**Foreword**

These instructions have been re-typed from the original instructions on the full size plan of the model. Many grammar errors have been corrected but others may have crept in. Also the nomenclature may be somewhat out of date; e.g. instructions refer to the center internal structural member as the “keel” and the appendage on the bottom of the hull is called the “center board”. Not that it is incorrect, but it could be misleading.

The diagrams are photos of the original plan but some areas may be off color due the age of the plan. The full size SIDE VIEW and TOP VIEW have been stitched together from photos of small sections of the plan. That is why they may not be to scale and have considerable distortion. They are located at the end of this manual and may need some zooming-in to see the detail.

Even though the sections appear in proper order, it would be wise to read over the complete instructions before attempting to rush into building this model, especially if you intend to build an RC version. If you search in RC GROUPS, VINTAGE BOATS for “Sterling Kingfish Build Log” you may find my own procedure that I have used for the build, including many modifications and RC revisions.

**Kingfish Specifications**

These are typical specifications and may differ, depending on how the model is constructed.

LOA (including the bow sprit) = 34"

LWL = 23.7"

Beam = 6.3"

Displacement (with RC electronics, but without battery) = 3.45 lbs

Draught of hull (waterline to bottom of hull) = 1.8"

Draught of keel (waterline to bottom of keel) = 5.4"

Sail Areas: Main = 189 square in.
Jib - 89 square in.
Flying Jib = 89 square in.
Assembly Instructions

Step 1 - Keel

If you are going to install radio control be sure to read step 6 before starting construction. Remove die-cut parts from sheet. Drill 1/8” holes through #1, #2 and both #3’s. Cement #1 and #2 together on a flat surface as shown in Figure 1 and allow to dry. As shown in Figure 1, cement #4’s on both sides of #2, and #3 on side shown between notches. Use wood model airplane cement to build the model.

Figure 1

Step 2 – Inner Deck

Insert inner deck #10 into bulkheads #7, #8 and #9. Push bulkheads down into notches in #10 and cement in place. Cement bulkheads #6 and #11 in place as in Figure 2. Continue with step 3 to insure keel and bulkhead alignment.

Figure 2
Step 3 - Bulkheads

Insert bulkheads #5 and #12 into notches in #1 and #2 and cement securely. See Figure 3. Slip keel into notches in bulkheads #6 to #11 and cement in place against bottom of inner deck #10. Place frame upside down on a flat surface so that the tops of the bulkheads are flat on the table. Be sure they are square (90 degrees) with the keel. Allow to dry thoroughly, then drill 1/8” hole for rudder post, through the keel, continuing from the notch in #2, behind bulkhead #11.

Figure 3

Step 4 – Completing the Internal Structure

Cut 3/16” square balsa strips to length to fit from bulkhead #5 to bulkhead #12 and cement in place on both sides as shown in Figure 4. Cut 1/8” x 3/8” balsa strips to fit from bulkhead #7 to #9 and cement into notches on each side as shown, flush with front of #7 and 1/8” past the back of #9. Cut two pieces of 1/8” x 3/8 balsa to length to fit between the strips just installed. Cement one strip across the top of #9, flush with the back of the other strips as shown. The remaining strip is cemented in place as shown, 1” back from the front of #7.

To remove excess plastic, cut around the hull with a single-edge razor or modeler’s knife. It is not necessary to cut completely through since plastic will come off easily when bent along a cut line. Note that the rub rail molded along the top of the hull receives the deck in the next step. Cut the slot for the center board out of the bottom of the hull at the molded location. A slot must also be cut in the bottom of bulkhead #8 from center notch to the inner deck #10 for the center board.

Sand the lead ballast smooth, then insert the center board through the slot in the hull. It is now bolted in place between the keel and the remaining #3, as shown. Use 4-40 machine screws and nuts, flat side
of nut against plywood. Secure the nuts with cement or solder. Apply a coat of cement to the bottom of the frame that contacts the hull and set the frame into the hull. Be sure it is seated firmly in place. The center board slot on the bottom of the hull is sealed with epoxy cement. Apply a bead of epoxy along the slot and smooth out with your finger.

Cut two pieces of ¼" square hardwood 1 7/8" long. These strips are mast supports and are cemented on top of the inner deck#10 and back of bulkhead #7 on either side of the mast hole. Be certain they are vertical and spaced 1/2” apart for the mast to fit properly.

Figure 4
**Step 5 - Rudder**

De-burr the ends of the nylon tube provided for the rudder stuffing box. Continue drilling a 1/8” hole previously drilled in the keel, through the bottom of the plastic hull. Insert tube as in Figure 5. On free sailing models the top extends ¾” above the keel; on RC models, top of tube ends flush with the keel. Cement securely in place. On non RC models drill a 1/8” hole through the deck for the tubing. If the model is built for RC, see “General RC Installation” (next step) before proceeding, so that equipment can be installed before the deck goes on.

![Figure 5](image-url)
Step 6 - General RC Installation

Figure 6 shows approximate installation of the RC equipment, between bulkheads #7 and #9, on the plywood inner deck #10. Material required is not supplied. Installation depends on equipment used. Equipment is installed so that the model floats parallel to the waterline, all the way around the hull. For access to RC equipment, the plywood deck section is cemented to the bottom of the cabin so that it fits snugly down into the deck cutout. Paint all parts, including the inside hull structure with several coats of clear dope or shellac, for waterproofing.

![Figure 6 diagram](image)

In single channel operation, only the rudder is controlled. The rudder post is made from swaged rod. Bend the swaged section 90 degrees and cut off the opposite end to length, so that when it is placed and soldered in the rudder socket, the rudder is in the position shown on the SIDE VIEW and the 90 degree bend swaged section is at the top of the tube as shown in Figure 7. Make holes and/or notches in bulkheads as necessary for installation. Screw a clevis onto threaded wire used for a pushrod. The clevis end of the pushrod is fastened to the swaged rudder post. The opposite end is connected to the servo.

Sails are set according to the wind conditions as described in sailing instructions. The cabin must fit snugly into the deck cutout. It can be secured to the deck with a metal tab and screw as in Figure 7. When operating the boat, the bottom edges of the cabin are coated with Vaseline for a waterproof seal with the deck when putting the cabin in place.

With multi-channel operation, the rudder is operated in the same manner, however, the mainsail requires a powered winch to operate the line. Figure 8 shows the winch drum. It can be made from hardwood, nylon, plastic or any similar material, not included in the kit. The diameter of the center hole is determined by the shaft size of the winch motor. Drill slightly undersize so that a tight push fit results, preventing the drum from turning on the shaft. Drill another hole so that the line may be inserted. Secure the line by tying a knot on the outside of the drum.
The second servo operates a miniature double pole, double throw switch which controls the forward, stop and reverse rotation of the winch drum. Our model used the Mini-Richard power unit, with the gear ratio set at 60 to 1. It is made in Germany by the Marx Company and is distributed in the U.S.A. Any similar unit can be used. Figure 9 shows how the line comes from the winch drum through an eyelet in the deck, through a screw eye in the deck and up to the boom.
Step 7 – Deck Attachment

Apply a coat of cement to the top of bulkheads and keel as well as around the edge of the die cut deck. Insert the deck into the molded rub rail recess, and press firmly down on bulkheads. Hold in place with masking tape if necessary until dry. On free sailing models the removable section of the deck below the cabin is now cemented in place.

Excess plastic is then removed around, and flush with the top of the deck. Paint the deck with clear dope or shellac applied in very thin coats, so that printed lines do not run, yet still show through. Try dope or shellac on a scrap with printed lines first, to be certain it doesn’t attack the print.

Insert a 1/16” wire into the rudder post socket formed in rudder and solder securely, then solder a washer in place, as shown in Figure 5 and SIDE VIEW. Insert the wire rudder post through the tube and bend the top to form a tiller arm, as shown in dotted lines in Figure 5 and SIDE VIEW.

The model is now painted. Paint scheme is optional. Mark off the water line by setting the hull on a flat surface up side down, raising the rear 15/16”. Fasten a pencil on a block so that the point is 2 1/16” above the flat surface. Mark off the waterline by sliding the block around the hull. Tape off the hull at the waterline and cover the deck. The bottom of the hull, including the rudder and center board is painted blue. Use enamel or plastic model paint. Model airplane dope may deform the plastic. The rub rail is painted brown.

Assemble the cabin, wheelhouse and companionway as shown and described in steps 8, 9 and 10, and cement them to the deck. If the model is RC, the cabin must be made removable as shown next.

Figure 10
Step 8 - Cabin Assembly

Cement #22 and #23 between cabin sides #24. Note #23 is angled as shown on the SIDE VIEW. Moisten the top of the roof (1/16” x 4” x 57/8” balsa) which will allow it to bend, then cement in place. Note that the roof overhangs equally on all sides. Cement #25 to rear of roof (flush with back and centered) as in Figure 10. Sand smooth, then paint. Original model used mahogany stain and clear dope on sides and hatch. The roof is painted white.

Cut handrails from 1/16” wire. Bend to shape using the SIDE VIEW, drill holes in the roof and cement them in place. Cut 1/16” wire to length for hatch tracks (see TOP VIEW) and cement in place. Handrails and tracks are black. Bars on windows are straight pins (not supplied) cut to length and cemented in place. Cut celluloid for windows and cement to inside of cabin sides. Window frames are 1/16” wide strips of white paper cut to length and cemented in place. On free sailing models the cabin is cemented to the deck in step 5. See detail for removable cabin on RC models in Figure 5.

Step 9 - Wheelhouse Assembly

If the model is to be free sailing (not RC) cut a slot with notches in back #21 using Figure 11. Notches hold the tiller arm in a set position for free sailing. Cement #18 and #19 between sides #20 as in Figure 12. The rear corners of #19 are flush with the back of #20’s. Moisten the back of #21 which will allow it to bend and cement it to the back of #19 and #20’s. Be sure #21 overhangs each side equally. The wheelhouse is stained with mahogany stain and painted with clear dope.
Cut the steering wheel support from 3/16” x 5/16” hardwood using the full size drawing. Cement the two parts together and paint white. Drill an 1/8” hole for the steering wheel shaft at the location shown. Paint the steering wheel brown and cement to support as shown. Cement the support to the front of #18 as shown (centered). The wheelhouse is cemented to the deck.

**Step 10 - Companionway Assembly**

Cement #13 and #14 between sides #15, referring to Figure 13. Cement roof #16 in place overhanging equally on all sides. Hatch #17 is cemented in place on top of the roof, flush with the front edge and centered as shown. Hatch rails are cut from 1/16” diameter wire and cemented to the roof as shown in sketch and top view. The companionway is now painted. The sides and hatch were stained with mahogany stain and clear doped. The roof is painted white and the rails black. Cement the brass window frames in place. Lower moulding is 1/8” wide strip of thin cardboard (not supplied) and painted white and cemented in place as shown. The companionway is cemented to the deck.

![Figure 13](image)

**Step 11 - Spars**

Cut two lengths of ¼” square hardwood (for rigging blocks) to the shape shown on Figure 14 and the SIDE VIEW. Sand smooth, paint brown, and cement to deck at the location shown on the TOP VIEW. Assemble the mast as shown and place into the hole in the main and inner deck seating on the mast ring. Be sure the mast is vertical.

Using the SIDE VIEW, cut the bowsprit to length using the tapered dowel. Drill a 1/16” hole at the front of the bowsprit and a 3/64” hole for a screw eye. Cut the boom to length using a ¼” dowel. Drill a 1/16”
hole at one end of the boom and another 1/16" hole midway at the location shown, drilled 90 degrees to the first hole. Cement the crotch #27 to the boom as shown in Figure 14. Round off the ends, then paint the boom and bowsprit white. Drill all 3/64" holes for screw eyes and screw them in place. Securely cement the bowsprit into the front of the deck as shown on the TOP VIEW and SIDE VIEW. Use at least two coats of cement on this installation, allowing cement to dry between coats.
Step 12 – Standing Rigging

Insert end of anchor through hole in anchor stock and cement together at right angle. Paint black. Tie chain to end hole in anchor with thin black thread (not supplied). Cement anchor, and fasten chain to deck as shown in TOP VIEW. Standing rigging is installed in this step, using black line, referring to Figure 15. Special rigging line is nylon and is prone to unravel when cut with a knife. It is recommended that line be cut with a hot soldering iron which will fuse the ends. Rigging lines should be installed snug enough to be straight and care must be taken that mast is not pulled out of line. Any bend in the birch dowel mast can be straightened by tightening the proper line. The backstay is tied to the top of the mast then tied to the screw eye on the rear of the deck. Shroud lines are installed by tying from the screw eyes on the blocks, through the top hole in the mast, and tied to screw eyes on the opposite side. The bobstay is tied from the front of the bowsprit to the screw eye on the front of the hull.

Figure 15
Step 13 – Sails and Running Rigging

Make the sails as shown in the SIDE VIEW. Running rigging installed in this step is tan colored line. Lines are attached to the sails by piercing through the hem with a sharp point, after which lines are inserted and either tied or sewn in place. See Figure 16 and the SIDE VIEW.

![Figure 16](image-url)
Tie mainsail to the boom, the rear corner is tied through a hole. The front is tied around, and through a screw eye on the bottom of the crotch. The top corner of the sail is tied to the top mast hole. Pierce the sail at locations shown and tie loops around the mast. The crotch jaw of the boom places the sail at the correct distance from the mast. The main boom guy line is tied to the front shroud screw eye, passed through the screw eye on the bottom of the crotch, then tied to the opposite front shroud screw eye. The line is pulled taught so that it prevents the boom from lifting. An out hauler is tied to the rear hole in the boom, passed through the center hole, and tied to the screw eye below it on the deck, so that the boom is able to swing about 6” past the side of the hull. On RC models with a winch control on the mainsail this out hauler line passes through a screw eye on the deck, down through an eyelet on the deck to the winch drum as in Figure 9.

The top corner of the jib sail is tied to a screw eye on the mast. Tie the front corner to a screw eye on the bowsprit. Tie the rear corner to a screw eye on the deck behind the companionway, leaving enough slack so that the sail is able to swing about 2” past the side of the hull.

The top corner of the flying jib sail is tied to the top of the mast, the front corner to the front of the bowsprit. Tie the rear corner to a screw eye on the bowsprit with enough slack so that the sail is able to swing 2” past the side of the hull. Moisten decals in water, and slide off onto the hull at positions shown on the SIDE VIEW.

See the following pages for the SIDE VIEW and the TOP VIEW.
Top View