

22' Outboard Cat (Cat 22)

Specifications:		
LOA:	21' 6"	6,56 m.
Max. Beam:	8' 3"	2,52 m.
Displacement/draft	2.650 lbs / 13"	1200 l / 0.33 m.
Tunnel height at rest	16"	40 cm
Fuel:	2 x 30 gallons	2 x 140 l.
Recommended engine	2 x 90 HP	2 x 67 kW

* Displacement include engines, fuel tanks 2/3 full, batteries etc. but no crew. Weight will vary in function of options and materials.

This design sat on our drafting table for almost 20 years. It started with somebody showing me the lines of a cat used by the Australian Coast Guard and asking for an epoxy-plywood version. We did not go very far. A catamaran cost more in material and labor than a monohull and after a quick estimate, the project went on the back burner.

Over the years, the same request came back regularly and as many of our builders have proven that they can successfully tackle elaborate projects, I went back to the drawing board and here is the result, our Cat 22 (CT22).



The hull is the well proven Australian model. This type of cat has been in production under the name Shark Cat and more recently as the NoosaCat. (Let's be clear, this boat does not use the lines of the ones listed above, it is the same type of hull). It is a planing cat of moderate displacement, moderately wide hulls, conventional hull shape.

The SkarkCat was and still is, used by several Coast Guard and Sea Rescue organizations. Our boat is a little lighter thanks to our materials but just as strong and seaworthy.

The cat hull form had some natural advantages in handling rough water: stability and softer ride. The Cat22 is an attractive alternative for bluewater anglers looking for a stable offshore craft with plenty of room to move. The shape of cat hulls means that the bow section of the boat is almost as beamy (wide) as that across the aft end. Fishermen or families will appreciate that.



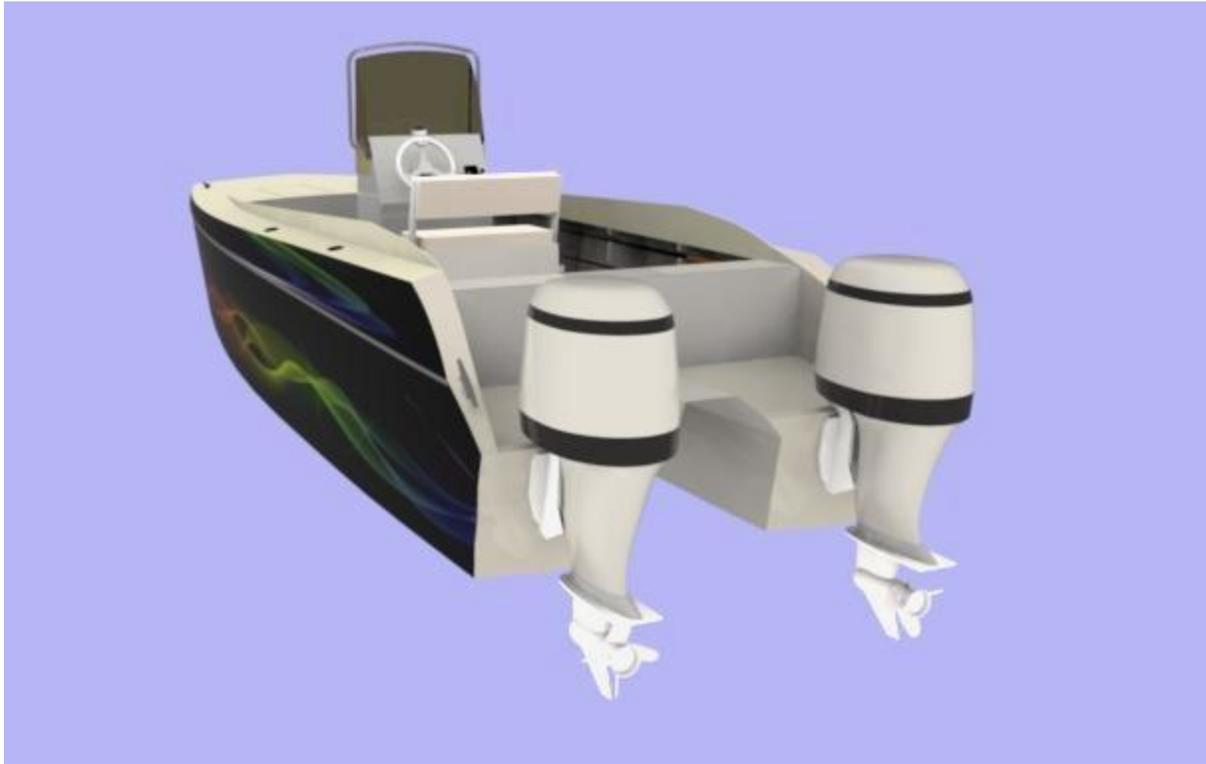
A catamaran is driven differently from a monohull and will not bank inside a turn but we gave the cockpit sufficient depth to keep her safe.

A catamaran feels different. With a standard boat the deck is around water level. The hull of a cat puts you much higher, as you have the tunnel beneath you. Being higher doesn't really hinder the stability, the hull is very stable to begin with. The extra height ensures good visibility, and though only a foot or so higher, it's enough to make a difference when spotting objects in the water, casting at fish and looking for fish or birds.

While not a racing tunnel boat, at speed, our Cat22 takes advantage the cushion of air trapped between the hull and the water to soften the ride. The air cushion is taking the jar out of the ride and add some lift. This gives a soft ride in almost all conditions

At slower speed, some small cats suffer from slamming under the deck. We have seen small power cats of that size with only a few inches of clearance. Our Cat22 has a higher than usual under deck: 16" at rest and the wave slapping is reduced to a minimum.

Most of the spray generated by the bow is directed under the hull of the boat and out through the tunnel. The hulls have relatively wide sponsons aft which contributes greatly to the stability and the lift of the hull. In rough conditions these allow you to plane along at reasonably slow revs

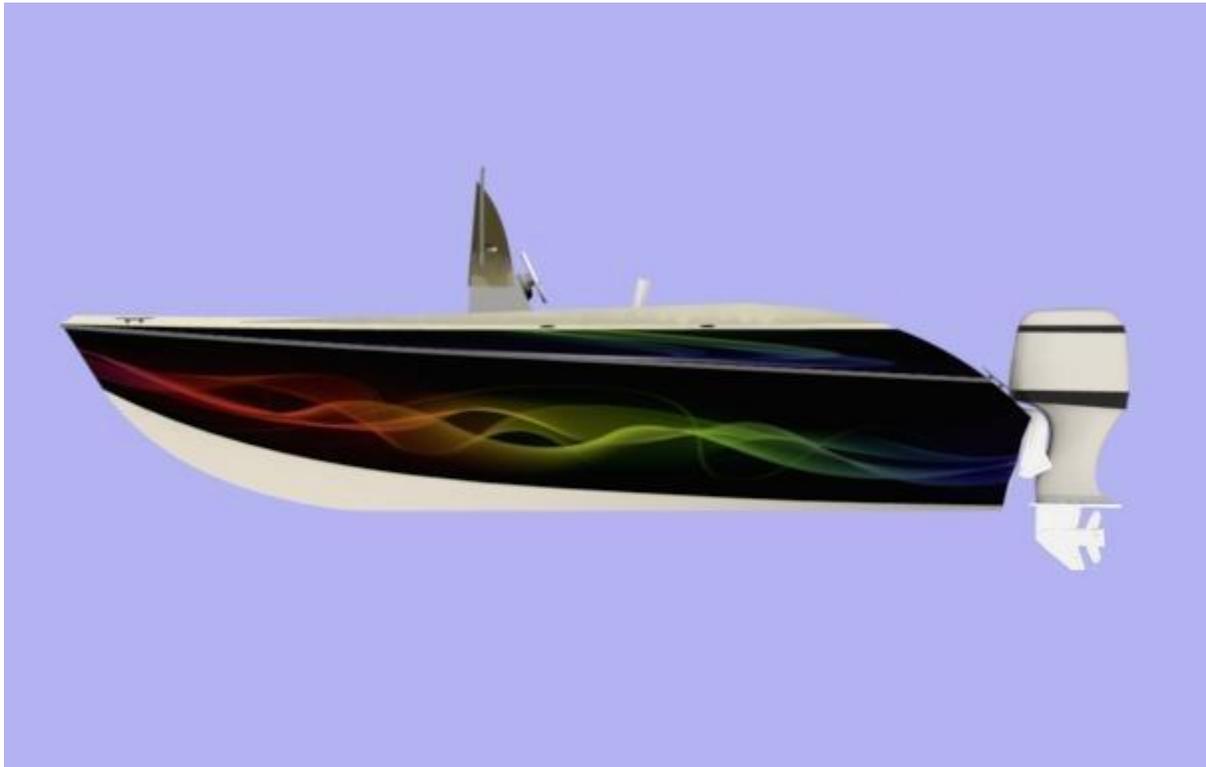


The Cat 22 is only available in a twin-engine version. Whatever you may read in some brochures, a single engine is never efficient with that hull shape. A pair of 90 HP engines will push the CT22 well above 40 mph, two 70's will push her close to 30 mph and whatever the engine size, the CT22 will be more efficient than monohull planing boats at any speed.



The topsides are shaped according to our material (epoxy-plywood composite). Right now, we offer only a center console version, a dual console may be offered if there is sufficient demand for it.

Across the bow a raised area forms a big locker or benchseat which has a fair amount of storage in it, additional storage is available in the sides. We show an integral rod rack that could be made lockable. There is room in the stern for tackle boxes and more. Seating can be added in the stern: one wide bench or two corners seats and the forward step can be made in a bench.



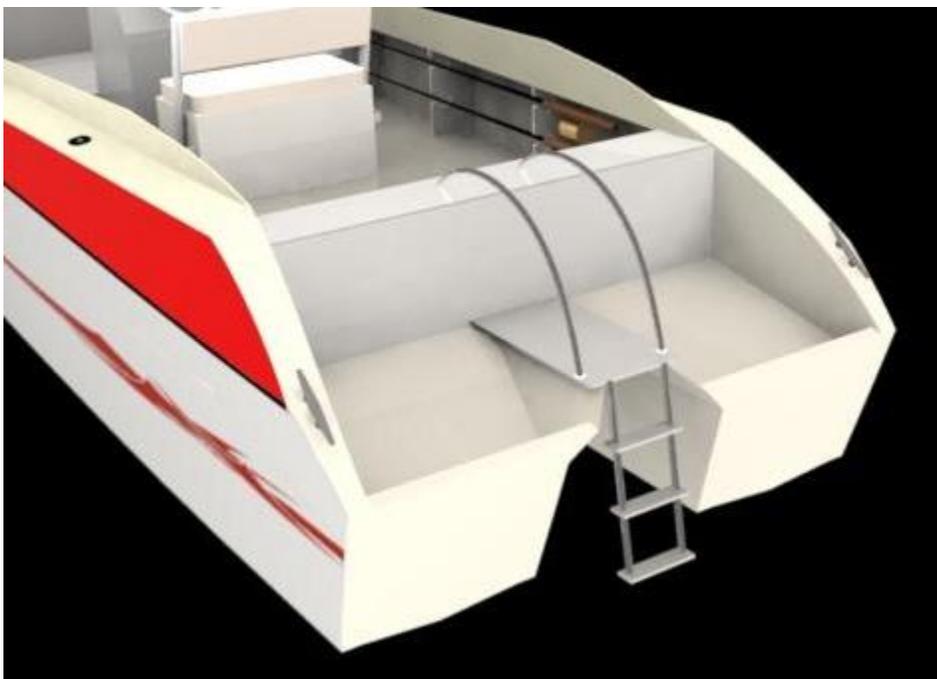
Options:

The standard material is our plywood cored epoxy sandwich. Foam sandwich specifications are available as an alternative.

The plans show a pair of 30-gallon fuel tanks. Much larger tanks can be installed but don't look necessary.



The plans show several center console types: simple one similar to what we use in our other designs and two other consoles with integral tee top. The integral tee top console uses carbon fiber stiffeners. One of the tee top consoles is designed for good weather and maximizes visibility, the other can be made into a pilot house type enclosure with roll up windows. The size of all 3 consoles can be customized: wider or higher.



The coaming shown on the plans is optional

A swim platform can be added to the rear of the tunnel.

For those who want to move components around or check options, we include the weight calculations spreadsheet (printed). That spreadsheet shows all weights with centroids and allows you to move tanks, batteries, add or remove components while keeping the LCG (Longitudinal Center of Gravity) where it belongs.

Building method:



The plans include all dimensions for the jig and detailed notes. We show bow molds.

Also included in the plans, in addition to the specific building notes for the CT22, is our Plywood-Epoxy Composite Boat Building manual (about 80 pages) and the weight calculations.

Required Skills:

The CT22 is a **not** a first-time builder project. The hull shape is complicated, and the builder must be familiar with our method.

The structure relies on quality fiberglass work. That skill is easy to acquire, anybody who has built several of our boats recognizes that the second one is ten times better than the first.

If this is a first boat, build our CC14 canoe from the free plans. You will save labor and materials worth several times what you invested in the canoe.

BOM:

The plywood layout was calculated to minimize waste: we show the nesting of all parts on the plans. However, this is an intricate boat using a relatively large number of plywood sheets for its size. The BOM does not include plywood or resin for the console/engine box but all other parts are included.

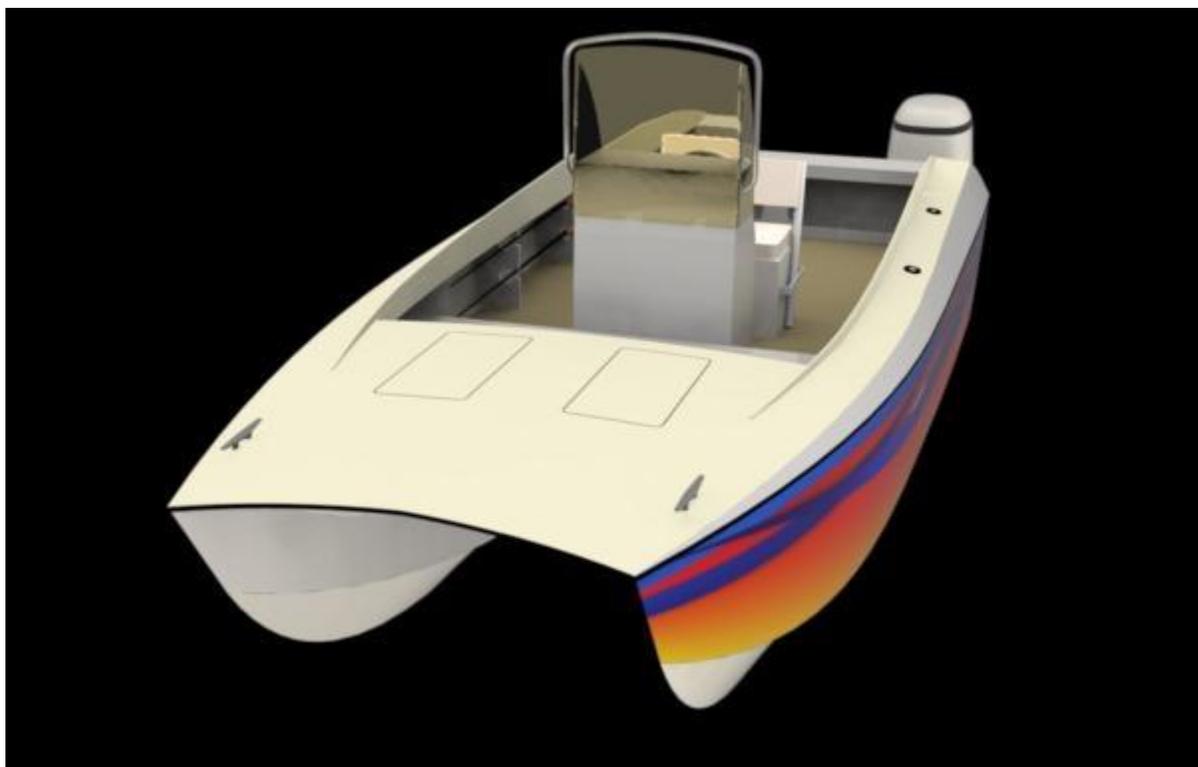
Epoxy resin usage is based on a 50% glass content. Considering how complex the tabbing is, epoxy usage will vary.

Marine Plywood 48x98.375" (122 x 255 cm)		
1/4" (6mm)	27	
3/8" (9mm)	19	
Fiberglass (Totals)		
Biaxial Tape	500 yards	465 m
Biaxial Fabric 50" wide	150 yards	135 m
Resin		
Epoxy, total	30 gallons	120 kg

Not included: fillers, some small cleats (battens), wood strips for the rubrail (from leftover plywood) and paint.

The plywood BOM is based on standard Okoume sheets.

(10 mm plywood is a nominal value, in reality, the plywood is closer to 9 mm.)



Cost & Labor:

Cost and labor will depend very much on how simple you keep the boat. See our kits or supplies at BoatBuilderCentral.com.

We estimate that you will need around 200 man-hours to assemble the hull and jig and between 100 and 200 hours to finish the boat.

More:

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

Plans Package List:

Detailed drawings with all dimensions required to cut **all parts from flat plywood sheets**: no lofting, no templates required.

The plans include our 85 pages shop manual plus detailed building notes specific to this boat plus a complete weight calculation file for those who want to customize the boat and move weights around.

Unless absolutely necessary, we print our plans on tabloid format (11x17) and letter size. This makes reproduction easy: feel free to make shop copies but do not distribute them, the plans are copyrighted.

Drawings list:

- B295_1 Plan and Profile
- B295_2
- B295_3
- B295_4 Construction
- B295_5 Nesting 6 mm plywood
- B295_6 Nesting 6 mm plywood
- B295_7 Nesting 10 mm plywood
- B295_8 Expanded plates
- B295_9 Expanded plates
- B295_10 Expanded plates
- A295_11 Frame 0
- A295/12 to 295/18: all frames, one per drawing
- B295_19 Building Jig
- A295_20 Transom
- B295_21 Systems
- A295_22 Standard console
- B295_23 Console with integral tee-top (2 types)
- A295_24 Swim platform
- Typical electrical diagram
- Complete design weight calculations (5 pages)
- Specific building notes for this boat.
- Shop manual: Epoxy-Plywood Composite Boat Building
- Bill Of Materials and fiberglass lamination included in the notes and drawings.
- Help files reference list and more!