two coats of clear Firzite, inside and out, and follow on the bottom with two coats of white Firzite which has been tinted to match the final enamel coat. Finish with a coat of enamel of the desired color (green being appropriate for a small boat), paint the bottom up to the chines with white Firzite tinted buff and varnish above chines with two coats of spar varnish. Outside may be either painted or varnished. Fittings for this boat consist of a bow plate, two stern lifting handles, and an airplane half steering wheel.

● Craft Print No. 32 in enlarged size for building the "Buzz" is available at 25c each. Address Dept. B-30, SCIENCE AND MECHANICS, 450 East Ohio Street, Chicago 11, Illinois.

# Whizz

By W. D. JACKSON, N.A.

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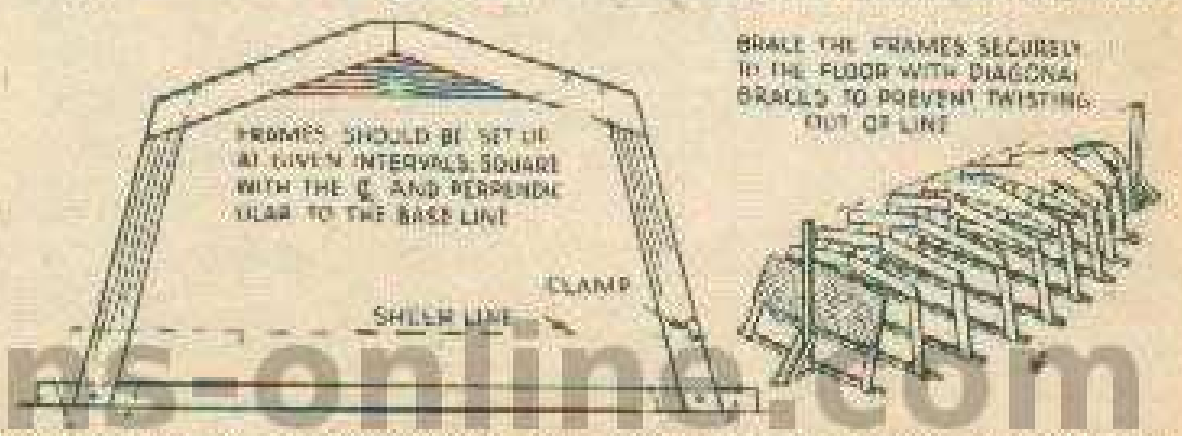
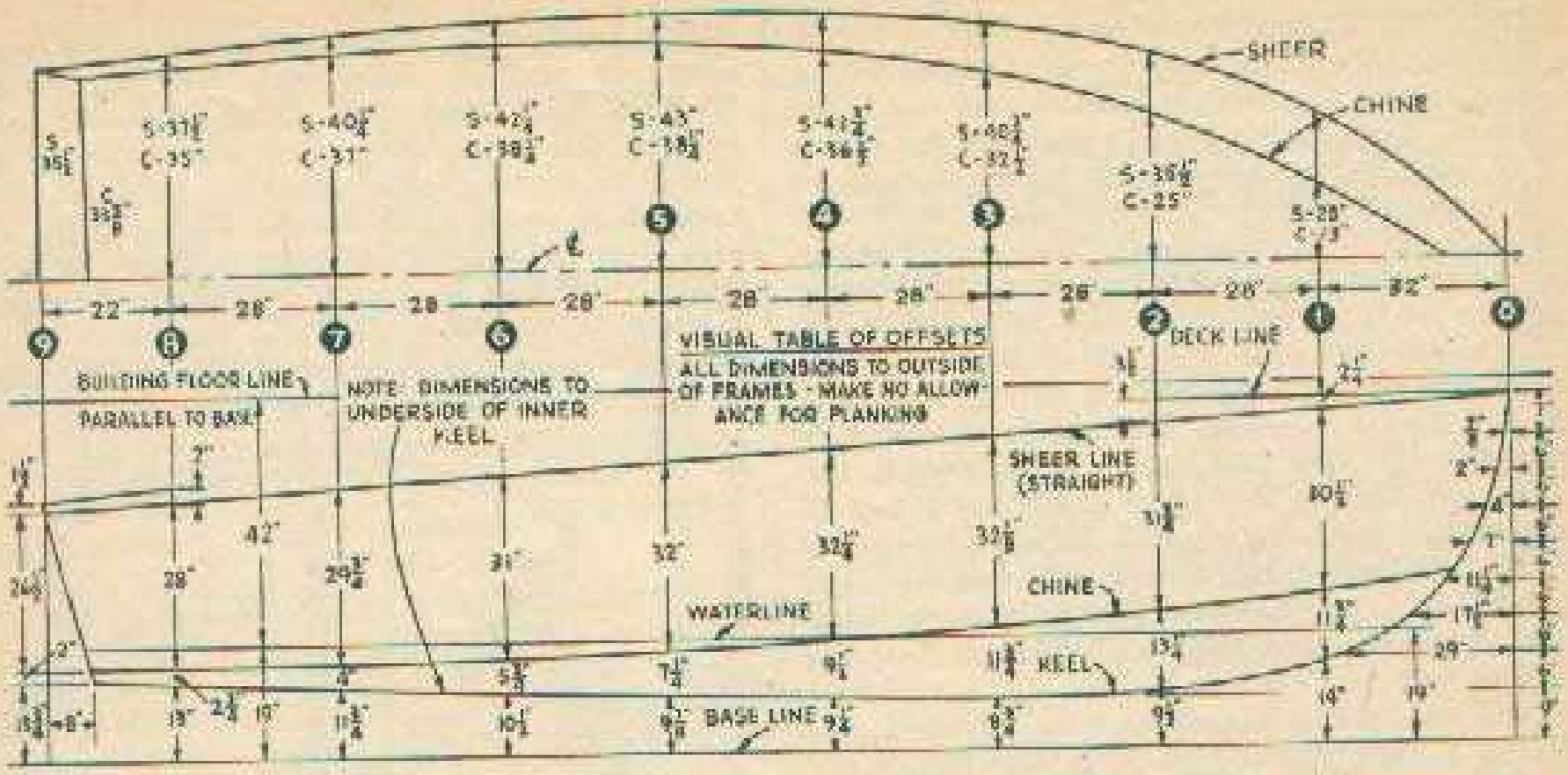
Craft Print Project No. 31

**USES:** A high speed cruiser for overnight trips, weekend cruises and general sports use. Designed for use with 40 to 100 hp inboard motors of lightweight, high speed design for flexible and maneuverable operation. Gray, Universal, Michigan Marine, or converted motors such as the OSCO Jeep or Ford V-8 are recommended types of motors.
**LENGTH:** 21 ft. overall.
**BEAM:** 7 ft. overall.
**DEPTH:** Forward 44 in.; Aft 39 in.
**DISPLACEMENT:** 1600 lb.
**SEATING CAPACITY:** 4 persons.
**SLEEPING CAPACITY:** 2 persons.
**CONSTRUCTION:** Plywood laid over a longitudinally stressed frame, with sawed transverse frames. Vee bottom design provides soft riding qualities and greater maneuverability. Bottom and side surfaces are adapted to the use of plywood without compound curves.

THIS boat, *Whizz*, should appeal to those who want their cruisers fast, sporty and small enough to carry by trailer. A small cruiser meant for overnight trips or weekend cruises, will sleep two persons on cruises and accommodate a party of four for afternoon excursions. With a dependable 50 to 60 hp Marine engine or a converted, lightweight high speed auto motor such as the Osco Willys Jeep, it will make 20 mph or better.

Before beginning construction, lay down the lines for *Whizz* full size and make patterns from the full size layout. This full size layout produces patterns that really fit and corrections or additions can easily be made on this layout where needed. You can also draw the engine dimensions on the layout and obtain patterns for engine bed stringers, etc., and their proper interrelationship in the hull. With corrected full size patterns of frames complete, lay frame material down upon pattern outlines, saw to shape and align shaped frame parts upon pattern outlines. Be sure to extend the top ends of the side frames to the building floor line and mark the sheer to be cut later. Next coat contact surfaces with resin glue and bolt chine joint members together



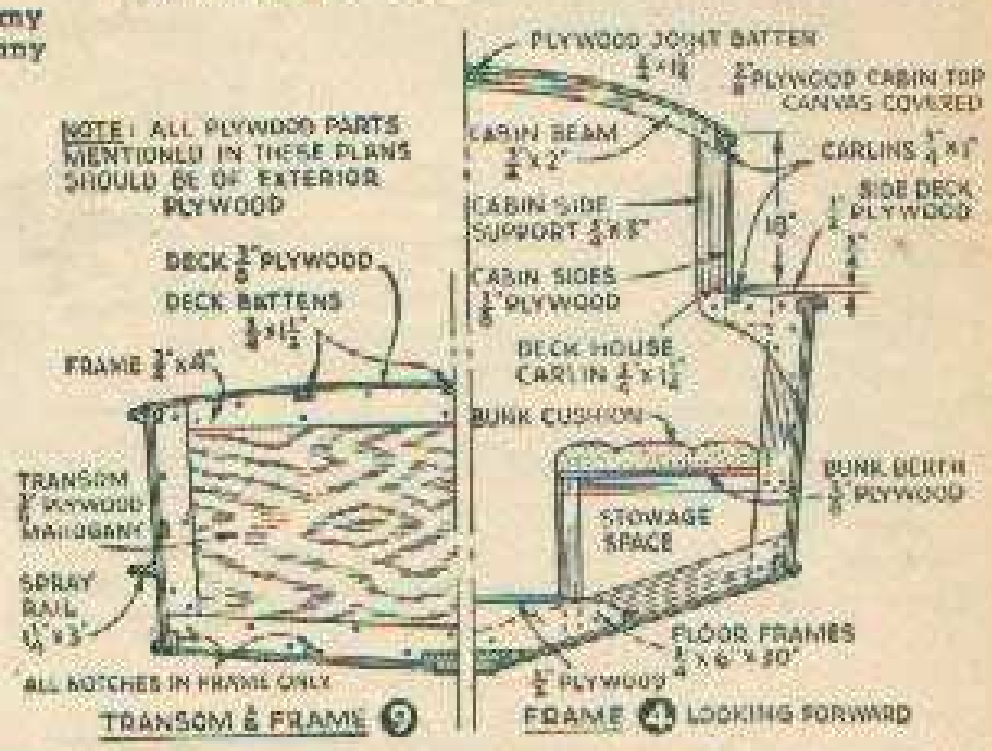



## MATERIALS LIST—WHIZZ

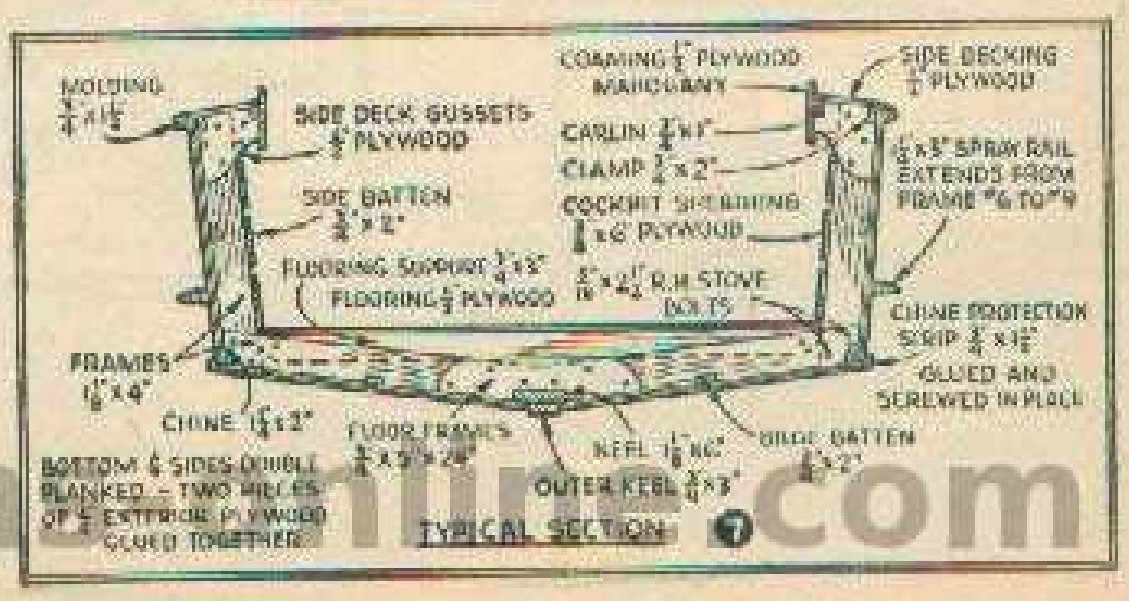
| | | |
|---|---|---|
| **Plywood** | | |
| Side and bottom planking | 24 pcs. | ¼" or ⅜" x4' x8' Fir |
| Decks | 3 pcs. | ½"x4'x8' Fir |
| Cabin top | 2 pcs. | ⅝"x4'x8' Fir |
| Cabin sides | 2 pcs. | ⅜"x4'x8' Fir |
| Bulkhead | 2 pcs. | ¾"x4'x8' Fir |
| Windshield and sides | 1 pc. | ¾"x4'x8' Mahogany |
| Galley dresser and banks | 6 pcs. | ⅜"x4'x8' Fir |
| Flooring | 4 pcs. | ½"x4'x8' Fir |
| Transom | 1 pc. | ¾"x30"x6' Mahogany |
| Coaming | 1 pc. | ½"x24"x6' Mahogany |
| **White Oak** | | |
| Keel (inner) | 1 pc. | 1⅛"x6"x181½' |
| Keel (outer) | 1 pc. | ⅞"x3"x181½' |
| Frames | 10 pcs. | ⅞"x3"x12' |
| Chines | 2 pcs. | 1¼"x2"x20' |
| Battens | 4 pcs. | ¾"x2"x21' |
| Engine beds | 2 pcs. | 2"x6"x3' |
| Engine stringers | 2 pcs. | 2"x4"x12' |
| Clamps | 2 pcs. | ¾"x2"x22' |
| Moldings | 2 pcs. | ¾"x1½"x22' |
| Stem | 1 pc. | 2¼"x6"x6' |
| **Yellow Pine or Spruce** | | |
| Deck beam material | 2 pcs. | ¾"x8"x12' |
| Cabin beams | 2 pcs. | ¾"x8"x12' |
| **Fastenings** | | |
| 38—¼"x2¼" galvanized carriage bolts | | |
| 4—5/16"x6" galvanized carriage bolts | | |
| 10 gross—1¾" #12 fh screws | | |
| 24—¼" x6" galvanized carriage bolts | | |
| 2 gross—2½" #10 fh screws | | |
| 4 gross—1½" #8 fh screws | | |

size layout; after hull is planked, an outer stem piece covers planking and exposed edges of stem.

Whizz is best built upside down, and a form is not used. Frames are set up on a level floor and fastened temporarily to the floor with the aid of 2 x 2 in. lumber nailed to floor and to tops of frames. Align all frames at the proper separation using diagonal bracing where needed (see plans). Make sure they are exactly level and perpendicular since a fair hull will depend upon this aligning. Set the stem up directly on center



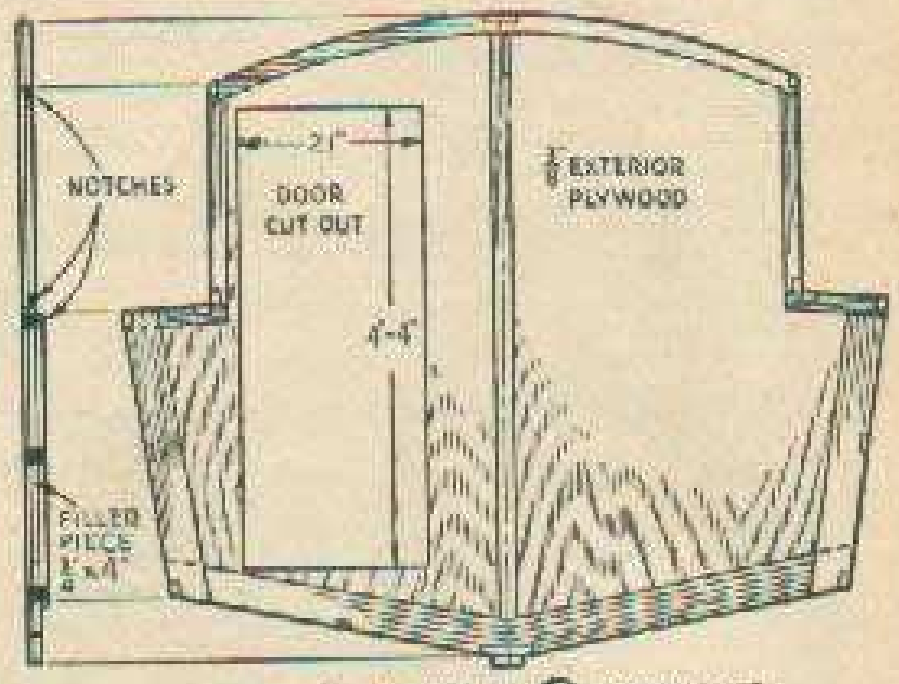

with ¼ x 2¼ in. galvanized carriage bolts. Glue and screw fasten floor frames with six 1¾ in. No. 12 fh screws to each floor frame joint. Make transom and frame as indicated, using ¾ in. plywood for the transom itself; glue and screw fasten an oak frame to the transom. Saw stem to shape and secure stem joint with ⅜ in. galvanized carriage bolts. This stem is beveled (not rabbeted) to correspond to full



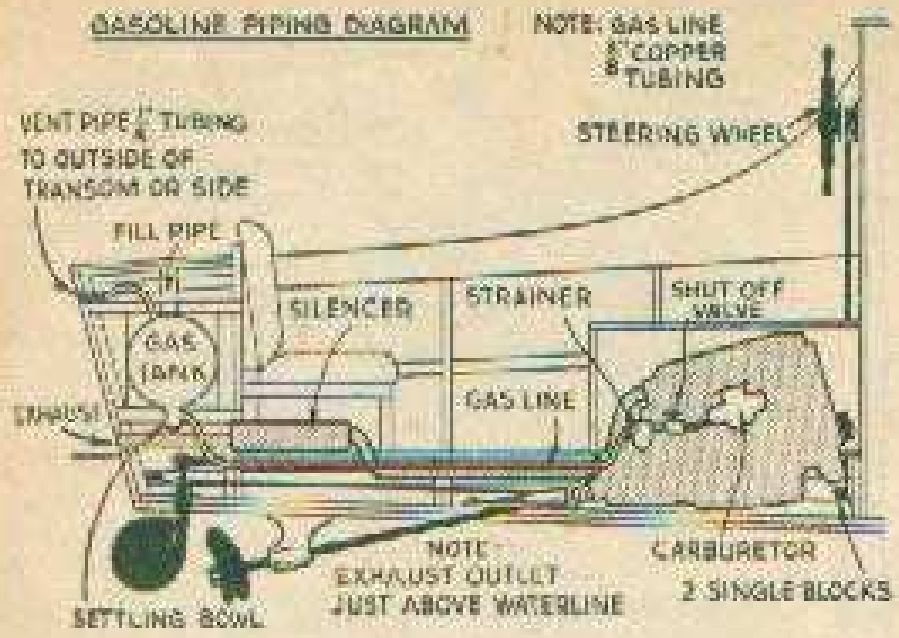
line of hull framework.

With frames set up it's easy to lay keel, chines and clamps in place, and to mark and notch the frames. Then spring keel in position and fasten it to each frame with two ¼ x 6 in. galvanized carriage bolts. Now bolt keel to stem notch with the same type carriage bolts. Next spring chines in place simultaneously (to prevent wringing strains on the framework) and fasten with one 2½ in. No. 10 *fh* screws to each chine joint. Bevel ends of chines at the bow to fit the stem and fasten chines to stem. Next, after checking to see that there are no humps or hollows in the sheer line, spring clamps in place and fasten to stem and frames. Now notch for bilge battens to fit flush in bottom frames, also one batten on each side. Locate these battens midway between clamp and chines on the sides and midway between chines and keel on the bottom.

The entire framework is now trimmed and faired so that plywood to be applied lies evenly at all points. In attaching plywood, use two ¼ or ⅜ in. thicknesses of plywood together and bond the plywood to the frames and all joints and plywood sheets together with a good resin glue. Remember to plank sides first. Lay plywood in position, mark and cut to shape. Then coat all adjoining or contact surfaces with resin glue and screw fasten with just enough screws to hold sheets in position. Now coat outer surface of plywood with resin glue, place outer sheet in position and screw fasten at all joints with 1¾ in. No. 10 *fh* screws spaced about 2½ in. apart. Secure all plywood joints to a ¾ x 3 in. batten inside hull. The joint is screw fastened to this batten with 1½ in. No. 8 *fh* screws. In using resin glue to glue plywood be careful to compensate for temperature conditions. (This glue will not set at temperatures below 60° F. and

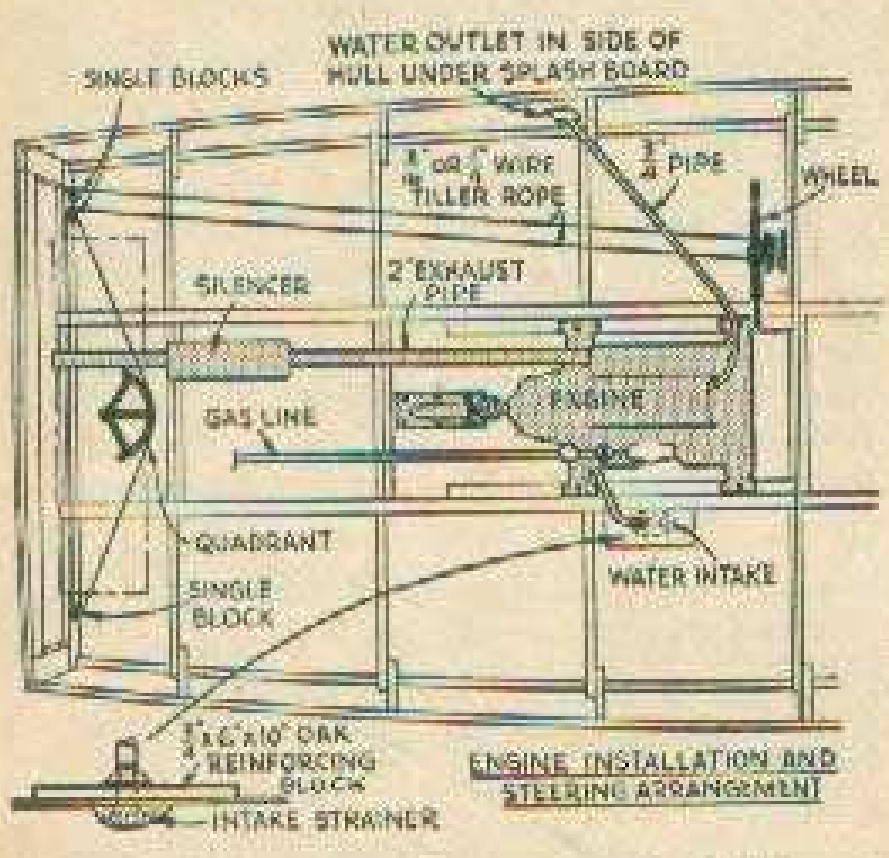



BULKHEAD AT STATION 6 LOOKING AFT



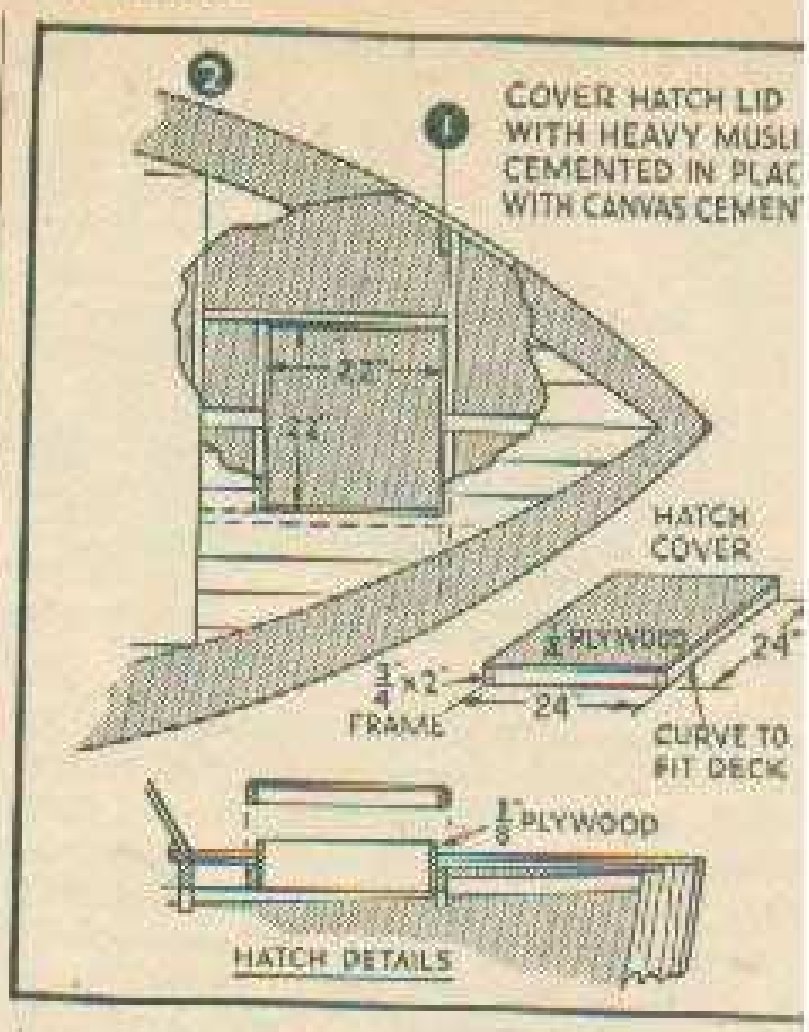

sets up within an hour at temperatures over 100° F.). So if it's quite warm where this boat is being built, work fast to get both plywood skins on together; if it's cool you can take a correspondingly longer time before the glue sets. Follow manufacturer's directions for best results.

Trim edges of plywood evenly along chines. Now coat contact surfaces of outer keel with resin glue. Place outer keel in position and screw fasten to the inner keel with 1½ in No. 10 fh screws spaced about 4 in. apart. Next plank the bottom as you did the sides, fastening two plywood skins securely to chines, keel, frames and battens. When bottom is planked, trim edges of plywood evenly along the stem and cover exposed edges of planking with an oak outer stem,




which has been steamed to make it pliable and screw-fastened in place; lower end of outer stem is butted against outer keel. When glue is thoroughly dry hull will be rigid and ready to turn right side up. (You'll need someone to help you turn it.)

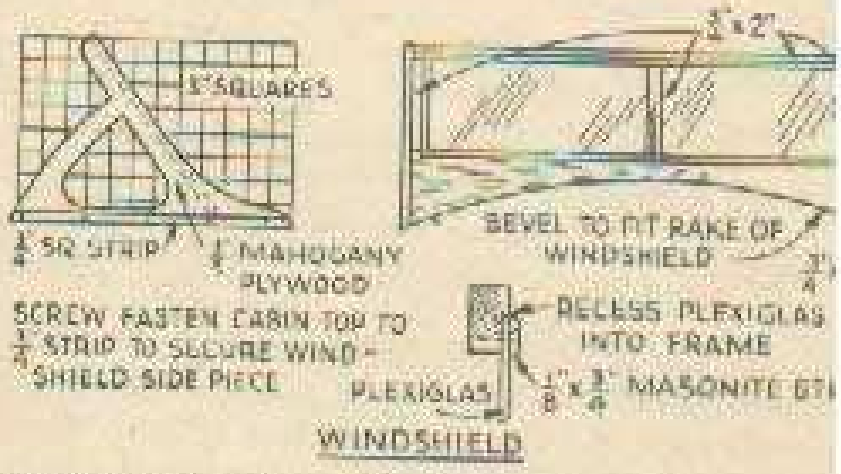
With hull right side up, install deck beams, cabin side supports, cabin beams and carlins. Before placing any decking in position, install gas tank, place rudder fittings in position, make and fit the engine beds, and put stringers in place. The ⅝ in. 5-ply plywood decking is placed




HATCH DETAILS

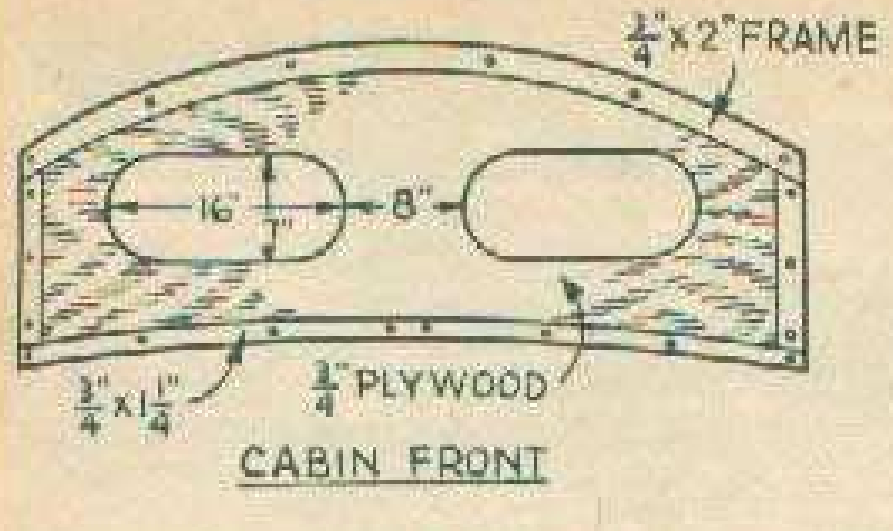
in position, marked and cut to shape. S center seam with a batten as shown. Glu screw fasten all joints with 1 in. No. 8 *fh* sc Now place cabin sides in position, marki shape and screw-fastening to side supports 1 in. No. 8 *fh* screws spaced about 2 in. Next cut the cabin roof and fasten it to beams. Trim edges of roofing evenly and top of cabin roof with muslin dipped in c cement. Cover edges at juncture line bet cabin sides and cabin top with ¾ in. half r moldings. Now cut window openings in cabin sides. Use ⅛ in. plastic for windows to cover opening and secure to cabin sides a Masonite ring which is screwed to cabin

Measure for and install bunks and cabine port side. Also install engine and arrange exhaust and gas lines to gas tank and m Now install an inside stuffing box, strut, rudder and fittings. Then cut ½ in. plyw cabin and cockpit flooring to size and s




WINDSHIELD

fasten it in place. Enclose end of cabin wit ¾ in. plywood bulkhead in which a door placed on the starboard side. Windshield a the cabin is made from ¾ in. mahogany plywo with openings cut out as shown. Windshi across cabin top is composed of a ¾ in. mah any plywood frame to which is secured a ¼ Plexiglas windshield.




A small hatch can be cut in the forward deck and used for ventilation or handling the anchor in rough water. Finish hull bottom up to waterline with red or green marine finishes, contrasting waterline, white sides, mahogany natural finished cabin sides, and buff decks.

● Craft prints in enlarged size for building the "Whizz" are available at 25c a set. Address Dept. B-30, Science and Mechanics, 450 East Ohio Street, Chicago 11, Illinois.

# High Sport With Water Skis

WITH water skis attached to any inboard or outboard craft all the fun of skiing over snow-clad slopes is yours with the minimum of expense and with far greater comfort. Safe and exhilarating at any speed, aqua-skiing has all the thrills and spills of skiing with even more fun than aqua planing. Until you have returned from a spray-drenched ride behind a fast boat on a pair of water skis you have missed a real thrill.

Water skis may be towed and sustain a person afloat behind any inboard or outboard boat that is capable of 10 m.p.h. or faster and this includes the majority of outboard craft. Materials for the skis should not cost more than one dollar and may be found anywhere. For the beginner, the general purpose type of ski is best, while if some skill has been acquired the speed model will produce more thrills and fun, but for best results must be towed behind the faster outboards.

The best materials should be utilized in the construction of the water skis such as well seasoned ¾" thickness white pine, cypress, cedar, mahogany or even fir is fairly satisfactory. With the model decided upon lay the dimensions out upon the lumber and mark to shape sawing out and later finishing the edges nicely. Sand the entire board smooth and apply at least four coats of spar varnish allowing each coat to dry well and smoothing each coat with fine steel wool. The final finish should be a coat of automobile wax to render the boards slick and waterproof. To enable the user to maintain a firm position on the boards without slipping each board should be covered with a rubber mat, which can be obtained from a dime store. Either tack the mat in place or cement it with waterproof glue.

The underside of the skis must have short fins attached at the rear to make the boards toe in when towed. Without these, the boards are unmanageable. The correct position of these fins is best found by experiment and when the best position is found fasten with a few screws.

The bridle for towing the skis is quite simple and consists of ⅜" dia. manila rope or sash cord. The towing bridle is made as shown, and can be altered to meet individual conditions.

There are many trick stunts that may be accomplished upon water skis but perhaps stunts should not be performed until some skill has been acquired. However, the various stunts that may be performed are endless and depend only upon the daring of the performer.