Cat's Paw

OLD-TIME, dyed-in-the-wool sailors look askance at sailing catamarans because of their unorthodox design. But these same sailors are usually looking ahead at them in a race because of the cats' speed. For their length, catamarans can carry extra large sails aloft due to the wide, stable platform of the two hulls. More sail area to pick up the wind means more push, and any horsepower jockey knows that more push means more speed.

But for the individual who just likes to spread white sails against blue water and isn't worried about winning races, *Cat's Paw* has other advantages. She's easy to build because of the straight-sided hulls. The sheer line is flat and that simplifies building the form. Bow and stern are straight, so there's no cockeyed bevel to fit and fuss with.

Cat's Paw is an ideal boat to learn or practice sailing in, because she will forgive so many mistakes. Operators of boys' camps should consider building a fleet of these catamarans to add sailing to their water activities program. Boys will get a feeling of speed, learn about capsizing if a gust of wind hits them at the wrong angle or if they mishandle her in a stiff breeze. But enough of such pleasantries, let's get to building your own *Cat's Paw.*

Order the 4x12-foot panels of exterior-grade plywood for the hulls first. Then while you're waiting for delivery, lay out the frames (Fig. 5), full size on heavy wrapping paper. Make a rough plan for cutting the plywood similar to Fig. 9 and use the pieces indicated for the frame bulkheads and corner gussets.

Using the full-size layouts of the frames as a working guide, assemble the five internal frames for each hull. Apply *Weldwood* or *Elmer's Waterproof* glue to the contact surfaces between the frame pieces and the plywood bulkheads or corner gussets and fasten with 1-in. *Stronghold* boat nails. Keep nails back from edges at least ½ in. to allow for fairing later. Do not saw out notches for chines and clamps until glue is dry. Cut the inner transom (Fig. 5) from 1x4-in. lumber. Bevel sides and notches as shown. Also bevel the bottom of the inner transom, but leave the top edge straight—no bevel. Later, an outer transom is fitted over this inner transom to cover ends of chines and clamps and to give a rounded stern to each hull. Shape the stem from 2x4-in. stock (Fig. 5). Set a table saw to cut 14° off vertical and saw the rabbets ¼-in. deep to allow plywood sides to fit flush in the rabbets. If you do not have a table saw, plane all but the final rabbet, then hand chisel to shape. Continue the bevel for the forward portion of the stem. Do not round off top and bottom corners until later.

Make the building form (Fig. 3) next. Since the sheer line of the hulls is straight and flat, the top of the building form must be straight. For added rigidity, bolt a 2x4-in. brace on edge under the centerline of the form. If necessary, add shims between the 2x4-in. brace and the 2x6-in. form to make sure the top surface is straight. Snap a chalk line down the center of the form and mark off the stations square with the centerline using the dimensions from Fig. 4. Note that for stations #3, #2 and #1, the station line falls along the aft face of the bulkheads. At stations #4½ and #5, the station line falls on the forward face of the bulkheads. The reason for this is to allow for planing edges to the bevel of the sides without affecting the planed size of the bulkhead itself. Temporarily nail down 1x2 blocks along the station lines to locate the frame bulkheads. Since the top end of the stem extends ¼ in. above the clamps, chisel out a ¼-in. deep depression in the form to allow clearance for the stem (Fig. 6).

Measure the centerline of each frame and mark it on the side that will face the station line, and saw the chine and clamp notches square —not beveled. Notches will be beveled and seated later. Cut limber holes diagonally across lower corners of frames (Fig. 5). Place the frames on the form in line with the centerline upside down, that is, with the chine notches up, since the form establishes the sheer of the hulls and temporarily nail to form. With the stem in place on



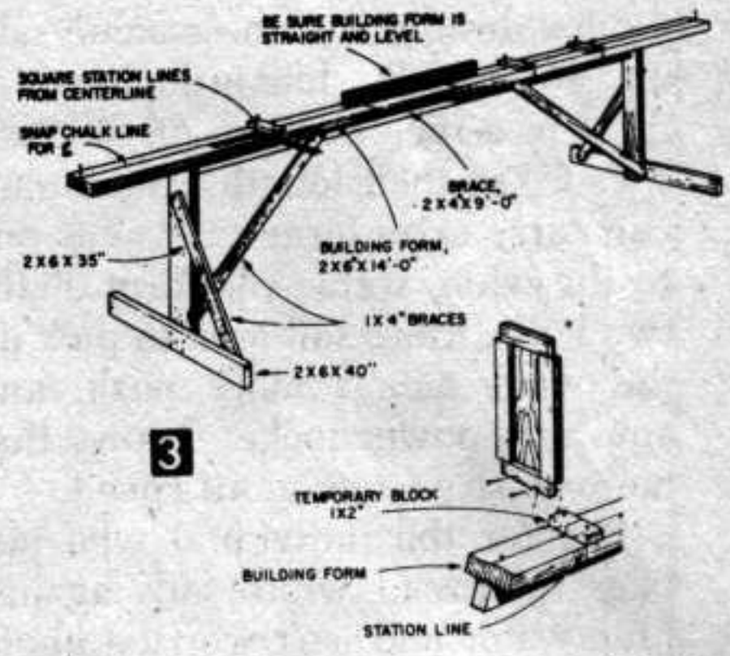
Construction is simplified with straight sided hulls plus straight bow and stern

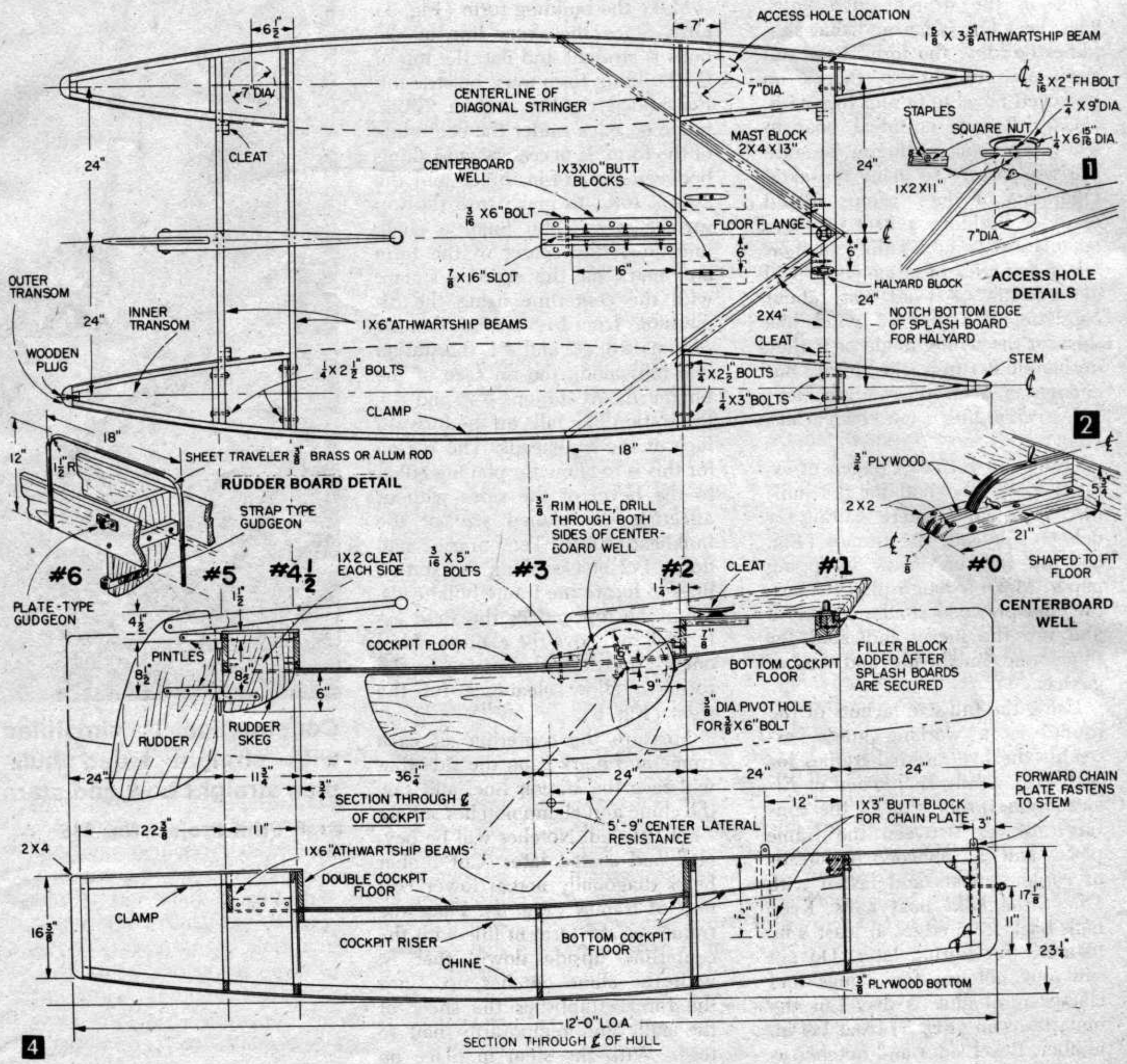
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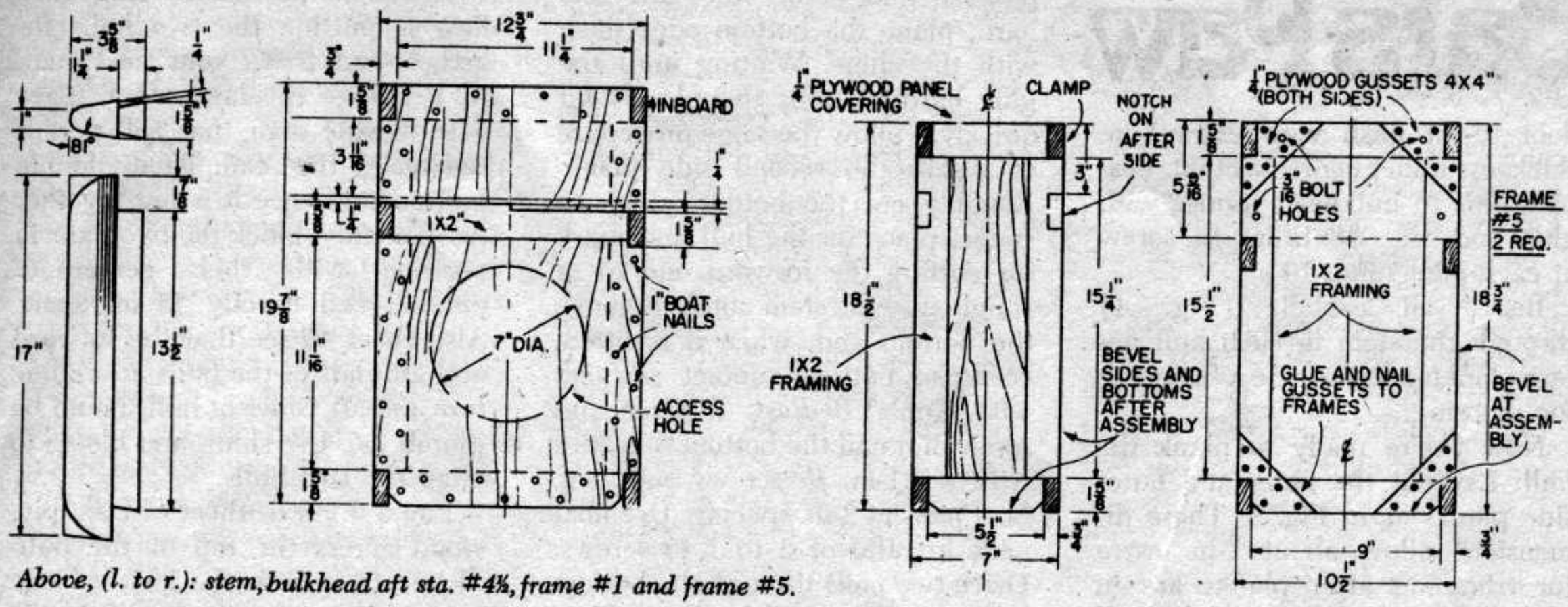
Cat's Paw

the form, bend one clamp at a time so forward end fits flush with rabbet in stem and fairs roughly to contour in notches of other frames back to the inner transom. Leave both clamps full length to establish side contours. Inboard clamps will be cut later through the cockpit area. Pencil mark along the clamps on the building form from the stem as far aft as the form's width. Remove the stem temporarily, and with the clamps following the contour of the other stations, trim the meeting surface between the two clamps until they follow the marked contour on the form. For a final, tight fit, clamp the two forward ends together and saw straight down between them. Before screwing the forward ends of the clamps together, separate them and coat the contact surfaces with glue. Do not fasten stem in place until later.

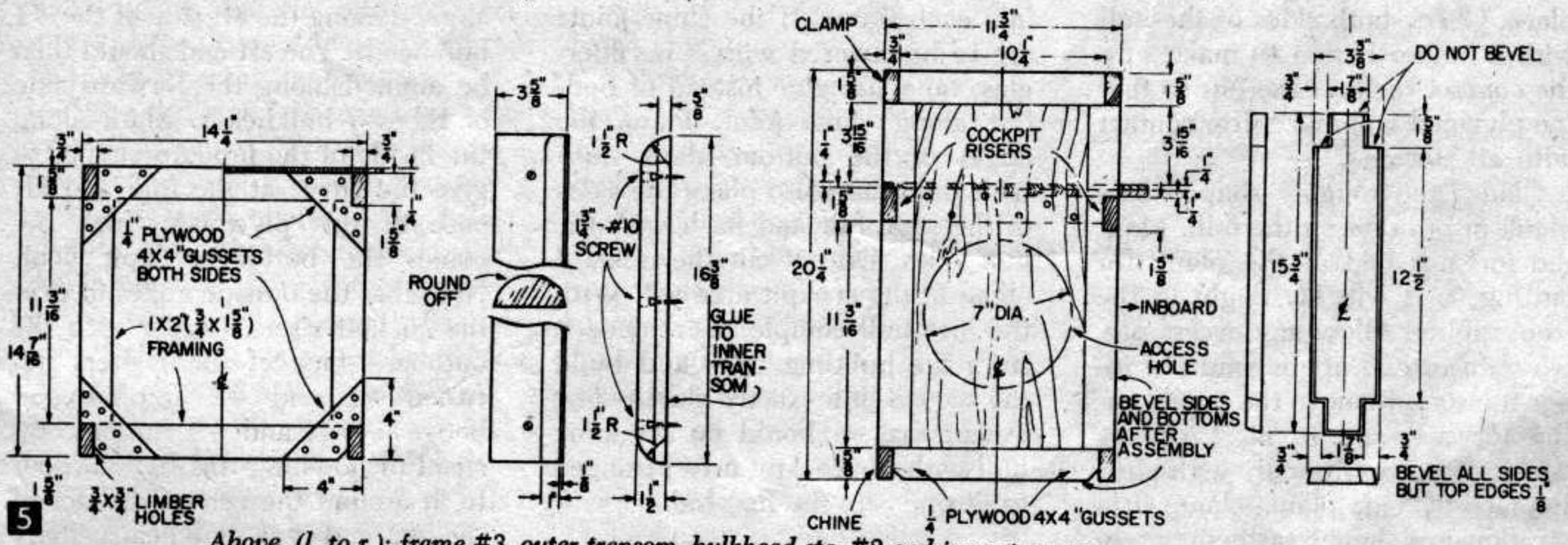
Working aft from the stem, seat the clamps in frame bulkhead notches with the aid of a hacksaw blade (Fig. 6A). Do not attempt to







Above, (l. to r.): stem, bulkhead aft sta. #4½, frame #1 and frame #5.

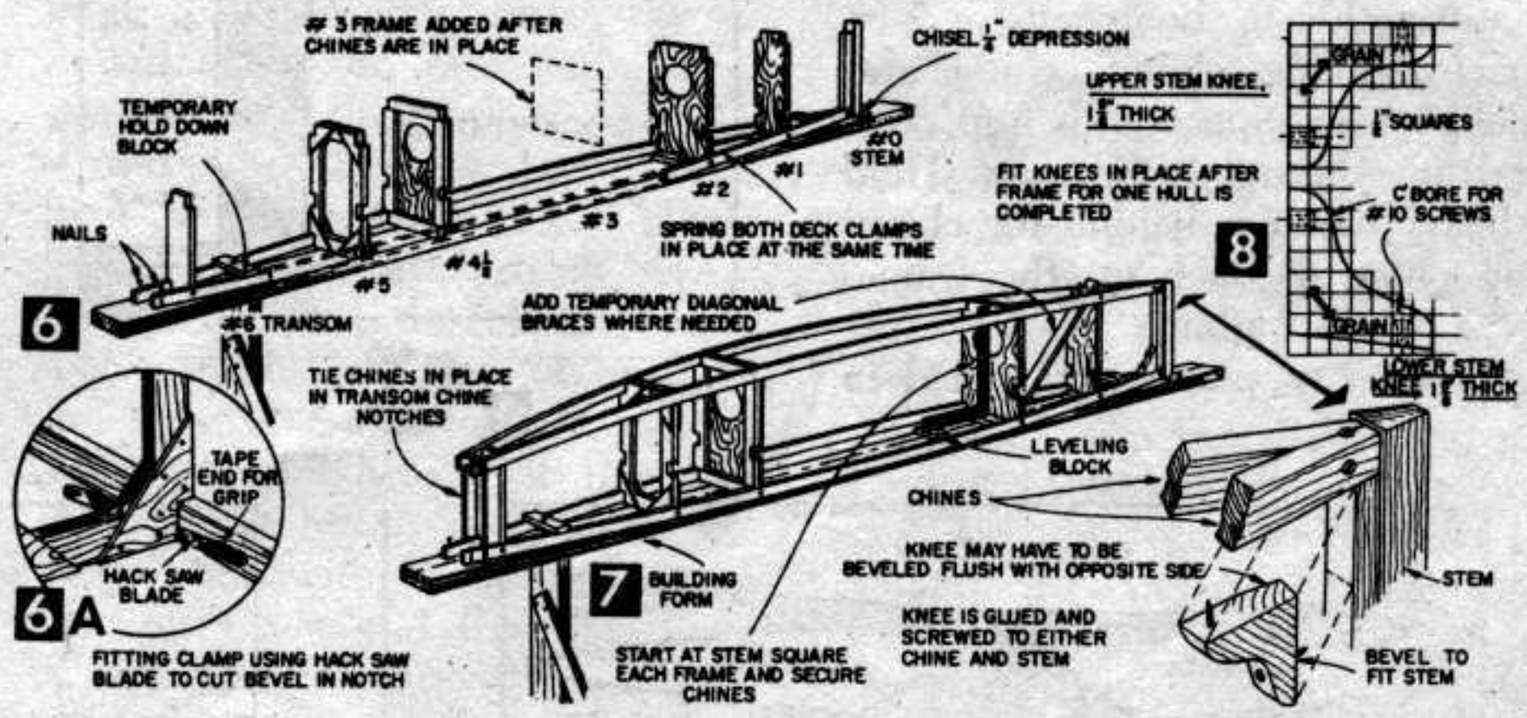


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Above, (l. to r.): frame #3, outer transom, bulkhead sta. #2 and inner transom.

cut the full bevel at each notch at one time, but leave a slight amount of material for a final fitting along the full length. At the aft end, drive nails through the extended clamps into the building form to hold them in position (Fig. 6). When you are satisfied that the clamps fit snugly in the bulkhead and inner transom notches, fasten with glue and one #8x1½-in. *fh* screw at each joint.

Spring and fit chines into their notches in the same way as you did the clamps. Work from the stem aft and remember that the chines not only maintain the contour of sides but also the rocker contour of the bottom. Bevel notches in bulkheads along both sides and bottom. Fit forward ends of chines together in a bevel joint similar to the joint in the clamps. Set stem in position and screw down through joined chines into end of stem (Fig. 7). Before final fitting and fastening of chines, check with a framing square to make sure that bulkheads are square with building form. Glue and screw chines in notches with one #8x1½-in. *fh* screw at each joint.



Cut stem knees (Fig. 8) to fit between the stem and clamps and chines and fasten with glue and two #10x1½-in. *fh* screws. Plane side and bottom edges of frames to a bevel that's flush with chines and clamps.

Set in the short bulkhead at station #3 and fit the cockpit risers (Fig. 4 and 10) along both the inboard and outboard sides of the hull between stations #1 and #5 as you did the clamps and chines. Note in Fig. 10A that along inboard side, riser notches are ¼-in. lower (when boat is in its upright position) than the outboard-riser notches. This is to permit cockpit

Cat's Paw

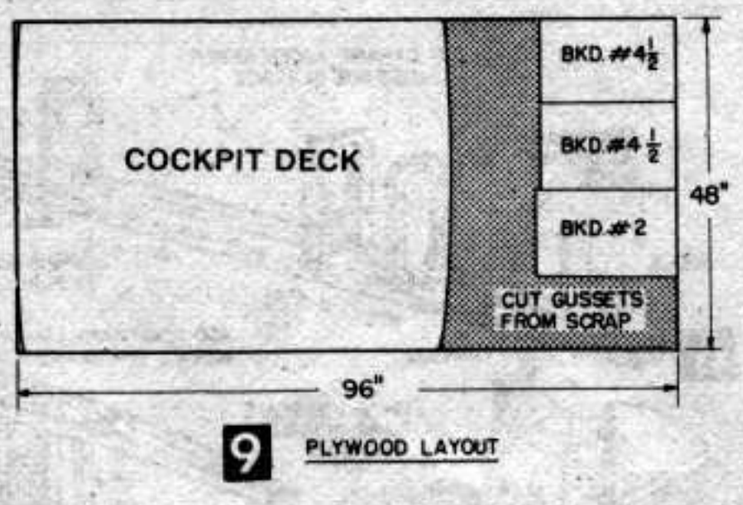
floor to sit flush with extra ¼-in. thickness under center section. Fasten risers to bulkhead frames with glue and one #8x1½-in. *fh* screw at each joint (Fig. 10).

Insert an eyebolt (Fig. 4) through the stem in each hull before planking to provide a fastening for mooring.

Now you're ready to plank the hull. Lay out the inner and outer side planks as in Fig. 9. These dimensions allow about ¼-in. extra for trimming after planks are in place. Check both sides of the hull with a limber batten to make sure the contact surfaces are fair so that the plywood will make firm contact with all surfaces.

Clamp the roughly shaped side plank in position on the hull. Mark the forward end of the plank for cutting so it will fit snugly in the stem rabbet. Allow any excess plywood to extend aft beyond the inner transom. Remove the plank, cut the forward end to fit. Coat the contact surfaces liberally with glue. Replace the side plank, clamp it in position and begin fastening it in place at the #3 frame and work toward both ends. Fasten the side plank with 1-in. boat nails at 2-in. spacing along clamp, chine and cockpit riser. Space nails into sides of frames about 8 in. apart. Hold a heavy hammer behind the clamp and chine to back up the framework while nailing.

As soon as plank is fastened in position and before the glue sets hard, plane the bottom edge flush with the chine. Waiting until the glue hardens dulls the plane's bit quickly. Follow the same procedure to install the second side plank. Roughly cut the bottom plank to shape, place on the hull and mark for cutting the forward end to fit snugly into the stem notch. Remove the bottom and, when it is fitted, coat the bottom contact surfaces with Kuhls' *Bedlast*. Replace and screw and nail the bottom to chines with #8x1-in. *fh* screws and 1-in. boat nails at 2-in. spacing. Use boat nails in ratio of 2 to 1 to screws. Drive two nails through the bottom into each frame. If the chine joints are to be covered with 6 in. fiberglass tape, use glue instead of Bedlast along chine joint. Plane the edges of the bottom plank flush with the sides. Also plane the sides of the stem fair and flush with the hull sides. Do not cut the inboard chine in the cockpit area yet. With the first hull completed, remove it from the building form and build the second hull exactly like the first except that it should be a mating hull with the cockpit area arranged to fit opposite the first hull.

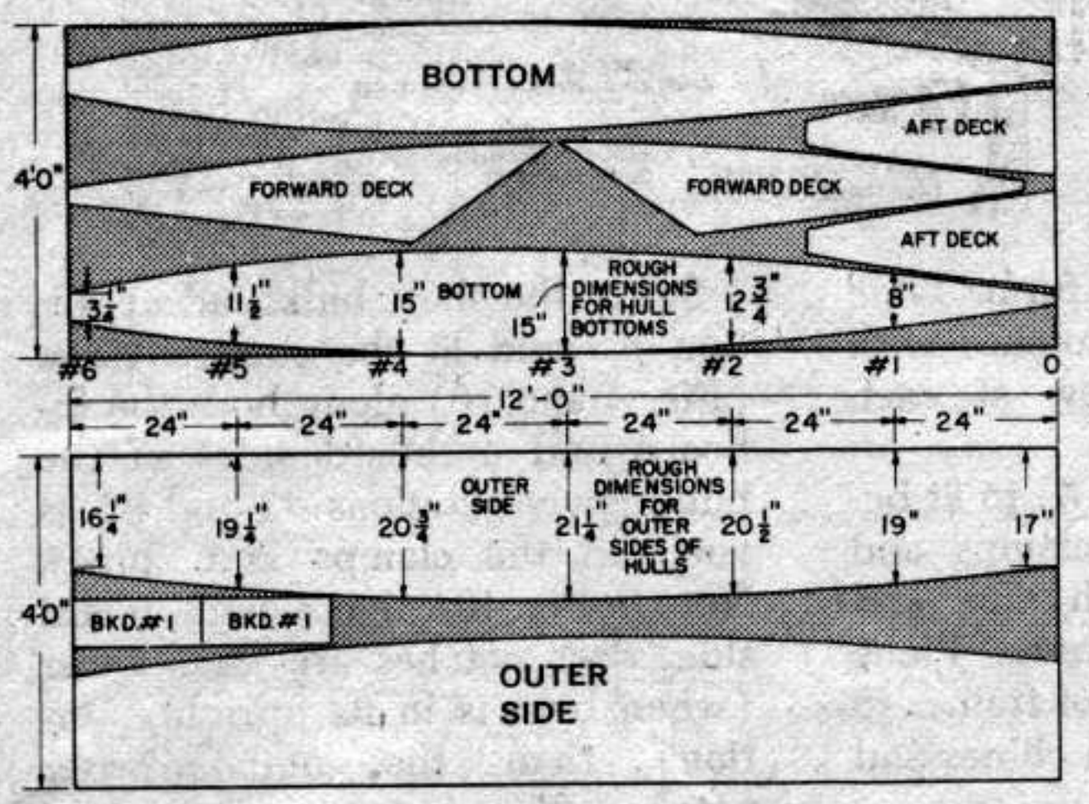


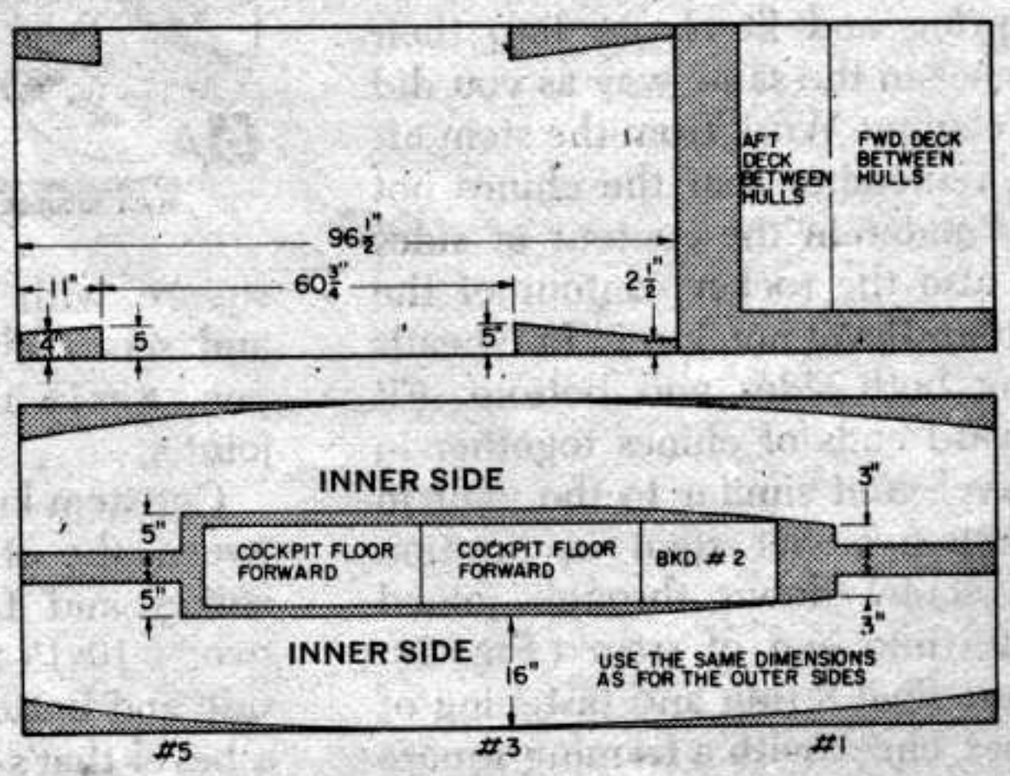
9 PLYWOOD LAYOUT

The tricky part of building Cat's Paw is putting the two hulls together—and that's your next step. In a garage or some other space with a wide door that will permit removing the completed double hull outside once it is put together permanently, block the two hulls in position with their centerlines parallel and exactly 48 in. apart. Also check to see that the forward and aft ends of the hulls are in line fore and aft. Sides of hull should be plumb too. Use shims and blocks to align the two hulls.

Lay a 4 x 8 ft. sheet of ¼ in. plywood across the top of the hulls (Fig. 11), with the forward end aligned along the aft side of the #1 bulkheads. The aft end should then be aligned along the forward side of the #5 bulkheads. Mark along the inside of the inboard clamps to give the curve at the fore and aft ends of this plywood which becomes the bottom cockpit floor. Note that the outside edges fit over the cockpit risers, in line with the outboard face of these risers between #1 and #2 stations and between #4½ and #5 stations. Instead of notching this bottom floor to fit around the vertical frames of the #2 and #4½ bulkheads, mark the plywood to be cut along the curve of the side all the way back to the aft face of the #2 bulkheads and all the way forward to the forward face of the #4½ bulkheads. Remove the bottom plywood floor, saw out the corner pieces and lay the piece back on the hulls to check the fit.

To permit the bottom floor panel



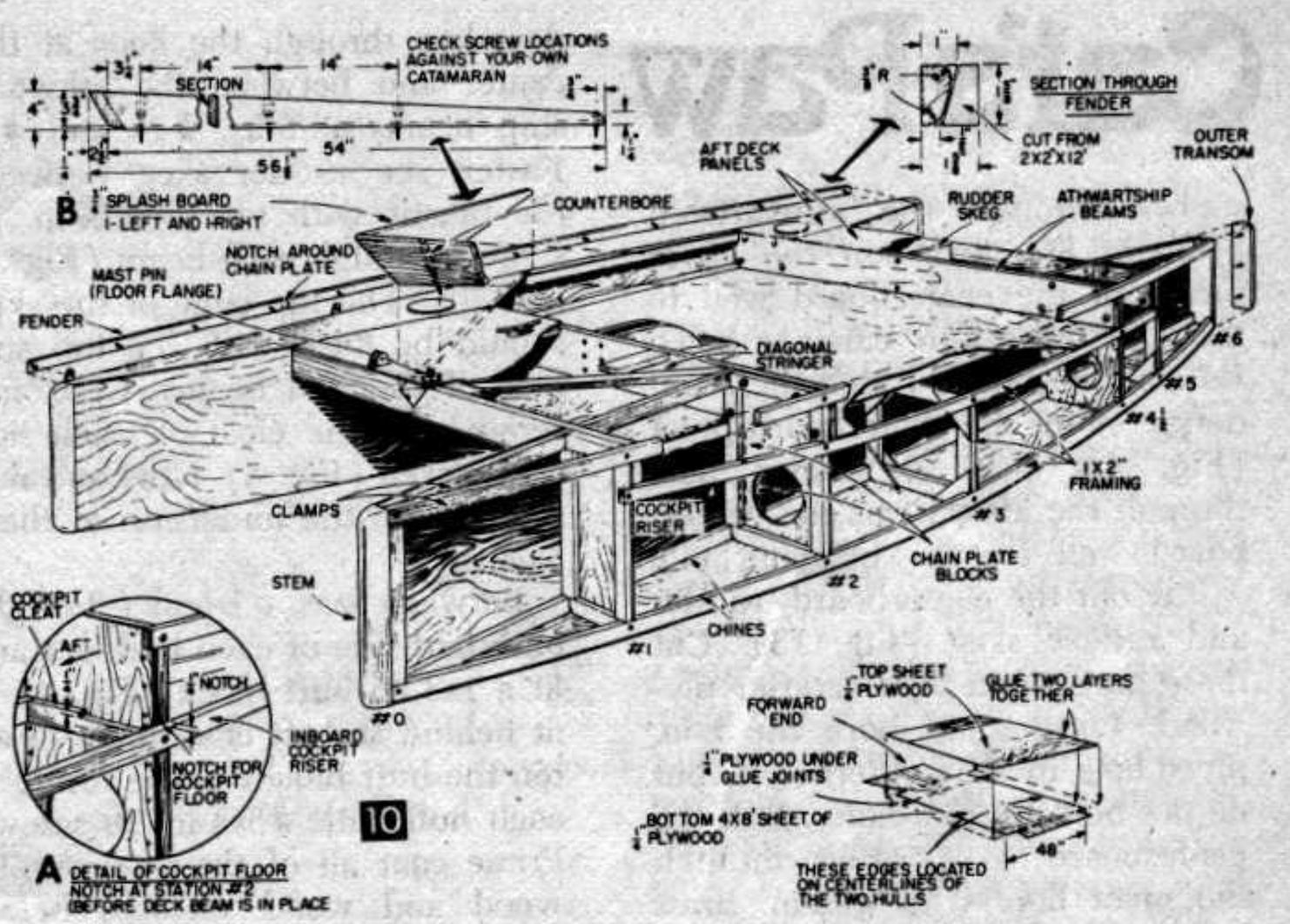


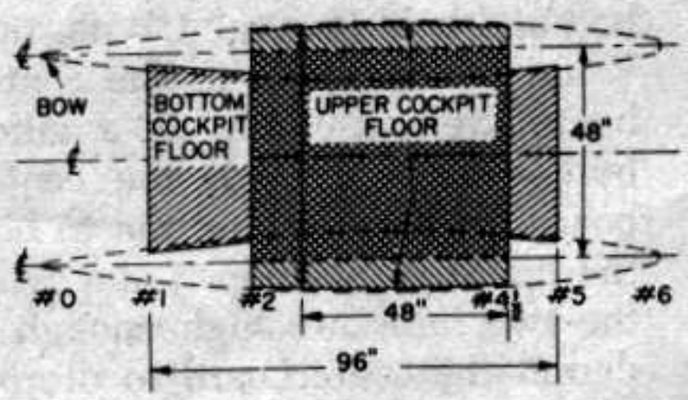
to fit between the #2 bulkheads and the #4½ bulkheads, saw the notch for the cockpit risers ¼-in. higher at the four corners (Fig. 10A). Notching the floor into the frames of the bulkheads rather than notching the floors to fit around the frames not only makes a stronger joint, but it eliminates the chance of water leaking into a joint that is unsupported for 1 inch.

You must remove one hull from its blocked-up position in order to get the bottom floor into position. If the notches for this bottom floor panel are cut correctly in the cleats of #2 and #4¼ bulkheads and in the top frame of the #3 bulkhead the parallel and straight edges of the original plywood sheet will help to align the centerlines of the two hulls and space them exactly 4 ft. apart. Fit this bottom floor panel until it lies in position with the hulls' centerline parallel and the hulls themselves level. Do not fasten it in place yet, however.

The upper floor panel extends over the bottom panel and between the outboard sides of each hull. Two additional smaller panels fit along the forward end to cover the open cockpit area (Fig. 10C). Fit these three upper floor panels together and mark their location on the bottom floor planel. Lay the bottom floor panel on a flat surface, and coat the entire contact surface between the bottom and upper floor panels with glue. Fit the upper panels in place on the marked lines. There will be joints between the small upper floor panels and the main upper floor panel outboard of the bottom floor panels edge (Fig. 10C) Fit a 2-in. wide piece of ¼-in. plywood from the edge of the bottom floor panel out to within ¾ in. of the outboard hull side. Place weights around on the floor panels to hold them in close contact until the glue hardens.

When the two floor panels are glued together, coat the cockpit risers in the floored section with glue. Fit the floor assembly into one hull, then slip the other hull onto the floor. Again block the hulls in a position with the centerline of each hull parallel and the sheer lines of each hull level and in the same





11 COCKPIT FLOOR DETAILS

plane. Proper alignment of the hulls at this stage is very important to the final performance of *Cat's Paw*. Fasten the floor with 1-in. boat nails spaced about 2 in. apart along both cockpit risers in each hull. Support the center of the floor assembly, if necessary, so it does not sag and pull the hulls out of alignment.

The main athwartship beams (Fig. 4) are next. At Sta. #1, the athwartship beam supports the mast pin midway between the hulls. Cut a section out of the inboard clamp on each hull aft of Sta. #1 and forward of Sta. #5. Unsupported ends of these clamps will be fastened to cleat blocks fastened to the athwartship beams. Cut and remove the inboard clamp between the aft face of Sta. #2 bulkhead and the forward face of Sta. #4½ bulkhead. Fit the four artwartship beams so their bottom edges fair with the slope of the cockpit risers and the tops flush with the top edge of the bulkheads at each section. Fasten with two ¼ in. carriage bolts at each joint or eight bolts per beam. Glue and nail the floor assembly to the underside of the four athwartship beams.

Glue and screw a 1x2-in. cleat to the inboard face of the athwartship beams at Sta. #1 and Sta. #5 to fasten the loose ends of the inboard clamps cut to allow installation of the athwartship beams. Glue and screw the mast block (Fig. 4) on the aft side of the athwartship beam at Sta. #1. Fit 1x2-in. diagonal stringers between the mast block and inboard corner of the hull line at Sta. #2. These stringers should line up with the centerline of the splash boards to be installed later on top of the deck (Fig. 10).

Along the centerline of the cockpit floor aft of the athwartship beam at Sta. #2 lay out the opening for the centerboard well (Fig. 4). Bore ⅞-in. holes through the floor at each end of the slot, and saw out the slot between them. Smooth the cut edges of the plywood with sandpaper, and prime the edgegrain thoroughly. Following the squared layout of the centerboard well parts (Fig. 13) cut them to shape. Subassemble the upper portion of the centerboard well with a ⅞-in. filler block between the two sides to line up with the slot cut in the cockpit floor. Coat the contact surfaces with glue and position over the centerboard slot. Fasten the forward end of the centerboard well assembly with

Cat's Paw

screws through the athwartship beam at Sta. #2. Bolt the lower pieces of the centerboard well to the floor using ¼-in. carriage bolts. Bore a ⅜-in. hole through these underpieces for the centerboard pivot (Fig. 4). Bore a similar hole through the aft part of the centerboard well for the belaying pin.

Lay out the centerboard, rudder and rudder skeg (Fig. 13). Cut these parts from ¾-in. exterior plywood. Locate and bore the ⅜-in. pivot hole in the centerboard, but do not bore the rim holes. Bolt the centerboard in position through the pivot hole with a ⅜-in. brass bolt and hold it in the UP position. Using the rim hole in the centerboard well assembly as a guide, bore a hole through the centerboard for the belaying pin to hold the board in position. Later when the two hulls are high enough to permit the centerboard to drop to its lowest position, again bore through the centerboard. Then, block the centerboard up in three other positions between up and lowest position and bore other holes through centerboard so that it can be adjusted to wind conditions. In rough water lower board all the way. For average conditions raise the board and maintain at a position where minimum pressure is felt upon the tiller.

Cut a ¾-in. wide slot for the rudder skeg through the floor at the center and between the athwartship beams at Stas. #4½ and #5. Fasten the rudder skeg between the beams with two #8x1½-in. *fh* screws through each beam (Figs. 4 and 10). The top edge of the skeg should be flush with the top surface of the two beams. Glue and screw a 1x2-in. cleat on each side of the skeg (Fig. 4). Glue and nail the floor to the underside of these cleats.

Between Stas. #1 and #2 on the outboard side of each hull, cut and fit a 1x3-in. butt block (Fig. 4) to fit behind the aft chain plate. Fasten the butt blocks to the inside of each hull with #8x⅞-in. *fh* screws. Prime coat all of the interior plywood and wood surfaces before covering with decking.

Now you're ready to install the decking. Start with the aft decks first—they're easier. The deck is fitted in three sections—one over each hull from the inner transom forward to Sta. #4½ and a center cover for the space between the two aft athwartship beams. The aft plywood deck panels meet over the inboard clamp of each hull between Stas. #4½ and #5. Therefore, cut these pieces to fit down the centerline of the clamps. Before fastening the decks in place, cut the 7-in. dia. access hole between Stas. #4½ and #5. Glue and nail the decks in place and trim flush with the sides and athwartship beams.

At the forward end, extend and mark the centerline of the diagonal stringers to the forward side of the athwartship beam at Sta. #1. With a straightedge, carry this same centerline to the outboard side of each hull approximately 18 in. aft. of Sta. #2, (Fig. 4). Cut the forward deck panels to fit from the stem aft to Sta. #2 along the inboard clamp and diagonally along the marked line to the outboard clamp on each hull. Along the diagonal line between the clamps, mark a line ⅜ in. on both sides of the diagonal centerline for the thickness of the splash boards. Notch the inboard edge of these forward deck panels along the inboard clamps from Sta. #1 aft to Sta. #2, so the center forward deck panel can fit on the clamps. Two cleats, one for the halyard and one for the sheet, will be fastened on the center deck later, so you must mark their location (Fig. 4) and install a 1x3-in. butt block underneath before fastening the center deck in place. Also cut the 7-in. access hole just forward of Sta. #2 (Fig. 4). When all three sections of the forward deck fit snugly together, glue and nail them in place.

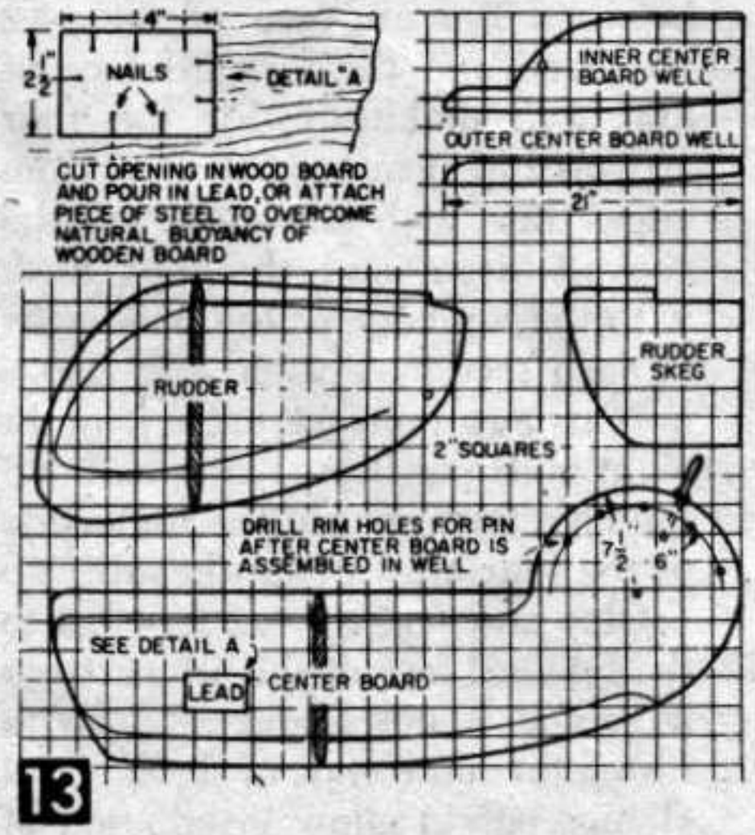
To complete the even top deck surface, fill in the space over the outboard clamp between the aft end of the forward decks and the forward end of the aft decks with ¼-in. plywood. Trim flush along the outside of the hulls and the inside of the clamps.

Shape the splash boards from ¾ in. mahogany for appearance (Fig. 10B). Bevel the underside of the

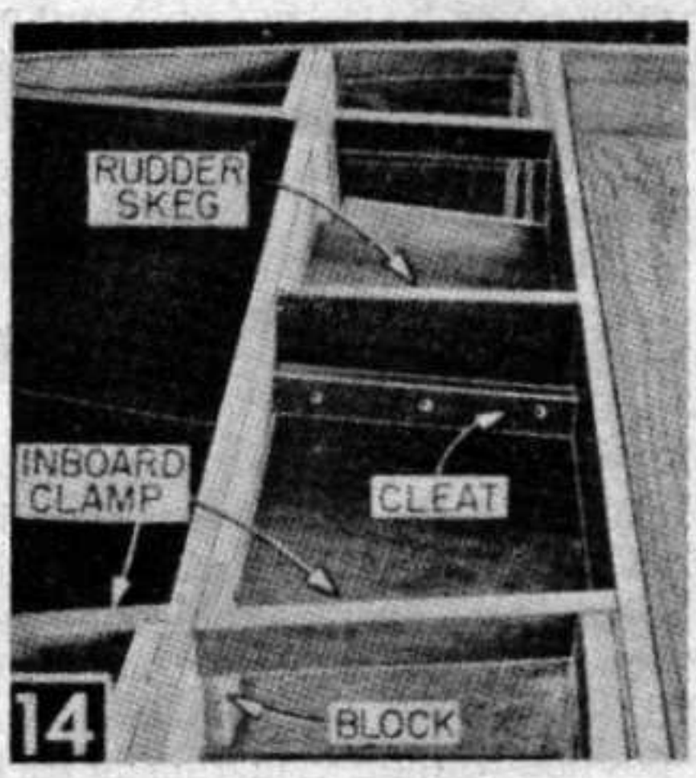


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Use C-clamps to fit the hull sides against the frame. Backup framework when nailing.



13



14

Athwartship view of beams at stas. 4½ and 5 shows rudder skeg and cleat placement.

boards first and then rough out the bevel at the forward joint. For a final fitting, clamp the splash boards in position and saw between them for a perfect joint. Align the splash boards along the diagonal from the center of the forward deck aft and fit the triangular block forward of the athwartship beam at Sta. #1 midway between the hulls. Also locate the 1-in. aluminum floor flange inside the V and over the mast block and Sta. #1 beam (Fig. 4). Note in Fig. 4 that the halyard enters a deck block fastened just outboard from the mast on the starboard side and runs aft to the cleat mounted on the deck. Notch the lower edge of the starboard splash rail to clear this haylard.

Before installing the splash boards, prepare the outside of the upper decks, sides of the hulls and cockpit for finishing. Round the upper and lower ends of the stem and sand smooth. Sand all exposed edges of plywood smooth. Fit ¾-in. quarter-round molding around the inside of the cockpit area, set screws and fill over the heads with wood putty. Also install the outer transoms to the inner transom with three screws. Counterbore for screws and fill the holes with wood plugs or dowels (Fig. 4). Plane, rasp and sand the transoms to a smooth, gently rounded shape.

Paint over the entire hull, decks and cockpit with two coats of white *Firzite*. Sand the second coat smooth and apply two additional coats of white marine enamel. Or use another color if you have a preference.

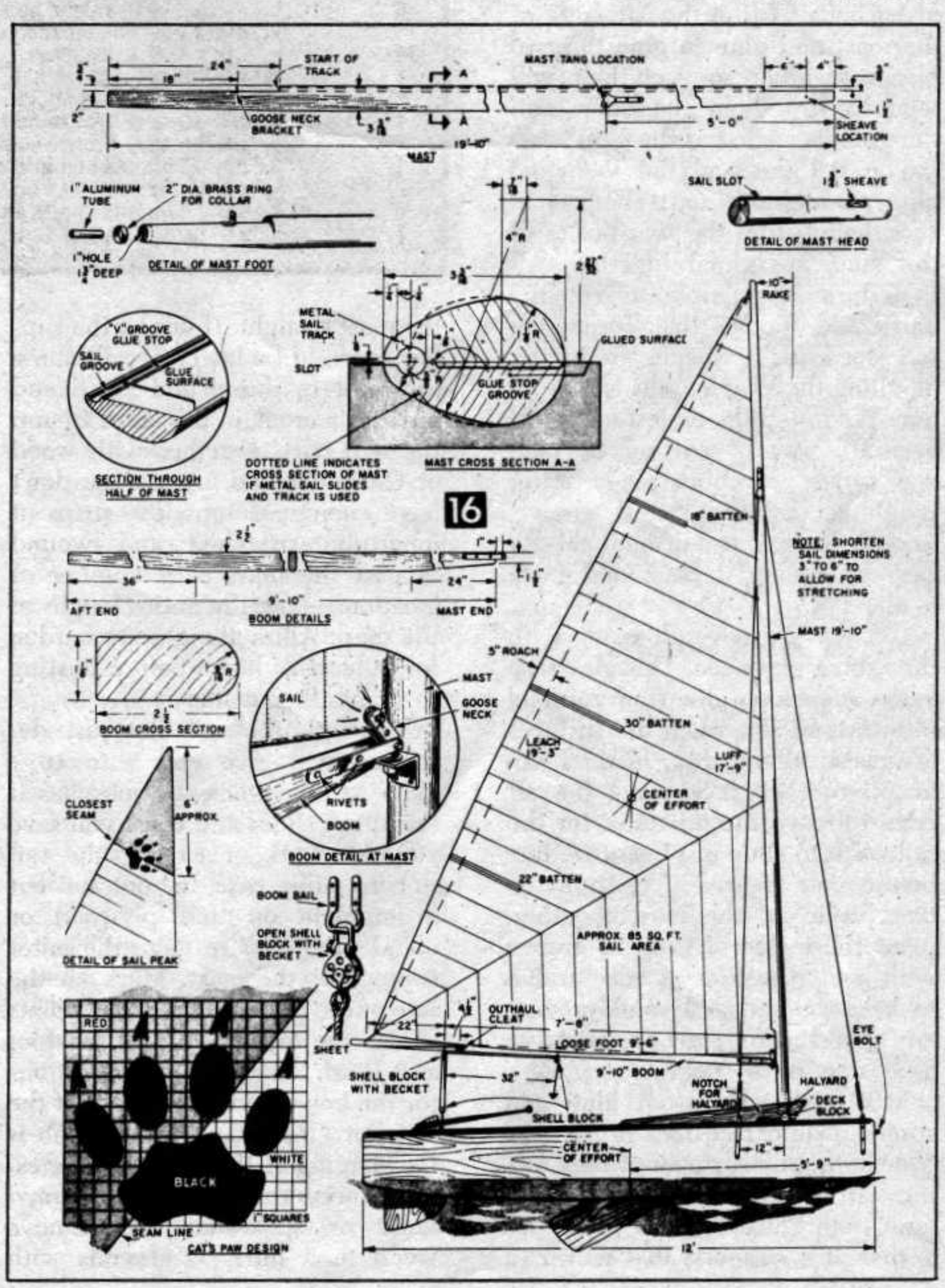
Now you can install the mahogany splash boards by counterboring deep holes from the top edge (Fig. 10) and screwing through the deck into the diagonal stringer. Between the inner and outer clamps, screw through forward decks from the underside into the splash rails. Fill the fenders (Fig. 10) along the outer sheer of both hulls, but do not fasten them in place until after the chain plates are attached. Locate the four chain plates (Fig. 4) and fasten with #10x1¼ in. *fh* brass screws driven into butt blocks previously placed inside the hull. Notch the fenders to fit over the chain plates and fasten to the clamps with chromium plated, #8x1¼-in. oval-head screws spaced about 8-in. apart. Varnish the splash boards and the fenders with marine varnish.

Make up the access hole covers as in Fig. 4. The outer cover should fit tightly against the deck to keep out any spray water. The main reason for the access holes is to ventilate the inside of the hulls in case there should be a small leak. In case a large leak should develop, you can reach any part of the hulls from one of the four bulkhead access holes with the suction hose from a bilge pump. If the hulls are not ventilated periodically, they may be subject to dry rot deterioration after several years.

With hulls completed your next step is to make the mast and boom, and rig the sails. The mast can be a purchased metal mast or you can make one yourself of wood. Either way, the mast includes a rope sail track along the aft edge and the general measurements are the same. For further information on a



15 TILLER DETAIL



Cat's Paw

hollow aluminum mast, contact Zephyr Products, Inc., Wareham, Mass.

To build your own mast from wood, obtain a 20-ft. length of edge-grain, clear fir stair-tread stock. Most of this stair-tread stock comes with a round nose on one edge which can be used as is. The stock should measure 1⅛ in. thick and about 9½ to 10 in. wide. Rip off a 2⅝ in. wide piece from the rounded nose section for the boom first (Fig. 16). Rip the remainder of the stock into two equal width pieces. Select the straightest edge of each half to be the aft edge of the mast and plan to glue the two pieces together so each half will tend to straighten the other and the grain is angled at the glue joint.

The sail slot and the V-shaped glue stop groove must be cut in each half before the two pieces of the mast are glued together. Although it is possible to cut the half-circle groove that forms the sail slot with a shaper or router, handling the long lengths is a problem. We found the easiest and most accurate way of cutting the slot was to use a rabbet plane. After roughing out the round groove, smooth it with a half-inch rat-tail rasp by sliding it back and forth in the slot.

Cut the V-groove glue stop with the rabbet plane too. This glue stop keeps any excess glue from running into the sail slot when the surfaces are clamped together. Plane 1/16-in. off of each face along the aft edge to leave the ⅛-in. slot for the sail colth to slide in (Fig. 16). Just before you are ready to glue the two pieces of the mast together, paint the inside of the sail groove with a thin coating of hot paraffin to help the sail slide and prevent any glue that might ooze past the glue stop from sticking.

Mix fresh waterproof glue and spread it quickly with a brush over over both glue surfaces of mast being careful not to go beyond the glue stop. Place the two pieces together over supports that will hold the mast straight. If one of the supports should be lower, it will allow the mast to slump and you'll end up with a crook in the mast. Clamp the two parts together with wood or C-clamps, and in case you don't have enough clamps, use strips of innertube stretched and wound around the mast at a number of locations along the entire length of the mast. Allow the glue to harden for at least 24 hours before starting to shape the outside.

Although the sail slot just described will give you 5 to 10% more sailing efficiency, purchased metal sail slides and track will save you the work of cutting the sail slot. In either case, lay out and cut a template on thin plywood or metal (Fig. 16) to gage the outer contour of the mast. Mark on the side of the glued-up mast the points. where the tapers start at the foot and head. Also mark the locations for the lower and upper ends of the sail slot (Fig. 16). The next job is the shaping of the mast—a progressive process that starts with a drawknife or spokeshave to remove wood in a hurry, and ends with No. 3 sandpaper for a smooth surface. After roughing off the bulk of the wood with a drawknife or spokeshave, plane the mast close to the final contour, then rasp off the ridges left from planing. Finish with decreasing grades of sand paper.

Before tapering the head end, bore the pivot hole for the sheave and cut out the hole for the halyard in line with the sail slot (Fig. 16). Shape the foot of the mast to a circular cross-section. Bore a 1-in. dia. hole in the center of the mast foot about 1¾ in. deep and in line with the centerline of the mast. Cut a 2-in. length of 1-in. O.D. Do-It-Yourself aluminum tubing and force it into the bored hole. Cut the excess tube off flush with the foot end of the mast. Around the outside of the mast's foot, drive a 2-in. dia. brass collar on the mast end to prevent it from splitting. The aluminum tube inside the mast is a snug fit on the aluminum floor flange mounted on the deck. Install the goose neck bracket (Fig. 16) on the aft edge. Cut a flat spot for the bracket so it will not tend to

MATERIALS LIST—CAT'S PAW

EXTERIOR PLYWOOD

No.	Description	Use
4	¼" x 4 x 12' fir	planking and
1	¼" x 4 x 8' fir	decking
1	¾" x 4 x 4' fir	centerboard, rudder and well

LUMBER

16	¾" x 1⅝" x 12' fir or pine	framing
1	¾ x 5⅝" x 16' oak, fir or spruce	athwartship beams
1	1⅝ x 3⅝" x 6' oak, fir or spruce	athwartship beams
1	¾ x 5⅝" x 10' mahogany	splash boards
1	1⅝ x 3⅝" x 6' pine	stems and outer transoms
1	1⅝ x 1⅝" x 8' pine	well cleats
1	¾ x 3⅝" x 8' pine	inner transoms
1	1⅝ x 5⅝" x 2' fir or pine	stem knees
1	1⅝ x 1⅝" x 3' mahogany	tiller
1	1⅛ x 9½" x 20' fir, edge-grain stair-tread stock	mast and boom

FASTENINGS

1 lb.	#0 x 1" brass Stronghold boat nails (Obtainable from Herter's Inc., Waseca, Minn.)
1 gross	#8 x 1" brass fh wood screws
8 doz.	#8 x 1½" brass fh wood screws
1½ doz.	#10 x 1¼" brass fh wood screws
28	#8 x 1¼" chromium-plated oval-head wood screws
8	¼" dia. x 3" galvanized carriage bolts
24	¼" dia. x 2½" galvanized carriage bolts
34	5/16" I.D. x 1" O.D. washers
1	⅜" x 6" brass machine bolt
2	7/16" I.D. x 1" brass washers
1	5/16" x 3" brass or bronze bolt and nut
2	⅜" I.D. brass or bronze washers
1	¼" dia. 2" bronze bolt and nut
2	5/16" x 2" bronze carriage bolts and nuts
6	3/16" dia. x 5" bronze bolts and nuts
1	3/16" x 6" bronze bolt and nut

	PAINTS AND GLUE	
1 gal	white Firzite	
2 qts	marine enamel	
1 gt	bedding compound	
2 lbs	Weldwood or Elmer's Waterproof glue	
	FITTINGS AND RIGGING	
2	size 0 shell block (Fig. 952)	
1	size 0 shell block with becket (Fig. 9520)	
2	size 0 boom bails (Fig. 6390)	
1	gooseneck fitting (Fig. 6430)	
2	jiffy halyard shackles (Fig. 2871)	
1•	2⅝" spar cleats (Fig. 408)	
1	mast head sheave (Fig. 8460)	
2	mast tangs, double (Fig. 502B)	
4	AM 150 aircraft turnbuckles, jaw and jaw	
4	6" x 1" stainless steel chain plates	
1	size 0, 5/16" deck block (Fig. 386)	
2	3" jam cleats (Fig. 4055)	
2	#1 x 19, 15'-1" aft stays, 1/8" (4 large eye-terminals), length includes turnbuckles	
2	#1 x 19, 15'-2", forward stays, 1/8" (4 large eye-terminals), length includes turnbuckles	
5 lin ft	3/16" cotton line (outhaul)	
71 lin ft	5/16" yacht manila rope	
2	¾" pintles (Fig. 460)	
1	¾" strap gudgeon (Fig. 462)	
1	¾" plate gudgeon (Fig. 463)	
2	belaying pins, R-1258 (8" overall length, 3" head)	
2	1" eye-bolts shank length	
1	1" O.D. x 2" Do-It-Yourself aluminum tubing	
1	2" O.D. x 2" brass ring	

Figure numbers refer to Tom A. Edwards & Co. boat equipment. 740 North Wells Street, Chicago 10, Illinois. Kits of all fittings and rigging (except sail) are available for Cat's Paw.
Individual fittings may also be obtained from W. L. Masters and Sons Inc., 210 West Chicago Ave., Chicago 10, Illinois.
Sails designed especially for Cat's Paw with or without insignia can be obtained from Alan-Clarke Co., 220 Rte. 25A, Northport, N.Y. 11768

rock back and forth. Screw a double-end mast tang on each side of the mast 5 ft. down from the head end. Mount the sheave in its slot with the pivot bolt.

Taper the ends of the boom as in Fig. 16. At the mast end of the boom, locate the boom straps along the top (straight) edge of the boom and fasten with rivets. At the outer end of the boom screw on the out-haul cleat (Fig. 16). Mount the shell block with becket aft and the shell block forward on boom bails as in Fig. 16. Coat the mast and the boom with two coats of marine varnish.

Lay out the rudder (Figure 13), on ¾-in. plywood or ¼-in. steel plate and cut to shape. Round the edges and tape the leading edge to a blunt taper. Prime and paint it white to match the hull and centerboard.

The tiller (Fig. 15) can be turned from a square of mahogany, or shaped by hand. Rough out the shape with a spokeshave and work it down to final shape with plane, rasp and sand paper. Finish the tiller with two coats of spar varnish. Join the tiller to the rudder with one 5/16 x 3-in. bronze bolt.

Mount the plate-type gudgeon on the aft side of the athwartship beam at Sta. #5 with the centerline of the journal in line with the centerline of the rudder skeg (Figure 4). The strap-type gudgeon fits around the rudder skeg extension below the beam. Hold the rudder in position and mark the location for the two pintles. Rivet the two pintles to the rudder with brass or bronze rod forming heads on both ends.

Make up the sheet traveler from ⅜-in. brass or Do-It-Yourself aluminum rod (Figure 4). Drill ⅛-in. holes through the rod ends and countersink them for mounting the sheet traveler to the aft side of the athwartship beam at Sta. #5. Mount the halyard block 6 in. outboard of mast (Figure 4). Also mount the two cleats on the forward center deck.

The sail plan is shown in Fig. 16. However, inasmuch as it is rather difficult to make a sail this large at home, a sail specially designed for *Cat's Paw* can be obtained from the Alan-Clarke Co. as indicated in the Materials List. They have the design for the *Cat's Paw* insignia shown in black on a red peaked sail in Fig. 16. The sail used with this mast uses a rope sewed to the luff that rides in the sail slot of the mast. The sail is also loose footed.

You'll probably make a dry run to check the rigging before taking *Cat's Paw* to the water. First, fasten the four stays to the mast tangs and run the halyard through the sheave. Set the mast upright over the flange, slip the ends of the strays over the chain plates and fasten them with the pins. Tighten the stays with the turnbuckles. Engage boom tangs in goose neck at base of mast and rig the sheet. Attach the head of the sail to the halyard and bend it into the sail slot as you hoist the sail. Run the halyard through the block and aft to the deck cleat through the notch previously cut in the splash board. Attach the outhaul pendant to the clew of the sail, run it through the hole at the outer end of the boom and then down the boom to the outhaul cleat (Fig. 15). Now if your *Cat's Paw* were in the water, you'd be ready to take off.

When you're ready to launch your *Cat's Paw,* bolt 2x6 beams across a conventional boat trailer to support the two hulls. Carry mast and boom separately and assemble them as indicated above just before launching her in water. Wait until boat is actually in water before hoisting sail.

With a boat as beamy as *Cat's Paw,* you'll probably find it a problem to store between seasons if you live in an area where boats must be removed from the water during the winter. For her length and beam, *Cat's Paw* is not a deep boat, so we fastened hoisting blocks under the garage roof and hoisted her overhead. When sailing time rolls around again, it's simple to let her down right on the trailer. Meantime, she's out of your way and out of the weather. ■

• To obtain enlarged plan for building Cat's Paw, Craft Print No. 245, see handy order form on last page of this issue.

