Pre-purchase survey of 1994 Symbol 54, “xyz”

Discovery Marine Surveys®
July 27, 2014
DISCOVERYMARINESURVEYS.COM
604 318-1402
Vancouver, B.C.
Canada

Document version: 5.0

Table of Contents

PRE-PURCHASE MARINE SURVEY REPORT 5

Report Number 5
Date of Inspection 5
Commissioned by 5
Address 5
Telephone 5
E-mail 5
DESCRIPTION 5
Vessel condition 5
GENERAL INFORMATION 6
Vessel 6
Licence 6
Registered tonnage 6
Canadian Ship Registry 6
HIN/MIC 6
SURVEY SITE 7
PUBLISHED SPECIFICATIONS 7

SCOPE OF SURVEY 8

SURVEY REPORT 9

STRUCTURAL COMPONENTS 9
General 9
Hull 9
Structural changes 9
Deck to hull joint 9
Topsides 9
Transom 10
Aft-deck 10
Foredeck and cleats 11
Fly-bridge 11
INTERIOR 11
General comment 11
Salon 12
Galley 12
Pilothouse 12
Forward cabin 13
Master cabin 13
Guess cabin 13

Survey report must be signed by the surveyor on the last page to be valid.
A PDF copy of this report is available upon request.
Survey information and survey report remain property of Discovery Marine Surveys until full payment is received.

Sanitation *13*
Potable water *14*
Water heater *14*
Heating system *14*
ENGINE ROOM 14
General *14*
PROPULSION SYSTEM 14
Transmissions *14*
Engines *15*
Engine mounts *15*
Ventilation *15*
Drip pans *15*
Cooling system *15*
Exhaust system *15*
Alternator and regulator *16*
Fire suppression *16*
Fuel system *16*
Fuel tanks *16*
Fuel lines *16*
PROPULSION AND CONTROL SYSTEMS 17
Propellers, and Shafts *17*
Rudders and Steering System *17*
Trim tabs *17*
Bow thruster *18*
GROUND TACKLE 18
Windlass *18*
Anchor(s) & rode *18*
AC ELECTRICAL SYSTEM 18
AC panel *18*
AC shore connection *19*
G.F.C.I. *19*
Other Outlets *19*
Battery charger *19*
Generator *19*
DC ELECTRICAL SYSTEM 20
DC panel *20*
Ship's batteries *20*
Inverter *20*
ELECTRONIC, NAVIGATIONAL EQUIPMENT 20
Engine controls *20*
Flybridge helm station. *21*
Navigation Lights *21*
SEA CONNECTIONS 21
Bilge & bilge pumps *21*

Survey report must be signed by the surveyor on the last page to be valid.
A PDF copy of this report is available upon request.
Survey information and survey report remain property of Discovery Marine Surveys until full payment is received.

Thru-hulls and seacocks *21*
Oil sample results *22*
Sea trial *22*
SAFETY EQUIPMENT 22

COMMENTS **23**

A: Issues in need of immediate attention. *23*
B: Issues that may enhance safety and/or value of vessel. *23*
C: Offered for information or suggested as maintenance or upgrades. *24*
STANDARDS USED 26

CERTIFICATION STATEMENT **26**

VALUATION 27
Vessel condition *27*
Fair market value *27*
Replacement value. *27*

MARINE GRADING SYSTEM OF CONDITION **28**

Pre-purchase Marine Survey Report

Report Number

2014-71

Date of Inspection

July 22, 2014

Commissioned by

Mr. xxx

Address

xxx

Telephone

xxx

E-mail

xxxx

Description

Vessel condition

The vessel is in: Average condition.

General information

Vessel

Name of Vessel: xyz
Manufacturer/model: Symbol 54 PHMY
Model year: 1994
Date of mfg.:

Licence

ONxxxx

Registered tonnage

3506

Canadian Ship Registry

n/a

HIN/MIC

Sxxxx

Survey site

Vessel inspected at:	Granville Boat Yardx
Vessel observed:	In water & on land followed by sea trial.
Weather was:	Mild and rainy 16 C
Survey times*:	10:10-13:00hr inspection, lift and power wash, 14:00-14:40hr underwater inspection section, 14:45-15:30hr sea trial, 15:30-16:30 inspection.

*approximative.

The client attended:	yes
Client's broker attended:	yes
Seller attended:	yes
Seller's broker attended:	yes

Published specifications

Weights and dimensions are taken from common publications. If any are in question then the concerned party should take actual measurements.

Make Symbol
Colour White
Beam 16.9
Weight 57,000
Power Make Caterpillar
Horsepower 375
Drive System Inboard
Fuel Capacity 378

Model 54 Pilothouse Motor Yacht Cruiser
Length 54
Draft 4.3

Power Model 3208 TA Inboard
Hours 2,550 (2x)
Power Type Twin diesel
Water Capacity 230

Scope of survey

The purpose of this inspection and survey report, requested by and created for Mr. xxxx, is to determine insofar as possible within the limitations of visual and physical accessibility, through non-invasive and non-destructive means, the vessel's condition at time of survey by reporting deficiencies against the standards quoted in the "comments" section of this report and to present the surveyor's personal opinion as to the vessel's condition. This type of survey is also known Pre-purchase survey. Certain parts of the structure, systems and equipment are inaccessible without removing decks, tanks, bulkheads and headliners etc. or in the case of cored structure, drilling core samples. This is not within the scope of this survey. Coatings build up, corrosion, marine growth, excessive gear on board or dirt may have hampered the surveyor's ability to inspect. Thick layers of anti-fouling paint may inhibit bottom inspection and therefore destructive testing is offered at additional cost.
Be advised that moisture meter readings and percussive soundings on frozen structure are not reliable and that if a survey must be conducted under these conditions the soundings and meter readings should be re-done at thaw. It should be noted that moisture meter readings are relative and these meters are affected by many factors other than moisture and that percussive sounding interpretations are subjective.
Components requiring access with tools or by disassembly are not inspected. A vessel's systems and component parts have a limited useful life and are subject to deterioration over time. Some conditions affecting useful life include original material specifications, fabrication techniques, environmental exposure and history of use. These systems and component parts often give no readily detectable external indication of deterioration or failure. Cosmetic or comfort issues may be addressed where there is a significant effect on the value of the vessel. Electronic and electrical equipment may be tested by powering up, only when power is already connected. A complete analysis of the vessels electrical systems would require the services of a qualified marine electrician. Only the external visual condition of wiring, connections and panels is reported. The surveyor recommends that a qualified marine mechanic inspect all engines, generators, V-drives, transmissions, sail-drives and or stern drives regularly. Loose gear and accessories are neither inventoried nor inspected. This survey is an opinion of the surveyor based on his knowledge, experience and following the ABYC standards, NFDA standards and the SAMS code of ethics. Within these parameters the surveyor will report on the hull, deck, vessel systems, running gear, cosmetic condition and provide a valuation based on the foregoing. This is surveyor cannot predict how the vessel or its systems will perform over time and therefore this report is valid only at time of survey. The surveyor has made neither weight calculations nor measurements. All dimensions and weights are from published specifications such as original brochures, the PowerBoat Guide, Mauch's Sailboat Guides, manufacturers or owners association web sites. Survey fees are based on such published L.O.A.

Survey report must be signed by the surveyor on the last page to be valid.
A PDF copy of this report is available upon request.
Survey information and survey report remain property of Discovery Marine Surveys until full payment is received.

Survey report

Structural components

General

Hull

The hull is solid FRP. The hull is supported by a system of longitudinal stringers and transverse bulkheads. No blisters were sighted on the hull. Percussive sounding was performed on the underwater section of the hull and on the spine and around thru-hulls and scuppers, the sounding did not indicate delamination or damage. Visual inspection did not indicate any damage or repair to the hull. The vessels anodes were almost 100% depleted and a large amount of marine growth was present, indicating that the vessel has been at rest for some times, this was later confirm with the owner. New anodes were installed on the propeller shafts and a new diver anode was installed at the transom. Two clam type anodes are located on the trim tabs were replaced. The anti fouling paint appears in thin but in serviceable condition the exact anti-fouling paint used is un-known.
See comment B1, B2.

Structural changes

No structural changes were reported or noticed.

Deck to hull joint

Deck to hull joint was inspected from the dock and while on the hard, where visible the joint appear in serviceable condition, no cracks, separations or signs of damage was noticed. No sign of leaks was visible. There is limited access to inspect the hull and the joint from inside the vessel due to panelling, cabinets etc.

Topsides

Top sides were visually inspected no cracks or damage to the surface were found outside of normal for a vessel this age. No spider crack or sign of impact or repair was noticed. Some rust stain from under some of the ports and port-lights as noticed. No damage or sign of repair at the bow. No hull deformation was noticed. All vents appear in serviceable condition. All thru-hulls are bronze and appear in serviceable condition.

Transom

Attached to the transom is a fibreglass swim platform, the platform is integral to the vessel. A folding re-boarding ladder is located under a panel on port the panel is secure with two sliding lock and hinges in serviceable condition. The ladder appears to make contact with the gel coat of the swim platform and in that area the gelcoat is damage. The port and starboard sides have small storage lockers, on port side the door was jammed and could not be open using a reasonable amount of force. The rubber and stainless steel rub-rail trim is in serviceable condition with no signs of separation. The teak sole is in serviceable condition. The hand-holds are in serviceable condition and secure, no cracks around the fittings. A small stern anchor roller is located on the swim platform near center-line is secure and in serviceable condition. Underwater section had no damage around the exhausts, two hairline cracks were noticed on port and on starboard.
See comment C1, C2.

Aft-deck

The aft deck include a large sliding door giving access to the saloon area, the door slid easily and appear in serviceable condition. The aft deck sole is teak, three steps nearly spanning the width of the vessel leads to the sliding door. Access to the aft-deck is trough the transom on starboard side, all in serviceable condition. The aft-deck bulwark is capped with teak, the wood is in serviceable condition, no crack or sign of separation was noticed. Two hatches in the aft-deck sole provide access to the aft storage room, the starboard hatch hinge was not secured to the hatch panel, the gas cylinder was not secured to the hatch panel. A molded fibreglass staircase followed by a stainless steel and teak ladder provides access to the fly-bridge. The fibreglass staircase can be lifted to provide access to the engine room. The gas cylinders supported the staircase, the latch at the bottom did not function properly. Two compartments are used for storage on the aft-deck bulwark, these might have been used as bait tanks, the teak lids are not secured. A small switch panel is located to starboard, the three top switches activate different lights in the aft-deck area and operated properly, the three bottom ones appears to have been retired. Immediately aside from this panel some gelcoat work appears to have been done, the colour-match is adequate, the repairs are small circles possibly some fittings that were removed and the area re-finished. No repair due to an accident in this area was reported. A Danforth type anchor, a small BBQ and a life ring are secure on the stern to port. Water connection is to starboard. Shore power connection is to starboard. Three steps on port and starboard provide access to the passage way leading to the foredeck. The side cleats and docking line hawse holes appear secure and in serviceable condition. All gel-coat, teak and fitting appear in average or above average condition.
See comment B3, C3.

Foredeck and cleats

Anchor located on bow roller, Muir windlass, chain locker and storage locker port and starboard of the bow, wash down to starboard, all in serviceable condition. The handle on the wash down faucet does not appear to operate properly. The first bulkhead forms the aft side of the lockers, this is full bulkhead that seal the forward section as a watertight compartment., no cracks or signs of stress was noticed A Bomar round port-light appear in serviceable condition, no leaks were notice from the forward cabin. Cleats and added stainless steel line shafting protection are secure, the pulpit, stanchions and stanchion bases are secure no cracks or damage was noticed. The bow section includes fender holders on port and starboard. The gelcoat and non-skid are in above average condition. Moisture metre readings were taken on the deck and the cabin with a Electrophysics GRP200 moisture metre, and returned consistent low readings, slightly higher readings around the bow anchor but lower than expected. Two gates in the stainless steel handrail are located on port and starboard about mid-ship they use trigger type locking mechanisms, the port side could not be operated.
See comment C4.

Fly-bridge

Accessed is from a stair case on starboard side from aft deck or from a staircase starboard side in the pilothouse. Accessing from the aft staircase is a large sitting area and the helm with full instrumentation to port. The sitting area doubles as storage space, all appear in serviceable condition. The cushions in this area are made with foam covered with a leatherette material the foam appeared to be soaked with water. Immediately aft of the captain and first mate seats is a small bar area with a sink, the faucet has been removed. A large area located aft of the staircase is occupied by a dingy and electric davits, the electric davit was tested and operated as expected, no marking or rating was sighted on the davit. A radar arch also doubles as support for the bimini and radar. The fly-bridge can be fully enclosed with Sunbrella type material and vinyl type windows all that were sighted appeared in serviceable condition. Covers for the seats, chairs and console were also sighted or reported as included. No cracks or damage was sighted on the gelcoat, some crazing on the splashguard windscreen was noticed. A starting battery is located under the settee, this is not connected to any circuit.
See comments C5.

Interior

General comment

The interior is appointed with wood and carpeting, the pilothouse area has wood cabin sole. All light fixtures and accessories that were turned on and off functioned properly.

Salon

Access to the salon is via a large sliding door from the aft deck. Immediately to port is a sitting area with a coffee table, opposite to starboard is some cabinets and wine storage. Some stains was noticed from inside the wine cabinet, some water damage under the starboard windows was noticed both areas are now dry. Forward of the salon is the galley, the stair case for the flybridge, the pilothouse and the staircase to the sleeping quarters and heads.

Galley

The galley is forward of the salon area to port. Double sink with stainless steel faucet, water pressure was available from both hot and cold water taps. Manual foot pump with separate faucet is also available and in working order. A microwave Princess classic collection II, powered up, a Princess three burner electric stove with oven, clean and appear in working order but was not tested. A fridge and freezer in serviceable condition is located near the stove. Between the fridge and the counter along the hull are small shallow cabinets and drawers. The fridge electrical cord was connected to an outlet on the galley counter. The galley area counter space, drawers, pluming under the sink appear in serviceable condition with no cracks or damage to the finish. Opposite the galley is the staircase to access the flybridge.

Pilothouse

The pilothouse is forward of the galley area and span the width of the vessel. There is sitting area to port and a sliding door to access the passageway is to starboard. A spiral staircase to access the sleeping quarter is also to starboard with the electrical panel. The stairs have courtesy lights with the Symbol logo, the plastic lens in most of them has yellowed and show signs of heating. The main helm has full complement of instrumentations plus some added navigation equipments, all instruments operated properly during the sea trial. The sitting area is clean with no damage to the fabric of the wood paneling. The staircase to access the fly bridge is wood, secure and no damage was noticed, the sliding door operated properly no damage was noticed. The door on starboard has suffered some water damage, some of the paneling has cracked and separated. The bottom of the door especially near the bracket has suffered water damage, wood decay in that small area was evident. The door was difficult to operate.

See comment C6, C7.

Forward cabin

A few steps down from the pilothouse on starboard side is the companionway, the forward cabin has an island queen size bed. Immediately upon entering are hanging lockers and drawers to port and starboard. No signs of water damage around chrome eye shaped ports was noticed, the head of the bed has wall mirrors in serviceable condition with no stain or damage. No signs of water ingress around the Bomar round hatch. Lights turned on and off. No damage or stain to the carpet or paneling was noticed. To starboard is the head and opposite is a guess cabin. All doors and drawers operated properly with no sticking or signs of movement.

Master cabin

The master cabin is access from the companionway immediately at the bottom of the staircase. An island queen size bed is on center line. The mattress is in serviceable condition, the island itself is in serviceable condition. Hanging closet and drawers are on port and starboard they open and closed properly, no damage to the finish outside of normal for a vessel this age. Chrome eye shaped ports are on port and starboard. Access to the head is to starboard and only accessible from the master cabin. All lights fixtures functioned properly. The head has been retrofitted with an electric Jabsco type, the head operated properly. Water was available from cold and hot tap, a shower is available with sitting bench. A storage cabinet is located under the bench, the door was jammed and could not be open. An electrical outlet near the sink shows signs of overheating. The drain pump for the sink and the shower operated properly. The wood paneling, sink, counter, head are all in serviceable condition. All doors and drawers operated properly with no sticking or signs of movement.
See comment C8.

Guess cabin

Located at the bottom of the staircase forward of the laundry machine, the cabin as a small closet and upper and lower bunk beds. The carpet and paneling was clean no signs of water damage. The door open and closed properly.

Sanitation

Two heads are installed in this vessel, one in the master cabin one forward opposite the guess cabin. Both have head, sink with hot and cold pressured faucets. The master cabin head has a shower with accordion door that separates the shower from the rest of the head, this head is accessible directly from the master cabin, all in serviceable condition. Cold and hot water was available at all faucets. Seventy gallon holding tank is, secure and appears in serviceable condition. All hoses for the sanitation system that were sighted appear in good condition and are flexible. The hull, hull-to-joint and partial bulkhead were visible from under the guess and master head sink, showed no sign of damage. A washing machine with dryer is located near the guess cabin and appears to be in working order.

Potable water

Two stainless steel 115 gallon water tanks are secured and appear in serviceable condition, no leaks or sign of leak was noticed. Small superficial signs of corrosion and scratches. All hoses that were sighted appear in serviceable condition. Some of the valves for the potable water tanks are gate valves, these were not worked to open or close. Some of the tabbing has separated on the water tanks.
See comment C9.

Water heater

Force 10 20g water heater. Is secured and appear in good condition no leak or signs of previous leak were noticed. That tank provided hot water at all taps. Some maintenance appears to have been performed on this unit with newer hoses and clamps. Model 418001, s.n. 819042012508.

Heating system

Diesel forced air heating system, Espar. Control located at the main helm station. The system was not tested but is reported as being in working order.

Engine room

General

The engine room was accessible from a large hatch located to starboard under the stair leading to the flybridge. A separate section located aft and accessible from hatches on the aft deck houses the generator, rudder posts and linkage. The engine room is painted white, nicely finished with paneling and nearly has stand-up room, it was generally clean and orderly. A small workbench with a vise is located forward of the engines. A tool box, a small ladder and other items are in the area. Carpeting has been added over the cabin sole panels. All hoses that were sighted have tags to identify them. Some hoses mainly for the drainage of the fly-deck and aft-deck appear to be original equipment are cracked and in poor condition. Some light fixtures have been installed in both rooms, some fixtures are not secure. A small heater was installed in the genset room.

See comment C10, C11, C12, C13

Propulsion system

Transmissions

Carterpilar original equipment, appear in serviceable condition, minimal amount of corrosion on the units. The transmissions engaged easily during sea trial.

Engines

Two Carterpillar 375HP turbo diesel. Model 3208T. Engine hours port 2550hr, starboard 2550hr. The engines were clean, no sign of leak and minimum amount of corrosion for a vessel this age. The engines started quickly from cold (78 degrees) and produced minimum amount of smoke. The engines appear to have been painted at some point in the past, hose clamps are painted over. Part of the exhaust after the turbos appear to have been replaced, newer cooling hoses also appear to have been installed. The belts tensions could not be assess due to protection covers, one belt is missing on the port engine. The oil dip-sticks were not in place when the engines were inspected, they were located on top of the engines. No signs of leaks at the injectors.

See comment B4, B5.

Engine mounts

Engine mounts appear in serviceable condition, no cracks or damage to the mounts, the rubber isolators or the frp supports was noted. Small amount of corrosion was noticed.

Ventilation

Original system with blowers, hoses are in serviceable condition, blowers powered up.

Drip pans

Integral frp, drip cloths were installed under the engines and were clean. The bilge area had water and other fluid in it.

Cooling system

All hoses that were sighted appear in serviceable condition and were flexible, no cracks was noticed. Seacock and thru-hulls appear in serviceable condition. The scuppers were inspected and appear in serviceable condition. Once started the engine exhausts had a good flow of cooling water. The engines temperature remained stable during the sea trial.

Exhaust system

Part of the exhaust system appears to have been replaced, the hoses are in serviceable condition no cracks or kinks, the clamps show no signs of corrosion, double clamped as per ABYC standards. The exhaust is supported properly. Large dry type mufflers appear in serviceable condition no cracks or signs of stress.

Alternator and regulator

Alternator appears to be in serviceable condition. Output was not tested by the surveyor. The gauge at the main helm indicated that the alternator was charging. An external regulator NextStep automatic multistep deep cycle regulator is installed.

Fire suppression

Original equipment halon system model 1211 is installed, one discharge unit on port and one on starboard. Both gauges indicate that the units are 'over charged' and out of the green section for normal operation.

See comment B6.

Fuel system

Racor filters 1000FG and 500FG are installed and appear in serviceable condition. Some debris was sighted in the bowl of the filters.

See comment C14.

Fuel tanks

Fuel tanks are located in the engine room, port and starboard. Tanks are secure, original equipment. The tank material is black iron. No signs of leaks or smell were noticed, no signs of excessive corrosion were noted, some corrosion at the fittings was noticed. Inspection was limited due to the tank being behind some paneling. The tanks are 378g each.

Fuel lines

All fuel lines that could be inspected appear in serviceable condition.

Propulsion and control systems

Propellers, and Shafts

Bronze propellers, three blades. The marking on the props could not be read. The propellers are made by Osborne. The propellers are secure, with two nuts, lock nut and half nut, properly installed and cutter pin in each. The propellers were tapped with a small tac hammer and return a crisp clear sound. No signs of dezincification. The shafts are stainless-steel with no signs of corrosion apparent, they appear to be true and straight. The struts that support the shafts appear in good condition, no cracks or deformation at the hull or on the struts legs was sighted. The shaft seals appear in serviceable condition. The propellers could not be turned by hand. The shafts have a shiny colour at the struts about 1/8 of an inch, indicating possible movement fore and aft when the transmission is engaged. Two new ball type anodes were installed during the inspection as well as a new diver anode on the transom. Dripless coupling on starboard and port have lubricating hoses attached to them. The shafts are part of the bonding system with a bonding strap touching the shafts. Limited amount of corrosion was noticed on the couplings. All appear in serviceable condition.
S**ee comment C15.**

Rudders and Steering System

Both rudders appear in serviceable condition, there was limited amount of play sideways indicating that the bearings are in acceptable condition. The rudders were tapped with a small tac hammer and returned clear crisp sound. The steering linkage that was sighted from the aft-deck room shows no leakage, no stress cracks, limited amount of surface corrosion and appears in serviceable condition. The ram and the hydraulic system show no leaks or loose connections. The hydraulic fluid was low. Hynautic hydraulic system, the pressure as indicated by the gauge on the reservoir was appropriate for this system.
See comment C16.

Trim tabs

Trim tabs operated properly, no damage or signs of corrosion on the tab or where they attach to the hull. No signs of separation from the hull no signs of damage to the piano hinge. The hydraulic arms appear in serviceable condition, no leaks when the boat was haul-out and no sign of leaks before it was put back in the water. The anodes were replaced while haul-out, the surveyor did not see how the new ones were installed and if the tabs surface was brushed clean under the anode to provide good contact.

See comment C17

Survey report must be signed by the surveyor on the last page to be valid.
A PDF copy of this report is available upon request.
Survey information and survey report remain property of Discovery Marine Surveys until full payment is received.

Bow thruster

Bow thruster is Vetus, original equipment. The bow thruster is installed under the island bed in the forward cabin. The tube is glassed-in and integrated with the hull at the bow. The propellers appear in serviceable condition, the anodes at the props were 100% depleted. The bow thruster operated properly when used.
See comment B7.

Ground tackle

Windlass

Muir windlass was working properly. The motor for the windlass is in the port chain locker the model and serial number could not be deciphered. The wiring is proper size but electrical connections are exposed. The casing shows signs of corrosion. A handle to manually operate the windlass was not found.
See comment B8, C18.

Anchor(s) & rode

Anchor roller with CQR articulated shank type anchor, the anchor has no marking. The rode is all chain and secured to the anchor with a proper shackle. The shackle pin is moused with proper seizing wire. Confirm that the bitter end of the rode is secure to the boat. The anchor appears adequate for a vessel this size. The length of chain appears to be minimal.
See comment C19.

AC electrical system

AC panel

AC panel is original equipment located on starboard side near the staircase. The genset or shore power breaker panel is located in the nearby cabinet. The panel was monitored with a Fluke 561 HVAC pro IR thermometer, the panel and the breakers remain cool (less than 15 degrees above room temperature). All breakers were turned on and off with no breaker tripping. The wiring for the panel is accessible and appears in serviceable condition.

AC shore connection

50A shore connections located on starboard in the aft deck. The shore connector shows no signs of corrosion, shorts or arching. A 50A to 30A pigtail was used on the vessel side. The 30A shore power cable shows signs of ageing. The shore cable was clamped with a Fluke 376 true RMS and showed signs of current fluctuation, intermittent at less than 0.01A this could be stray current from the marina.

See comment B 9.

G.F.C.I.

GFCI outlets was not sighted on the vessel.

See comment B10.

Other Outlets

Other outlets throughout the boat that were sighted appear in serviceable condition. A GFCI Gardner Bender 3501 tester was used to test polarity at some outlets and showed no faults. Some outlet showed ‘open ground’ status this could be the result of the limitation of the GB3501or could be an outlet with open ground.

See comment C20.

Battery charger

Professional Mariner Promariner 80 commercial duty battery charger, located in the engine room. These units have been discontinued by the manufacturer some years ago. The charger was charging when the boat was on shore power. A series of four battery switches is located near the charger to separate the different battery banks.

See comment C21

Generator

A Onan marine genset 8Kw diesel generator is located under the aft-deck, centre line. The generator was tested, started easily and produce 110 AC current. The generator is in a sound shield box. A breaker is located near the AC panel that prevents the shore power and the generator from feeding the circuits simultaneously. The genset has 2876 hr on the meter. The genset has a silencer fibreglass canister type appear in serviceable condition, all hoses are flexible with no cracks or damage. The fluid in the external container was low.

See comment C22.

DC electrical system

DC panel

Shared with the AC panel. The DC side of the panel appear in serviceable condition. The back of this panel is not separated from the AC side, this an ABYC standard that was not in effect when the vessel was built.

Ship's batteries

Multiple battery banks are serviced by the battery charger and the alternator. House, bow thruster, starting battery, generator battery. The house battery bank located in the engine room under the cabin sole is compose of eight US 145C batteries and one 8D battery these are lead acid batteries, all connected in parallel. The cables used for connecting the batteries is heavily corroded, the batteries were boiling when the compartment was opened, the batteries plates appeared not to be flooded, the batteries were hot and the compartment was hot. The brand of the 8D and dates on all batteries could not be found. The connections to the battery posts do not have battery boots, the batteries are not secure, there are four cables secured by a wing-nuts on the positive terminal of the 8D, some wires are attached to the negative terminal of the first US145C battery these wire run over the negative and positive battery terminals unsecure a pair of wires has crimp connectors right against a battery terminal. Starting and genset batteries located in the engine room and the genset room Magnacharge 36, no date stamped on the batteries, the batteries are in wooden boxes. The batteries appear to have been filled with liquid recently, multiple wires secure with wing-nuts, no boot on the battery posts the battery are not secure with straps.

See comments B11, B12.

Inverter

Magnus inverter control panel is located on starboard side near the sliding door in the salon. Powered-up, reported in working condition. MagnaSine Magnum inverter model MS2812, date stamped fourth quarter 2007. These inverter are also charger, these unit are pure sine wave inverters.

See comment C23.

Electronic, Navigational Equipment

Engine controls

The engine controls are original at the main helm and on the flybridge, control worked as expected. This is a hydraulic system the area was clean no leak or signs of leak was found along the tubing or at the fittings.

Flybridge helm station.

The helm station is to port with fibreglass console. All gauges worked. The tachometers did not indicate the same RPM at the flybridge and in the pilot house. Bow thruster control located to starboard of the helm wheel, the bow thruster operated properly. Flush mount 3 inch compass is center line on the console, the dampening liquid was clear and the compass responded to electro-magnetic influence. Trim tab control, transmission and rpm controls are reported in working condition. The VHF and radar Si-Tec CVS106, powered up. The helm is a stainless steel hub with wood rim, the varnish is pealing. Controls for a search light are available but the search light has been removed. An open array radar is located a top the arch, Furuno model RSB-0035. The radar operated properly at the main helm. A Winegard MS2000 Metrostar Omnidirectional Amplified TV Antenna is located on the arch, was not tested. A VHF antenna is mounted on starboard side. Docking lights located at the stern of the fly-bridge on port and starboard are working properly. An intercom system is installed but did not appear to work.

See comment C24.

Navigation Lights

Navigation lights, located at the bow and stern, and the anchor light located on the fly-bridge arch in working condition.

Sea connections

Bilge & bilge pumps

Bilge had some water and other fluid in the engine room area but was dry everywhere else were inspection was possible. All bilge pumps operated. A bilge pump was not found in the aft genset room. A high water alarm is located with the main bilge pump, it was not tested.

See comment C25.

Thru-hulls and seacocks

All thru-hulls that were sighted appear secure and in working condition. Seacocks that were worked, opened and closed easily.

Oil sample results

The genset, engines and transmissions oil samples were sent to Finning Proactive fluid analysis. This is a Cartepilar authorised dealer, and a division of Finning International Inc., the world's largest Caterpillar equipment dealer. The surveyor contacted Mr. Greg Eyer who performed the interpretation of the sample results, to review his findings and compare with the Carterpilar 3208 wear tables. The conclusion was that the samples were within normal wear for these engines with some results below the amount of wear expected for engines and transmissions with these hours. The results for the Onan generator was also satisfactory. It is important to note that these results should be considered a baseline to be compared to with future oil analysis, it is a changes in these numbers that becomes important. Consider always using the same lab and if possible the same technician in future oil analysis.

Sea trial

Sea trial was performed after haul-out and bottom wash. The fuel tanks, water tanks were approximately ¾ full. The engines warmed up to port 178F and starboard 172F, jacketed exhausts were at 140F. The gear engaged smoothly. At 2000RPM the vessel traveled at 9.5knot. The engines did not appear to smoke after warmed-up. The speed was upped to 11.5knot the boat was trimmed, the port engine was return to idle then back up and same was done with starboard engine, in both cases the helm needed less then ½ a turn to maintain course, no vibrations. The vessel was put hard to port centered and hard to starboard, changing course for more than 30 degrees each time, the vessel listed for less than 6 degrees during this test. The course was then changed and the vessel crossed its wake at a shallow angle, the vessel movement was tempered with no shakes minimum roll and no reaction at the helm. The vessel was pushed to 15.2knot and trimmed, that was deemed WOT by the owner and his broker, the vessel maintained that speed for approximately five minutes. Engine temperature remained stable at all time during the sea trial, minimum vibrations at the engines and engine mounts, minimum vibration and noise in the vessel.

Safety equipment

Safety equipment that is not integral to the vessel or permanently installed has not been inventoried or inspected by the surveyor. The Transport Canada "Safe Boating Guide" TP5111E, should be consulted for requirements specific to the vessel.
The vessel should comply with the regulations for the area in which it is intended to be used.

DBC 5 persons life raft, mfg date August 1994 s/n 5328-6rsr, due for inspection.
Fire extinguishers that were sighted are due for inspection.
One re-boarding ladder is located under the swim platform.
See comments B13, B14, B15, B16.

Comments

Comments based on a specific authority are cited as such. Other comments are based on the opinion of the surveyor as being of "good marine practice".

A: Issues in need of immediate attention.

None.

B: Issues that may enhance safety and/or value of vessel.

B1. Some anodes were not replaced as they were not available, one diver anode at the transom, one set of anode for the bow-thruster for example. These should be installed as soon as possible, the diver anode is part of the bonding system and is needed.

B2. The anti-fouling paint remaining is thin and in some area the hull is bare, with the marine growth now removed the apparently ablative anti-fouling paint will be active again and won't last long.

B3. The starboard hatch should be repaired this could be a safety hazard. The port side hatch should be inspected for the same condition.

B4. The engine oil should be replaced, there is (reported) few hours on them but the last oil change was (reported) two years ago, oil additives lose their properties over time. After a few hours of running time oil sample should be taken from the engines and sent for oil analysis and compared with the oil analysis done in July 2014.

B5. The missing belt should be replaced. The belts currently installed should be inspected and replaced as necessary.

B6. The fire suppression system should be inspected by a qualified technician and new tags affixed to the units.

B7. The bow thruster should not be left without anodic protection. Install anodes for this unit as soon as possible.

B8. Boots should be installed over the connections a large amount of current is required to operate a windlass a link from the chain or other metal could create a short with these electrical connectors exposed.

B9. With more and more AC current used on boats the risk of encountering tray current has dramatically increased in recent years. The use of an isolation transformer practically eliminate this risk to your vessel. The leak that was found could be coming from a nearby boat, if the vessel is moved to a different location check the AC shore cable for electrical current leak that could indicate that the leak is coming from this vessel.

B10. A GFCI outlet should be installed to protect the circuit on the vessel. If the AC outlets are on more than one circuit each circuit should have one GFCI installed. This is an ABYC requirement. Please use marine grade GFCI units.

Survey report must be signed by the surveyor on the last page to be valid.
A PDF copy of this report is available upon request.
Survey information and survey report remain property of Discovery Marine Surveys until full payment is received.

B11. All batteries on the vessel should be made compliant with ABYC E-11 standards. The house batteries located under the cabin sole in the engine room should be handled with care, the eight US145C these are starting batteries they have boiled and likely vented, these were coupled with a larger 8D battery that appears to be a deep cycle battery. Mixing type and size of batteries never produces optimal results. The US145C should be load tested they likely got damaged when they boiled, the arrangement is also not optimal appear to have limited ventilation three of four larger deep cycle batteries in proper battery boxes and secure properly would be a better arrangement. The wires use to make the battery bank is of proper gauge but heavily corroded, they should be tested for resistance.

The use of wing-nuts is prohibited with wire this size, four wires on one terminal is the maximum permitted, a better arrangement would be the use of a bus bar. Boots should be over the terminal to prevent possible dead short if a spanner or other tool is dropped on a battery.

Again please refer to ABYC E-11AC and DC electrical systems on boats.

B12. A small gauge pair of wires that has been extended with crimp connectors lay unsecure over the top of the house battery bank. This should be re-routed and a proper pair of wires should be used.

B13. The life raft should be sent for inspection and to receive new tag.

B14. The fire extinguisher should be inspected and receive new tags, or replaced.

B15. ABYC now require that a reboarding ladder be deployable from the water, the current unit does not comply with this requirement.

B16. A smoke detector was not sighted, if none is currently installed one should be added on the vessel.

C: Offered for information or suggested as maintenance or upgrades.

C1. The gel coat near the re-boarding ladder should be repaired to prevent water ingress in the fibreglass. The door for the port locker should be forced open and the area inspected.

C2. The small hair-line cracks on port and starboard should be inspected further for water ingress, and repaired.

C3. Provision is made to secure the lid with a small length of chain, this should be done to prevent loosing the lids.

C4, apply lubricant to release the locking mechanism.

C5. The battery should be in a box in case of spill and should be secure, or it should be removed.

C6. The door should be adjusted and the wood repaired.

C7. There is an access hatch under the helm to access wiring and hydraulic system, there should be not items stored there due to risk of fire.

C8. This AC outlet should be replaced, possibly by a GFCI type.

Survey report must be signed by the surveyor on the last page to be valid.
A PDF copy of this report is available upon request.
Survey information and survey report remain property of Discovery Marine Surveys until full payment is received.

C9. Gate valves are known to seize, in an internal system it can be simply an annoyance but they should be replaced by ball valve whenever possible.

C10. Items that are loose including storage bins etc, should be secure so they cannot move and interfere with the engines or other mechanical components.

C11. All hoses that are cracked or in poor condition should be replaced, if one or some failed water could get in the area and damage the electrical or other systems.

C12. If light fixtures are installed in the engine room or the genset room they should be secure and should be a type that cannot generate a spark.

C13. the small heater was connected to an extension cord the cord went from the genset room to the engine room. This is less than an ideal setup and these type of heaters should never be used when no one is onboard to monitor them.

C14. The bowls should be cleaned, when the old fuel currently in the tanks has been used the filters should be replaced and the tanks could be inspected for cruds or debris inside the tanks.

C15. A certain amount of play is acceptable, this should be monitored whenever possible when sending a diver or when hauling the boat out of the water. The shaft movement may be due to an adjustment at the coupling or transmission, this could be investigated further and adjusted.

C16. Top up fluid with proper fluid as recommended by Hynautic.

C17. Monitor depletion of the anodes on the trim tabs, if they do not deplete equally they might not have good contact with the trim tabs surface.

C18. With no electrical current on the unit, use a wire brush to remove corrosion and apply protective coating.

C19. A length of line could be added to the chain to create a longer rode, a rule of thumb is to have the line diameter twice the size of the chain being used. If the rode is kept as chain only a snubber line to release stress on the bow fitting and the vessel itself is recommended.

C20. Further investigation of this ‘open ground’ is beyond the scope of this survey. Investigation should be done by an ABYC certified marine electrician.

C21. This was a quality set-up at the time. Today an isolation transformer, a 4 phase charger with different battery type capability and charging relay would be a better set-up. See battery section and inverter section.

C22. Top-up fluid in the genset.

C23. This inverter could possibly be wired differently to replace the current charger, this is a quality unit.

C24. The instrumentation on the fly bridge should be calibrated with the instruments at the main helm.

C25. Monitor the main bilge area in the engine room for water or other fluid. The bilge area should be cleaned to prevent odour. There was not enough water in the bilge to activate the high

water alarm. The high water alarm should be tested.

Standards used

Standards used are the most current editions and may not have been in place when this vessel was built.
ABYC standards are voluntary but generally accepted throughout the marine pleasure craft industry and counts as the reference standard. Transport Canada “Construction Standards for Small Vessels, TP1332 are mandatory to the date of manufacture and states "existing pleasure craft shall comply with this standard insofar as it is reasonable and practicable to do so". TP1332 frequently refers to and is in the process of being harmonized with ABYC Standards.
Compliance with “Collision Regulations” is mandatory. NFPA 302 is a voluntary standard.
Standards quoted may have been paraphrased in the interest of brevity. A 100% accurate survey to the aforementioned standards would require complete disassembly of the vessel and inspection by several specialists and is not within the scope of this report. Canada Shipping Act, CSA Small Vessel Regulations. TP127 "Ships Electrical Systems". TP10739B "International Regulations for Preventing Collisions at Sea, ed.1972 with Canadian Modifications".
American Boat and Yacht Council "Standards and Technical Information Reports for Small Craft". National Fire Protection Association. NFPA302 "Fire Protection Standard for Pleasure and Commercial Motor Craft" might be referred to as necessary.

Certification statement

I certify that to the best of my knowledge and belief:

The statements of fact contained in this report are true and correct. The reported, opinions and conclusions are limited only by the reported assumptions and limiting conditions and are my personal unbiased professional analysis, opinions and conclusions. I have no present or prospective interest in the vessel that is the subject of this report and I have no personal interest or bias with respect to the parties involved. My compensation is not contingent upon reporting of a predetermined value or direction in value that favours the cause of the client, the amount of the value estimate, the attainment of a stipulate result, or the occurrence of a subsequent event. I have made a personal inspection of the vessel that is the subject of this report.

This report should be considered as an entire document. No single section is meant to be used except as part of the whole.
This report is submitted without prejudice and for the benefit of whom it may concern. This report does not constitute a warranty, either expressed or implied, nor does it warrant the future condition of the vessel. It is a statement of the condition of the vessel at the time if the survey only.

Survey report must be signed by the surveyor on the last page to be valid.
A PDF copy of this report is available upon request.
Survey information and survey report remain property of Discovery Marine Surveys until full payment is received.

Valuation

Valuation is primarily determined through www.yachtworld.com but may also be derived from consultation with knowledgeable boat brokers, other marine surveyors, personal experience, current listings of similar vessels in the area and available pricing sources such, Computer Boat Value Guide, N.A.D.A. Marine Appraisal Guide or the BUC Value Guide. Boat values vary considerably due to local market demands and significant premiums may be paid for fresh water vessels in exceptional condition for example. Currency conversion is done on date of survey using www.xe.com Universal Currency Converter. Valuations do not include taxes.
www.yachtworld.com, www.sailboatlisting.com, and others.

Vessel condition

The vessel “xyz” surveyed on July 22, 2014, is in “average” condition

Fair market value

"Current fair market value" is the price, in terms of currency or its equivalent that a willing seller will accept for property from a willing buyer, neither part being under undue pressure to act in the matter. The assigned value assumes that components, systems, sails or equipment not inspected during the survey are in serviceable condition commensurate with age. This valuation opinion is intended for insurance and financing purposes only and is not intended to influence the purchase or purchase price of the subject vessel. The surveyor has no interest in the vessel financial or otherwise. The current fair market value is: $xxx,000.00 CDN ($yyy,000.00USD)

Replacement value.

“Replacement value” is the value of replacement in case of a total loss of the vessel.
It is the opinion of the surveyor that the vessel “xyz” current replacement value is:
$xxx.000.00CDN ($yyy,450.00USD)

Prepared without prejudice.

Captain Alain Pascal Routhier
Discovery Marine Surveys.com®
Cpt. Licence A104769
CDN# 142164M
SAMS-SA member
ABYC member
NFPA member
BoatUS member

Survey report must be signed by the surveyor on the last page to be valid.
A PDF copy of this report is available upon request.
Survey information and survey report remain property of Discovery Marine Surveys until full payment is received.

Marine grading system of condition

The following is the accepted marine grading system of condition used:

"**BRISTOL CONDITION"**	Vessel is maintained in mint or Bristol fashion, loaded with extras. Maintenance is performed as 'restoration' projects – a rarity.
"**ABOVE AVERAGE CONDITION"**	Has had above average care and is equipped with extra gear. Maintenance is done as 'improvement'.
AVERAGE CONDITION"	Ready for sale requiring no additional work and normally equipped for its size. Maintenance is done as 'repair of faults'.
"FAIR CONDITION"	Requires usual maintenance to prepare for sale.
"BELOW AVERAGE CONDITION"	Yard work required and/or maintenance previously performed was sub-standard.
"RESTORABLE CONDITION"	Enough of hull and engine exists to restore the boat to usable condition.