

In the 60's, DIY magazines often showed boat plans for plywood on frame and houseboats were very popular. The topsides were often vertical to maximize interior volume and to make building easier. One of those plans was for a 20' long houseboat that offered incredible accommodations for it's length.

We asked designer Emile Ajar to redraw a boat very much in that style but for stitch and glue. The design goal for the HB20 was simple: a maximum of boat for a minimum of construction difficulty.

The result is a small vacation home on the water, large enough for a family of four. In only 20' of hull length but an impressive 300 sq.ft. of floor area we were able to incorporate a separate forward cabin, enclosed head, comfortable galley and saloon arrangement, an extra large cockpit, a real foredeck and an optional flying bridge! All at a fair cost, using a material with minimum maintenance and great appearance. No other 20' houseboat offers as much accommodations, versatility, space, comfort and stability as our HB20. No other 20' houseboat is easier to build than our HB20.

Check out our Building method tutorial, in our [How-To Section](#)

Specifications:		
LOA:	20'	6,10 m
Max. Beam:	9' *	2,75 m
Draft at DWL:	6"	152 mm
Hull weight:	1750 lbs.	795 kg
HP:	15 to 50	12 to 39 kW
Material:	Stitch and Glue	

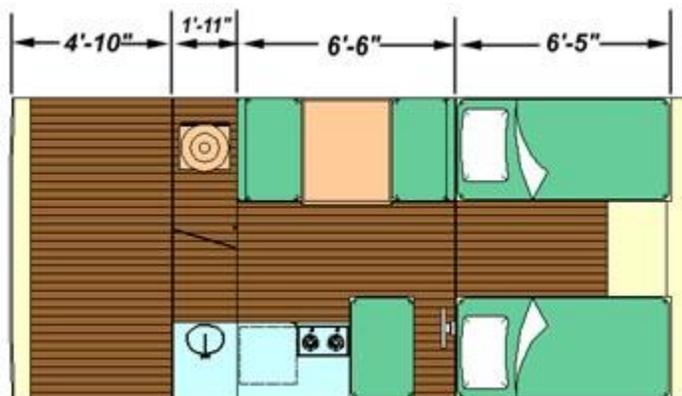
** the beam can be reduced to 8' 6" or less by changing one dimension on all the frames and bottom panel.*



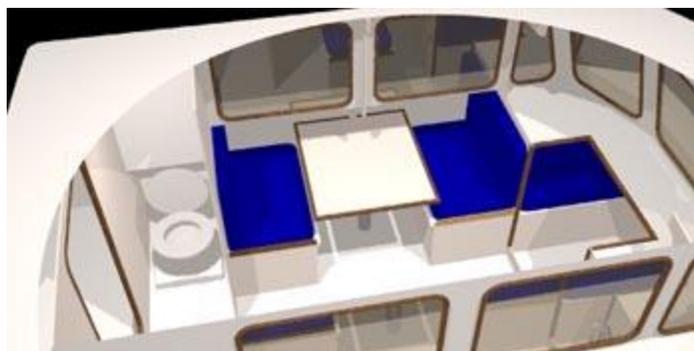
If you can build a bookshelf, then you can build this boat. It does not require special materials or complicated building skills. All of the wood is readily available from the local lumber yard and an epoxy-fiberglass kit is available from this web site.

The HB20 is **easily trailerable** without an expensive boat trailer. The flat bottom hull can be hauled on a utility trailer. At 9' wide, it will require an extra permit but those are inexpensive and easy to obtain. It operates in shallow water. The **draft was kept to 6"** at full load. The HB20 can be made unsinkable with **foam flotation**.

With the recommended engine(s), the HB20 will go at **25 mph** in protected waters. The ideal engine is a 30 HP, this will push the boat at 15 mph.



The **rear cockpit** is deep and roomy: almost 45 sq.ft. Large enough to accommodate standard patio furniture. We show a 44 gallon (180 liters) fuel tank under the cockpit.



The cabin has **standing headroom: 6' (1,80 m)**.

The enclosed head can be a Porta Potti or a real marine head.

The dinette is wide enough for 4 adults to sit and the table can drop down to become a double bed 6' 6" long (1,95 m).

There are large lockers under the seats and room for more shelves in the head.



The suggested layout for the galley shows a double burner stove with or without oven, a fixed sink, room for a small fridge and a nice working area.

The steering station is optional: if you build the flying bridge version, steering can be done from the top. The plans show a jump seat but it could also be build with a fixed seat and more storage.

Going down one step, you access the forward cabin with two roomy bunks: each is 38" wide (95 cm) and 76" long (1,90 m). There is standing headroom in the companion way and lots of storage.



From the cockpit, two steps lead to the foredeck. The gunwales are 14" wide (35 cm). The foredeck is fitted with an hatch over the forward cabin and can also be equipped with bow rails.

The outboard (not shown) fits on a bracket to keep the cockpit uncluttered.

The plans include specifications for a bracket that can be used at displacement speeds only. If the builder wants an outboard bracket to use at planing speeds, we recommend to purchase a professionally made bracket like the Armstrong bracket.

Building method:

The building method uses cleats framing wherever possible like under the sole but all outside seams are made of fiberglass and the whole hull is protected and reinforced with biaxial glass fabric and epoxy. We show the cabin top with some curve, but this can be done flat. Because the boat has vertical sides, the interior will be quite easy to build. This boat lends itself to modifications by the builder: build her to suit your preferences! All surfaces are epoxy saturated.



Required Skills:

Our goal was to make the HB20 **easy and inexpensive to build.**

Thanks to its simple and efficient shape, the HB20 is easy to build and epoxy is a very forgiving, gap filling material: no need for delicate tight assemblies.

Almost all plywood cuts are square, the bottom uses full sheets of plywood: no cuts required!

The plans are very detailed with many exploded views, perspective views of assembly and step by step building notes. See the plans list at the bottom of this page.

Options:

The main option is the flying bridge. Not only is a great place to sit and drive the boat but it frees room inside: the downstairs steering position can be replaced with an extended galley counter or an extra lounge seat.

There are many interior layout variations possible: as long as the builder respects the location of the structural bulkheads, any layout is possible.

From a comfort point of view, the boat can be frugal or luxurious. For example, there is ample room for a pressurized water system but simple water jugs with a hand pump will work too. Almost anything is possible.

There also a few material options: the plans show the cabin sides, roof and flying bridge made of fibreglassed plywood but foam sandwich is a great alternative. Specifications are given on the plans.

Bill Of Materials:

(Excerpts from our BOM)

We include enough epoxy to cover the whole boat with a saturation coat and fiberglass for the bottom up to the waterline. The epoxy coat must be varnished or painted.

Plywood 4x8' (122x244cm)		
1/4" (6mm)	9	
3/8" (9mm)	15	
1/2" (12mm)	14	
Fiberglass (totals)		
Biaxial tape	139 yards	125 m
Woven Tape	43 yards	39 m
Biaxial fabric	21 yards	19 m
Resin		
Epoxy, total	17 gallons	68 liters

Labor:

A complete hull with superstructure can be build in less than 200 hours but allow another 200 hours for finishing.

More:

Visit our message board, help pages, tutorial pages and read our FAQ: most questions are answered there.

Plans Packing List:

Detailed drawings, large scale with all dimensions required to cut the sides, frames and the bulkheads from flat plywood sheets: no lofting, no templates required. All dimensions for cabin and deck. Suppliers part numbers for hardware and accessories.

- B243_1 Concept plans
- D243_2 Plywood Nesting
- D243_3 Construction drawings
- D243_4 Frames dimensions
- D243_5 Expanded Plates - Hull, bottom, roof etc.
- B243_6 Lamination Schedule
- B243_7 Bottom Assembly
- B243_8 Construction Details
- B243_9 Typical Door Assembly
- B243_10 Jump seat
- B243_11 Motor Bracket
- B243_12 Fly Bridge
- B221_c Electrical Diagram
- Step by step illustrated building notes.
- A Bill Of Materials is included in the building notes
- Help files reference list and more.