

BUILD MUCHO GUSTO

By DAVID D. BEACH

IF you're a speed enthusiast who wants high standards of performance from a boat that has the comforts and appearance of the smartest custom runabout, *Mucho Gusto* is the answer to your prayers. For thrilling jaunts with another passenger, or for towing a single aquaplane or water skier, *Mucho Gusto* is your baby.

Mucho Gusto is also economical to build and operate. It is a plywood-planked craft, constructed of universally available lumber, and is powered with an engine in the 25-to-45 hp range. The engine shown on the drawings is the standard 2:1 reduction gear Crosley which delivers 25 hp at about 4800 rpm's. And by addition of Braje or other hop-up accessories, it can put out about 40 hp on normal fuel.

Let's not spend more time discussing generalities when the drawings can tell so much more. The outboard profile and deck arrangement shows a boat which you'll admit is at least rakish looking. The hogged sheer, the raked windshield and the two-toned paint scheme—for which purple and light yellow are suggested—combine to provide a craft which will be the center of attraction at every dock.

Can't you picture yourself behind that wheel, doing figure 8's off the club anchorage, or out in the lake with the after-lifting eye doing double duty as a towing cleat for a water skier astern? Better still, picture that same skier waving to the boys on the dock as you skim by! You'll need little more than that to sell yourself on the idea.

If you build her yourself, you'll have to study the two other drawings which detail the shape and construction of the craft. But if you'd just as soon pass by the building and place an order in some local boat shop, all you need is the ability to write a proper sized check.

The three drawings which comprise the building plans for *Mucho Gusto* are drawn in professional style, but with such notes and sections as are required by most amateur builders. The professional boatbuilder will find the drawings a pleasure to work from as will the experienced amateur.

Others who are "handy-to-skilled" with tools, had better read one of the better books on building small boats. *How to Build Small Boats* by Edson Schock, is one. Robert Steward's *Small Boat Construction* is another. Both of these books outline the general problems of laying down full-sized lines and making framing and stem templates. These two items are the only major problems in building *Mucho Gusto*.

The lines and offsets plan gives the conventional plan, profile and body-plan sections, and also the major dimensions of the frames. Note that the table of offsets gives the offsets to the *outside* of the planking, but that the seven framing sections provide dimensions of building form frames to the *inside* of the planking before bevelling. These dimensions were scaled from a drawing made to a scale of 1½ inches to the foot and are probably right to within a few sixteenths of an inch. That's where the full-size layout proves its worth. A shim along the bottom of a frame to compensate for a scaling error by the architect, or a few heavy strokes with a plane for the same reason is the most penalty you'll have for ignoring the lofting job and building from the frame sections. However, the stem and transom should be checked *full-size* before fabricating any stock. This will prevent headaches later on.

The double baselines, 36" apart, are about right for comfortable working. As the framing sections on the lines plan show, this permits easy downhand work on all parts of the

structure, including the several fastenings to be driven through the bottom and side planking. If you build on a jig, or set the frames up on a building form, don't go much higher or you'll have to stretch to reach the center. And if you go lower to save on the length of the side frames, you'll get a stiff back from working at too low a position.

Now let's look at the structural plan, and first at the longitudinal section at the top of the drawing. This construction profile shows the boat along the centerline, looking to the left-hand side. It shows a lot, as you can see, but your attention is directed to several features which make *Mucho Gusto* a husky craft, able to absorb punishment from choppy water when afloat, and from rough roads when trailer-borne.

The backbone is an oak keel, fairly husky for a boat of this length, but ample to permit some latitude in locating fastenings thereto. A pair of stringers run about 10' 3" from the transom to the second frame and are securely bolted, through oak tripping brackets, to each frame as indicated. The seven frames are spaced 20" for the most part. And combined with the two bottom battens and the chines, they provide amply small panels for the ¼" plywood planking used throughout.

There are other features in the profile about which you'll get more later on.

The figure in the middle of this drawing shows the deck and bottom framing, together with several important installation items. The upper half shows the deck structure without the decking, while the lower portion shows the bottom framing from a level just above the stringer top. The sections at the bottom are, with the exception of the transom, taken a bit behind the framelines, looking forward. The transom struc-

Flashing speed for the hot-rod sailors is provided in this sweet little inboard craft. She is powered with a 25 hp. Crosley marine motor

ture is from in front, looking at the inside face of the transom. Every important detail which might cause a builder some concern is shown in at least *two* views, so study the drawings carefully before starting to work.

How first to start? By preparing a bill of material. This information could be readily supplied by the designer, but there's a bit of method, not laziness, in not supplying it. A lot of people start building boats before they know what they're doing. By sitting down with this SPORTS AFIELD BOATBUILDING ANNUAL before you, or large photostatic enlargements of the drawings, and by compiling your own material list, you can't *help* but become aware of the problems you must solve in construction. Compile your list of materials by ruling off a sheet of paper in columns headed: (a) Item, (b) Material, (c) Size, (d) Length, (e) Remarks.

Of course, start with the keel. And you'll see that (a) the keel is (b) of oak and is (c) $1\frac{1}{8}$ "x4", and (d) is about 11' 5" long. Next might be the stringers. These are (a) Stringers, 2 required, (b) spruce, (c) $1\frac{1}{8}$ " by about $5\frac{1}{2}$ ", (d) 10' 3" long and (e) check the $5\frac{1}{2}$ "-deep dimension on the full scale lines plan before ordering. There'll be lots of notes like this one which will require a bit of checking on the full-size layout. However, the drawing may be scaled for the majority of things.

On materials, there are several things worth mentioning. When you present the list at your local lumberyard, make sure you tell the man two things. First that you are building a boat, and secondly that the dimensions under column (c) are *finished* dimensions, *not nominal*.

The white oak and spruce should be of clear, straight-grain material, free of knots or checks. All plywood (and try to obtain 16' lengths to

avoid joints) should be of an accepted *waterproof* grade. Exterior-grade Douglas fir plywood or Weldwood plywood are two brands which are readily obtainable. Mahogany plywood is as acceptable as fir, but, more expensive. Take pains to specify and get a resin-bonded marine grade. It is important. All fastenings should be brass or bronze, as should all hardware. Chromed fittings dress up your boat a lot, but polished brass is as nice, and a bit cheaper.

Now, having studied the plans well, ordered your material, lofted the full-scale lines, and prepared a place to work, let's begin to make chips and shavings.

Start by duplicating the frame structures shown on the bottom of the lines plan. The full-size body plan will permit the assembly to be fabricated with a minimum chance of misalignment, and should be used for that purpose. The framing is all of $\frac{3}{4}$ " spruce, and the dimensions of the bottom frames as given on the construction plan should not be materially reduced.

Carefully template the sides and bottom pieces before cutting the members from proper stock. Carefully mark the centerline on the bottom frame and the keel notch. When assembling the sides and bottoms, have ample glue and clamps ready. It is easiest to assemble the frames on the floor, on the full-size lines. Spread liberal amounts of a good glue such as "Penacolite" on the surfaces, and tack them with brads to hold them in position while the screws are driven at the chines. Follow the directions on the glue can when mixing the glue, and *don't skimp*.

The better glues, properly applied, are tremendously effective. And fastenings are often only used to hold the wood surfaces together until the glue dries. The spreader or brace bar

across the head of the frames need not be glued. But check the frame for symmetry before you fasten it. Dimensions to check are from keel centerline to chine and frame head, and from chine to opposite frame head. These should be identical, give or take a sixteenth at the *most*, for proper hull alignment.

Next, fabricate the transom by fastening the half-gained framing to the $\frac{3}{8}$ " plywood planking. The centerline stiffener should be lapped over the top and bottom frames as shown. Here, too, be liberal in the use of glue, and drive the transom fastenings in *hard*. The screws from the planking to the frames should be 1" No. 8, spaced about $2\frac{1}{2}$ " all around.

The stem can be either of laminated strips of oak or cut from double $\frac{3}{4}$ " plywood. It is best to template the stem carefully from the lines plan, making it extend to the floor line, as shown.

○ ONE more item must be cut, and then the erection of the frame structure can begin. That single remaining piece is the keel. This is shown on the drawings as oak, $1\frac{1}{8}$ "x4", which seems, to some, a bit heavy. The main reason for this is that the designer considers it necessary when lifting gear, such as is shown, is fitted. If such gear is not required, and the boat will be launched from a cradle or a sling, then you can cut the depth down an eighth of an inch or so to about a scant one inch. Note that the keel is tapered from the full width specified, to about two inches, at the forward end.

When the stem and keel are fitted together, glued and bolted tight, ready the frames for erection. Make certain the gains (notches) for the keel are a tight fit and of proper depth. Then, on a centerline laid down on the building floor, draw



YACHT ENSIGN 16 BY 24'
GALBRAITH G-626°

mucho gusto

EXHAUST DEFLECTOR
MANHATTAN H-454°

NO FIN DEBBOLD

3/8 CYAL QUARTER GUARD MOLDING MANHATTAN H-372

STEP PADS - MANHATTAN H-802 A°
OR TO SUIT°

RUBBER INSULATION FOR 1/4"
WINDSHIELD - MANHATTAN H-493, H-494

1/2" FUEL FILL, MANHATTAN H-484

LIFTING EYE

REVERSE LEVER°

STRINGER°

HAND GRAB°

HATCH

STERN FLAGPOLE AND SOCKET
GALBRAITH G-615 24' LONG°

WATCH STRAP & EAT-ER°

SEAT CHUCKS - MANHATTAN H-1463-N° 1°

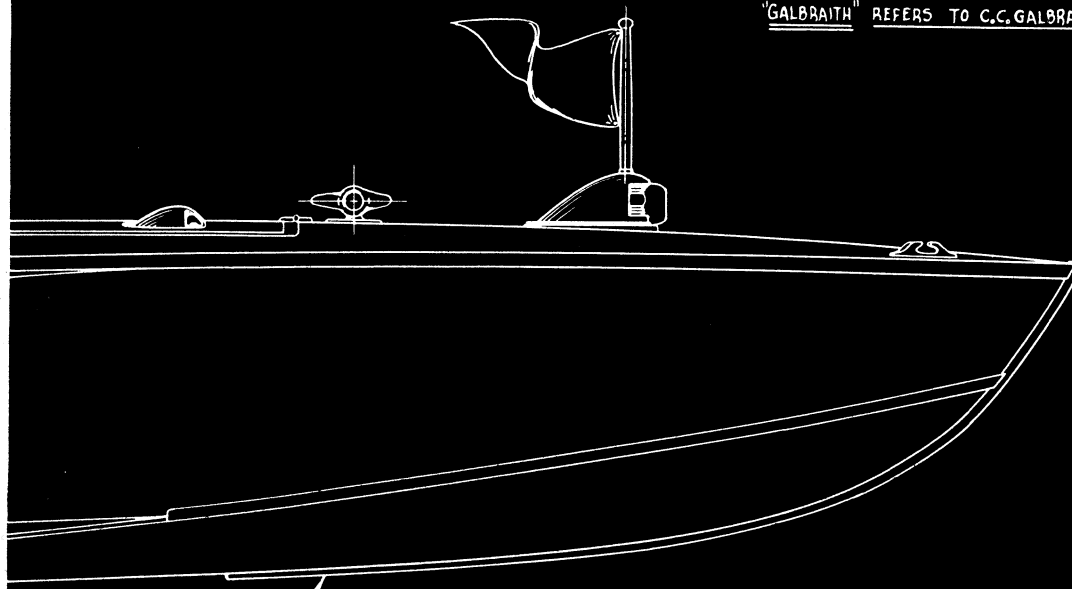
SEAT BACK & CUSHIONS -
UPHOLSTER TO SUIT°

WINDSHIELD BRACKET°
DEBBOLD 38° FIG. N° 48, CH°

"DEBBOLD" REFERS TO I.E. DEBBOLDS MARINE SUPPLY, 10366 LONG BEACH BLVD,
LYNWOOD, CALIFORNIA. EASTERN SALES MAIL ORDER OUTLET - "CUSTOM CRAFT",
BUFFALO MARINE MART, 1700 NIAGARA ST., BUFFALO, NEW YORK.

"MANHATTAN" REFERS TO MANHATTAN MARINE & ELEC. CO, 116 CHAMBERS, N.Y. 7, N.Y.

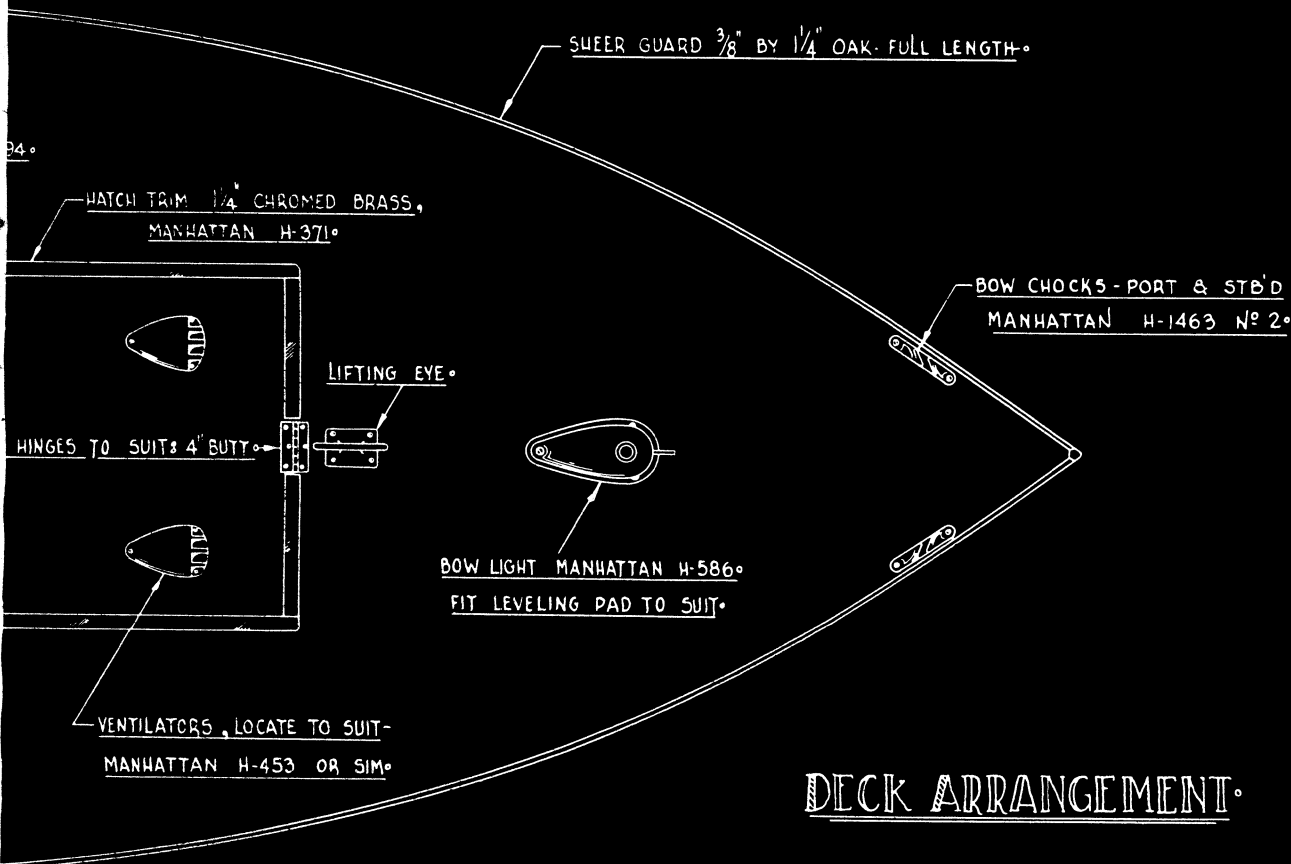
"GALBRAITH" REFERS TO C.C. GALBRAITH & SON, INC., WEST FRONT ST., KEYPORT, N.J.



TAPERED STEM CAP FROM $\frac{3}{4}$ " x $\frac{3}{4}$ "
OAK WITH $\frac{3}{8}$ " BRASS HALF
ROUND SIM TO MANHATTAN H-373.

OUTBOARD PROFILE.

LD FIG. 47.



DECK ARRANGEMENT.

INSIDE OF TRANSOM FRAMING, FWD FACE

1/2" PLANKING PLUS 3/4" FRAMING

OPTIONAL COLOR SCHEME LINE

TOP OF NON-TRIP, STRAIGHT

TOP OF GUARD MOLDING

TABLE OF SCALED OFFSETS

GIVEN IN INCHES & EIGHTHS TO OUTSIDE OF PLANKING, DECK TOP

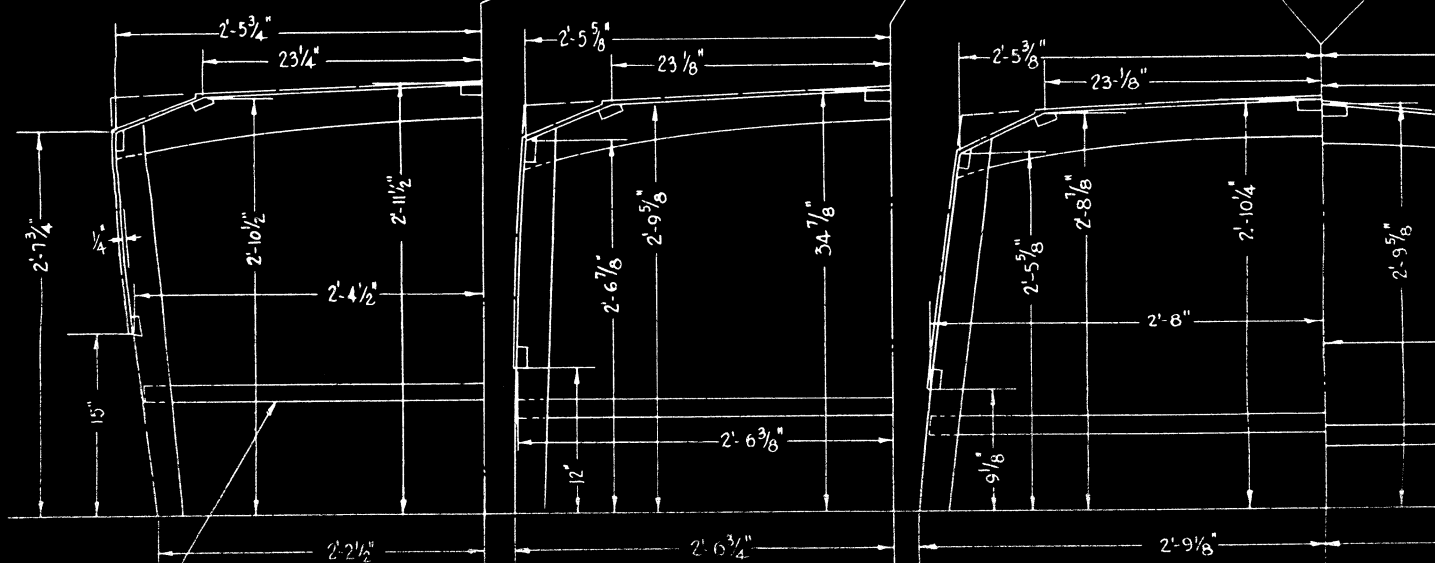
ITEM	STATION	1	2	3	4	5	6	7	T
HEIGHT: KEEL FACE ABOVE BASELINE		7-6	4-5+	3-2	2-1	1-4	0-7	0-2+	0-0
CHINE		14-1	10-5	7-5	6-1	3-2+	2-2	1-2	0-6
DECK EDGE		27-6	27-6	27-4	27-0	25-7	23-7	20-6+	15-2
CENTER OF DECK		28-6	29-5	29-7	29-5	28-6	27-1	24-0	18-0
HALF BREADTH OF CHINE FROM CL		8-5	16-7	23-0	27-0	29-1	29-7	30-0	30-0
DECK EDGE		15-4	24-3	29-5	32-1	32-2	30-7	28-5	26-0

NON-T
AS IN
LINES
CENTER
FROM
STATION

AFT SURFACE TRANSOM PLANK AT BOTTOM

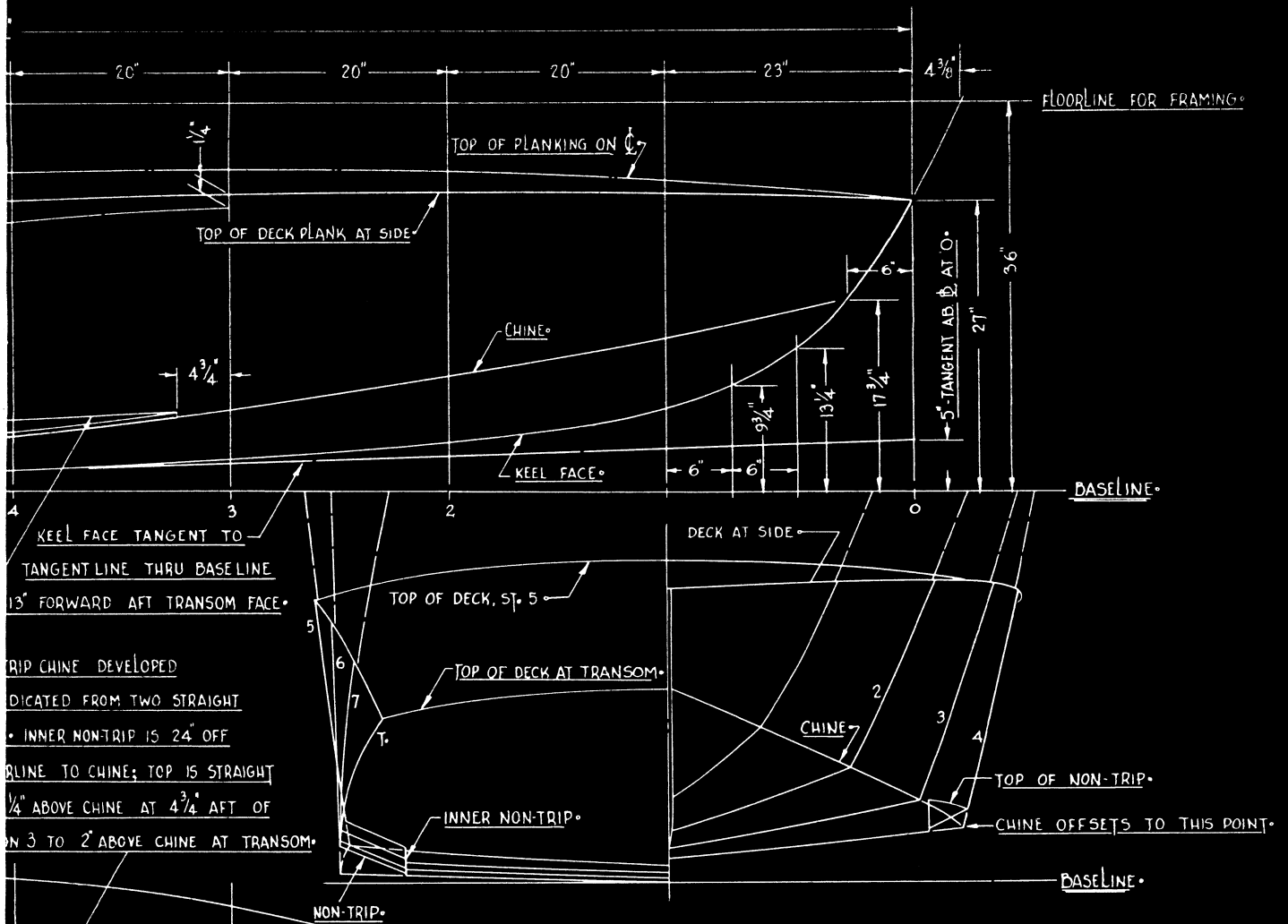
TOP OF DECKING AT AFT TRANSOM FACE

5" RADIUS "CAVITATION PLATE" SEE CONST



USE 3/4" BY 1 1/4" BRACE ACROSS FRAMES, AS SHOWN

FOR LOCATION OF SIDE & BOTTOM FRAMING

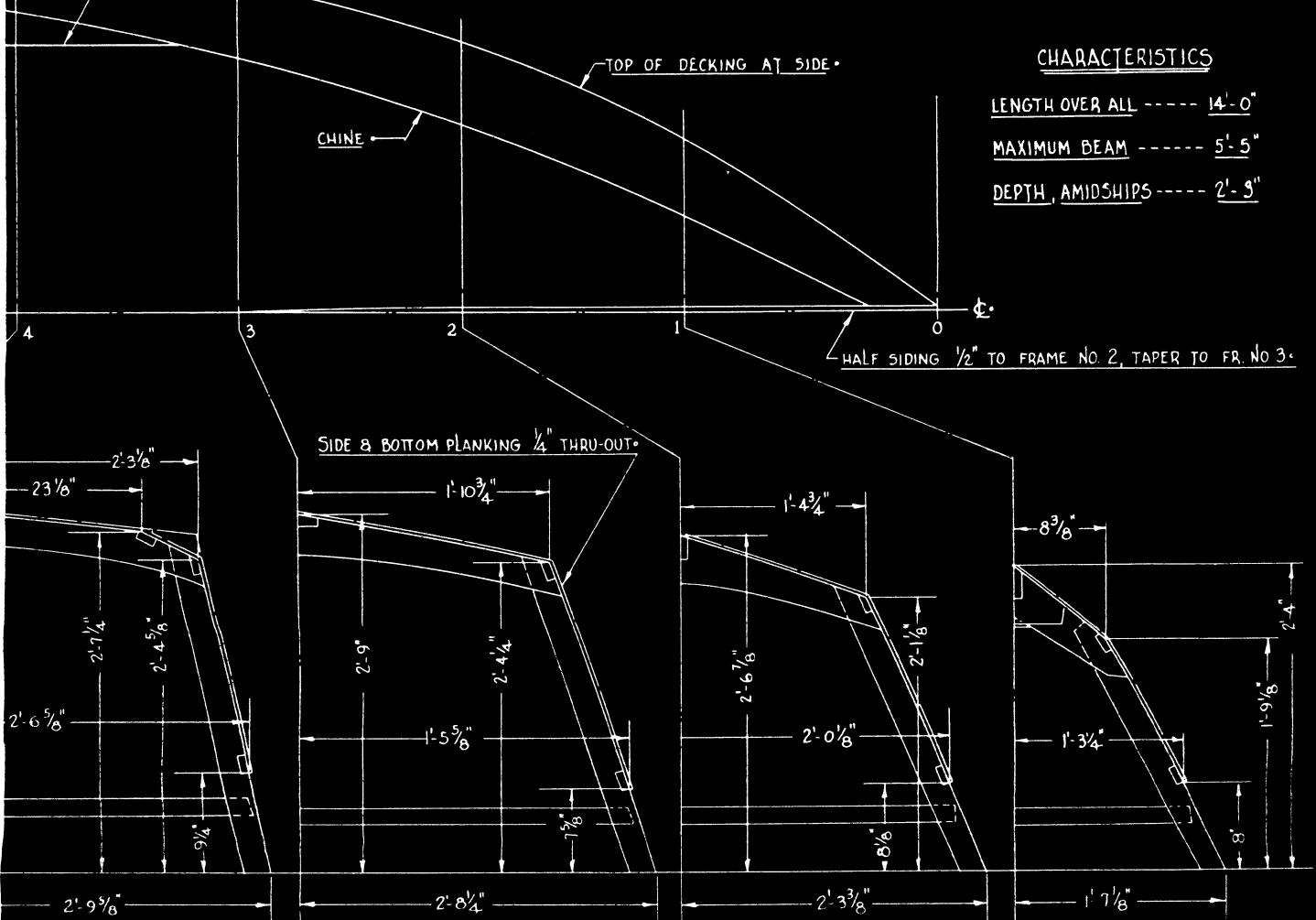


CHARACTERISTICS

LENGTH OVER ALL ----- 14'-0"

MAXIMUM BEAM ----- 5'-5"

DEPTH, AMIDSHIPS ----- 2'-9"



MEASUREMENTS RELATIVE TO STATION LINES. SEE CONSTRUCTION PLAN.

FIT LIFTING RING ON LEVELING PAD.
THRU BOLTS THRU KING PLANK AS REQD.

SE HAS F. CONNECTION AT
ANGLE SO PLATE IS FLUSH

15 DIA. DASH MOUNTED STEERER
SM. LAR. X 1/2 IN. FIG. 8150.

VERTICAL
MOUNT 1/2"

TANK 10" DIA. BY 30" LONG HELD BY
1 BY 1/2" STEEL STRAPS TO SADDLE.

1/4" PLYWD ON KEEL SIDE BLOCKS
DOUBLE 3/4" PLYWD KNEES END
FASTENED (1/2" NO. 10'S) TO KEEL
& TO TRANSOM FRAME.

STEERING ASSEMBLY CONSISTS OF
DEBBOLD FIG. 2 RUDDER, FIG. 2-B R
GLAZIANT, COLUMBIAN FIG. 230 PORT
1/2" DECK FLANGE 3/4" STOCK.

AFTER DECK BATTEN, SPACE
OF 1/4" BY 1/4" NOTCHED
INTO BEAMS AND TRANSCOM.

8" WOOD TRANSCOM PLANK
ON 1/4" AA FRAMING, HALF-
GAINED AT SHEER, CHINE.

KEEL EXTENDS THRU TRANSCOM.
BLOCKED ON SIDES FOR 1/2"
SHAPE, COVERED WITH 1/4" PLYWD.

1/2" BY 4" OAK PIECE ON TOP
OF STRINGERS FOR RUDDER BEARING.

TILLER CABLE PULLEY & YOKE-ATWOOD 6518
1/4" BOLTED TO 3/4" x 1 1/4" OAK BRACKET.

3/4" OAK FRAMING.

3/4" BY 4" OAK TRANSCOM STIFFENR
HALF-LAPPED ON UPPER-LOWER FRAMES.

3/4" BY 1 1/4" OAK VERT. STIFFENERS
TWO 2" NO. 10 SCREWS IN FRAMES, 1/2"
BOLTS TO STRINGERS.

3/8" PLYWOOD.

TRANSCOM.

3/4" PLYWOOD TANK SADDLE ON
STRINGER-CUT HOLE FOR TILLER CABLE.

3/4" PLY. KNEE.

MOUNT TACHOMETER, SPEEDOMETER, ETC.
TO SUIT IN 3/4" VERT. DASHBOARD.

13" OR TO SUIT
MOCK-UP DASH BEFORE CUTTING
TO SUIT STEERER-KNEEROOM.

WEDGE FOR ANGLE SEAT

FRAME NO. 6.

BLOCK OUT SIDE SHEATHING
PIECES 3/8" x 4" FIR OR SPRUCE
TO CLEAR TILLER ROPE 3/16" DIA.

FIT BLOCK FOR 1" RS PIPE EXHAUST
WITH GASKET INSIDE FLANGE.

PULLEY BRACKET.

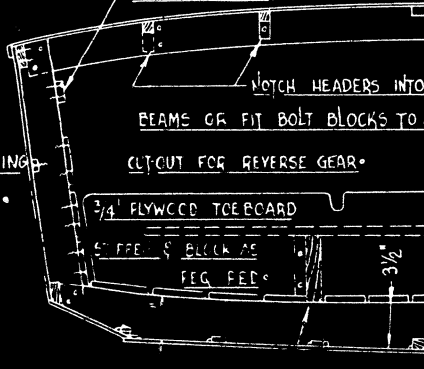
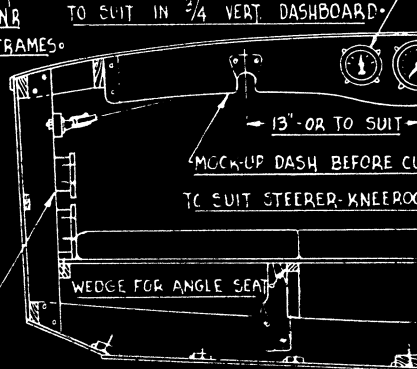
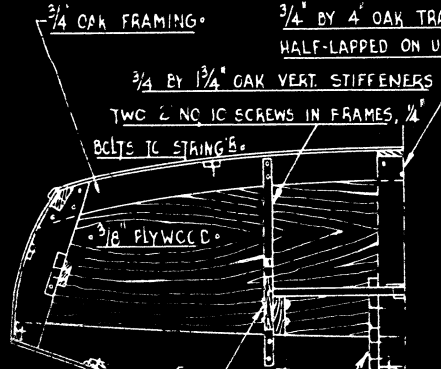
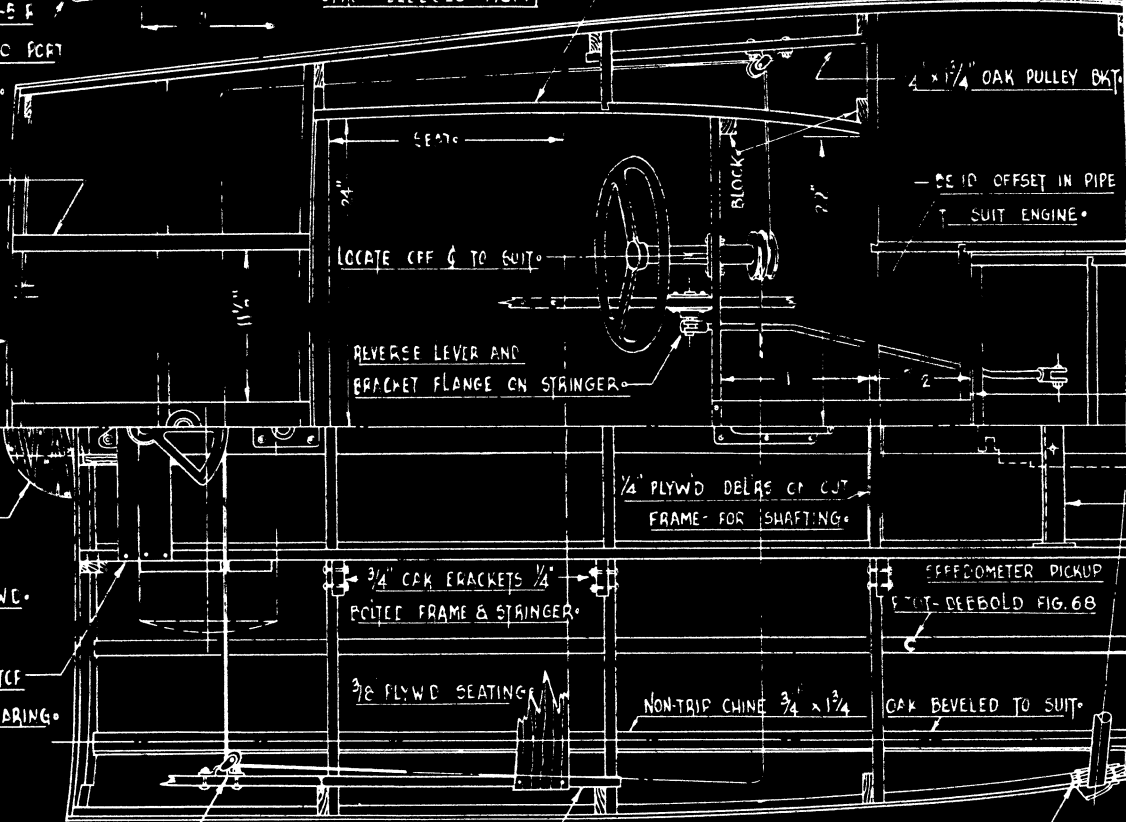
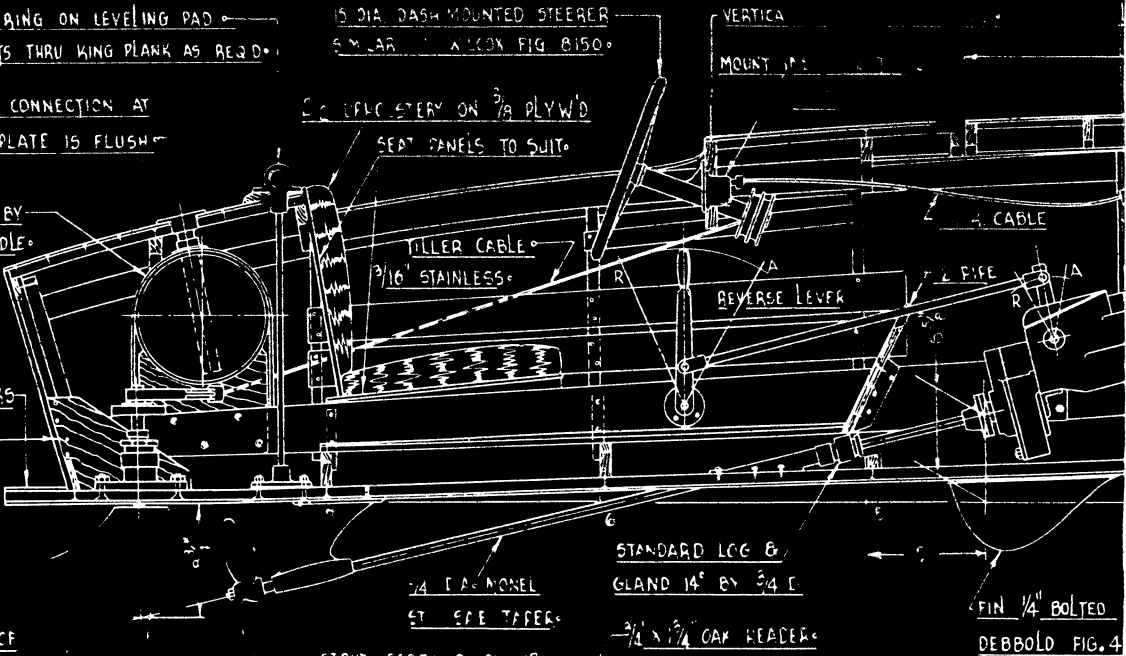
NOTCH HEADERS INTO
BEAMS OR FIT BOLT BLOCKS TO
CUTOUT FOR REVERSE GEAR.

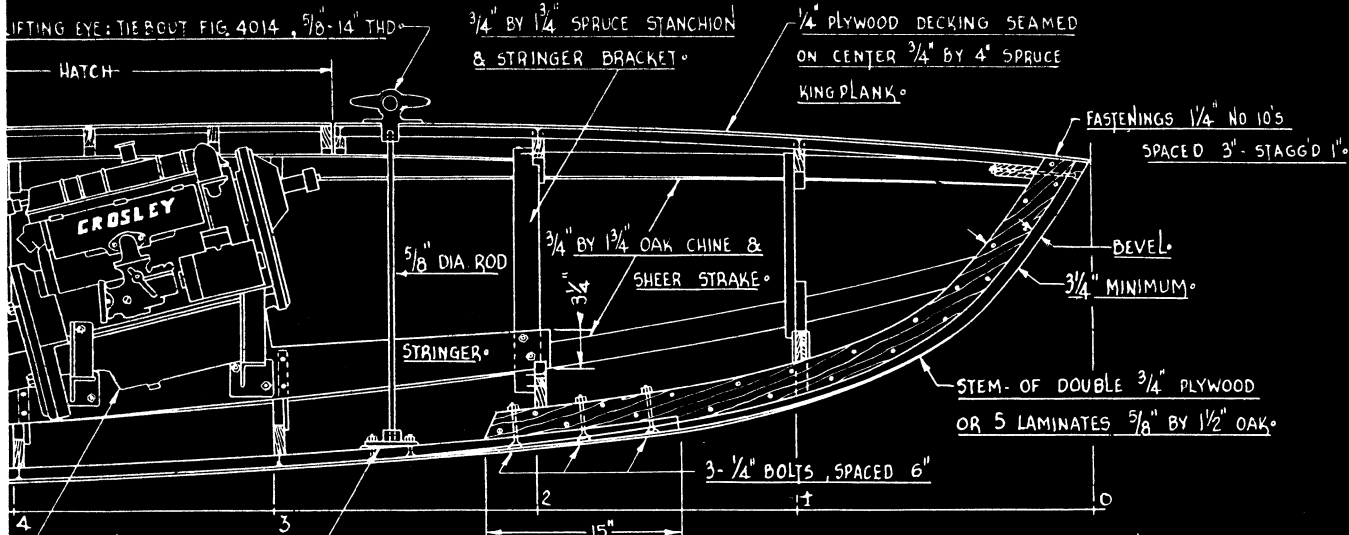
3/4" PLYWOOD TCEBOARD

5" FPE & BLOCK AS
REQ. REQ.

TO SUIT

10'3" LONG
3 CORNERS





CONSTRUCTION PROFILE.

"TIEBOUT" REFERS TO W & J. TIEBOUT, INC., 64 FRONT STREET, N.Y.C. 4, N.Y.

"ATTWOOD" REFERS TO ATTWOOD BRASS WKS., GRAND RAPIDS, MICHIGAN.

"COLUMBIAN" REFERS TO COLUMBIAN BRONZE CORP., FREEPORT, L.I., N.Y.

$\frac{1}{4}$ " SIDE PLANKING - 1" NO 8 F.H.W.S. SPACED 2 1/2" STAGGERED 3/4" IN $\frac{3}{4}$ " BY 1 3/4" CHINE AND SHEER, 3" IN FRAMES.

BREASTHOOK FROM $\frac{1}{4}$ " OAK 4 1/2" WIDE SINGLE $\frac{1}{4}$ " BOLT TO STEM HEAD. 1/2" NO. 10 SCREWS THRU SHEER.

CROSLY "4" - 25 H.P. ENGINE
BRAKE EQUIPMENT TO HOP-UP.
422 W. 83RD ST., L.A. 3, CALIF.

ALL BEAMS EXCEPT #7 ON FORD SIDE OF SIDE FRAMES.

ALL HATCH STRUCTURE OF $\frac{5}{8}$ " x 2 1/4" SPRUCE.

3/4" BY 2 1/4" OAK HEADER.

DECK BEAMS $\frac{5}{8}$ " BY 2 1/4" MINIMUM - SAWN SPRUCE.

KEEL - OAK 1 1/8" BY 4".

TAPERED FWD TO 2"

DECK & BOTTOM FRAMING.

KINGPLANK TO BEAM: TWO 1 1/2" NO 8'S.

DECKING TO KINGPLANK, DECK BEAMS AND SHEERS 1" NO. 8'S, SPACED 2 1/2".

$\frac{5}{8}$ " BY 1 1/4" OAK BATTENS NOTCHED INTO BOTTOM FRAMES 3/4" NO. 6 FASTENINGS SPACED 3" STAGGERED 1/2" THRU PLYWOOD.

CUT $\frac{1}{4}$ " HATCH PLANKING TO LAND ON HATCH HEADER. BINDING TO FASTEN THRU TO BEAMS.

STANCHION NOTCHED OVER BEAM & FRAME - 1/2" NO. 10'S - TWO 3/16" BOLTS THRU STRINGER.

CHINE & SHEER SCREWS, 1/2" NO. 10'S INTO FRAMES.

SINGLE 5/8" BY 1 1/4" OAK SIDE BATTEN, 1/4" NO 8 INTO NOTCHED FRAME.

GLUE & 1/4" NO. 10 SCREWS ON ALL FRAMING LAPS.

ALL BOTTOM FRAMING 3/4" SPRUCE.

1/4" DBL PLYWD GUSSET ON #1 FRAME - SIDES LAPPED.

FRAME NO. 4.

FRAME NO. 2.

FRAME NO. 1.

CROSLY ENGINE FOUND'NS TO BE ALUMINUM ANGLES 2" BY 2" BY 3/8" AND PLATE, WELDED.

the properly spaced framelines at right angles. Set up one of the midship frames. Number 4 or 5 is good as a starter. It must stand perfectly plumb, and be well centered. *How* you brace it in that position isn't too important. Only it should be rigidly braced against sidewise or fore-and-aft motion. Frames 1 to 7 should be so erected.

Carefully check, with a plumb bob and string, to make certain that the centerlines you previously marked on the frames are exactly above the centerline drawn on the floor. Then, fit in the keel-stem assembly, starting from forward and working aft.

Of course you swabbed glue on the keel notches (gains in the engineering term) in the frames, and used a single deep C-clamp to draw the keel down tightly before driving the two fastenings in each frame. These fastenings, *not specified on the drawings*, should be 2¼" No. 10, spaced about 2½". Throughout this assembly, all fastenings are driven into pilot holes drilled two sizes smaller and ¼" shallower than the fastening length. Your book on boat-building mentions this in detail.

You'll note that we've not mentioned the transom. This is raked at an angle shown on the lines plan. Clamp suitable supporting pieces to the inside face and fit the assembly to the keel. Glue and clamp this, too, as this through-transom extension of the keel is a potential leak source. It is well to set several lengths of cotton wicking in the notch cut for the keel. This, when properly compressed in glue, makes an effective seal.

When you've come along this far, you should stand back and admire your work. The major labor is done. The rest is work, of course, but not so tough.

When the glue has set, you can remove the clamps and get ready for the next steps. Of these, perhaps the first should be the fitting of the double transom knees. These are of ¾" plywood, and land alongside the keel and centerline transom stiffener, on both sides, notched over the bottom frame.

Next, the chines and sheer straker should be fitted. Start with the sheer strake first, as it is the easier of the two. Carefully notch, or gain, the frames with saw and chisel for these, to a depth that permits the ¾"x1¼" section to be flush with the after edge of frames 1 to 5, and with both edges

of the remaining frames and the transom. This will permit proper bevels for the planking to be subsequently cut.

When both sides are readied for these members, and the sheers themselves are shaped to land on the stem at the proper angle, they can be fitted. Again the sequence is glue, clamp and fastenings, and work should progress from stem to stern equally on each side. This is to prevent the bending of the strakes from warping the frames.

The chines are similarly fitted, but provide for bevel on both the sides and bottom frames. It might be well to prepare the chines for the abrupt bend at the non-trip by wrapping that portion in burlap or other coarse fabric, and soaking them for an hour or so in boiling water. The bend will go in easier that way. Again, from bow to stern, glue clamps and fastenings.

The non-trip chines are next. These should go in as the previous two, and should fit properly and tightly against the outer chine just aft of frame 2.

Now, you'll do some bevelling. This involves fairing the frames, stem, chines and sheers so the planking will lie smoothly. Bevelling is best done by plane and file. And use several battens to see that all is smooth in every possible direction. Work on the side frames first, from amidships to aft where the change in shape is not so abrupt. Lay on the batten, noting where it does not lay smoothly along the frames. These spots should be planed, at the indicated angle, until the batten will span several frames, lying smoothly against them in a fair curve. As you progress forward, you will have to plane and file the stem as shown on the construction plan. Do this *slowly and carefully*. It is extremely awkward and difficult to remedy an overly zealous cut.

Follow the side bevelling with that of the non-trip chine. Note that the chine pieces themselves are well bevelled, but that the fore-and-aft bevel of the frames is almost negligible. You've got the hang of it by now, so the bottom will go with no further advice.

With the bevelling complete, there remains only the fitting of the panel battens before the planking is fitted. These 5/8"x1¼" oak strips are notched into the side and bottom frames, as shown, to reduce the

unstiffened areas of the planking.

Now you can fit the planking. If you were fortunate enough to locate 16' panels, you'll have no butt joints to make, and everything will be simple. If you butt smaller panels together, the backing piece should be ½" thick and at least 8" wide to have two rows of 5/8" fastenings through the plywood.

Template the side panels with a sheet of heavy paper, thumb tacked on the structure, allowing a full half inch or more for fitting. This template can be traced onto the plywood panel and that panel run through the band saw. And that's a two-man job, at least. The plywood panels should be temporarily clamped in place to check the bevels. And if all is true, then the structure should be traced against the inner surface of the plywood. This is to aid in drilling all the pilot holes for the planking fastenings. Remove the panels and drill pilot holes for all the fastenings, taking care to locate those for the chines so as not to come through the sides. A power drill, properly stopped, will be a valuable time saver.

When all these holes are drilled, spread frame edges, sheers, chines, stem and transom with glue.

Replace the panel on the side of the boat and securely clamp it just where it was when the framing was outlined on its inner surface. Working fast, drill through the holes already drilled through the planking into the frames to the proper depth, insert fastenings and drive them home. All fastenings should be driven so their heads are just beneath the plywood surface. Work from amidships to the ends. A screwdriver bit for your power drill will be a welcome tool, as there are hundreds of screws in the planking.

WHEN the side panels are on, clean them of excess glue, and bevel them for the non-trip planking which is put on in the same fashion. This planking is, in turn, bevelled for the bottom planking. Be careful here to fit the right-and left-hand panels tightly at the centerline. Note that the bottom planking extends aft of the transom for the small built-in cavitation plate.

After all the planking is on, the next problem is one of sanding, filling the screw heads with "wood-dough" and painting with a good sealer such as Firzite.