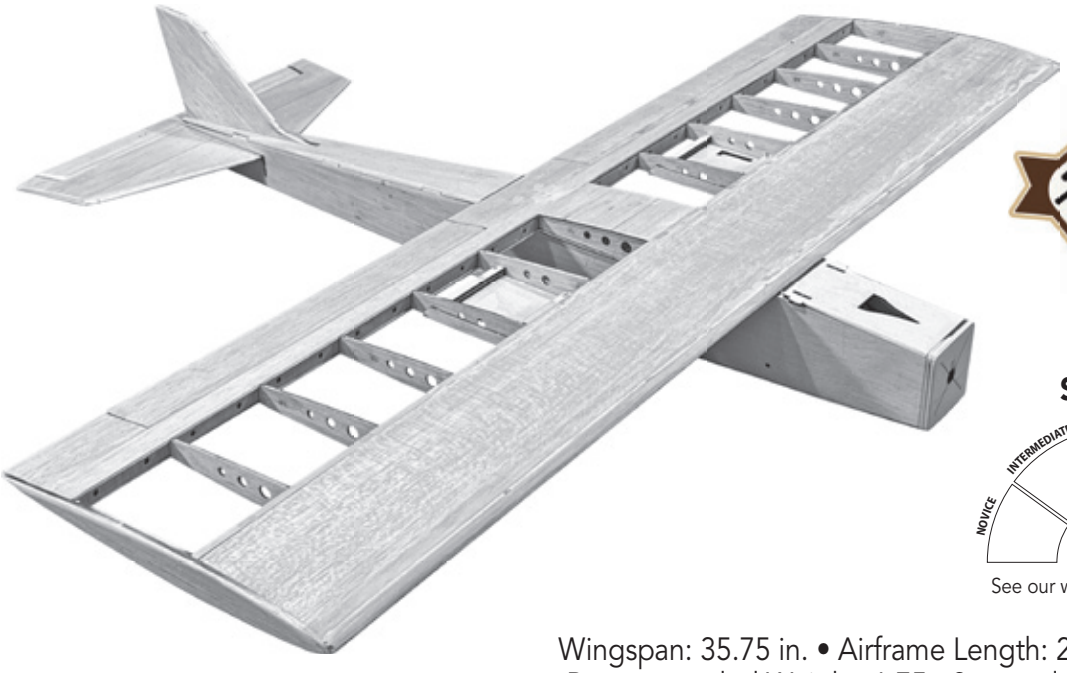
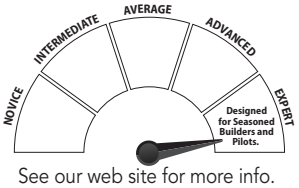
CONSTRUCTION MANUAL

BARRACUDA



OSMW SCHOOLYARD SERIES

Skill Level



See our web site for more info.

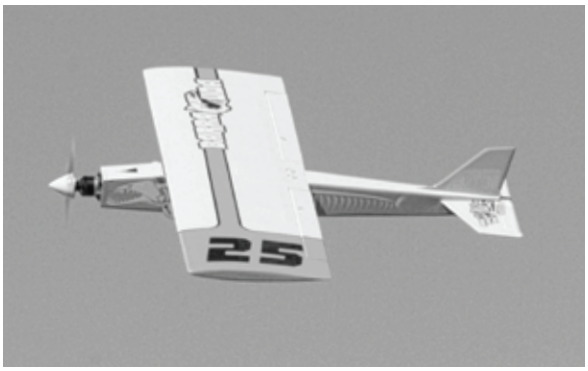
Wingspan: 35.75 in. • Airframe Length: 28.9 in.
Recommended Weight: 1.75 - 3 pounds (RTF)
3 ch. radio • Power: 150+ watt, 2 - 4s 2200mAh (.09-.15 glow)

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 at two different 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 4.8" x 24" lite ply
- 1 LP2 - laser cut 1/8" x 4" x 24" lite ply
- 1 LP3 - laser cut 1/8" x 3.25" x 24" lite ply

- 1 BP1 - laser cut 3/32" x 4" x 24" balsa
- 1 BP2 - laser cut 3/32" x 4" x 24" balsa
- 1 BP3 - laser cut 3/32" x 4" x 24" balsa
- 1 BP4 - laser cut 3/32" x 4" x 24" balsa
- 2 BP5 - laser cut 3/32" x 4" x 12" balsa
- 2 BP6 - laser cut 1/16" x 4" x 12" balsa
- 2 BP7 - laser cut 1/16" x 4" x 12" balsa
- 2 BP8 - laser cut 1/16" x 4" x 24" balsa

- 2 1/16" x 4" x 36" balsa sheets
- 1 1/16" x 2" x 36" balsa sheet

- 1 5/16" x 5/16" x 36" balsa strip
- 1 1/4" x 1/4" x 36" balsa strip
- 1 3/8" x 1-1/2" x 36" shaped balsa strip
- 2 3/16" x 3/16" x 36" basswood strips
- 3 1/8" x 1/8" x 36" basswood strips
- 1 3/16" x 3/8" x 2" basswood strip

Hardware parts included in this kit:

- 10 CA hinges
- 8 2-56 x 1/2" self tapping screws
- 6 2-56 x 1/2" machine screws
- 4 #4 washers
- 3 Control horns
- 2 10-32 x 1" wing bolts
- 2 10-32 plastic washers
- 2 10-32 T-nuts
- 4 Magnets

Other items included in this kit:

- 1 - Rolled plan
- 1 - Construction Manual
- 1 - Sticker sheet

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: 150+ watt, 3-4s 2200mAh (.09-.15 glow)
- Propeller
- Motor mount and mounting hardware
- Receiver - 3 channel minimum
- Servos: 3 mini servos (Hitec HS5065MG or similar)
- 1 "Y" servo harness
- Pushrods - two 5" for ailerons, one 17" for elevator
- Clevises for the pushrods.
- Covering: If you're using simple color scheme, 1 to 1-1/2 rolls of iron-on covering will be enough. You will need more if applying a more complicated livery.

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
- T-Pins
- Waxed paper
- Building board
- Wood adhesive of your choice. We use medium viscosity CA (cyanoacrylate) , but aliphatic resin and/or carpenter's glues (used correctly) will work just as well and give longer working time.

We advise the following:
Closely inspect the supplied laser-cut parts for damage. If you find any damaged or missing parts, contact us within 60 days of purchase (not your dealer).

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 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.

Don't remove parts from their sheets until you need them. 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.

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 Barracuda prototypes. Several pieces may have changed slightly with the 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/barracuda/

Remember, building is not a race.
You are the craftsman here.
If you take your time, take the time to understand the steps, and make the effort to do good work, it will certainly show when the Barracuda's airframe is completed.

IF YOU READ NOTHING ELSE IN THIS MANUAL, PLEASE READ THESE FIVE POINTS.

#1 - We've done everything we can to make the Barracuda a fun and easy to assemble kit. However, this is NOT a trainer. It is a lively little sport model that will get away from you in a hurry, if you're not an experienced pilot.

#2 - PLYWOOD HAS SLIGHT BOWS IN IT 93.48% OF THE TIME. We don't like it, but that's the way plywood is. Because of this, we engineered the Barracuda to eliminate these warps whenever possible - we'll make recommendations on how to overcome them as we go along.

#3 - BALSA HAS SLIGHT BOWS IN IT 81.53% OF THE TIME. We don't like it, but that's the way balsa is. We'll make recommendations on how to overcome them as we go along.

#4 - It is very important that you assemble the Barracuda 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.

5 - Save ALL of the scrap wood as you build - the ends of sticks, the left over sheets, etc. You will use some of this in assembly, and can use other parts if you need repairs.

Whether you're hinging, mounting, gluing, sanding, soldering, or installing, chances are we've got a video tip to make the task easier.
OSMW has created a series of videos to not only help you build your aircraft, but build it better. Our Bright Idea videos can come in handy for some of the following steps.
Check them out today - they're FREE, and we're adding to them all the time!
Visit oldschoolmodels.com/tips.htm or scan this QR code.

E2K - Club Pylon Racing

Our Barracuda is a purpose-designed model, made to conform to the original E2K club pylon racing rules established by the British Model Flying Association in 2024.

The idea behind this form of pylon racing is that low-cost, easy-to-build models can be built and flown without the need for complicated, high-priced power systems and advanced electronics.

In simple terms, it's a low-cost, grassroots form of racing that puts the focus squarely on the pilot and callers involved, not the size of their wallet.

All models follow a simple list of rules - minimum wingspan, minimum/maximum weight, and a few call-outs on fuselage measurements. No exotic building materials are allowed. Our Barracuda easily meets/exceeds all of these criteria.

When it comes to power, electric is the go-to system, and several power systems are recognized in competition - all having the same power output, using the same prop, and all using the same size battery - a 4s 2200mAh pack.

As in any form of racing, there's probably a loophole or two, but we feel the rules are pretty well thought out. They make sure to bring results back to both beginner and expert competitors alike at club level. A competitor's skill is rewarded - not the size of a competitor's wallet.

For a complete rulebook for E2K racing, scan this QR code or use the link below to download a .pdf copy of the BMFA's 2024 rules. The E2K Electric Pylon Racing – class specific rules start on page 19.

www.oldschoolmodels.com/pdf/2024-BMFA-rulebook.pdf

☐ **InstaCAddy**

Throughout this manual, you'll see photos with our InstaCAddy on the bench. This is a unique collection of Bob Smith C/A glues, accelerator, and pipettes. What makes this special is the box, as it has cutouts that make it the perfect tool to hold everything in one spot - ***and the glue won't spill!*** If you're needing C/A, consider our InstaCAddy!

Let's begin with the easy stuff first to get you warmed up. We'll start by building the tail surfaces of your Barracuda.

☐ **Prepare your work area**

Tape down the horizontal stab / elevator plans on your work surface. Tear off a piece of waxed paper to cover this part and tape it to your building surface. Make sure the plans and waxed paper are completely flat with no wrinkles.

☐ **Step 1 - Horizontal Stab Assembly (H1)**

Locate H1 from BP4 and pin it in position over the plans, as shown here. Make sure it's aligned properly, as the rest of the horizontal stab is based off this one part.

☐ **Step 2 - Horizontal Stab Assembly (H2)**

Locate both H2s from BP5. One of these is glued to each side of H1, already pinned to the board. H2s form the trailing edge of the stab.
Make sure they are positioned correctly and their notches are fully inserted into the matching notches in H1. Also make sure they are flat and straight to the plans along their entire length.

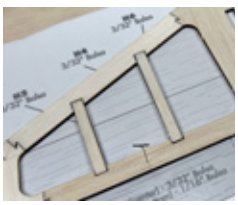
☐ **Step 3 - Horizontal Stab Assembly (H3)**

Locate both H3s from BP2. One of these is glued to the end of each H2.
Make sure they are positioned correctly and H3's notches are fully inserted into the matching notches in H2. Also make sure both H3s are flat and aligned to the plans.

☐ **Step 4 - Horizontal Stab Assembly (H4)**

Locate both H4s from BP2. One of these is glued between H3 and H1, on each side of the stab, as shown here.
Make sure the H4s are positioned correctly and H4s notches are fully inserted into the matching notches in H1 and H3. Also make sure both H4s are flat.

☐ **Step 5 - Horizontal Stab Assembly (H5, H6)**



Locate both H5s and both H6s from BP1. Glue one H5 and one H6 in place, between H2 and H4, as shown here - then do the same for the other side of the stab.
Make sure these pieces are fully inserted into the matching notches in H2 and H4. Also make sure all H5s and H6s are flat.

☐ **Step 6 - Horizontal Stab Assembly (H7)**

Remove any pins and lightly sand the surface of the stab's framework to make sure it is flat for the next two steps.
Then locate one H7 from BP8. Glue H7 in place, on top of the stab's framework, as shown here. It needs to be perfectly aligned with the framework. Make sure it is completely flat by either holding it down or placing weights on it until the glue cures. And check to make sure the center cutout is clear of glue.

☐ **Step 7 - Horizontal Stab Assembly (H8)**

Now locate one H8 from BP8. Glue H8 in place, on top of the stab's framework, as shown here. It needs to be perfectly aligned with the framework and up against H7 you just installed.
Make sure it is completely flat by either holding it down or placing weights on it until the glue cures.

☐ **Step 8 - Horizontal Stab Assembly (H7)**

Carefully remove the stab framework from the waxed paper and flip it over. As before, lightly sand the surface of the stab's framework to make sure it is flat for the next two steps.
Then locate H7 from BP8. Glue H7 in place, on top of the stab's framework, as shown here. It needs to be perfectly aligned with the framework. Make sure it is completely flat by either holding it down or placing weights on it until the glue cures. And check to make sure the center cutout is clear of glue.

☐ **Step 9 - Horizontal Stab Assembly (H8)**

Locate H8 from BP8. Glue H8 in place, on top of the stab's framework, as shown here. It needs to be perfectly aligned with the framework and up-against H7 you just installed.
Make sure it is completely flat by either holding it down or placing weights on it until the glue cures.

Now set the stab assembly aside as we begin construction on the Barracuda's elevator.

☐ **Step 10 - Elevator Assembly (E1, E2)**

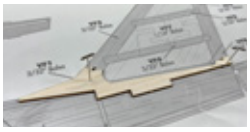
Locate E1 from BP4 and one E2 from BP8. Glue E2 on top of E1, making sure both pieces are properly aligned with each other. Also make sure they are completely flat by either holding them down or placing weights on them until the glue cures.

☐ **Step 11 - Elevator Assembly (E2)**

Flip the elevator assembly over. Now locate the other E2 from BP8. Glue E2 on top of E1, again, making sure both pieces are properly aligned. Keep them completely flat until the glue cures.

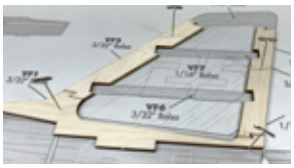
Now set the elevator assembly aside as we begin construction on the Barracuda's vertical fin.

☐ **Step 12 - Vertical Fin Assembly (VF1)**



Remove the stab/elevator plans and tape down the vertical fin plans on your work surface, along with a fresh piece of waxed paper - nice and flat. Then locate VF1 from BP1 and pin it in position as shown here.

☐ **Step 13 - Vertical Fin Assembly (VF2, VF4)**



Locate VF2 and VF4 from BP1. VF2 is the leading edge of the fin, with VF4 the trailing edge.
Make sure they are positioned correctly and their notches are fully inserted into the matching notches in VF1. Also make sure both pieces are flat and aligned to the plans along their entire lengths.

☐ **Step 14 - Vertical Fin Assembly (VF3)**

Locate VF3 from BP1. It is glued to the ends of VF2 and VF4 that you just installed.
Make sure VF3 is positioned correctly and its notches are fully inserted into the matching notches in VF2 and VF4.

☐ **Step 15 - Vertical Fin Assembly (VF5, VF6)**

Locate VF5 and VF6 from BP1. These are glued between VF2 and VF4 to make the inner structure of the fin.
Make sure both pieces are fully inserted into the matching notches in VF2 and VF4, and they are held down flat while the glue cures.

☐ **Step 16 - Vertical Fin Assembly (VF7)**

Remove any pins and lightly sand the surface of the vertical fin's framework to make sure it is flat for the next two steps.
Then locate one VF7 from BP6. Glue VF7 in place, on top of the fin's framework, as shown here. It needs to be perfectly aligned with the framework. Make sure it is completely flat by either holding it down or placing weights on it until the glue cures.

☐ **Step 17 - Vertical Fin Assembly (VF8)**

Locate one VF8 from BP6. Glue VF8 in place to fill in the missing corner of the sheeting. It only fits correctly in one way, so make sure you apply glue to the correct side.
Make sure it is pushed up against VF7 you just installed, and it should also be held flat until the glue cures.

☐ **Step 18 - Vertical Fin Assembly (VF7)**

Carefully remove the fin's framework from the waxed paper and flip it over. As before, lightly sand the surface of the framework to make sure it is flat for the next two steps.
Then locate VF7 from BP6 and glue it in place as before. Make sure it's aligned and held flat while the glue cures.

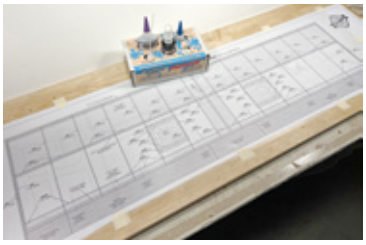
☐ **Step 19 - Vertical Fin Assembly (VF8)**

Locate the other VF8 from BP6. Glue it in place, checking the orientation. Make sure it is pushed up against VF7 and held flat until the glue cures.

Now set the vertical fin assembly aside as we begin construction on the Barracuda's wing.

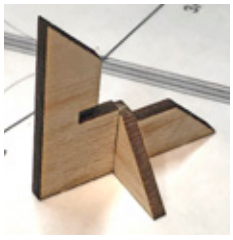
NOTE - the wing is built up-side-down.

☐ **Step 20 - Prepare your work area**



Tape down the wing plans on your work surface. Tear off a piece of waxed paper to cover it and tape it to your building surface. Make sure the plans and waxed paper are completely flat with no wrinkles.

☐ **Step 21 - Alignment Triangles**



Before we start on the wing construction, there are a couple of tools that are pre-cut into this kit.

In LP1 and LP3 are a few sizes of triangles, each with a 90° angle on them. They can be used to vertically align any of the parts in the construction of your Barracuda. Also, you'll find foot pieces that can be used with these triangles to hold them vertically (hands-free).

☐ **Step 22 - Wing Assembly (upper spar)**

Locate one of the 3/16" sq. x 36" basswood sticks. This is used as the upper wing spar. Position it on the plans, measure and cut it to length, leaving about a 1/8" or so on each end - just to be safe.

Then it needs to be attached in place over the plans. We use a few drops of medium C/A to tack-glue this piece to the waxed paper to hold it in place, instead of t-pins. Use your long straight-edge to make 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 23 - Wing Assembly (R1)**

Locate both R1 ribs from LP1 and LP2. These are glued together to form a thicker R1 - and we recommend epoxy for this step.

Mix up some 15- or 30-minute epoxy and apply it to the mating surfaces of each R1. Carefully align them, weight them down, and allow the glue to cure to form a solid, one-piece R1. Make sure these parts are perfectly aligned.

Keep epoxy out of the pre-cut holes; wipe off any excess epoxy.

☐ **Step 24 - Wing Assembly (R1A)**

Locate both R1As from LP1 and LP2. One R1A glued to each side of the R1 assembly, each aligned with the front wing-hold, as shown here. This forms a thicker, stronger wing hold.

☐ **Step 25 - Wing Assembly (R1)**

Now the completed R1 assembly is ready to install on the spar. It is positioned in the center of the wing. Its center cutout should fit over the spar, and the back tab should rest on the surface, as shown here.

When you're ready to attach it, remove it, apply glue into the cutout, and a little bit on the bottom of the rear tab. Then place it in position, fully inserted onto the spar. You can use one of those triangle gizmos we talked about earlier to make sure the rib is perfectly 90° to the building surface while the glue cures.

NOTE - The wing's shear webs are cut from 1/16" sheeting. They are going to require you to be careful when removing the parts from the sheet and when you place them.

Please, I beg you, take your time and don't handle the wing's pieces roughly. They are perfectly strong when assembled and flying through the air. However, when in your hands and on your workbench, it is a far different story.

Also for the rest of the wing's construction, you'll be building the port and starboard sides at the same time. This means you'll need to mirror the pieces on one side compared to the other. The photos will NOT show each side of the construction, but I'll bug you about it as we go along.

☐ **Step 26 - Wing Assembly (R2, SW3)**

Locate both R2s from BP2 and both SW3s from BP6.

Note the angry Barracuda face etched on the SW6s (and all other shear webs). Because the wing is built upside down, all of the faces should also be upside down and facing the trailing edge.

Test fit what I'm about to describe, as you'll use this same technique for all of the other ribs. Refer to these pics to be safe.

The tab on SW3 should be inserted into the pre-cut hole in R1, then R2 is placed up against SW3, with SW3's tab inserted into R2's pre-cut hole. R2 should be pushed down onto the upper spar, with its rear tab resting on the building surface.

Don't glue them in just yet.

Now locate the two SW5s from BP6. These fit into the rear cutouts of R1 and R2, as shown here.

What you should have is something that looks a lot like this. All pieces were carefully placed with tabs fully inserted into their notches. And pieces are mirrored on each side of the center R1 rib.

If so, then you can apply glue to bond it all together. Make sure to also glue the SW3s to the spar where the pieces touch.

☐ **Step 27 - Wing Assembly (R3, SW4, SW6)**

Locate two R3s from BP3 and BP4, two SW4s and two SW6s from BP6 and BP7.

As you did in the previous step, you'll insert the tabs on SW4 into

R2 and then put R3 in place up-against SW4, and pushed down onto the spar.
SW6 should be inserted into the rear cutouts of R2 and R3 as shown here.
When everything is in place, glue these parts in position.

☐ **Step 28 - Wing Assembly (R3, SW4, SW6)**

Locate the other two R3s from BP3 and BP4, two SW4s and two SW6s from BP6 and BP7.
You'll install these in the same way as you just did for the first set of R3's.
Make sure everything is in place and firmly seated before gluing into place - and repeat for the opposite side of the wing!

☐ **Step 29 - Wing Assembly (SH2)**

Locate four SH2s from LP2 and LP3.
One SH2 is pushed in the forward pre-cut slots in both R3s, spanning between the ribs.
The other SH2 is pushed in the aft pre-cut slot, as shown here.
Make sure they are both pushed all the way into these slots when gluing them in place - and repeat for the opposite side of the wing!

☐ **Step 30 - Wing Assembly (SH2)**

Locate four more SH2s from LP2 and LP3.
One SH2 is placed on top of the four SH2s you just installed, and one over the rear SH2. This should double-up both rails and give a bit more purchase when installing the servo hatch screws later on in the build.
Make sure they are both pushed all the way into these slots when gluing them in place - and repeat for the opposite side of the wing!

☐ **Step 31 - Wing Assembly (SH2)**

Locate the last four SH2s from LP2 and LP3.
One SH2 is glued to the ledge just in front of the forward SH2s you installed. The other is glued to the ledge just back of the aft SH2s, as shown here. These SH2s should be flush with the surface of the ribs - and repeat for the opposite side of the wing!

☐ **Step 32 - Wing Assembly (R3A)**

Locate four R3As from BP1. These are glued to the outside edges of the R3 ribs, flush with the top of the ribs, and centered on the last SH2s you just installed. This should form the sides of the servo box and provide an edge to iron-on covering to stick to later on in the build. Be sure to repeat for the opposite side of the wing.

☐ **Step 33 - Wing Assembly (R4, SW4, SW6)**

Locate six R4s from BP5, as well as six SW4s and six SW6s from BP6 and BP7.
You'll install these, one at a time, in the same way as you did for other ribs and shear webs.
Make sure everything is in place and firmly seated before gluing into place - and make sure to repeat for the opposite side of the wing!

☐ **Step 34 - Wing Assembly (R5, SW4, SW6)**

Locate both R5s from BP2, as well as two SW4s and two SW6s from BP6 and BP7.
These are glued in place like other ribs to form the start of the wing tip.
Make sure everything is in place and firmly seated before gluing into place - and make sure to repeat for the opposite side of the wing!

☐ **Step 35 - Wing Assembly (SW1)**

Locate both SW1s from LP2 and LP3.
These are glued in between the R1 rib and the two R2 ribs on each side. These should be pushed down against the spar and up against the shear web already in place, as shown here.

☐ **Step 36 - Wing Assembly (SW2)**

Locate both SW2s from LP3.
These are glued in between the R2 rib and the first R3 ribs on each side of the wing. These should be pushed down against the spar and up against the shear web already in place, as shown here.

☐ **Step 37 - Wing Assembly (lower spar)**

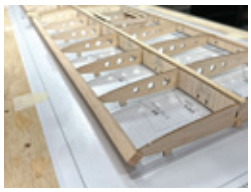
Locate the other 3/16" sq. x 36" basswood stick. This is glued into pre-cut slots of all the ribs to form the lower spar.
When pushed all the way in the slots, the spar will be flush with the aft part of the R3-R5 ribs, but not the forward part. It will also stand proud on the R1 and R2 ribs by a 1/16" - by design.
Make sure this is glued to all of the ribs and the shear webs. You might want to use a slower curing glue for this step to give you more working time.

☐ **Step 38 - Wing Assembly (trailing edge)**

Be careful with the force you use here - This is your potential broken tab alert!

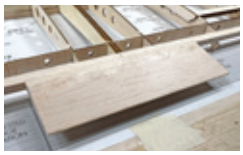
Locate the 1/4" sq. x 36" balsa stick. This is glued to the rear of each rib to form the trailing edge. It should rest on the ledge of the rear tabs and be pushed up against each rib. The amount of force you use here will be in direct proportion to the number of tabs you could break off - so be slow and careful here.
Make sure the trailing edge is straight along its entire length while the glue cures. Use a long straight-edge to help.

☐ **Step 39 - Wing Assembly (leading edge)**



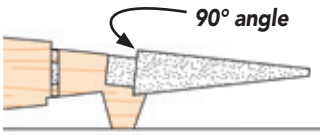
Locate the 5/16" sq. x 36" balsa stick. This is glued to the front of each rib to form the leading edge. It should be pushed into the cutout in R1 first, then into each of the diamond cutouts in each rib.
Make sure the leading edge is straight along its entire length while the glue cures. Use a long straight-edge to help.

☐ **Step 40 - Wing Assembly (tapered trailing edge, center)**



Locate the 3/8" x 1-1/2" x 36" tapered balsa stock. You'll be cutting this over the next few steps - ***make sure you measure twice, three, or seven times before you make each cut*** - as there's only one of the pieces, and it's used for the entire rear of the wing, including ailerons.
Measure and cut the center section for the wing - the portion between the ailerons - *exactly* 4.93628" long, or the model just won't fly right - exactly this length.

Just kidding - it should be 5" long.



Now when installing this, first look at the cross section of the tapered piece. On the taller end, it has a 90° angle and a "not" 90° angle. We're focused on the 90°, and it should be placed as shown in this diagram.
When you're ready, glue it to the trailing edge, properly centered as per the plans - and make sure that it fits down into the small ledge, precut into each rib's tab - see the diagram above.

☐ **Step 41 - Wing Assembly (lower trailing edge sheeting)**

Locate the 1/16" x 2 x 36" balsa sheet. Measure and cut two identical 3/4" x 36" pieces to form the trailing edge sheeting (place one aside for later on).
This will be glued in place into the rear notches of each rib along the entire length of the wing.
Make sure it is glued to each rib, to each of the rear shear webs, and to the trailing edge strip already installed.

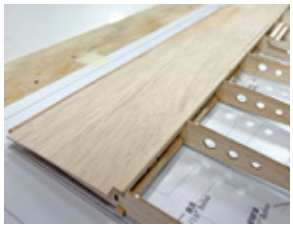
☐ **Step 42 - Wing Assembly (tapered trailing edge, center)**

Locate the leftover 3/8" x 1-1/2" tapered balsa stock you had previously. Now cut two identical lengths to span between R5 and R4, as shown on the plans.
These are both glued in place, making sure of the same orientation as you did for the center section you installed in the previous step.
Also make sure you do repeat for the opposite side of the wing.

☐ **Step 43 - Wing Assembly (lower leading edge sheeting)**

Locate one of the 1/16" x 4" x 36" balsa sheets. Measure and cut a piece from this to use as the leading edge sheeting, spanning from the rear of the leading edge to the front edge of the wing spar. Make sure you take into consideration the curvature of the wing ribs. It should be roughly 3.4" wide, but it's best to make it just a little wider, then sand as necessary to get a good fit.

Now, mark the center of the sheet, as you'll use this center mark to cut a notch to clear the wing's forward hold-down tab, as shown here. Test fit to guarantee a good fit.



When satisfied with how this piece fits, glue the sheeting in place. Make sure it is glued to the leading edge, to all of the ribs, and to the spar, as shown here.

☐ **Step 44 - Wing Assembly (lower center section sheeting)**

Locate one CS1, CS2, and two CS3s from BP7. Glue one CS3 over each of the cutout holes in CS1, both on the same side of the sheeting.
CS1 is now glued up against the rear sheeting. Make sure the CS3s face into the wing (not seen). Also position CS1 with the holes facing towards the leading edge.
Then CS2 is cut to fit between CS1 and the rear of the main spar.
Note the grain direction when cutting and fitting these pieces.
Make sure they are glued to all of the pieces that they contact.

☐ **Step 45 - Wing Assembly (remove tabs)**

Now it's time to carefully remove the wing from the building surface. Flip it over and carefully remove all of the tabs from each rib. Make sure that when you trim these, you take care to make the cuts so they continue the airfoil's shape in each instance.
Lightly sand as necessary to remove any excess glue.

☐ **Step 46 - Wing Assembly (upper trailing edge sheeting)**

Locate the other 3/4" x 36" piece you cut when forming the trailing edge sheeting a few steps back.
This will be glued in place into the rear notches of each rib along the entire length of the wing.
Make sure it is glued to each rib, to each of the rear shear webs, and to the trailing edge strip already installed.

☐ **Step 47 - Wing Assembly (upper leading edge sheeting)**

Locate the other 1/16" x 4" x 36" balsa sheet. Measure and cut a piece from this to use as the leading edge sheeting, spanning from the rear of the leading edge to the front edge of the wing spar. Make sure you take into consideration the curvature of the wing ribs. It should be roughly 3.5" wide, but it's best to make it just a little wider, then sand as necessary to get a good fit.

When satisfied with how this piece fits, glue the sheeting in place. Make sure it is glued to the leading edge, to all of the ribs, and to the spar, as shown here.

☐ **Step 48 - Wing Assembly (upper center section sheeting)**

Locate the other CS1 and CS2 from BP7. This time you'll glue CS2 on first, and trim CS1 to fit between CS2 and the rear of the main spar, cutting away the part that has the holes.
Note the grain direction when cutting and fitting these pieces.
Make sure they are glued to all of the pieces that contact.

☐ **Step 49 - Wing Assembly (R6)**

Now take a bit of time to sand the ends of the wing tips flat. Sand down any excess sheeting or sticks so everything is flat with the outer surface of both R5 ribs.

Then, the four R6s from BP4. Two of these are glued to each outer R5 rib to form the wing tips.
Note the curvature of the wing ribs, as these pieces only align properly in one direction.

Now set the wing assembly aside as we begin construction on the Barracuda's fuselage.

☐ **Step 50 - Fuselage Assembly (prepare your surface)**

Tape down the fuselage plans on your work surface. Tear off a piece of waxed paper to cover it and tape it to your building surface. Make sure the plans and waxed paper are completely flat with no wrinkles.

☐ **Step 51 - Fuselage Assembly (FS2, FS3)**

Locate both FS2s from BP2 and BP3, as well as both FS3s from BP1.
One FS2 is glued to one FS3 to form an outer fuselage skin, then do the same for the other FS2 and FS3 to make two perfectly matched outer fuselage sheets.
Make sure the glue joints are perfectly flat.

☐ **Step 52 - Fuselage Assembly (FS1)**

Locate both FS1s from LP1 and LP2. The FS1s are glued to the outer sheets as shown to make the start of the internal fuselage structure.
It is important that the FS1s are perfectly aligned with the FS2s, as any misalignment will cause the fuselage to be warped and possibly unfixable later on.

The alignment point is along the wing cradle so these need to be spot-on.
So glue one FS1 to an outer skin - perfectly aligned, and make sure it's held flat against the balsa sheeting until the glue cures.
When that piece is finished, you'll now make a MIRROR IMAGE of the first piece - as shown in the photo. Do NOT make matching pieces!

☐ **Step 53 - Fuselage Assembly (SK - optional)**

This step is optional, but it won't hurt a thing to do it anyway.
If you are going to purchase and use the optional Barracuda skids that let you land on rough surfaces, you'll need to install the SKs now. These are located on LP1.
There are two pre-cut holes in the bottom of each of the plywood inner frames. One SK is glued to the plywood in these spots, as shown on the diagram above. Make sure that the hole in SK aligns with the pre-cut hole in the side frames.

☐ **Step 54 - Fuselage Assembly (lower frame)**

Locate the 1/8" sq. x 36" basswood strips.
These are used to form the lower frames of the fuselage sides. You'll measure and cut pieces that will go from the back of the firewall (F1A) to the middle of F3 and another to go from the middle of F3 back to the end of the fuselage sheeting. These can be made up of smaller pieces with no problems.
Glue these in place, making sure they are absolutely straight along their entire lengths.
Do this for both the port and starboard fuselage sheets.

☐ **Step 55 - Fuselage Assembly (upper frame)**

Using more of the 1/8" sq. basswood strips, measure and cut the upper frames of the fuselage sides.
These can be made up of smaller pieces with no problems.
Glue these in place, making sure they are absolutely straight along their entire lengths.
Do this for both the port and starboard fuselage sheets.

☐ **Step 56 - Fuselage Assembly (F2, F2A)**

Locate F2 and F2A from LP1. Glue F2A to F2 as shown here. Make sure that it's centered side to side and that the pre-cut holes in each piece are aligned.
Keep glue out of this cutout as it cures.

☐ **Step 57 - Fuselage Assembly (F2, F2A)**

Glue the F2 assembly into the port fuselage sheeting. F2A should face towards the nose of the fuselage.
Make sure its tab is fully seated into the pre-cut slot in ply sheeting as shown here.
Also make sure it sticks up, protrudes, stands, (or whatever) a perfect 90° from the fuselage side. Use one of those triangle

gizmos from way back when we started things in the steps previous to this one.

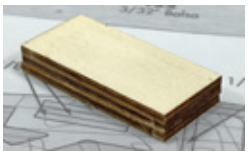
☐ **Step 58 - Fuselage Assembly (F3)**

Locate F3 from LP1. It is glued in place next, into the fuselage sheeting. Note that the thin cutout should be positioned toward the bottom of the fuselage as shown here.
Use the same technique as in the previous step to make sure it's seated and 90° to the sheeting as the glue cures.

☐ **Step 59 - Fuselage Assembly (F4)**

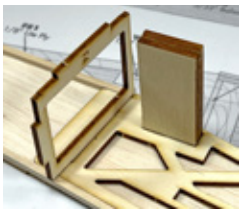
The next contestant in the former train is F4, part of LP1.
It is glued in place next, into the fuselage sheeting. Note that its tab should be positioned toward the bottom of the fuselage as shown here. Use the same technique as in the previous step to make sure it's seated and 90° to the sheeting as the glue cures.

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



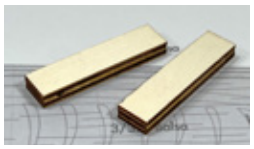
Locate the three WHs from LP1. These are glued one on top of the other to make a thicker WH.
Make sure they are all perfectly aligned and use a clamp to hold everything in place as the glue cures. We recommend epoxy for this step.

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



Once the glue cures from the previous step, lightly sand the edges of WH, then it is glued into the fuselage as shown here. Make sure it's fully inserted and 90° as you did with the formers. We recommend epoxy for this step.

☐ **Step 62 - Fuselage Assembly (SR)**



Locate the four SRs from LP1. Glue two together to make a thicker SR. Then glue the other two together so you have a magnificent pair of these elevator servo mounting rails.
Make sure the SRs are all perfectly aligned and use clamps to hold everything in place as the glue cures.

☐ **Step 63 - Fuselage Assembly (SR)**

NO GLUE FOR THIS STEP.
Once the glue cures from the previous step, lightly sand the edges of both SRs. These will be placed in the long groove pre-cut into the fuselage sides. By not gluing these in right now, they will be free to slide back and forth, allowing you to custom fit them around your elevator servo later on.

☐ **Step 64 - Fuselage Assembly (starboard fuse side)**

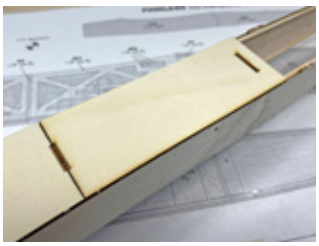
Locate the starboard fuse side, as it's now time to join it to the port side and formers you've been working on over the last few steps.
It's strongly advised that you test fit this a time or two before popping the cap off your glue.
All of the formers should fit into the appropriate slots in the starboard's internal ply sheeting. Also, the SRs should be able to slide back and forth. It's ok if it takes a bit of force - just as long as you can move When you're happy with how all this fits together,

it's go-time with your favorite glue. Make sure all the formers and the WH have the proper amount of glue, then press all of them completely into the starboard sheet's pre-cut holes.
Again - NO GLUE ON THE SRs.
Use clamps or weights to hold everything in place while the glue cures.

☐ **Step 65 - Fuselage Assembly (FB1)**

Locate FB1 from LP3. This is the underside of the fuselage extending from the firewall back to F3. The precut slot in FB1 is where the tab in the bottom of F2 will slide in. Also, FB1 will only fit properly in one way; test fit this first.
When happy with the fit, remove FB1, apply glue to the fuse where FB1 will touch the fuselage, then attach FB1 in place.

☐ **Step 66 - Fuselage Assembly (FB2)**



Locate FB2 from LP3. This is the underside of the fuselage extending from F3 back to just behind F4.
Just as you did with FB1, test fit FB2 in place to check the orientation and to make sure that F4's tab fits properly into FB2's slot.
When happy with the fit, remove FB2, apply glue to the fuse where FB2 will touch the fuselage, and then attach FB2 in place.

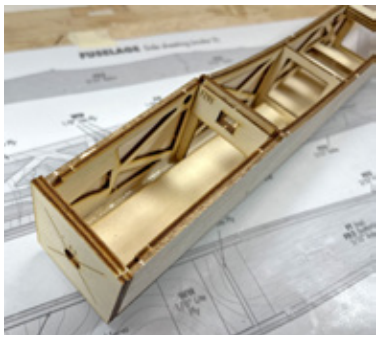
☐ **Step 67 - Fuselage Assembly (F1A, TR)**

Locate F1A from LP1 and TR from LP2.
TR is glued into the pre-cut slot in F1A, as shown here. To make sure it's flush, place F1A on your building surface, then push TR completely into the slot.

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

Locate F1 from LP1. Notice all that fancy etching stuff I put on it? Well, that's to help you position your motor's mount later on in the build.
So make sure that when you glue F1 to F1A, the etching can be seen. Also make sure to orient it as shown in this photo.
Epoxy is recommended for this step. Clamp the pieces together until the glue is fully cured.

☐ **Step 69 - Fuselage Assembly (F1/F1A/TR assembly)**



Once the glue has cured from the previous step, it's time to test fit the assembly into the fuse.
TR forms the battery tray and should be toward the bottom of the fuselage. It will also extend into the pre-cut slot in the bottom of F3 when the firewall is in place.
When you see how all this works, mix up some epoxy and glue the F1/F1A assembly in place. Make sure it is held perfectly aligned with the fuselage sides and bottom. While the glue is curing, check out the next step - somewhat quickly.

☐ **Step 70 - Fuselage Assembly (firewall supports)**

While the glue is curing from the previous step, locate the scrap 1/8" sq. basswood sticks and quickly cut two 1-1/2" lengths.
These should be pushed into the epoxy on each side of the firewall, where it meets the fuselage sides. Goop a little extra epoxy around these to strengthen the fuse-to-firewall bond as shown here.

☐ **Step 71 - Fuselage Assembly (F1B)**

Locate F1B from LP3. This is glued to the back of the firewall, into the pre-cut slots on each side of the fuselage, as shown here. Make sure it is completely inserted into the slots so that it is flush with the fuselage sheets on both sides.

☐ **Step 72 - Fuselage Assembly (F5)**

Locate F5 from LP1. This is glued in place between the fuselage sheets, towards the rear of the fuselage. There are pre-cut slots in the sheeting to help align this.
When doing this step, make sure the sides are symmetrical. "Eye-ball" down the fuselage to make sure they look even - not a like a banana. Bananas are no good here.

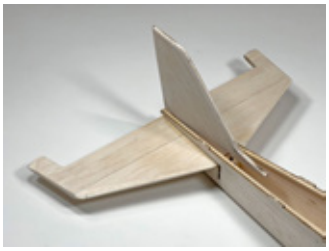
☐ **Step 73 - Fuselage Assembly (FB3)**

Locate FB3 from LP2. This is the bottom of the fuselage, from the end of the sheeting already installed back to the aft end.
Test fit this before getting a whiff of your glue. The notches in the sides of FB3 should slide down around the tabs in the fuselage sides.
Take your time and make sure of the alignment. Then remove FB3, apply glue to the bottom of the fuselage sides, and glue FB3 in place.

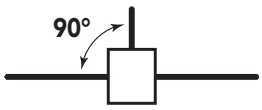
☐ **Step 74 - Fuselage Assembly (FB4)**

Locate FB4 from LP3. This is glued inside the fuselage to strengthen the joint between FB2 and FB3. Make sure it overlaps these joints when you glue it in place.

☐ **Step 75 - Fuselage Assembly (attach the tail)**



Locate the tail you assembled way-back-when.
It's now time to glue this to the fuselage.
Before test fitting, cut away the supports in the rear of the horizontal stab slots cut into the fuselage sides.
Then carefully slide the tail assembly into the rear of the fuselage. Don't force it with too much pressure, as we don't want things to break.
If you've built everything straight and true, the tail should line up perfectly.
But if not...
sand as necessary to allow the assembly to slide all the way into the fuselage and into the pre-cut slot in the top of F5.



When it does fit properly, "eye-ball" down the fuselage again and make sure that the stab is perfectly horizontal to the fuse and the vertical fin is perfectly straight up.
Keep test-fitting and sanding as necessary to get everything just right.

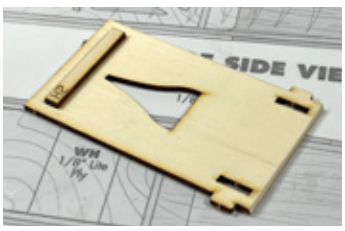
☐ **Step 76 - Fuselage Assembly (FT, FSS)**

Locate FT from BP3 and FSS from BP8.
Glue FSS between the notches, just in front of the vertical fin cutout. Make sure it is centered between the notches.
This piece adds a bit of strength to this area.

☐ **Step 77 - Fuselage Assembly (FT)**

Now it's time to offer up FT to the top of the fuselage. Make sure that the side with FSS is placed inside the fuselage.
Before test fitting, cut away the rear support in the back of the vertical fin cutout. Then test fit, making sure all the side tabs fit into the pre-cut FT notches.
When you're happy with the fit, remove FT and apply glue to the top of all of the fuselage pieces that touch FT.
Then place FT back in place as shown.

☐ **Step 78 - Fuselage Assembly (H1, H2)**



Locate H1 and one H2 from LP1.
Note that one side of H1 has a pre-etched rectangle where H2 should be glued.

☐ **Step 79 - Fuselage Assembly (H3, magnets)**

Locate both H3s from LP1 and LP2 and retrieve the 4 magnets from the hardware bag.

Push one magnet into each of the H3's pre-cut holes. Make sure they're completely pushed in - flush on both sides, and set aside.

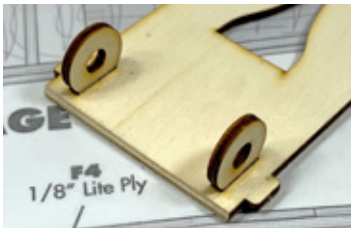
Inside the fuselage's tank/battery area, you'll see 2 pre-cut holes into the plywood side-frame - one on the port side and one on the starboard. Place a drop of glue into each hole, then push a magnet into each of these holes - again making sure they are flush, but take care when squeezing them in place so you don't damage the outer balsa skin. Don't worry about positive/negative poles and attraction - that's in the next step.

☐ **Step 80 - Fuselage Assembly (H3s)**

This step requires attention and visualization to make sure you glue the H3's in place so the matching magnets attract - not repel each other.

Snap each of the H3s in place to the magnet inside the fuselage so the flat side of each H3 is facing upward. Now, take your hatch assembly and hold it over this area so the finger tabs face the rear of the fuse.

Make sure you're also holding the hatch so H2 is facing down.

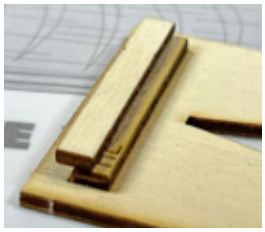


Now, one at a time, you can take an H3 and press it in place into the corresponding pre-cut notch of H1. They need to stick straight up (or down, depending on how you're holding the hatch), 90° to the hatch surface. Both should be a nice, press fit that will hold them in place fairly well so you can dry fit the hatch before permanently gluing these in place.

Once each of the H3s is pressed in place, dry fit and make sure the sides are attracting, not repelling, each other.

When you're good with everything, remove the hatch, then carefully glue both H3s in place by noting their orientation, removing them, applying glue, and then pushing them back into place - firmly seated and at the correct angle.

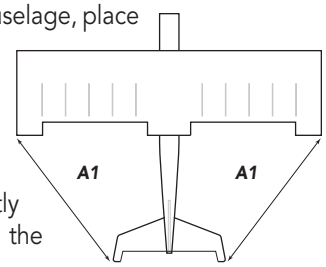
☐ **Step 81 - Fuselage Assembly (H2)**



Locate the other H2 from LP1. It should be glued to the H2 that was previously installed on the underside of the hatch (H1).

But it should be "stepped" to create a step that will catch on the fuselage, holding it in place.

☐ **Step 82 - Fuselage Assembly (wing alignment)**



To align the wing properly on the fuselage, place the wing in position by pushing the forward wing retainer into the slot in the center of R2 (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 wingtip to the left tip of the stab is the same as the distance measured from the right wingtip to the right stab tip (A1=A1).

☐ **Step 83 - Fuselage Assembly (drill wing bolt holes)**

With the wing aligned, you'll need to drill two 3/16" holes for the wing bolts, down through the wing into the WH assembly in the fuselage.

Now, should I leave you to your own devices to figure out where to drill the holes? **Hmm - could be interesting.**

Well...let me think about that.

Hmmmm.

Well, you're welcome to do it yourself, or...

you could use the full-size template I made for you on the plans. You're welcome! Cut it out, align it along the back edge of the wing, tape it in place, and Bob's your uncle - or maybe it's Fred. Let's say Fred, because *"that's good with Fred"*.

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 to 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.

Now run a 1/4" drill through the WH2/WH3 assembly in the fuselage. Locate the two 10-32 T-nuts from the hardware bag and install them on the underside of the WH2/WH3 assembly.You can then test fit the wing again, running the 10-32x1 screws through the wing and into the T-nuts you just installed.

☐ **Step 84 - Wing Assembly (ailerons)**

One last thing to "create" is the ailerons. They are cut from the leftover 3/8" x 1-1/2" tapered balsa strip. Measure and cut both the port and starboard ailerons.

☐ **Step 85 - Fuse Assembly (tail-skid - optional)**

Located on LP1 is TS - an optional tail-skid. Adding this can give the rear of the Barracuda a bit more "wear-resistance." If you choose to install this, it is glued on the bottom of the fuselage, towards the rear. Be sure to sand/file a good angle on the leading and trailing edges first to help cut down any added wind resistance.

☐ **Step 86 - Fuse Assembly (sanding)**

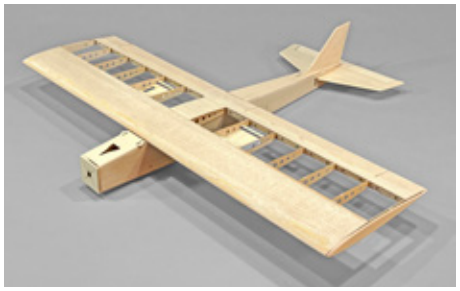
Now is the time to get quite familiar with the sanding tools of your choice. Take the time to perform a good sanding, rounding the wing's leading edge and blending it into the wingtips. Go over the entire wing, making sure the sheeting is smooth and the trailing edges are blended into the ribs, continuing the curvature of the wing. Pound out the extra time on those leading edges to make sure they are smooth and perfect works of art along their entire lengths.

Smooth out the edges of the fuselage. Per E2K regulations, you can't do too much rounding here - only 1/4" radius (use the gauge cut into LP1). Whatever you choose, just make sure the edges are smooth and straight along their entire length.

You should have already sanded the leading and trailing edges of the stab and vertical fin, but if not, now is the time to do that.
Note that I've incorporated some extra wood into the design, which will allow you to more than just simply round these edges. You can make more of an elongated taper for less wind resistance. The same is true with the trailing edge of the elevator.

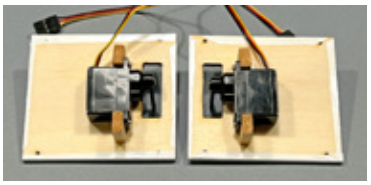
Also sand bevels into the leading edge the elevator and ailerons. The idea is to spend some time caressing this awesome airframe you've created, so what you end up with will be a thing of beauty that will slice through the air like a knife through melted butter.

When all is sanded, you should end up with an airframe that looks a lot like this. Hopefully JUST like this!



☐ **Step 87 - Servo Hatches (SH1, parte uno)**

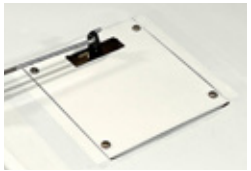
Locate both SH1s in LP3 and the 2" piece of 3/16" x 3/8" basswood. Create four servo mounting posts by cutting the basswood strip into four 1/2" pieces.



Now place the SH1s on your work surface, mirroring each other as shown here.
Position your aileron servos on the inside of the SH1s 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.

☐ **Step 88 - Servo Hatches (SH1, seconda parte)**

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 hatch mounting strips. 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 89 - Covering**

Well, it's time to cover the Barracuda.
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.
On the back of this manual is a livery sheet that you can use to design the perfect color-scheme for your Barracuda. Get out your crayons, markers, colored pencils, paint & brushes - or whatever you use - and let your mind go. You can also download a .pdf of the livery sheet from our website and print as many as you need.
To cover the Barracuda as shown in our prototypes, it took three rolls because the colors involved. But 1-1/2 rolls of iron-on covering would easily cover the entire airframe, with some to spare.
Be sure to cut away the covering over the three pre-cut exhaust holes on the bottom of the fuselage.

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. She iusa very well-known provider of custom graphics for R/C models.
We have supplied her with the artwork needed, and you can order straight from her, choosing the colors that work for you.
Contact Callie Graphics at this link: https://callie-graphics.com
or scan the 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. She just does good work at a very reasonable price!

☐ **Step 90 - Attach the Control Surfaces (CA hinges)**

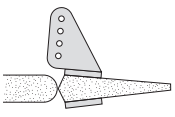
Now is the time to attach all the control surfaces to the airframe by gluing the hinges in position with thin C/A. We've noted suggested hinge locations for each of the control surfaces on the plans, and you'll need to make the appropriate slots for each hinge.
When using the CA hinges, first push a pin through on one side, at the center of the hinge, as shown here. This will keep the hinge centered as it's pushed into the surfaces. When you've got all the hinges for a surface in place, then remove the pins and glue the hinges. (AND, SEAL THOSE HINGE GAPS!)

☐ **Step 91 - Radio installation**

Now it's time to install your receiver and hook up all of the radio for the first time.
Attach the aileron servo hatches (with the servos mounted) and run the wires through the cutouts in the ribs and then out through the pre-cut holes in the center sheeting. (You'll probably have to use a short servo extension along with a "Y" harness for the aileron servos, depending on the brand you use.)
To Install the elevator servo, place it between the SR rails already in the fuselage. These can be moved back and forth to get the right fit and servo position. When you have them where you need them, glue the SRs in place to the fuselage sides and attach the elevator servo.
Finish the layout of your radio gear by adding the receiver and ESC. We mounted the receiver next to the elevator servo. The ESC goes up front, under the removable hatch.
Using a bit of self-adhesive hook-and-loop (not included).

☐ **Step 92 - Pushrod installation**

Now it's time to mount all of the control horns, one for each control surface. A control horn consists of the horn's plastic backer plate and two 2-56 x 1/2" self-tapping screws; you'll find all of that in the hardware bag.
Each control horn should be mounted so it's in-line with the pushrod opening, and the holes in the control horn should be in-line with the hinge, as shown in this diagram.

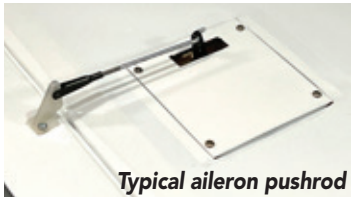


You'll need to carefully mark and drill the mounting holes, using the control horn as a guide. Then you insert the screws and thread them into the backer plate from the other side. Tighten the screws to firmly hold the control horn in place, but do not crush the wood of the control surface.

As for the pushrods, we're not going to go in-depth on how they work, as that's covered in their included instructions. Basically, you'll measure and cut the pushrods to length, taking into account the length of any clevises (or z-bends) on the end of the pushrods.

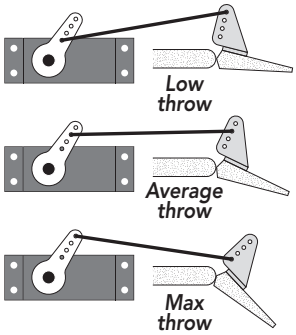
Elevator pushrod exits out the rear of the fuselage

We typically have one end of the pushrod (the exposed end for the elevator) that has an adjustable clevis. The other end is usually a simple Z-bend that attaches to the servo horn. Doing it this way allows for fine adjustments in the field without having to get inside the plane, taking things apart.



Typical aileron pushrod

Also, when setting up the pushrods, the various holes in the servo arm and the control horns can drastically change the amount of throw that the surfaces will have. Here's a rudimentary diagram that shows how you can remove or add throw to a surface mechanically - simply by changing the holes used.



☐ **Step 93 - 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 the center will decrease throw, and moving it away from the center will increase throw. Work with a combination of the two to achieve something relatively close to these throws that are good for everyday sport flying. If competing in pattern, you'll probably want to dial these down a bit to give a smoother appearance to your maneuvers.

Aileron 1/4" up/down (40% expo)

Elevator 3/16" up/down (40% expo)

Again, these are starting numbers. At speed, the Barracuda can be VERY touchy, as it needs to be to make tight, quick turns.

So you'll need to play with these to find the right combination of agility and controllability for your style of flying.

Please, please, please!

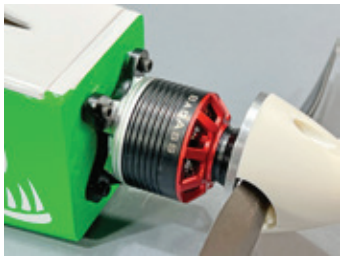
Check the direction that each control surface moves.

Then double check the directions.

Walk away for a while, then come back and check the directions again.

The number one cause of a crash of any brand new airplane on its maiden flight is having the wrong throw for one (or more) of the control surfaces.

☐ **Step 94 - Motor install**



Mounting the motor is fairly straightforward, using the etched cross-pattern on the front of the firewall.

Drill the four mounting holes and use your hardware to mount your motor to the fuselage.

You'll also need to make a cutout for the motor's wires to pass through into the fuselage.

A note about down and right thrust. 2° down thrust is already built into the fuselage. However, right thrust is not designed in, as depending on how you fly the Barracuda, it will change the amount of right thrust you could need.

To add right thrust, simply slip one or two of the included washers onto the left-side mounting bolts - between the motor mount and the firewall. For high-speed racing, we found two to be just about right.

Also be careful not to over-tighten the bolt and crush the washers into the firewall - as that will negate their effect.

☐ **Step 94 - Battery / ESC install**

By design, the Barracuda's fuselage is a specific size to meet the E2K regulations and also make it competitive. This makes things a bit tight inside, which will work both for and against the battery and ESC install.

I found it best not to permanently mount the ESC so it can be moved out of the way to slide the battery in place.

Because the Barracuda is one of those rare designs that has the battery located on the C.G., it means the battery is slid through the hatch, then all the way back against the "limit fingers" I've added to F3. You can add a little foam to the fuselage sides to help hold the pack in place. I added a patch of foam on the underside of the wing; right above where the battery sits to keep the pack from moving vertically.

With the battery in place, you can then insert the ESC into the area under the hatch.

☐ **Step 95 - 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) for the Barracuda is 3.9" 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 and/or receiver until the correct balance is achieved. If absolutely necessary, weight can be added - stick-on weights are available at your local hobby store and work well for this purpose.

C.G. BALANCE POINT

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., in 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.

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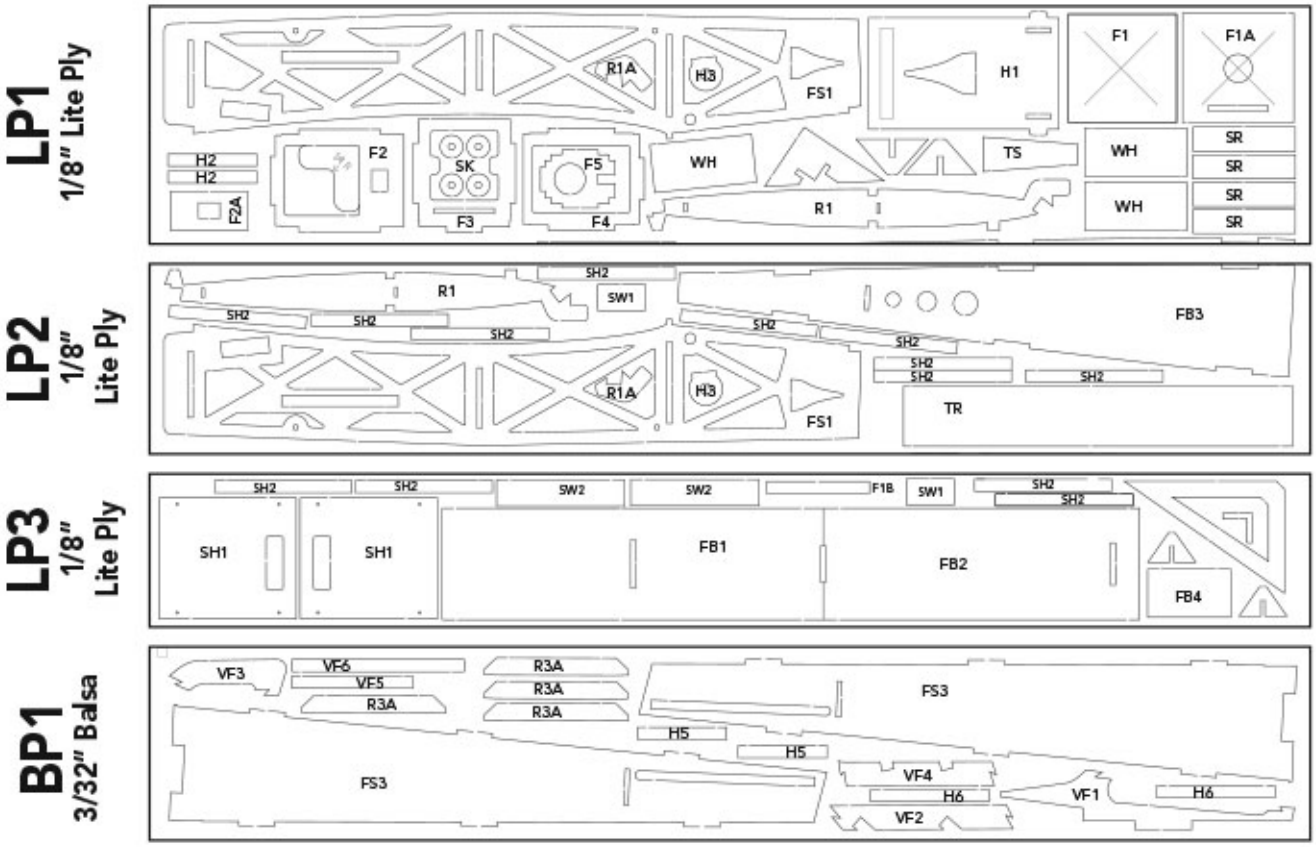
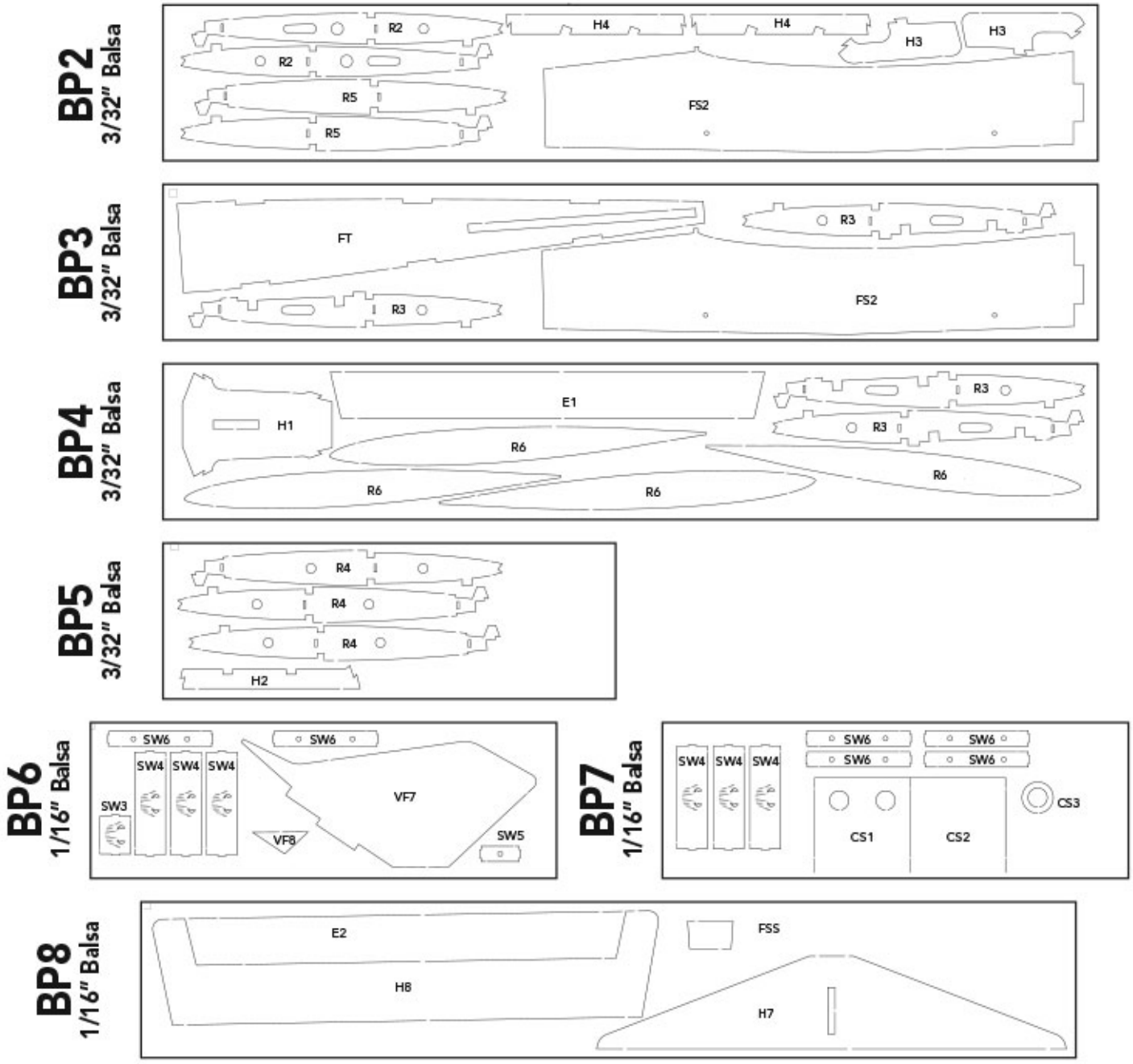
In the use of this product, our only obligation shall be to replace such quantity of the product proven to be defective. The user shall determine the suitability of the product for his or her intended use and shall assume all risk and liability in connection therewith.

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 unopened 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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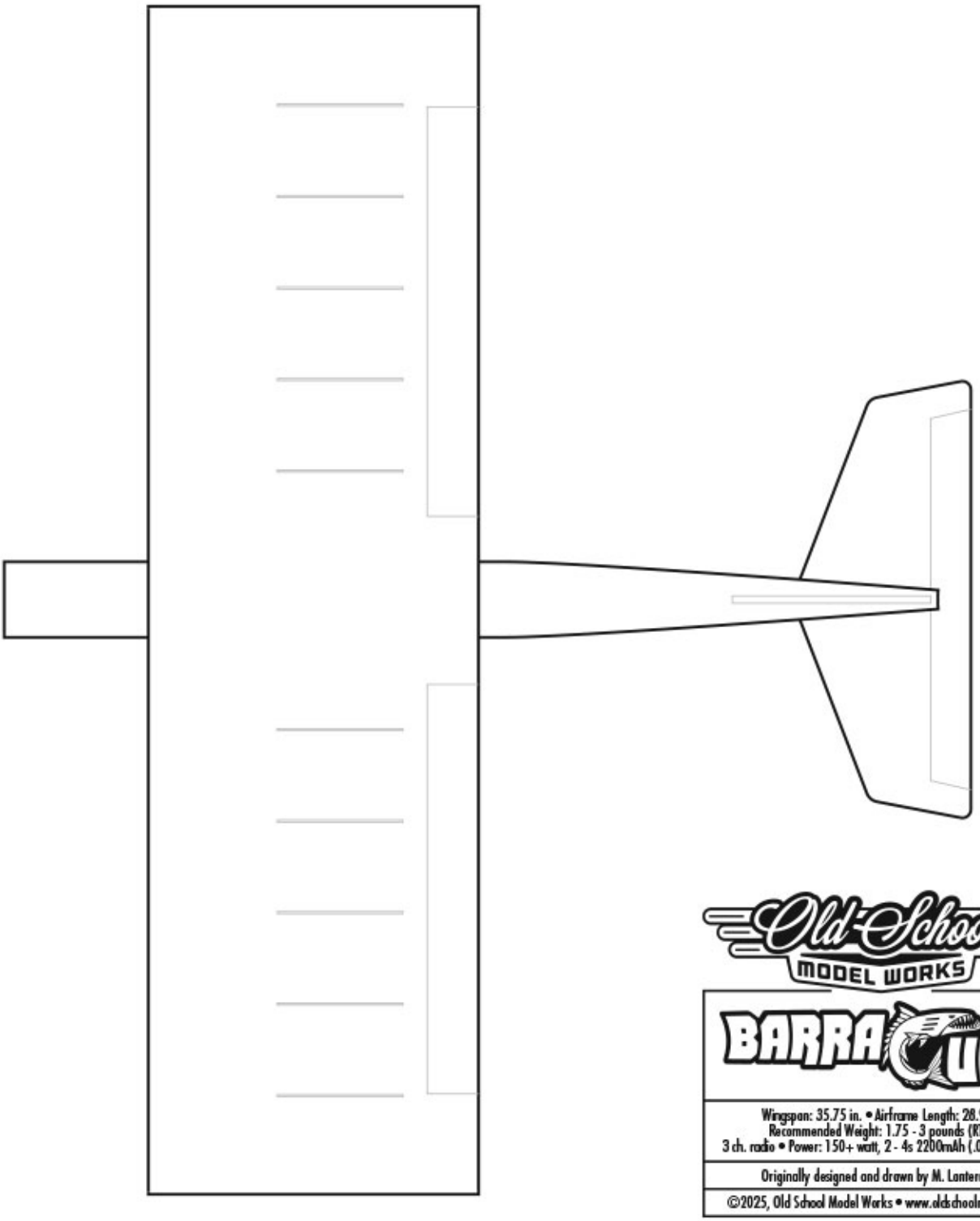

Old School
MODEL WORKS

BARRACUDA

Wingspan: 35.75 in. • Airframe Length: 28.9 in.
Recommended Weight: 1.75 - 3 pounds (RTF)
3 ch. radio • Power: 150+ watt, 2 - 4s 2200mAh (.09-.15 glow)

Originally designed and drawn by M. Lanterman

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