

# STEAMBOAT



Pullin' keeps that big wheel turning

Back in Huck Finn's day, stern-wheel steamboats ruled America's mighty rivers. This one's sure to become the flagship of the playroom fleet as soon as you build it.

## Start with the hull

**1** Cut the hull (A) to the size shown in the Bill of Materials. On the bottom, lay out the taper, the stern-wheel well, and the front-wheel mortise, shown on the Parts View drawing, *page 100*.

**2** Drill a  $\frac{3}{32}$ " hole  $2\frac{3}{8}$ " deep into the hull edge where shown. The hole extends  $\frac{1}{2}$ " past the hull's centerline. If your bit isn't long enough, you can deepen the hole after you cut the hull to shape.

**3** Form the mortise for the front-wheel well. To do this easily, bore

a  $\frac{5}{8}$ " hole at each end of the mortise, then scrollsaw out the waste between them.

**4** Bandsaw the hull. Shape the bottom front with a rasp, rounding it to the contour shown. On the sides, slight round-overs taper off toward the stern, ending at the front of the wheel well.

**5** Lay out the stern-wheel bearings (B) on  $\frac{3}{8}$ " stock. Drill a  $\frac{1}{4}$ " hole through each where shown, then scrollsaw the bearings. Glue and nail them to the hull where shown. Sand the hull smooth.

**6** Cut the boat deck (C) and the two cabin tops (D) from  $\frac{1}{8}$ " Baltic birch plywood. Round the front and back corners, following the radius guides with the parts drawings. Glue and nail the deck (C) to the hull, positioning the back edge of the deck flush with the stern-wheel well. Note that the

deck mortise is shorter than the hull mortise.

## Build the superstructure

**1** Construct the cabin fronts by laminating two pieces of stock, one  $\frac{3}{4} \times 2\frac{3}{4} \times 12$ " for the front walls (E) and another  $\frac{3}{4} \times 2 \times 12$ " for the fillers (F). (We picked the length arbitrarily for safety and convenience.) Rout a  $\frac{1}{2}$ " round-over along both edges of one side of the wider stock.

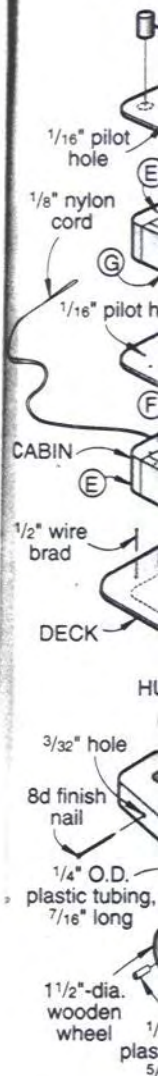
**2** Center the filler stock on the back (the flat side) of the cabin-front stock. Glue it in place, creating a  $\frac{3}{8}$ " rabbet along each edge. Crosscut two  $1\frac{1}{8}$ " lengths of the laminated stock for the cabin fronts.

**3** Designate one cabin front assembly as the lower cabin front. Through this one, bore and saw a wheel-well mortise similar to the ones in the hull and deck. At the middle of the front wall, drill a  $\frac{1}{8}$ " hole into the mortise.

**4** Cut the four side walls (G) to the dimensions shown. Bore  $\frac{3}{4}$ " holes where shown. Because the holes are centered from top to bottom, you can make all four parts the same, then just flip two over to make opposites.

**5** Glue the side walls (G) to the cabin fronts (E/F). Space the side walls at the open end with scraps of the filler stock, and clamp. Ensure that the top and bottom surfaces are flush.

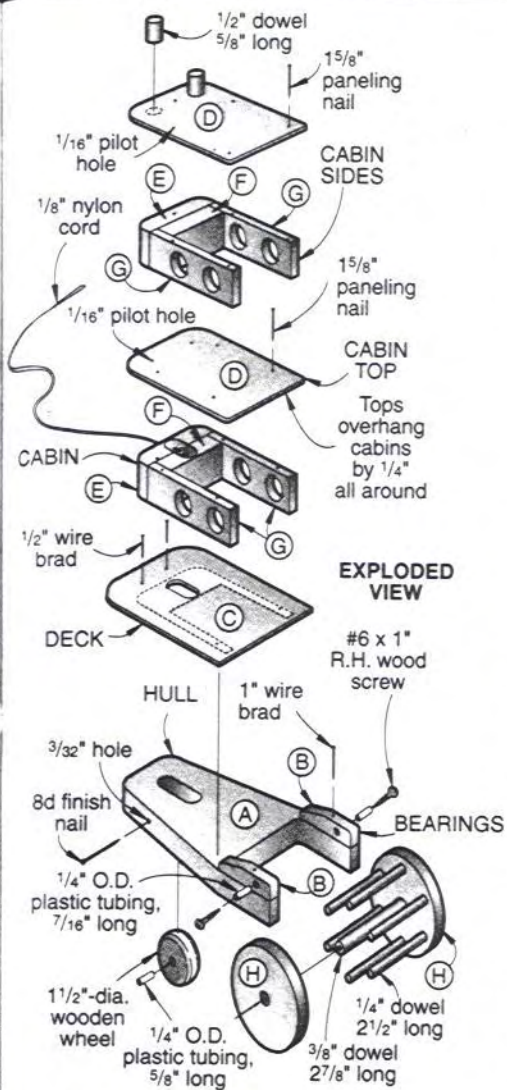
**6** Sand the cabin assemblies. Round over the side walls inside and out at the open end.



**7** Position the cabin assembly (the front wall) on the front of the hull. It, allow it to round. through the hull. View drawing shows top in place. nailing upper and lower ca



# ON A STRING



Bill of Materials					
Part	Finished Size			Matl.	Qty.
	T	W	L		
A hull	3/4"	3 3/4"	8"	P	1
B bearings	3/8"	1/2"	2 3/8"	P	2
C deck	1/8"	3 7/8"	5 7/8"	BB	1
D cabin top	1/8"	3 1/4"	5 1/8"	BB	2
E front wall	3/4"	2 3/4"	1 1/8"	P	2
F filler	3/4"	2"	1 1/8"	P	2
G side wall	3/8"	1 1/8"	3 7/8"	P	4
H wheel	3/8"	2 7/8" dia.		P	2

**Materials Key:** P—poplar  
BB—Baltic birch plywood

**Supplies:** 1/4", 3/8", and 1/2" dowels; #17x1/2" and 1" wire brads; 8d finish nail; 1 1/8" paneling nails; 1 1/2"-dia. wooden toy wheel; 1/4" O.D. plastic tubing; #6x1" roundhead wood screws; nylon twine; glue; gloss enamel paints.

paddle wheel together. The 3/8"-diameter axle should extend 1/16" beyond the outside of the paddle wheel on each side.

**4** Mark the center of the axle on each end. Drill a 1/8" hole 1/2" deep straight into each end.

## Paint and assemble the boat

**1** Cut two pieces of 1/2" dowel rod 5/8" long for the smokestacks. Glue them to the cabin top where shown in the illustration.

**2** Paint the boat and the paddle wheel separately, following the color scheme shown (or your favorite colors). We used gloss enamel paints.

**3** Tie a finger loop in one end of an 18" length of nylon twine about 1/8" in diameter. Push the other end through the hole in the front of the cabin until it dangles out of the wheel well. Tie a large knot in the end, and pull the string until the knot stops on the inside of the cabin front.

**4** Install the front wheel. Cut a piece of 1/4"-outside-diameter plastic tubing 5/8" long, and insert it into the hole of a 1 1/2"-diameter wooden wheel. Insert the wheel with the tubing bushing into the front wheel well, and pin it in place with an 8d finish nail. Fill the nail hole and touch up the paint, if you wish.

**5** Finally, install the paddle wheel. Cut two 7/16"-long bushings from the 1/4" plastic tubing, and slip them into the holes in the paddle-wheel bearings. Drill out the bushings if necessary to allow a #6x1" roundhead screw to slide through them. Then, position the paddle wheel, and drive a screw into each end of the axle. ⚙

**9** Countersink and fill all exposed nails. Sand the completed hull and superstructure to 220-grit in preparation for painting.

## Put together a paddle wheel

**1** Lay out the wheels (H) on 3/8" thick stock. To space the six 1/4" holes evenly, first draw a circle with a 1 1/8" radius on the blank. Then, without changing the compass opening, put the point anywhere on the circle. Swing the pencil across the circle to make a mark. Move the compass point to that mark, and swing another arc, and make another mark. Continue around the circle.

**2.** Cut out the two wheels with a hole cutter set to 1 1/16" radius. Drill the 1/4" holes 1/4" deep, then enlarge the center hole to 3/8". Sand the wheels, giving the edges a slight round-over.

**3** Cut six 2 1/2"-long pieces of 1/4" dowel rod and one 2 7/8"-long piece of 3/8" dowel rod. Referring to the Exploded View drawing, glue the

**7** Position the lower cabin assembly (the one with the mortise in the front) on the boat deck where shown. Place a cabin top (D) on it, allowing a 1/4" overhang all around. Carefully drill 1/16" holes through the cabin and top into the hull, shown in the Exploded View drawing. Glue the cabin and top in place, and drive in 1 1/8" paneling nails.

**8** Similarly, glue and nail the upper cabin into place. Position the nails to miss the ones in the lower cabin.

Project Design: ©Russell Lasho  
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Photograph: Hopkins Associates