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CONDITION & VALUE SURVEY

Of

S/V COMPAÑERA II

The Captioned Vessel

STANDARDS USED IN INSPECTION OF THE VESSEL INCLUDE ABYC, NFPA, USCG AND THE STATE OF CALIFORNIA

PARTICULARS

Report #: 20-000
Date: March 16, 2020
Owners:
Survey Requested By:
Where Surveyed: Schoonmaker Point Marina, & KKMI, Sausalito, CA
Afloat/Hauled: Afloat & while hanging in the Travelift slings
Vessel Name: *COMPAÑERA II, (ex. Détente)*
Type: Sai/sloop
Service: Private/pleasure
Home Port: Sausalito, CA

Official #: 986419

Hull ID#: 875629
Builder: Robertson Boat Builders, NZ
Designer: Bruce Farr Yacht design, LTD.
Model: Farr 44
Year Built: 1988
Date Last Hauled: August, 2018
LOA: 44' 7"
Beam: 13' 1"
Draft: 7' 6"
Displacement: 22,667
Vessel Color Scheme: White topsides with blue cove & boot stripes, white cabin & cockpit

DECK HARDWARE

1 Harken MK III headsail roller furler
1 Harken adjustable mainsheet traveler
2 Harken double halyard organizer blocks
2 Harken adjustable jib/genoa sheet tracks
Assorted Schafer fixed pin jib sheet tracks
2 Lewmar genoa sheet double turning blocks
Spinlock Cam-0814 single rope/halyard clutches
2 Spinlock Cam-0814 double rope/halyard clutches
Spinlock Cam-0814 triple rope/halyard clutches
1 Stainless steel double anchor roller
1 Stainless steel radar mast with articulating radar dome bracket
1 Stainless steel pedestal guard
1 Stainless steel Edson 48" destroyer wheel
1 Stainless steel 3-rung retractable re-boarding ladder
1 Stainless steel bimini/solar panel frame
4 Stainless steel 10" mooring cleats
1 Maxwell 1200 vertical capstan anchor windlass
1 Aluminum spinnaker sprit
1 Aluminum Edson steering pedestal

RIGGING

Mast:	Painted silver aluminum, double spreader, keel stepped, masthead
Boom:	Painted aluminum, with mid-boom sheeting
Sails:	Not inspected, or inventoried
Standing Rigging:	Hayn chromed bronze toggled turnbuckles, coupled to solid discontinuous rod
Winches:	1 Lewmar #15 single-speed self-tailing outhaul, 1 Lewmar #44 electric single-speed cabin-top, 1 Lewmar #44 2-speed self-tailing cabin-top, 2 Lewmar #46 two-speed self-tailing forward cabin-top, 2 Lewmar #52 two-speed self-tailing cockpit secondary, 2 Lewmar #65 two-speed self-tailing cockpit primary
Lifelines/Rails:	Double rail stainless steel pulpits & double 1 x19 x 5/32" stainless steel cable lifelines
Anchor:	Bruce 20 kilo, Fortress FX16
Rode:	Three-strand nylon ¾" x 150' estimated, & nylon double-braid ¾" x 100' estimated for Fortress anchor
Chain:	Galvanized 7/16" x 50' estimated

SEA CONNECTIONS

PURPOSE	VALVE TYPE	THROUGH-HULL TYPE	LOCATION	APPARENT CONDITION
Engine raw-water intake	Bronze inline ball valve	Bronze threaded	Forward engine compartment	Surface corrosion/operable
Head intake	Bronze inline ball valve	Bronze threaded	Under forward cabin sole	Satisfactory
Head discharge	Bronze inline ball valve	Bronze threaded	Under forward cabin sole	Satisfactory
Shower sump pump	Bronze inline ball valve	Bronze threaded	Under forward cabin sole	Satisfactory
Head sink drain	Bronze inline ball valve	Bronze threaded	Under forward cabin sole	Satisfactory
Main bilge pump discharge	Forespar Marelon inline ball valve	Bronze threaded	Behind settee	Satisfactory
Shower sump pump discharge	Bronze inline ball valve	Bronze threaded	Behind settee	Satisfactory
Galley sink drain	Bronze inline ball valve	Bronze threaded	Under galley sink	Partially frozen
Galley saltwater/water maker intake	Bronze inline ball valve	Bronze threaded	Under galley sink	See Summary & Recommendations
Holding tank macerator discharge	Not sighted	Not sighted	Not sighted	See Summary & Recommendations
Knotmeter discharge	Plastic plug	Plastic housing	Under forward cabin sole	Satisfactory
Depth sounder transducer	None	Threaded plastic	Under forward cabin sole	Satisfactory

PLUMBING

Waterclosets/Heads:	Lavac saltwater flush
MSD:	Type III, with polyethylene tank, empties via overboard macerator & deck pump out plate
House Water System:	Two integral aluminum
Hot Water Heater:	Stainless steel 5 gallon estimated, VAC 220 & heat exchanger off engine
Hoses:	Rubber & plastic
Sinks:	Stainless steel

PUMPS

1 Jabsco M/N 18590-1000 holding tank macerator pump
1 Jabsco M/N 37202-2012 shower sump pump
1 Jabsco M/N 31755-0000 house water pressure pump
1 Whale MK III galley saltwater foot-pump
1 Whale manual bilge pump
1 Rule 3700 submersible bilge pump

GALLEY EQUIPMENT

Stove:	Force 10 three-burner with oven
Fuel:	LPG
Valving:	Readily accessible remote solenoid & manual valves at fuel cylinders
Installation:	See Summary & Recommendations
Refrigeration:	Technautics 12-volt air-cooled

AC/DC ELECTRICAL

DC Voltage:	12-Volt
Batteries:	Six Lifeline 6-volt AGM M/N GPL-4CT house, wired in series/parallel to make house bank, one 12-volt AGM M/N GPL-3100T engine starting
Switches:	Blue Seas Systems on/off vapor-tight
Battery Installation:	See Summary & Recommendations
DC Overcurrent Protection:	Remote circuit breakers & inline fuses for high current cabling & toggle magnetic circuit breakers in DC distribution panelboard
AC Voltage:	VAC 125
AC Overcurrent Protection:	Toggled magnetic circuit breakers in AC distribution panelboard
Charger:	Xantrex True Charge 40+
Inverter/Charger:	Xantrex 400-watt
Shoreline Connection:	30-Amp
Outlets:	GFCI protected
Wiring Condition:	See Summary & Recommendations

ELECTRONICS/NAVIGATION

1 Raymarine 18" HD Color Radome
1 Raymarine E-Series 9" multifunction navigation display (MFD)
1 Raymarine ST60 analog wind point/digital wind speed
1 Raymarine ST60 digital knotmeter
1 Raymarine ST60 digital depth sounder
2 Raymarine ST60 Multi MFD
1 Raymarine ST70 autopilot controller
1 Raymarine fluxgate compass/heading sensor
1 Apple IPOD with wireless connection to Raymarine E-Series MFD
1 ICOM IC-M602 DSC VHF radio
1 ICOM -M802 SSB radio
1 ICOM SSB antenna tuner
1 AIS Transponder
1 Iridium Go satellite phone with external antenna
1 Ritchie binnacle compass

MACHINERY

Main Engines:	Inline four-cylinder diesel
Make:	Yanmar
Model:	4JHE
Serial:	02060
HP:	44 @ 3600 RPM
Year Installed:	1988
Cooling:	Freshwater heat exchanger
Exhaust System:	Horizontal wet, through hard-wall marine exhaust hose & fiberglass water-lock, exits stern
Engine Controls:	Morse single lever with solid push/pull cable
Gauges/Alarms:	Yanmar factory panel, with tachometer, oil pressure, water temperature, high water temperature & low oil pressure light & audible alarms, hour-meter 3955 total hours
Steering:	Edson pedestal, to stainless steel cables & aluminum rotary quadrant, & Raymarine autopilot with linear drive
Rudder(s):	Fiberglass spade with stainless steel post

DRIVE SYSTEM

Transmission:	ZF MIV vee-drive reduction gear
Ratio:	2.99:1
Shaft:	Stainless steel Aquamet 22 alloy, 1.25" diameter
Strut(s):	Bronze tee, set into hull mortise
Propeller:	PYI-MAX Prop, three-bladed feathering, 20" diameter variable pitch
Bearings:	Intermediate & main sleeve cutlass
Packing Gland:	Lasdrop dripless shaft seal

VENTILATION SYSTEM

Natural:	Yes
Blower:	Not sighted

FUEL SYSTEM

Filtration:	Racor 75/500FGX fuel/water separators in fuel manifold
Tanks/Capacity:	Two-aluminum, 75 gallons estimated total capacity
Location:	Under forward cabin vee-berth & under salon settee
Securing:	To stringers
Fills/Vents/Draws:	From top of tanks, vented overboard
Valves and Lines:	Valve in fuel manifold, USCG type A1
Fuel System Condition:	See Summary & Recommendations

FIRE PROTECTION

SIZE	TYPE	LOCATION	DATE SERVICED
~ 3.0 lbs.	BC Dry Chemical-Kidde	Forward Cabin	Manufactured 2017
~ 3.0 lbs.	BC Dry Chemical-Kidde	Galley	Manufactured 2018
~ 3.0 lbs.	BC Dry Chemical-Kidde	Aft Cabin	Manufactured 2018

USCG REQUIRED EQUIPMENT

Horn/Bell:	Yes, air horn
Lifejackets:	None sighted
Throwable Device:	Yes, Lifesling & MOM MOB module (next inspection due 3/2020)
Plaques:	Yes, affixed to engine compartment
Flares:	Yes, SOLAS handheld & smoke (expires 11/2020)
Navigation Lights:	Yes, deck-level
Escape Hatch:	Yes, forward cabin & main salon
CO/Smoke Detectors:	Smoke yes, CO not sighted
Compliance:	See Summary & Recommendations

SPECIAL OTHER EQUIPMENT

1 Mainsail cover
1 Cockpit dodger with isinglass covers
1 Cockpit bimini top
1 Hatch board storage bag
2 Kyocera 130-watt solar panels
2 Marinco 30-amp x 50' shore power cords
1 Sunsea solar converter
1 Teak cockpit table
Assorted fenders & dock lines
1 Windex masthead wind indicator
5 Lewmar plastic winch handle holders
1 Spectra Ventura 150 Deluxe water maker
Assorted winch handles
Assorted high-tech spinnaker & jib sheets & guys
1 boom brake
1 Aluminum spinnaker pole with trigger end
1 Aluminum telescoping boat hook
2 Plastic buckets
1 Espar diesel force air heater
4 Cabin 12-volt fans
1 JVC KD6510 stereo
2 Cockpit speakers
2 cabin speakers
5 Plastic jerry cans in cockpit fuel storage locker

SEA SAFETY EQUIPMENT

1 MOM 8A MOB module (next inspection due 3/2020)
2 Jack lines
1 Rescue Rope
1 Winslow valise 6-person life raft (M/N 6OSLSO, next repack due 6/2021)
1 ACR Global Fix EPIRB (registration expires 04/17/2020)
1 Emergency rudder
1 Lifesling
1 Two-piece emergency tiller

EDITORIAL NOTE

These terms and words have the following meanings, as used in the survey report:

- ***Serviceable***: adequate;
- ***Excellent condition***: this rating indicates the item, system, or component is in new or like new condition.
- ***Good condition***: this rating indicates the item, system, or component is nearly new, with only minor cosmetic or structural condition.
- ***Fair condition***: this rating indicates the item, system, or component is functional as is with minor repairs, and should be monitored often to see if its condition deteriorates.
- ***Poor condition***: this rating indicates the item, system, or component is unusable as-is, and need replacement or repair, to be considered functional.

SUMMARY

Scope of Survey Engagement

The sole purpose of the survey was to determine the vessel's condition and value for underwriting and pre-purchase purposes: to note the vessel's general condition, inventory of onboard equipment, documentation, and hull identification numbers. On November 20, 2018, the vessel was inspected while afloat in her regularly assigned berth, at Schoonmaker Point Marina, and while hauled in the Travelift slings, at KKMI, LLC, both located in Sausalito, CA. Attending the inspection were the prospective buyer, John Doe, and the undersigned certified marine surveyor, Bill Melbostad.

General Description & Condition

The subject vessel, *COMPAÑERA II,* is a semi-custom built racer/cruiser, from a proven design by naval architect Bruce Farr, and of tested construction by Robertson Boat Builders, of New Zealand. Cosmetically, the vessel is in very good condition, with the cabin surfaces repainted with linier polyurethane marine enamels, and maintaining some of their gloss.

The vessel reportedly received a major refit in 2006, when the topsides, cabin, and cockpit were repainted, and the teak deck overlay was replaced. A new mast and boom were installed as part of the refit.

The deck layout consists of a tee-shaped self-bailing cockpit protected by a dodger and a bimini top, flush side and fore decks with a slight crown, and a raised blister trunk cabin. There is a recessed anchor locker fitted with a windlass. The cockpit, deck, and cabin structures are constructed with alternating layers of molded fiberglass, with closed cell foam cores in places for reinforcements. The cockpit seats, sole, and the side and fore decks have a solid teak plank overlay, traditionally fastened with stainless steel sheet metal screws. Visual inspection of the structures showed them without indications of physical harm or damage, or signs of previous repairs. Visual inspection of the teak plank overlay revealed the following cosmetic and minor anomalies:

1. There is very minor and normally expected wear on the planking, and slightly raised grain.
2. There are roughly 10 missing teak bungs, leaving the fastener heads exposed.
3. There is an open seam, where the outboard starboard plank mid-ships is damaged for roughly 5" along the seam. This may be a tool mark, and done during the deck's installation.
4. There is a very thin split, roughly 18" long, in the 5th plank from the shear on the port side of the foredeck, just behind the anchor locker.
5. There is a ~3" long groove in the plank just outboard and adjacent to the port jib lead's Harken adjustable car.

Otherwise, the teak planking was found in very good condition, without open seams, or shrinking caulking. The teak overlay was tap-tested with a 6-oz. plastic hammer, and there were no indications loose or moving planks, or debonded or delaminated substrates.
The fiberglass cabin-top, and the cockpit surfaces were also found hard by tap-testing, with no indications of delamination, outer-bond separations, or deteriorated core materials.

The structures were spot-checked with a Protimeter Aquant moisture meter. All readings were generally low, without indications of water migration into the composite laminates, or saturated or decayed core materials.

Note: Tap-testing is used to assist in identifying possible upper laminate bond failures, or delamination, or compromised core material. Additionally, the audible sounds the tap-testing creates are vibrational differences that may provide indications of laminate debondment from the core, or deteriorated or statured core materials.

The cabin windows were clear, and free of hazing or occlusions, and well attached to the cabin sides. There are two main opening and three ventilation deck hatches. All their lenses were clear, and free of crazing. Their frames were without cracking, and the gaskets and latching hardware were sealing well.

The interior accommodations are comprised within a four-cabin layout. The forward cabin has a vee berth, and a private head to starboard. The main salon has a settee/dinette and a galley to starboard. To port are the pilot berth, and the navigation station. There are aft cabins port and starboard, both fitted with double berths. The center floorboard over the keel sump was delaminating from water damage, and needs to be repaired or replaced. The interior liners, cabinetry, and cushions were in good condition, for the vessel's age, showing little wear or tear. There were a couple inches of the normally accumulated bilge water in the keel bolt area, which could not be completely evacuated with the bilge pump. Otherwise, the lockers, bilges, and cabinets were dry, clean, and well ventilated. There were no indications of deck, hatch, or hardware leaks sighted in the interior.

For internal reinforcement, the vessel relies upon marine plywood bulkheads and ring frames bonded to the hull, fiberglass over foam cores, and wood transverse frames. The hull-to-deck joint is a horizontal overlapping flange that is heavily bonded. The chain-plates are concealed within cabinetry, not allowing inspection of their attachments. The stainless-steel keel bolts were free of pitting, rust staining, or other forms of corrosion. A thorough inspection of the interior and its structural sub-assemblies revealed no movement, failed secondary bonds, or soft or decayed wood. Much of the interior is sealed in with liners, cabinetry, and tanks, making complete inspection impossible.

Spars & Rigging


The mast, the boom, and the standing and running rigging were inspected both at deck-level and aloft. As reported by the prospective buyer, the mast was unstepped at Driscoll Boat Works in August 2018, to repair a transverse crack on the mast's aft side, just below the gooseneck. The repair was completed by the subcontractor, Rig Works in San Diego, and involved installing a mechanical sleeve to reinforce the cracked area of the mast extrusion. A thin crack was still evident at the sight of the repair. The coatings should be removed to determine the depth of the crack, and whether it is structurally significant.



The mast is centered, in-column, and well tuned in the vessel. Inspection of the mast aloft showed no signs of cracking, metal wastage, or pitted aluminum. The double spreaders are installed upon welded brackets that are mechanically fastened to the spar. The spreaders were tight, with no movement at their attachments, and maintaining the correct dihedral angle to the shrouds. The spreader tips were covered with leather chafe gear, and could not be visually inspected. The Antal external sail track was well secured, and tight to the mast. The halyard sheaves all turned freely, and there were no signs of cracking at the welded sheave boxes.

Reportedly, the mast was repainted during the sleeve repair. Cosmetically, the spars are in very good condition, with only a few minor and small blemishes, where the metallic silver LPU paint was slightly chipped or worn. The keel-stepped mast was free of indications of compression or settling, or galvanic activity, or cracking. The mast partner is supported by wooden wedges, and sealed with amalgamated rigging tape. The boom-to-gooseneck link was tight, with no signs of structural movement or cracked castings. The mainsheet and boom vang attachments were free of signs of strain.

Inspection of the discontinuous rod rigging, with a 5x, magnifying mirror, showed no indications of cracked or misaligned terminals, or kinked or bent rod. The rod terminals at the lower spreader tips, and the spreader bends at the upper tips were concealed by the leather chafe gear, and could not be inspected. The discontinuous cap shrouds' upper legs reportedly were replaced in 2018.

However, rod-rigging requires disassembly to view cold heads, and other concealed rigging components. It is typical marine industry standards to perform a complete rigging inspection, in intervals based upon the frequency and conditions in which the vessel is sailed: the higher the frequency, and/or the wind conditions, the more often a full rigging inspection should be performed. In 2018, the standing rigging was fully inspected professionally, by Rig Works, INC, a San Diego based rigging contractor.

The stainless steel pulpits and stanchions were well secured to the deck, and free of bent or distorted tubing, or cracked welds. The stainless steel 1x19x5/32" double cable lifelines had some mild rust stained cable at the swage fitting; they were in serviceable condition, and were free of cracked swage fittings, un-laid or kinked cable, or broken wire strands.

The halyards and control lines are routed through the foot-blocks at the mast partner, and Spinlock clutches, and tensioned via four Lewmar two-speed self-tailing winches. The winches all turned easily, and are well maintained. The Dacron and Spectra double braid control lines and halyards were in serviceable condition, with no areas of significant UV damage, or wear. The port aft cabin top winch has been converted to a single speed electric powered. The powered winch was tested, and found operable, under a light load.

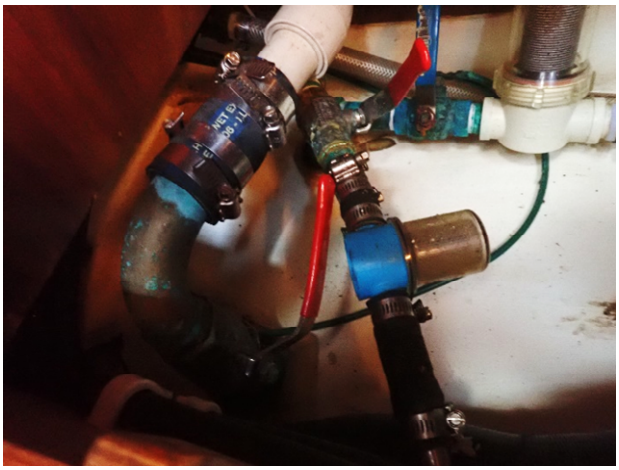
There is an aluminum welded spinnaker sprit installed on the anchor roller. The sprit was missing its bobstay. The bobstay's pad-eye, mounted on the stem, appeared undersized for heavy air ocean sailing, and the expected spinnaker loads of a vessel this size. The vessel has no chocks to store the asymmetric aluminumspinnaker pole.

The vessel is equipped with a hydraulic adjustable backstay, outhaul, and hydraulic vang, all manufactured by Navtec. When the backstay was tensioned, its hydraulic experienced very minor bleed-off of pressure, and hydraulic fluid was seeping from the cylinder's top seal. The outhaul and the vang were not tested; their hydraulic cylinders were serviced recently. As discussed, servicing the Navtec hydraulic system will become more difficult, since the company no longer is in business, and replacement and service parts will become increasingly difficult to purchase.

The deck canvas was in serviceable condition, with little seen wear, or failed stitching, and the zippers appearing operable. The dodger's isinglass was recently replaced; was clear, and free of hazing, or cracking.

The Bruce anchor, the galvanized chain, and the three-strand nylon anchor rode all appeared adequately sized for most holding conditions, and readily deployable. The Maxwell horizontal capstan anchor windlass, was tested momentarily, without a load, and it powered up as expected.

Plumbing:



For sea-connections, the vessel relies upon bronze inline ball-valves, coupled to threaded bronze through hulls, and single Forespar Marelon inline ball valve. The engine raw-water intake valve had mild surface corrosion, and the bonding conductor was damaged. The galley sink valve handle was obstructed from closing by an adjacent sea-connection valve. The rest of the sea-connection valves and through hulls were found in operational and satisfactory condition, with no pinking or signs of dealloying on the through hulls and tail piece hardware. However, the macerator discharge sea-connection was not located in the vessel. Verifying its condition and integrity is recommended. All the vessel's corresponding hoses were in satisfactory condition, with no sighted cracking.

The vessel is equipped with a compliant Type III marine sanitation device (MSD), consisting of a polyethylene holding tank located under the vee-berth in the forward cabin, and the Lavac manual toilet, which alternatively discharges directly overboard or into the holding tank. The holding tank can be emptied via the overboard Macerator pump, and deck pump out plate. Inspection of the MSD found it in satisfactory condition, with no indications of sewage leaks. The MSD diverter valve operated freely, and was in near-new condition. However, there was moderate sewage odor in the forward cabin. It was reported the holding tank vent line was clogged, and attributable to the sewage odor. The buyer reported the holding tank vent line has been cleared. The Lavac head pumped water into and out of the bowl normally.

The vessel is equipped a Force 10 three-burner LPG fueled marine range. The readily accessible fuel shutoff valve was tested, and found operable. Inspection of the LPG fuel delivery system showed the fuel cylinder installed within a compliant vented locker. The fuel delivery system is not fitted with a pressure gauge, as recommended by ABYC A-1:

A-1.5.2 Each system shall be fitted with a pressure gauge. The gauge shall read the cylinder pressure side of the pressure regulator.

Further inspection showed the system equipped with two fuel cylinders. One of the fuel cylinders is not DOT approved, nor was this cylinder fitted with OPD valve, as recommended by DOT regulations.

The vessel's domestic pressurized water system consists of two aluminum integral tanks, a Jabsco pressure pump and regulator, all routed vinyl water lines. The water pressure system was tested, and it supplied water to all stations operated, with no pump run-on or cycling. There is a stainless steel hot water heater that heats water alternately with VAC 220 volts and the engine heat exchanger. The vessel is not equipped with a 220-volt shore power system; therefore, the heater only works via the engine heat exchanger.

The vessel is equipped with a 12-volt Rule 3700 submersible bilge pump, using a float switch, which allows it to operate automatically, and manually via the toggle switch control. The 12-volt bilge pump was tested, and it powered up both automatically and manually. The vessel's Jabsco remote shower sump pump was tested, and it powered up normally. The vessel is equipped with a Whale manual bilge pump, which was not tested.

There is an Espar diesel fueled, forced heater aboard the vessel. The heater is installed in the starboard lazarette, and is properly vented to the atmosphere on the starboard topside. The vent line is adequately lagged. Testing the heating system showed it to power up normally, and blow warm air through the registers.

Electrical

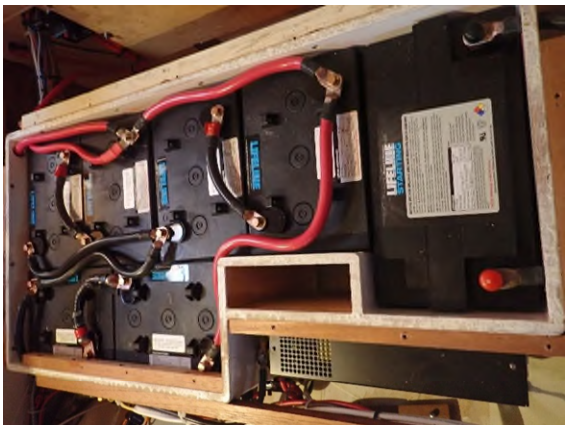
The vessel has both AC and DC electrical systems aboard. The wiring systems are well loomed, corrosion-free, and adequately sized, where visible and inspected.

The AC electrical systems are powered via the 30-amp shore power inlet, and routed through the distribution panelboard. The AC electrical systems were tested, and they operated the appliances normally.

The AC receptacles were tested with an Extech load/circuit tester, and there were no indications of open circuits, ground faults, or reverse polarity conditions. There was a slightly elevated voltage drop, of roughly 6%; the National Electric Code suggests a 5% drop or less. When the aft galley GFCI protected receptacle was tested, it tripped, and would not reset. The forward GFCI receptacle tripped and could be reset normally.

There is a Xantrex inverter aboard the vessel, which solely powers the aft galley GFCI receptacle. Once the receptacle could not be reset, the invert could not be tested.

For AC overcurrent protection, the vessel relies upon single pole toggled circuit breakers, which is sufficient, but not fully compliant with ABYC Standards (see surveyor's notes regarding ELIC at report conclusion).



The DC electrical system is powered via the six AGM lifeline batteries, wired in series/parallel, to make the house bank, and the 12-volt AGM engine starting battery, which are routed through the Blue Seas vapor-tight battery switches, and the DC distribution panelboard. The batteries are securely installed within a custom-built plywood box. The batteries reportedly are three-years old.

The battery box had no visible means of venting. If an overcharge situation were to occur, perhaps caused by the battery charger not turning off, or a malfunctioning voltage regulator, AGM batteries would develop pressure inside their casing from the byproduct of hydrogen gas, which would discharge through vent caps installed in the batteries. Without the battery box being ventilated, there is a chance hydrogen gas could build up into dangerous and explosive concentrations. Providing a means to adequately vent the box to the vessel's interior is recommended. The vent should be located in the top of the box. Since hydrogen gas is lighter than air, the vent should allow the gases to dissipate into the main cabin and out through natural cabin ventilation. The guidelines of ABYC E-10, Storage Batteries recommends:

10.7.9 A vent system or other means shall be provided to permit the discharge from the boat of hydrogen gas released by the battery.

10.7.10 Battery boxes, whose cover forms a pocket over the battery, shall be vented at the uppermost portion of the cover.

Inspection of the high current cabling showed it consisting of marine tinned battery cable. However, the house battery bank's ungrounded conductor is not fitted with a battery switch as recommended by ABYC E-11:

11.6.1.2.1 A battery switch shall be installed in the positive conductor(s) from each battery or battery bank with a CCA rating greater than 800 amperes, or 100 Ah if CCA is unavailable

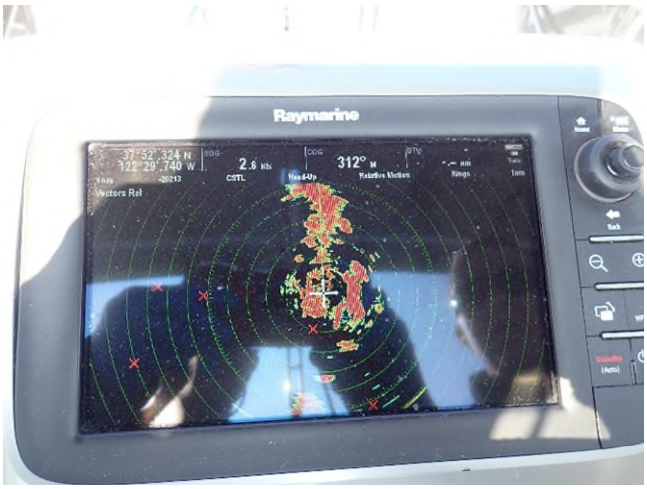
1.6.1.2.2 A battery switch shall be mounted in a readily accessible location as close as practicable to the battery

The house batteries are charged via the Balmar externally regulated alternator, the Kyocera 130-watt solar panels, and the Xantrex battery charger. The engine starting battery is charged

via the engine mounted stock Yanmar alternator, and Xantrex charger. The charging sources were found operable.

There is an independent emergency battery system to run navigation lights, if the main DC system were to fail. The emergency system is powered via a single West Marine AGM battery, and charged via a battery combiner. The emergency battery navigation light system was not tested.

The DC overcurrent protection is via remote circuit breakers and inline fuses for the high current cabling, and the toggled magnetic circuit breakers in the distribution panelboard, which is sufficient.



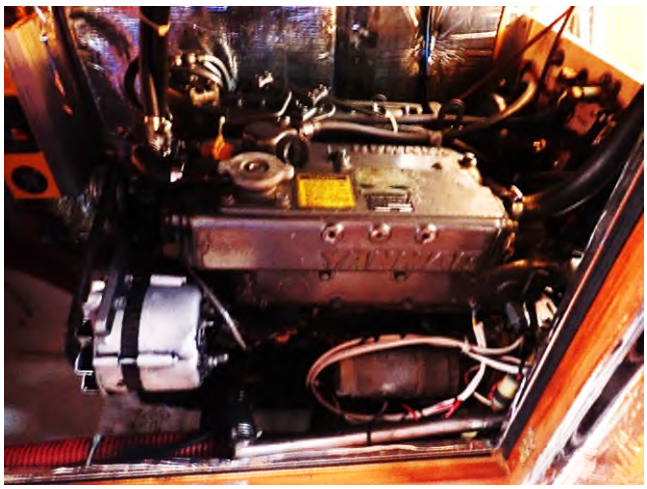
The electronic navigation equipment was tested. The Raymarine E-Series multifunction display (MFD) was powered up and provided accurate navigation information, and vessel position. The MFD provided a clear image when operated in radar mode. The Raymarine sailing instruments were tested, and they provided accurate wind point & speed, and depth information. The Raymarine knotmeter could not be tested, since the impellor was not installed.

The ICOM VHF radio was powered up and received transmission clearly. The ICOM SSB was not tested. However, inspection showed noticeable corrosion and deterioration on its copper ribbon grounding.

The forward cabin port LED reading light, and the galley dome lights did not illuminate. The rest of the cabin lights that were tested all illuminated.

Engine & Machinery

For auxiliary power, the vessel relies upon a Yanmar inline four-cylinder freshwater cooled diesel engine, coupled to a ZF vee-drive marine reduction gear, which turns an inline stainless steel propeller shaft. The engine and the gear are securely installed upon fiberglass over wood engine stringers. The motor mounts had light rusting on their brackets; otherwise, the motor mounts were sound and solid, with the bushings maintaining their vulcanization and resiliency, and the adjusting studs free of significant rust or corrosion, and workable. Where accessible, the motor mounts' hanger bolts were checked, and they were found tight and bighting well into the engine bed. There were no indications of delamination, or soft-core materials seen on the engine bed.

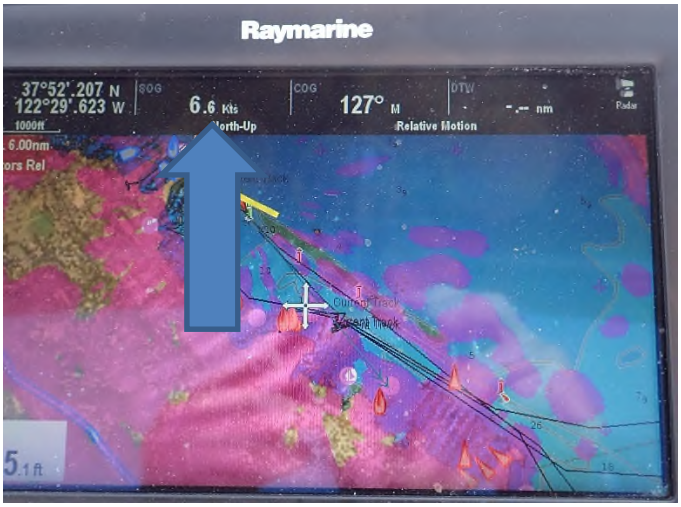


Cosmetically, the engine is in good condition, with the factory installed anticorrosive coatings free of significant failures. The fluids were checked, and the oil and coolant levels and qualities were found normal. The vee-drive's fluid could not be checked, as the dipstick was quite tight in the gear casing, and the surveyor could not remove the dipstick. Verifying the quality and level of the vee-drive's oil is suggested.

Both of the alternators had loose belts. The smaller Yanmar's stock alternator was very loose, and was adjusted and tightened by the prospective buyer. The engine hoses were found in satisfactory condition, with no sighted cracking or wear.

The engine started from cold easily and pumped adequate cooling water, with little smoke in the exhaust. Once the engine warmed to operating temperature, it idled and shifted smoothly.

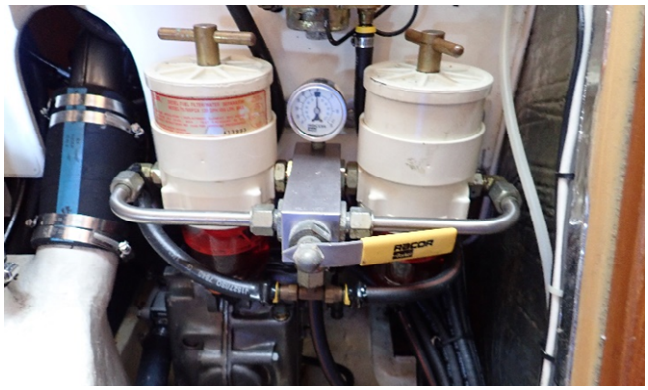
Reportedly, List Marine, the Yanmar dealership in Sausalito, maintains the vessel's engine.



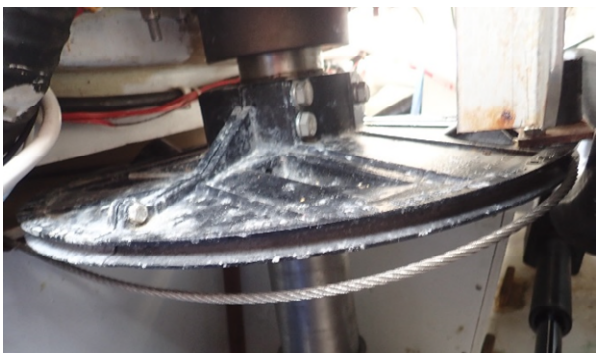
A brief sea-trial was performed on the vessel, while delivering the boat to the yard for haul-out, where the engine and vee-drive was observed under a load, at varying power and RPM levels. The engine and vee-drive ran smoothly at all power and RPM levels, with no unusual vibration or run-out at the propeller shaft or shaft seal. The engine would not reach the manufacturer's recommended specified wide-open throttle (WOT) of 3600 RPM. When running the engine with the throttle fully advanced, the engine only attained ~2350 RPM, according to the factory panel's tachometer. However, the engine would reach specified RPM when it was not in gear; it was suspected the Morse single lever's control linkage and cables are not adjusted correctly. Having a marine mechanic determine verify the exact cause of the engine not reaching the correct RPM at WOT is suggested. The engine gauges and alarms were all operable. It was noted the water temperature reads degrees in Celsius.

The vessel's propeller shaft relies upon a Lasdrop dripless shaft seal. The seal was weeping when the shaft was at rest, and while turning. The seal reportedly was installed during the recent haul out in the San Diego Driscoll yard. Repairing or replacing the seal so it does not leak is recommended.

The engine exhaust is comprised of a Yanmar mixing elbow, a routed through a fiberglass integral water-lock, and hard-wall marine exhaust hose, exiting the stern. When the exhaust system was inspected, it was found clear, well routed, and without signs of raw-cooing water or vapor leaks.



The fuel system consists of two aluminum tanks, and routed through ISO or USCG neoprene flexible fuel hose, and the Racor dual filter water separating tank selector manifold. Reportedly, there has been water contamination in the forward tank, possibly caused by an incorrectly installed vent line. The vent does not have a loop to prevent water from back-flushing into the tank. The exterior vent terminus needs to be relocated either aft or onto the deck, where there is less chance of water entering the line. Otherwise, the fuel system was found in satisfactory condition, with no indications fuel leaks, or fuel odors in the bilges. The two Racor filters' sediment bowls were free of particulate or water contamination.



Driscoll Boat Works completed work on the vessel's rudder and steering system, which included repairing the upper bearing and installing new lip seal in the lower rudder bearing assembly. On the delivery to the yard, the Edson pedestal/wheel/cable steering showed excessive play, and the steering was not positive. Inspection of the steering cable showed the cable/quadrant's adjusting studs loose, and the lock nuts not properly tightened. Apparently the cables have been loosening since the rudder was repaired at Driscoll. The cables were slack to the point they could be pulled out of the quadrant, which could have resulted in a loss of steering. Tensioning the steering cables to industry standards, and tightening the adjusting studs' lock nuts is recommended.

The Raymarine autopilot linier drive was well secured to its boss. The autopilot was tested on the delivery to the boat yard; it steered a true course, and responded reliably to course change commands at the controller.

Underwater Hull

The hull is constructed of alternating layers of molded fiberglass, with closed cell foam cores in places for reinforcements. The topsides are protected by a low profile solid teak rub-rail fitted with a bronze oval round strip. The topsides are slightly rounded, with a raked bow, and a reverse transom with a small swim step. The underwater hull has shallow rounded sections forward that flatten aft, and there is an externally bolted lead keel, and a fiberglass composite spade rudder. There is an exposed stainless steel propeller shaft, turning a right handed, three-bladed bronze feathering propeller.

There was a minor area of cosmetic compression damage (shown in below photo), measuring roughly 1" x 3", located just below the stem fitting; perhaps it is from the anchor contacting the stem. Otherwise, the topsides were fair, and free of indentations, physical harm or damage, or indications of previous repairs. The rub-rail is well secured and free of physical damage. The topsides are painted with LPU marine enamel, and were in good condition, maintaining some of their original gloss.

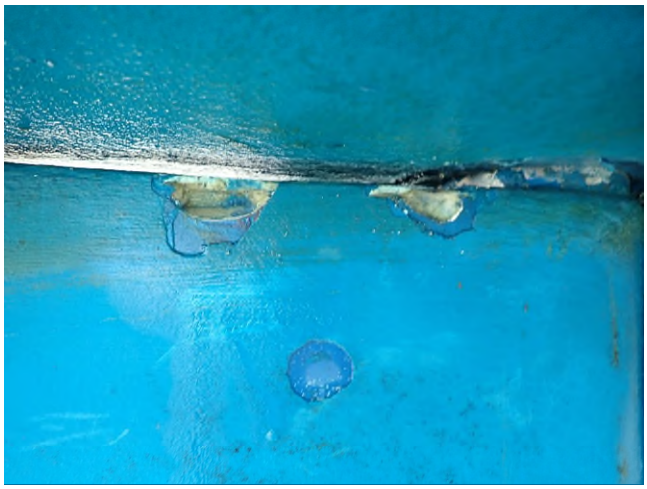
There were areas where the antifouling paint was ineffective, and had thick marine growth, and there were a few other isolated areas where the rolled-on paint was layered. Overall, the antifouling paint was mostly well adhered.

The underwater hull was fair, and free of physical harm or damage, indentations, or signs of previous repairs. There were no indications of osmotic blistering. The underwater hull was tap-tested with an 8-oz. ball-peen hammer, and found hard, with no indications of delamination, outer-skin debondment, deteriorated cores materials, or voids.

The running gear was found true to the eye. The stainless steel propeller shaft turned easily, was centered in the cutlass bearings, and free of pitting, and other forms of corrosion, or wear, where visible. The bronze three-bladed feathering Max-Prop was in good condition, with no indications of folded or frayed blade edges. It articulated freely, with no paly at the hub. The propeller was free of pinking or de-alloying. The intermediate and main cutlass bearings were well aligned to the shaft, and were without signs of wear. The bronze tee propeller shaft strut was free of de-alloying; it was tight in its mortise, and had no structural movement. The mortise fairing had a few cosmetic cracks, which could be repaired with marine epoxy fillers.

The hull-to-keel joint was tight, and has a fillet of suspected polyurethane bedding compound, such as 5200; there were no indications of structural movement, or failing fairing compounds.

Inspection of the bottom of the keel showed a few areas of bare lead, which should be coated with an underwater epoxy barrier coat. Otherwise, the keel's anticorrosive coatings were in very good condition, with no signs of blistering or detachments. There were no signs of grounding sighted on the foils, or the underwater hull.



Inspection of the rudder showed minor cosmetic damage on its top surface, where it meets the skeg fairing. There were several gouges, measuring roughly 1" x 1" in the fairing compound. There was another smaller gouge on the leading edge, roughly halfway from the rudder tip. The gouges are not structurally concerning for the vessel, but should be repaired, to prevent water migration into the laminates. Otherwise, the rudder blade was in satisfactory condition, with no indications of delamination, cracking, or indications of water migration into its foam cores. The rudder was slightly loose, and had a minor wobble in its lower bearing. As discussed, dropping the rudder to inspect the lower rudder bearing assembly, and to determine the extent and nature of the wobble is suggested before sailing offshore extensively.

The running gear anodes were mostly wasted at the haul out, and were replaced by the KKMI Boat yard staff. There were no indications of unusual electrolytic activity seen on the underwater hull, or its metals.

Documentation, Safety & Required Equipment

Coast Guard Vessel Documentation

Data found in current database.

Vessel Name:	**COMPANERA II**	USCG Doc. No.:	**986419**
Vessel Service:	RECREATIONAL	IMO Number:	*
Trade Indicator:	Recreational	Call Sign:	WDD4162
Hull Material:	FRP (FIBERGLASS)	Hull Number:	875629
Ship Builder:	*	Year Built:	1988
		Length (ft.):	44
Hailing Port:	SAUSALITO CA	Hull Depth (ft.):	6
Owner:		Hull Breadth (ft.):	14
		Gross Tonnage:	17
		Net Tonnage:	15
Documentation Issuance Date:	February 28, 2018	Documentation Expiration Date:	January 31, 2019
Previous Vessel Names:	DETENTE	**Previous Vessel Owners:**	

The current ABYC standards call for an automatic fire suppression system for the engine compartment, or a suitable fire extinguishing port in the side of the engine box and a suitably sized clean agent fire extinguisher mounted adjacent. There was no engine compartment fire suppression system sighted.

The firefighting equipment was viewed, and all appear serviceable; however, they are not currently tagged. The ABYC and the NFPA recommend all fire extinguishers be inspected, serviced, and tagged annually, by qualified service personnel.

Furthermore, there were Kidde dry chemical fire extinguishers aboard the vessel. Some extinguishers manufactured by Kidde were subject to a factory recall. More information can be found on Kidde's website at: https://www.kidde.com/home-safety/en/us/support/product-alerts/recall-kidde-fire-extinguisher

There were no carbon monoxide detectors seen in the living spaces. Sources of carbon monoxide (CO) on boats include gasoline engines and generators, cooking ranges, and space and water heaters. The tasteless, odorless, colorless gas is produced any time a material containing carbon, such as gasoline, wood, propane, coal or natural gas, is ignited. Exposure to prolonged or high concentrations of CO can result in death or serious injury because CO reacts with hemoglobin and reduces blood's oxygen-carrying capacity. Installing an approved Marine CO detector in the living spaces is recommended, per ABYC A-24:

24.7.1 A carbon monoxide detection system shall be installed on all boats with an enclosed accommodation compartment(s)

The steaming light did not illuminate.

RECOMMENDATIONS & FINDINGS

Section A: Items that may pose a safety hazard, or do not meet current Standards, or USCG regulations, and should be attended to as soon as possible.

1. Verify the condition of the holding tank macerator discharge sea-connection.
2. Replace the non-DOT approved LPG cylinder, with an approved cylinder fitted with an OPD valve.
3. Replace the galley's aft GFCI AC receptacle, with a marine type GFCI receptacle.
4. Vent the battery box, per ABYC E-10.
5. Install a battery switch on the house batteries' ungrounded conductor, per ABYC E-11.
6. Have a marine mechanic determine the cause of the engine not attaining manufacturer's WOT specified RPM.
7. Provide a means to prevent water from back-flushing down the forward fuel tank's vent line.
8. Repair or replace the Lasdrop propeller shaft seal.
9. Tension and adjust the steering cables, and fully lock the adjusting studs' nuts.
10. Provide at least four currently tagged USCG Type B1 fire extinguishers, and have qualified personnel service and tag the fire extinguishers annually in the future.
11. Install a Marine approved CO detector in the living spaces, per ABYC A-24.
12. Make the steaming light illuminate.

Section B: Findings and observations made during the course of inspection and mentioned for the owner's consideration and scheduling of future maintenance.

1. Repair or replace the delaminated main salon center floorboard.
2. Repair or replace the weeping hydraulic backstay cylinder.
3. Provide a bobstay for the spinnaker sprit.
4. Clean the surface corrosion from the engine intake valve, and repair its damaged bonding conductor.
5. Repair or replace the deteriorated copper ribbon SSB ground.
6. Tension and adjust alternator belts.
7. Repair gouges in rudder.
8. Drop the rudder, to determine the cause of its wobble in the lower bearing.
9. Install an engine compartment fire suppression system, per ABYC A-4.

IT SHOULD BE NOTED THAT NUMEROUS FINDINGS ADDITIONALLY ARE DISCUSSED WITHIN THE REPORT'S SUMMARY. THIS REPORT SHOULD BE READ ENTIRELY.

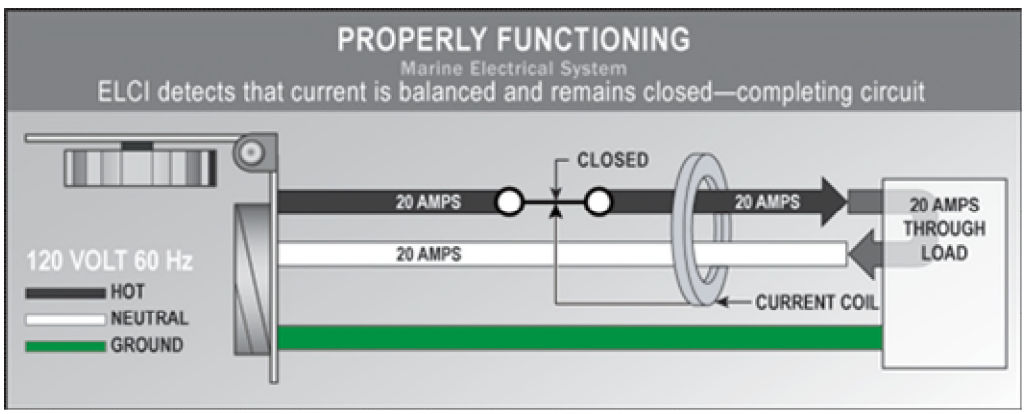
SURVEYOR'S OTHER SUGGESTIONS

Some of the USCG, NFPA, and ABYC standards in effect today did not exist when the vessel was built. Therefore, while this survey observes the vessel with reference to the current standards, and reports deficiencies thought to be important to the safety of the vessel and personnel, it does not and cannot require complete compliance with all of the current voluntary standards.

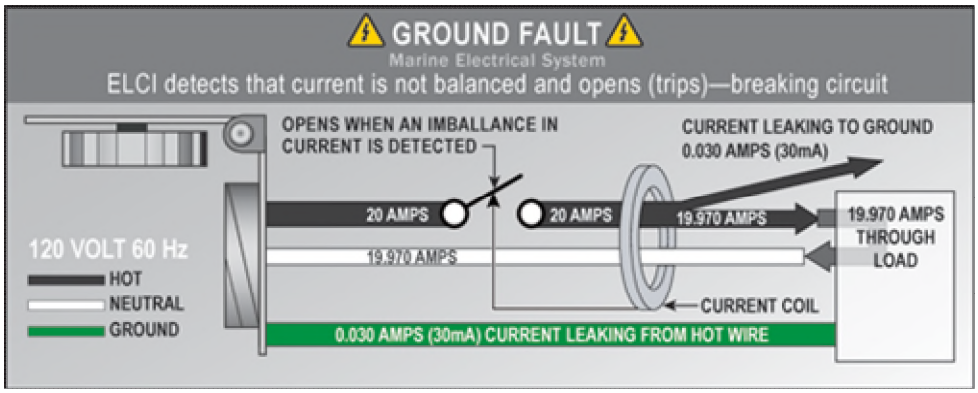
It is suggested to provide softwood tapered plugs tied to the through hulls, which could be used in cases of emergency failure of any sea-connection valves, hoses, or piping below the waterline. Furthermore, the plugs should be stored in plastic bags, to prevent them from becoming wet, and swelling before usage.

There was no ELCI installed aboard the vessel. The American Boat and Yacht Council's electrical standard E-11.11.1 recommends that *the installation of "ELCI's" (equipment leakage circuit interrupter's) be installed with, or in addition to, the main shore power disconnect circuit breaker(s) or at the additional overcurrent protection, whichever is closer to the shore power connection.* The ELCI is similar to a GFCI outlet. The primary difference between the two is the amperage at which they trip. A typical GFCI is engineered to trip at a nominal 5 milliamps, whereas the ELCI is engineered to trip at 30 milliamps.

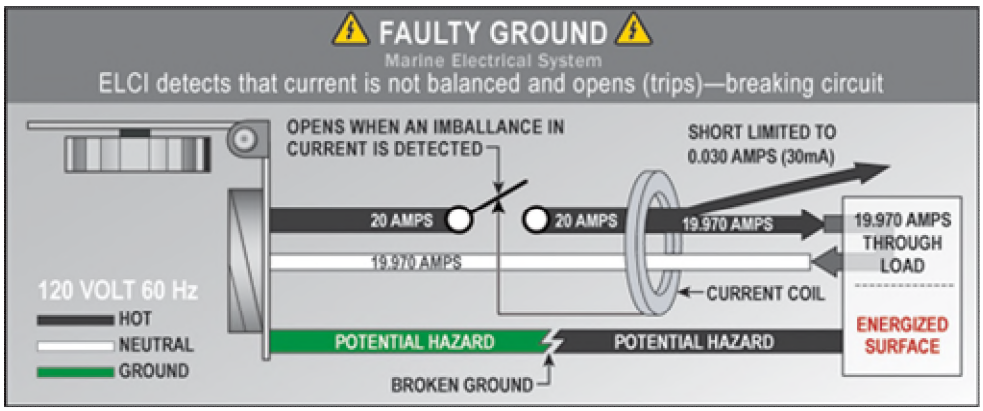
There are two potential failures in a boat′s electrical system that can put people on or around the boat at risk of lethal electric shock. In a properly functioning marine electrical system, the same amount of AC current flows in the hot and neutral wires.



However, if electricity "leaks" from this intended path in these two wires to ground, this condition is called a ground fault. A good example of this is an insulation failure in the wiring of an appliance.



In addition, a faulty ground can occur when the grounding path is broken through a loose connection or broken wire. For instance, a shore power cord ground wire may fail due to constant motion and stress.



Faulty grounds can be undetectable; a simple continuity test will not necessarily reveal a problem. When these two conditions occur at the same time, the results may be tragic. The combination of a ground fault and a faulty ground can result in metal parts in the boat and underwater hull becoming energized. In addition to the hazard to people on the vessel, there is a larger danger to swimmers near the boat. While people onboard are likely to receive a shock from touching energized metal parts, nearby swimmers could receive a paralyzing dose of electricity and drown due to involuntary loss of muscle control.

This photo shows a well-organized visual distress signal kit, and waterproof storage container. Including protective gloves and safety glasses. Note the dangerous ends of the flares are marked with reflective tape. Smoke or day signals, and handheld night signals, should be part of a complete flare kit. Additionally, white collision flares that can be displayed to bring attention to your vessel if it is not seen on radar or AIS of a large or commercial vessel, and also useful for lighting up the area in a MOB situation. It is important to treat flares with respect, store them well, and purchase SOLAS or LED flares. The USCG now approves electronic LED flares. Carrying these LED flares should be considered, instead of traditional pyrotechnics. Pyrotechnic flares are extremely difficult to dispose of and have expiry dates.

RISK & VALUATION

Cosmetically the subject vessel is in excellent overall condition for her age. The current owner has continuously upgraded her mechanical, sailing, and electronics systems since he purchased the vessel in 2005.

With the exception of the defects listed in this report, the subject vessel, *Companera* is in above average condition. Once the recommendations are met, with continued maintenance, and when used in a seamanship like manner, the vessel should be well suited for its intended usage, and considered a reasonable underwriting risk.

Comments On Appraisal

In arriving at a suggested market value, the Surveyor attended the vessel and inspected it, in and out of the water, in its current condition. Methodology for this appraisal involved comparable market data, and included researching market data of vessels of the same or similar design, which either currently are on the market, or have recently sold. The Appraiser researched and reviewed comparable vessels of like kind or the same general usage and profile. These vessels appeared to be well maintained and available for immediate usage as designed. It was necessary to research similar vessels currently for sale. Research involved sources in the Pacific Northwest, Central, Southern, and East Coasts.

Facts, Assumptions and Conditions Governing This Report

The estimates of value contained in this report are founded upon a thorough examination and analysis of information gathered and obtained from numerous sources. Certain information has been accepted at face value. Other empirical data required interpretive analysis pursuant to the objective of this appraisal. For these reasons, the following Contingent and Limiting Conditions have been prepared, to summarize the basic factors and circumstances, which govern, in part, the analyses, opinions, and conclusions contained in this report.

1. This appraisal is valid only for the purpose stated herein. Any other use or reliance by a third party is invalid.
2. This firm assumes no responsibility for matters legal in character, nor is any opinion given as to the title of the vessel.
3. All existing liens and encumbrances have been disregarded. Vessel has been appraised as though free and clear.
4. The estimate of market value expressed herein, is to be considered valid at the time of inspection.
5. Information, estimates, and opinions furnished to the Appraiser, and contained in this report, were obtained from sources considered reliable and believed to be true and correct; however, no responsibility for accuracy of such items furnished to the Appraiser can be assumed by the Appraiser.

6. Disclosure of the contents of this appraisal is governed by the Bylaws and Regulations of the National Association of Marine Surveyors, a professional organization with which the appraiser is affiliated.
7. This appraisal is based on the condition of the vessel as found and does not address future repairs, alterations, additions or personal property.
8. This appraisal does not accommodate predicted earnings the vessel may generate as a business for hire, nor does it address expenditures involving berthage fees, insurance, and brokerage fees.
9. This appraisal does not allow for the transfer of berth rights.
10. This appraisal assumes that the engine is in operable condition.

Certification and Limiting Conditions

This Appraiser certifies and agrees that:

1. The statement of facts and information contained in this appraisal report are true and correct, and the Appraiser has not knowingly withheld any significant information.
2. The Appraiser has no present or contemplative future interest in the subject vessel, or any other interest, which might prevent making a fair and unbiased appraisal. The fee for performing this appraisal is in no way contingent upon the reported value, nor is it based on a percentage of the appraised value.
3. The Appraiser has no personal interest or bias with respect to the subject matter of this appraisal report or the parties involved.
5. The Appraiser has made a personal inspection of the vessel that is the subject of this report.
6. All conclusions and opinions concerning the subject vessel that are set forth in this appraisal report were prepared by the appraiser whose signature appears on the appraisal report.

Conclusion

Based on our research and the examination of this vessel a reasonable market value of the vessel in its current condition would be approximately: **$0,000.00**

Estimated reconstruction value (Amount given represents purchasing similar new in 2018. The vessel is no longer in production): **$750,000.00**

SURVEY LIMITATIONS

Large parts of every vessel cannot be examined due to inaccessibility. Some procedures add greatly to the time involved and consequently the cost of the survey. Therefore, such procedures are not performed unless specifically requested. Engines, machinery, anchors and warps, complicated electrical systems and components, sails, spars and rigging aloft are not usually examined. The surveyor DOES NOT test the vessel or tanks for tightness, open up and expose parts ordinarily concealed, make removals, unload lockers or holds, clean bottoms or operate the vessel. It is pointed out that when wood decay or deterioration of many types is involved, it is not unusual for repairs to uncover previously hidden additional deterioration.

SURVEY SCOPE

The scope of this report is confined to this surveyor's opinion as to the general physical condition and value of the subject vessel. It does not include a determination as to the limitation of seaworthiness of the vessel, nor does it include stability tests necessary to determine such limitations, nor does it attempt to itemize waters unsuitable for the vessel's use.

SURVEY STATEMENT

This report is made without prejudice and reflects the judgment of the undersigned. It is not a warranty, implied, expressed or otherwise, of the condition of the vessel, its hull, rigging, or machinery, as far as can be ascertained from a general examination of the accessible parts of the vessel, dry-docked/afloat. It is the opinion of the undersigned that when noted deficiencies and or recommendations have been corrected, this vessel will be in satisfactory condition. The report is for underwriting and appraisal purposes only and solely intended to be used by the person or persons ordering the survey. Any usage by any individual other than the original intended recipient makes this report null and void. This report is offered with the understanding that its acceptance constitutes an agreement to hold the undersigned free of any liability.

Bill Melbostad

Bill Melbostad-NAMS-CMS