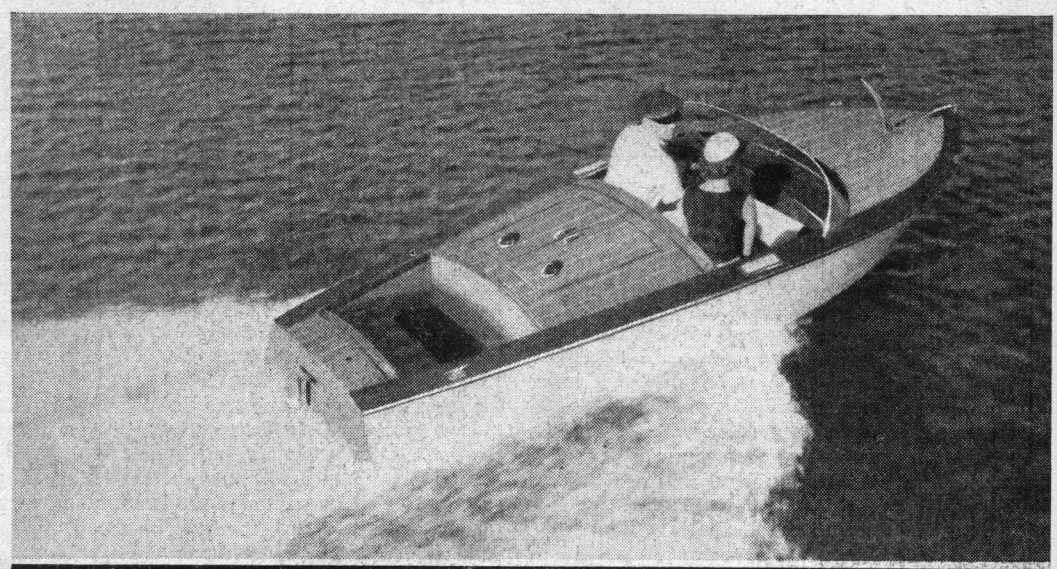
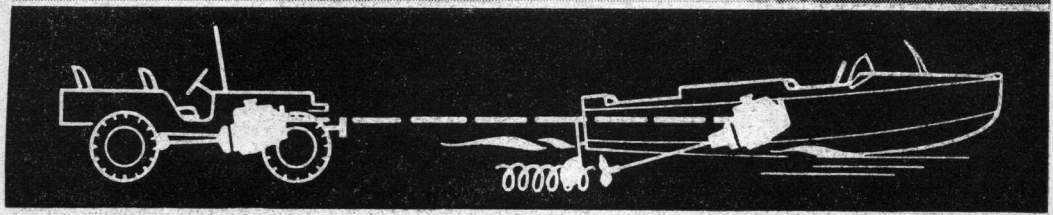




Chum

This speedy inboard runabout is designed for a converted Jeep motor

By W. D. JACKSON

Craft Print Project No. 36

THIS convex bottom (hydroconic) runabout is 15½ ft. long with a beam of 6 ft. and a maximum draft of 20 in. You can use either a double cockpit or a single cockpit style for utility use. *Chum* was designed for use with a Marined Jeep Engine (such as the Lehman *Econ-o-Power*, which develops 60-hp at 3400 rpm and will propel *Chum* at over 30 mph). Any 25-100 hp similar engine may also be used to power *Chum*, as long as the motor is of light weight, high-speed design.

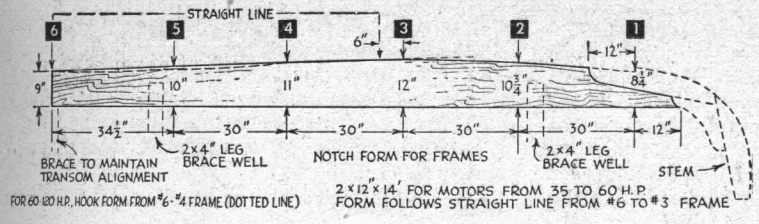
Plywood of ⅜ in. thickness is used to cover this boat and, with the framework indicated, *Chum* will stand up indefinitely under all conditions of usage. To begin construc-

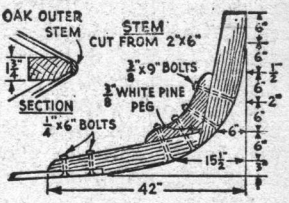
MATERIALS LIST — CHUM

Wood Required:	EXTERIOR PLYWOOD OR WEDWOOD
Bottom and side planking	6 pcs. ⅜″ x 4′ x 8′ Marine plywood
Decking	3 pcs. ⅜″ x 4′ x 8′ Marine plywod-mahog.
Bulkheads & flooring	2 pcs. ⅜″ x 4′ x 8′ Fir
Seats and dashboards	2 pcs. ⅜″ x 4′ x 8′ Mahogany or Fir
Transom	1 pc. ¾″ x 30″ x 70″ Mahogany plywood
Gussets	Use scraps
	WHITE OAK
Stem	1 pc. 1¾″ x 6″ x 6′
Keel (inner)	1 pc. 1¼″ x 4″ x 14′
Keel (outer)	1 pc. ¾″ x 2″ x 14′
Chines	2 pcs. ¾″ x 2″ x 16′
Clamps	2 pcs. ¾″ x 1½″ x 16′-6″
Battens	8 pcs. ¾″ x 1⅜″ x 16′
Frames—Sides	2 pcs. ¾″ x 4″ x 12′
Frames—Bottom	2 pcs. ¾″ x 8″ x 16′
Moldings	2 pcs. ¾″ x 1¼″ x 16′-6″
	SPRUCE, FIR
Deck beams	3 pcs. ¾″ x 8″ x 12′
Carlines	2 pcs. ½″ x ¾″ x 16′-6″
Coaming plates	1 pc. ¾″ x 3″ x 8′
Deck battens	5 pcs. ¾″ x 1″ x 8′
Coamings	2 pcs. ½″ x 4″ x 8′
Stringers	2 pcs. 2″ x 6″ x 14′
Engine beds	2 pcs. 1¾″ x 12″ x 3′
Form	1 pc. 2″ x 12″ x 14′ (any common lumber)
Fastenings Required:	
1 gross	1¼″ No. 10 Flat Head Screws
6 doz.	1½″ No. 10 Flat Head Screws
9 gross	1¼″ No. 8 Flat Head Screws
1 gross	2″ No. 10 Flat Head Screws
6 doz.	2½″ No. 12 Flat Head Screws
4	⅜″ x 9″ Carriage Bolts
2	¼″ x 6″ Carriage Bolts

1 pt. Aviation Glue; 1 lb. Resin Glue

Miscellaneous hardware, fittings, paint, varnish, and Firzite.





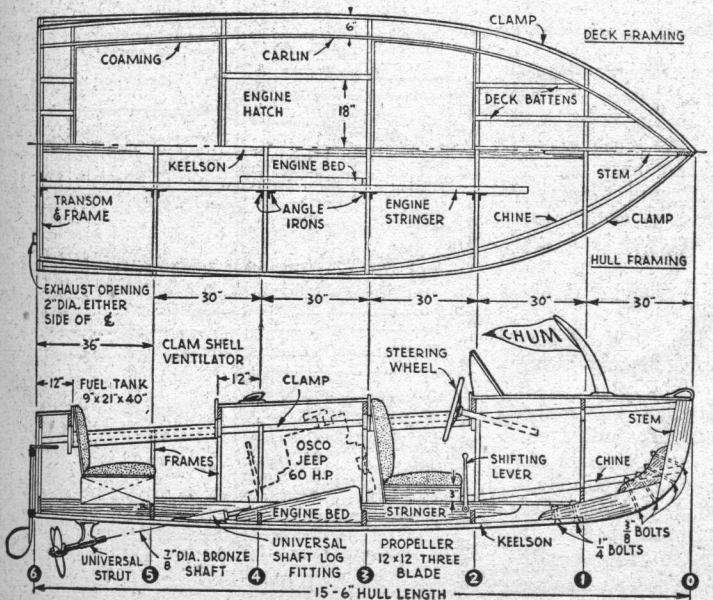
tion, first secure items listed in the materials list. Then saw the form on which the hull will be built to shape and mount on legs similar to a saw horse at a convenient working height. Next draw full-size patterns of all frames and the stem. Lay frame and stem material on these patterns and mark and saw to shape. Fasten frames with ⅜ in. plywood gussets. Glue contact surfaces with resin glue and screwfasten joints with 1¼ in. No. 10 fh screws.

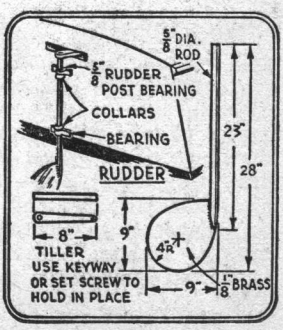
Next cover transom frame with ¾ in. mahogany plywood or two ⅜ in. thicknesses glued and screwfastened together. Assemble parts of stem with ⅜x9 in. carriage bolts, coating contact surfaces with resin glue. Then notch all frames for keel, chines, and clamps, notch stem for keel, and notch out frame only of transom. Now notch form for frames and then assemble frames atop the form. Spring a light batten around all frames and, noting on each frame edge the correct amount of bevel necessary, remove and bevel edges accordingly. With all frames in place, spring the keel in place to the frame keel notches, and fasten using two 2½ in. fh screws to each joint. Fasten stem to keel with ¼ in. carriage bolts. The keel may be held in place temporarily to form by inserting three or four screws. Remember to remove these before bottom planking is applied.

The chines and clamps are now sprung in place; both sides are secured simultaneously to prevent wringing the hull out of shape and also to align each frame squarely with keel. Measure to be sure transom is square and stem is aligned. Next fasten chines and clamps, using one 2½ in. No. 12 fh screw to each joint. Bevel ends of chines and clamps to fit stem, and fasten with one 2 in. No. 10 fh screw to each joint. Now brace the framework with legs clamped to frames and resting on floor, and continue by trimming and fairing framework so plywood to be applied lies evenly at all points. Finish framework assembly by coating outer and inner keel contact surfaces with aviation glue and attaching outer keel to inner keel or keelson with 1¾ in. No. 10 fh screws spaced about 8 in. apart. To make the frame strong and sturdy under the urge of the higher powered motors, notch flush battens into the frames as indicated, fastening with one 2 in. No. 10 fh screw to each joint.

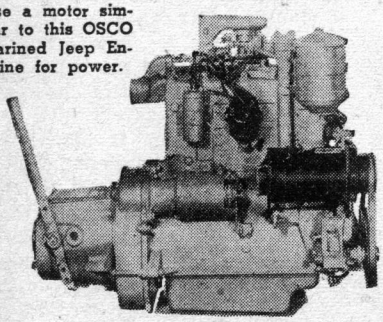
The ⅜ in. plywood planking is now fastened in place. Starting on bottom, clamp a plywood sheet in position and mark and cut to shape. If full length plywood is not available, provide a bevel joint on edges, then glue with resin glue and screwfasten joint to a ¾x4 in. batten.

Clamp shaped plywood plank to bottom of hull to check the fit. Then remove, coat all contact surfaces with

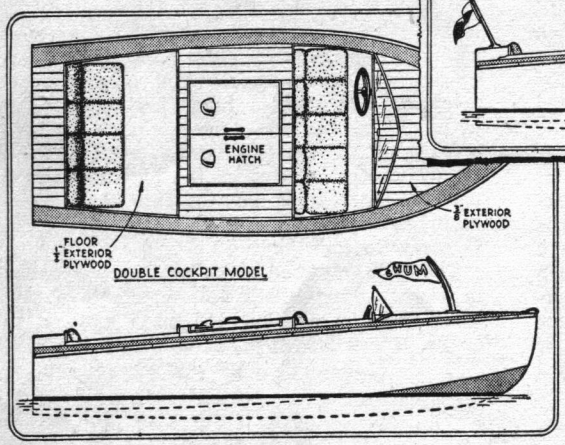


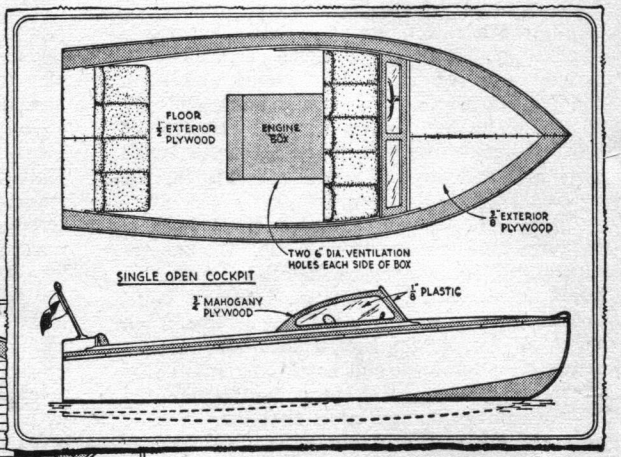


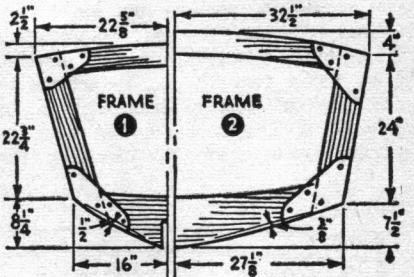
aviation glue, lay plywood in position, and clamp and screwfasten with 1¼ in. No. 8 fh screws, spaced 2 in. apart. Finish bottom by trimming edges of plywood carefully along the edges. Be especially careful towards the stem to provide for a joint at the chines so that bottom and side plywood butts together about 2 ft. aft of stem and laps together the remainder. The sides are planked next, laying plywood in position and marking and cutting to shape. Coat adjoining or contact surfaces such as chines, keel, batts, stem, and transom with aviation glue, lay cloth strips over glued areas, recoat, and then clamp bottom plywood in place. Fasten similarly to bottom. Fore ends of plywood bottom may have to be softened with hot water so that they can be bent in place readily.

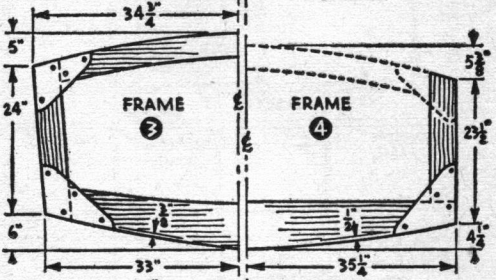


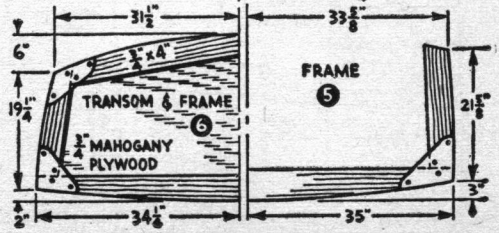
Use a motor similar to this OSCO Marined Jeep Engine for power.









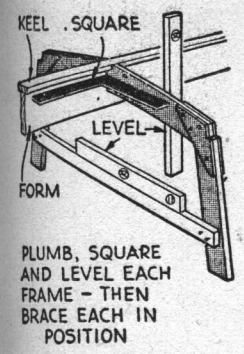


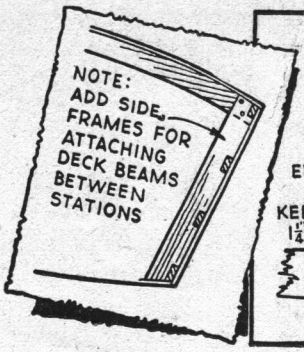
Installing Stringers

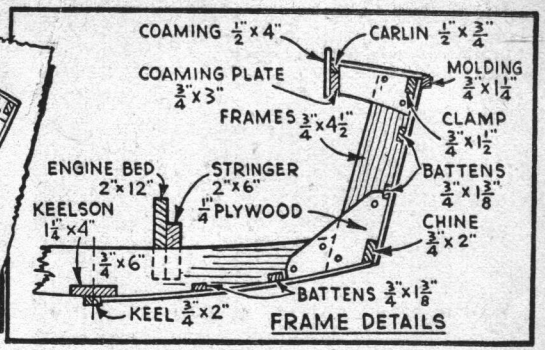
With the hull planked, trim edges of plywood evenly along edges of hull and cover exposed edges of plywood along stem with a piece of oak, softened with hot water and screwfastened in place. Then lift hull from form, turn right side up, and prepare to install the stringers and engine beds. Fasten stringers with aluminum angle irons and screw to frames. Next cut deck beams to shape, and screwfasten them to frames with 1½ in. No. 10 fh screws. Exterior plywood ½ in. flooring is next screwfastened in place. Then gas tank, steering gear, and even the engine with its muffler, propeller shaft, strut and all connections are installed before decking is applied. Angle of drive shaft is approximately 12°.

Making Decking

The decking should be ⅜ in. mahogany plywood shaped as shown and screwfastened







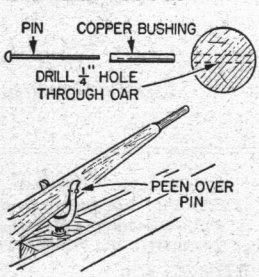
in place with 1¼ in. No. 8 fh screws. If you build double cockpit model, provide hatches secured with piano type continuous hinges, and ventilators secured to side deck to ventilate the engine. If you make the open cockpit model, however, a properly vented box over the motor will suffice. Seats can be upholstered or bare as time and finances permit. Moldings are screw-fastened in position to sides with 2 in. No. 10 fh screws spaced about 8 in. apart.

Coat the entire hull inside and out with Firzite and, when dry, apply another filler coat of white Firzite to bottom and sides. Then apply three coats of enamel or semigloss yacht finish to bottom and sides, rubbing each coat (the last one lightly) and allowing each coat to dry thoroughly. Apply a coating of wood filler to the decking and moldings, and then give them three coats of varnish. Use two coats of light gray or buff for the inside. Streamlined deck hardware will dress up the hull considerably.

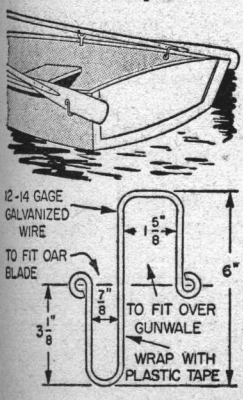
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Bushing Prevents Oar Wear

● To eliminate chewed up oar-pin holes because of loose fit, wobble and play, insert a snug-fitting piece of copper tubing into ¼-in. hole drilled through oar and peen over pin. This installation will outlast oar. Remember that lock must be fitted to oar at right angle to oar blade.



Dripless Oar Holder

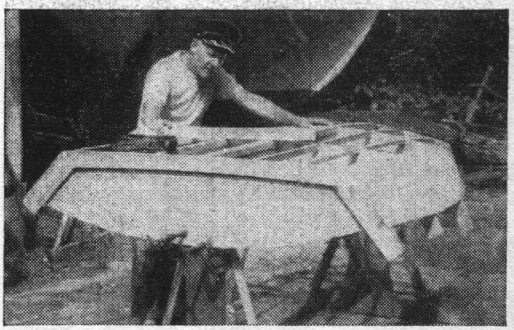


● This oar holder allows oars to be shipped, yet prevents wet drippings from running inside the boat. Make holders from 14 to #12 gage galvanized wire, bent to shape with pliers or vise. To prevent oars from rattling in holders, wrap part where oar blade fits into holder with plastic tape.—WM. D. JACKSON.

Reinforcing the Transom

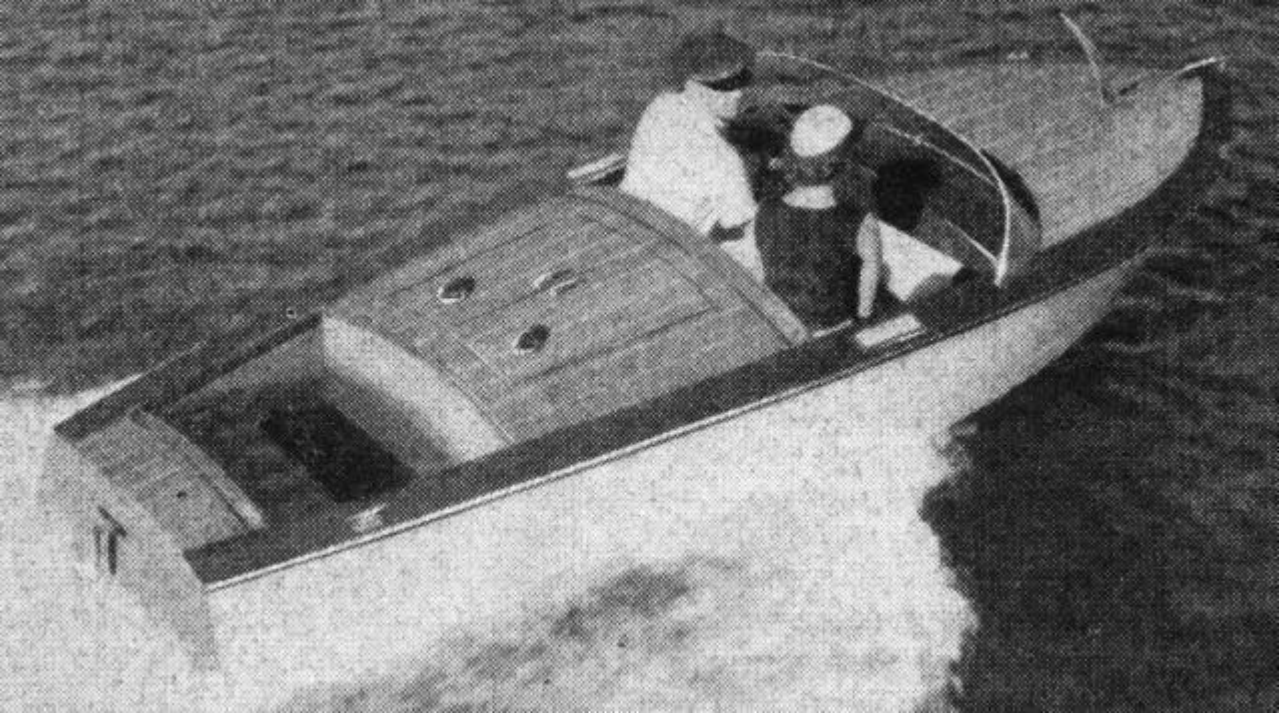
● The transom of an outboard boat receives considerable pounding from the vibration of an outboard motor and the impact of the entire boat if it's a planing boat at high speeds.

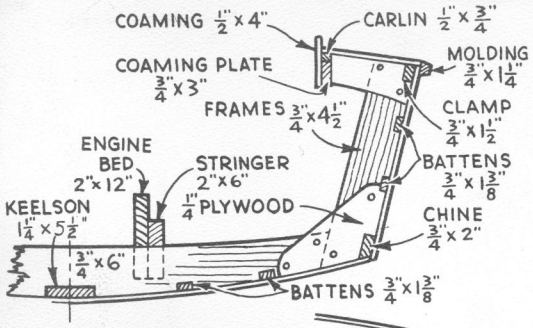
This simple solution to reinforcing the transom is adaptable to nearly all boats. Before planking any boat, simply add an outside frame ¾ x 2 or



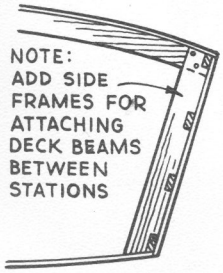
3" to the bottom edge of the transom. Side frames may also be used. Coat adjoining surfaces liberally with Kuhls' *Bedlast* and screwfasten it in place with #10 x 1¾-in. *fh* screws.

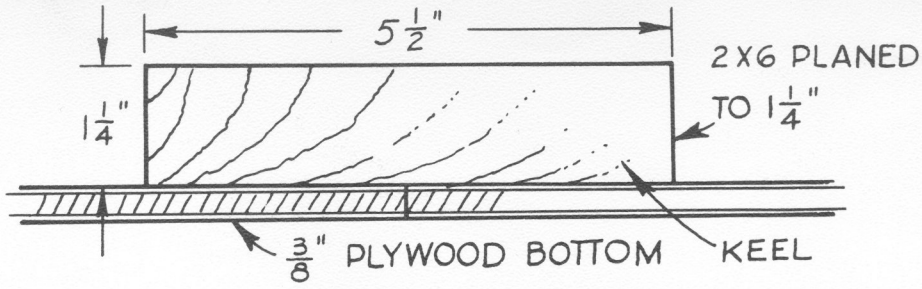
Increasing transom thickness at this point builds up bedding composition and adds planking screws to insure an almost leakproof joint despite any and all pounding.—WM. D. JACKSON.

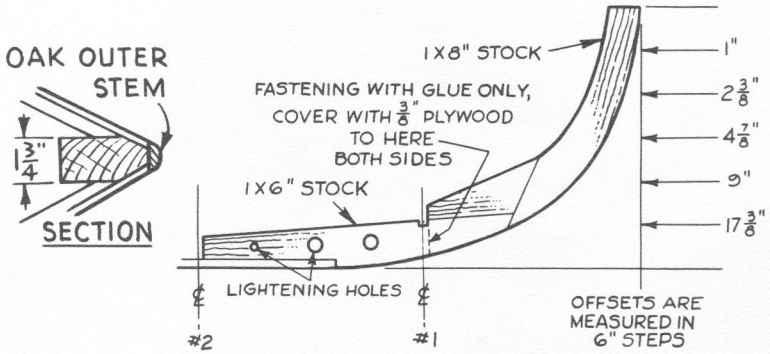


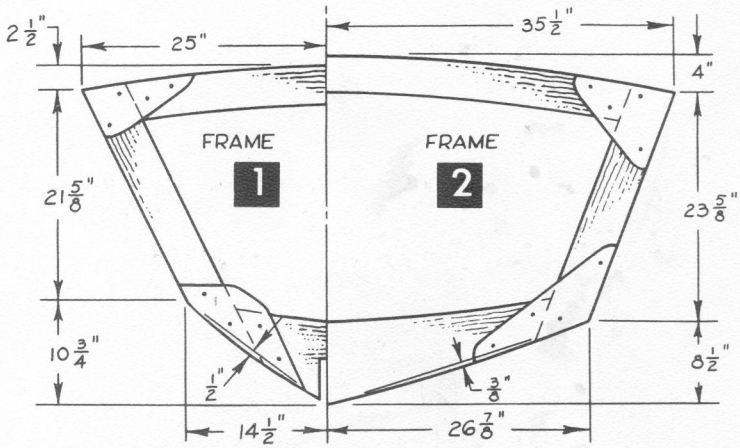


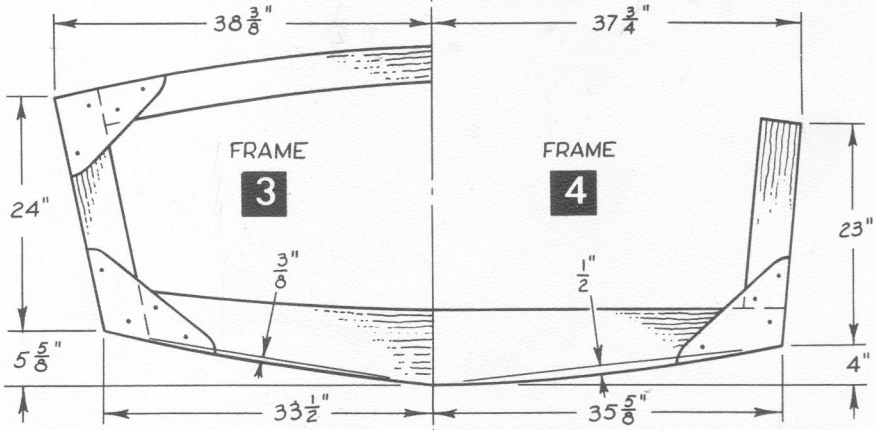
FRAME DETAILS

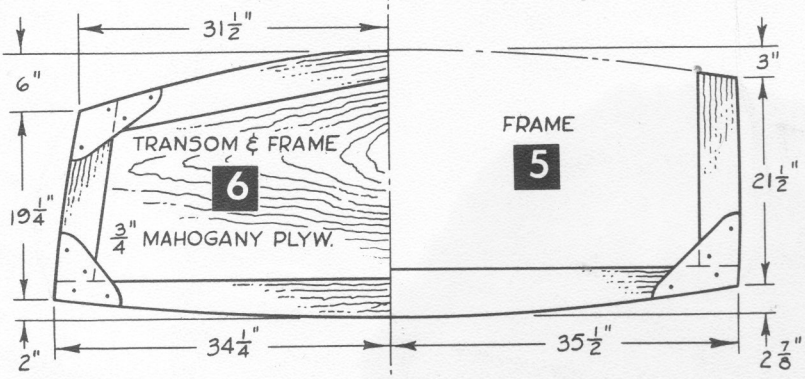










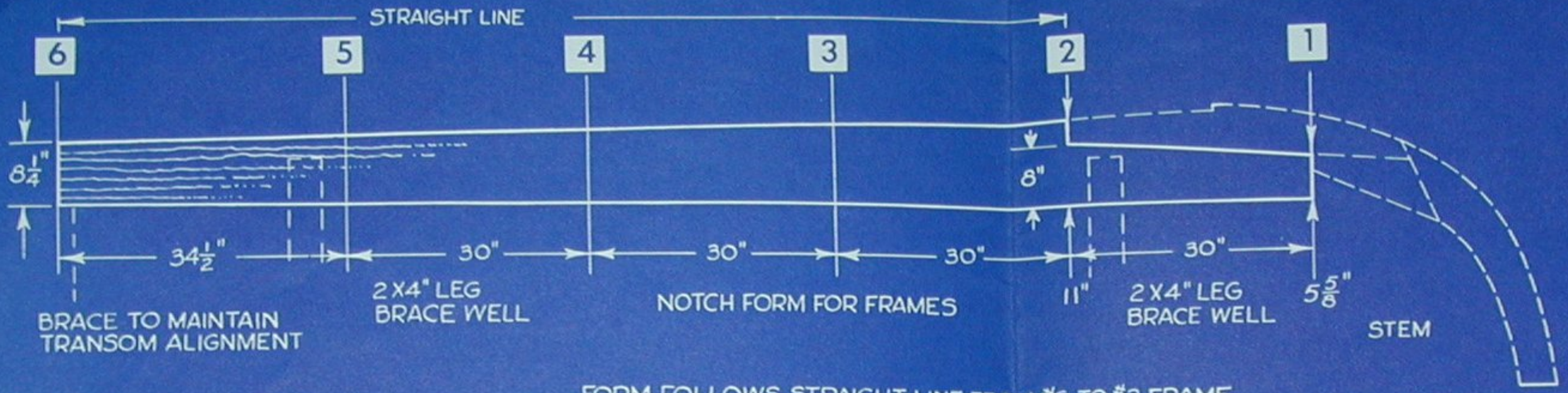


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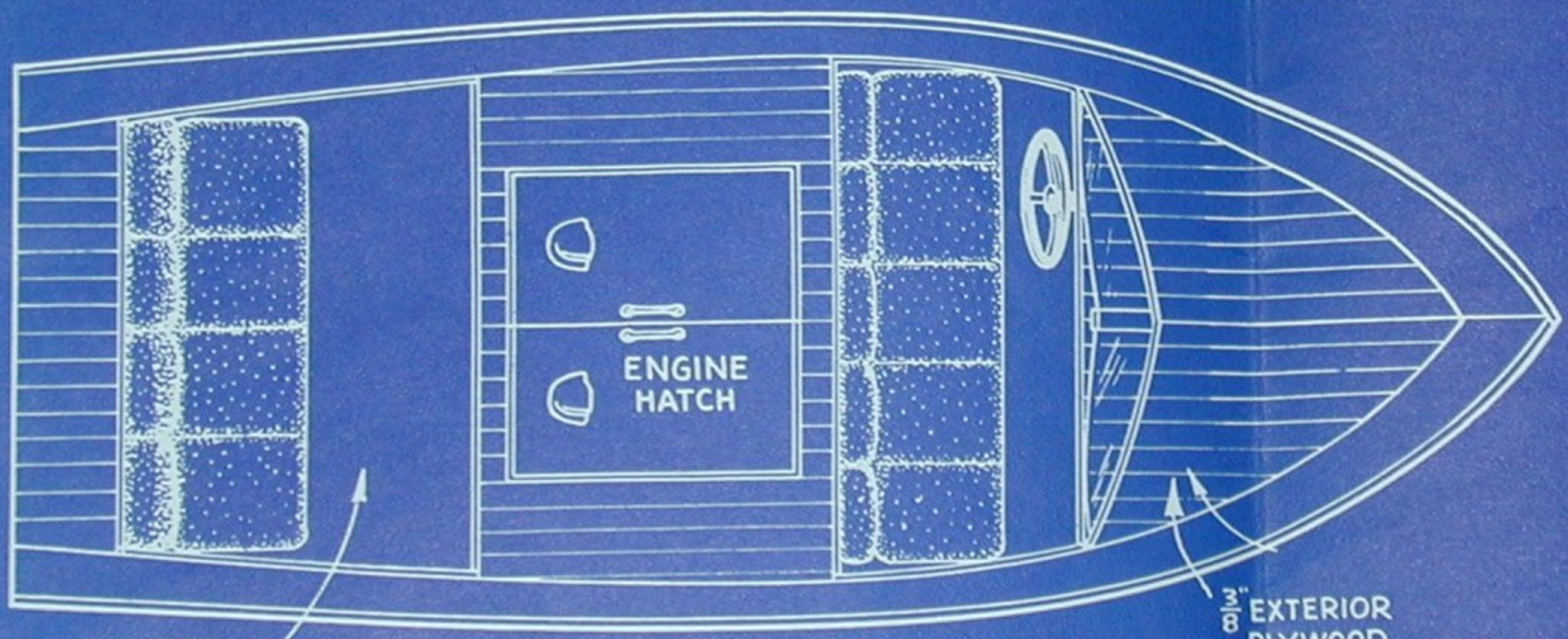
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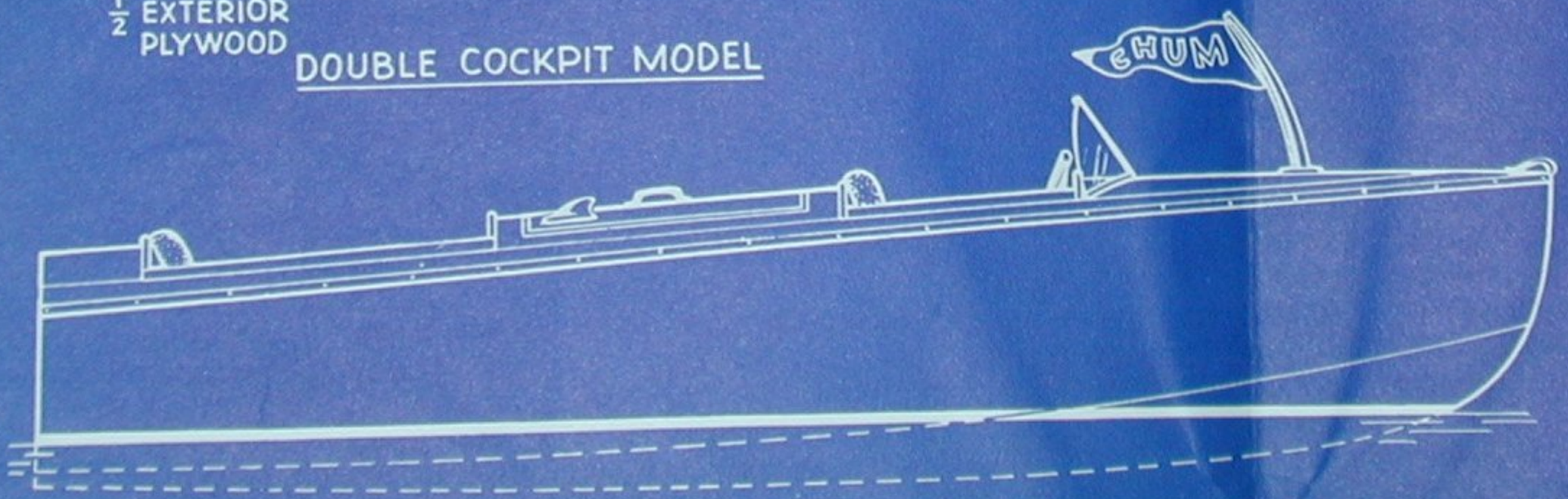
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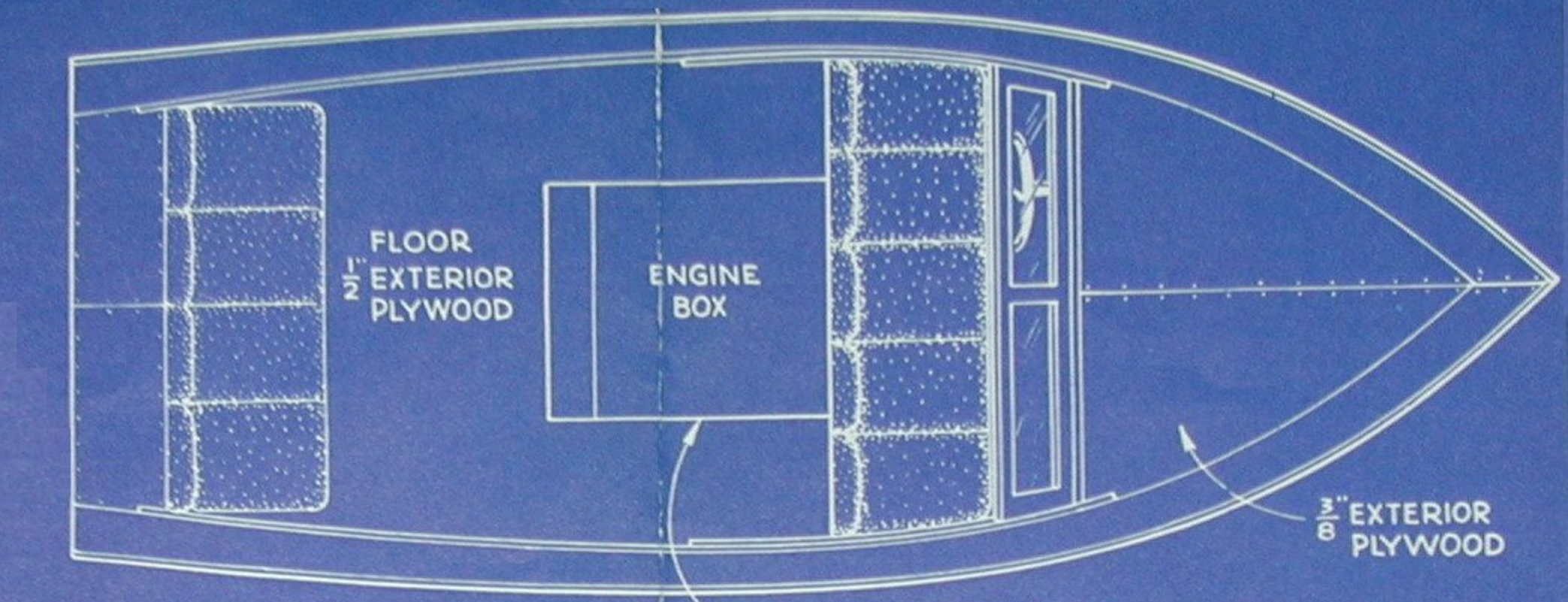


FORM FOLLOWS STRAIGHT LINE FROM #6 TO #2 FRAME



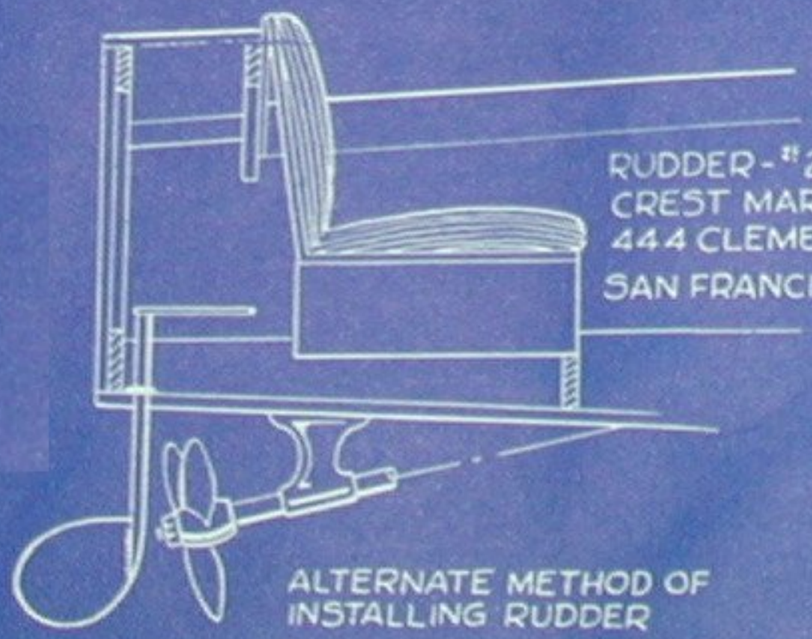
DOUBLE COCKPIT MODEL

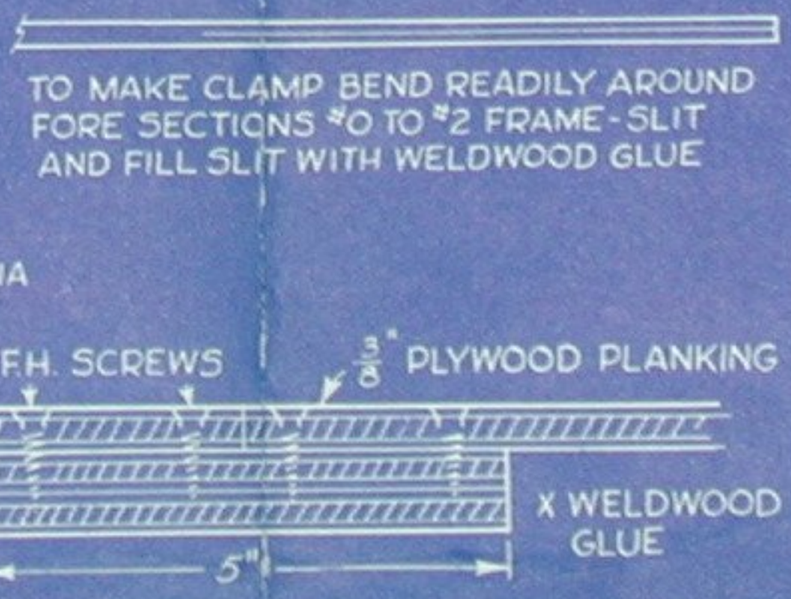


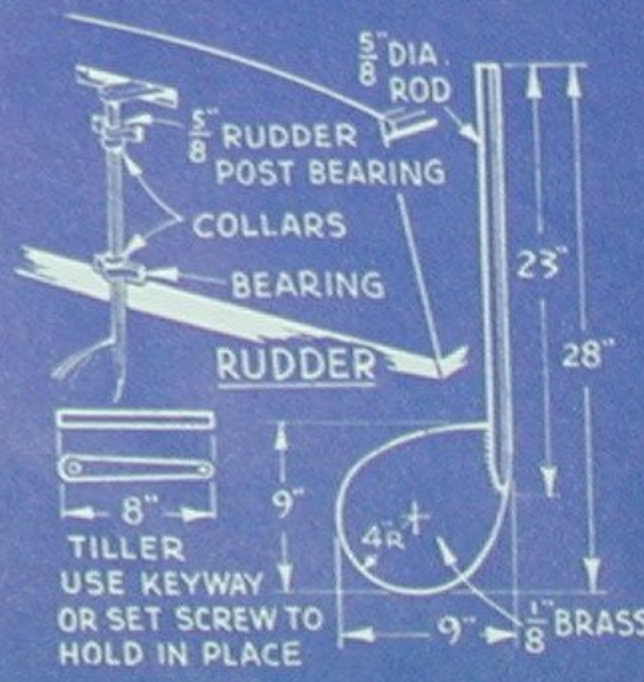


SINGLE OPEN COCKPIT









ED

DECK FRAMING

CLAMP

6"

CARLIN

COAMING

ENGINE HATCH

18"

DECK BATTENS

KEELSON

ENGINE BED

STEM

TRANSOM & FRAME

ANGLE IRONS

ENGINE STRINGER

CHINE

CLAMP

HULL FRAMING

EXHAUST OPENING 2" DIA. EITHER SIDE OF ℄

30"

30"

30"

30"

30"

36"

CLAM SHELL VENTILATOR

12"

CLAMP

STEERING WHEEL

12"

FUEL TANK 9X21X40"

STEM

FRAMES

75-100 H.P.

SHIFTING LEVER

CHINE

3"

ENGINE BED

STRINGER

KEELSON

UNIVERSAL STRUT

7/8" DIA. BRONZE SHAFT

UNIVERSAL SHAFT LOG FITTING

PROPELLER 10 X 12 THREE BLADE

6

5

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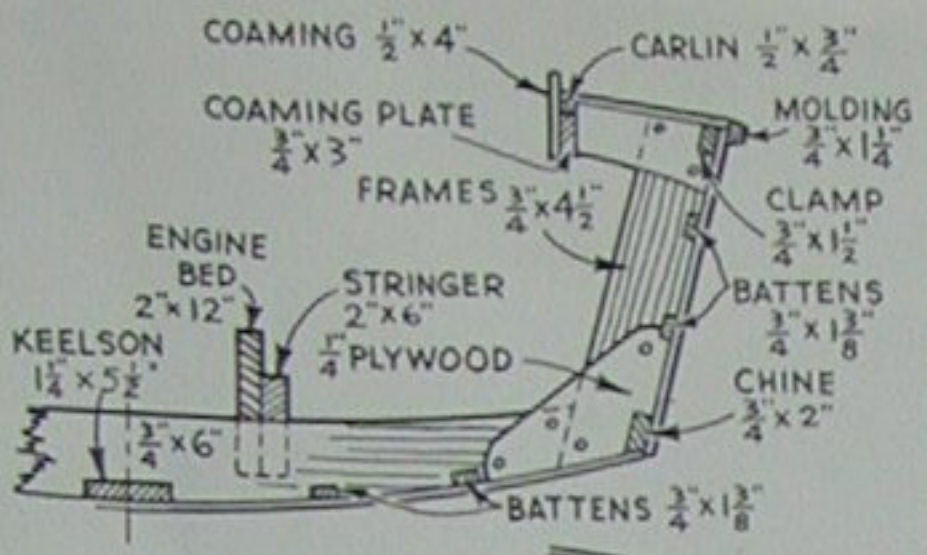
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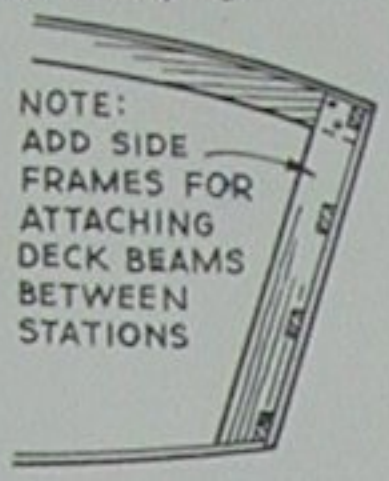
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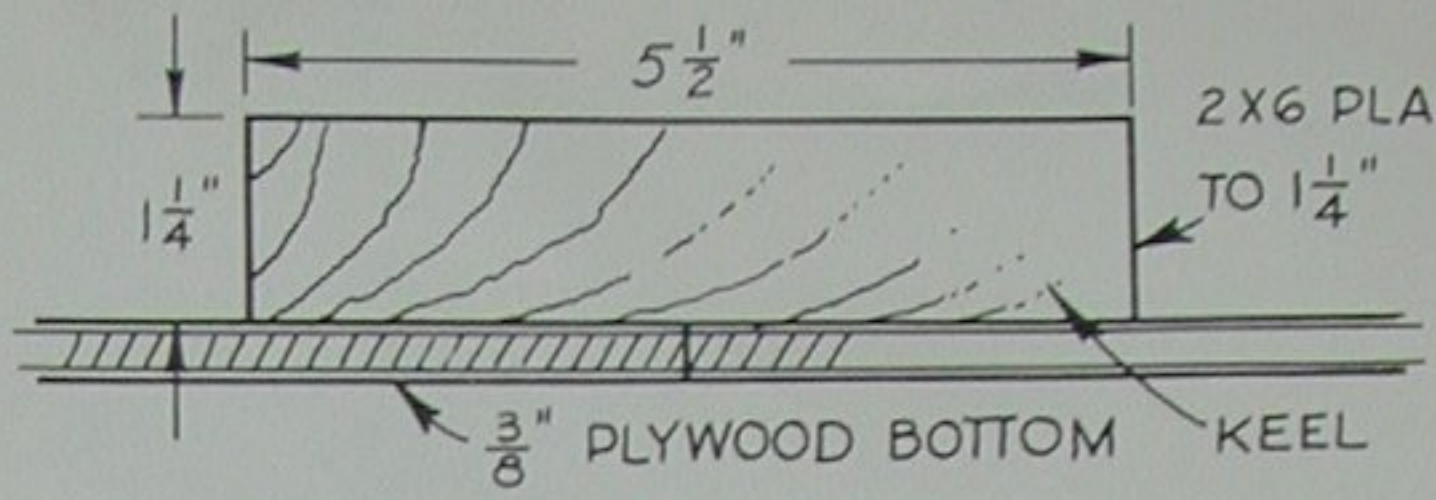
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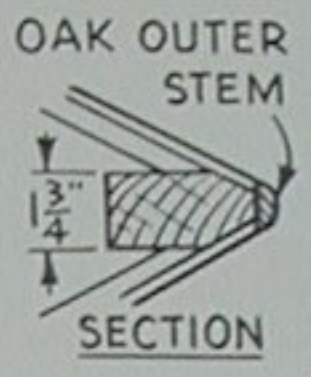
15'-6" HULL LENGTH

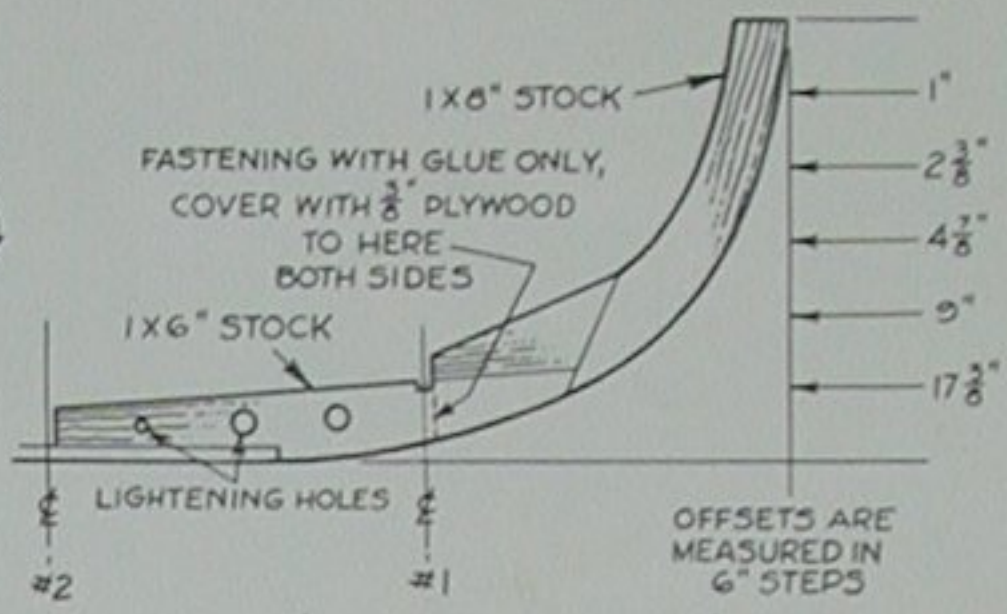


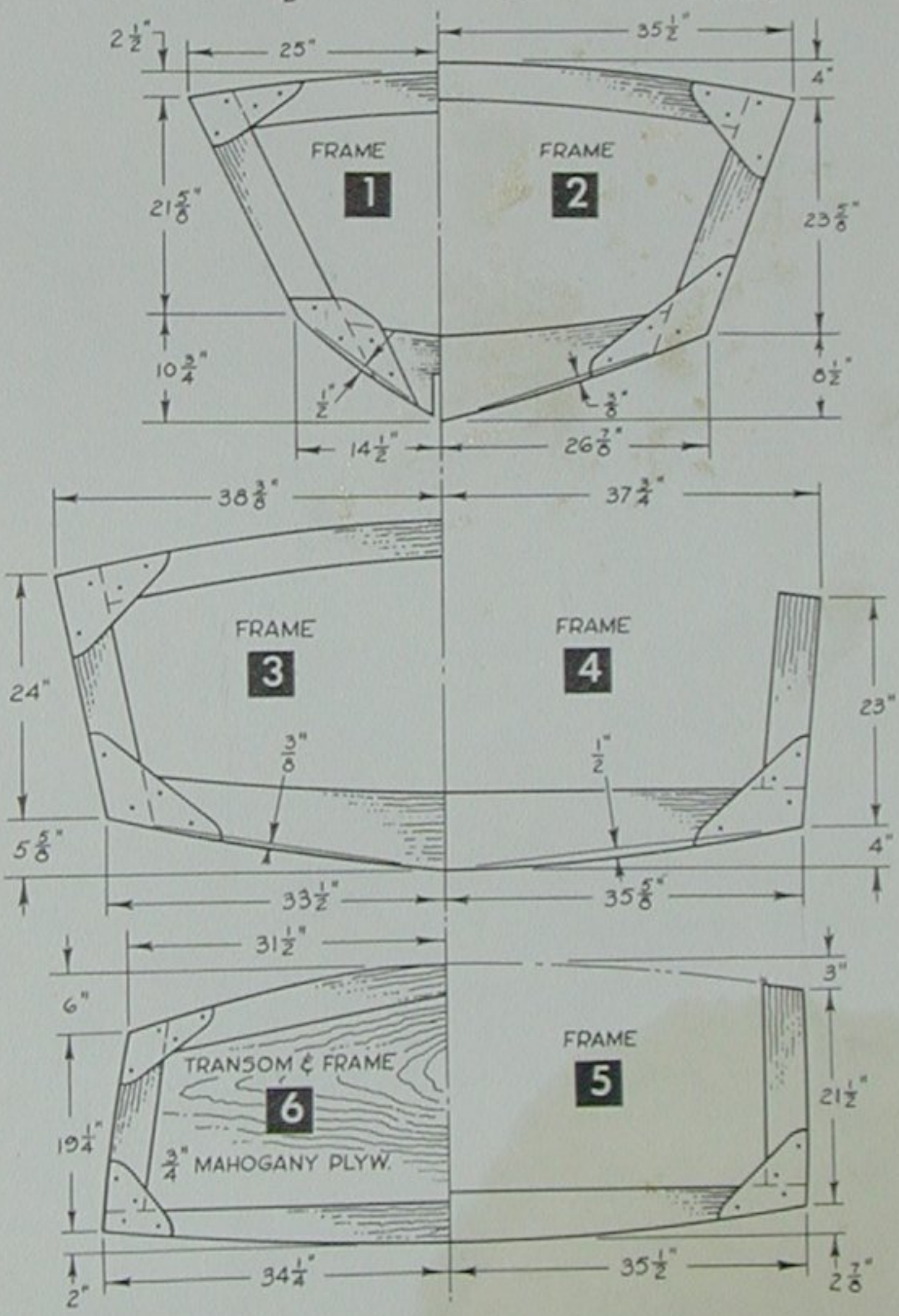
FRAME DETAILS









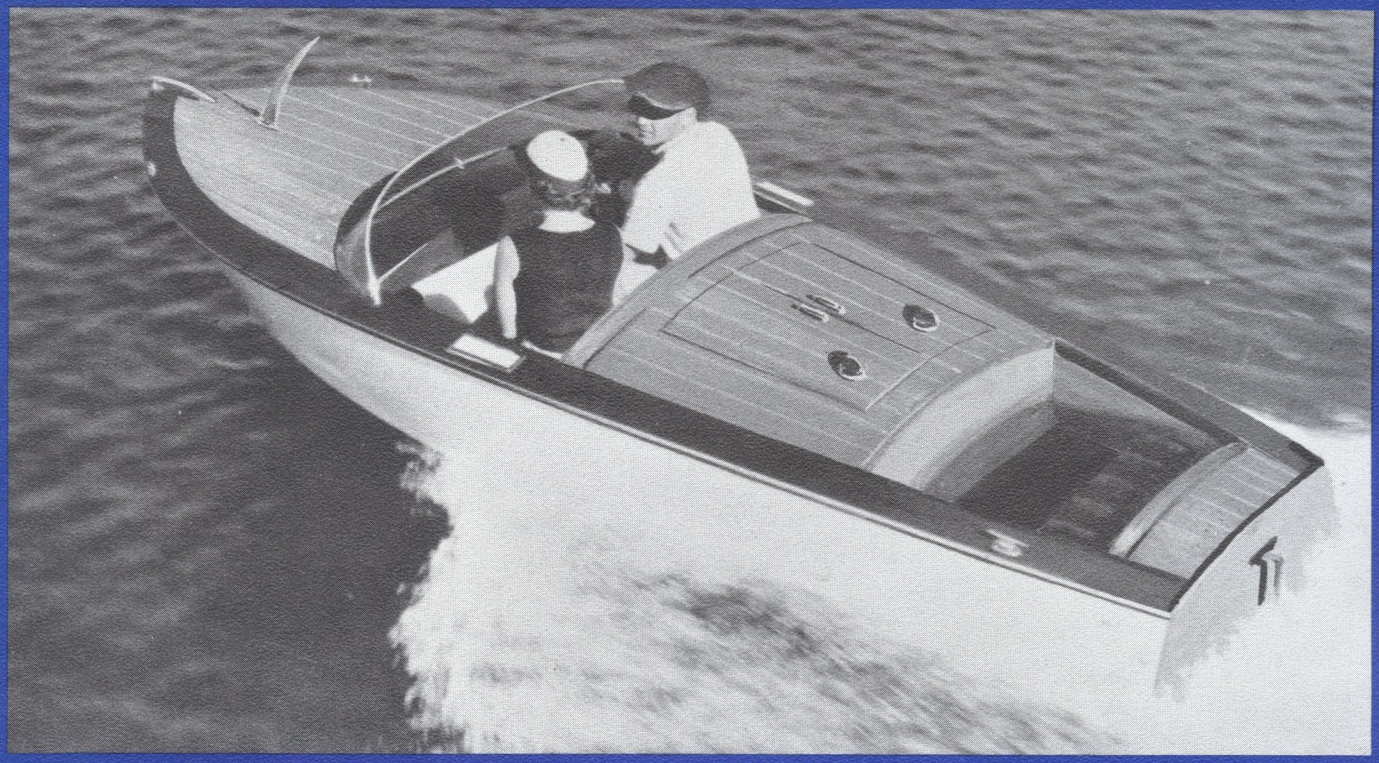


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CHUM

CRAFT PRINT 36

R-'58 BBA '52

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SCIENCE AND MECHANICS MAGAZINE

505 Park Avenue New York 22, N. Y.

PRINTED IN U.S.A.

Construction Procedure

This convex bottom (hydroconic) runabout is 15½ ft. long with a beam of 6 ft. and a maximum draft of 20 in. You can use either a double cockpit or a single cockpit style for utility use. *Chum* was designed for use with a Marined Jeep Engine (such as the Lehman *Econ-o-Power*, which develops 60-hp at 3400 rpm and will propel *Chum* at over 30 mph). Any 25-100 hp similar engine may also be used to power *Chum*, as long as the motor is of light weight, high speed design.

Plywood of ⅜ in. thickness is used to cover this boat and, with the framework indicated, *Chum* will stand up indefinitely under all conditions of usage. To begin construction, first secure items listed in the materials list. Then saw the form on which the hull will be built to shape and mount on legs similar to a saw horse at a convenient working height. Next draw full-size patterns of all frames and the stem. Lay frame and stem material on these patterns and mark and saw to shape. Fasten frames with ⅜ in. plywood gussets. Glue contact surfaces with resin glue and screwfasten joints with 1¼ in. No. 10 fh screws.

Next cover transom frame with ¾ in. mahogany plywood or two ⅜ in. thicknesses glued and screwfastened together. Assemble parts of stem with ⅜x9 in. carriage bolts, coating contact surfaces with resin glue. Then notch all frames for keel, chines, and clamps, notch stem for keel, and notch out frame only of transom. Now notch form for frames and then assemble frames atop the form. Spring a light batten around all frames and, noting on each frame edge the correct amount of bevel necessary, remove and bevel edges accordingly. With all frames in place, spring the keel in place to the frame keel notches, and fasten using two 2½ in. fh screws to each joint. Fasten stem to keel with ¼ in. carriage bolts. The keel may be held in place temporarily to form by inserting three or four screws. Remember to remove these before bottom planking is applied.

The chines and clamps are now sprung in place; both sides are secured simultaneously to prevent wringing the hull out of shape and also to align each frame squarely with keel. Measure to be sure transom is square and stem is aligned. Next fasten chines and clamps, using one 2½ in. No. 12 fh screw to each joint. Bevel ends of chines and clamps to fit stem, and fasten with one 2 in. No. 10 fh screw to each joint. Now brace the framework with legs clamped to frames and resting on floor, and continue by trimming and fairing framework so plywood to be applied lies evenly at all points. Finish framework assembly by coating outer and inner keel contact surfaces with aviation glue and attaching outer keel to inner keel or keelson with 1¾ in. No. 10 fh screws spaced about 8 in. apart. To make the frame strong and sturdy under the urge of the higher powered motors, notch flush battens into the frames as indicated, fastening with one 2 in. No. 10 fh screw to each joint.

The ⅜ in. plywood planking is now fastened in place. Starting on bottom, clamp a plywood sheet in position and mark and cut to shape. If full length plywood is not available, provide a bevel joint on edges, then glue with resin glue and screwfasten joint to a ¾x4 in. batten.

Clamp shaped plywood plank to bottom of hull to check the fit. Then remove, coat all contact surfaces with aviation glue, lay plywood in position, and clamp and screwfasten with 1¼ in. No. 8 fh screws, spaced 2 in. apart. Finish bottom by trimming edges of plywood carefully along the edges. Be especially careful towards the stem to provide for a joint at the chines so that bottom and side plywood butts together about 2 ft. aft of stem and laps together the remainder. The sides are planked next, laying plywood in position and marking and cutting to shape. Coat adjoining or contact surfaces such as chines, keel, batts, stem, and transom with aviation glue, lay cloth strips over glued areas, recoat, and then clamp bottom plywood in place. Fasten similarly to bottom. Fore ends of plywood bottom may have to be softened with hot water so that they can be bent in place readily.

Installing Stringers

With the hull planked, trim edges of plywood evenly along edges of hull and cover exposed edges of plywood along stem with a piece of oak, softened with hot water and screwfastened in place. Then lift hull from form, turn right side up, and prepare to install the stringers and engine beds. Fasten stringers with aluminum angle irons and screw to frames. Next cut deck beams to shape, and screwfasten them to frames with 1½ in. No. 8 fh screws. Waterproof plywood ½ in. flooring is next screwfastened in place. Then gas tank, steering gear, and even the engine with its muffler, propeller shaft, strut and all connections are installed before decking is applied. Angle of drive shaft is approximately 12°.

Making Decking

The decking should be ⅜ in. mahogany plywood shaped as shown and screwfastened in place with 1¼ in. No. 8 fh screws. If you build double cockpit model, provide hatches secured with piano type continuous hinges, and ventilators secured to side deck to ventilate the engine. If you make the open cockpit model, however, a properly vented box over the motor will suffice. Seats can be upholstered or bare as time and finances permit. Moldings are screwfastened in position to sides with 2 in. No. 10 fh screws spaced about 8 in. apart.

Applying Finish

Coat the entire hull inside and out with Firzite and, when dry, apply another filler coat of white Firzite to bottom and sides. Then apply three coats of enamel or semi-gloss yacht finish to bottom and sides, rubbing each coat (the last one lightly) and allowing each coat to dry thoroughly. Apply a coating of wood filler to the decking and moldings, and then give them three coats of varnish. Use two coats of light gray or buff for the inside. Streamlined deck hardware will dress up the hull considerably and may be secured at nominal prices from any marine dealer or manufacturer.

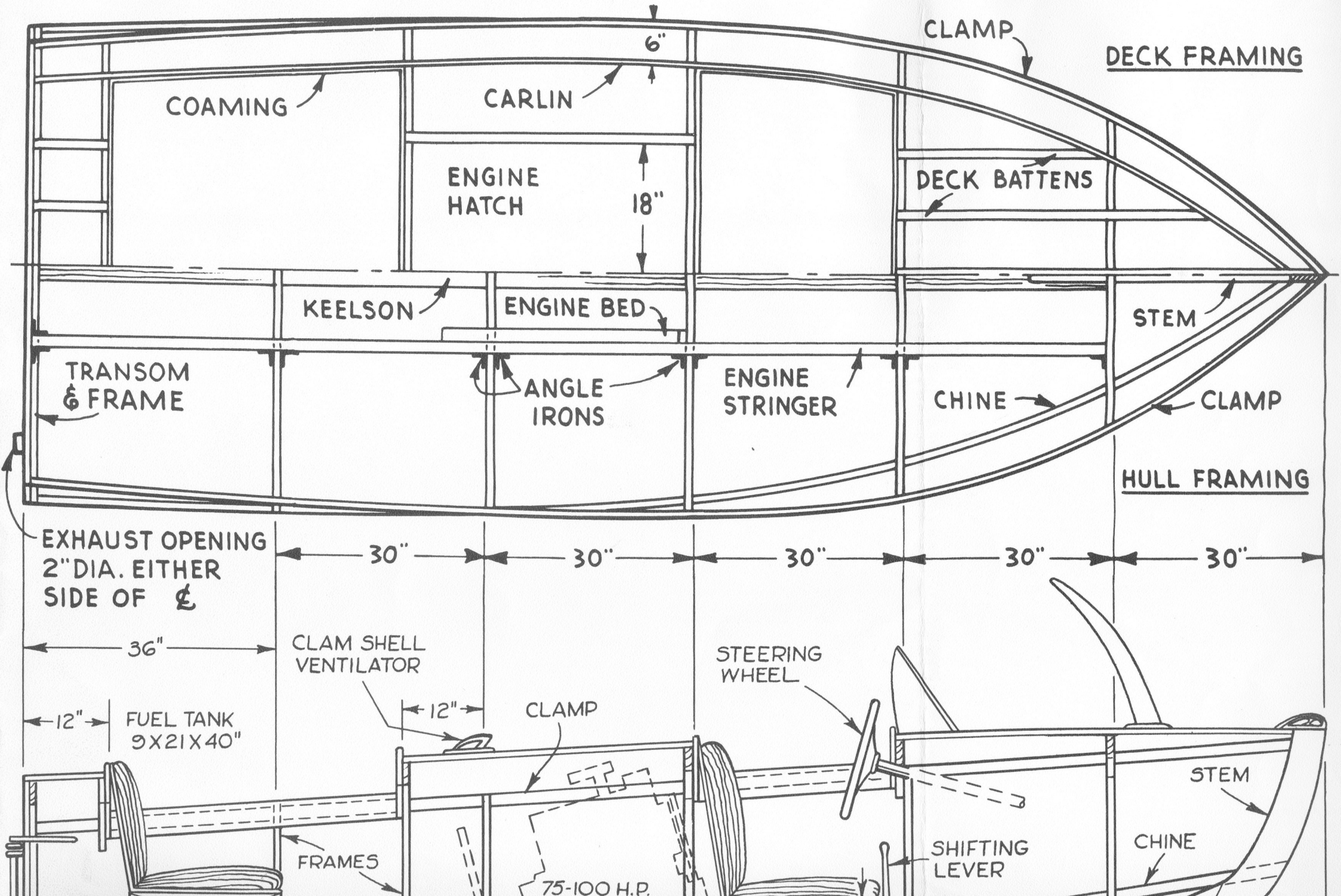
MATERIAL LIST—CHUM

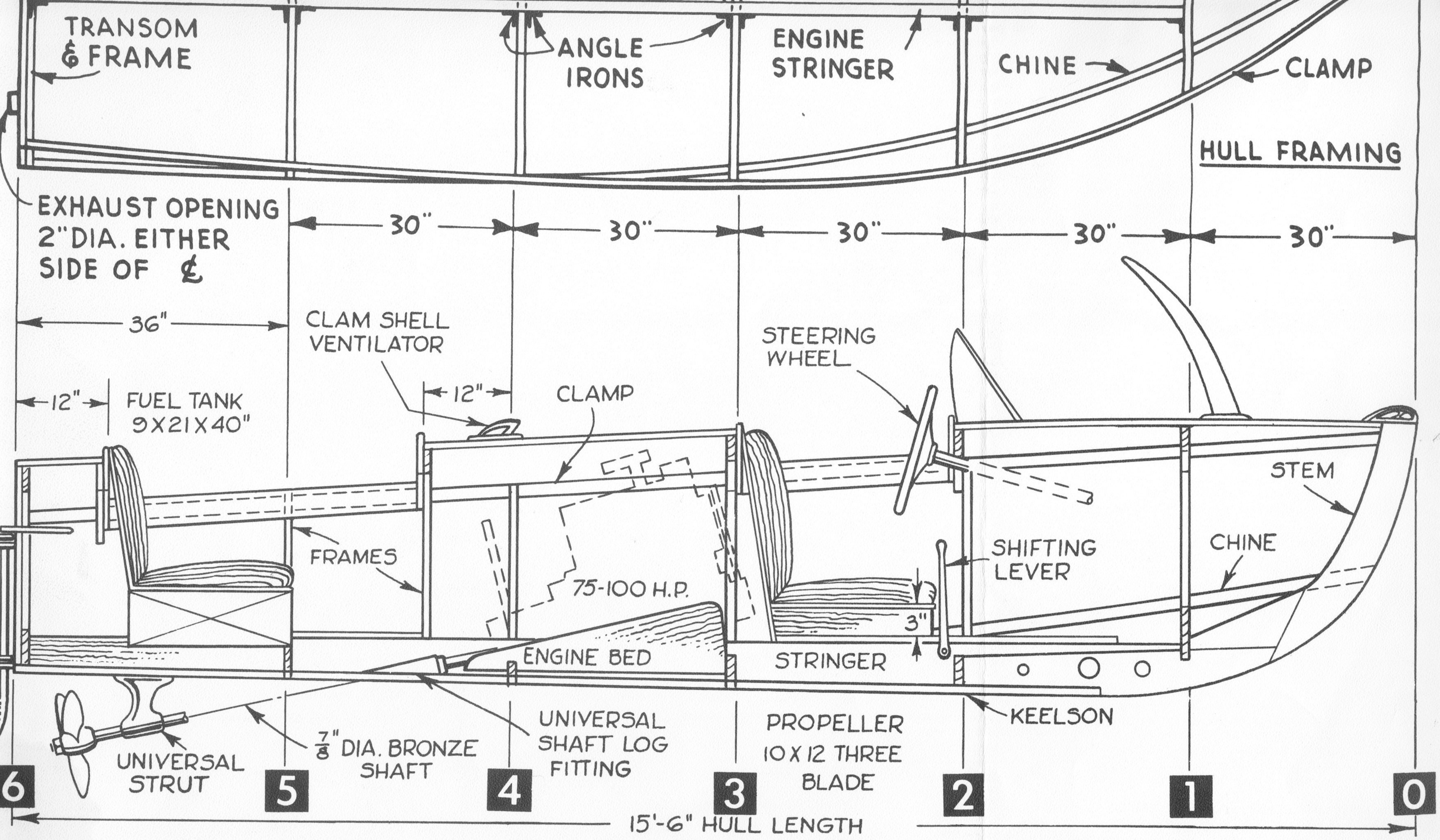
Wood Required:	EXTERIOR PLYWOOD OR WELDWOOD
Bottom and side planking	6 pcs. ⅜" x 4' x 8' Marine plywood
	2 pcs. ⅜" x 4' x 10' Marine plywood-mahog.
Decking	3 pcs. ⅜" x 4' x 8' Marine plywood
Bulkheads & flooring	2 pcs. ⅜" x 4' x 8' Fir
Seats and dashboards	2 pcs. ⅜" x 4' x 8' Mahogany or Fir
Transom	1 pc. ¾" x 30" x 70" Mahogany plywood
Gussets	Use scraps
	WHITE OAK
Stem	1 pc. 1¾" x 6" x 6'
Keel (inner)	1 pc. 1¼" x 5½" x 12'
Chines	2 pcs. ¾" x 2" x 16'
Clamps	2 pcs. ¾" x 1½" x 16'-6"
Battens	8 pcs. ¾" x 1⅜" x 16'
Frames—Sides	2 pcs. ¾" x 4" x 12'
Frames—Bottom	2 pcs. ¾" x 8" x 16'
Moldings	2 pcs. ¾" x 1¼" x 16'-6"
	SPRUCE, FIR
Deck beams	3 pcs. ¾" x 8" x 12'
Carlines	2 pcs. ½" x ¾" x 16'-6"
Coaming plates	1 pc. ¾" x 3" x 8'
Deck battens	5 pcs. ¾" x 1" x 8'
Coamings	2 pcs. ½" x 4" x 8'
Stringers	2 pcs. 2" x 6" x 14'
Engine beds	2 pcs. 1¾" x 12" x 3'
Form	1 pc. 2" x 12" x 14' (any common lumber)

Fastenings Required:	
1 gross	1¼" No. 10 Flat Head Screws
6 doz.	1½" No. 10 Flat Head Screws
9 gross	1¼" No. 8 Flat Head Screws
1 gross	2" No. 10 Flat Head Screws
6 doz.	2½" No. 12 Flat Head Screws
4	⅜" x 9" Carriage Bolts
2	¼" x 6" Carriage Bolts

1 pt. Aviation Glue; 1 lb. Resin Glue

Miscellaneous hardware, fittings, paint, varnish, and Firzite.


CLAMP
DECK FRAMING
6"
COAMING
CARLIN
ENGINE HATCH
18"
DECK BATTENS
KEELSON
ENGINE BED
STEM
TRANSOM & FRAME
ANGLE IRONS
ENGINE STRINGER
CHINE
CLAMP
HULL FRAMING
EXHAUST OPENING 2" DIA. EITHER SIDE OF ℄
30"
30"
30"
30"
30"
36"
CLAM SHELL VENTILATOR
STEERING WHEEL
12"
FUEL TANK 9X21X40"
12"
CLAMP
STEM
FRAMES
75-100 H.P.
SHIFTING LEVER
CHINE


TRANSOM & FRAME
ANGLE IRONS
ENGINE STRINGER
CHINE
CLAMP
HULL FRAMING
EXHAUST OPENING 2" DIA. EITHER SIDE OF ℄
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12"
FUEL TANK 9X21X40"
12"
CLAMP
STEERING WHEEL
STEM
FRAMES
75-100 H.P.
SHIFTING LEVER
CHINE
3"
ENGINE BED
STRINGER
KEELSON
UNIVERSAL STRUT
7/8" DIA. BRONZE SHAFT
UNIVERSAL SHAFT LOG FITTING
PROPELLER 10 X 12 THREE BLADE
6
5
4
3
2
1
0
15'-6" HULL LENGTH