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### Pre-Purchase Inspection Report

At the request of **XXXX XXXXX** ("Client") and in accordance with the terms of the **Pre-Purchase Inspection** and Confidentiality Agreements dated **062110**, all of which are incorporated herein by reference and specifically made a part of this report, Steve D'Antonio Marine Consulting, Inc. ("SDMC") inspected a **XXXXX XXXXX 52' "XXXXXXXXXX"** and its systems and components (collectively "Vessel") on **July 2-3, 2010** in **XXXXXXXX, CA** [LOCATION] and has prepared this Pre-Purchase Inspection Report ("Report"). This Report summarizes the SDMC findings resulting from this inspection and sets forth SDMC's opinions and recommendations with respect to the Vessel.

The inspection of the Vessel was conducted both dockside and underway. The Vessel was hauled for this inspection and therefore observations concerning the hull below the waterline or running gear are included.

The inspection is based solely on a careful visual and non-destructive inspection of the easily and readily accessible portions of its structure and equipment. Complete inspection can be made only by removal of soles, decking, headliners, insulation, ceiling, bulkhead fascia, hull lining, tanks and their access ports and joiner work. In all likelihood, the disassembly required would be damaging in nature and prohibitively time consuming. As such, SDMC has conducted this inspection without the benefit of such disassembly.

Complete inspection of machinery, auxiliaries, piping, tanks, systems, electrical wiring, electrical and electronic equipment can be made only by continuous operation or by disassembly which has not been done. SDMC recommends that the engines, generators, navigation, communication, water making and other similar equipment or systems be inspected by a qualified dealer for the particular make of equipment, including but not limited to power loaded tests to determine the condition of the engines, gears, pumps, controls, instrumentation, heat exchangers, exhaust system and electrical components and filtration, duration and calibration testing of other equipment or systems.

SDMC has made no determination regarding the stability characteristics or inherent structural integrity of the Vessel.

SDMC makes no representation regarding the ownership (legal or equitable), classification or regulatory status of the Vessel. The ownership (legal or equitable), classification or regulatory status of the Vessel can only be confirmed directly by the certifying authorities.

SDMC makes no representation regarding the presence of mold, spores or fungus aboard the vessel. SDMC makes no representation regarding the presence of asbestos aboard the vessel.

SDMC's opinions and conclusions contained in this Report are not and should not be considered or construed as a guarantee or warranty, express or implied, regarding the condition of the Vessel. Furthermore, this Report shall not be construed, utilized or relied upon as a "Pre-Purchase Survey," "Marine Survey," "Insurance Survey," "Condition and Valuation Survey," "Appraisal" or other similar document as those terms are commonly known in the marine surveying industry.

This Report summarizes SDMC's opinions and conclusions regarding the condition of the Vessel as of **070310** [Last date SDMC observed/ inspected Vessel].

### FINDINGS, OPINIONS and RECOMMENDATIONS REGARDING VESSEL<sup>1</sup>

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<sup>1</sup> KEY:

**A:** Critical safety item, direct risk of fire, explosion, electrocution, injury or loss of life, this item should be resolved before using the vessel.

**B:** Important, may compromise safe operation, the vessel may lose power, lose control or flood as a result of this problem. It should be corrected or addressed before using the vessel.

**C:** Not critical, this is a nuisance or merely undesirable but not *immediately* serious, however, it may lead to substantial failures and/or repair costs in the future.

**D:** Observation or not an action item.

**ABYC:** American Boat and Yacht Council ([www.abycinc.org](http://www.abycinc.org)) compliance issue and relevant chapter in the Standards and Technical Information Reports for Small Craft (STIR) publication.

**CL:** Centerline or center of the vessel in a fore and aft orientation.

**FRP:** Fiberglass reinforced plastic or fiberglass

**GFCI:** Ground Fault Circuit Interrupter, an electrocution prevention device.

**GPH:** Gallons per hour.

**OCP :** Over Current Protection, i.e. fuses or circuit breakers.

**RW:** Raw water, seawater or any water in which the vessel floats.

**T:** Time in labor hours required to correct, where applicable. This is a rough guesstimate **not** a quote.

**WOT:** Wide Open Throttle, the maximum rpm the vessel's engine has obtained under load (may be less than or greater than WOT specified by the manufacturer).

Unless otherwise noted, all temperatures are in **degrees Fahrenheit**.

## Cabin and Decks

1. A molding trim section appears to be missing on the foredeck; the foredeck area aft of this section appears to have been repaired. The caulking here and in many other areas stands proud of the teak deck, indicating deterioration or wear of the teak. C (severity level, see KEY above). 008, 206 (refers to the last three digits of photos on accompanying DVD).
2. The aft fastener on the swivel used on the anchor rode appears to be distorted. Recommend remove and inspect for damage. In many cases it will be found that swivels are unnecessary. C. 017.
3. There are gaps in the teak deck caulk in several locations. Several bungs are missing from fasteners. Water will migrate through these and under the teak deck, possibly leading to water penetration into the cored sub-deck. C. 024-029, 198, 201, 202.
4. The Danforth anchor shackle is rusting. C. 200.
5. Water has migrated beneath the cap rail varnish at many of the rail stanchions. C. 034, 035.
6. The rubber boots used on the windscreen wiper posts are cracked. There is evidence of crevice corrosion (brown staining) adjacent to each wiper shaft base. C. 036-038.
7. The stern navigation light can be obstructed if the dinghy davits are used. B. ABYC A-16 (refers to relevant American Boat and Yacht Council Standards chapter). 040.
8. Sheared off fasteners are visible in the underside of the port lazarette hatch. C. 042.
9. The tiller port in the stbd lazarette hatch leaks. C. 043, 044.
10. The aft deck drain hoses are clear PVC, they are distorted, they appear to be original equipment, and they should be replaced. B. T:4 (refers to estimated repair time, see KEY above for additional detail). 046, 057.
11. The stbd aft engine room deck support beam is cracked. C. 258.

12. There is no visible fire extinguisher in the galley. A. ABYC A-4 357.
13. The bow pulpit shows evidence of moisture penetration, readings as high as 80 on the Tramex relative scale were observed. This is not unusual for pulpits; however, it should be more carefully investigated by removing select hardware items and inspecting what's beneath the FRP skins. The owner of the vessel reported that this was rebuilt and that it was "solid fiberglass". C. 283
14. There is evidence of previous window leakage on opening/sliding windows. This is likely the result of clogged drains in the window frames. Drains appeared to be clear at the time of inspection. C. 210, 212

### Electrical System

15. There are exposed connections for windlass control wiring in the locker beneath the windlass. The AC shore power wiring that is routed through this locker is not well supported and lacks sufficient protection against chafe. B. ABYC E-11. T: 2. 001-004, 006, 007 (all photo numbers begin with the prefix 070210 and are followed by a unique three digit serial number).
16. One of the foredeck shore power fuse holders is overheating. The cause for the overheating should be isolated and repaired. Consider replacing these individual fuses with a single, multi-pole circuit breaker installed in the fwd cabin in accordance with ABYC E-11.10.2.8.3. A. ABYC E-11. 010, 013, 014.
17. The shore power cable indicates leakage current (current that is returning to its source through the water rather than through the shore power cable's neutral conductor) of in excess of 100 mA (the threshold for leakage current devices is 30 mA). A. 018, 019
18. Corrosion is visible on the aft shore power inlet. C. 030.
19. The chafe protection used on the aft shore inlet wiring does not comply with ABYC guidelines. It is not continuous (it's a spiral wrap) and it lacks fire resistance. This spiral wrap material is used in many locations throughout the vessel as it was common at the time of the vessels construction. Consider undertaking a process of sequential replacement, starting with high risk cabling such as that used for high current carrying DC cabling that lacks OCP (engine and gen start cables for instance) as well as shore power wiring. A. ABYC E- 11.4.24; E-11.14.6.7. 052, 053, 244.

20. The terminal block used for the aft nav light wiring, located in the lazarette, is direct bearing (this connection method is not ABYC compliant) and of low quality. Recommend replacing with waterproof butt splice or a high quality terminal strip utilizing crimp connectors. B. E-11. 067.
21. The AC power supply connection to all of the air conditioning air handlers utilizes unenclosed splices. All AC splices others than those located in dedicated electrical lockers must be enclosed within an NEMA approved junction box. A. ABYC E-11. T: 3. 087, 088, 115.
22. Positive connections for the windlass DC control, located under V berth, lack insulation. (All DC positive connections throughout the vessel must be insulated to prevent short circuiting.) A. ABYC. T: 2. 090.
23. When it was first started and for the first 5 minutes of operation, the generator voltage was low, 104 volts and 57.6 Hz. Afterward, however, the voltage increased to the correct level. The generator governor may be defective; it should be investigated by a Westerbeke dealer. C. 100.
24. The AC selector roll switch was overheating while operating on shore power. The switch temperature was measured at 155°, while the ambient temperature of the locker was 92°. The switch may be corroded, the connections may be loose or it may be defective or underrated. A. 103-106.
25. Wiring under the stbd aft cabin sole is poorly supported. C. 112.
26. The galley GFI receptacle does not work properly. It is energized. When the GFI is tested using an external testing device the unit trips power remains available, although power to receptacles further aft and on the same side of the vessel is de-energized. A. 116, 117.
27. The positive posts on both engine starters lack insulation. A. 223.
28. The number of ring terminals installed on the starter negative terminals exceeds the ABYC recommended maximum of four. C.
29. The generator lacks a main AC outlet circuit breaker. A circuit breaker is installed on the generator's stbd aft side, however, it was found to be in the off position, while the generator continued to have voltage output, its function, therefore, is unclear. The generator output must be equipped with OCP within 7" of the source of power. A. ABYC E-11. T:6. 241.
30. Engine room overhead AC lighting wiring lacks sufficient strain relief. A. ABYC E-11. T: 1. 263.

31. Generator starter positive post lacks insulation. A. ABYC E-11. T:1. 266, 269.
32. Battery box number 1 and the generator starting battery lack appropriate ventilation (vents need to be at the highest point in the cover rather than in the side of the box). Electrical connections to this battery are at one end rather than across the bank; this often causes batteries to discharge and cycle unevenly. These are “maintenance free” batteries; ensure that the charge sources, the house battery charger and the alternators are properly matched to this battery design. A. ABYC E-10. 294 – 296, 338.
33. The inverter chassis ground is undersized. Inverter grounds should be as large as the largest positive DC conductor. A. ABYC A-31. 319, 320.
34. Exposed DC positive connections on the stbd fwd engine room bulkhead lack insulation. A. ABYC E-11. T:4. 331.
35. Welding cable has been used for several high current carrying conductors. Welding cable, because of the gauge of its individual strands and the jacket’s lack of abrasion resistance, is unreliable in marine applications and lacks ABYC compliance. C. ABYC E-11. 332.
36. The house battery bank is overheating; the temperature of the fwd battery was measured 126°. The battery load and charging connections are wired to one end rather than across the bank, which leads to uneven cycling (the aft most battery, furthest from the connection, measured 88°). Rewire the bank, ensure that all charge sources are appropriate for these batteries, they are AGM and that only temperature compensated charging profiles are utilized. For more on battery banks and charging see <http://www.stevedmarineconsulting.com/blog/index.php?p=13> B. 339-334.
37. The battery charger located on the stbd side of the engine room appears to be wired to the batteries without the benefit of DC over-current protection (fuses or circuit breakers). A. ABYC E-11. T: 4. 347, 348.
38. Direct bearing terminals are used in the electrical junction panel located on the stbd side of the engine room. While these were common when the vessel was built, they are not ABYC compliant. These should be checked initially for tension and periodically for corrosion, poor connections and overheating. C. ABYC E-11. 350-354.
39. A voltage drop as high as 11.3% was recorded on at least one receptacle. Typically, 10% is considered the safe threshold for marine AC receptacles. This should be rechecked when the vessel is plugged in at a different shore power location. If high voltage drop is confirmed then the

receptacles themselves should be removed and connections and wiring inspected. B. ABYC E-11. 092.

40. The cold cranking amperage of the starting batteries should be determined and it should be verified that they are of sufficient capacity for the engine's rating and requirements. It appears as if the original battery configuration has been changed. Although the engines start easily, in warm weather, they *appear* undersized. Verify that cable size is correct for no more than a 10% voltage drop for the length of the run between the battery bank, the switch panel and the engines *and back*, particularly the one farthest from the bank. C. 296.

### Engines and Peripherals

41. The main engine exhaust hoses appear to be original equipment; they appear to have been painted. They, along with hose clamps should be replaced. C. 047, 379, 385.
42. The port engine exhibits severe vibration at cruising speeds and WOT. There are a variety of possibilities that may be responsible for this, they include a damaged propeller, incorrect engine alignment, a bent shaft, worn cutless bearings, and a defective flexible coupling, to name a few. C.
43. A noise is emanating from the engine compartment at mid-range rpm, it may be coming from the stbd alternator. A careful assessment of this noise should be carried out to determine its source. C.
44. During the sea trial the stbd engine coolant temperature increased steadily during the WOT test, which was ended prematurely (after approximately 7 minutes into a 10 minute test) to prevent the engine from overheating. The cause for the overheating should be determined and corrected. B. 188.
45. The engine coolant temperature instrumentation is not accurate. During an 80% power run of 30 minutes actual temperature readings were 179 and 162 for port and stbd engines respectively. B. 134.
46. During the roughly one hour run to the boat yard the engine room temperature rose to 107°. The blowers were not on. During the return run the blowers were operated and the temperature in this compartment reached a maximum, at the end of the run, of 111°. Ambient air temp during the day was a steady 74° (it was overcast or raining the entire day). *Ideally, the engine room temperature should not exceed 30° above ambient.* Consider installation of an additional or larger ventilation system. C. 209.

47. The generator coolant level is low. C. 231.
48. The generator exhaust hose located just aft of the generator enclosure is original equipment, it is deteriorated and torn, there are signs of leakage, it should be replaced. B. ABYC P-1. 223-235, 238.
49. The insulation material on the rear generator sound enclosure panel is stuck to the stator housing. This makes inspection of the back of the generator impossible until this is corrected. C. 239.
50. A metallic fuel line is chafing against the generator stop solenoid housing. A. 248, 249.
51. Port forward generator motor mount corroded. C. 268.
52. The generator coolant recovery bottle is too short to facilitate convenient removal of the front sound enclosure cover panel. A longer hose could easily be installed. C. 271
53. The exhaust hose located inside the generator compartment lacks dual hose clamps. C. ABYC P-1. 274.
54. Wiring is chafing against the throttle linkage on the port engine. A. 306
55. The cotter pin that retains the throttle linkage on the port engine is installed in the incorrect hole. Throttle linkages on both engines are in need of lubrication. B. 307-310, 365.
56. There is a slight oil leak on the port engine turbo; it appears to be coming from the drain. C. 311.
57. There is discarded hardware and assorted debris in the valley between the cylinder heads and under the injection pump on the port engine. C. 312, 313.
58. The stainless steel raw water elbow installed on the inboard aft side of the port engine is crevice corroding and shows signs of leakage. For more on why stainless steel is a poor choice for raw water applications see <http://www.passagemaker.com/MagazineandEvents/OnlineResources/Newsletter/NewsletterContent/tabid/442/ctl/Read/id/1530/mid/1158/Default.aspx> . The hose installed over this fitting is stretched and overextended. The fitting should be replaced with one made of bronze and the proper size pipe to hose adapter used. B. 323-325.



59. There is a significant amount of belt dust on the front of the port engine. There is no way to determine how long this has taken to accumulate, however, it warrants attention. The belt guard should be removed and the belts and pulleys, especially the alternator, should be carefully inspected for signs of slipping or misalignment. For more on belt service see <http://www.cruisingworld.com/how-to/systems/an-orderly-transfer-of-power-1000067595.html> B. 368.
60. Hoses conveying coolant from the port engine to the water heater are poorly supported. While they are designated as “heater hose” they lack the necessary durability and abrasion resistance to be used in this application. A failure in one of these hoses would lead to loss of coolant and an engine overheat. Replace with high quality marine grade hoses and secure to prevent chafe. B. T: 6. 333, 334.
61. The stbd aft outboard motor mount rusting. Considering the age of the vessel, all motor mounts should be replaced. C. 367, 370, 371.
62. The stbd coolant recovery bottle cap is cracked. C. 356.
63. As soon as it’s convenient, the emergency override manual throttle and shift controls should be tested for proper operation. C. 133.

### Hull

64. The bottom paint has worn down to the barrier coat in several locations on the bottom. Once this occurs, the barrier must be abraded by sanding in order to offer sufficient profile to enable bottom paint to adhere mechanically. When the barrier is sanded its effectiveness as a barrier is compromised as the manufacturer clearly specifies a minimum thickness (10 mils dry) in order for the product to act as a moisture barrier coat. Additionally, the barrier itself appears to be thin, gelcoat or FRP as well as DA sander patterns are visible beneath barrier where it’s worn away in many locations. Recommend stripping the bottom paint, evaluating the condition of the barrier, abrading the surface in accordance with the barrier manufacturer’s guidelines, applying additional barrier to reach the specified mil thickness. In this process, anti-fouling paint should be applied within the manufacturer specified window in order to achieve the desirable chemical bond. For more on this product and its proper use see [http://ca.binnacle.com/pdf/Interlux\\_interprotect\\_bulletin.pdf](http://ca.binnacle.com/pdf/Interlux_interprotect_bulletin.pdf) . C. 151,152, 155, 156.
65. The hull scoop strainers are not easily serviceable. If the bottom is re-barrier coated these will have to be removed. At this time, consider replacing them with serviceable strainers such as Groco ASC (slotted not perforated) <http://www.groco.net/08-CD-BURN/GROCO%20CAT/CAT->

- [BRWSR/sec-5-view.htm](#) . Ensure that a scoop strainer is not used on the generator. C. 153.
66. The cutless bearings appear to be and feel worn, both shafts can be moved. C. 162, 163.
67. Rust stains are visible at rub rail sections. This often means the bedding behind the rail and/or fasteners has failed. The rail should be removed, old bedding cleaned off and the rail fully bedded in polyurethane or polysulfide sealant to prevent water from migrating into and remaining behind the rail sections. C. 172, 177, 178, 182.
68. One blade appears to be out of alignment (by approximately 1/8") on the stbd prop. In light of the severe port engine vibration both props should be scanned by a propeller shop that utilizes a digital measurement and graphing system such as PropScan  
<http://www.propscanusa.com/shops.htm> . C.
69. The transom anodes don't appear to be decaying as quickly as other anodes. Ensure that they maintain a low resistance connection to the vessel's bonding system. C. 150.
70. There is a section of delaminated FRP tabbing at the fwd engine room bulkhead. The extent of this delamination appears to be limited to this tabbing area; however, it should be ground back and investigated to determine the cause. C. 328, 329.

#### Plumbing and Underwater Hardware

71. Seacocks located under the fwd head vanity utilize thread types that are incompatible. For more on the subject of seacock installations see <http://www.cruisingworld.com/how-to/systems/prevent-leaking-or-frozen-valves-below-the-waterline-1000067412.html> . The handle on the fwd valve is seized and the shelf impinges on its free movement. B. T: 18. ABYC H-27. 093-095.
72. There are signs of leakage on the fwd head sink plumbing under the vanity. C. 096.
73. Sanitation hoses located under the aft stateroom sole appear to be original, they are moldy and in need of cleaning. C. 109, 110.
74. Seacock located under the aft head is seized. B. 113.
75. Hose used for fill and vent for potable water tank do not carry an FDA or NSF rating for potable water. Additionally, aluminum is a poor material

- choice for potable water systems. Recommend installation of a whole-boat particulate and charcoal filter. C. 135-138.
76. PVC plumbing has been used for the air conditioning system raw water supply. PVC lacks the necessary tensile strength or modulus or elasticity for raw water applications. Recommend this be replaced with bronze, FRP, Marelon or CPVC plumbing components. B. 252.
77. Plumbing used for all of the vessel's bilge pumps lacks the necessary anti-siphon protection. This is especially important in that all of the pumps' discharges are in the boot stripe or very close to the waterline, which would easily facilitate a siphon and downflooding scenario. B. ABYC H-22. T:12. 253.
78. The water injection plumbing and main hoses for the stuffing boxes appears to be original equipment and is in need of replacement. B. T: 4. 260-262.
79. Fuel tank sight glass hoses are difficult to read. Gate valves were found to be open (sight glass valves should be closed at all times other than when reading fuel level). Recommend replacing sight glass hose with that which is rated for fuel, see <http://www.newageindustries.com/clearflo.asp#fuel> . Gate valves lack ABYC approval. Replace gate valves with spring loaded normally closed ball valves. B. ABYC H-33. 264, 265.
80. Hose used for the generator raw water supply appears to be original, it's designed for use with fuel and oil rather than raw water, it should be replaced with proprietary raw water hose bearing the J2006R marine wet exhaust and raw water hose. B. 272, 273.
81. Seacocks located on the port side of the engine room lack compatible threads, the clamps on the refrigeration compressor hose are loose. B. ABYC H-27. T:16. 289-292.
82. The generator exhaust discharge seacock valve is seized. B. 292.
83. The sanitation discharge seacock, located port aft, is seized. B. 293.
84. Brazed copper raw water fitting located port engine room show signs of leakage. C. 315.
85. The seacock located in the port, fwd engine room, fwd of water heater, is seized. B. 316.

86. The bilge pump discharge located in the port fwd engine room area lacks a seacock. Because this fitting is very close to the waterline and within the 7° heel envelope it must be equipped with a sea cock and anti-siphon valve. B. 317.
87. Both of the bilge pumps located in the fwd engine room bilge lack anti-siphon valve protection. The aft pump discharges overboard at the waterline without the benefit of a seacock. For more on this subject see <http://www.cruisingworld.com/how-to/systems/a-simple-valve-prevents-flooding-1000067409.html> B. T:4. 317, 318.
88. The aft engine room bilge pump discharges without the benefit of a seacock. B. ABYC H-27. T:6. 369
89. The air-conditioning raw water pump utilizes PVC plumbing fittings. PVC fittings lack the tensile strength and elasticity for use in raw water applications. Replace with bronze or Marelon. B. T: 2. 321, 322.
90. The handles for the main engine seacocks are very stiff and difficult to actuate. They are in need of service and regular exercising. C. 326.
91. Plumbing used for the refrigeration raw water circuit utilizes PVC. Replace with bronze or Marelon. B. 329, 330.
92. The raw water intake seacock for the air conditioning system is seized. B. 337.
93. Seacocks located on the stbd side of the engine room are rusting, leaking and their threads are incompatible. B. ABYC H-27. T:10. 372-375.

#### Systems

94. The fasteners securing the shelf supporting the steering sheave, in the lazarette, appear to be crevice corroding. The shelf beneath them also appears to be compressed. Remove, inspect, replace/repair if necessary. B. 055, 056, 060.
95. Recommend removing, inspecting and lubricating fasteners and axle pins used in rotating, moving and pivoting portions of the steering system. C. 065.
96. Cable clamps used on the steering system at the lower helm are installed backward. The “live” or loaded portion of the cable should pass through the clamp’s saddle. B. 072-074.

97. The thru deck fitting in the chain locker appears to not be secured. C. 083-086.
98. Determine how the chain rode is secured to the vessel. A cut away line that will easily pass through the chain pipe should be installed between the bitter end of the chain and the hull. C. 082.
99. The CO detector located in the aft cabin appears to be original equipment. The typical lifespan of a CO detector is 5 years, it should be replaced. For more on CO detectors see <http://www.cruisingworld.com/how-to/gear-and-systems/plan-ahead-and-play-it-safe-1000068552.html> . CO detectors should be installed in every berthing area as well as in the saloon. A. ABYC A-24. 114
100. Neither VHF radio appears to be interfaced with the GPS. Tgis limits the radios' distress function in that it cannot, at the push of the distress button, send the vessel's position. Recommend interfacing both radios with the GPS. A. 137.
101. Condensation was observed on both fuel tank fill caps, indicating that there is water in the tanks. The O rings on these caps do not fit well. B. 216-221.
102. The engine and generator primary fuel filters are not rated for marine engine room use; they lack the necessary heat shields and metallic drain fittings (they could be retrofitted with these components). A. ABYC H-33. T:4. 225, 280.
103. Primary fuel filters coalescer cones are contaminated with debris. This debris appears to be or contain rust, which is likely caused by water in the mild steel fuel tanks. The filters should be disassembled and thoroughly cleaned, the fuel tanks should be emptied and the inspection port (there is only one at the fwd end of each tank) opened to inspect the interior. If contamination or rust is found, inspection ports should be added into all of the tank's other baffled chambers to facilitate a complete cleaning. No water was noted in the filters. C. 225, 226, 281.
104. There is an odor of effluent at the macerator pump aft of the generator. Hoses, fittings and clamps should be checked for leaks, the hose itself may be permeated and in need of replacement. C. 236, 237.
105. The oil reservoirs used for the stuffing boxes are not well secured. B. T:2. 254, 255.
106. The fuel tank vents are equipped with spill preventers. Because they do not possess a 2.5 flame resistance rating, these devices are not

- approved for use in engine rooms and as such they do not meet ABYC guidelines. Additionally, the hose and plumbing components that have been used to install them also lack a flame resistance rating (the parts are plastic and Type B fuel line). A. ABYC H-33. T: 4. 256, 345, 346
107. During the seatrial the stbd stuffing box was observed to operate at a significantly higher temperate than the port, 135° and 111° respectively. The stuffing box should be inspected to ensure it has been installed properly, that it is not defective and is receiving proper lubrication. B. 183-185.
108. The port fuel tank vent hose is kinked. The hose used lacks a flame resistance rating; one section of black, unmarked hose is deteriorated, it should all be replaced with Type A fuel hose. B. ABYC H-33. T:4. 284-288, 364.
109. The air-conditioning compressor condensate trays are rusting. C. 376.
110. Deck drain and air conditioning condensate drain hoses are unsupported and very close to steering cables. C. 377, 378.
111. The autopilot drive chain is not properly tensioned. B. 387, 388.
112. The refrigerant tube located on the stbd side of the engine compartment is corroding as a result of exposure to condensate from the air handler located in the saloon. C. 382-384.
113. There is rust on the mounting flange of the fuel tanks. While not serious, this should be addressed by cleaning and painting. C. 381, 386.
114. The fixed fire extinguishing system lacks an interconnect with engines, ventilation and generator (this is required for ABYC compliance). In the event of a system discharge this equipment may continue to operate, exhausting the gaseous agent from the engine room. Consider installation of the interconnect components to enable automatic shutdown of this gear. C. ABYC A-4.
115. The emergency tiller should be fit to the rudder post and tested at the soonest opportunity. C. 054.
116. Consider replacing the existing primary fuel filter vacuum gauges with the recording variety. At the moment, the only time an accurate vacuum reading can be obtained is when the vessel is under way at cruising rpm. In order to reduce the likelihood of damage occurring to them, new vacuum gauges should be plumbed to the inlet plumbing on the

- filter body rather than in the filter lid hardware. Additionally, tandem filters will afford a degree of redundancy should a filter become clogged. C. 187.
117. The water heater is rated for operation with coolant that does not exceed 170°. The engines are capable of safely and routinely operating at temperatures in excess of 170°. Additionally, the tank used in this water heater is aluminum, a material that is less than ideal for potable water applications. Consider replacement with a high quality water heater that utilizes a stainless or glass lined tank with a temperature rating that is equal to the engine's operating characteristics. C. 314.
118. The water heater does not appear to be fit with a tempering valve. In the absence of such a valve it's possible for the hot water produced by the water heater to be as hot as or nearly as hot as the engine's coolant. Recommend installation of a tempering valve and/or anti-scald faucets. A.
119. The clean fire extinguishing agent used in the engine room fixed fire extinguish system is not rated for use in occupied areas. The engine room is not considered an occupied area, however, it should be born in mind that should the fire extinguisher discharge or be discharged while persons are in this space there is the potential for injury. For more information on this subject see <http://www.cruisingworld.com/gear-and-systems/for-the-boat/prevent-an-onboard-fire-1000067342.html> D. ABYC A-3. 390.
120. The fixed fire extinguisher does not appear to have been inspected, there is not inspection documentation. It should be inspected and weighed by a qualified fire extinguisher service facility. C. ABYC A-3. 390.
121. Rodent droppings are visible in the engine room, stbd fwd of the electrical junction panel. C.

#### Addendum

- A smoke detector should be installed in the engine room as well as the main saloon (wireless units in which all sound in the event any one detects smoke are recommended). These units, available inexpensively at home improvement stores, will cause all units in the system to sound in the event smoke is detected in any one location. (NFPA 12.3 now recommends a smoke detector be installed on all vessels over 26'). Smoke detectors should be replaced every 5 years or in accordance with manufacturer's guidelines. Portable fire extinguishers should be installed in every cabin and accommodation space as well as adjacent to the

galley. A fixed fire extinguishing system that includes a manual discharge and automatic equipment shut down should be installed in the engine compartment. These additions are highly recommended. For more information on smoke detectors see

<http://www.passagemaker.com/MagazineandEvents/OnlineResources/Newsletter/NewsletterContent/tabid/442/ctl/Read/id/1534/mid/1158/Default.aspx> A

- Every vessel with a cabin or enclosed space should be equipped with CO detectors in each stateroom as well as locations where occupants may sleep, even occasionally (saloon, pilothouse etc). CO detectors should be permanently wired to the vessel's DC power supply *without* switches or circuit breakers that can be easily or inadvertently turned off. CO detectors have a finite life, typically no more than 5 years. If you are unsure of the age of a CO detector, it should be replaced. For more information on CO detectors see <http://www.cruisingworld.com/how-to/gear-and-systems/plan-ahead-and-play-it-safe-1000068552.html> A
- If not already installed, an exhaust system temperature alarm should be installed on propulsion engines and generators. These will often alert the operator to a cooling water supply problem long before the event becomes critical. B.
- If not already installed, a bilge high water alarm should be installed. The float switch for a high water alarm should be located no more than three inches above the existing bilge pump float switch. In general, vessels should be equipped with a **minimum** of 100 gallons per foot of boat length, effective, per hour of bilge pump capacity. Twice that capacity is desirable. For more information on bilge pump installations see <http://www.cruisingworld.com/how-to/projects/wire-and-plumb-your-bilge-pump-properly-1000067474.html> B
- Every vessel should be equipped with GFCI receptacles located in the galley, heads, machinery spaces and on deck in order to comply with ABYC guidelines. All receptacles would benefit from this protection. Additionally, whole boat GFCI protection is also desirable and recommended in the form of a residual current device or RCD. While these do not technically offer protection for personnel, they are designated as equipment protection, they do never the less enhance safety and reduce the likelihood of dangerous electrical faults and potential electrocution scenarios. A
- If the vessel's water heater is plumbed to the engine, and if not already installed, the water heater should be equipped with a tempering valve. This will reduce the temperature of the water leaving the water heater, particularly when it's being heater by the engine, conceivably to the same



temperature as the engine's coolant, or nearly 200°F. Additionally, in addition to the tempering valve, if the engine is used for producing hot water anti-scald faucets should be installed in the galley and heads. For more information on tempering valves and water heater installations see <http://www.passagemaker.com/MagazineandEvents/OnlineResources/Newsletter/NewsletterContent/tabid/442/ctl/Read/mid/1158/id/1436/Default.aspx> A

- Every vessel should be equipped with a permanently installed rigid or flexible fitting or part of the hull which allows a person to reboard from the water without assistance. A.

Once the indicated items (entries denoted A and B or otherwise as critical or important) have been addressed, corrected or repaired, the Vessel is capable of making passages that are in keeping with the intended use of the designer and builder.

Reasonable care has been taken in conducting a visual inspection of the accessible areas of this vessel. All details and particulars in this report are believed to be true; however, they are not guaranteed to be accurate. All judgments, conclusions and recommendations are purely expressions of opinion, based on my skill, training and experience after a reasonable examination of the vessel's systems and after discussions with owners/brokers/crew/builder or others who could provide useful information.

#### LIMITATION OF LIABILITY

SDMC HAS ENDEAVORED TO CONDUCT AS THOROUGH AN INSPECTION OF THE VESSEL AS POSSIBLE, AND THE FINDINGS, OPINIONS AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED ON THE INFORMATION OBTAINED DURING THE COURSE OF THE INSPECTION. SDMC'S FINDINGS AND OPINIONS WITH RESPECT TO THE VESSEL ARE NOT INTENDED TO BE NOR SHOULD THEY BE CONSTRUED AS A GUARANTEE OR WARRANTY, EXPRESS OR IMPLIED, REGARDING THE CONDITION OF THE VESSEL.

SDMC ASSUMES NO RESPONSIBILITY FOR THE COST OF REPAIRING OR REPLACING ANY DEFECT IN THE CONDITION OF THE VESSEL.

SDMC SHALL HAVE NO LIABILITY FOR CONSEQUENTIAL DAMAGES, PROPERTY DAMAGES, BODILY OR PERSONAL INJURY DAMAGES, OR PUNITIVE DAMAGES SUSTAINED BY THE CLIENT ARISING FROM SDMC'S INSPECTION OF THE VESSEL AND THE FINDINGS, OPINIONS AND

RECOMMENDATIONS CONTAINED IN THIS REPORT. IN THE EVENT SDMC IS FOUND LIABLE TO CLIENT FOR ANY SUCH DAMAGES, CLIENT'S DAMAGES SHALL BE LIMITED TO THE FEE SET FORTH IN THE PRE-PURCHASE INSPECTION RETAINER AGREEMENT IN PARAGRAPHS 2.1 AND 2.2 OF SAID AGREEMENT, LESS EXPENSES, PAID BY THE CLIENT.

### DEFENSE AND INDEMNIFICATION

In the event SDMC is found liable to a third party or third parties for damages arising from SDMC's inspection of the Vessel and the findings, opinions and recommendations contained in this Report, Client agrees to defend, indemnify and hold harmless SDMC for such damages, including but not limited to reasonable attorney's fees, whether arising under theories of negligence, contract, or any other legal theories.

### CONFIDENTIALITY

This Report is considered "Confidential Information" as that term is defined by the Confidentiality Agreement dated **062110**, and is subject to the terms of said Agreement.

### CLIENT'S ACCEPTANCE OF REPORT and RESPONSIBILITIES

Client's acceptance and use of this Report is subject to the terms of this Report, the Pre-Purchase Inspection Retainer Agreement and Confidentiality Agreement.

By Client's acceptance of this Report, Client acknowledges that many conditions, defects, hazards or problems may affect the safety, seaworthiness, safe operation, reliability, operability, and value of the Vessel, and Client further acknowledges that it is the sole responsibility of the Master of any vessel to determine the seaworthiness and suitability of the vessel for any intended voyage.

Client acknowledges that SDMC retains full rights to photos taken during, or provided to the client in the course of fulfilling the terms of this agreement. The client may not publish, copy or otherwise distribute photos provided by SDMC without prior written consent (the client may provide photos to the boat builder or broker with an accompanying inspection report).

It is the sole responsibility of the Client (1) to make inquiries and request full disclosure from the seller(s), broker(s) and other interested party(ies) of any such conditions, defects, hazards or problems, whether discovered during SDMC's inspection and set forth in this Report or not; (2) to obtain and review any previous surveys and repair records and to make inquiries of any individuals with firsthand knowledge of the Vessel, particularly those individuals with experience operating and/or repairing the Vessel; (3) to conduct a "walk through" inspection, inventory verification and operational testing/sea trial/full power run of the vessel and all equipment immediately prior to Client's conclusion of the purchase of the Vessel; and (4) to contact the manufacturer of the Vessel to register ownership and to obtain up to date information concerning the boat/equipment and possible recall campaigns or other service/maintenance advisories.

NO PORTION OF THIS REPORT IS OFFERED AS A WARRANTY, EXPRESS OR IMPLIED, OF THE CONDITION, LIFE EXPECTANCY, SEAWORTHINESS OR VALUE OF THE VESSEL.

\_\_\_\_\_(E Mailed) \_\_\_\_\_ 070710  
Steve D'Antonio, President, Date  
D'Antonio Marine Consulting, Inc. (SDMC)

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