Flying Saucer AIRBOAT

THE *FLYING SAUCER* is a fast, inexpensive airboat that will take you into shallow water and marshes, over mud flats and sand bars, and still be safe, seaworthy and easy to handle in deep water. The boat will carry four passengers, or three with hunting or fishing gear and, although not designed primarily for speed, it will outrun most conventional outboard boats. Fitted with a Continental A-65 engine and a Banks-Maxwell 660-36 propeller, the *Flying Saucer* attains a speed of 35 m.p.h. in deep water, with three passengers aboard. Higher speeds are reached when running over grass or mud which is covered with an inch or so of water.

The hull design permits the boat to plane at minimum speeds. The boat banks nicely on turns, and the use of both an air rudder and a tilting water rudder affords positive control at all speeds. Another feature of the *Flying Saucer* is a safe mesh-covered propeller guard and a crank which is inserted through the guard hub for turning over the engine.

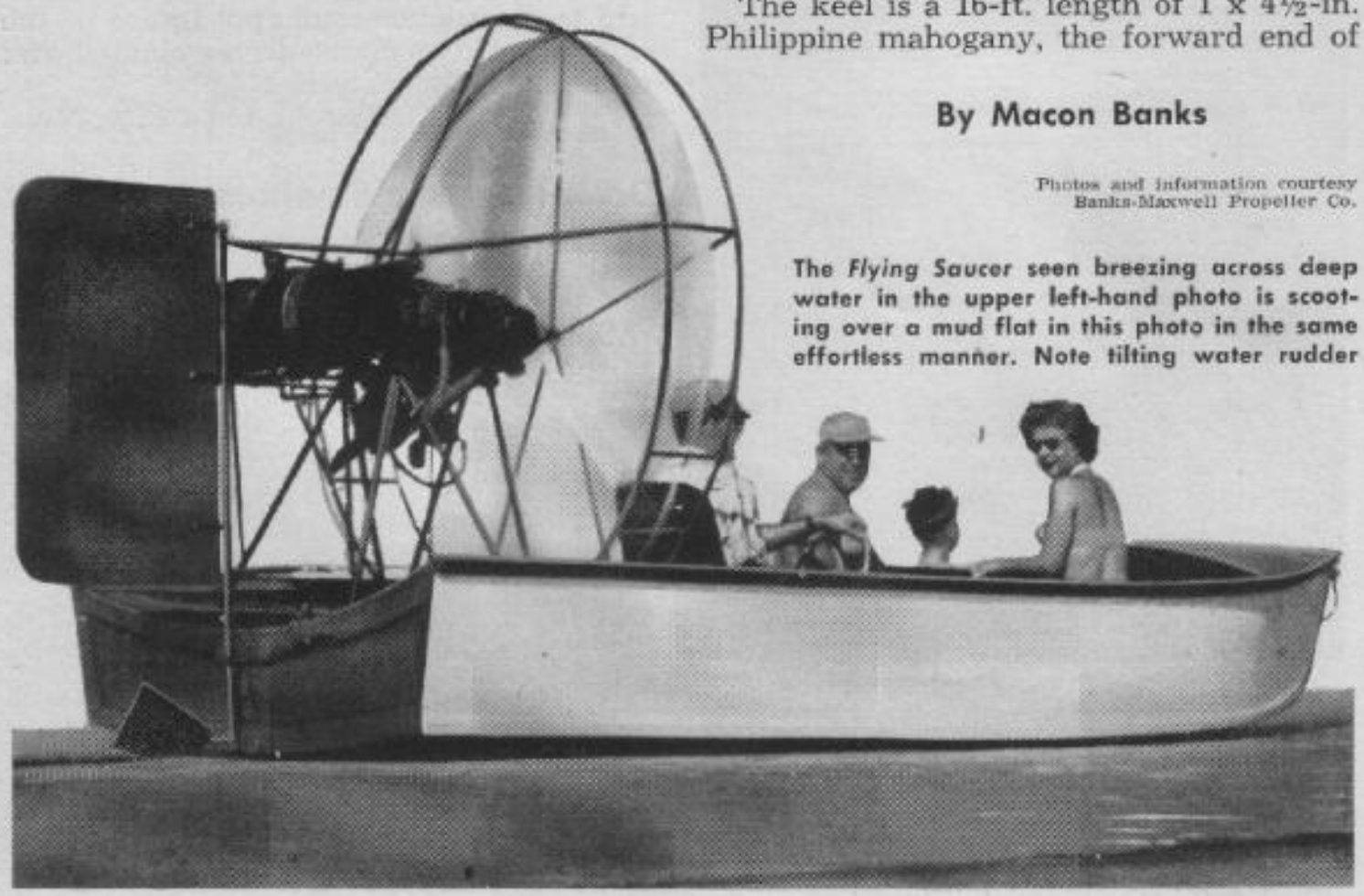
Unless precut frames are purchased in kit form, the first step in building the airboat is to cut the bottom and deck frames from 1-in. hardwood, Fig. 3. Four rear-deck frames are required. The side frames, also cut from 1-in. hardwood, are all made the same size as in Fig. 2. After the frames have been cut, bevel the bottom of No. 1 frame 10 deg. and the ends 30 deg.; the bottom of No. 2 frame 5 deg. and the ends 2 deg.; and bevel the sides of No. 3 frame 13 deg.

Assemble the frames so the side frames will be in front of the bottom frames and the bevels will face forward when assembled on the keel form. Glue and bolt the side frames to the bottom frames, being sure to leave clearance for the chine notches. Then notch each frame for ⅞-in.-sq. mahogany chines, making the cutouts undersize and rasping for a perfect fit.

The keel is a 16-ft. length of 1 x 4½-in. Philippine mahogany, the forward end of

By Macon Banks

Photos and information courtesy Banks-Maxwell Propeller Co.



The *Flying Saucer* seen breezing across deep water in the upper left-hand photo is scooting over a mud flat in this photo in the same effortless manner. Note tilting water rudder

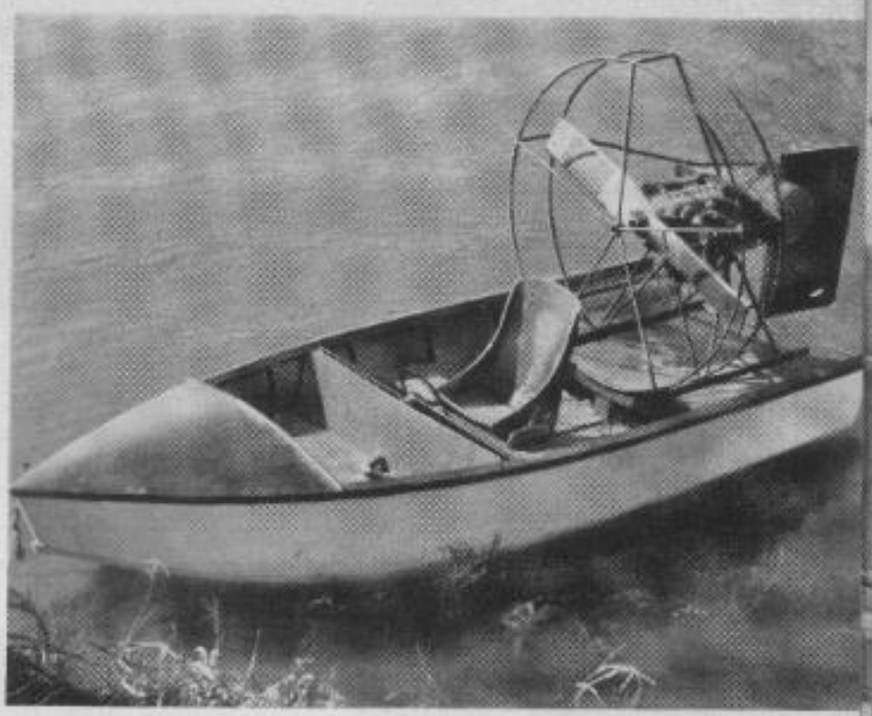
which is cut to match the shape of the stem, Fig. 2. The bottom frames are notched along the centerline to receive the keel. It is best to cut the sides of the notches at 45 deg. so rainwater can flow through the frames toward a drain plug installed in the transom.

A rear-deck frame and frame No. 8 are used as patterns to cut the transom from ¾-in. marine plywood. Notches are made in the transom for the chines and keel. Frame No. 8, two side frames and a rear-deck frame are glued and nailed to the outside of the transom, using galvanized nails driven from both sides.

After the hardwood stem and the keel are fastened together with glue and screws, you are ready for the keel form. The latter is made from 2-in. lumber as in Fig. 2. The form can be nailed to sawhorses or fitted with wooden legs to hold it off the ground.

The frames are now set on the keel form with the side frames facing forward, as mentioned before. Then the keel-and-stem assembly is set in place with the stem nailed temporarily to the front of the keel form. Glue and nail the keel into each frame notch, working from the stem toward the stern. Fit the chines to the stem and keel and tie the chines to frames with strong cord. Then square and align the frames, fit the chines and glue and nail them permanently to the frames. Install the built-up transom next.

Before planking the hull, set nails in the chines about 3/16 in. below the surface and rasp the edges of the chines so they are parallel with the edges of the side frames. Fit and nail ⅜-in.-plywood side planking, applying batten compound where plywood joins transom, chines and stem. Rasp and sand bottom surfaces of the chines flush



This view of *Flying Saucer* shows location of driver's seat with passengers' seat directly in front of it

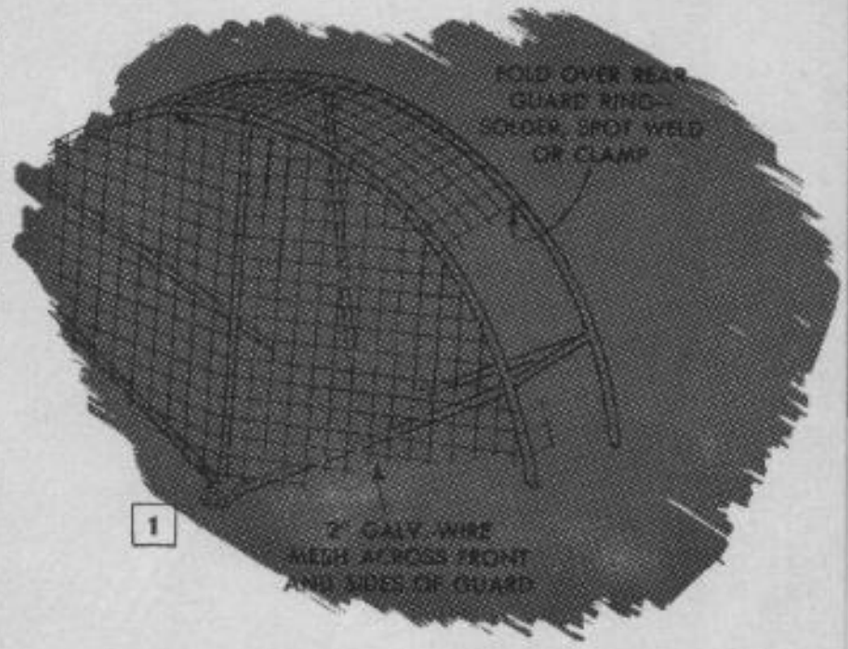
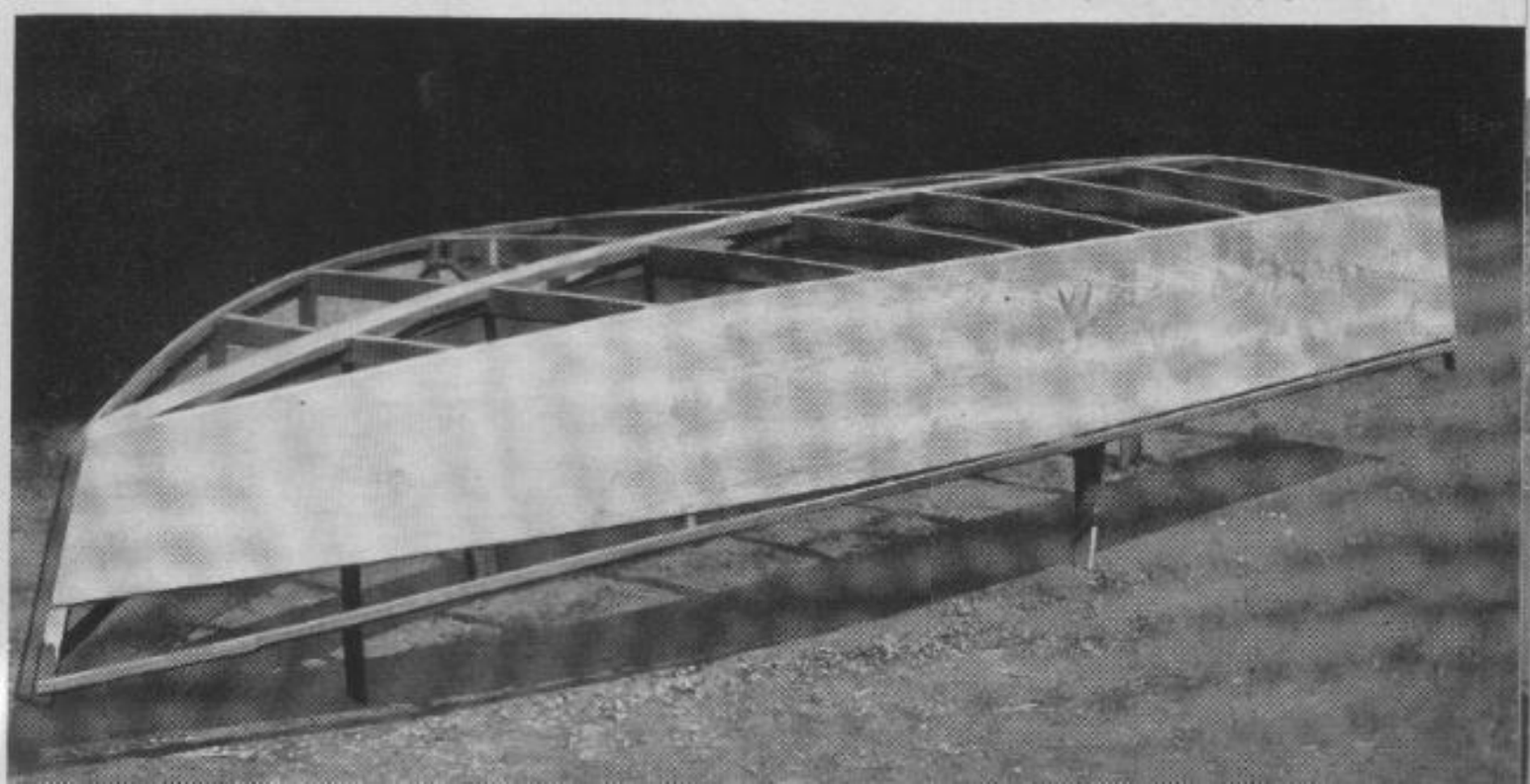
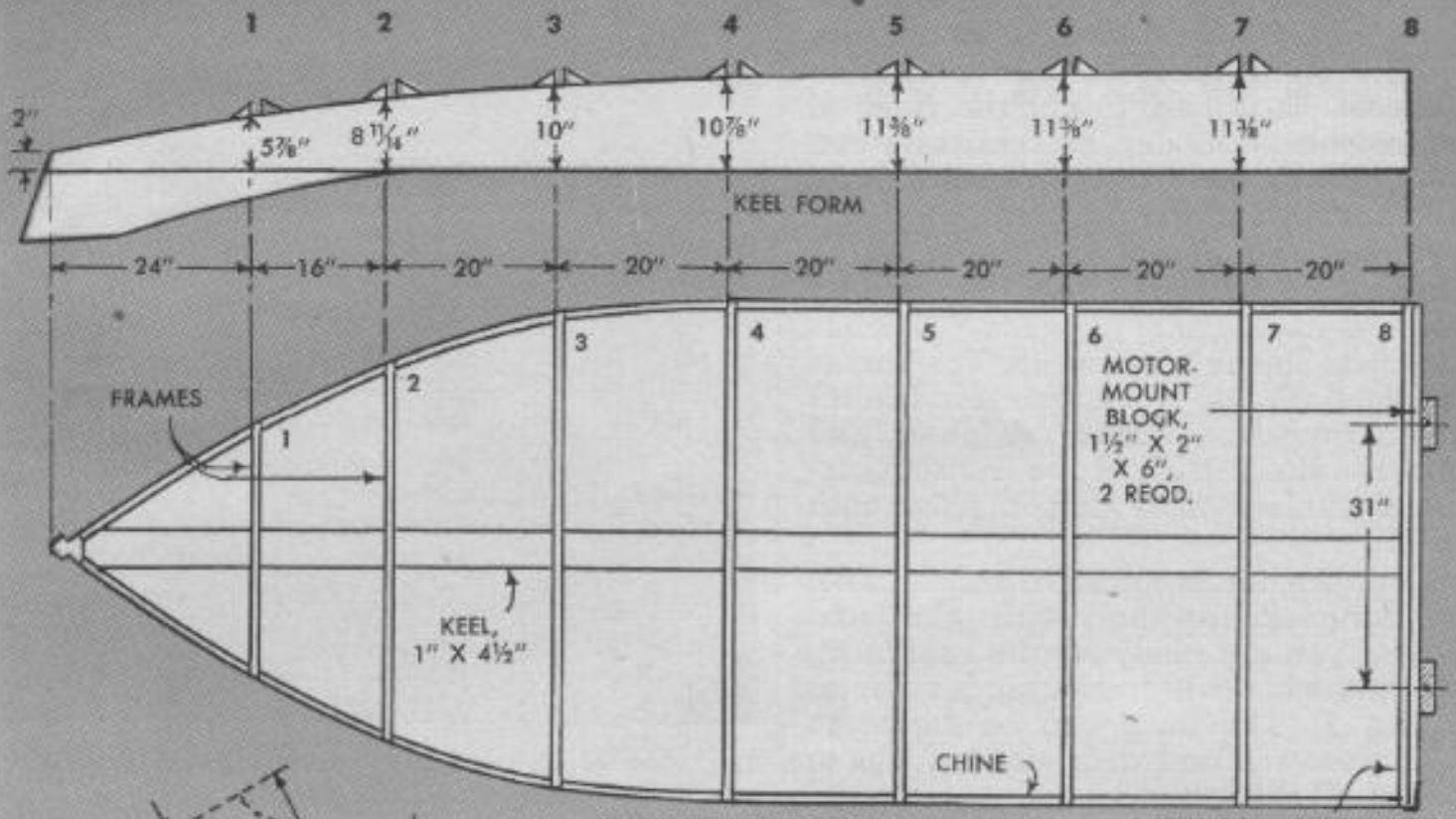
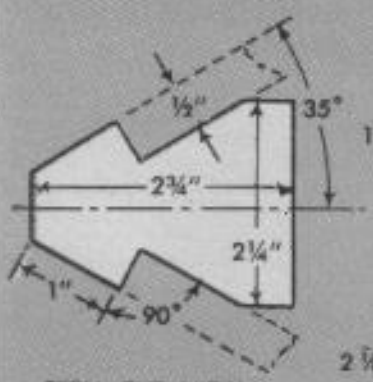


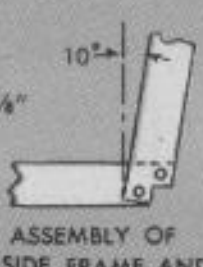
Photo below shows keel and side-planking installation. Note temporary tacking strip nailed along gunwale

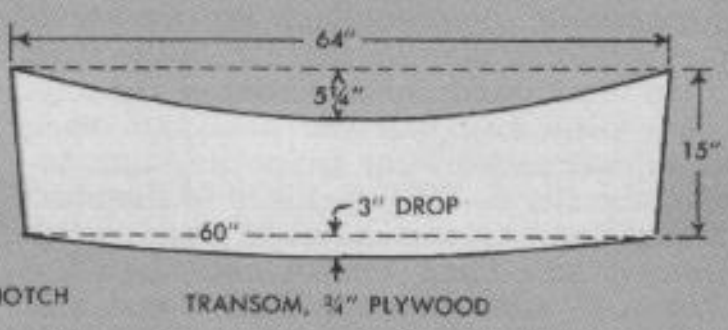


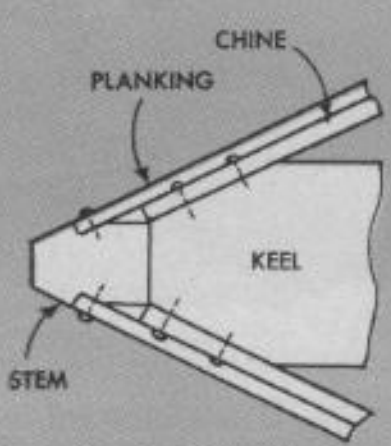

1
2
3
4
5
6
7
8
2"
5⅜"
8 11/16"
10"
10⅞"
11⅜"
11⅜"
11⅜"
KEEL FORM
24"
16"
20"
20"
20"
20"
20"
20"
FRAMES
KEEL, 1" X 4½"
MOTOR-MOUNT BLOCK, 1½" X 2" X 6", 2 REQD.
31"
CHINE
PLAN VIEW OF BOTTOM AND FRAMES
TRANSOM, ¾" PLYWOOD

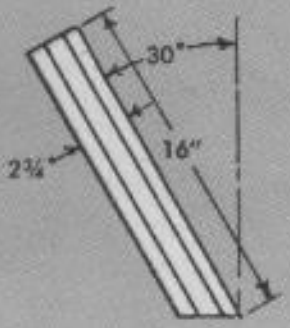

½"
35°
2¾"
2¼"
1"
90°
STEM, END VIEW

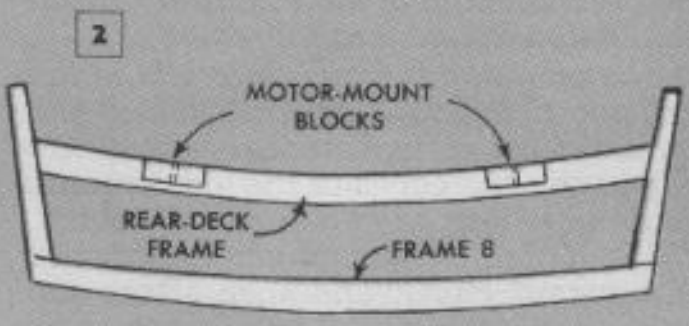

10°
1⅛"
18⅛"
2⅛"
SIDE FRAME

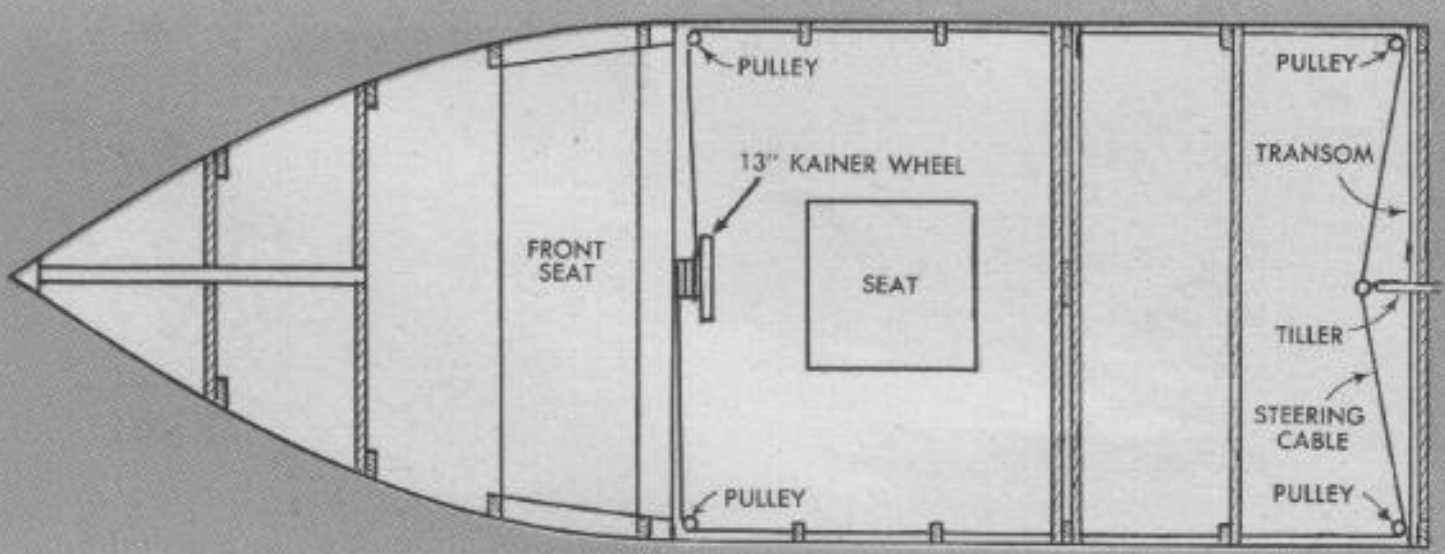

10°
ASSEMBLY OF SIDE FRAME AND FRAME NO. 2 SHOWING CHINE NOTCH


64"
5¼"
15"
3" DROP
60"
TRANSOM, ¾" PLYWOOD


CHINE
PLANKING
KEEL
STEM


30°
2¾
16"
STEM, SIDE VIEW


2
MOTOR-MOUNT BLOCKS
REAR-DECK FRAME
FRAME 8
TRANSOM FRAMING


PULLEY
13" KAINER WHEEL
FRONT SEAT
SEAT
PULLEY
PULLEY
TRANSOM
TILLER
STEERING CABLE
PULLEY
DECK FRAMES, SEATS AND STEERING

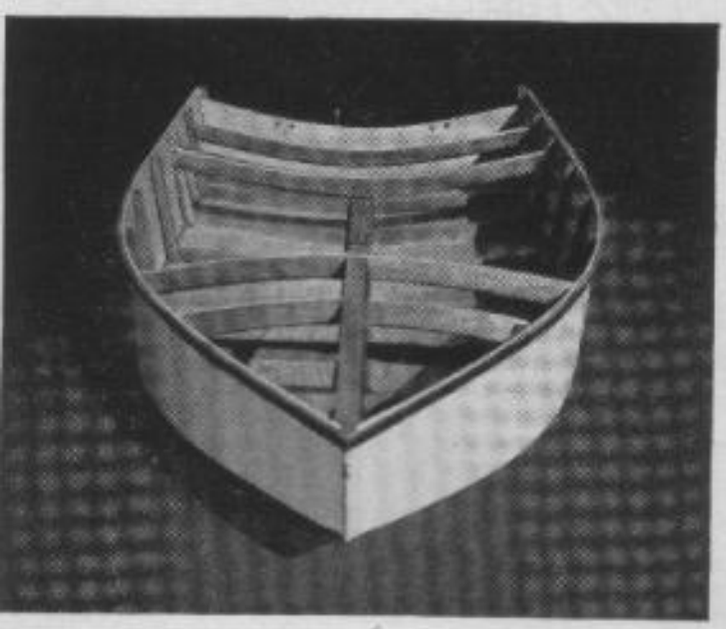
with bottom edges of the frames, trimming the plywood side panels simultaneously. At this time, also bevel the bottom edge of frame No. 3. Next mark the keel centerline and fit two panels of ⅜-in. plywood to the bottom, joining them along the centerline. Nail the plywood in place and nail on the outside chine strips.

After removing the hull from the keel form, remove the tack strips from the frames and cut off frames and stem flush with the planking. Install rear-deck frames at the same height as the transom, aligning the frames carefully and bolting in place. Note that the two frames at the forward end of the rear deck are reinforced with a 1 x 5-in. hardwood block bolted to frame No. 6. Motor-mount blocks are fastened to the transom, Fig. 2, and also between the forward rear-deck frames.

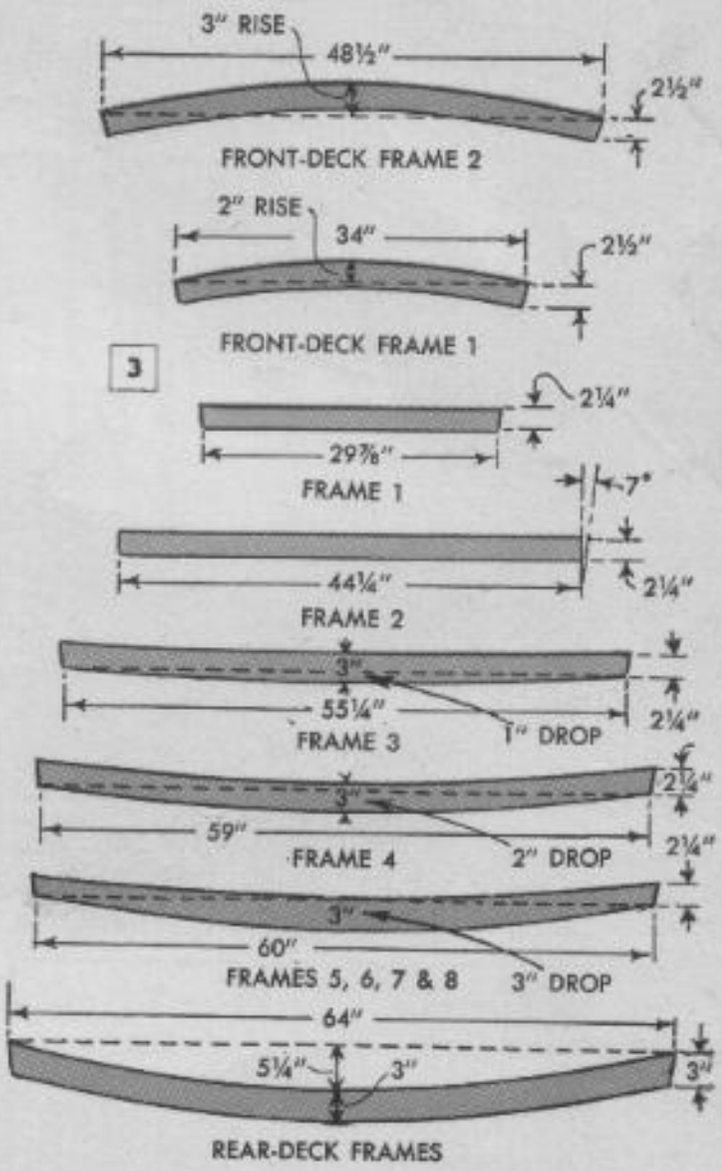
The lower rudder-post bracket consists of two brass pipe flanges bolted together through the transom 4½ in. above the bottom, as in Fig. 4. After installing the bracket, paint the inside of the boat. Next install the front deck frames and cover both of the decks with ¼-in. plywood. Finally, fit the hull with floor boards and seats.

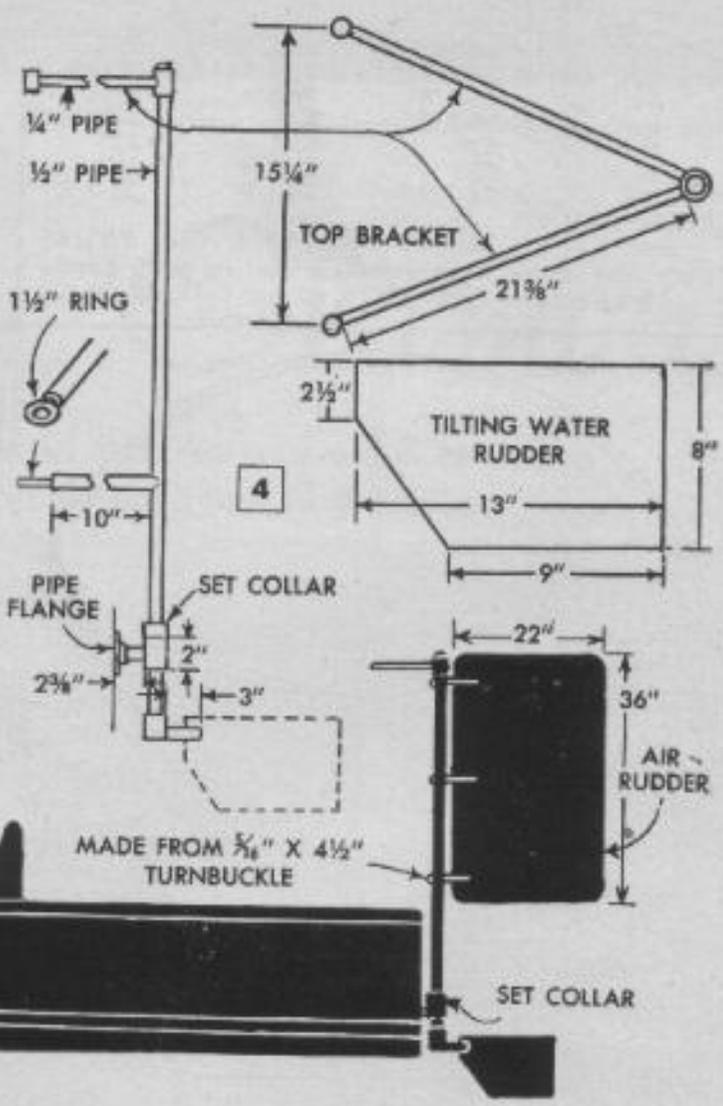
The gunwale is trimmed with 5/16 x 1⅝-in. lattice strips on the inside and the top is covered with ⅜-in. strips which are cut from 6-in. stock to follow the hull contour. After adding trim, paint the hull to suit.

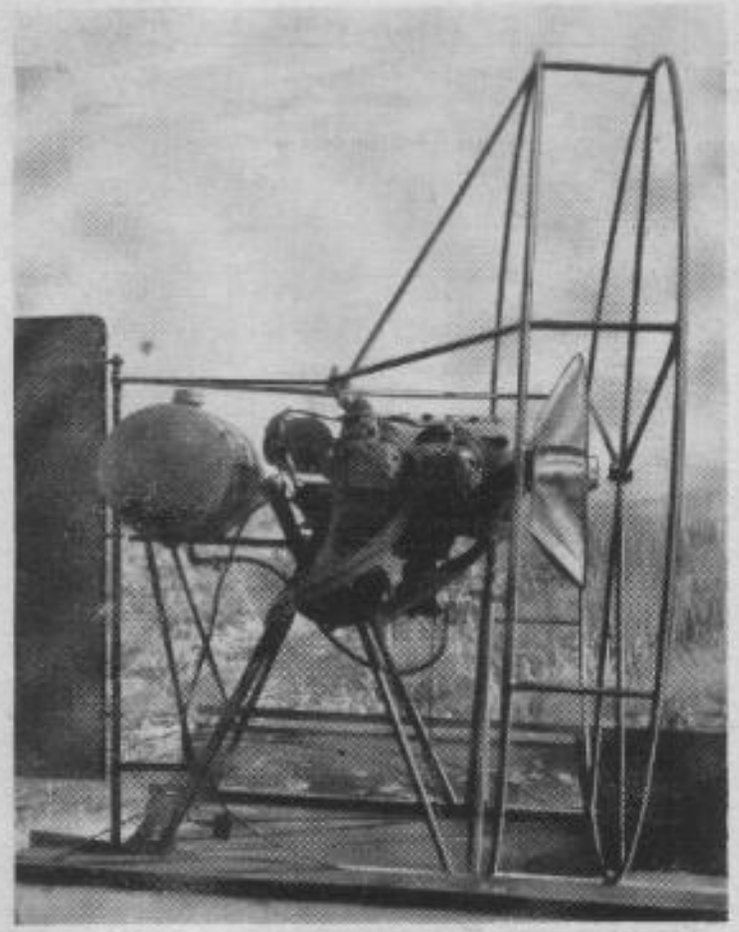
The motor mount and the propeller guard are welded from black-iron pipe as in Fig. 5. Note the variable dimensions which are



Center strip of ¾ x 2-in. hardwood is set in front-deck-frame notches and faired into stem as above







determined by the motor and propeller selected, as indicated in the table along with Fig. 5. Install the engine temporarily on the mount, supporting it from above, and level it both ways before welding brace, L-M, and the front supports, B-F.

The propeller guard rests on two 11-in.-long pieces of 1¼-in. pipe which are cut lengthwise. These fit over the motor-mount base pieces and, on assembly, are bolted through them and the deck. A piece of 1½ x 18-in. steel angle is bolted across the top of the engine for fastening the propeller-guard braces and rudder bracket.

The propeller faceplate is machined from an aluminum casting and fitted with a crosspin to engage a crank handle, Fig. 5. The propeller guard should be temporarily installed to align the 1¼-in.-pipe hub with the propeller faceplate, cutting and welding the spider framework at this time. The guard is covered with wire mesh, Fig. 1.

Make the rudder post from ½-in. pipe as in Fig. 4. The tilting water rudder is cut from ⅛-in. black iron and pinned or bolted in a yoke made from half a turnbuckle which is welded to the post. The rudder should be free to tilt upward, but fitted with a pin to keep it from dropping below the horizontal. The air rudder is a panel of ½-in. plywood, Fig. 4. ★ ★ ★

Variable Dimensions for Motor-Mount, Propeller Guard and Rudder Shaft

	Propeller Size		
Part	50 inch	60 inch	70 inch
A-B	12-1/4"	12-1/4"	12-1/4"
A-C	14"	14"	14"
A-D	25-5/8"	26-5/8"	26"
A-E	34-3/8"	35-1/2"	38-1/2"
B-F	20"	24-3/4"	30-3/8"
C-G	22"	27-5/16"	32-1/2"
D-G	18-11/16"	24-7/16"	30"
E-H	19-1/2"	25-3/16"	32-1/4"
J-K	16-1/8"	19-3/4"	22-1/4"
L-M	26-1/2"	30"	34-1/4"
N-P	53"	63"	73"
W-X	23"	27-3/8"	31"
Y-Z	25-1/2"	30-1/8"	35-3/8"
Rudder shaft length	49-1/4"	54-1/4"	59-1/4"

Note: The above dimensions are for use with Continental engines A-50, 65, 75, 80 and C-75, 85, 90