

SPECIFICATIONS

LOA	28'-2"	8,60 m
Max Beam	10'	3,05 m
Draft at DWL	34"	86 cm
Displacement light/full	7500/9750 lbs.	3400/4400 l
PPI at DWL	920 lbs.	418 kg
Recommended HP	35 to 50	30 to 40 Kw

NEW: the plans now include complete scantlings for foam sandwich (October 2007)

Our Trawler 28 is a sturdy offshore trawler with a straight inboard diesel.

The hull is a typical displacement hull, trawler type. This means a relatively wide beam for her length.

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DESCRIPTION



Displacement hulls are typically used for work boats, fishing boats and pleasure boats where moderate speeds are sufficient to fulfill operating requirements. Displacement hulls are generally considered more suitable for serious offshore cruising than planing hulls. With their big rudders, and deep keels, these boats can turn on a dime and punch through seas that would stop lighter ones. They also use less fuel, have smaller engines, more range and cost much less to operate than planing hulls. Her optional mast with steadying sail will ease the motion in a beam or following sea. Rigged with a jib, it enables her to reach a downwind port in the event of engine trouble. The boom can be used as a dinghy hoist with the tender stowed on the roof during long passages. Displacement hulls can carry much larger loads than planing hulls

of the same length: no problem with storing more than 2,000 lbs. aboard our Trawler 28. This makes our Trawler 28 an ideal boat for a couple to live aboard or for a crew of 4 that wants to go far in safety and comfort. The economical diesel engine gives her a range of around 1,000 miles at displacement speed. This type of vessel is not limited to short day cruises from harbor to harbor, she can remain offshore for long cruises going steadily 150 miles a day. One particularity of this design is the relatively wide box keel somewhat in the style of the Jersey skiffs. W. Atkins was a great believer in that feature, and we have used it on long range sailboats between 32 and 65 feet. That keel is a NACA profile and has very little drag. It is easier to build than a keel with outside ballast and allows us to install the engine very low. This gives a shallow shaft angle which is more efficient, and the low engine installation angle gives better lubrication, extends engine life. Plus, it lowers the engine weight and gives easy access to trim ballast. Access to the shaft coupling and stuffing box is also much easier than on most boats. This hull is designed to have around 2,000 lbs. of ballast, some of it is trim ballast. We say "around" because some amateur builders will increase the scantlings and increase the hull weight despite our assurances that the boat is strong as designed. In that case, less ballast will be needed to bring her down to her lines. Others will outfit the boat with plenty of extra equipment and the amount of ballast can be adjusted accordingly.

SOME FIGURES:

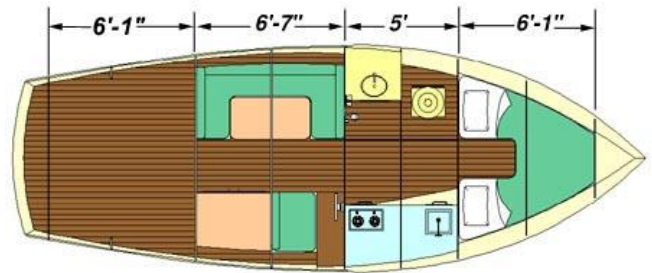
Our Trawler 28 is a medium to heavy displacement boat with the motion and feel of a little ship. Her D/L (displacement to length ratio) is 240 fully loaded and 216 at medium load. For comparison, a Kroger 48 trawler has a D/L = 267 and most of the G. Buehler designed trollers are lighter between 165 and 220. Her calculated range with the 80 gallons tanks is as follows:

- At 5.1 kn. (6 mph): 1360 NM,
- At 6 kn. (7 mph): 800 NM
- At 7 kn. (8 mph): 465 NM

Those figures are for calm weather but even with a 50% safety margin the range is impressive. BTW, there is room to double the tank capacity and range. She is designed to operate around the theoretical hull speed of 7 knots. To achieve that speed requires less than 20 HP at the shaft but we designed her with a 40/45 HP diesel engine, either Vetus Mitsubishi or Nannidiesel/Kubota.

LAYOUT:

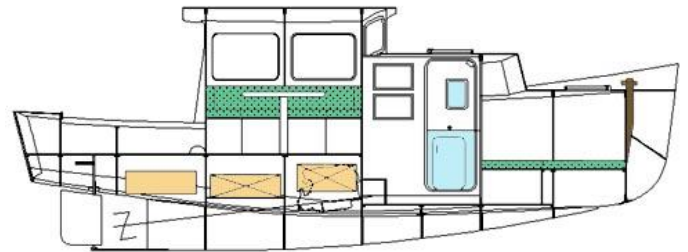
This is a real double cabin "yacht" that will easily accommodate a family of four if not five in comfort and privacy. The standing headroom is 6'-1" in the pilot house and 6' 4" in the galley, shower, and forward cabin. The plans show some layout options: one with the cockpit sliding door in the middle and a U-shaped dinette and one with a door offset to the side and larger L shaped dinette. If you build the boat with the steadying sail mast, you must use the offset door.



The dinette will seat four or more and the table drops down to become a double bed. There is room for a cabin heater or even a wood stove with chimney behind the steering station. That side of the pilothouse can also be fitted with a fold back steering seat and a sofa behind it that becomes a full-size extra berth. As designed, the space behind the steering position is a chart table with room underneath for an entertainment center. The three-part windshield windows can be hinged along the upper edge to open for ventilation in hot climates. The plans also show small hatches in the cabin roof.



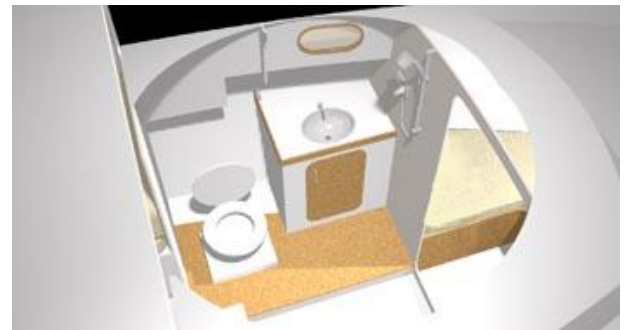
With two more hatches forward, the Trawler 28 has enough air circulation and will not require AC to be comfortable in tropical climates. From the saloon, you step down to the full-size galley on the starboard side. There is ample room for a stove with oven, a good-sized sink, fridge, and storage. There is a dorade vent over the galley and another one over the head plus an optional large hatch in the middle.



large hatch in the

middle. Across the galley there is a fully enclosed roomy head complete with shower. There is at least 6' 2" standing room in the shower. The forward cabin has a wide and long vee berth that becomes a double with an insert in the vee. It is possible to build a one piece double on the port side with a seat or cabinet on the opposite side.

The builder has complete freedom to modify the layout as long as all the framing is present. Along the full length of the cabin, there is storage room under the sole and much more under the seats and berths. The box keel is deep and can be used to store reserve anchors and chains. Outside, the self-bailing rear deck is wide enough for folding chairs, a barbecue and more. The transom lockers are large enough to store good sized fenders plus plenty of lines and other gear. Gunwales run along the full length of the cabin and handrails on the roof will make maneuvers easy.



The self-bailing rear cockpit is wide enough for a lounge chair or more storage. It can be covered with a Bimini top or, if the mast option is chosen, covered by canvas over the boom. The forward deck is raised: there is a 10" step in the gunwale hidden behind the bulwark. This explains all the headroom downstairs and the unusual feeling of space for a boat of this size. There is a sturdy sampson post on the foredeck. That post extends under the deck, workboat style, along the chain locker bulkhead: much sturdier than the tiny little cleats with almost no backing plates found on production boats. You can anchor in really bad conditions without worrying about the deck being torn apart. The anchor locker drains overboard.

BUILDING METHOD:

The Trawler 28 is built the stitch and glue way: simple, fast, and strong. She is not a plywood boat held together with some resin and glass tape. The hull is a true composite in which most of the strength comes from the fiberglass/epoxy skins. The bottom planking thickness varies from 3/4" to 2". Epoxy is used for all fiberglass laminations and all plywood parts are saturated with resin. Completely encapsulated in epoxy, the plywood will not rot. The monocoque structure with its fiberglass framing is typical of composite boats: stronger than plywood on frame. The hull assembly is very simple. The Trawler 28 is built upside down on a jig like most large boats. It is also possible to build this hull in a basket mold, right side up. The superstructure can be built from our plywood-epoxy-glass composite or as a foam sandwich composite if the builders choose that option. There are several advantages to a foam sandwich superstructure. Lighter topsides and excellent insulation, an important factor for long cruises. Less condensation and easier temperature control. The plans show specifications for the two methods: a cabin made of regular plywood and epoxy and our sandwich panels. We can supply all the materials for either method. October 2007: the plans now include scantlings for the foam sandwich hull. See our foam sandwich tutorial. That is how you would build the TW28 in foam sandwich with one difference. For the TW28 we would use wide foam sheets, not strips.

REQUIRED SKILLS:

Like all our stitch and glue boats, the TW28 is easier to build than plywood on frame or fiberglass boats. There is no wood framing, no delicate assemblies with tight fits, no need for special tools. Since the strength comes from the fiberglass, small gaps between parts are recommended: a 1/4" cutting mistake becomes a blessing! The plans are very detailed. Each part hull panel, stringer, bulkhead, frame, floor etc. is described. We understand that engine installation and alignment, rudder and steering, exhaust and other parts of the building may be intimidating but we divided the building process in simple steps described in detail in our building notes. There are specific plans included for the rudder and steering system, complete engine installation with shaft, fuel, electricity, cooling, exhaust etc. etc. On request, we will supply more drawings and specifications if necessary, but our plans are more detailed than any others: see the list of drawings at the end of this page.

OPTIONS:

We highly recommend building the superstructure from foam sandwich. This option will result in a very sturdy cabin structure with great insulation. Condensation is greatly reduced in a foam sandwich cabin; it is a great factor of comfort. Next, we highly recommend building the steadying sail mast. It will not only stabilize the boat and add the safety of an emergency sail, but the Trawler 28 looks much better with a mast. We show two types of steering: cables on quadrant and hydraulic. Other engines than the one shown can be used, for example the Toyota or Kubota diesels from Nannidiesel Engines. Many parts like tanks, hatches, steering quadrant, vents etc. can be made by the builder. The plans show details for those parts but also manufacturers part numbers. It is possible to build the Trawler 28 completely in foam sandwich. This will increase the cost of the hull materials by around 60%. Fiberglass scantlings are shown below. There are many possible changes in the layout: as long as the builder keeps the framing intact, almost anything is possible. Some will ask to enlarge the boat. Lengthening is possible to maximum 10% but the builder will have to recalculate most dimensions. Scaling her up in 3 dimensions would require new complete hydrostatic calculations and scantlings, we do not support those changes.

LABOR

The hull will go together fast: around 200 hours for the average builder. The superstructure, appendages, mechanical installation and inside cabinetry will require more labor. This will bring the total up to 1,000 hours for a boat show finish or as little as 500 work boat style.

MORE

Visit our [forum](#), 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.

BILL OF MATERIALS

Plywood (4x8' – 122x244cm)		
6 mm (1/4")	16	
12 mm (1/2")	40	
Also see our CNC Kit , which is a precut plywood kit that includes all the plywood needed to build the boat as designed.		
Fiberglass Fabric and Tape		
Fiberglass Biaxial Tape 45/45 12 oz., no mat, 6 in.	420 yards	384 m
Fiberglass Tape 6 oz., 4 in.	50 yards	45 m
Fiberglass Cloth 10 oz., 50 in.	150 yards	137 m
Biaxial Cloth 12 oz., 50 in.	115 yards	105 m
Fiberglass Cloth 17/08 oz., 50 in.	50 yards	45 m
Resin		
Epoxy	39 1/2 gallons	150 liters
Also see our MarinEpoxy or Silvertip Epoxy kits which include all of the epoxy and fiberglass listed.		

This BOM covers all the supplies for this boat as designed. Usage of materials will vary in function of several factors. An experienced builder will use less resin. First time builders always use more resin, take that in account. Our resin usage calculations are based on a 50% glass content. Options, customization, and variations in fabric and foam cutting preferences will also affect the Bill of Materials. Our figures show an estimated average. Small variations in fiberglass specifications are acceptable, consult us for substitutions.

PLANS PACKING LIST

Plans are available in metric or US units.

- [📄](#) B224_1 Plan and Profile
- [📄](#) D224_2 Construction
- [📄](#) B224_3 Nesting
- [📄](#) D224_4 Stations & Frames
- [📄](#) D224_5 Expanded Plates
- [📄](#) B224_6 Appendages
- [📄](#) B224_7 Lamination Schedule
- [📄](#) D224_8 Sail Plan
- [📄](#) D224_9 Sail Plan - Marconi Sprit Rig
- [📄](#) E224_10 Full Size Patterns for Seat Tops and Mast Partner
- [📄](#) E224_11 Full Size Patterns for Transom and Frames
- [📄](#) B225_c Seat Lockers
- [📄](#) Specific building notes for this boat
- [📄](#) Help files reference list and more.