

Specifications:		
LOA:	20'-11"	6,38 m
Max. Beam:	8'-6"	2,59 m
Deadrise at Cutwater	53 degrees	
Deadrise	45 to 10 degrees	-
Fuel:	2 X 30 gallons	240 liters
Hull weight*:	1,300 lbs.	591 kg
HP	90 HP	150 Max
Material:	Stitch & Glue	

**Stripped hull, before rigging, no hardware. Estimated hull weight with tanks and hardware: 2,0002 lbs.
All specifications are approximate and subject to changes in function of the mood of the designer and the skills of the builder . . .*

The Pilot 21 (P21) is a larger version of our P19, the vee hull version of our HM19. The proven hull shape with a typical moderate vee similar to the C21. 45 degrees at the cutwater, 10 degrees at the transom. Sufficient deadrise to run smoothly in bad weather but moderate enough to provide good stability at slow speed without the wild roll typical of deeper vee hulls.

The hull shape is related to our C21 but not identical: see the bow and sheerline for example. The topsides are built with one wide panel instead of two overlapping ones.



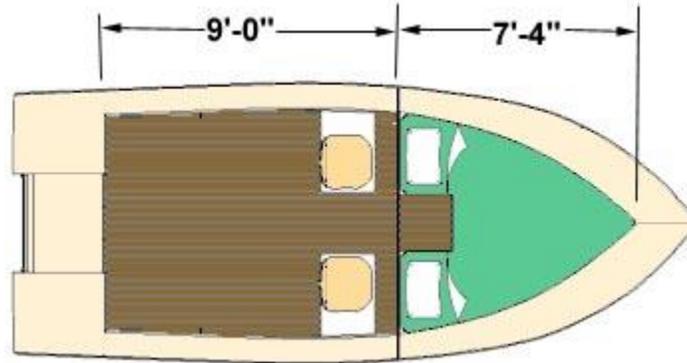
The generous freeboard and the classic sheer are tried and true features contributing to seaworthiness. This boat will negotiate both head and following seas with ease. Lightly loaded, the P21 will require 90 HP to cruise in the low 30 mph range. 125 HP is recommended for a well equipped boat at full load. This boats transom is designed for a standard 25" shaft. The transom can easily be modified to accept other shaft lengths.



The self bailing cockpit depth minimum 26" with 12" wide gunwales, is another important element of safety. Her PPI is at DWL is 543 lbs (247 kg). Thanks to the freeboard and transom design, she can be rated to a max. capacity of eight persons (USCG) and we recommend engines in the 90 to 150 HP range. While stronger than the typical production fiberglass boat of that size, she is also lighter and does not require as much HP (or fuel) to cruise at the same speed.

Layout:

The pilothouse has 6' headroom in the middle and there is ample sitting headroom in the cabin.



From stern to bow:

Large lockers on each side of the motorwell can be used for storage or bait well. The self-bailing cockpit sole is high enough to stay above the waterline until the displacement reaches 3,500 lbs.

Under the cockpit floor, we show 60 gallons fixed fuel tanks.

Under the nicely cambered pilothouse roof, the rear frame of the pilothouse doubles as a grabrail.

The skipper will find enough room in front of the wheel to mount electronics and we use the extension of the cabin roof as a dashboard. The same surface on the port side can be a small chart table.

Access to the cabin is through an open companionway but feel free to install a sliding hatch.

The vee berth is 7'-4" long and a Porta-Potti slides under the mid section. On deck, the 8" wide gunwales extend all along the pilothouse and cabin side. Handrails on each roof helps circulation forward.

Building method:

The construction is epoxy-fiberglass-plywood composite, a second-generation stitch and glue system designed for efficient and fast building.

This building method combines the ease of stitch and glue (plywood-epoxy) with the strength, lightweight, longevity and low maintenance of a high tech composite hull.

The hull material is a fiberglass sandwich with a plywood core.

The builder assembles the hull as a plywood boat first, then build the outside and inside fiberglass skins to produce a strong composite hull without all the time consuming woodworking associated with plywood on frame.

We specify high performance directional glass and epoxy. While that type of fiberglass cost a little bit more, we save on resin and weight.

The bottom panels are more than 3/8" thick: thicker and stronger than the typical production fiberglass boat in that size.

The internal framing is characteristic of a fiberglass or composite boat: a monocoque structure made of interlocking bulkheads and stringers, tabbed to the hull and fiberglass chines and keel.

While the hull can be built without it, we strongly recommend building her upside down on a simple jig.



Our jig system is very uncomplicated, self-aligning and economical since we use the internal framing of the hull as molds. Our jig does not require all the precautions, alignments or even a perfectly flat floor that are a must for traditional boat building.

Required Skills:

As all our stitch and glue boats, the P21 is easier to build than other plywood or fiberglass boats. No woodworking skills or special tools are required. The plans include all dimensions and some full size patterns to cut all the hull parts flat on the shop floor. No scarfing required. While she can be build as a first project, some experience with our building methods will save time and materials. If you have never build a boat, try our free canoe plans first.

One of the reasons why our boats are easier to build is the level of details on the plans. For example, for the fuel system, we show not only the fuel tanks (standard part with part number) and their installation but fuel fill, fuel pick-up and fuel vent with part numbers, all in conformity with the ABYC and ISO regulations. Most other boat plans do not even show a fuel tank! We also show rigging tubes for electricity, controls and engine harness, inspection plates, removable fuel tank hatch, foam location between the stringers, hatches dimensions and part numbers, drainage of the casting deck hatches, make and part number for the swing back seat, rod holders in gunwale etc. etc.

All the plywood parts, even the smallest ones are shown with dimensions including cabin and pilot house parts.

Options:

There is room for a bench in the rear if one needs more seating.

Under the gunwales, the frames can be cut to act as rod holders. There is ample storage room in the seat boxes: they extend all the way to the hull sides. With the proper foam insulation, a seatbox can be used as an ice box.

The pilothouse can be partially or completely closed with Plexiglas or Lexan but builders should keep the size of the boat in mind and not make the topsides too heavy or excessively increase windage. Framed or hinged windows are possible but keep them light.

We show a small hatch and portholes in the roof and cabin sides for light and ventilation.

The P21 can be made unsinkable with expandable buoyancy foam under the sole while foam sheets glued under the gunwales will guarantee upright floatation.

This boat can be built with a closed transom for bracket installation.

Bill Of Materials:

(Excerpts from our BOM)

The BOM list materials based on our standard layout and includes a 15% waste factor for resin and fiberglass. For plywood, we use standard sheets 4' x 8' (122 x 244 cm). Meranti marine BS1088 is the plywood of choice for this planing hull.

Plywood 4x8' (122x244cm)

1/4" (6mm)	18	
3/8" (9mm)	13	
1/2" (12mm)	5	
Fiberglass (totals)		
Biaxial tape	400 yards	360 m
Woven tape	50 yards	45 m
Biaxial fabric	41 yards	37 m
Woven fabric	16 yards	14 m
Resin		
Epoxy, total	20 gal.	80 liters

Labor:

The hull can be build in 80 hours but a finished boat will require 300 hours or more depending on the level of detail and the skills of the builder.

More:

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

Plans Packing List:

- 11 detailed drawings with all dimensions required to cut the sides, bottom, bulkheads, deck, floors and all parts from flat plywood sheets: no lofting, no templates required.
- Nesting drawings for the best plywood layout with labeled parts.
- Construction drawings showing assembly with notches, parts numbers for most of the hardware such as hatches, fuel fill, inspection plates etc.
- One full size pattern for the bow mold.
- Drawings list:
 - B249/1 Plan and Profile
 - D249/2 Nesting
 - D249/3 Layout
 - D249/4 Construction
 - D249/5 Stations
 - D249/6 Frames
 - D249/7 Expanded Panels
 - D249/8 Expanded Plates
 - B249/9 Details
 - B249/10 Lamination Schedule
- B221 Typical Small Boat Electrical
- "Building on a jig" file including a detailed description of the assembly sequence and building tips.
- Specific building notes for this boat.
- Bill Of Materials.
- Help files reference list and more.