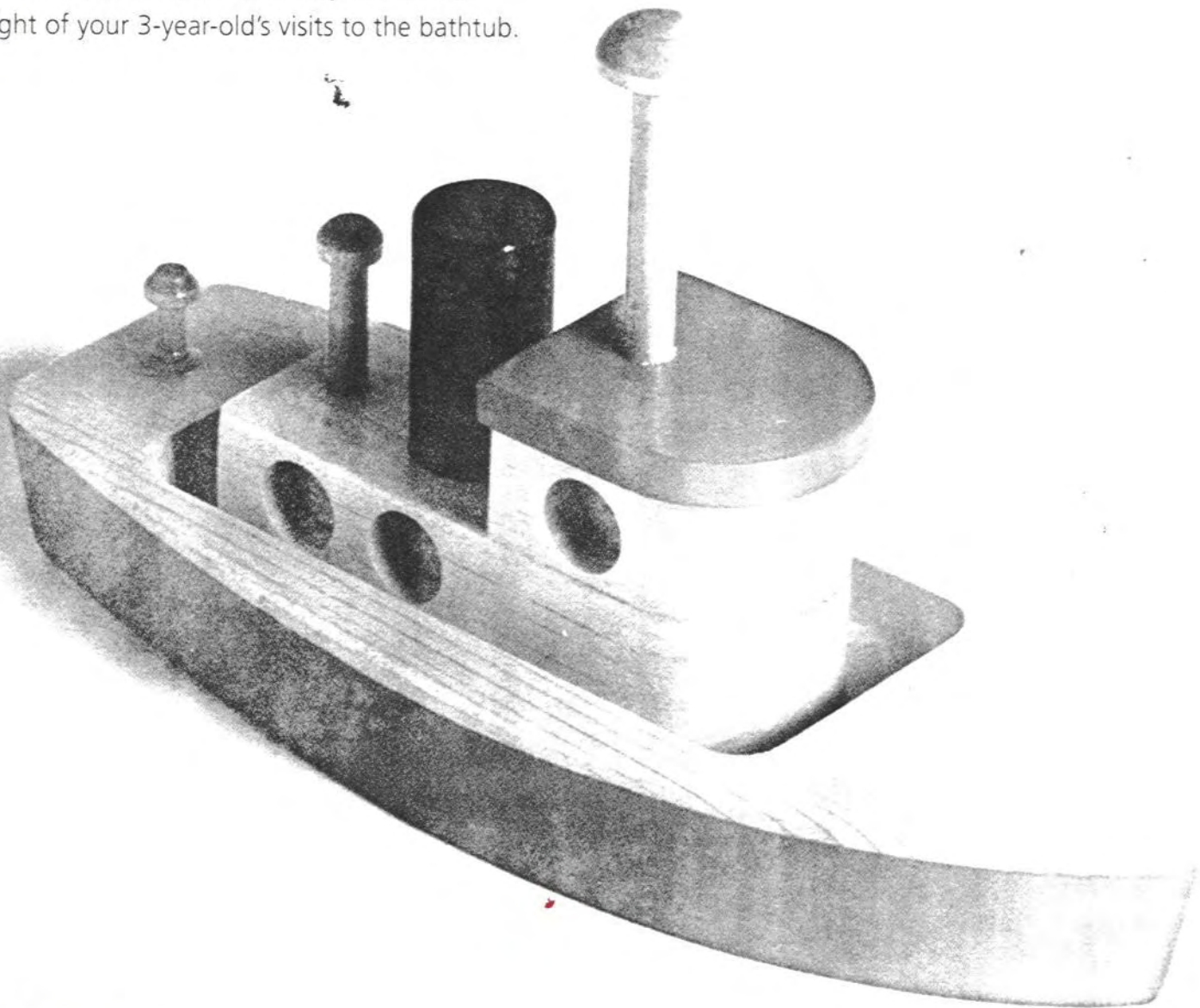


Tug Boat

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It's hard to imagine a more perfect subject for a toy than a tug boat. Working tug boats look just like toys as they tow long barges or push huge commercial liners into moorings. My design has exaggerated features—a chunky hull and oversized cabin and smokestack—and is painted in bright colors to accentuate the playful image. Tug boats were always a highlight of my childhood visits to Staten Island, New York. Now they can be the highlight of your 3-year-old's visits to the bathtub.



Parts Preparation

HULL

I use hardwood for most of my toys, but to give buoyancy for the tug boat I recommend pine for the hull and cabin. After all, we're making a boat—not a submarine.

1. To make the hull, start with an oversized blank that's slightly wider and about 2 in. longer than the finished dimensions. This extra material leaves room for attaching the routing template for cutting the recessed area into the deck, as shown in the photo below. To rout the recess, I nailed a 1/4-in.-thick masonite template to the workpiece and used a 1/4-in.-dia. straight bit with a guide collar.

2. Cut the perimeter of the hull to shape on the bandsaw, with the table tilted to a 10° angle. Drill the 3/16-in.-dia. hole for the back post.

3. Sand the hull and apply two coats of an oil-based sanding sealer, sanding lightly between coats. Leave some unfinished wood in the recessed area for gluing in the deck cabin and pilot's cabin later. Mask off the top of the hull and spray the sides and bottom with at least two coats of your favorite color paint.

4. Remove the masking tape and round off the top edge of the hull with a 3/16-in. roundover bit in a table-mounted router. Finish the top of the hull and the border of the recessed area with two coats of an oil-based high-gloss urethane.

CABINS

1. Cut the blanks for the deck cabin and the pilot's cabin and glue them together with epoxy. (Don't use water-based glue or water-based finishes on toys that will get a lot of exposure to water.)

2. Drill the 1/2-in.-dia. portholes, and then round off the front of the cabin assembly (as explained on p. 14).

3. Apply sanding sealer and two coats of high-gloss urethane to the cabin assembly, leaving the top and bottom unfinished for later glue-up.

4. Cut the cabin roof to shape, round the front end and finish with sanding sealer and paint, leaving a section of the underside unfinished for gluing to the cabin.

Parts List

Quantity	Description	Finished Dimensions	Material
1	Hull	1 x 3 1/8 x 7 1/2	Pine
1	Back post	3/16-in.-dia. peg, 3/4 in. long with 5/16-in.-dia. head	Birch
1	Deck cabin	3/4 x 1 1/8 x 3 3/4	Pine
1	Pilot's cabin	3/4 x 1 3/8 x 1 1/4	Pine
1	Cabin roof	1/4 x 1 1/8 x 1 1/4	Birch
1	Smokestack	3/4-in.-dia. dowel by 1 1/2 in. long	Birch
1	Main mast	1/4-in.-dia. peg, 2 1/2 in. long with 5/16-in.-dia. head	Birch
1	Short mast	1/4-in.-dia. peg, 1 1/4 in. long with 3/16-in.-dia. head	Birch

Assembly

Refer to the drawings on p. 26 for correct orientation of the parts.

1. Glue the cabin roof onto the cabin assembly with epoxy.

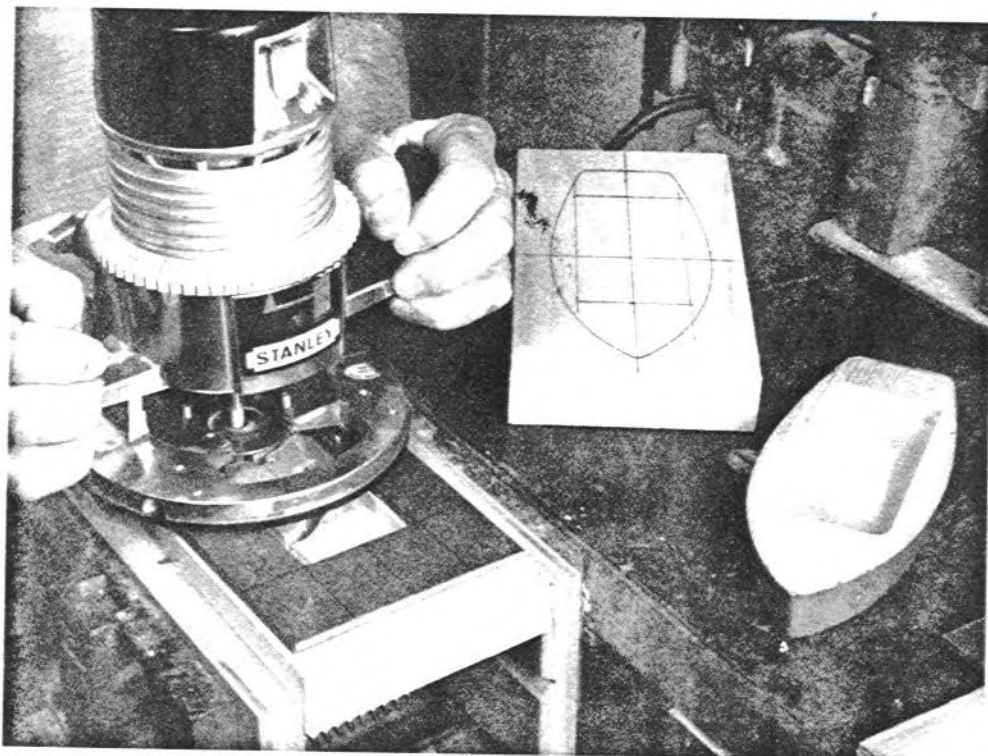
2. Locate and drill the holes for the smokestack and masts.

3. Epoxy the main deck to the hull, and glue the masts, smokestack and back post into place. For the smaller post and masts, it's safer

to use commercial pegs with large rounded heads rather than cut-off dowels (see Sources of Supply on p. 151).

4. Finish the remaining parts with two coats of urethane.

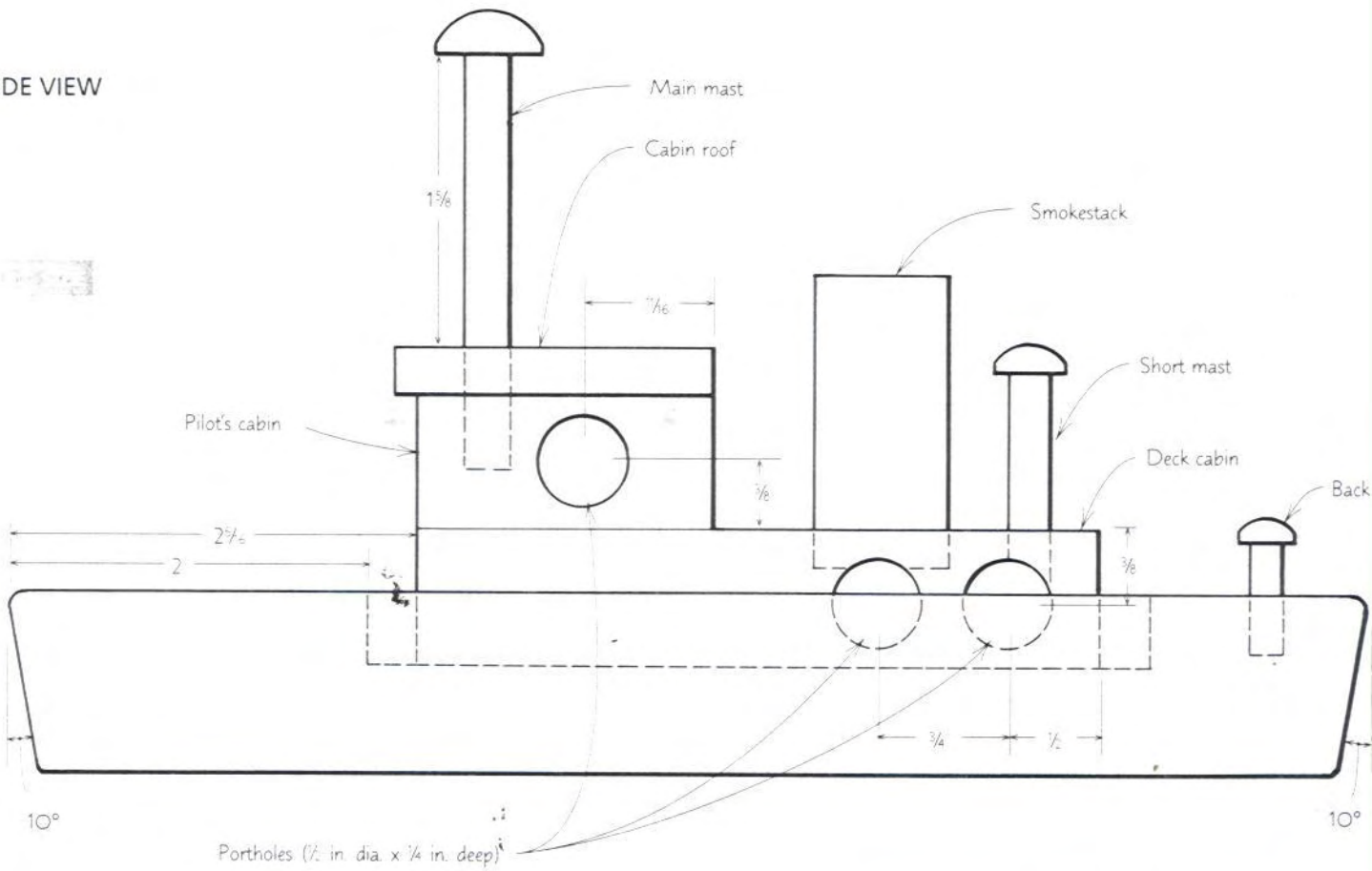
Check this toy from time to time to see if water exposure has caused any of the parts to come loose.



Use a template to rout the recessed area for the deck in the hull. Shown on the bench are the oversized hull blank (marked for routing) and the finished hull.

Tug Boat

SIDE VIEW



TOP VIEW

