

## **INDIGO**

LOA 52.3', LWL 42.4', Beam 14.8', Draft 5.3/11.0'

Displacement: 50,000 lbs

Designer: Dieter Empacher

Built: 1984 by Cenmarine, Cape Town, South Africa



*Indigo* was designed by Dieter Empacher and built by Cenmarine of Cape Town, South Africa in 1984. At that time, Cenmarine specialized in high quality custom yachts built of welded aluminum, to the rigorous standards demanded by the tough sailing conditions around Cape Town and the Cape of Good Hope. Dieter designed her for an American owner who wanted a cruiser/racer, to be a fast, handsome seaworthy vessel capable of long ocean passages, and one that a man and woman could easily sail and live aboard indefinitely. She had to sail well, particularly in light airs, to be well balanced in all conditions, and to have a comfortable motion in a seaway in all conditions. Welded aluminum construction of the hull, deck and superstructure was chosen for its great strength and high impact resistance, should the vessel ever strike a reef, rock or a semi-submerged container at sea. Welded aluminum construction also solves structural problems at high load areas such as chain plates, rudder posts, rudders, center boards, winches, windlasses, mast step, etc. With today's technology, aluminum corrosion is no longer an issue with a well built vessel if properly addressed during construction and operation of the vessel. The hull above the waterline, the deck and cabin top are well insulated for temperature comfort in a wide range of weather conditions, as well as for sound insulation.



*Indigo* carries 21,000 lbs of lead ballast, cast inside the hull around the centerboard trunk. Her sail area is 1,313 sq. ft. She carries 150 gallons of fuel in two aluminum tanks amidships under the cabin sole, and 300 gallons of water in four aluminum tanks amidships under the cabin sole and salon berths. Auxiliary power is an 84 hp naturally aspirated Perkins 4.236M, mounted under the cockpit, with the drive shaft thru a Walters V-drive with a 2.56:1 reduction gear, to a 22 in. 3-bladed feathering Max Prop. This design permits a horizontal prop shaft, with the prop protected behind the keel, but ahead of the balanced rudder which is hung on a partial skeg. *Indigo* does 6.9 knots under power in “mill pond” conditions at 1800 rpm. The 4.236M has a maximum rated rpm of 2800. The deep balanced rudder and its vertical shaft are as far aft as possible with the rudder’s trailing edge at the aft end of the waterline. The rudder is supported by 3 bearings – at the bottom of the partial skeg, at the waterline and at the deck level. This configuration gives the boat good maneuverability when docking or mooring “Med style.”

The sloop rig has the mast fairly far aft, similar to where a cutter rig would place it. The large fore triangle permits sailing well in any breeze over 10 knots with only a 105 % full hoist high clew genoa set. The boat is well balanced with this sail only and tacks well. This sail is 8.5 oz. Dacron, as is the mainsail, to achieve maximum durability in the tropics. We have achieved 10 knots boat speed with only the genoa set, with the wind at 40 knots on the beam, and the rail barely awash. (This was NOT on purpose – we got caught in a squall of short duration.) The genoa is 800 sq. ft. The mainsail is 600 sq. ft. The rig is masthead, with double spreaders. The spars are of welded aluminum construction. Standing rigging is rod by Navtec, with a Navtec hydraulic backstay adjuster and hydraulic boom vang controlled from the cockpit. The 800 sq. ft. genoa is on

a Reckman roller furler, controlled via a furling line from the cockpit. The inner forestay goes to the second spreaders, and is used to set a full-hoist heavy staysail on hanks or a storm jib. Running backstays support the mast at the second spreaders. Double lowers go to the lower spreaders. All halyards are led to four Lewmar self-tailing # 46 & # 48 winches on the mast. The main halyard goes through a single block at the headboard, giving it a 2:1 purchase, and is lead to a # 48 winch. The mainsail is fully battened with slab reefing, with the reef lines led through locking cams at the gooseneck, to a dedicated reefing winch on the mast under the gooseneck. As shown in the accompanying photos, there is good working room for halyard handling and reefing around the mast base. The spinnaker pole is carried on the mast.



A 66 lb. Bruce anchor is carried on one of two bow rollers and serves as the working anchor, with 300 ft. of G4 high strength 3/8 in. galvanized chain. The vertical windless is a 3,000 lb. Nilsson from New Zealand. It is also used as a warping winch when docking. A 6 man liferaft is carried just forward of of the cabin trunk.



A 10.8 ft. RIB dinghy is carried amidships, just forward of the midship companionway dodger, on top of the cabin. For long passages it is deflated, and as such does not obstruct sightlines ahead of the boat thru the dodger windows. Usually, it is towed when coastal cruising and has good stability due to its fiberglass bottom. The 15 hp outboard is carried on the stern rail.





The traditional aft cockpit layout has relatively high coamings for comfort and safety. The primary sheet winches are Lewmar # 65 self-tailing electrics, the secondary winches are # 55 manuals. The staysail sheet winches are on the cabin top outside the dodger, the main sheet winch on the cabin top under the dodger to port, and the centerboard wire winch to starboard of the companionway. The permanent cockpit bimini has windows for seeing sail trim when under sail, and have Velcro-held sun covers on the underside for use when not sailing.



The entryway at the base of the companionway is open to a double quarter berth and tool chest to starboard. To port is a cabin with another double quarter berth and the aft head with separate shower on the center line of the boat. This shower is also accessible from the galley passageway as well as the head. As such, it serves as a wet gear hanging locker when on passage.

The navigation equipment includes Furuno GPS and NAVTEX receivers. The Raytheon 4 kw radar is being replaced with a Furuno 1835 including AIS & ARPA capabilities in the nav station and a FMD 1835 slave station in the cockpit under the dodger. The wind and depth instruments are Brookes & Gatehouse Hornet and Hecta units mounted in the nav Station, with repeaters in the cockpit. There are two autopilots, a Robertson unit and a separate Alpha Marine Systems unit, both with dedicated tiller arms on the rudder shaft. Both are operated from the nav station or with remote cable control units in the cockpit. Electronic charting is based on Nobeltec VNS software running on laptops, with raster charts. The AIS receiver uses a dedicated antenna on the radar tower.

The communication equipment includes two ICOM VHF radios, one in the nav station with a masthead antenna, and a separate cockpit unit with its dedicated antenna on the radar tower. Also there are two ICOM SSB/HAM radios, an M710 and an HF Transceiver IC751, with separate tuners at the backstay antennae. Both have full SSB & HAM frequency capabilities. The IRIDIUM Sat Phone is in the nav station with its antenna on the radar tower. It has data-connect capability for weather grib file downloads and email using Sail Mail, as well as for voice connections. Sail Mail is also used with a Pactor modem and the SSB radios.



The large open saloon is shown in the accompanying photos. The two settees serve as bunks on passage, with lee cloths. Thus, with the two quarter berths, four people off watch can sleep aft of the mast when going to windward. This open saloon layout serves a live-aboard couple well. *Indigo's* open fore-and-aft layout provides good ventilation, augmented by six large dorade ventilators. There is a midship companionway and ladder at the aft end of the main saloon, with its own dodger, providing additional light below and ventilation.





The seagoing galley is designed for use by one person in all weather conditions. Under the entire forward counter is a large refrigerator with three levels available through top and side openings. The equally large freezer is outboard, and extends out to the full beam of the boat under the storage lockers above it. The Grunnert refrigeration system uses two totally independent systems with a total of 5 holding plates. Each plate has dual refrigerant coils. One system has an engine-drive compressor. The other uses a 110 volt AC compressor, powered either by shore power or a 2.5 KW inverter run off the ship's 12 v batteries. *Indigo* has an isolation transformer with dual windings for shore power, to accommodate separate connections to 110 v or 220 v, 60 or 50 Hz. Once past the isolation transformer, *Indigo* is 110 v on the AC circuits.

The house batteries are in two banks, each with two 8D Lifeline AGM batteries in parallel. They are installed near amidships under the cabin sole adjacent to the galley and under the shower. Each bank is charged by a dedicated 140 amp. alternator, with externally regulated high charge-rate staged Ample Power Control systems. When the two battery banks are in parallel and charged off the Perkins diesel, the Heart inverter can be activated to power the 110 v AC refrigeration system without draining the batteries, while the engine-drive refrigeration compressor is powering its separate refrigeration system. These two refrigeration units are run in combination twice per day in the tropics, for a total of two hours per day, to keep the freezer and refrigerator at their required temperatures. 12,000-13,000 Btu/hr. are "extracted" from the freezer/refrigerator when run in this combination. This "run time" also keeps the batteries topped off, while at anchor for extended periods. The loading of the Perkins associated with this charging cycle keeps it from loading up with carbon when run at "fast idle." Concurrently, the 12 v DC Village Marine 200 gal/day watermaker is also run, adding 17 gal/day to the ship's supply in two hours. The starting battery for the engine is an Optima spiral wound AGM.

*Indigo* has large storage lockers all around the saloon, galley and cabin perimeters. This is accommodated by her ample beam which extends aft to the cockpit. The starboard cockpit locker holds the watermaker; the port cockpit locker holds two SCUBA dive tanks in racks, in addition to spare anchors, lines, etc. Two 20 lb. aluminum propane tanks are in a dedicated locker in the lazarette, providing fuel for the Force 10 galley stove.

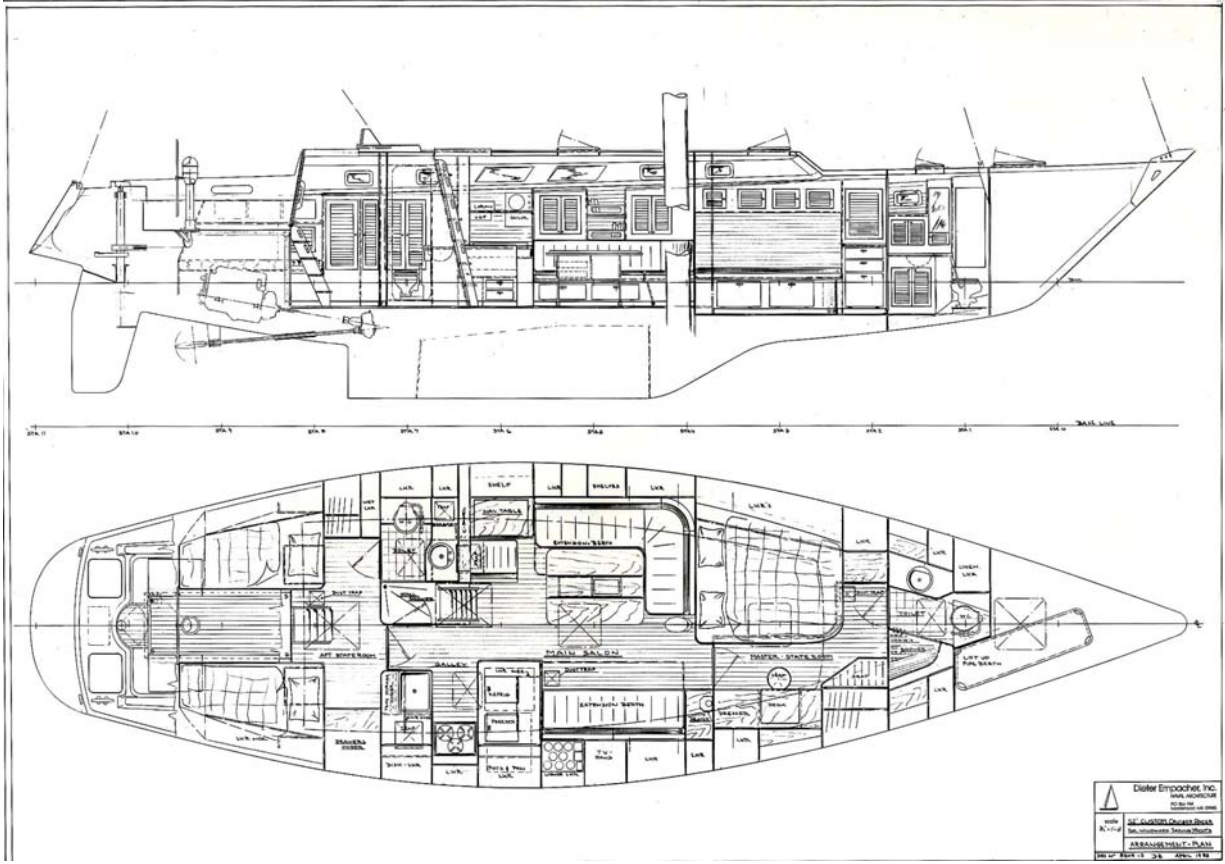


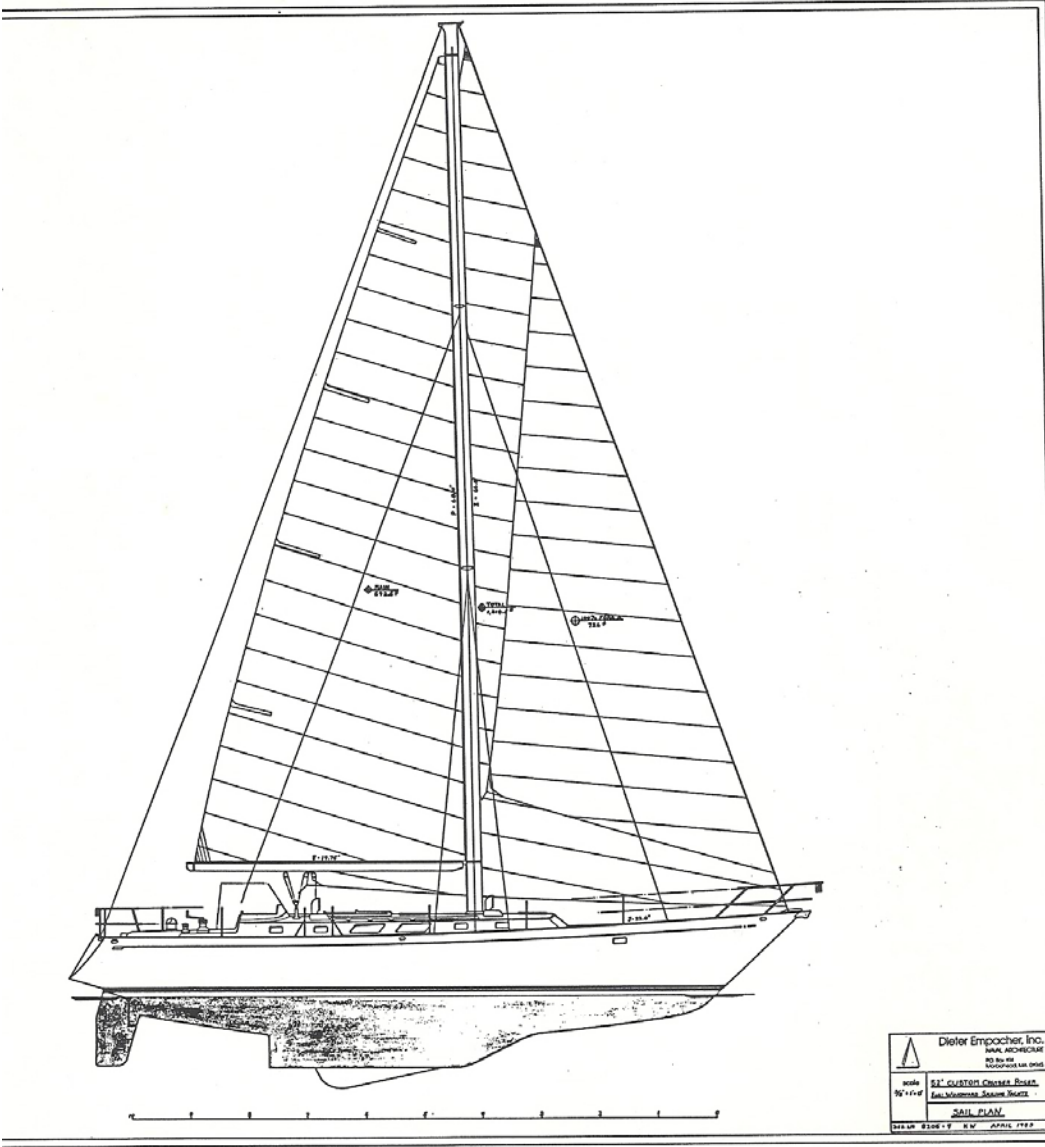
Forward of the mast is a full-width owner's stateroom. A large queen-sized double berth with lee cloths is to port. To starboard are a desk, hanging locker and seat. Forward of this stateroom is a second head, with hull port holes within the flair of the hull near the bow, providing additional ventilation, particularly when at anchor in the tropics. Forward of this head are storage lockers and an entrance to the large sail locker.



*Indigo's* passerelle, is used for mooring Med style. It is approximately 9 ft. long and made using laminated teak stringers, with a bowed shape to give it strength. The bow helps with quay clearance when the boat is lower than the quay, and also to fit the curvature of *Indigo's* hull when stowed underway on its side on special folding arms swung outboard from two lifeline stanchions just forward of the cockpit.

The current owners purchased *Indigo* in 2000. They spent two years sailing on the Great Lakes. In 2002 they retired and sailed to the Caribbean and South America, as full-time live-aboards, 12 months per year. In 2007 they sailed to the Med., and have spent the last three years cruising the eastern Med, from Italy east to Turkey, up and down the Aegean and south to the Suez Canal, cruising in all the countries in between. They have spent winters in Turkey, in marinas, while enjoying winter “vacation” travel inland. The interior photographs shown were taken in Marmaris, Turkey just prior to their annual Christmas eve open house.





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