

STANDARD SURVEY

Client: Removed for privacy

Date of report: March 21st 2006

Our file #: 06-25163

This inspection was performed upon the request of the client listed above on March 17th 2006 while the vessel was hauled at Driscoll Boat Works, 2500 Shelter Island Drive, San Diego, California and while afloat in (removed for privacy) Yacht Club, 2901 Shelter Island Drive, San Diego, California and (removed for privacy) and his broker attended.

VESSEL DESCRIPTION

Builder:	Mariner (Japan)	Reg. #:	Removed for privacy
Model/type:	Mariner 40/ ketch	HIN:	16
Year:	1967	Engine # & MFG.:	(1) Perkins
Length:	40' *	Name:	<i>Removed for privacy</i>
Draft:	6' *	Hailing Port:	None
Beam:	11' 5" *	Weight:	33,000 lbs. (travel lift's scale)
* listing specifications		Displacement:	24,000 lb. *

HULL & STRUCTURE

Keel & bottom: Wood plank on wood frame construction, bronze rivet fasteners, external "ferrous" (rusted) ballast – unknown weight, green anti-fouling paint

Topsides & transom: Wood plank on frame construction, bronze rivet fasteners, transom stern, white with blue boot stripe

Decks & superstructure: Plywood, fiberglass overlay, painted nonskid particle deck surface – beige

Deck hardware: Stainless steel bow rail, stainless steel stanchions, life lines, hawes pipes, foredeck hatch, wood cap rails, wood grab rails, two deck vents, two stern bits

Longitudinals/stringers: Wood frames, 12" centers in saloon, steel athwartships below water tank

Athwartships/bulkheads/frames: Wood bulkheads

Layout/interior components: Aft cockpit, side lazarettes, starboard companionway, starboard aft quarter berth, engine below galley cabinet, galley to port aft, navigation station forward of quarter berth, dinette to port and bench seat to starboard, head to port and V-berth forward

Bilge: Holding minimal water

Comments: The vessel was inspected while hauled and afloat. The hull bottom was visually inspected and randomly sounded. The planks are fair; the fasteners appear

tight. The hull planks are fastened to frames with bronze rivets, thus no fasteners were removed. There is hard black marine growth at several seams, particularly aft. The age of the anti-fouling paint is unknown; it exhibits good coverage. The hull sides and transom were visually inspected and randomly sounded while the vessel was hauled and afloat. The paint in the plank seams is cracked to port forward but not to starboard. The fashion plate on the hull forward is separated from the hull. The dolphin striker is pushed in to the hull at its connection point; it also flexes. The transducer block exhibits physical damage and the paint is missing. There is surface rust and corrosion visible on the ballast portion of the keel. The hull sides and transom are in satisfactory – good structural and cosmetic condition. The registration sticker is from 2005. It was reported that the vessel suffered damage from a grounding six – seven years ago; repairs were reportedly performed at Koehler Kraft Boat Yard. The repairs included repairs to the rudder. The deck and superstructure were visually inspected and randomly sounded. Overall, the deck and superstructure appear satisfactory. There are numerous maladies with the deck. The deck and cockpit are known weak points of this model, with respect to deterioration. Audible differences were found on the sides of the bow sprit, on the starboard side of the deck at a smooth painted spot by the second stanchion (from the bow), fiberglass is also cracked near this location, on the center of a nonskid portion of the starboard deck adjacent to the change in height of the cabin top. The fiberglass is cracked on the port side near a stanchion. There is cracking along the radius between the deck and the toe rail. The owner's representative stated that the fiberglass was installed last year, thus the cracks have developed in a relatively short period of time. The plywood decking is warped and delaminated in many locations as visible from below. This condition is visible on both sides of the cockpit and overhead in the V-berth. There is a leak through the deck onto the chart table. The client mentioned noticing leaks through chain plates, following recent rain. There are stains, indicative of leaks in the V-berth. The deck hardware including safety rails, mooring devices and hatches was visually inspected and the hatches were opened and closed. The deck hardware appears satisfactory. The structural reinforcements were visually inspected, randomly sounded and randomly probed. Overall, the structural reinforcements are in satisfactory condition. There is a cracked frame in the port lazarette near the waterline, a much smaller crack lower and a split portion of a frame forward. There is a cracked frame to starboard aft in the saloon bilge. There are cracked frames to starboard forward of the water tank, one has been "sistered". Much of the frame work is not accessible due to obstructions including tanks and ceilings installed on the interior of the frames. There is corrosion on the interior of the keel bolts. There is corrosion on steel reinforcements visible beneath the water tank, where the bottom of the water tank has been cut out. There is deterioration of the wood below the refrigerator. The interior cabin spaces are clean, neat and orderly. The vessel is in good cosmetic condition. The bilge is holding minimal water. There are lead ingots in the bilge forward of the water tank; the ballast is not secure.

Summary: Satisfactory

MACHINE SYSTEMS

Main engine: Perkins, 4.107, 48 h.p. *

Engine application: Diesel, inboard, 4-cylinders, freshwater cooled, 11-hours on meter

Serial Number: 107U14021

Transmissions: Velvet Drive, tag not legible

External/peripherals: Suitable application, satisfactory installation, plastic remote coolant reservoir, propeller shaft brake

Engine controls: Push/pull cables, single lever control

Exhaust systems: Wet system, dry riser, water lift muffler, aft discharge

Propulsion gear/shaft logs: 20 LH 13 ½ 3-blade bronze propeller, 1 1/8" (or metric equivalent) diameter stainless steel propeller shaft, bronze packing gland, stern tube

Steering system/rudder ports: Wood rudder hung on keel, worm gear style mechanical system

Ventilation: Blowers and natural

Through hulls & components: Bronze through hulls, bronze ball valves

Location of through hulls as visible in travel lift slings: Port – one aft, two forward of amidships, Starboard – transducer forward of amidships, paddlewheel transducer amidships, two aft

Seawater systems: Reinforced hoses, single and double clamped connections

Bilge pumps: One electric/automatic in saloon bilge, portable manual pump

Comments: The engine and transmission were visually inspected and the vessel was operated from the boat yard to the yacht club. This survey is not a mechanical survey; the benefits of a mechanical survey were discussed with the client. The external surfaces and peripheral components of the engine appear satisfactory. There is light surface corrosion on the motor mounts. There is a leak onto the exhaust manifold, from a water pressure system hose connection above. The engine appeared to start and run normally, the transmission shifted normally. The propeller shaft is equipped with a shaft brake; its proper function is beyond the scope of this survey. The exhaust system appears properly arranged and installed. The propulsion components including the propeller, propeller shaft and packing gland were visually inspected. The propeller was percussion sounded and the propeller shaft was observed while underway. The propeller exhibits spots of corrosion, apparently at prior repairs. The shaft gland is leaking water excessively. There is a shim on the propeller shaft, below the propeller. The propeller zinc anode is missing. I did not determine if the engine hour meter is functional. The steering system was visually inspected and test operated. The steering system appears satisfactory – good. The through hulls and related components were visually inspected and most valves were tested. The cockpit drains' through hull valves were seized and were not tested. The seawater systems were visually inspected and most components were tested. The galley sink drain hose is slipped onto a PVC fitting, with no clamps. The head has no handle on the wet/dry bowl valve. The electric bilge pump was energized with its float switch; its proper function is beyond the scope of this survey. The portable manual bilge pump was not tested.

Summary: Satisfactory

TANKAGE

Fuel: Stainless steel * tank below starboard bench seat, 60 gallon capacity *

Fill & vent: Flexible hoses

Feed & return: Flexible hoses, three filters, electric fuel pump

Water: Plastic tank in side original tank in saloon bilge, 34 gallon capacity *

Holding: Plastic tank below dinette

Comments: The fuel system including the tank, fill, vent, feed and return lines was visually inspected as installed. Where visible the fuel system appears satisfactory. There is debris in the fuel filter bowl. The fuel tank is installed in the bench seat and is mostly inaccessible for inspection. The fuel level gauge is reportedly inoperative. The condition and age of the fuel (and water) and the integrity of the tanks (fuel, water and holding) is beyond the scope of this survey. The original water tank leaked and has been partially cut out; a smaller plastic tank has been installed inside the original water tank. The water pressure system functioned normally.

Summary: Satisfactory

ELECTRICAL SYSTEMS

AC system: One 30A/125V inlet to port forward in cockpit, 110-volt system, shore power cord

DC system: Four 12V sealed batteries in aft saloon bilge, 12-volt system, battery switch

Wiring: Multi-strand wires (apparently)

Circuit protection: Main AC circuit breaker on side of quarter berth, branch DC breakers in several locations

Comments: The electrical system including the shore power cord, shore power inlet, batteries, wiring, circuitry components and circuit protection equipment was visually inspected and most of the components were test operated. Overall, the electrical system appears satisfactory. The electrical system is disbursed throughout the vessel with a multitude of circuit breaker panels and terminal boards in various locations. The condition of the batteries is beyond the scope of this survey. There appears to be AC & DC breakers on a small circuit panel on the side of the quarter berth, for the instruments and the battery charger. The paddlewheel transducer on the hull bottom is orientated from side to side. The spreader lights are inoperative. There is a loose battery in the starboard lazarette, apparently serving the trolling motor. There is an unlabeled and exposed circuit breaker in the starboard lazarette, possibly functioning as a switch for charging the trolling motor battery. The batteries are not well secured or fit with terminal protection. There is no ground at the AC duplex outlets; several outlets are two pronged outlets. The dome light in the saloon is inoperative.

Summary: Satisfactory

SAFETY AND LIFE SAVING

Portable fire extinguisher: CO2 unit tagged in 1998

Fixed fire system: Halon unit – expired

Flotation devices: Five type III

Horn/distress flares: Canister air horn, flares aboard (expired)

Navigational/anchor lights: Separate side lights, stern light, masthead/steaming, all around/anchor

Anchor & ground tackle: 22 lb. Danforth style primary anchor, folding anchor and short chain in water tank

Other equipment: Rescue sling, radar reflector, EPIRB (expired battery), emergency tiller handle

Comments: Safety equipment for fire fighting protection appears satisfactory however the extinguishers have not been inspected or tagged per N.F.P.A. regulations. Flotation devices are minimal. I did not test the canister air horn. Distress signal flares are aboard however their expiration dates have passed. The navigational lights and anchor light are properly arranged and installed. I could not determine if the anchor light was functional. The EPIRB is antiquated and its battery is expired. I did not attempt to test fit the emergency tiller handle.

Summary: Satisfactory

LP GAS SYSTEMS

Tanks: One tank to port forward in cockpit

Devices: Reducing regulator, pressure gauge, electric solenoid valve, galley range

Comments: The propane system including the tank, tank locker devices and galley range was visually inspected and the galley range and electric solenoid valve were tested. Overall, the installation of the propane system appears satisfactory. The vessel is not equipped with a propane or carbon monoxide alarm.

Summary: Satisfactory

SAILING SYSTEMS

Mast & rig type: Wooden keel stepped mast, apparently Sitka spruce, box spar, wood booms, wood spreaders, deck stepped mizzen, ketch rig

Standing rigging: Multi-strand stainless steel wires, swage end fittings, forestay, inner forestay, two lower and one upper shroud per side, split backstay, stay between masts, mizzen has two lower and one upper shroud per side, running backstay

Hardware: Hood Sea Furl II roller furling head sail assembly, spinnaker gear (no pole), winches: two Lewmar 8, Lewmar 10, two Lewmar 40, one Bariant 21, two Lewmar 43 2-speed

Sails: Roller furling head sail, main, mizzen, one sail in bag

Comments: The mast and associated rigging was visually inspected from the deck level only. This survey is not a rigging survey; please consult with a qualified rigger for greater detail as to the condition of the sailing system. The sailing system components do not appear to be original; the age of the standing rigging is unknown. The original turnbuckles are apparently stored below the starboard lazarette. The age and condition of the sails is beyond the scope of this survey. The sails were not opened and inspected. The bobstay is not seized to the dolphin striker. The fitting on the end of the bow sprit appears to have moved slightly aft. The whisker stays have no pins in their turnbuckles. The deck cover plates for the chain plates are not installed. The vessel was not taken on a sea trial and sailed during our survey.

Summary: Satisfactory

ACCESSORIES

Navigational & operational electronics: Navico WP4000 autopilot, Garmin GPS 45 handheld, Garmin GPS MAP 215, Standard Eclipse VHF, Horizon wind instrument, Horizon depth digital fathometer

General equipment: Bow sprit with pulpit, manual windlass, Sampson post, spreader lights, icebox, various canvas covers, engine instrument include tachometer with hour meter, oil pressure and temperature, Kelvin white compass, extensive spare line inventory, Minkota electric trolling motor, plastic boarding ladder, Statpower True Charge 20-battery charger, bean bag chair, beer keg water heater, Racor fuel/water separator filter with vacuum gauge, internal sea strainers, shaft brake, DC voltmeter, DC refrigeration, Holiday 3-burner LP gas range, water pressure pump with accumulator pump, galley sink, dinette, dehumidifier, manual waste discharge pump, Jensen JSM96 CD/stereo, Panasonic TV/VCR, wood burning stove, ship's clock and barometer, cabin fan, manual head, waste "Y" valve, shower sump pump and collector, fuel level gauge

SUMMARY

The vessel is a wooden ketch manufactured in Japan and equipped with a diesel inboard engine. The current owner was not available during the survey; his representative stated that he has owned it for ten years. It was reported that the engine was rebuilt by Admiralty Marine Service. The hull sides were reportedly painted four years ago at Shelter Island Boat Yard. The vessel appears basically structurally and mechanically sound. The vessel appears actively maintained and seems suitable for its intended purpose as a near coastal cruising vessel and potentially as an offshore cruising vessel.

Overall Summary: Satisfactory

VALUES

ACTUAL CASH VALUE	NEW REPLACEMENT VALUE	INVESTMENT
\$60,000	\$350,000	N/A

The actual cash value above is the high end of the range of values that our research approximates the selling price of this vessel should be, at the time and place of our inspection. Consideration is given to vessel's condition, geographic location, published listings and guides, comparable sales and listings, and market conditions. The new replacement value is the cost of this or a similar, **new vessel**, comparably equipped. The investment is the reported investment including purchase price and significant upgrades. No values include maintenance costs, storage or tax.

Standard Form Key: All systems are rated based upon their appearance, ratings include: Not examined, Not applicable, Faulty, Marginal, Satisfactory, Good, Excellent.

RECOMMENDATIONS

1. Address the areas which exhibited soft reports when percussion tested, as listed under hull and structure comments above.
2. Address the delaminated and warped plywood sub-decking as necessary; areas where this condition was seen include the cockpit and forward cabin.
3. Repair the cracks in the fiberglass deck cover.
4. Provide and install sister frames by all cracked frames, including to port in the lazarette, forward and aft of the water tank to starboard.
5. Properly address the deterioration of the wood below the refrigerator, replace deteriorated wood and service to eliminate the cause.
6. Clean the corrosion from the keel and the keel bolts, inspect, address appropriately.
7. Service to eliminate leaks through the deck, including the leak onto the navigation station and leaks reported through the chain plates.
8. Provide and install a sacrificial zinc anode for the propeller.
9. Service to eliminate the excessive water leakage at the propeller shaft packing gland.
10. Service to eliminate the freshwater pressure system leak onto the engine's exhaust manifold.
11. Properly secure the hose to the galley sink drain; comply with applicable A.B.Y.C. recommendations.
12. Free-up and prove all through hull valves properly functional. The cockpit drain through hull valves were seized.
13. Either cover and secure the trolling motor's battery or remove the battery from the starboard lazarette.
14. Properly secure the primary batteries and provide terminal protection to prevent accidental short circuiting.
15. Upgrade the AC electrical system to comply with applicable A.B.Y.C. recommendations, including providing a ground and three pronged outlets.
16. Upgrade the electrical distribution system and over current protection system to comply with A.B.Y.C. recommendations, do not combine AC and DC circuit breakers on one panel and assure that the backs of all AC components are covered to prevent accidental short circuiting and to eliminate the shock hazard.
17. Clean the fuel in the fuel filter bowl and tank as necessary.
18. I strongly encourage the installation of a propane alarm and a carbon monoxide alarm.
19. Seize the bobstay to the dolphin striker.
20. Provide and install pins in the whisker stay's turnbuckles.
21. Certify the fixed and portable fire extinguishers per N.F.P.A. recommendations.
22. Upgrade the flotation devices so that suitable flotation devices, for the intended area of usage and for each passenger are stored in an easily accessible location.
23. Provide U.S.C.G. required, approved and current distress signal flares.
24. Replace the battery in the EPIRB and consider upgrading the EPIRB.
25. Re-secure the fashion plate to port forward on the hull side.

NOTES

1. Provide and install current registration sticker.
2. Upon repainting of the vessel, address the seams which currently exhibit hard black growth to prevent the repetition of this condition.
3. Repaint the transducer block to prevent worm damage.
4. Monitor the plank seams to port forward, which appear to be working (cracked paint) and address appropriately.
5. Address the dolphin striker, which is flexing and seems to have pulled into the hull.
6. Properly secure the lead ingot ballast.
7. Clean stains indicative of leaks through the deck to allow detection of any future leaks.
8. Assure the head is properly functional, service as necessary.
9. Monitor the propeller, which has small spots of corrosion, repair/replace as necessary.
10. Properly orientate the paddlewheel transducer.
11. Service and prove the spreader lights properly functional.
12. Modify the circuit breaker in the starboard lazarette to comply with applicable A.B.Y.C. recommendations.
13. Service and prove the dome light in the saloon properly functional.
14. Service and prove the fuel level gauge functional if/as desired.
15. The capacity of the water tank is extremely limited, upgrade as desired.
16. Monitor the end fitting on the bow sprit, which exhibits minor movement; address appropriately.
17. Install the shrouds' chain plates' deck plates and seal these penetrations.
18. Determine how the emergency tiller handle functions and consider a test of the emergency tiller handle and system.
19. Assure that the anchor light is properly functional, address appropriately.

This survey sets forth the condition of the vessel and components, as specifically stated only, at the time of inspection and represents the surveyor's honest and unbiased opinion. The submitting of this report should not be construed as a warranty or guaranty of the condition of the vessel, nor does it create any liability on the part of Christian & Company or the individual surveyor. No part of the vessel was disassembled or removed and no assumptions should be made as to the condition of concealed components. Specifics were obtained from sources available at the time of inspection and are believed correct, but are not guaranteed to be accurate.

Christian & Company, Marine Surveyors, Inc.

By: Mr. Kells Christian, Surveyor

Date