

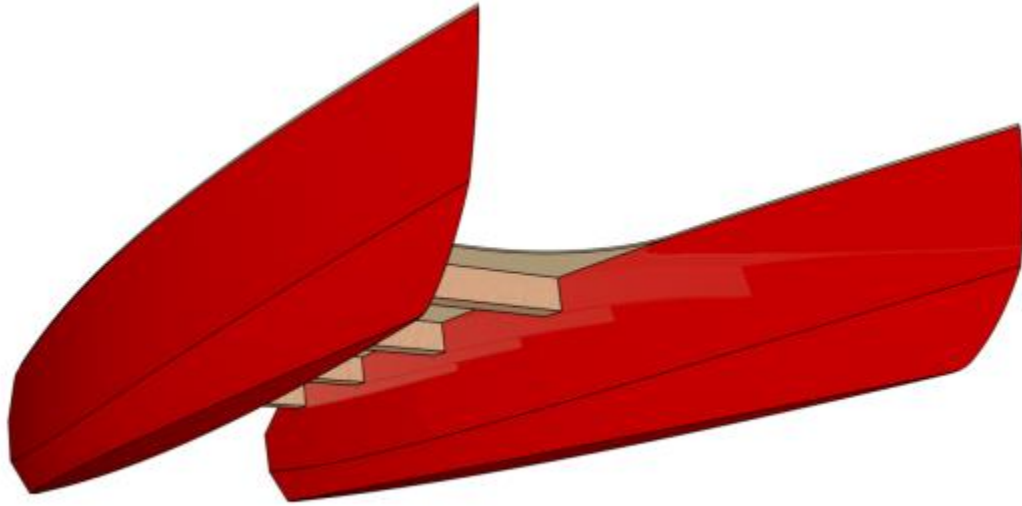


Specifications:		
LOA:	23'9"	7,24 m
Max. Beam:	8-10'	2,40 to 3 m
Hull draft (2000 lb):	9"	20 cm
Displacement at DWL:	2000 lbs	907 liters
PPI at DWL:	295 lbs/in	53 l/cm
Fuel:		
Recommended engine	2x5hp HP	2x4 KW
Material:	Plywood cored epoxy composite	

The E Cat was designed for E-Boat Inc. but that is not the reason for the name. E stands for Electric Catamaran or Economy Cat or Efficient Cat: it is all that. Our material, fiberglass epoxy on a plywood core, is stiff and light and as such, a perfect candidate for a very efficient hull.



Other boats of that type exist: the ELB cat (nicknamed Cowmaran) and the Gougemaran. Their very fine hulls perform well but we wanted a little more volume and a much simpler building method. Here is the result.



The hull section is made of five panels with a narrow bottom. This is the closest one can get to a low drag cylindrical section with a limited number of plywood panels.

The hulls are fine and long: we need that long waterline for speed.

The E Cat 24 is designed for electric or gas power.

Electric motors like the Torqeedo Cruise R 4.0 or the Ray electric outboards 4 or 5 HP are well fitted. The building notes also mention Parsuns motors.

Batteries can be recharged by solar panels mounted on the roof or dockside or on the trailer.

A small quiet generator can be kept onboard to recharge the batteries.

Performance will depend very much on weight. Lightly loaded, with a pair of Torqeedo's 4.0 and two battery sets, the boat will cruise all day long at 6 mph, top speed above 10 mph.

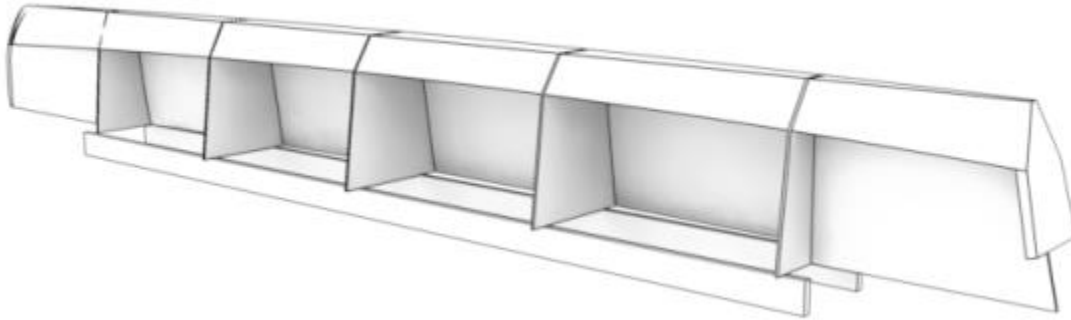
With a pair of small gas outboards 5 HP each, performance will be the same than with the electric motors. With larger gas motors, 10 HP max., the top speed will be around 15 mph with no range limitation.

Those figures are calculated for a boat built as designed.



Building method:

The material is thin plywood between layers of fiberglass in epoxy. The assembly is done the stitch and glue way like all our designs. The E Cats are built in 4 parts: 2 hulls, a set of cross beams and the deck. The hulls are built one or two at a time, the beams and some of the deck furniture are built separately from the hulls. After completion of those parts, the hulls are joined by the cross beams, the assembly is fitted with a deck and deck components are added. The E Cat hulls are built upside down on a jig made from the plywood frames or from throw away molds.



Skill Level:

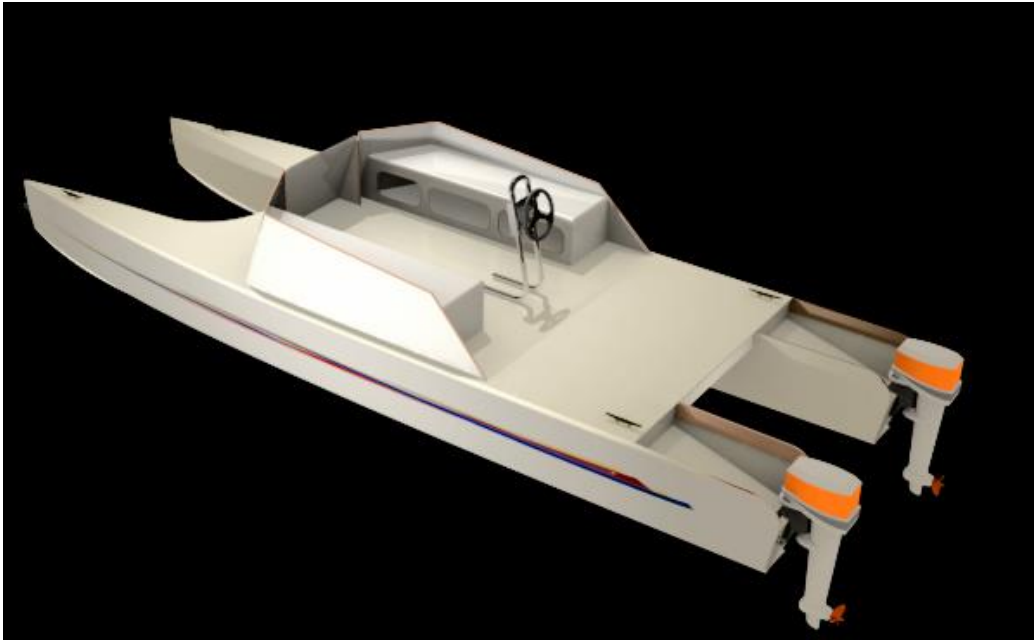
The EC24 is not difficult to build. Each hull looks very much like a large flat bottom kayak. The deck is flat, the cross beams are made from plywood and battens, all very simple. It is within the reach of a first time builder but familiarity with our method will save a lot of materials and make the process faster.



Options:

All the options below are included in the plans and/or building notes with most dimensions and explanatory notes.

Beam: The designed beam is 8' (244 cm) but the EC24 can be built up to 10' (300 cm) wide. The plans show how to build longer beams for a wider boat.

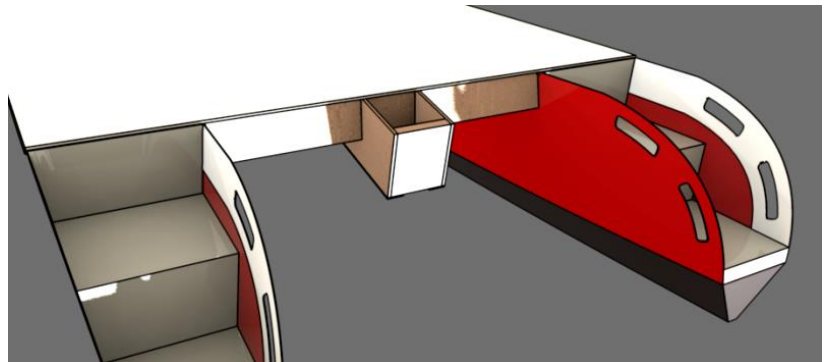


The EC24 can be powered by a single engine:



The plans include dimensions and specifications for the bracket and the building notes explain how to adapt the bracket to different shaft lengths. The minimum shaft length for a single motor is 20".

The single outboard or electric motor hangs on a simple small bracket welded to the last cross beam.



Deck Layout:

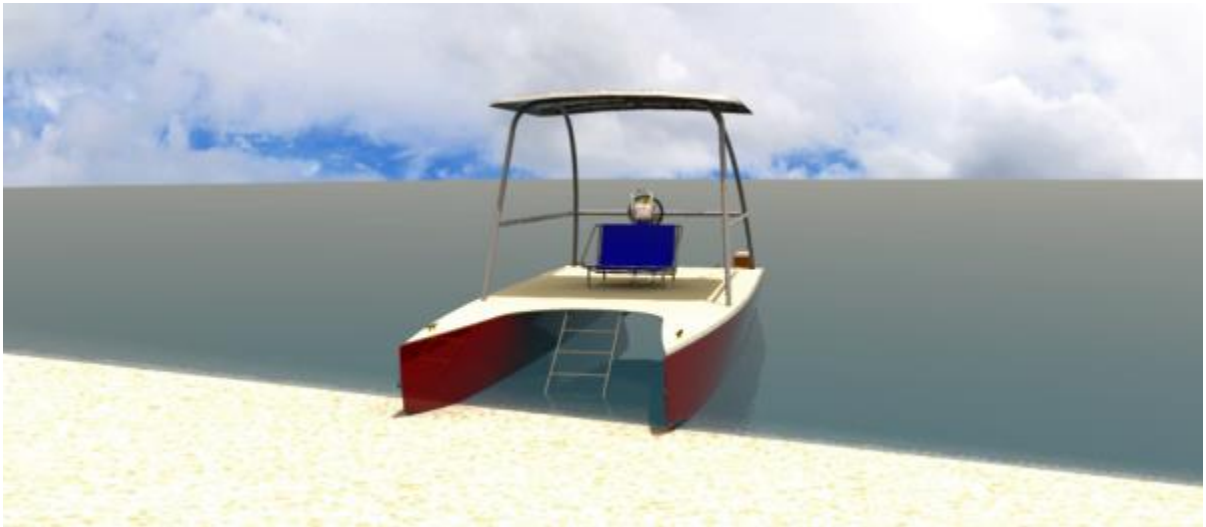
The exact deck shape can be customized to the builder's preference but please do not extend the deck all the way to the stern or to the tip of the bow: we must keep the ends of the boat light. Think of the EC24 as a 20' boat with extended hulls, not a full 24' boat. Those ends are needed for buoyancy and to extend the waterline. The deck type and furniture is to the builder's preference but we show 4 layouts with specifications and basic dimensions to use as a starting point:

- A fixed roof with specifications and dimensions for Al or carbon fiber tubing frame.
- A folding roof with the same specs. This will be preferred for towing.
- A center console surrounded by benches, no roof but it can take a Bimini top
- A pontoon boat type railing.



Power:

The building notes cover in detail several electric power options and one gas power version. We list supplier's information for motors, batteries, chargers and solar panels. We even cover the type and size of electric cables. We discuss the type of batteries and motors available. We also discuss how to link the twin motors (gas or electric) with a tie bar or dual cable Teleflex steering. More: The building notes list a small boat console and a under deck ladder supplier.



The BOM is based on the standard 8' beam. Resin and fiberglass use vary a lot depending on the builder's experience. Deck furniture is not included in the BOM.

Bill Of Materials:*(Excerpts from our BOM)*

The BOM list materials for the complete boat as designed.

Plywood standard sheets 4x8'		
12 mm (1/2")	2 sheets	
10 mm (3/8")	7 sheets	
6 mm (1/4")	11 sheets	
Boards and Battens		
1x3	120 feet	
1x1	100 feet	
Fiberglass fabric 50" wide (125 cm) or tape 6" wide (15 cm) (totals)		
Biaxial tape 45/45 12 oz. (400 gr)	300 yards	366 m
Woven fabric 6 oz. 50" wide	35 yards	32 m
Woven tape 9 oz. 4" wide	6 yards	5 m
Resin		
Epoxy, total	9 gal	30 Kg

The BOM above does not include deck furniture or roof framing.

Labor:

Each hull can be assembled in 40 hours, the whole boat ready to sand and paint should not take more than 200 man/hours for somebody with moderate experience.

More:

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

License:

As with all our plans, you have the right to build one boat from those plans. The designer holds the copyright to the design, and you purchase a license to build one boat. If you plan to build more than one boat, please contact us about licensing fees.

Building standards:

These plans were drafted according to the ABYC rules. The ABYC (American Boat and Yacht Council) defines the boat building standards in collaboration with the USCG.

Professional builders may be subject to more requirements. Consult the designer.

The ABYC standards are very close to the ISO norms and CEE requirements but no European certification was applied for since this is not required for amateur boat building in Europe. CEE/ISO certification is available to professional builders for a fee.

Plans Packing List:

Plans are available in metric or US units.

- B302/1: Plan and profile, main dimensions.
- B302/2: Nesting on standard plywood sheets
- B302/3: Stations and molds, dimensions and location.
- B302/4: Hulls panels, dimensions to cut plywood flat.
- B302/5: Jig with bow and transom mold.
- B302/6: Frame details.
- B302/7: Cross beams and wider boat option.
- B302/8: Fiberglass details (lamination schedule listed in the notes)
- B302/9: Deck and deck details.
- B302/10: Layout Center Console type
- B302/11: Layout Fixed roof with framing.
- B302/12: Layout Folding roof with framing
- B302/13: Layout Pontoon boat railing.
- B302/14: single engine bracket.
- B302/15: Swim Steps.
- Detailed building notes specific to this boat, with pictures. (about 30 pages)
- Our Plywood-Epoxy Composite Boat Building shop manual, about 90 pages.