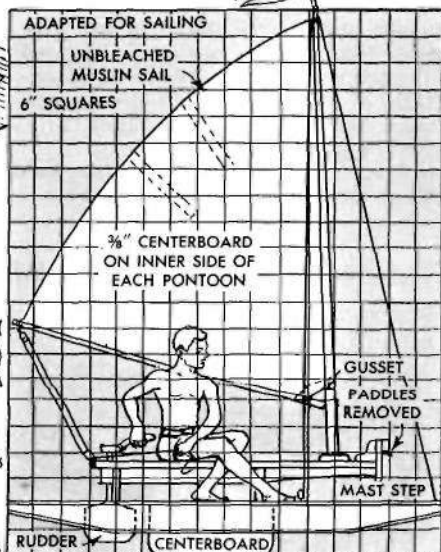
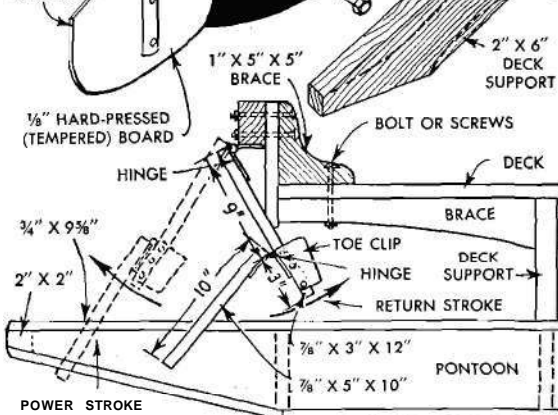
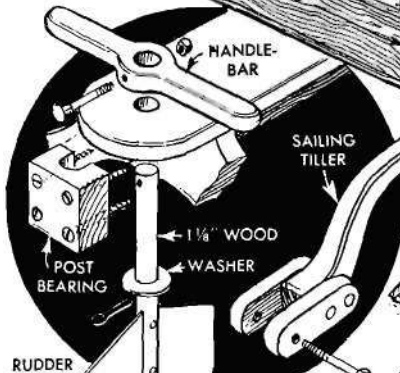
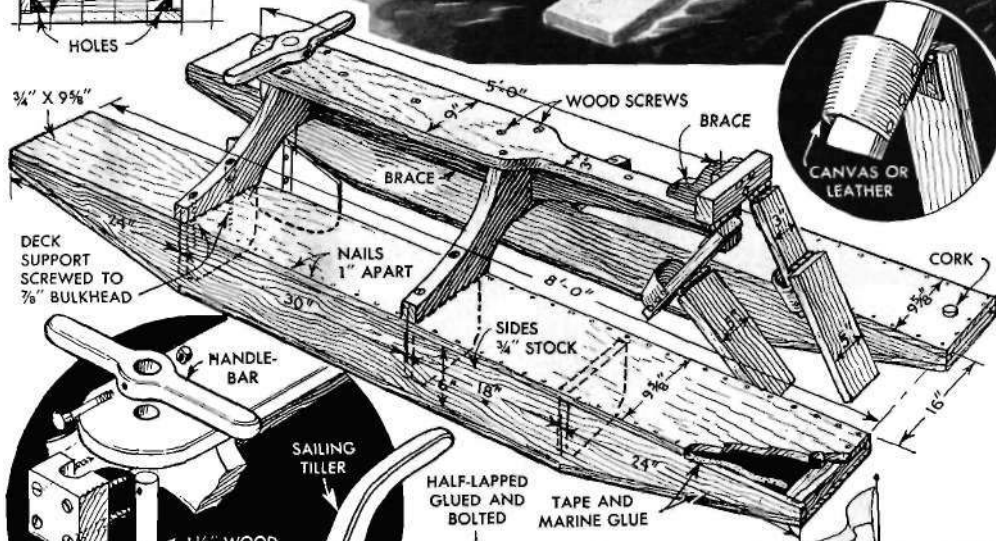
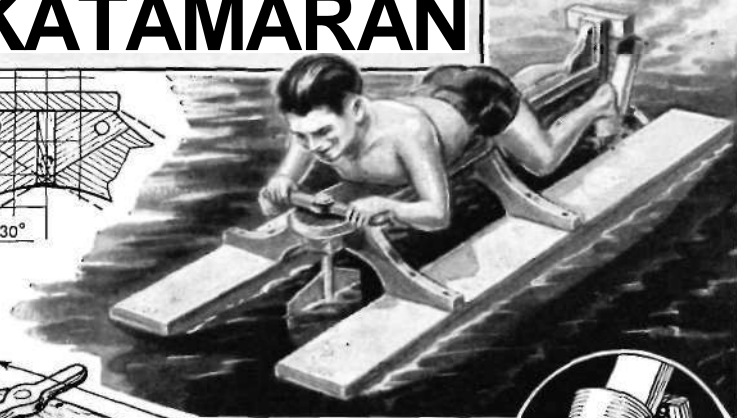
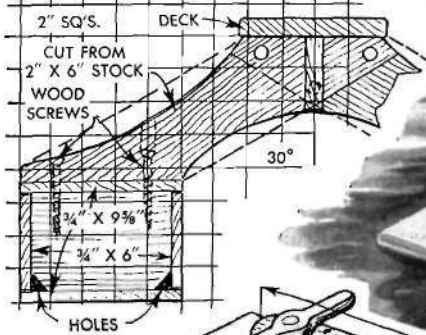
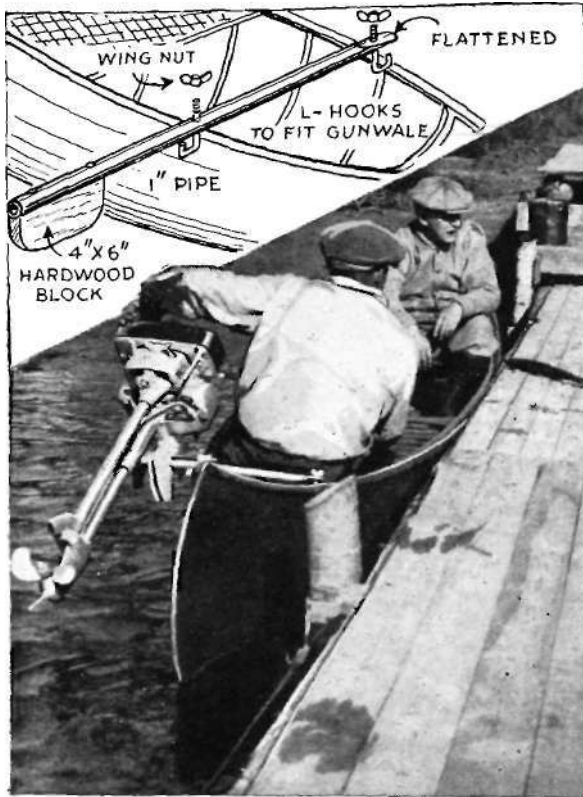


# KICK-KATAMARAN





## Foot-Powered Catamaran Is Fun ->

It's great fun to lie on the deck of this homemade catamaran, slip your feet into the toe-clips and paddle over the lake or bay, steering your course with the forward rudder using little effort. Pontoons, of  $\frac{3}{4}$ -in. lumber, are joined with nails;—preferably galvanized—driven about an inch apart, and are calked with strips of cotton binding tape laid in marine or casein glue, or white lead. Ply-wood centerboards are screwed on the inside of each pontoon.

The deck, made from the same material as the pontoons, is supported by two arched cross members of 2-in. lumber cut as shown and half-lapped, glued and bolted together and installed on the pontoons with screws through the two forward bulkheads. A brace running under the deck reinforces it. A stiff crosspiece supports the paddles a few inches above deck level, and on this piece the paddles are hinged. On the drive stroke the paddles swing back against the upper section to which the canvas or leather toe-clips are attached, and on the return, they swing free, dragging across the surface of the water.

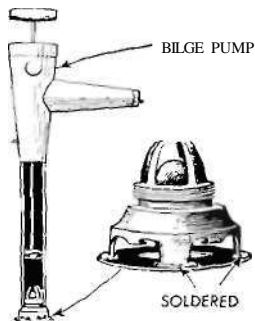
To use the catamaran as a sailboat, the paddles are fastened out of the water, the handgrips are removed from the rudder and a tiller is substituted. The skipper now faces in the other direction, with the rudder at the stern. The mast, tapering from 2 in. at the bottom to  $\frac{1}{2}$  in. at the top, is held in a step block on the narrow part of the deck and braced by wire stays made taut with turnbuckles. To furl the sail, the boom is swung up and the sail wrapped around the mast and tied. Several coats of paint carefully applied complete the job and give you a seaworthy boat that can be used for a diving platform, surfboard or craft for an outboard motor as well as a foot-powered raft.

Note in the detail at the low right of the facing page that two centerboards, one mounted on the inner side of each pontoon, are required when the catamaran is adapted for sailing. A mast step is placed behind mount for paddles.

## Bracket to Attach Outboard Motor to Canoe

This simple bracket will enable you to attach an outboard motor to your canoe or kayak for swift transportation without arduous paddling. Outboard motors of  $\frac{1}{2}$  to 2 hp. are sufficient for powering the average canoe. The bracket consists of a length of pipe fitted at one end with a hardwood block bolted in place to serve as a motor mount. L-hooks fit under the gunwales attach the bracket to the boat.

## Disk Soldered to Bilge Pump Protects Boat



Because some bilge pumps used on small boats have bases with sharply projecting feet, they mar the bottom planking when being used. However, if a metal disk with a large hole in the center is soldered to the feet, it will prevent damage, and will not obstruct the flow of water because of the center hole and the space between the feet. A brass disk is preferred as it will not rust and is not damaged by the action of salt water.