

A rugged workboat style vee hull, simple to build and economical to operate.

Specifications:		
LOA:	20'-3"	6, 20 m
Max. Beam:	6'-1 "	1,85 m
Hull draft at DWL:	8"	20 cm
Hull weight:	1,000 lbs.	453 kg
Displacement at DWL:	1650 ,lbs.	750 l.
PPI at DWL:	350 lbs.	
Recommended. HP	50-70	
Fuel capacity:	18 gallons	72 l.
Material:	Composite	Stitch & Glue



The hull weight shown in the table includes the console, empty fuel tank and basic rigging but not the engine.

Amateur builders love our **Outboards Dories**, OD16 and OD18 because they are simple, economical and easy to build

seaworthy boats.

Many asked for boats with the same qualities but with a vee-hull.

We designed a set of rugged, simple to build work boats with a vee-hull based on a proven work boat type, the Panga.

In Mexico, the word "panga" applies to any small boat but mostly to beach launched skiffs between 18 and 26' long. The pangas have a narrow beam and high bow. They are powered by relatively small outboards



That type of boat is also very common in Africa and in Asia, in particular Indonesia and the Philippines. The most beautiful example of the type is the famous Saintoise, very seaworthy work boats some as long as 35'.

All those boats evolved from the same hull shape: fishing boats designs from the FAO for third world countries.

In the FAO project, the accent was on ease of building and economical operation. Max. HP rating was 10. Because of their hull rocker, the FAO boats were limited to displacement speeds.

Builders modified these plans to allow the boats to plane with larger outboards but kept the original narrow beam, fine entry and high bow. The result are fishing boats of moderate speed designed to hold heavy loads while maintaining fuel efficiency.

Our design is based on that hull type. It includes the straight run needed to get on plane.

Like other Pangas, our boats are strong but simple to build and economical to operate.



The 20 footer is a very able but small boat for it's length.

The cockpit is self-bailing up to a displacement of 2,000 lbs. at level trim.

Like her bigger sisters, she can be made completely unsinkable with the addition of expandable foam under the sole and under the gunwales. Each two gallon kit of foam provides on the average 500 lbs. of flotation. Considering that the hull material has positive buoyancy, we recommend 3 kits for a total of 6 gallons.

We recommend a 50 HP outboard. With this engine, the PG20 fully loaded will cruise at 25 mph and have a top speed between 28 and 30 mph.

Pangas are designed as work boats, not speed boats and while the PG20 can accept engines as large as 115 HP, we do not recommend to install anything larger than 70 HP.

At DWL displacement and WOT, a 50 HP will give 29 mph and a 70 will go at 35 mph. The minimum HP required to plane at designed displacement of 1,650 lbs is 30.



The interior is clean and simple with a lot of room. With all the open space it can easily accommodate a family for a day on the water.

The builder is given complete freedom in the layout of the boat. As long as the frames shown on the plans are present and common sense is used in weight distribution, almost anything is possible: simple open plan with a center console, thwarts, longitudinal benches, small or large casting deck etc.

The plans show an 18 gallon fuel tank under the casting deck. With the recommended engine, this will provide sufficient range for a full day on the water but if necessary, larger tanks can be installed.

Comparisons:

Compared to our flat bottom OD boats, the Pangas with their vee hulls will require a little bit more skill and more labor to build but not much.

Because of their narrow beam, their performance and behavior can not be compared to other vee hulls of the same overall length except for seaworthiness. In the hands of an experienced skipper, they can venture far offshore and take bad weather but they will not offer as much room or speed as a wider boat of the same length.

Building method:

The boat is built in stitch and glue fashion but is a true composite sandwich. The plywood is a core sandwiched between layers of directional glass and it is the fiberglass that supplies most of the strength, not the plywood. As in our other boats, the frames and decks are part of the structure.

The Pangas should be built the traditional way upside down on a jig made of the frames. This guarantees a nice straight bottom without hook or rocker.

That building method is described in all books about boat building but also in [our HowTo file](#).

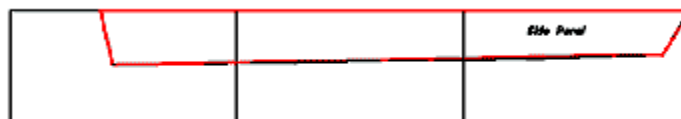
A careful builder could assemble the hull without a jig using the folding panel technique but he must pay special attention to symmetry and bottom straightness.

Required Skills:

As all our stitch and glue boats, the Pangas are easier to build than plywood on frame or most other stitch and glue boats.

A long boat is easier to build because there is less curvature in the panels and this gives an extra advantage to the Pangas.

We worked hard to keep the building as simple as possible: many of the plywood cuts are straight lines, including for the hull panels. The nice curves are created by well planned bending around the frames.



The drawing above shows one of the two side panels on 3 sheets of plywood. Note that the long side is aligned with the plywood panel: no cut. The other sides are all straight lines: easy to measure, easy to cut.

All the plywood parts have been precisely calculated: you cut them flat on the floor, no need for templates, no need to take measurements from the hull framing as in the plywood on frame method.

Options:

The plans show a basic layout with dimensions for a standard center console. The center console is easy to modify if the builder wants to make it taller or wider



Seating, fish boxes, cooler and storage benches can be added almost anywhere. The casting deck can extend further back and the console can be moved back a little bit. We take in account that most builders will have batteries in the stern and compensated by putting the console further towards the boat than usual.



The plans include a typical drawing showing how to cut lids in seats or in the casting deck.

The PG20 can also be rigged with tiller steering but this reduces the max. recommended HP to 40 HP. Do not install excessively large engines: top speed increase will not be significant because this hull is designed for moderate planing speeds. Our designs are consistently faster than fiberglass production boats of the same type and size thanks to the lighter, stiffer hulls and careful design. A larger engine will weigh more, result in poor trim and use more fuel.

Bill Of Materials:

(Excerpts from our BOM)

The BOM list materials based on our standard layout and includes a 15% waste factor for fiberglass. For plywood, we use standard sheets 4' x 8' (122 x 244 cm). Please read the building notes and see the plans for detailed specifications. Marine plywood is specified for the hull. Meranti marine BS6566 cost less than Fir marine and is far superior. See our [online plywood store](#) for pricing. Okoume and Meranti BS1088 are even better.

Plywood 4x8' (122x244cm)	
1/4" (6mm)	5
3/8" (10mm)	4
1/2" (12mm)	6

Fiberglass (totals)		
Biaxial tape	180 yards	162 m
Woven tape	50 yards	45 m
Biaxial fabric	30 yards	27m
Resin		
Epoxy, total	15 gallons	60 liters

Labor:

The hull can be build in 40 hours but a finished boat will require 100 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 numbered parts.
- Construction drawings.
- One full size pattern for the bow mold.
- Drawings list:
- B265/1 Plan and Profile
- B265/2 Construction drawing with notes
- D265/3 Nesting of parts on standard plywood sheets
- D265/4 Stations (= molds) dimensions
- D265/5 Frames
- D265/6 Expanded Panels
- B265/7 Lamination Schedule
- B265/8 Construction details
- B187 Standard Center Console
- B225 Seat lockers
- B221 Typical Small Boat Electrical schematic
- Specific building notes for this boat
- Bill Of Materials
- Help files reference list and more.