

## **Pre-Purchase Condition and Value Survey**

### **“WINDFALL”**



### **2005 FASTONE 36**

**Hull Identification Number: 111122220000**

**Capt F.K. Lanier & Associates, LLC**  
**Phone: (757) 287-3770    [www.captfklanier.com](http://www.captfklanier.com)**

1 of 30

Vessel: WINDFALL

File Number: 123456789

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Rev. 11/18/19

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**PRE-PURCHASE CONDITION AND VALUE SURVEY REPORT**

To: Hannover Fist  
Phone: (123) 456-7890  
E-mail: 1234@ibed.com  
Vessel's name: WINDFALL  
Hailing port: Norfolk, VA  
Date of Survey: December 13th, 2019  
Surveyed at: Norfolk, VA  
USCG Documentation Number: 1234567  
HIN Number: 111122220000  
Hull Number: 002  
Vessel type: Sail  
File Number: 123456789  
Surveyor: Capt Frank Lanier, AMS®, SAMS Accredited Marine Surveyor  
LOA\*: 37'- 9"  
Beam\*: 11'- 11"  
Draft\*: 4'- 5"  
Displacement\*: 14,100 lbs  
Builder: Fastone Yachts  
Year Built: 2005  
Model: 36  
Hull material: Fiberglass  
Fuel Type: Diesel  
Offered at: \$000,000.00  
\*\*Market Value: \$000,000.00 Replacement Value: \$000,000.00  
Vessel use: Pleasure  
Navigational limits: U.S. Coast Guard and underwriter assigned.  
Surveyed at request of client: Hannover Fist  
\*As provided by published specifications. The surveyor has performed neither weight calculations nor measurements.  
\*\*All values are estimates and are based on the state of the vessel at time of survey.



Captain Frank Lanier  
Capt. F.K. Lanier & Associates. LLC

**Captain F. K. Lanier & Associates, LLC**  
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**I. SURVEY SUMMARY**

This is to certify that on December 13th, 2019 I personally surveyed “WINDFALL,” a 2005 36-foot sailing vessel of fiberglass construction built by Fastone Yachts. The vessel was surveyed on December 13<sup>th</sup>, 2019 while docked at Chesapeake Bay Yachts, Chesapeake, VA. The bottom was inspected after being hauled at the same facility on December 18<sup>th</sup>, 2009. The purpose of this survey was to determine the condition and value of the vessel. This is a **Condition And Value Survey** for the sole use of Hannover Fist and is not transferable.

Problems indicated in this report **are in no way** intended to present a poor impression of the vessel or to detract from her value. Most problems mentioned are normal for a vessel of her age and type. They are noted here as a professional service and obligation to the client requesting this survey report to assist in maintaining the vessel’s condition, value, and safety.

**DEFINITION OF TERMS**

The following is a definition of words and terms used in this survey report:

<u>Excellent condition</u>	New or like new.
<u>Good condition</u>	Nearly new with only minor structural / cosmetic discrepancies noted.
<u>Fair condition</u>	Functional as appears with minor repairs.
<u>Poor condition</u>	Unusable – requires repairs or replacement of system, component or item to be considered functional.
<u>Appears / good as seen</u>	Indicates that a very close inspection of the particular system, component, or item was not possible due to the constraints imposed upon the surveyor (e.g., no power available, inability to remove panels, or requirements not to conduct destructive tests).
<u>Adequate</u>	Sufficient for a specific requirement.
<u>Powers up</u>	Electronic item operates, but reliability of data and all functions of operation cannot be confirmed.
<u>Not Proven</u>	Installed and appeared functional, but operation was not confirmed.

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<u>Sea Trial</u>	A generic term for a short test run undertaken by a prospective buyer of a new or used vessel as only one determining factor to consider whether to purchase a vessel. Use of this term does not denote the vessel was operated on any specific body of water or location (i.e. the ocean for example).
<u>Replacement Value</u>	The cost of building a new vessel of like or similar style in the current market situation and includes applicable freight and taxes.
<u>Market Value</u>	The value of a vessel agreed upon between a willing seller and a willing buyer under normal supply and demand conditions in an appropriate marketplace, when neither is acting under compulsion and when both have reasonable knowledge of relevant facts.

In addition to a vessel's overall condition, accurate fair market values take many factors into consideration (upgrades, outfitting, desirable qualities or design features, etc.) and rely to an extent on knowledge of both the type of vessel and the boat building industry. As such, estimated values often cannot be directly correlated with any central bank, listing service, government or local agencies, records, etc.

The fair market value given in this survey report is influenced by the above factors and is based on a combination of both the Market and Cost Approach methods. The Market Approach method utilizes a market scan of comparable vessels for sale and is representative of these considerations as interpreted by the surveyor.

In the Cost Approach method, the cost of a new comparable boat is depreciated based on the age of the subject boat. The appraiser uses a depreciation rate determined by his experience and industry accepted tables (in this case, the Martin Scale of depreciation).

It is the intent of this survey report to provide an unbiased report of the vessel's condition and equipment on the date and time of inspection, not prior to or subsequent to that date and time. A conscientious effort was made to inspect the entire vessel. However, since this report is based only on visual examination of the vessel by non-invasive and non-destructive methods of inspection and diagnosis, this inspection and all contents of this report are not rendered or represented as a warranty or a guarantee of the performance or condition of this vessel, or of any of her machinery, equipment, or systems. Defects not readily visible and not reasonably accessible for inspection or discovery without removal of structure, sheathing, liners, joinery, fittings, tanks, machinery and equipment, especially without disassembling or removing those and any other barriers preventing inspection, are not and cannot be covered by this report.

The mandatory standards promulgated by the United States Coast Guard (USCG), as well as the standards and recommendations of the American Boat and Yacht Council (ABYC) Standards and Recommended Practices for Small Craft and the National Fire

Protection Association (NFPA) NFPA 302, Pleasure and Commercial Craft have been used as guidelines for this survey and many of the observations and

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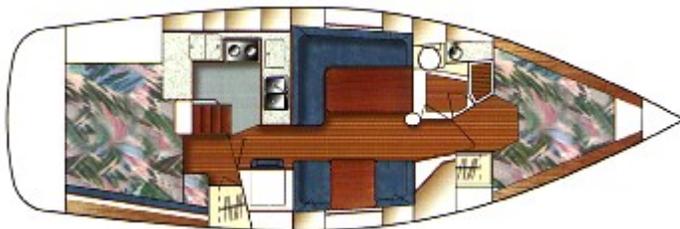
recommendations contained in this report are based on these standards and recommendations, however complete compliance with the above references is neither suggested nor guaranteed.

The observations, opinions, and recommendations contained in this report constitute the entire written survey report as of its date and are intended to supplement and incorporate all prior oral or written comments and communications. If anything in this report is, in the opinion of the above named client, inconsistent with any prior communications from the undersigned, then the client must request clarification as soon as possible or else proceed at his/her own risk.

**This survey is based on facts observed, discovered and presented at the time of survey and represents the honest and unbiased opinion of the surveyor and neither the surveyor nor his agents are to be held responsible for any inaccuracies, omissions, errors in judgment, or negligence. It is submitted in good faith and in no way offers, expressly or implied, any form of warranty or guarantee concerning the condition of the above mentioned yacht. This survey does not include a determination of the vessel's seaworthiness, nor does it include stability tests or sea trials necessary to such a determination.**

Use of this survey constitutes acceptance of all provisions and limitations stated in both this survey report and in the survey contract. All of the provisions of this report are not transferable.

## II. DESIGN AND CONSTRUCTION



WINDFALL is an auxiliary powered sloop rigged sailing vessel of molded fiberglass construction with a raked bow, walk-through transom, spade rudder, and externally mounted wing keel. The hull is of solid fiberglass construction, while the decks and superstructures are a combination of solid and internally cored molded fiberglass.

Power is provided by a single diesel engine located on centerline and aft of the main cabin. Removable panels give reasonable service access to the engine. The layout of the vessel incorporates partial, non-watertight partitions and molded liners to separate the various internal spaces. These are FRP bonded to the hull/deck and where accessible (except as noted elsewhere in this report) show no evidence of separation or fracture, however many internal portions of the hull were obscured by construction and unable to be accessed and inspected.

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### **III. SCOPE OF SURVEY**

During the survey of this vessel the hull, decks, and superstructure were inspected both visually and by percussion sounding with a small plastic headed hammer for rot, synthetic filler, loose fastenings, and other defects that would be audibly detected. Relative moisture readings of the hull above the waterline and decks were observed using a model GRP 33 moisture meter.

This survey neither includes nor implies any certification that the materials and construction methods meet any known standards and the surveyor cannot predict how the vessel will perform over time. It is the builder's responsibility to warrant the fitness of their product for its intended use and the surveyor does not assume any portion of that warranty. The surveyor has not inspected woodwork or other parts of the structure which are covered, unexposed, or inaccessible and is therefore unable to report that any such part of the structure is free from defect. Design parameters for intended vessel usage are deferred to the designer and manufacturer. Any surveyor comments in this report refer to builder and designer claims and are not the opinion of the surveyor.

Visual inspection of the wetted surfaces of the hull exterior and underwater machinery revealed no damage from impacts, grounding, or galvanic corrosion. The hull was inspected at the hauling facility while blocked in place using typical yard stands and the areas of the hull obscured by these stands were unable to be inspected.

It must be noted that complete inspection of machinery, plumbing, electrical systems and available equipment can only be made by disassembly or by continuous operation. This has not been done, but may be recommended later in this report. No technical or mechanical tests were performed on propulsion or auxiliary generating equipment by the undersigned and no fluid samples were drawn. Only the installation and external condition of machinery and accessory equipment were inspected. As such, this should not be considered a complete mechanical inspection. Qualified marine mechanics experienced with the specific machinery installed should be employed to survey propulsion engines and auxiliary generators.

Propulsion and rudder shafts were not drawn for inspection and the inspection of flexible piping was limited to the condition of its external casing and only where readily accessible for visual inspection.

The mast, spreaders, associated equipment, and all rigging were inspected from deck level and the mast was not climbed. Absent documentation to the contrary, standing rigging and spars are presumed to be original equipment. Masts and rigging should be struck periodically for inspection and routine preventative maintenance. If open water voyaging or extended cruising is planned, a qualified marine rigger should be employed to go aloft to inspect the rigging. All sails were given a limited inspection for visible defects, however they were not laid out for a comprehensive inspection and (unless otherwise noted) are accepted to be in a condition of normal wear relative to their age.

During the interior portion of the survey all loose floorboards were lifted, drawers removed, lockers opened and all accessible interior spaces inspected, however due to construction, finishing methods, modular design, and equipment installations approximately 90% of the interior hull and hull to deck joint was inaccessible and therefore unable to be fully inspected. Due to the above some areas and equipment were

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not wholly accessible and were unable to be fully inspected, examples of which include the fuel and water tanks.

Electronic and electrical equipment were tested by powering up and observing function, however no measurements were taken and no calibrations or adjustments were made. Batteries were not load tested and only the electrical wiring, connections, and system installation was inspected where visible.

Both AC and DC electrical systems were inspected as noted, however no attempt was made to perform a complete analysis of the boats electrical systems, as this would require disassembly with tools, removals, etc. to gain access to components.

Cosmetic or comfort issues are addressed only where there is a significant effect on the vessel's value.

#### **IV. GENERAL COMMENTS**

WINDFALL looked to have been used with very good care and consideration and no signs of excessive wear and tear, abuse or careless usage were noted. The engine started easily and ran smoothly at idle, and the vessel was placed in forward, neutral, and reverse at the dock and operated during the sea trial with satisfactory results.

WINDFALL's original design incorporates many desirable traits expected of a vessel of her class and these features are only enhanced by the upgrades and outfitting performed under her current owner, however there were items noted that require attention. This marine survey report addresses those recommendations thought to be necessary for the safety of the vessel and all those onboard, however it does not suggest or imply complete compliance with all current requirements, standards or practices. It must also be noted that the onus to properly equip and operate a vessel lies solely with the owner and/or operator.

A search of the US Coast Guard boating safety website [www.uscgboating.org](http://www.uscgboating.org) revealed no recalls or safety defects listed for this make, model, and year vessel. Information on manufacturer's defects is available by calling the U.S. Coast Guard's Boating Safety Hotline, (800)368-5647, or Boat/US at (703)461-2864

Boaters have a responsibility for their own safety that extends well beyond legally mandated safety requirements. Free boating education programs are offered by the U.S. Coast Guard Auxiliary, U.S. Power Squadrons, and some states. For information on courses offered in your area, call Boat/US at (800)336-BOAT or access their web site at [www.boatus.com](http://www.boatus.com). The U.S. Coast Guard Auxiliary and U.S. Power Squadrons also offer boating instruction online at [www.americasboatingcourse.com](http://www.americasboatingcourse.com) and via CD-ROM, which can be ordered online or by phone at (866) 262-8222. This course has been approved by the National Association of State Boating Law Administrators and meets the requirements of states (except those that still require classroom instruction) that mandate educational certification to operate a boat.

Finally, a wide range of informative articles written by the surveyor on boat operation, maintenance, and repair are available for free under the "Articles" section of our website at [www.captfklanier.com](http://www.captfklanier.com).

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The following provides vessel information and condition as found during the survey. Recommendations are noted for reference here and listed in their entirety in the “Recommendations” section.

## **V. SYSTEMS**

### **HULL**

Documentation number: **See recommendation B-1.**

Hull: Molded FRP (fiber reinforced plastic).

Construction: Hull construction is of solid FRP construction.

Comments: Good condition as seen.

Finish: Original gel-coat topsides, roller painted bottom antifouling paint.

Color: Off-white topsides, blue bottom paint.

Comments: Hull topside finish is in overall good condition with minor cosmetic dings and scratches. The bottom paint has full coverage and is in good condition.

*Note: No visible evidence of hull blistering was noted during this survey, however as reinforced plastics are known to be unstable and the surveyor is not able to determine the nature of the plastics and reinforcements of which the hull is made, no guarantee as to the stability or performance of the laminate can be made by him. Warranties of the hull are provided by the builder only, and if there are any questions about existing warranties the manufacturer should be consulted. The surveyor has made every effort to determine the presence of blistering short of destructive testing, however changing conditions may result in the sudden appearance of blisters where previously there were none. Finally, latent blisters, or blisters in the very early stages of formation, or blisters which are depressurized and deflated may also exist which are not detectable by any means available to the surveyor. Only a technical analysis based on destructive testing can answer the more in-depth question concerning blister formation, and that is not included in this survey service.*

Stem: Raked stem of molded FRP.

Stern: Walkthrough transom of molded FRP.

Keel: External wing keel fastened with epoxy and bolts.

Comments: Keel bolts are in good condition as seen, but unable to be fully inspected due to installation. Keel bolts should be torqued annually to the manufacturer’s recommendations – the keel should also be lowered periodically (again, according to the manufacturer’s recommendation) so that all mounting hardware, hull to keel joint, etc, can be thoroughly inspected.

Hull to Deck Joint: “Shoe box” type secured with screws through aluminum rub-rail. Although the hull to deck joint appeared sound with no visible damage or evidence of separation, stress overload, or working of the joint noted from the outside, the hull to deck joint was unable to be fully inspected from inside due to interior finish work.

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Decking and superstructure: Combination of solid and internally cored FRP.  
Vessel trim in water: Good fore and aft with no unusual list to port or starboard.

**UNDERWATER MACHINERY**

Rudders: Balanced inboard spade rudder.

Comments: Good as seen with full range of motion and no unusual movement noted.

Propeller shaft: 1" stock with knurled shaft nut and cotter pin.

Propeller: 3 bladed bronze, stamped "15 R 19"

Comments: No visible signs of corrosion, electrolysis, or impact damage.

**See recommendation B-2.**

Cutless Bearings: Water lubricated rubber sleeve.

Comments: **See recommendation B-3.**

Shaft log / hose: Good as seen, double clamped with SS clamps.

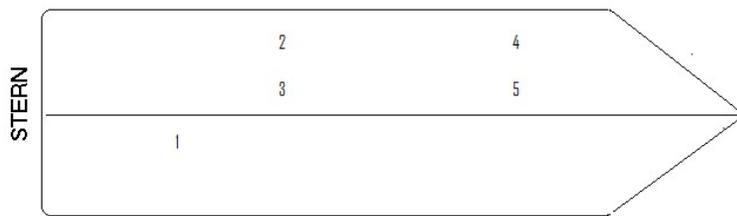
Transducers: Two through-hull mounted transducers (one depth, one knot log).

Comments: Both of composite construction - no physical, external damage or leaks noted.

Sacrificial Anodes (zincs): New sacrificial anodes were installed during the haulout.

**THROUGH-HULLS (below static waterline)**

*Note: All through-hulls and seacocks are of composite construction.*



1. Type: Engine raw water intake.  
Comments: Good as seen. Seacock operational.
2. Type: Holding tank macerator overboard discharge.  
Comments: Good as seen. Seacock operational.
3. Type: Galley sink drain.  
Comments: Good as seen. Seacock operational.
4. Type: Head sink drain.  
Comments: Good as seen. Seacock operational.
5. Type: Head raw water intake.  
Comments: Good as seen. Seacock operational.

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THROUGH-HULLS (above static waterline)

Comments: 8 units of composite construction – each in good condition.

Overall through-hull comments: **See recommendation B-4.**

**INTERIOR**

Ventilation: Good with adequate hatches (7) and opening port lights (4).

Comments: All hatches and opening port lights were operational.

Bulkheads: Good as seen with no broken bonds or tabbing noted, however overall access and inspection was limited due to construction, equipment installations, and finishing.

Overall interior comments: All interior finishes and upholstery appear in good physical and cosmetic condition.

**BILGE PUMPS**

1. Manufacturer: Jabsco  
Type: 12 VDC with float switch.  
Model: 1950  
Location: Main cabin bilge.  
Installation: Good as seen.  
Comments: Powered up via float and manual switch, but operation not proven.
2. Manufacturer: Whale  
Type: Manual.  
Location: Cockpit.  
Installation: **See recommendation B-5.**  
Comments: Appears functional, but operation was not proven.

Bilge alarm: No

Overall bilge pump system comments: **See recommendation B-6.**

**SAFETY EQUIPMENT**

**PERSONAL FLOTATION DEVICES**

- 6 Type I (Offshore)  
3 Type IV (Throwable Device)  
Location: Main cabin and cockpit locker.  
Comments: Each in good to excellent condition.

**VISUAL DISTRESS SIGNALS**

Type: Three red hand held day/night flares.

Location: Main cabin.

Expiration Date: July 2020

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**SOUND PRODUCING DEVICE**

Horn: Portable canister type.

Location: Shelf in galley.

Comments: Horn is operational.

**FIREFIGHTING EQUIPMENT**

Portable extinguishers: 02 - type B/C:I

Location: Cockpit locker and main cabin. **See recommendation B-7.**

Comments: Gauges read full. While the above meets the minimal USCG requirements for this size vessel, it is always prudent and highly desirable to carry additional extinguishers on board. **See recommendations B-8, B-9 and B-10.**

*Note: Although not a requirement, it is recommended every vessel carry on board one 2.5 gallon fire bucket with a lanyard of suitable size and length for drawing water from over the vessel's side. In addition to their primary purpose, a fire bucket is versatile piece of equipment that can serve many functions, such as a bailer or even an emergency toilet.*

**NAVIGATION**

Running Lights: Operational

Anchor Light: Operational

Masthead Light: Operational

Comments: Unable to completely inspect installation and wiring due to interior finishing.

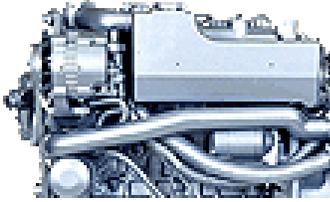
**CREW SAFETY AND ERGONOMICS**

1. COB (crew overboard) retrieval planning for this vessel will most likely involve deployment of the stern boarding ladder, however planning should include various scenarios, such as recovery of an incapacitated victim. It is crucial that COB and recovery drills are not only understood by all onboard, but practiced on a regular basis – include captain and crew role reversals to ensure recovery can take place if the captain is incapacitated or the COB. Ensure the ladder can always be easily deployed and that all hardware is kept in serviceable condition.
2. Ensure passengers and crew are aware of the various sheets and lines resting on the port and starboard decks and cabin top and to utilize caution with transiting the decks. Such lines can roll underfoot, resulting in a fall.

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**MACHINERY**

*Note: All technical information taken from published specifications.*



**ENGINE**

Number: 1

Type: Diesel

Make: Universal

Model: M-35BC

Year: Original installation.

Serial Number: 4S5953-E411

Cylinders: 4

HP: 35

Engine Hours: 78.7

Oil level: Correct

Reduction Gear: 80D2

Serial Number: 1209293 000945

Oil level: Correct

Engine Mounts: Good condition.

Engine Bedworks: Good as seen, with no delamination or unusual moisture noted.

Shaft Coupling: Good

Stuffing Box: Good condition with no leaks noted.

Comments: **See recommendation B-11.**

Alternators: 1

Ventilation: Natural and mechanically aspirated.

Blower: Single engine compartment blower.

Cooling: Closed freshwater

Type: Heat exchanger

Comments: **See recommendation B-12.**

Cooling Water Intake & Hoses: Good condition as seen.

Raw Water intake strainer: Single composite unit.

Exhaust System: "Wet" type system with transom exit.

Comments: **See recommendation B-13.**

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Engine Controls: Jacketed push-pull type, dual control located at helm.

Fuel shut off: Yes – at helm.

Instrumentation: Engine Temp, RPMs, Fuel, Hours, and Voltmeter (vessel has indicator lights for oil pressure)

Comments: Located at helm. All gauges appeared functional, however there is a considerable amount of condensation / moisture in the gauges.

Oil discharge placard: Yes

Mechanic's engine survey: No

Engine manual: Yes

Maintenance Log: None sighted

Overall machinery comments: **See recommendation B-14.**

**FUEL SYSTEM**

*Note: All technical information taken from published specifications and/or tank manufacturer's label.*

Number of tanks: 1

Capacity: 25 gallons

Material: Aluminum

Location: Below port cockpit locker.

Fill Hose Type: USCG TYPE A II.

Tank grounding installed: Yes

Fill & tank grounded: Yes

Overboard vent discharge: Yes – USCG Type A1 hose.

Fuel hose type: USCG Type A-I hose.

Fuel Shut Off Valves: Yes

Location: At tank.

External engine fuel filter: Racor R15

Overall comments: There were no visible indications of fuel leaks in the bilge, however access to the fuel tank was limited, meaning construction details and condition of the fuel tank could not be determined within the limits of this inspection.

**See recommendation B-15.**

**ELECTRICAL SYSTEMS**

**DC ELECTRICAL SYSTEM**

Batteries: 2

Type: Wet cell

Location: Main cabin, starboard side.

Size: 8D

Voltage: 12 VDC

Installation: **See recommendation B-16.**

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Wiring: Multi-stranded jacketed copper wire.  
Charging systems: Engine alternator and battery charger.  
Battery charger: Charles  
Model: 5000 SP Series, 30 Amp.  
Location: Main cabin, port side.  
Comments: Unit appears functional, but was not proven.

Battery Switch: 2 (multi-position)  
Location: Main cabin, starboard side.  
Circuit Protection: Individual branch circuit breakers.  
Location: Main cabin

**AC ELECTRICAL SYSTEM**

Voltage: 120 (V.A.C.)  
Amps: 30  
AC/DC system ground: **See recommendation B-17.**  
Wiring: Multi-stranded, jacketed copper wire.  
Comments: Good as seen.

Circuit Protection: Main and individual branch circuit breakers.  
Location: Main breaker in aft cockpit locker, with panel located at navigation station.  
Polarity Indicator: Yes.  
Galvanic Isolator: None sighted.  
GFCI: Yes – galley and head outlets protected.  
Shoretie / connections: 30 amp shore tie approximately 50 foot in length – good as seen.  
Warning at shore tie inlet: Yes  
Comments: Many household type electrical/electronic appliances (TV, microwave, etc) do not meet any applicable ABYC, UL Marine or other marine standards. To minimize the chances of failure, turn off individual appliances, all branch circuit breakers, then the main circuit breaker prior to turning off the shoreside circuit breaker and unplugging the shore power cord.

**FRESH WATER SYSTEM**

**TANKS**

Number: 3  
Material: Polyethylene  
System capacity: 66 gallons  
Location(s): One 24 gallon tank in V-berth, two 21 gallon tanks beneath aft berth.  
Inspection ports: Yes  
Vented: Yes  
Water Lines: Reinforced vinyl hose.  
Comments: Unable to be fully access and inspect tanks due to installation.

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No leaks were noted, however this could not be conclusively determined as access to each tank was limited. Tanks were not filled or tested during the survey as no water was available at the dock.

**FRESH WATER PUMP**

Manufacturer: Jabsco  
Model: Sensor-MAX 14  
Location: Main cabin (beneath port settee).  
Comments: Operational

**WATER HEATER**

Manufacturer: Seaward  
Voltage: 120 VAC  
Capacity: 6 gallons  
Location: Main cabin (beneath port settee).  
Comments: **See recommendation B-18.**

**MARINE SANITATION SYSTEM**

**HEAD**

Number: 1  
Type: Manually operated seawater flush type unit.  
Manufacturer: Wilcox Crittenden  
Comments: Unit appears functional.

**HOLDING TANKS**

Number: 1  
Locations: Main cabin (beneath port settee).  
Material: Polyethylene  
Estimated capacity: 17 gallons  
Shape: Rectangular  
Hoses: Marine grade sanitation hose  
Y-Valve: No – has “T” in discharge line to deck pump out and macerator.  
Macerator pump: Powers up, but not proven.  
Discharge and Dockside Pump-out: Yes  
Comments: **See recommendation B-19.**

System comments: Head appears functional and all hoses, fittings, and the holding tank appear to be in above average condition and omit no foul odors. All marine sanitation system seacocks should be closed when head is not in use to prevent possible back siphoning and flooding.

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**GALLEY**

Layout: "U" shaped on port side of main cabin aft with double sink, pressure water, refrigerated icebox, microwave oven, and propane stove.

**STOVE**

Manufacturer: Seaward

Model: Hillerange

Type: 2 Burner with oven.

Gimbal Mounted: Yes

Fuel Type: LPG

Stove Lines: Good as seen.

Regulator: Yes – in propane locker

Ventilation: Natural – good.

Fire Protection / Insulation: Adequate

Instructions posted: Yes

Comments: Unit was tested and operational. While not a requirement, consideration should be given to installation of a propane "sniffer" type alarm that would automatically shut off the fuel supply in the event of an LPG leak.

**STOVE FUEL STORAGE**

Location: Aft cockpit LPG locker.

Installation: Good as seen.

Capacity: 10 lbs

Fuel Shutoff: Remote solenoid shutoff and via valve at tank.

Propane / fuel locker venting: Locker vents overboard as per ABYC recommendations.

System pressure/leak test results: Pass.

Comments: Pressure tests for the LPG system are easily performed and should be conducted on a regular bases (weekly at a minimum). With the appliance valves off, open the tank supply valve and solenoid valve (to pressurize the system) then close the tank supply valve. Observe the pressure gauge reading. The pressure indicated should remain constant for not less than three minutes. A drop in pressure indicates a leak, at which point the entire system would be checked with a leak detection fluid or detergent solution to locate the leak (test solutions must be non-corrosive and non-toxic). The leak must be found and repaired prior retesting and operating the system.

***NOTE:***

- 1. Never use flame to check for leaks.***
- 2. Never use solutions containing ammonia. Ammonia, present in some soaps and detergents attacks brass fittings. Undetectable at first, in a matter of months these fittings may develop cracks and leaks.***
- 3. Always seek the advice of a professional if unsure how to inspect, tests, or make repairs to your LPG system!***

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Microwave oven

Manufacturer: GE

Comments: Powers up.

REFRIGERATION

Type: Ice box conversion.

Make: Adler/Barbour

Compressor location: Port cockpit locker.

Comments: Unit was powered up and appeared operational.

MARPOL Trash Placard: Yes

CO Detector: Yes – two units, located in the main and forward cabin.

Smoke Detector: Yes – two units, located in the main and forward cabin.

**ELECTRONICS**

*Note: All units were powered up and appear functional (unless otherwise noted) however no technical testing or verification of functionality was conducted.*

VHF RADIO

Manufacturer: Icom

Model: IC-M402

Serial #: Not sighted due to installation.

Location: Navigation station.

Comments: Powers up and appears operational. Unit has a RAM mike, but it was not functional. Ensure this VHF radio is properly registered and has a Mobile Maritime Service Identity (MMSI) number for DSC and emergency operation.

Manufacturer: West Marine

Model: Hand held unit.

Serial #: 607Z-64007176

Location: Main cabin.

Comments: Powers up and appears operational.

TEMP / SPEED / DEPTH SOUNDER

Manufacturer: Raymarine

Model: TRIDATA

Serial #: Not sighted due to installation.

Location: Helm

Comments: Powers up and appears operational.

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**AUTOPILOT**

Manufacturer: Raymarine  
Model: SmartPilot  
Serial #: Not sighted due to installation.  
Location: Helm  
Comments: Powers up and appears operational.

**WIND SPEED / DIRECTION**

Manufacturer: Raymarine  
Model: ST60  
Serial #: Not sighted due to installation.  
Location: Helm  
Comments: Powers up and appears operational.

Other electronics: Vessel has a Sharp Aquos flat screen TV and DVD player. Both units power up.

**INSTRUMENTATION**

**COMPASS**

Manufacturer: Ritchie  
Model: Powerdamp  
Location: Helm  
Comments: **See recommendation B-20.**

**STEERING SYSTEM**

Type: Pedestal with cable and quadrants.  
Manufacturer: Edson  
Emergency tiller: Yes  
Comments: Steering and emergency tiller installation appears sound and in good condition. Regular inspections of the steering system should be incorporated into the vessel's maintenance schedule. Install and test emergency tiller operation on a regular basis (annually at a minimum).

**GROUND TACKLE AND CORDAGE**

*Note: Rodes and chains were not pulled or inspected except as noted. All lengths are estimates unless otherwise noted.*

**PRIMARY ANCHOR / RODE**

Manufacturer: West Marine  
Type: Danforth style, 22 lbs.  
Chain: 30 ft of 5/16" galvanized  
Rode: 120 ft. of 1/2" three stranded nylon.  
Location: Anchor mounted on bow, with rode attached and stored in anchor well.  
Swivel: No

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All shackles moused: Yes  
Bitter end attached: Yes  
Comments: **See recommendation 21.**

**WINDLASS**

Type: 12 VDC powered.  
Manufacturer: Maxwell  
Model: 800  
Installation: Good as seen.  
Condition: Unit powered up and appears operational, but was not proven.  
Comments: Always tie off the anchor rode to a suitable cleat when deployed - a windlass is only intended to raise the anchor, not secure the line or pull the boat up to the anchor's location).  
Overall comments: It is always prudent to carry a larger, more robust anchor and rode for use as a backup or for times additional holding power is required (such as when anchoring in less than ideal conditions). Consult ABYC H-40 "Anchoring, Mooring, and Lifting" as well as anchor manufacturer selection data to ensure the appropriate sized anchors are always onboard.

**DECK**

**DECK HARDWARE**

Material: Stainless steel  
Mounting: Good as seen  
Cleat placement: Four 10 inch cleats – two at bow and two at stern (port and starboard).

**HAND RAILS**

Comments: Mounting is good with stainless steel rails adequately placed about the vessel cabin top.

**TOE RAILS**

Height: 1 ¼” rail  
Comments: Molded FRP.

**STANCHIONS**

Height: 24 ½”  
Type: Stainless steel.  
Comments: Good as seen.

**LIFELINES**

Height: Dual lines – 24” & 12”  
Comments: The lifelines are vinyl coated and unable to be fully inspected.  
**See recommendation B-22.**

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**MAST & BOOM**

MAST

Type: Charleston Spar in mast sail furling system.

Material: Extruded aluminum

Stepped: Keel stepped. **See recommendation B-23.**

Halyards routing: Internal to mast.

Comments: Good as seen from deck level. Pull the mast boot annually to check material for deterioration and allow inspection of the mast for corrosion.

BOOM

Material: Aluminum

Straightness: Good

Traveler car: Garhauer

Vang: Spring loaded mechanical boom vang.

STANDING RIGGING

Type: SS 1 x 19 wire.

Comments: Good as seen from deck – has backstay bridle.

Turnbuckles: Open body type.

Comments: Good – with retaining pins.

Terminals: Swaged fittings

Comments: Visual inspection revealed no cracks or other indications of failure.

CHAIN PLATES

Material: Stainless Steel

Comments: Good condition as seen with no corrosion, movement, or evidence of internal leaking noted.

Overall rigging comments: **See recommendation B-24.**

WINCHES

1. Type: Self tailing Lewmar 48  
Quantity: 2  
Location: Cockpit
2. Type: Self tailing Lewmar 30  
Quantity: 2  
Location: Cockpit

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**RUNNING RIGGING**

Halyards and sheets: Synthetic braid.

Comments: Serviceable condition.

**SAILS AND FURLING GEAR**

*Note: Sails were unable to be unfurled and fully inspected during survey due to windy conditions while docked (no sea trial was conducted). As observed, both appeared to be in good condition, however each should be professionally inspected by a qualified sail maker or sail loft.*

**SAILS**

1. Type: Main  
Comments: Good condition as seen.
2. Type: Jib  
Comments: Good condition as seen.

**FURLING GEAR**

Manufacturer: Schaffer

Model: 2100

Comments: Good condition as seen. Service as per manufacturer's instructions – pull and inspect drum line for wear when servicing.

**CANVAS**

Dodger: Yes	Condition: Good
Bimini: Yes	Condition: Good.

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**VI. RECOMMENDATIONS**

The following recommendations are made in accordance with NFPA-302, ABYC, and applicable USCG codes and have been divided into priorities for the purpose of planning maintenance and repair.

First priority items (preceded by an “A”) are listed in section A and pertain to safety or vessel integrity issues which should be completed either before operation of the vessel or prior to leaving her unattended at a dock or mooring, depending on the nature of the recommendation.

Secondary items (preceded by a “B”) are listed in section B and pertain to deficiencies in state and/or federal regulations, as well as maintenance or improvement recommendations that should be completed within the next year or sooner (as dictated by need and circumstance) unless otherwise noted.

Surveyor comments (preceded by a “C”) are pertinent suggestions and good general advice provided as a courtesy to the client.

**SECTION A: First Priority Recommendations**

A-1 None

**SECTION B: Secondary Priority Recommendations**

B-1 The vessel’s documentation number was not properly displayed. The official number assigned to documented vessels, preceded by the abbreviation "NO." must be marked in block-type Arabic numerals at least three inches high on some clearly visible interior structural part of the hull. The number must be permanently affixed so that alteration, removal, or replacement would be obvious and cause some scarring or damage to the surrounding hull.

B-2 The propeller is slightly loose on the shaft. Recommend it be inspected and tightened by a competent marine mechanic.

B-3 The cutless bearing is worn. Recommend it be replaced by a competent marine technician.

B-4 Recommend the following be completed by a competent marine technician  
B-4.1 Install double, marine grade stainless steel or titanium clamps on all through-hull and seacock hoses where possible.  
B-4.2 Locate soft tapered wood plugs of appropriate size at every through-hull fitting below the waterline – these plugs can be either mounted or attached with light line. Another option is storage in a portable “Damage Control” kit.

Finally, it is recommended that all through-hull seacocks be closed when the system it serves is not being used, particularly when the vessel is left unattended while in the water.

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*Note: Where installation of double hose clamps is recommended throughout this report, it is understood that double clamps should only be installed where there is sufficient length of barb/nipple available and hose end overlap to allow it. As per ABYC, no clamp shall be installed closer than 1/4" to the end of the hose and must fully engage the barb or fitting. Any clamp that extends over the end and is cutting into the hose or forcing the hose to be internally cut by the fitting is an incorrect installation. In such cases, replace the fitting with one having a longer barb/nipple to facilitate installation of double clamps (preferred) or install a single clamp of the appropriate size. Clamps should be separated by at least 1/4" (1/2" if possible) with screws located on opposite sides of the hose.*

*For a clamp to perform at its optimal level, the clamp should be installed at the manufacturer's recommended installation torque. Insufficient clamping force allows fluid to seep in between the joint and the hose I.D. increasing the risk of blow-off, while over tightening clamps can cause damage to the hose and/or clamp itself.*

- B-5 The handle for the cockpit manual bilge pump was not sighted. Recommend a replacement handle be mounted near the pump using a lanyard, catch, or similar device to prevent accidental loss.
- B-6 Recommend the following be carried out by a competent marine technician:
- B-6.1 Install a visual "bilge pump on" indicator for the electric pump at the helm position and a visual/audible high water bilge alarm to alert the operator in the event of flooding. The alarm should be loud enough to be heard over engine noise while under way and ideally by passers-by or marina personnel when docked. A bilge pump on/off counter is also desirable to indicate how often bilge pumps are cycling (making a leak more noticeable).
  - B-6.2 Install vented or riser loops in all bilge pump discharge hoses to a level at least 12" above the hull's maximum heeled waterline to prevent possible back siphoning.
  - B-6.3 Replace the corroded hose clamp at the electric bilge pump discharge outlet.
  - B-6.4 Where possible, double clamp all bilge pump hoses at each transition point and at both ends with marine grade stainless steel or titanium clamps.
- B-7 The portable fire extinguisher in the main cabin is stored in a locker located on the port side of the main cabin. Recommend it be mounted in an easily visible, accessible location by a competent marine technician.
- B-8 Recommend the portable fire extinguisher in the cockpit locker be mounted by a competent marine technician.

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- B-9 Recommend all portable fire extinguishers be inspected now by a qualified service facility and at regular intervals in the future as per NFPA 302 (annually at a minimum).
- B-10 ABYC standards require provisions for discharging a suitably sized clean agent portable fire extinguisher directly into the space immediately surrounding the engines without opening the primary access panels (if an appropriately sized fixed automatic "clean agent" (i.e. CO2, Halotron®, FM-200, FE-241) fire extinguisher is not installed in the engine compartment). The discharge port must be sized to accept the portable fire extinguisher discharge nozzle, able to be opened from outside the compartment to provide ready access for discharge of the agent into the engine compartment, and located so the required size portable fire extinguisher can be properly discharged in accordance with the manufacturer's instructions. The fire extinguisher must also be of sufficient size to service the entire engine compartment. Recommend installation of a discharge port and fire extinguisher as per the above by a competent marine technician.
- B-11 The propulsion shaft stuffing box is leaking slightly more than normal while underway. Recommend that the stuffing box be inspected and adjusted or re-packed (if necessary) by a competent marine technician.
- B-12 Evidence of leaking was noted at the engine raw water pump and at the ends of the engine heat exchanger. Recommend both of these leaks be inspected and corrected by a competent marine mechanic.
- B-13 Evidence of leaking and corrosion was noted at the bottom of the engine exhaust riser (see photo B-13). Recommend having a competent marine mechanic remove the insulating lagging and inspect the exhaust riser (elbow) for corrosion and to repair any leaks found. It is also recommended that the lagging be removed and that the riser be inspected annually for corrosion by a competent marine technician as part of the vessel's regularly scheduled maintenance.
- B-14 While no technical inspection of the engine or reduction gear was performed, a visual inspection was conducted and the following observations were made. The engine compartment was in general clean and well organized and overall installations looked sound and serviceable. Recommend each of the following be conducted by a competent, qualified marine mechanic.
- B-14.1 Test the engine antifreeze concentration and verify it meets manufacturer's recommendations.
- B-14.2 Determine the cause of moisture in the instrument gauges and correct.

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- B-14.3 Install chafe protection for all engine wires and hoses where necessary and ensure that all fuel, cooling, and exhaust hoses are double clamped with marine grade stainless steel clamps where possible and provided chafe protection at all bulkhead or other such transition points as required.
- B-15 The fuel tank was inaccessible and unable to be inspected due to installation. Recommend the fuel tank and entire fuel system (from fill to tank to engines) be accessed and thoroughly inspected by a competent marine technician to ensure installations comply with all applicable ABYC recommendations and federal requirements.
- B-16 Battery connections are made using wing nuts. ABYC recommends battery cables and other conductors size 6 AWG and larger not be connected to the battery with wing nuts. Wing nuts are difficult to properly torque and may work loose due to vessel movement. Recommend wing nuts used in battery cable connections be replaced with appropriately sized marine grade lock nuts.
- B-17 ABYC standards call for the main AC system grounding bus to be connected to the engine negative terminal or the DC main negative bus on grounded DC systems, or the boat's DC grounding bus in installations using ungrounded DC electrical systems. This AC to DC ground was not sighted. Recommend it be verified or installed if not in place by an ABYC certified marine electrician.
- B-18 The plumbing for the water heater was disconnected (the water system hoses have been joined so that the water heater is bypassed). Recommend the water heater be connected and tested by a competent marine technician for proper operation.
- B-19 The seacock at the through-hull discharge for the macerator must be positively controlled (secured in the closed position) to meet USCG regulations. Recommend having a competent marine technician install a means of securing the valve as per the above.  
One possible option would be to cut a small piece of salt treated 2"X2" or 2"X4" no longer than 4". Screw an eye bolt into it then epoxy the wood to the bilge in line with the valve handle. Insert a cable/wire strap through the hole at the end of the valve handle and through the eye bolt.
- B-20 There is no deviation card for the compass. Recommend having a compass adjuster swing the compass and post the deviation card.
- B-21 The bitter end of the primary anchor rode is not attached. This attachment point isn't meant to bear the load of anchoring, but rather to prevent accidental loss of the rode. Recommend having the bitter end of the rode attached by a competent marine technician.

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- B-22 Surveyor was unable to fully inspect the lifelines as they are vinyl coated. The problem with vinyl coating is that when worn or damaged it can trap water, which wicks beneath the coating and along the wire, causing accelerated corrosion. As this corrosion often occurs out of sight and unknown (until failure occurs) the use of vinyl coated wire is generally not recommended and is in fact prohibited by many offshore racing organizations. Uncovered wire lifelines (a better option) allows visual inspect of their condition at anytime. The overall outside diameter of uncoated wire is also smaller than the same sized coated wire, allowing you to increase wire size for additional safety. As evidence of corrosion was noted at some of the lifeline wire to fitting terminations, recommend the lifelines be inspected by a competent rigger.
- B-23 The mast boot shows signs of deterioration. Recommend it be pulled and inspected by a competent marine technician to prevent water entry into the vessel. Once the boot is removed, inspect the mast section in that area for corrosion prior to re-installation of the boot.
- B-24 Although good as seen from deck level, recommend the rigging and chainplates be inspected by a competent marine rigger prior to offshore sailing or long distance cruising.

**SECTION C: Surveyor Comments**

- C-1 When the vessel is relocated (either to a new slip or marina) it's a good idea to have a diver check the condition of all zincs within sixty (60) to ninety (90) days of the move. This allows the owner to determine rate of zinc wastage and make any required changes in the zinc inspection/replacement schedule.
- C-2 All seacocks should be exercised at least monthly to ensure proper operation and each should be completely removed, disassembled and inspected every three to four years, at which time all clamps and hose ends should be inspected for corrosion, cracks, or other damage and replaced as necessary. Through-hulls should be removed and inspected at this time as well, which ensures bedding compounds are renewed at appropriate intervals.
- C-3 Installation of back-up bilge pumps is highly desirable. Back up pumps should ideally be mounted and configured to turn on when bilge water level reaches around 4 to 6 inches above the cut on point for the primary pump. This prevents the back up pump from resting in the normal accumulation of bilge water, where it can become clogged with sludge and debris or seized from disuse.

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- C-4 Regular inspections of the bilge pump systems should be included in the vessel's overall preventative maintenance program, enabling the replacement of worn or damaged components at prescribed intervals rather than upon failure.
- C-5 Although not a USCG requirement, an appropriately sized fixed automatic "clean agent" (i.e. CO2, Halotron®, FM-200, FE-241) fire extinguisher mounted in the engine compartment would be a very desirable safety upgrade. NFPA Standard 302, Chapter 10.2-10.3, and ABYC Standard A-4.5.2 specify that "enclosed machinery spaces (engine compartments) be protected either by a fixed, automatic fire extinguishing system or by a portable "clean agent" [CO2, Halotron®, FM-200, FE-241] extinguisher. If a portable extinguisher is provided to meet this standard, a port must be provided through which the portable extinguisher can be discharged directly into the machinery space without opening the primary access."
- C-6 Engine manifolds and exhaust risers should be periodically removed, pressure tested, and fully inspected by a qualified marine mechanic for leaks, corrosion, and clogging, as failure here can easily cause catastrophic engine failure. This should be considered standard maintenance, particularly with systems operating in salt water. How often depends on vessel location and use, however at a minimum they should be removed every four years (more frequently depending on age), pressure tested, and inspected by a qualified marine mechanic.
- C-7 No galvanic isolator was sighted. Boats with metal in contact with water are subject to galvanic corrosion when connected to shore power as a result of connection to the common AC grounding conductor. This connection will affect a vessel's cathodic protection system and a galvanic isolator may be used to reduce these effects. Based on this, installation of a galvanic isolator and a "status monitor" as per ANSI/ABYC A-28 by an ABYC certified marine electrician should be considered. Status monitors should be installed within easy view (so they can be monitored frequently) and tested for proper function of the isolator unit, failure to block galvanic current, continuity of the green wire ground, reverse polarity, connectivity of both AC and DC ground systems, AC ground wire ground currents, and failure of the monitoring system itself. There are essentially 2 basic categories of Galvanic Isolators available today. The first type is specifically designed to fail safe, meaning if there is an electrical transient affecting the unit (lightning hit or nearby strike), the diodes will fail shorted, not open circuited (which would cause a loss of continuity for the green grounding wire ground and present a safety hazard). The second type does not have "failsafe diodes" and can fail open circuited (which again which would cause a loss of continuity for the green grounding wire ground and present a safety hazard). The monitor required by ABYC for

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this category of GI is supposed alert the owner to an “open circuit”, however the voltages that damaged the GI will likely disable the electronics of the monitor as well. Recommend all galvanic isolators installed utilize failsafe technology, such as the Dairyland Electric Isolator (DEI) model, which can be viewed at [http://www.dairyland.com/index.php?page=products\\_mgi](http://www.dairyland.com/index.php?page=products_mgi)

- C-8 In general all deck-mounted hardware should be removed and re-bedded at least every five years, at which time the area beneath each should be inspected for damage (water intrusion into the core for example) and repaired as necessary.
- C-9 While it sounds a bit unorthodox, a number of wax toilet bowl rings (available at any hardware store) are a handy item to include in your DC (Damage Control) kit. They are easily stored and have proven their worth on numerous occasions when used as a temporary means of plugging or controlling water entry into the hull via minor holing, flooding at shaft logs, etc.
- C-10 In addition to the above listed recommendations, before any offshore passages the vessel should be prepared and equipped as recommended in the publications "Safety Recommendations for Cruising Sailboats", United States Sailing Association, Portsmouth, RI, 35p. and "Safety Recommendations for Offshore Sailing (ORC Special Regulations)", United States Sailing Association, Portsmouth, RI, 35p.

**VII. CONCLUSION**

In our opinion, once the required items listed in the “Recommendations” section have been corrected, this vessel should be suitable for service within limitations defined by design and construction provided prudent routine and preventative maintenance is performed and the boat is operated by competent crew with due regard to customary safety practices, good seamanship, and prevailing weather conditions.

Issued without prejudice,



Captain Frank K. Lanier



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Foredeck



Engine



Helm



Navigation Station



Galley



B-13