Bogue Class Escort Carrier Kit

This kit will build a Bogue Class Escort Carrier from WW II, suitable for running as a R/C navel combat ship or convoy ship. During WWII, 43 of these ships were built by the U.S. and many were transferred to the British where it was known as the Attacker class. Parts for this kit were developed from plans from CVE 53. Minor alterations were made to guns and the island throughout the life of the class, so use a reference like www.navsource.org to research different configurations to model.

(CVE 6) ALTAMAHA / HMS BATTLER
(CVE 7) BARNES / HMS ATTACKER
(CVE 8) BLOCK ISLAND / HMS HUNTER
(CVE 9) BOGUE
(CVE 10) BRETON / HMS CHASER
(CVE 11) CARD
(CVE 12) COPAHEE
(CVE 13) CORE
(CVE 14) CROATAN / HMS FENCER
(CVE 15) HAMLIN / HMS STALKER
(CVE 16) NASSAU
(CVE 17) ST GEORGE / HMS PURSUER
(CVE 18) ALTAMAHA
(CVE 19) PRINCE WILLIAM / HMS STRIKER
(CVE 20) BARNES
(CVE 21) BLOCK ISLAND
(CVE 22) HMS SEARCHER
(CVE 23) BRETON
(CVE 24) / HMS RAVAGER
(CVE 25) CROATAN
(CVE 32) CHATHAM / HMS SLINGER
(CVE 33) GLACIER / HMS ATHELING
(CVE 34) PYBUS / HMS EMPEROR
(CVE 35) BAFFINS / HMS AMEER
(CVE 36) BOLINAS / HMS BEGUM
(CVE 37) BASTIAN / HMS TRUMPETER
(CVE 38) CARNEGIE / HMS EMPRESS
(CVE 39) CORDOVA / HMS KHEDIVE
(CVE 40) DELGADA / HMS SPEAKER
(CVE 41) EDISTO / HMS NABOB
(CVE 42) ESTERO / HMS PREMIER
(CVE 43) JAMAICA / HMS SHAH
(CVE 44) KEWEENAW / HMS PATROLLER
(CVE 45) PRINCE / HMS RAJAH
(CVE 46) NIANTIC / HMS RANEE
(CVE 47) PERDIDO / HMS TROUNCER
(CVE 48) SUNSET / HMS THANE
(CVE 49) ST. ANDREWS / HMS QUEEN
(CVE 50) ST. JOSEPH / HMS RULER
(CVE 51) ST. SIMON / HMS ARBITER
(CVE 52) VERMILLION / HMS SMITER
(CVE 53) WILLAPA / HMS PUNCHER
(CVE 54) WINJAH / HMS REAPER

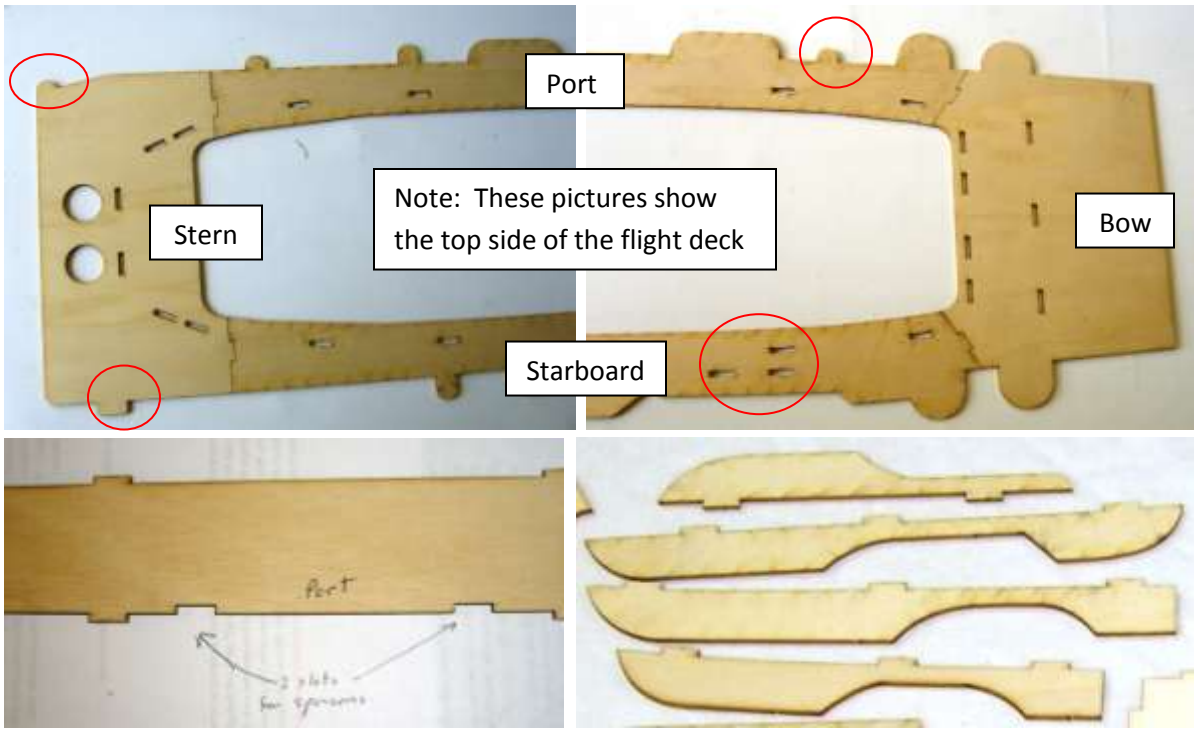
The kit consists of four sheets of laser cut parts, two of 1/4" birch ply and two of 1/8" lite ply. The 1/4" parts build up the hull, while the 1/8" parts are the superstructure. The hull consists of 14 ribs, a single center keel, two water channel keels, a sub-deck, and rudder. The superstructure includes the flight deck risers, the flight deck support, the side sponsons, the top decks, and the tower with radar mast pieces.

Construction. Construction is designed to be compatible with most R/C navel combat rule sets. There is two inches of solid area in the bow and one inch in the stern. The vulnerable windows are set one inch below the waterline (10 lb minimum weight) and follow the 45 degree turn of the hull in the back. Ribs

are 1/4” and are spaced a minimum of 2.5 inches apart center-to-center. Check your rule set to make sure it is compliant before starting to build.

Hull Assembly

1. Start by removing the parts from the plywood sheets. The 1/8” parts can generally be removed by carefully flexing the wood to snap the retaining tabs. To remove the 1/4” parts, cut through the retaining tabs on both sides using a stout knife, like a utility knife, and then push the parts out. Sand off any remaining tabs on the parts. Now is a good time to mark the unique parts. The port and starboard flight deck and flight deck risers are different, with only the port riser having one set of two slots for sponsons and one set of three slots for sponsons. The starboard riser has two sets of three slots. The flight deck sides are different, as is the flight deck stern, match the pattern in the picture to



mark them. All four of the sponsons are also different: from top to bottom they are 1) port stern, 2) starboard stern 3) starboard bow and 4) port bow. The end that is on the left side of the picture is the end that points towards the bow. Use the pictures to mark the parts to avoid confusion.

2. Locate the 5 pieces of the subdeck. Between ribs 1 through 9, make two cuts 1/2 way through the subdeck. These slots will help the deck assume its curved shape without stressing the keel. Assemble the pieces of the subdeck and glue them together

3. Assemble the three center keel pieces and glue them together.

4. Place the ribs on the center keel, making sure that they are pushed completely together. The fit with the ribs is tight, so use a piece of scrap 1/4" wood to push the ribs down and make sure they are fully set in the keel. Do not glue them at this time. Now add the subdeck, starting at rib 2 and then engaging the remaining ribs. Add the forecastle deck between ribs 1 and 2. Again, do not glue anything yet.
5. Place the hull on a flat surface and weigh it down on the inside to make sure keel is flat. Check each rib to make sure it is fully seated in both the keel and subdeck. If everything looks right and straight, use thin CA to glue the pieces together.

6. Determine the width of your water channel - generally just big enough to fit the pump - and place the water channel keels between ribs 4 and 9 at this width.
7. Glue the water channel keels to the ribs using CA or epoxy. Cut out the center of ribs 5-8 and the portion of the center keel with them to form the water channel.

8. Place the 1/8" x 1/4" bass wood rail in the slots in the sides of the ribs. ** IMPORTANT – keep the ship on a table and use some weights to keep the keel straight for this step** The easiest way is to start at rib 14 and carefully bend and twist the rail to fit in each subsequent slot. If not using a continuous rail, join the pieces in the flat portion of the sides on any of ribs 6-8. Once the rail is in place, glue it with thin CA and then repeat for the second side.
9. Glue the two 1/8" bow decks on to the hull.
10. Sand the sides and subdeck to blend them together. There will be a significant amount of material that will have to be removed from ribs 13 and 14 and from the subdeck near the bow to get the proper shape.
11. Add the rudder servo tray and glue it in. The tray can be slipped through the opening at the top of rib 13 and then inserted into rib 14 and rotated down to sit flat in rib 13.

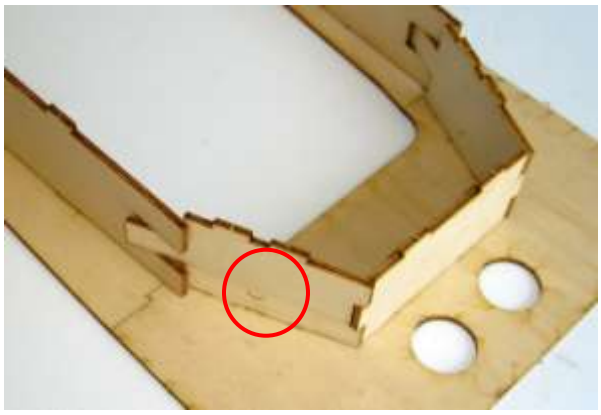
12. Add balsa or other soft wood in front of the first rib and after the last rib. Also fill in up to the stringer location between the last two ribs. Sand the balsa to get a nicely shaped hull.


13. Sheet the center section of the hull with 1/32 plywood. When using plywood, use one piece for each rib bay. The plywood will bend around the ribs with the exception on the last bay, which will need some balsa blocks at the keel to form the tight curve.


14. Drill a 5/32" hole for the rudder post tube using the notch on the keel as a guide. Insert the tube in, making sure that it extends about 1/16" below the hull.
15. Install a 9/32" brass stuffing tube, lining it up with the front of rib 12 and the back of the center keel. Glue in place with epoxy.
16. Fill in any gaps between the pieces with spackling and sand the whole hull smooth. Covering the bottom of the hull with a layer of 2 - 4 oz fiberglass is recommended.
17. Now is the best time to seal the hull. Paint all parts with thin epoxy or spar varnish and let cure.
18. Bend a 90 degree bend into a length of 1/8" rod to form the rudder post. Glue the rudder onto the 1/8" rudder post with epoxy. Sand the rudder post before gluing to promote adhesion. To keep the post centered while the epoxy sets, support it with some scrap 1/16" wood.
19. Mark the centerline on the back of the rudder and then sand it to an airfoil shape, using the line you have drawn and the rudder post to keep it straight.

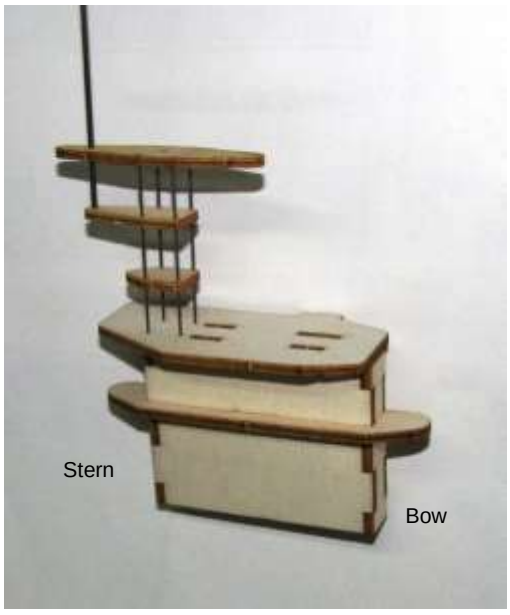
Superstructure and flight deck

1. Glue together the four pieces that make up the flight deck, taking care to properly lay out the port and starboard sides. It is helpful to mark the top and bottom of the deck so that you don't build it upside down.
2. Assemble the five flight deck riser pieces. Make sure that the port and starboard sides are in the right place and that the deck is assembled on a flat surface. The bow and stern pieces are symmetrical, so it does not matter which side is up. The long sides are flat on one side and curved on the other. Make sure the flat side is inserted into the flight deck. The diagonal pieces in the stern have a small hash mark – make sure the mark points to the flight deck.

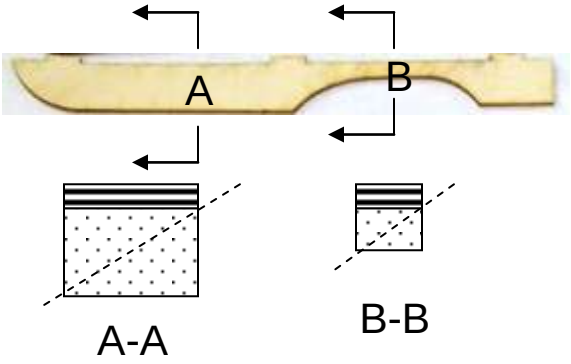


3. Carefully insert the flight deck support structure into the underside of the flight deck. Once everything is assembled properly, glue it together with thin CA. Make sure to squeeze the pieces together so they contact each other along the entire joint.
4. Add the bow support piece and glue it.
5. Trim the excess tabs on the riser and then add some reinforcement (such as epoxy with micro-balloons) to the inside of the corners for durability. Sand the corners of the support structure and then seal the flight deck.

6. Assemble the tower top and side pieces. Make sure that the top piece of the tower is set as shown, with the small rectangular tab inboard and towards the bow of the ship. If the top piece is started upside down, the tower will be backwards on the deck. The outside piece that the middle searchlight deck plugs into is also not symmetric, so if it doesn't line up correctly with the front and back pieces, flip it over. Sand the corners of the tower smooth. Add the searchlight deck and glue it together.
7. Assemble the radio mast using four 2" pieces of 1/32 music wire, spacing the two intermediate levels evenly between the tower top and the top of the radio mast. Add a 1/16 dowel for the mast and glue everything together.

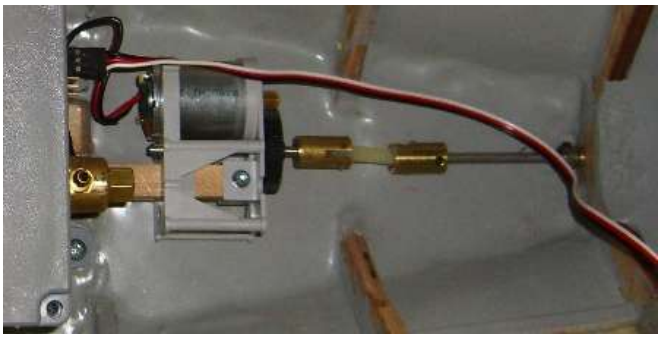


8. Seal all the wood parts with epoxy or spar varnish.
9. Glue the flight deck on the hull. It is recommended to complete most of the work (motor installation, water channeling, BB shields, etc.) on the hull before gluing the flight deck on.
10. Sponsons are glued into the side of the ship after the flight deck is glued on. These sponsons can be left off to simplify building and added at a later date if you change your mind. Depth is added to the 1/8" sponson form by gluing 1/2" of balsa to the underside. Check with your rule set - if it does not allow the sponsons to extend below the deck (into the penetrable area) then you can use 1/4" balsa instead. After gluing on the balsa, trim the inside edge (the edge that will be glued to the ship) so the balsa is flush with the 1/8" sponson form. Taper the balsa from the outside edge of the sponson form to where it contacts the ship. In the middle of the sponson, where it is thinner, the depth of the balsa should go down to about 1/4".



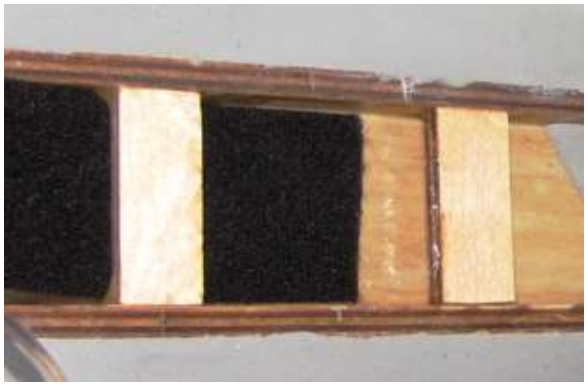
Finishing notes:

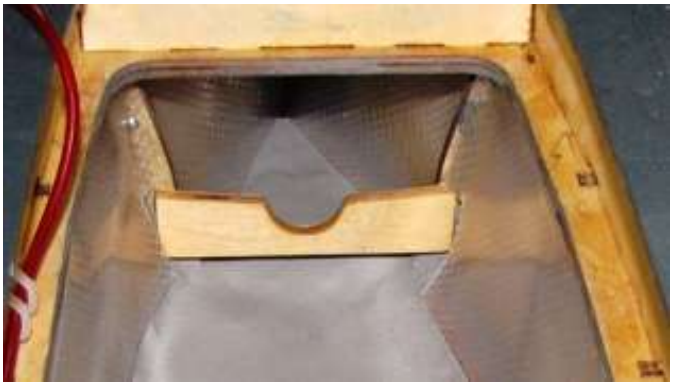
1. Complete the stuffing shaft by adding two 1/8" x 1/4" flanged bronze bushings. Cut a drive shaft out of 1/8" stainless steel rod. Size the rod so that it extends approximately 1/4" beyond where the stuffing shaft exits the ship and leave enough room between the inside end and the motor shaft to put a dog bone.
2. The rudder servo mount is designed to take a Hitec HS-82MG (metal gear) servo which works very well in this application. If a different servo is desired, just make sure to cut the hole in the mounting tray before you glue it into the ship.
3. A good motor for this ship is the GWS DX 370 B. With a 6 volt lead-acid gel cell, it only draws about 4 amps using a 1.5" x 25 prop. The shaft is 3mm, which is close enough to 1/8" that you can use a 1/8" dog bone end without modification. See below for a motor mount pattern if you use this setup.



4. The ship must weigh at least 10 pounds to get the waterline right. This allows a large 12 Amp Hour battery to be used, or you could go with a smaller battery and add ballast. In the picture below, you can see that an unopened container of 6000 BBs was about the right amount of additional ballast needed.
5. In the prototype, 1 pound of ballast was added between ribs 12 and 13. This helps keep the prop in the water when running at less than maximum displacement. As typical with the merchant hull that this ship was based on, running empty means the bow is out of the water quite a bit and the prop is barely covered.

6. The prototype balanced very well with a 3.5 oz CO2 bottle in the front, 12AH battery immediately behind, followed by the bilge pump, water tight box, and motor. The mount for the CO2 bottle is piece of scrap 1/4" plywood notched for the bottle neck to rest on. The battery sits on the water





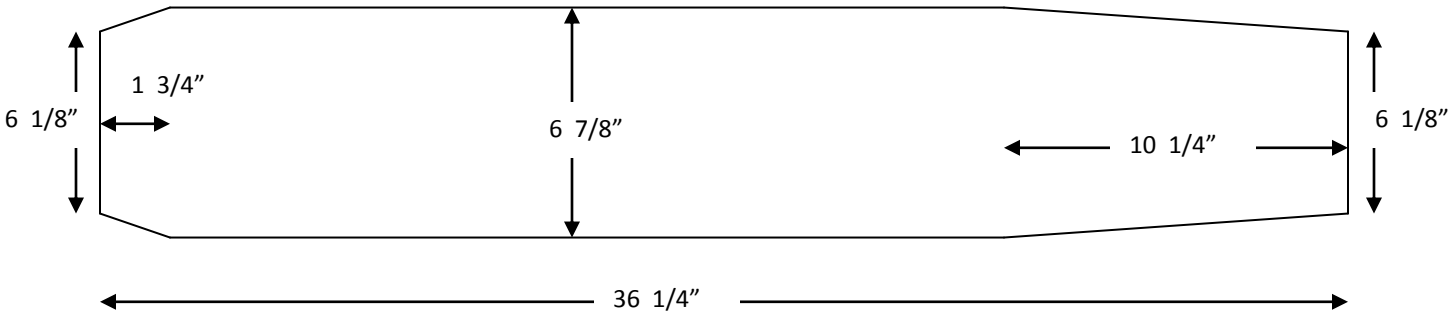
channel keels, but a couple of pieces of 1/4 plywood added between the keels allows the use of a piece of double sided Velcro to hold the battery in case of a sink.

7. If you plan to add a gun to the ship, it can be mounted to the bottom of the flight deck as shown in the picture and exit out the back of the hanger level. The mount shown allows the gun to be adjusted in elevation to get the desired range, but a simple wood block with hole drilled for the barrel will also work.

8. If you want a float, there isn't a lot of superstructure to work with, but it can be done. The prototype tower was cut in half just under the searchlight platform, which nicely covers up the cut when viewed from the outside. The top half was filled with foam and the bottom half was used to store the float line. When using this method, you also get the benefit of removing the top of the tower when transporting the ship. Since the tower is only thing sticking up, it tends to hit first when loading the ship in the car. On the prototype, the 1/2" foam deck was enough to keep the ship from completely submerging, so the float was not needed.

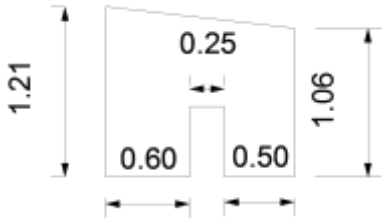
Flight Deck Pattern

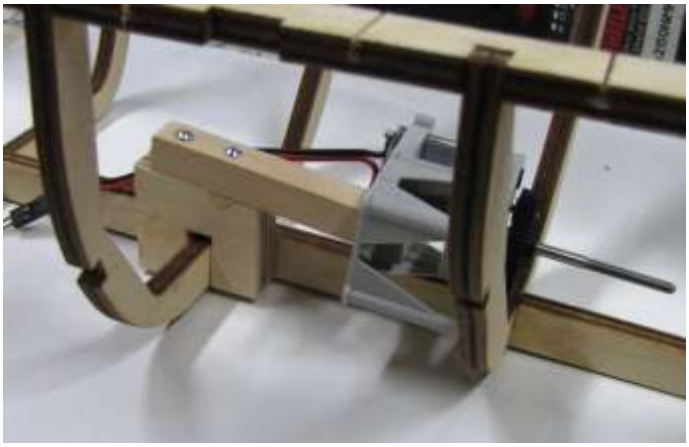
Layout the removable flight deck on a 1/2” piece of foam and cut it out. Fiberglass the deck for better durability. Alternatively, you can use 3/8” square balsa to outline the flight deck and then cut a flight deck out of 1/8” wood. The deck is 36 1/4” long overall. It is 6 7/8” wide in the center and it tapers to 6 1/8” at both ends. The taper in the bow starts 10 1/4” from the front and the taper in the stern start 1 3/4” from the back. The deck is 1/2” thick.



Motor Mount Pattern

For use with a stick mount motor such as the GWS DX 370 B. Screw the stick to the top of the motor mount after it has been glued on the port side of rib 10.





Download plans from the Historical Naval Ships Association website to see details and locations for equipment such as lifeboats, life rafts, floater nets, 20mm guns, etc.
http://www.hnsa.org/doc/plans/cve53-d79.pdf