engineer the Quickie 500 so it will build straight and true, take a few minutes to guarantee things indeed are straight before gluing on the tail surfaces.

To align the stab, first install the wing. Now place the horizontal stab in place on the fuselage. 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 support on the high side, a little at time. Check the stab and re-sand the support if needed until you see the stab as level.



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, then attach the stab in place.



☐ **Step 79 - Fuselage Assembly (vertical fin)**

The vertical fin is installed next, with the fin's tab sliding through the slot pre-cut in the stab. Lightly sand the tab if necessary to get a firm, slop-free fit.

Use the included large triangle to insure the fin is a perfect 90° to the stab.

Once properly in position, it's time to glue the fin in position. Take a bit of time to make sure these glue joints are sufficient, but don't use too much glue as it will make the Quickie 500 unnecessarily tail-heavy.

Also, don't put a large bead of glue between the fin and stab as we'll be adding a support block to each side of the fuse in a later step.

☐ **Step 80 - Fuselage Assembly (LG4/LG5)**

Locate LG4 and LG5 from BP1. These are layered on top of each other as shown here.

Note that there are small circles engraved on both pieces. Make sure the corners with these circles are aligned (so the circles stack up). Whe properly aligned, you should be able to see how the offsets in LG4's slot will lineup with the pre-cut holes in LG5. Keep the slot and holes clear of glue when assembling.

☐ **Step 81 - Fuselage Assembly (LG4/LG5)**

Now glue the LG4/LG5 assembly in place on the bottom of the fuselage, with the back edge of this assembly aligned with the back edge of F3 - refer to the plans. LG4 (the piece with the large slot) should be facing outwards and be visible when the piece is installed.

☐ **Step 82 - Fuselage Assembly (LG1, LG2)**

Locate both LG1 pieces from LP1. These are glued together to form a thicker LG1. Now this piece is glued in position inside the fuselage. It should rest on top of the LG4/LG5 just installed, and be pushed back up against F3. Also note the angle of the slot so it matches what we've shown in this photo. This slot should line up with the pre-cut hole in LG5. Keep the slot in LG1 free of glue during this step.

Now do the same with both LP2 pieces, gluing them inside the opposite side of the fuselage.

☐ **Step 83 - Fuselage Assembly (TS)**

Locate TS from BP4. This is glued to the top of the fuselage, around the vertical fin as shown.

☐ **Step 84 - Fuselage Assembly (PG)**

Before the top of the fuselage is sheeted, now is a good time to plan the route of the rudder and elevator pushrods through the rear of the fuselage.

We chose to use DuBro's flexible pushrod system in our prototypes, but use what works for you. If using a flexible pushrod system, you'll need to secure the outer tubing in a few spots to keep it from flexing. We've included several pushrod guides (PG) in BP1. These can be used as needed to support the guides from the servo tray to the exits pre-cut into the fuselage sides. For the rudder, we cut a hole into TS for the rudder pushrod to exit on the top of the fuse.

☐ **Step 85 - Fuselage Assembly (top sheeting)**

Using the ***scrap*** 1/8" sheet from the BP2-BP8 sheets, you'll now create the sheeting for the top of the fuselage.

The sheeting is cut so it is cross-grained (running from side to side for strength).

Starting at the front edge of TS, measure, cut, and glue strips to form the top of the fuselage. Make sure that the sheeting is not only glued to the fuselage sides, but also to any formers they touch as well the other top sheets as you work your way forward 4" at a time. Stop when you cover F3, as shown on the plans.

☐ **Step 86 - Fuselage Assembly (vertical fin supports)**

Using additional 1/8" ***scrap*** wood, form two vertical fin supports for each side of the fin. These supports should smoothly blend into the fuselage stop sheeting and taper back to the trailing edge of the fuselage as we've shown here.

Do your best to make both sides the same length and height - just make sure they are mirror images of each other. Glue them in place when satisfied.

☐ **Step 87 - Fuselage Assembly (top sheeting & H6)**

Measure and cut two shorter strips of 1/4" x 1/8" balsa strip to finish the top sheeting. This should run between the firewall and the front of F3.

Also locate H6 from LP2. This is glued on the underside of H4. There are etched lines on H6 to show the halfway mark, so glue this in place so it is centered between the fuselage sides and so that half of the piece shows, as seen in the photo.

☐ **Step 88 - Fuselage Assembly (H1, H5)**

Locate H1 from LP2 and both H5s from LP1. Both H5's are glued into the pre-cut slots in H1 to form the forward hatch stops. Make sure they are 90° to the hatch surface and both stops overhang the front end of the hatch as shown here.

When finished, place the hatch in position on the fuselage and use a 1/16" drill bit to drill the rear screw holes into both H2/H3's, using the pre-cut holes in H1 as a guide.

☐ **Step 89 - Ailerons and elevator**

Using the two 36" lengths of 5/16" x 1" shaped strip, measure and cut both ailerons. Make sure they are the same length.

Now using the shorter length of 5/16" x 1" shaped strip, measure and cut the elevator to length.

☐ **Step 90 - Fuselage Assembly (bottom sheeting)**

Measure and cut two shorter strips of 1/8" x 1/4" balsa strip to glue on the bottom edges of the fuselage sides between the firewall and the front of F3.

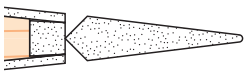
Using some ***scrap*** 1/8" x 4" sheeting, measure, cut and glue together the sheets that will make up the bottom sheeting between LG4/LG5 and F1.

☐ **Step 91 - Sanding (airframe)**

Now is the time to get quite familiar with the sanding tools of your choice. Take the time to preform a good sanding, rounding the wing's leading edge and blending it into the wingtips. Go over the entire wing, making sure the sheeting is smooth and the trailing edges are blended into the cap strips, continuing the curvature of the wing.

Smooth out the edges of the fuselage. Because of the framing installed around the fuselage's perimeter, you can round the corners a bit, but not too much.

For the control surfaces (ailerons, elevator and rudder), sand bevels into the leading edges and round their trailing edges.



Now it's time to think about radio and engine installation.

These next steps of covering, hinging, radio and power installation are not in any particular order. Some modelers like to cover everything first, then outfit the rest. Others like to hinge and pre-install the components, working out the installation before covering. Use the method that works best for you.

We prefer to pre-install many of the components to make sure there are no surprises in the way things fit or might have to be modified for after market items. We find it much easier to fix these problems now, before covering, as there's nothing worse than ruining a good covering job by having to hack a hole or provide clearance for something.

☐ **Step 90 - Fuselage Assembly (firewall supports)**

Using some ***scrap*** wood 1/4" or 5/16" square balsa, cut short sections that can be used to brace the internal joints between the firewall (F2) and the fuselage sides. Epoxy these in place.

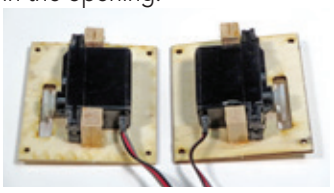
We chose to cut the lengths into triangle strips to give a bit more space internally.

☐ **Step 91 - Aileron servo hatches (from LP2)**

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 additional posts from the remaining pieces, sanding the ends flat.

Position your aileron servo on the inside of the aileron hatch so the servo arm output shaft is centered in the opening.

On the inside of each aileron hatch, glue one post on each side of the servo as shown in the photo.

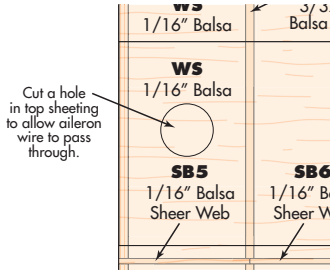


Note that the left hatch is a mirror image of the right hatch.

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 supplied 2-56 x 3/4" self tapping screws to secure the hatches in place.

☐ **Step 92 - Aileron wire holes for servo wires**

On the plans you'll see callouts where the two holes should be cut in the top sheeting (WS). These holes allow the aileron servo wires to pass through the wing and into the fuselage.



This next part is optional, but could make the aileron servo installation a bit easier, once the wings are covered. Cut two 18" lengths of string, one for the port side, and one for starboard. Starting with the port 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 top of the wing at the center hole cutout you just made. Tape both ends of the string so they won't easily pull out. Do the same for the starboard side.

☐ **Step 93 - Hinge the control surfaces**

Included with in your Quickie 500 kit are strips of hinges. These are CA hinges, requiring a little bit of thin CA to secure them in place. These hinges come in strips, so separate them into individual hinges. Referring to the plans you'll see a number of spots called out where we recommend these CA hinges to be installed.

Starting with the horizontal stab, mark the locations of each of the hinges. Now using a sharp hobby knife, carefully cut a hinge-sized slot in each of the four locations, making sure the slots are cut perfectly in the center of the stab's trailing edge.

Now slide the elevator in place (through the slot you cut earlier) and mark the leading edge of the elevator for hinge location. Remove the elevator, then make the matching slots in the elevator.

Take 4 of the hinges and stick a t-pin into them as shown here, right in the center. These pins will help in installing the pins half-way into the stab and elevator.

Slide each of the 4 hinges into the elevator slots, then slide the elevator into position on the back of the horizontal stab. Continue working the hinges in to the horizontal stab until they are fully seated up against the t-pins.

When happy with the fit, remove the elevator and the hinges, then set them aside.

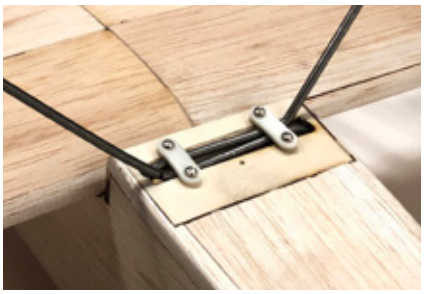
Now using this same technique, cut the hinge slots for the both ailerons and the rudder. Test-fit all of them to make sure the slots are the proper depth and the hinges can be properly inserted.

☐ **Step 94 - Main Gear (main gear, straps)**

First, using a 1/8" drill bit, use it to clear out the holes for the left and right gear. Hold the drill at the same angle as the slots pre-cut into the internal LG1 and LG2 pieces.

Second, you'll need to cut an angled relief into the rear edge of the slot in

LG4. This relief will give the necessary clearance for the main gear wire to fit into the slot. (Because this cut needs to be on an angle, it's not something we can laser-cut for you ahead of time.)



When these steps are complete, slide both main gear wires in place, one forward of the other. Now position a landing gear strap on each side as shown in this photo. Using a 1/16" drill bit, drill through the holes in each strap, then use four of the included 2-56 x 3/4" self-tapping screws to attach the straps to the fuselage.

Use the included 1/8" i.d. wheel collars to hold each wheel (not included) on the axles. 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 95 - Tail skid**

Using the included wire, refer to the fuselage plans as we give an example of how to bend this wire into a simple tail skid.

The original Quickie 500 models used a skid instead of a tailwheel to save weight and lessen wind resistance.

When bent to the shape that works for you, mark TW in the two spots to be drilled, then drill both holes to allow the skid to be mounted as shown here.

☐ **Step 96 - Covering**

Now it's time to cover your Quickie 500 airframe. Remove the main gear, the tail skid and any of the control surfaces and hinges that are still attached.

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

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 any of our logos to the sizes you need. 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 this QR code.

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

The next steps shown are not in a particular order but will all need to be done.

☐ **Attach the Control Surfaces**

Now is the time to attach the control surfaces to the airframe, by gluing the hinges in position with a several smaller drops thin C/A on each hinge.

☐ **Landing Gear (main gear, straps, tail skid)**

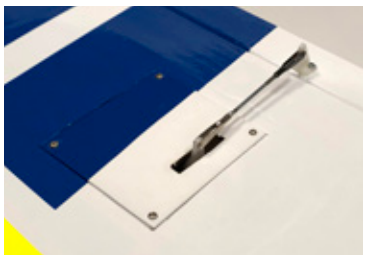
Re-attach the main gear wires and hold them in place with the mounting straps and four 2-56 x 3/4" self-tapping screws. Also hold the tail skid in place with a touch of glue, or mount your own tailwheel assembly.

A note on the main gear. We've included 1/8" pre-bent gear that works well. It is light-weight and will hold up for average flying. If you fly off a rough field, or repeatedly perform hard landings, this gear can bend. If this happens, it should be able to be bent back by hand with a bit of pressure. Take care when landing to perform nice, smooth landings where this won't be an issue. A hard landing which dramatically bends the gear can reduce prop clearance significantly.

☐ **Attach wheels.** Use the included 1/8" i.d. wheel collars to hold each wheel (not included) on the axles (one for each 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.

The following steps will show various pieces and parts which are not included in your Quickie 500 kit. These are some of the parts we referenced as "needed to purchase" towards the front of this manual.
The parts shown in the photos were those we had on hand. Please pay no attention to the brand names of these parts as we aren't recommending any particular brand.

☐ **Radio and pushrod installation**



Shown here a few photos of the pushrods and radio gear installation in one of our Quickie 500 prototypes. These are shown only as a guide because each installation is unique and the radio system you have might require adjustments from what you see here.

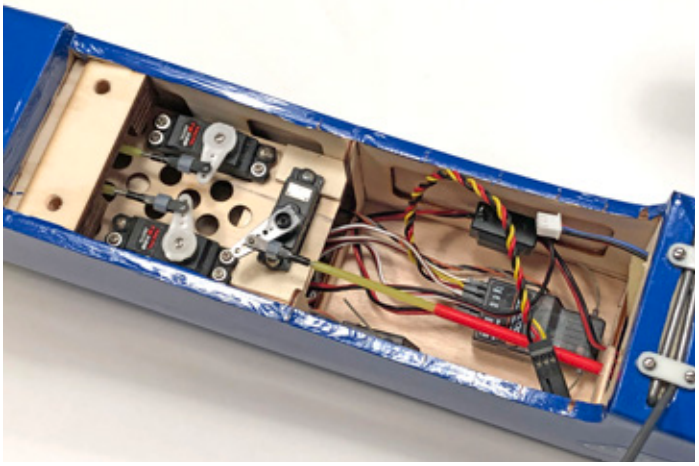
Make sure that when installing the control horns, they are placed in-line with the pushrods, and that the line of holes where the clevises attach are positioned over the hinge line.

For the average pilot, we recommend that clevises are attached to the second outermost hole on each control horn.

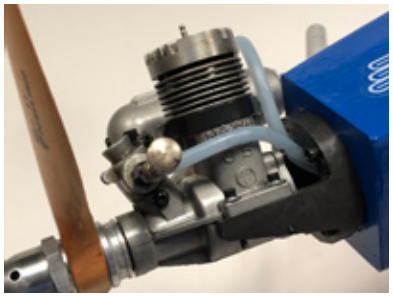
We used mini-sized servos on our Quickie 500 prototypes and the servo mounting holes cut into the servo tray are sized for them. Other sizes of servos can be used but you might need to modify

these holes to accept your choice of servos.
Also cut into LP2 is a separate, slightly smaller servo mount. This is designed to be used if you're using an even smaller servo for throttle control.

Using some scrap lite ply from LP1 and LP2, cut strips that can be glued in place to double-up where the servo mounting screws will be used. Shown here is an example of one of our layouts. Your's might be different, but the idea is the same.
Finish the installation of your radio gear by adding the receiver, flight pack battery and the switch. We mounted the receiver to the fuselage using a bit of self-adhesive hook-and-loop (not included).



☐ **Power system**



Installing your power system of choice is up next. We mentioned this earlier, but it bears repeating. Our engine size recommendation range is a .25-.46 two-stroke glow engine or an electric motor with similar power output.

On the fuselage plans, you'll notice a line referred to as the "thrust line". This is the suggested line where the crankshaft of the motor (or engine) should be located. On the original Quickie 500 design it was dead center on the firewall, and the same is true with our kit. The original had zero down thrust and zero right thrust. We fell that the majority of our kits will be used for sport flying so the only thing we changed was adding a touch of down-thrust to aid in every-day flying. We suggest flying the Quickie 500 in the way we have set-up before changing the thrust angle. If you choose to add right thrust, it's an easy thing to add a washer or two between the firewall and the motor mount.

Glow power

If you're planning on using a glow engine, that's a good thing. The original version was glow powered, our prototypes are glow powered, and if you're going to consider racing them in the AMA Quickie 500 classes, you'll need it to be glow powered.
You'll need to mount a throttle servo and drill a hole in the firewall to allow the throttle pushrod through.
A 6 ounce fuel tank easily fits in compartment behind the firewall, even with a receiver battery and pushrod in the same space.

Electric power

If you're powering your Quickie with an electric power system, thats ok too - as glow can't be flown everywhere these days. With an electric power system, the installation is very much the same, substituting an ESC for the throttle servo and the battery for the fuel tank. You'll bolt the motor in place, similar to how you'd mount a glow engine and the batteries and ESC will be in the fuel tank compartment.
The biggest difference will be you'll need to cut cooling holes in the firewall (or fuse sides) as well as in the rear of the fuse to allow sufficient airflow to cool the batteries and ESC.
And, we HIGHLY recommend using some sort of arming plug when using electrics. This can be something as simple physical plug that has to be inserted before operation, or some of the more sophisticated electronic systems on the market today. We don't recommend anything in particular, so use the system that works best for you and your pocketbook.

This completes the assembly of the Quickie 500. Now you'll need to adjust the control throws and check for balance.

☐ **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 starting Center of Gravity (CG) location for the Quickie 500 is measured 2.5" back from the leading edge of the wing, and you'll see this marked on the fuselage plan with this symbol.

C.G. BALANCE POINT

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 as a last resort from your local hobby store and can work for this purpose when shifting of the internal components just isn't enough.

Balance can vary up to 1/4" behind main spar. It is best to start with our recommended position. If the model tends to drop its nose in the turns, move the CG back a little - or forward a little if it tends to balloon in the turns. When properly trimmed, the Quickie 500 will fly through the turns flat without the need of any rudder control. As an added feature, in the event of aileron servo failure, the Quickie will perform almost as well with the rudder.

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

These control throws are only suggested but we find they work well. We also like to program a bit of exponential into each of channels to help smooth out the center. Roughly 20% on ailerons, 25% on elevator, and 10% on rudder works for everyday sport flying.

We suggest that you start with these settings, then adjust them as needed as you become familiar with the flying characteristics of your Quickie 500.

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.

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 .

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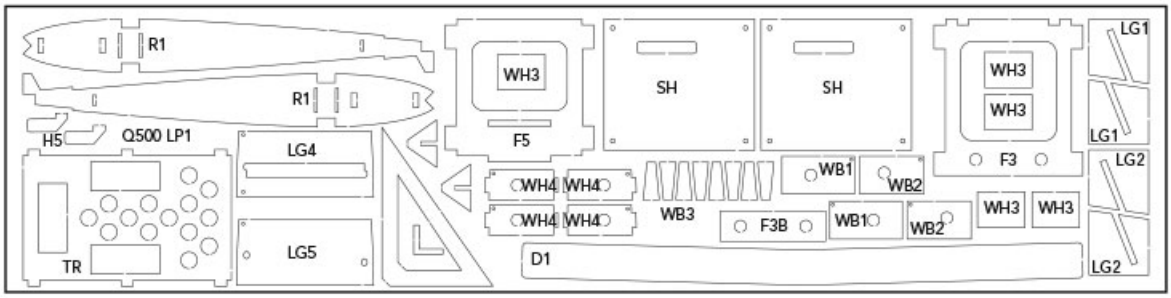
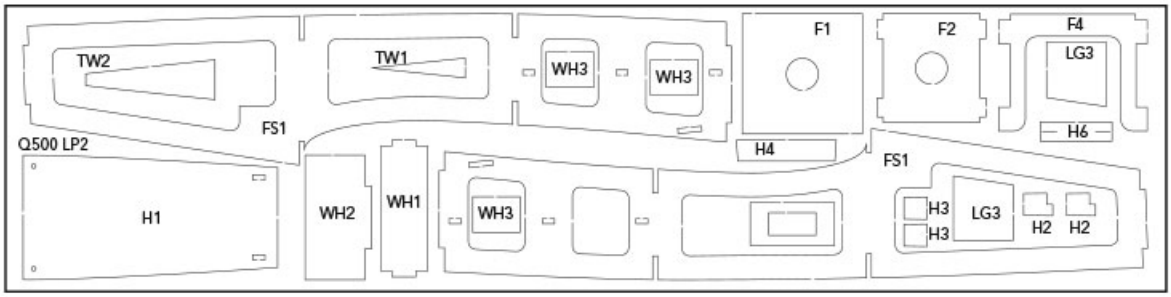
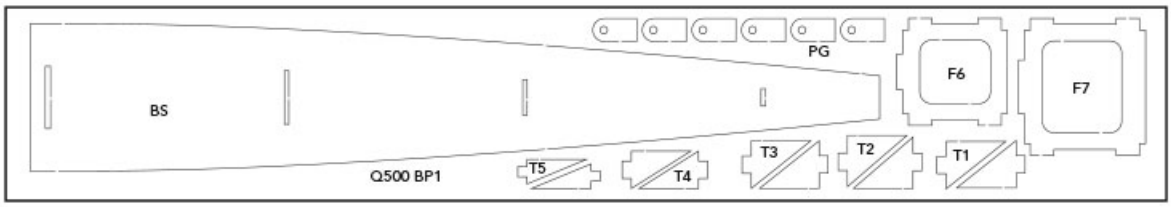
LP1
1/8" Lite Ply



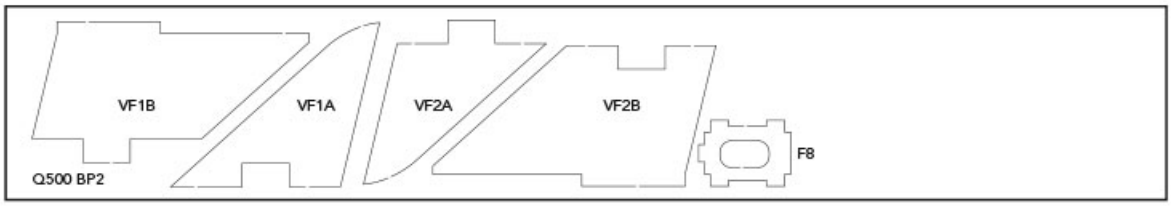
LP2
1/8" Lite Ply



BP1
1/8" Balsa



BP2
1/8" Balsa



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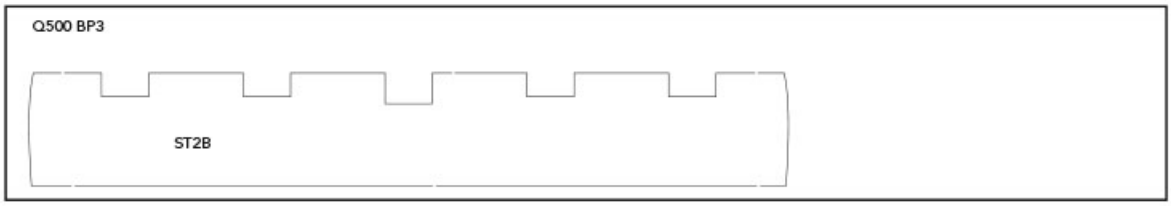
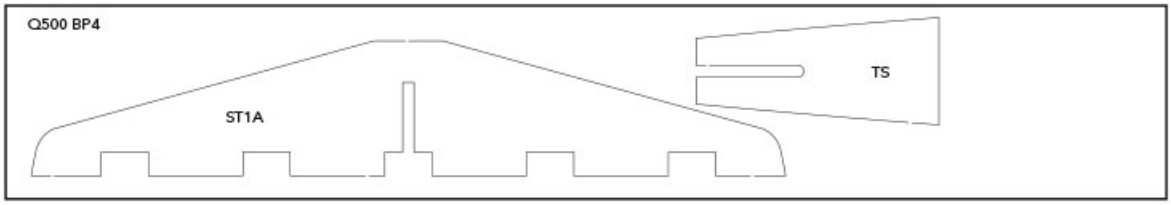
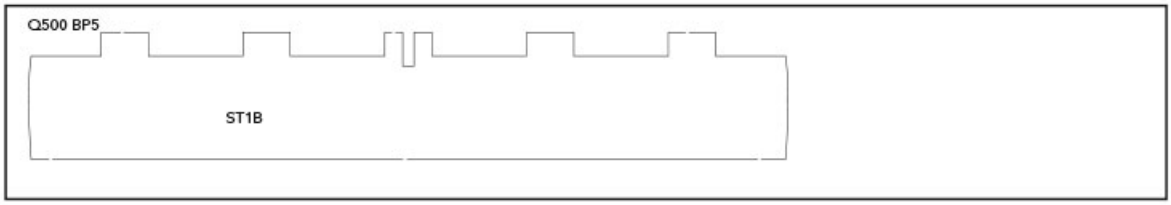
1/8" Balsa



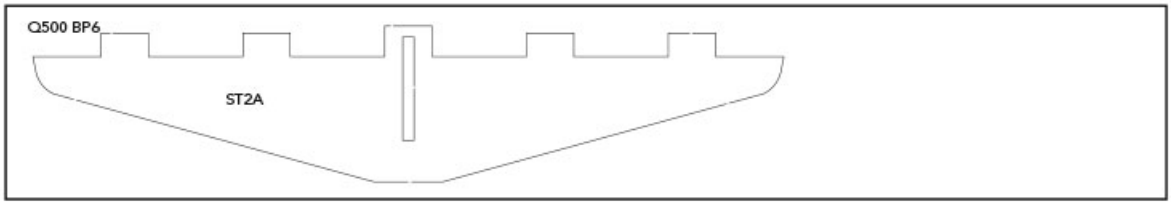
BP4
1/8" Balsa



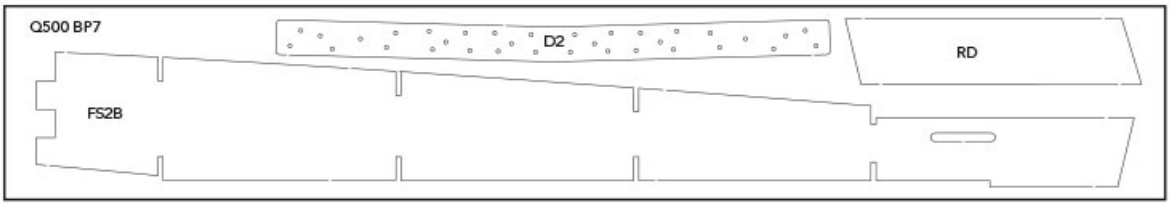
BP5
1/8" Balsa



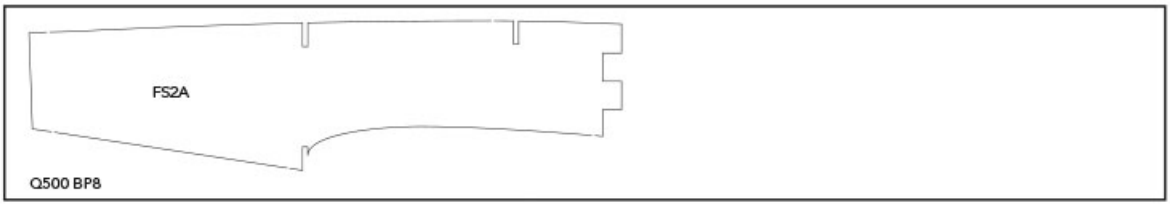
BP6
1/8" Balsa



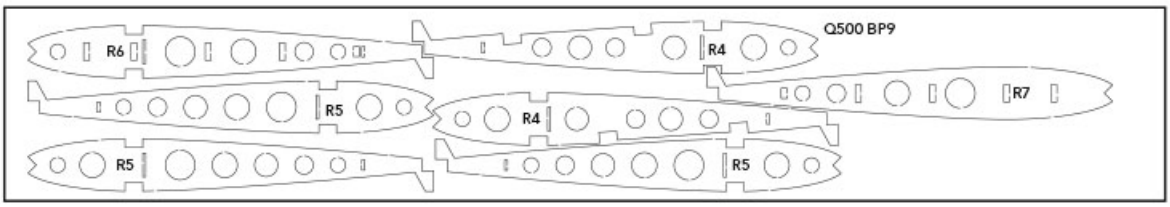
BP7 1/8" Balsa



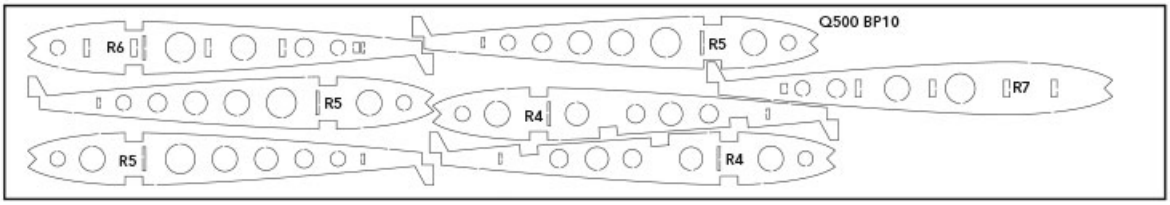
BP8 1/8" Balsa



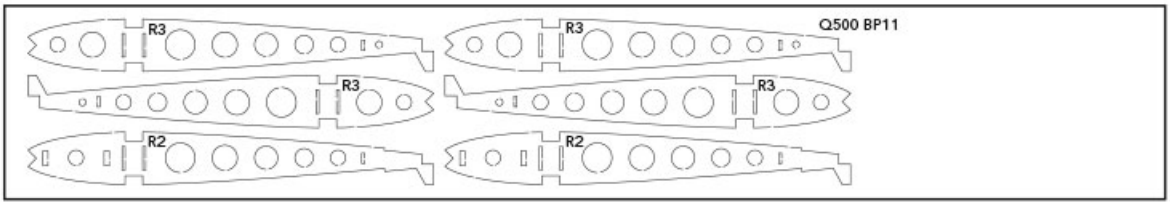
BP9 3/32" Balsa



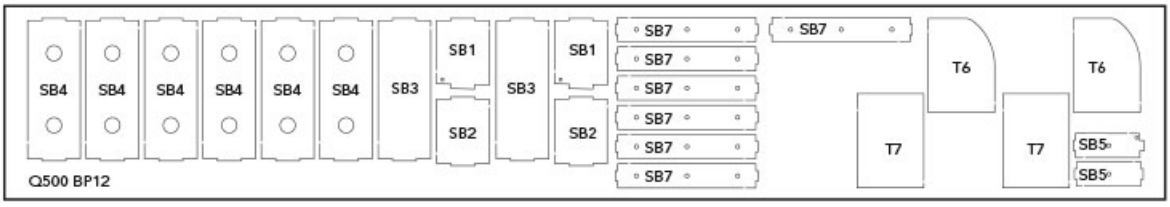
BP10 3/32" Balsa



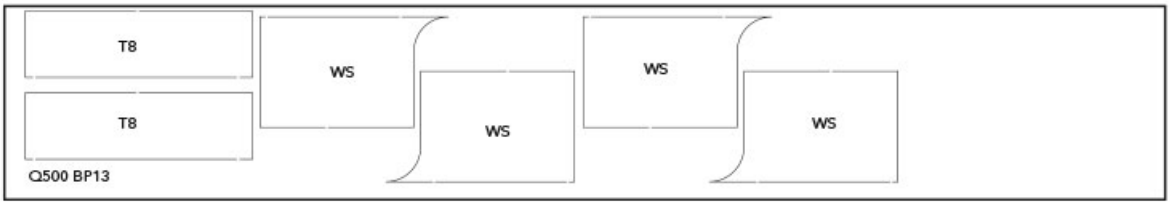
BP11 3/32" Balsa



BP12 1/16" Balsa



BP13 1/16" Balsa



BP14 1/4" Balsa