CAROLINA MARINE SURVEYS

MARINE SURVEYOR AND CONSULTANT

1979 Morgan 415 Ketch Rigged Sailing Vessel

SailAway

MEMBER OF SOCIETY OF ACCREDITED MARINE SURVEYORS

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Report of Marine Survey

Of The Vessel

SailAway

1979 Morgan 415 Ketch Rigged Sailing Vessel

Conducted by
Kenneth "Butch" Rasmussen AMS®

ABYC Master Technician, Retired

PREPARED EXCLUSIVELY FOR:

Mr. Over The Horizon

August 06, 2017

MEMBER OF SOCIETY OF ACCREDITED MARINE SURVEYORS

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I. INTRODUCTION

SCOPE OF SURVEY

Acting at the request of Mr. Horizon , the attending surveyor did attend onboard the Morgan 415 ketch, "SailAway". An in the water survey was conducted at The Marina in Washington, North Carolina. No ship's papers were sighted on board. The Hull Identification Number was verified from the transom. A sea trial was performed. An out-of the water inspection of underwater machinery and the exterior of the hulls wetted surface area was performed. The reason for the survey, was to ascertain the physical condition and value of the vessel. Moisture readings taken and referenced throughout the body of the report, were taken with the ElectroPhysics GRP33 moisture meter. Where available AC and DC power was used to check operation of only the electrical systems specified in this report only. No reference or information should be construed to indicate evaluation of the **internal** condition of the engines or transmission. Electronic equipment was checked for operation when possible, otherwise for ''powers up'' only. This vessel was surveyed without removals of any parts, including fittings, tacked carpet, screwed or nailed boards, anchors and chain, fixed partitions, instruments, clothing, spare parts and miscellaneous materials in the bilges and lockers, or other fixed or semi-fixed items. Locked compartments or otherwise inaccessible areas would also preclude inspection. Owner is advised to open up all such areas for further inspection. Further, no determination of stability characteristics or inherent structural integrity has been made and no opinion is expressed with respect thereto. This survey report represents the condition of the vessel on the above dates, and is the unbiased opinion of the undersigned, but it is not to be considered an inventory or a warranty either specified or implied. **This Survey Is Not Intended, Conducted, Or Suitable For Use As A Complete Safety And Construction "STANDARDS-COMPLIANCE" And "HAZARDS Or FAULTS" Test. All Of Which Are In-depth Inspections Going Well Beyond The Intent, Scope And Time Allotment Of This Inspection.**

NOTES:1- It is recommend and understood that all diesel engines be surveyed by a qualified Engine Surveyor to determine the condition of the engines, gears and
pumps, heat exchangers, coolers, etc.
2-It is recommend and understood that the spars, all rigging (running and standing) and sail handling hardware be inspected by a qualified rigging contractor to determine the condition of these components.

CONDUCT OF SURVEY: THE MANDATORY STANDARDS PROMULGATED BY THE UNITED STATES COAST GUARD (USCG), UNDER THE AUTHORITY OF TITLE 46 UNITED STATES CODE (USC); TITLE 33 AND TITLE 46, CODE OF FEDERAL REGULATIONS (CFR), AND THE VOLUNTARY STANDARDS AND RECOMMENDED PRACTICES DEVELOPED BY THE AMERICAN BOAT AND YACHT COUNCIL (ABYC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) MAY HAVE BEEN REFERENCED ONLY AS GUIDELINES IN THE CONDUCT OF THIS SURVEY.**THIS SURVEY IS NOT INTENDED, CONDUCTED, OFFERED, OR TO BE MISTAKEN BY ANY READER AS PROVIDING OR INCLUDING A RIGOROUS "STANDARDS-COMPLIANCE" AND "HAZARDS OR FAULTS" CHECK THAT INCLUDES THE CITATION OF ANY "VIOLATION" OF THOSE STANDARDS.**

II. GENERAL INFORMATION

GENERAL INFORMATION

SURVEY PREPARED FOR: . . . . . **Mr. O.T. Horizon**

NAME OF VESSEL: . . . . . **SailAway**

TYPE OF SURVEY: . . . . . **Condition and Value**

OVERALL VESSEL RATING: . . . . . **AVERAGE**

ESTIMATED MARKET VALUE: . . . . . **$38,000.00 USD**

ESTIMATED REPLACEMENT COST: . . . . . **$341,000.00 USD (From the BUCValu Pro Guide)**

YEAR/MAKE/MODEL OF VESSEL: . . . . . **1979/Morgan 415/Center Cockpit Ketch**

HULL IDENTIFICATION NUMBER (HIN): . . . . . **MRY01234M679 - 415 Verified from transom.**

USCG DOCUMENTATION NUMBER: . . . . . **# 791386 Sighted on plaque affixed to interior bulkhead. No USCG document was sighted onboard.**

STATE REGISTRATION/VALIDATION STICKER NUMBERS: . . . . . **None Sighted.**

CURRENT OWNER'S NAME: . . . . . **Mr. Current Owner Owners name supplied by selling broker.**

DATE/TIME OF SURVEY: . . . . . **August 22, 2017**

VESSEL SPECIFICATIONS: . . . . . **Length overall; 41 FT. 0 Inches**
Length of waterline; 34 FT. 0 Inches
Beam; 13 FT. 10 Inches
Draft; 4 Ft. 4 Inches
Displacement; 27,000 Pounds
Specifications from published manufacturers data.

PROPULSION SYSTEM: . . . . . **Sail and auxiliary diesel.**

DEFINITION OF TERMS

The terms and words used in this report have the following meanings as used in this Report of survey:
GOOD CONDITION: Fully functional for it's intended use, with only normal, minor wear and tear due to use.
FAIR CONDITION: Denotes that system, component or item is functional as is with minor cosmetic or operational discrepancies. (MONITOR OFTEN)
POOR CONDITION: Unusable as is. Requires repairs, replacement, refinishing or reconditioning of system, component or item to be considered functional.
POWERS UP: Power was applied only. This does not refer to the operation of any system or component unless specifically indicated.
RECENT REPLACEMENT: New or like new.
APPEARS SERVICEABLE:Indicates that a very close inspection and or operation of the particular system, component or item was not possible due to constraints imposed upon the surveyor(e.g. no power available, inability to remove panels, or requirements not to conduct destructive tests, or owner or representative not present, or time constraints of survey).
FIT FOR INTENDED USE: Use which is intended by Survey Purchaser (present or prospective owner).
ADEQUATE:Sufficient for a specific requirement.
USE OF *: Use of * in the body of this report will indicate that a finding will be listed in the ''Findings and Recommendations'' section pertaining to the * item.

III. SYSTEMS

HULL DECK AND SUPERSTRUCTURE

HULL CONSTRUCTION

HULL TYPE/CONSTRUCTION: Full displacement hull with full keel and attached rudder. Hull construction of solid fiber reinforced plastic (FRP) marine composites. Good condition.

EXTERIOR HULL (TOPSIDES ABOVE WATERLINE): White gelcoat with a dark blue sheer strip. Minor blemishes and light crazing of gelcoat was sighted in several areas of the hull topside. Fair condition.

PORTLIGHTS: Opening plastic ports in hull both port,starboard and transom. Two have damage to exterior components. Fair condition.
Note; Elevated moisture meter readings on transom below ports. Re-bedding of all ports and replacement of damaged ports in hull should be included in a maintenance schedule.

BULKHEADS: Athwartships reinforcement enhanced by wood bulkheads bonded to the hull with FRP (fiber reinforced plastic). Good condition, where sighted.

BILGE: Shallow bilge from saloon forward and deep bilge from engine aft to aft cabin. Wet and dirty (oil stained) Fair condition.

KEEL: Internal ballast set into molded in hull cavity. No outwardly visible issues sighted.

DECK CONSTRUCTION

CONSTRUCTION/CONDITION: Cored marine composite with painted on non-skid material. Core material not determined. Average condition.
No delaminated or "soft" spots were detected during percussion testing or by walking on deck surfaces.

DECK MOISTURE METER READINGS: Elevated moisture meter readings were taken on starboard side of cabin top deck, foredeck forward edge of cabin and on the transom.
Notes; 1. - It is recommended that re-bedding of all deck fittings and hardware be included in a maintenance and upgrade schedule.
2. - If more detail information (core material and condition) is needed or desired, destructive testing will be needed.

HULL-TO-DECK JOINT

TYPE: Inward turning hull flange with deck mold mechanically fastened and bedded with elastomeric compound. Aluminum toe rail thru-bolted on deck at sheer to hull to deck joint. Good condition where sighted.

DECK FITTINGS

* **STANCHIONS/LIFELINES: [B1]** Stainless steel stanchions and double vinyl covered lifelines and a netting material, run from bow to stern pulpits both port and starboard. Good condition.
Note; Lock-nuts on lifeline terminals are not secure.

BOW PULPIT/STERN RAIL: Welded stainless steel tubing bow pulpit and stern rail with boarding gate. Good condition.
Note; A slight bend in a port bow rail stanchion was sighted

TOE RAILS: Aluminum toe rail on deck at sheer. Good condition.

CHOCKS AND CLEATS: Chocks and cleats appeared to be stainless steel, all sighted were thru-bolted and serviceable. Good condition.

HULL DECK AND SUPERSTRUCTURE

DECK FITTINGS*(continued)*

* **HATCHES: [C1, C2]** Three opening deck hatches of FRP and aluminum construction were sighted on cabin top.
  Aluminum hatches. Good condition.
  Forward FRP hatch is cracked at hinge.
  Teak hatch track for sliding aft cabin hatch is split.

Forweard Deck Hatch

* **GRAB RAIL: [B2]** Teak grab rails on cabin house. Starboard teak handrail on main cabintop is split and not secure.

Handrail

DAVITS: Manually operated aluminum dingy davits mounted on transom. Not tested. Appear serviceable.

CANVAS AND SUPPORT STRUCTURE.: Hardtop over cockpit with stainless steel pipe supports. Hardtop supports wood framed rigid plastic windscreen with opening sections forward and eisenglass enclosure with screens. Good condition.

STEMHEAD FITTING: Bow stemhead fitting cracked at starboard aft end.
Note; The crack appears to have been there for a period of time and does effect function or integrity of stemhead fitting.

ADDITIONAL EQUIPMENT AND ACCESSORIES

GENERAL EQUIPMENT: Mast head mounted camera. Operates. Good condition.

CABIN APPOINTMENTS

INTERIOR DESCRIPTION:

JOINERY AND FINISH: The joinery and finish of the interior showed average wear and tear for a vessel of this age. Good condition.

CABIN APPOINTMENTS

INTERIOR DESCRIPTION:*(continued)*

INTERIOR BULKHEADS: The interior bulkheads were securely tabbed to the hull or mechanically fastened where sighted.

WATER INTRUSION SIGNS: Wood below opening ports in main saloon showed signs of past water damage and repair. Fair condition.

FABRIC AND CUSHIONS: Cushion coverings appear to be recent replacements. Good condition.

CABIN SOLE: Carpeted in the cabins, teak and holy in the saloon. Good condition.

VENTILATION: Opening ports in hull, opening deck hatches and companionway hatches provide adequate natural ventilation below decks.

* **AIR CONDITIONING UNITS:[B3]** Two Marine Air self contained reverse cycle air conditioning units with digital controls, one forward, one in the aft cabin. Operation not tested due to no shore power available.
Notes; 1- Forward air conditioning unit condensate drain not graded downward for proper drainage.
2 - Forward air conditioner power wire is wired with plug to a receptacle.

GALLEY

LOCATION: Galley located to starboard at companionway.

SINKS: Single stainless steel galley sink drains to seacock below waterline. Good condition.

REFRIGERATION: 1- Built-in ice box with inoperable refrigeration.
2 - Separate stand alone Haier 120 volt AC fridge under counter to port at companionway. Not tested due to no shore power.

STOVE/OVEN: Hillerange two burner LPG stove with oven. all burners light. Good condition.

OTHER: Residential type microwave installed in galley. Operates. Good condition.

PROPULSION

MAIN ENGINES

MANUFACTURER: Perkins four cylinder diesel rated at 62 horsepower, installed under cockpit.

SERIAL NUMBERS: Serial number was not sighted or recorded due to poor access.

INDICATED HOURS: 965 hours are indicated on the engine hour meter installed at the helm station.

* **ENGINE MOUNTS AND BED:[B4]** Main engine beds are longitudinal stringers. Adjustable motor mounts are bolted to the stringers and are used to secure the engines to the hull stringer structure.
The aft starboard engine mount has corrosion due to exhaust leak of engine cooling water.

DRIP PANS: FRP engine drip pan integral to hull. Minor oil residue in pan. No signs of major oil leak at time of survey.

VENTILATION: Engine room ventilation provided by 12 volt blowers and natural ventilation. Blower operates. Ventilation appears adequate.

* **EXHAUST SYSTEM:[A1]** Wet exhaust type system with water lift muffler with flexible exhaust hose. A siphon break was sighted in cooling water piping. Flexible exhaust hose is not double clamped and cooling water leak sighted at muffler leaking onto engine mount.

PROPULSION

MAIN ENGINES *(continued)*

*** EXHAUSTSYSTEM:** ***(continued)***

Single Clamped Exhaust Hose

*** STUFFING BOX: [B5]** Stuffing box and packing gland, was traditional bronze hex nut type, hose/boot was double clamped. Stuffing box is leaking when engine is not in use.

*** CONDITION AND DEFICIENCIES:[B6]** Loose alternator and water pump belts sighted on engine. Excessive belt dust due to abnormal wear sighted.

NOTE: It was reported to this surveyor that the engine had been "rebuilt". My inspection cannot confirm if the engine has been rebuilt or not. No paper work was provided as documentation for the reported engine rebuild.

FUEL SYSTEM

MAIN ENGINE(S) FUEL SYSTEM

FUEL TYPE: Diesel.

FUEL TANK MATERIAL/CAPACITY: Aluminum/Reported to be 75 gallons. Recent replacement. Good condition where visible.

NUMBER OF TANKS: Two (2)

SECURED: Fuel tanks well secured with metal straps provided with chafe protection.

MANUFACTURING LABEL: The ABYC/USCG recommended fuel tank labels were not sighted.

*** FUEL FILL PIPE/TANK GROUNDED:[A2]** No grounding connections detected with meter.

FILL PIPE MATERIAL: Not sighted due to access.

*** FUEL LINES AND FITTINGS: [A3]** USCG approved type A1 flexible hose fuel lines.
Hose clamp missing from fuel line at fitting near remote mounted fuel filter.

FUEL FILTERS: Both remote mounted Racor filter/water separator type and engine mount spin on/off type sighted. Good condition.

ELECTRICAL SYSTEMS

ELECTRICAL SYSTEM (D.C. SYSTEM)

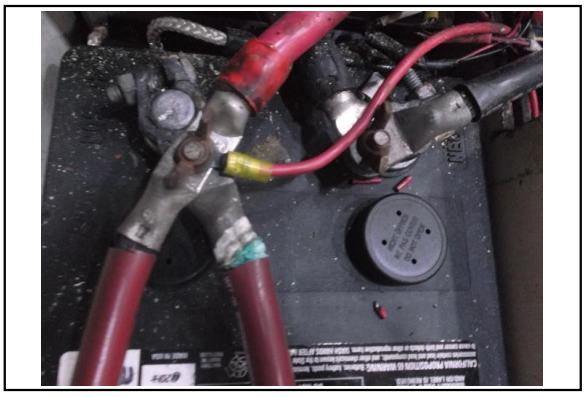
VOLTAGE: Two 4D AGM batteries power 12 volt house battery bank sighted.
One group 27 engine starting battery.

BRANCH CIURCUIT OVERCURRENT PROTECTION: DC distribution panel has breakers for branch circuit over current protection.
Breakers properly labeled.

* **DC OVERCURRENT PROTECTION:[A4, A5]** All ABYC standards recommended overcurrent protection **is not** in place. Wires were sighted connected directly to the battery positive terminals without overcurrent protection. High amperage fuse sighted installed in negative battery cable.

No Overcurrent Protection

* **DC WIRING CONNECTORS: [A6]** Wing nuts were sighted connecting large gauge battery cable to batteries.



Wing Nuts

SHORT CIRCUIT PROTECTION: Protection against accidental short circuits provided by terminal boots and protective covers.

BATTERY CHARGING SYSTEM: Alternator on main engine. Operates. Good condition.
Shore power charger; Ample Power, Model #PSC-45-12. Not tested due to no shore power available.

WIND GENERATOR: Air Marine wind generator mounted on mizzen mast. Not tested.
Note; The blades of the wind vane were not sighted to spin during the course of survey.

* **NOTE: [C3]** There are many electrical connections in the engine room with corrosion.

ELECTRICAL SYSTEMS

ELECTRICAL SYSTEM (D.C. SYSTEM)*(continued)*

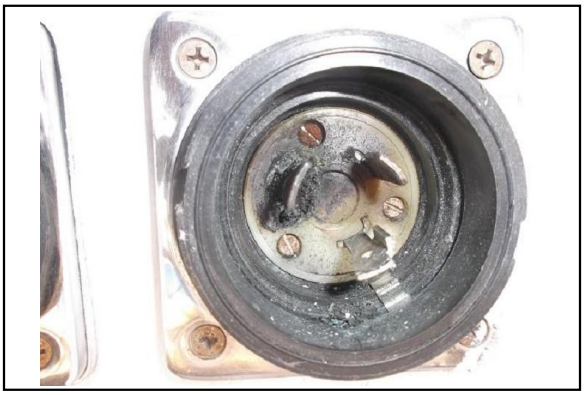
*** NOTE:** ***(continued)***

Terminal Corrosion

ELECTRICAL SYSTEM (A.C. SYSTEM)

*** SHORE POWER INLET: [A7]** Two 30 amp, 120 volt shore power inlets were sighted. Both shore power inlets and cords had burned terminals and pins and were not connected to shore power at time of survey.

Shore Power Inlet 1



Shore Power Inlet 2

SHORE POWER: Shore power was not connected for survey.

BRANCH BREAKERS: Individually switched branch breakers on main A.C. distribution panel. Well marked.

CIRCUIT LOAD MONITORS: Voltage and amperage analog gauges were sighted in the main electric panel for both the AC and DC systems. Good condition.

A.C. WIRING CONNECTIONS/ROUTING /SUPPORT: Captive type terminals/well routed and supported wire runs.

A.C. OUTLETS/POLARITY/GFCI PROTECTION: Conveniently located A.C. outlets available throughout the vessel. Tested for proper polarity, OK. GFCI (ground fault circuit interrupter) outlets sighted at engine room, galley, heads and weather decks. Tested OK. Good condition.

REVERSE POLARITY INDICATOR: Two reverse polarity indicators sighted. One for each of two 30 amp shore power circuits. Not tested for operation.

ELECTRICAL SYSTEMS

ELECTRICAL SYSTEM (A.C. SYSTEM) *(continued)*

GALVANIC ISOLATOR: Galvanic isolators were sighted in engine room. Not tested.

ABYC RECOMMENDED AC TO DC GROUNDS SAFETY CONNECTION: AC to DC safety ground connection verified with meter.

GENERATORS AND INVERTERS

TYPE: Kubota diesel engine powered generator sighted in engine room. Reported to run an 150 amp alternator. Generator engine would not start at time of survey.

MANUFACTURER: No data plates visible.

INDICATED HOURS: 169 hours indicated on generator hour meter.

* **GENERATOR EXHAUST SYSTEM: [B7]** Severe corrosion (rust) sighted on generator exhaust elbow.

* **GENERATOR NOTES: [C4]** Wire ties are being used to perform an unknown function on the generator.

DC TO AC POWER INVERTER: ProSine 1800 Watt mounted in engine room. Operates. Good condition.

INVERTER INSTALLATION: Well installed with correct wire sizes, overcurrent protection and well ventilated.

FRESH WATER SYSTEM

FRESH WATER SYSTEM: (POTABLE WATER)

STORAGE TANKS: Aluminum water tank, reported to be 75 gallons. Good condition where visible. Recent replacement.

PUMPS: Jabsco 4GPM 12 volt DC potable water pump. Operates. Good condition.

HOSES AND CLAMPS: Reinforced plastic tubing sighted at various areas throughout vessel. Appears serviceable where sighted.

WATER HEATER: Atwood 6 gallon engine cooling water and 120 volt AC powered water heater. Not tested. Appears serviceable.
Model #M-EHM6-SM

FRESH WATER SYSTEM (WATER MAKING SYSTEM)

TYPE: No onboard seawater to potable water purification system.

SANITATION

SANITATION (BLACK WATER)

* **MANUAL OR ELECTRIC TYPE: [A8]** Two electric flush heads were inspected. The heads did not flush.

USCG MARINE SANITATION DEVICES (M.S.D.): Certification Type: U.S.C.G. Approved M.S.D. Type III. (Holding tanks)

HEAD RAW/FRESH WATER SUPPLY HOSE AND CLAMPS: Hose and clamps. Good condition.

HEAD DISCHARGE HOSES AND CLAMPS: Hose and clamps. Good condition.

"Y" VALVES: Valve are provided to direct head discharge to holding tank or overboard. Operation not tested.

SANITATION

SANITATION (BLACK WATER)*(continued)*

VENT LOOPS (HEAD INTAKE AND DISCHARGE): Vented loop sighted in discharge hose.
No vented loop sighted in head intake hose. Head intake hose is routed above waterline.
Note; A vented loop installed in the head intake hose, to prevent raw water siphoning into head, is the recommended head intake installation method.

SANITATION (GREY WATER)

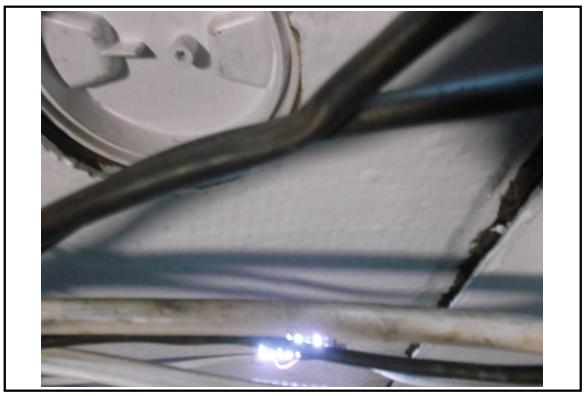
* **SHOWER DRAIN PUMPS: [B8]** Forward head shower sump pump powers up.
Aft head shower sump pump did not power up.

STEERING SYSTEM

STEERING SYSTEM

TYPE: Hydraulic pedestal wheel steering. Operated smoothly during sea trial.

* **LINES AND FITTINGS: [C5]** Copper hydraulic fluid steering line damaged/kinked in engine room.



Steering Hydraulic Line

UPPER RUDDER BEARING SUPPORT: Good condition.

* **RUDDER SHAFT PACKING GLAND:[C6]** Rudder shaft seal is a traditional type bronze packing gland. The seal was leaking at time of inspection.

Leaking Rudder Post

EMERGENCY TILLER: Emergency tiller sighted secured on deck. Access port on aft deck for emergency tiller.

GROUND TACKLE

GROUND TACKLE

* **ANCHORS: [C7]** 1 - A 60 pound CQR plow type anchor with 3/8 inch all chain rode is mounted ready for use on a bow anchor roller. Good condition.
  2 - A second 45 pound CQR with a combination chain and three strand nylon rode is secured in a PVC tube at the bow. Good condition.
  3 - A Danforth anchor with a combination chain and three strand nylon rode is mounted on the stern rail. Good condition.
  Notes; 1.-The two bow anchor rodes are attached to the vessel.
  2.- The anchor rode shackle pins are secured.
  3. One of the shackles attaching the primary 60 pound anchor to its chain rode is smaller than industry standards would recommend.

* **WINDLASS: [B9]** Lewmar electric windlass mounted on bow. Did not power up.
  Serial number #5711104374

ELECTRONICS AND NAVIGATION EQUIPMENT

ELECTRONICS AND NAVIGATION EQUIPMENT

VHF: Standard Horizon VHF radio mounted at navigation station. Powers up.
Remote microphone to VHF mounted in cockpit. Powers up.

RADAR/GPS/CHARTPLOTTER: RAYTHEON Model RL70C display. Powers up. Displays radar, and vessel position on electronic chart. Good condition.

* **AUTOPILOT: [C8]** Autohelm ST7000 autopilot. Inoperable.

SPEED/WIND/DEPTH INSTRUMENTS: Raytheon ST40 displays for wind, speed and depth instruments. All operate. Good condition.

FISH FINDER: Fish finder display with below waterline hull mounted transducer sighted. Powers up.

COMPASSES: Rule cockpit bulkhead mounted AquaMeter steering compass. Good condition.

THRU-HULLS

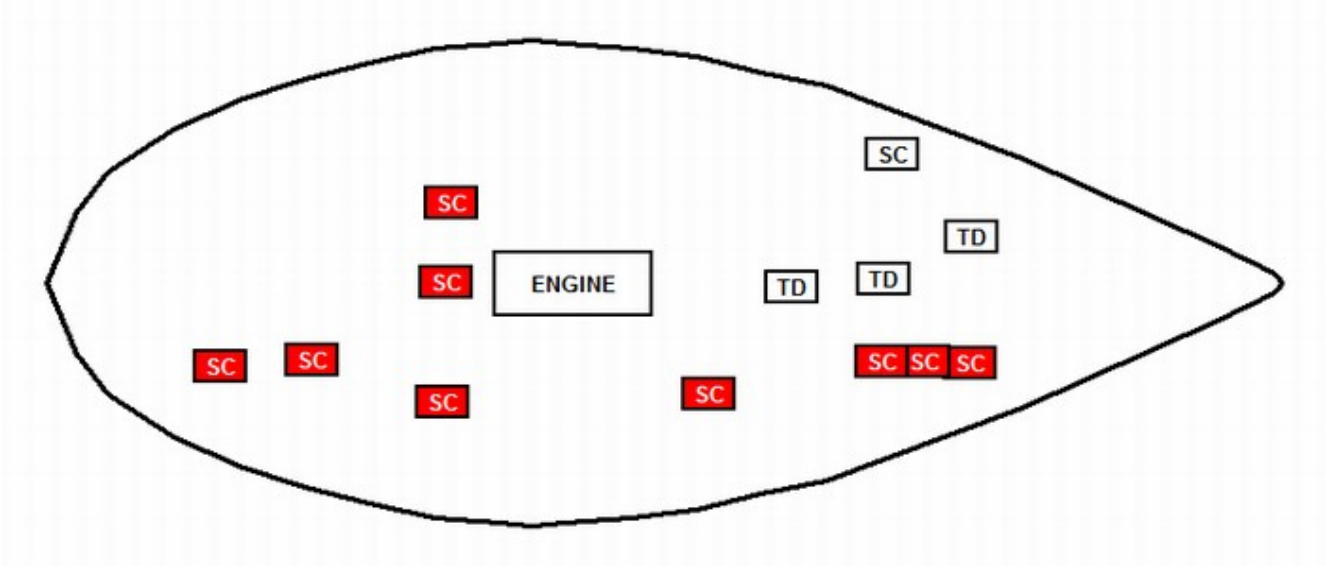
THRU-HULLS:

* **ABOVE WATERLINE THRU-HULL FITTINGS{C9]** All above the waterline **plastic** thru-hull fittings have been degraded due to UV damage. Fair condition.

THRU-HULLS

THRU-HULLS:*(continued)*

THRU-HULLS BELOW WATER LINE (DIAGRAM):



Abbreviation	Description
ENGINE	Engine
SC	Seacock
TD	Transducer

**** Red Icon(s) with white text indicates inoperable item.**

* **THRU-HULL VALVE OPERATION: [A9]** No thru-hull valve operated with normal force with the exception of the forward air conditioning unit intake valve.

* **MATERIAL/TYPE/INSTALLATION: [A10]** Flanged bronze ball valve seacocks. The seacocks are installed on thru-hull fittings that are too long to allow the seacock flanges to be secured to the hull.

Seacock Installation

THRU-HULLS

THRU-HULLS:*(continued)*

CONDITION OF HOSES AND CLAMPS ATTACHED TO THRU-HULL VALVES: Recent replacements. Good condition.

BONDING SYSTEM

BONDING SYSTEM

MAIN BONDING CONDUCTOR: It appears that there is not a proper and complete main bonding conductor on the vessel. Bonding and Lighting protection are a matter of individual interpretation of the principals involved. The ABYC suggests bonding all metallic below waterline thru-hull fittings and to construct a Cone of Protection for lighting protection. See Bonding section in the ABYC section E-1& E-4-6d.

SAFETY EQUIPMENT

SAFETY EQUIPMENT (UNITED STATES COAST GUARD)

* **NUMBER AND TYPE OF PFD'S: [A11]** None sighted.

* **NUMBER OF THROWABLE PFD'S: [A12]** No USCG Approved Type IV throwable device sighted.

* **FIRE EXTINGUISHERS: [A13]** No USCG/ABYC/NFPA compliant fire extinguishers onboard. All fire extinguishers sighted either have no current inspection tags or have exceeded replacement age.

VISUAL DISTRESS SIGNALS: Day/night visual distress signals are hand held flares. Three sighted. Expiration date: March 2019.

* **SOUND DEVICES: [A14]** None Sighted.

* **NAVIGATION LIGHTS: [A15]** Bow and stern marker lights. Operable. Good condition.
  Anchor and steaming lights not operable.

* **INLAND NAVIGATION RULE BOOK (12M-39'4" OR LONGER): [A16]** None sighted.

"NO OIL DISCHARGE" PLAQUE: No oil discharge plaqard sighted, properly displayed.

TRASH DISPOSAL PLACARD: Trash disposal placard sighted, properly displayed.

AUXILIARY SAFETY EQUIPMENT

* **BILGE HIGH WATER ALARM AND SAFETY SWITCHES: [B10]** High bilge water alarm panel sighted mounted in cockpit. Did not function when test button pushed.

FUME SNIFFER ALARM SYSTEMS: LPG sniffer panel mounted in galley with sensor below stove. Operated when test button pushed.
Note; Sensor is not mounted securely.

BILGE PUMPS

* **LIST: [A17, B11, C10]** Two electric bilge pumps are mounted in the bilge area. Both bilge pumps are operated from auto/manual switches. The pumps power when switched to the manual mode. The float/auto switches were not tested due to access. The aft cabin bilge pump did pump water when in the auto mode.
  Notes; 1 - The aft bilge pump discharge hose is kinked due to the weight of a bronze in-line check valve.
  2 - Engine room bilge pump not checked for its ability to pump water.
  3 - No manual bilge pump sighted.

SAFETY EQUIPMENT

BILGE PUMPS *(continued)*

* **LIST:** ***(continued)***

Aft Bilge Pump Discharge Hose

OUT OF WATER INSPECTION

BELOW WATERLINE MACHINERY

PROPELLER: Three bladed bronze propeller. Propeller markings not readable. The tips of the propeller are thinning due to wear and tear from age. Fair condition.

PROPELLER SHAFT: Stainless steel 1 1/4'' diameter shaft. Good condition.

* **SHAFT BEARING (CUTLASS BEARING):** **[C11]** Cutlass bearing is worn allowing shaft play.

RUDDER(S) MATERIAL: Marine composite with stainless steel skeleton. Good condition.

RUDDER(S) MOUNTING: Bronze shoe attached to keel supports bottom of rudder. Good condition.

ZINCS: Replaced at haul-out.

CONDITION OF HULL (WETTED SURFACE AND TOPSIDES)

BLISTERS: None Sighted with the exception of several small blisters in the bottom paint.

CONDITION OF BOTTOM PAINT: Heavy build-up of bottom paint. Fair condition.

TOPSIDES (FROM WATERLINE TO SHEERLINE) Fair condition.

PERCUSSION TESTING OF WETTED SURFACE Percussion testing of hull wetted surface and rudder was done. No remarkable results.

LIQUIFIED PETROLEUM GAS SYSTEM (LPG)

LIQUIFIED PETROLEUM GAS SYSTEM (LPG)

TYPE: LPG.

LPG STORAGE: Dedicated, vented and gasketed LPG storage locker with two OPD protected aluminum 20 pound tanks on aft deck. Good condition.

REGULATOR/PRESSURE GUAGE/PRESSURE TEST Regulator and pressure gauge mounted in LPG storage locker. Good condition. ABYC pressure test was performed, results OK.

LIQUIFIED PETROLEUM GAS SYSTEM (LPG)

LIQUIFIED PETROLEUM GAS SYSTEM (LPG) *(continued)*

SHUT-OFFS: Electric solenoid valve operated from switch in galley. Good condition.

LINES AND FITTINGS: Flexible gas hose. Good condition where sighted.

SEATRIAL REPORT

INTRODUCTION

INTRODUCTION: The inspected vessel was operated from its berth on Broad Creek out to the Pamlico River and back, between the hours of 4:00 PM and 5:00 PM on the day of survey. The vessel was operated by the selling broker, Mark Henley. Attending the sea trial were the selling broker, the buyers Robert and Jade Long, and myself.

OBSERVATIONS

OBSERVATIONS: 1. The engines started without excessive cranking.

2. The engine exhaust appeared normal.
3. The cooling water exhaust appeared adequate and normal.
4. The engine instruments operate within normal operating limits at idle, cruising speed, and maximum throttle.
5. Engines reached 3000 RPM at full throttle.
6. The steering system operated normally.
7. The throttle operated normally.
8. The transmission operated normally/smoothly.
9. The back down test was satisfactory. (Motor mount condition test)
10. There were no excessive vibrations noted.
11. There were no oil or coolant leaks observed. (On main engines or in exhaust water)

ENGINE SURVEY SUMMARY

ENGINE SURVEY

ENGINE SURVEY : No engine surveyor was onboard and **no engine survey was performed.**

STANDING RIGGING

STANDING RIGGING

MAST/SPARS/SPREADERS: Aluminum spars. Observed from deck level only. Good condition.

* **MAST STEP: [A18]** 1 - Main mast stepped on keel. A mild steel (magnetic) plate used to distribute the load has deteriorated due to corrosion (rust).
2 - Mizzen mast stepped on the sole of the head in aft cabin is supported by bulkhead glassed in hull in bilge. Good condition. (Access for inspection is limited and was done with a mirror and light on one side only)

Main Mast Step

STANDING RIGGING

STANDING RIGGING *(continued)*

* **SHROUDS/STAYS/TERMINAL ENDS:[C12]** 1x19 stainless steel wire rigging with swaged end fittings. Minor corrosion sighted on several swage fittings at wire entry to fittings. Fair condition.

CHAIN PLATES: External chainplates through bolted to the hull. Good condition.

NOTE: "The spars, standing and running rigging were inspected at deck level only, the client has been informed of the "Rule of Thumb" 10 year replacement recommendation and estimates of life expectancy schedule based on climate variables and water salinity: Heat and water salinity at maximum (Florida, Caribbean Islands) - 5 to 10 years..."
Age of rigging is not known.

RUNNING RIGGING

RUNNING RIGGING

* **WINCHES: [C13]** All sail handling winches are Lewmar. The jib sheet winches are Lewmar #54 self-tailing two speed winches. The other winches are not self tailing. One mast winch drum is not secure and falls off. All winches are in need of service.

REEFING SYSTEM: Jiffy reefing system appeared serviceable.

* **RUNNING RIGGING: [B12]** All running rigging is worn and UV/weather degraded.

* **ROLLER FURLING GEAR: [A19]** Roller furling gear is of unknown manufacturer. The aluminum drum on furling gear is damaged in two places. The electric wire reel winch mounted below decks to operate the furling gear is inoperable.

Furling Drum

SAILS

SAILS

* **SAIL INVENTORY: [C14]** Mainsail; serviceable condition.
Headsail; serviceable condition.
Mizzen sail; serviceable condition.
Notes; 1 - Mainsail slide webbing is wearing out from the top down and several slides have already been lost.
2 - Headsail has a repair to a center seam.

SAIL COVERS & BOOTS: Mainsail, Sunbrella canvas sail cover. Good condition.
Jib, Roller furler with UV cover. Good condition.

IV. FINDINGS AND RECOMMENDATIONS

Deficiencies noted under **''SAFETY'', designated as "A" Findings,** should be addressed before vessel is next underway. These findings represent an endangerment to personnel and/or the vessel's safe and proper operating condition. ***Findings may also be in violation of U.S.C.G. regulations.*** Deficiencies noted under **''OTHER DEFICIENCIES'' designated as "B" findings** should be corrected so as to maintain standards and to help the vessel to retain it's value. Deficiencies noted under **''SURVEYORS NOTES AND OBSERVATIONS" designated as "C" findings**, should be corrected so as to maintain standards and to help the vessel to retain it's value. Deficiencies will be listed under the appropriate heading:

A. SAFETY DEFICIENCIES
B. OTHER DEFICIENCIES NEEDING ATTENTION
C. SURVEYORS NOTES AND OBSERVATIONS

A. SAFETY DEFICIENCIES:

FINDINGS | ***RECOMMENDATIONS***

A.1 (PAGE 5) EXHAUST SYSTEM:

Flexible exhaust hose is not double clamped and cooling water leak sighted near muffler leaking onto engine mount.	*Clamp Exhaust as per ABYC P-1. Flexible Exhaust Hose Connections: P-1.7.1.10.1 Every* ***exhaust hose connection shall be secured with at least two non-overlapping clamps*** *at each end to produce a secure, liquid and vapor-tight joint. Further investigate exhaust cooling water leak and repair as necessary.*

A.2 (PAGE 6) FUEL FILL PIPE/TANK GROUNDED:

No grounding connections detected with meter.	***Provide fuel tank and fuel fill fitting grounding*** *as per ABYC H-33. Diesel fuel systems, 33.15 FUEL SYSTEM GROUNDING. H-33.15.1;* ***Each metal*** *or metallic plated* ***component of the fuel fill system that is in contact with the fuel*** *and the fuel tank* ***shall be grounded*** *so that its resistance to the boat's ground is less than one ohm.* *NOTES: 1.* ***The deck fill is considered to be in contact with the fuel.***

A.3 (PAGE 6) FUEL LINES AND FITTINGS:

Hose clamp missing from fuel line at fitting near remote mounted fuel filter.	*Securely clamp all fuel line connections.*

A.4 (PAGE 7) DC OVERCURRENT PROTECTION:

High amperage fuse sighted installed in negative battery cable, which is a grounded conductor.	*Further investigate and provide overcurrent to comply with ABYC E-11. 11.10 OVERCURRENT PROTECTION* *11.10.1 LOCATION OF OVERCURRENT PROTECTION - DC CIRCUITS* *11.10.1.1 General Requirements* *11.10.1.1.1 Overcurrent Protection Device Location;* ***Ungrounded conductors*** *shall be provided with overcurrent protection within a distance of seven inches of the point at which the conductor is connected to the source of power measured along the conductor.*

IV. FINDINGS AND RECOMMENDATIONS

A. SAFETY DEFICIENCIES:

FINDINGS	*RECOMMENDATIONS*
A.5 (PAGE 7) DC OVERCURRENT PROTECTION:	
All ABYC standards recommended overcurrent protection is not in place.	*Further investigate and provide overcurrent to comply with ABYC E-11. 11.10 OVERCURRENT PROTECTION* *11.10.1 LOCATION OF OVERCURRENT PROTECTION - DC CIRCUITS* *11.10.1.1 General Requirements* *11.10.1.1.1 Overcurrent Protection Device Location* *Ungrounded conductors shall be provided with overcurrent protection within a distance of seven inches of the point at which the conductor is connected to the source of power measured along the conductor.* ***EXCEPTIONS:*** *1. Cranking motor conductors.* *2. If the conductor is connected directly to the battery terminal and is contained throughout its entire distance in a sheath or enclosure such as a conduit, junction box, control box or enclosed panel, the overcurrent protection shall be placed as close as practicable to the battery, but not to exceed 72 inches.* *3. If the conductor is connected to a source of power other than a battery terminal and is contained throughout its entire distance in a sheath or enclosure such as a conduit, junction box, control box or enclosed panel, the overcurrent protection shall be placed as close as practicable to the point of connection to the source of power, but not to exceed 40 inches.*
A.6 (PAGE 7) DC WIRING CONNECTORS:	
Wing nuts were sighted connecting large gauge battery cable to batteries.	*Replace wing nuts with standard nuts to comply with ABYC E-10.8.3 Battery cables and other conductors size 6 AWG and larger shall not be connected to the battery with wing nuts.*
A.7 (PAGE 8) SHORE POWER INLET:	
Both shore power inlets and cords had burned terminals and pins.	*Replace shore power inlets and cords.*
A.8 (PAGE 9) MANUAL OR ELECTRIC TYPE:	
The heads did not flush.	*Repair or renew as necessary.*
A.9 (PAGE 12) THRU-HULL VALVE OPERATION:	
No thru-hull valve operated with normal force with the exception of the forward air conditioning unit intake valve.	*It is the surveyors recommendation that all seacocks be serviced. I would also like to add that wooden plugs of the appropriate size be readily accessible for emergency use at each seacock location.*

IV. FINDINGS AND RECOMMENDATIONS

A. SAFETY DEFICIENCIES:

FINDINGS	*RECOMMENDATIONS*
A.10 (PAGE 12) MATERIAL/TYPE/INSTALLATION:	
The seacocks are installed on thru-hull fittings that are too long to allow the seacock flanges to be secured to the hull.	*Install seacocks to comply with ABYC H-27 Seacocks and Thru-Hull Fittings. H-27.6.3* ***If a flanged seacock is used, its flange shall be securely mounted to the hull structure****.*
A.11 (PAGE 13) NUMBER AND TYPE OF PFD'S:	
No personal flotation devices (PFD'S) sighted.	*USCG requires an approved PFD for everyone onboard while underway.*
A.12 (PAGE 13) NUMBER OF THROWABLE PFD'S:	
No USCG Approved Type IV throwable flotation device sighted.	*USCG regulations require a readily accessible, approved Type IV throwable flotation device be onboard.*
A.13 (PAGE 13) FIRE EXTINGUISHERS:	
No USCG/ABYC/NFPA compliant fire extinguishers onboard.	*Comply with ABYC and NFPA recommended standards for fire protection;* *TABLE II BOATS 65 FT. OR LESS IN LENGTH;* *Three type B-1, extinguishers, one outside engine room, at steering station and passenger cockpit or galley if so epuipped.*
A.14 (PAGE 13) SOUND DEVICES:	
No sound producing signal device onboard.	*Comply with USCG regulations for Sound Devices. Boats less than 12 meters must carry an efficient sound producing device, In general this may be bell, whistle or air horn.*
A.15 (PAGE 13) NAVIGATION LIGHTS:	
All USCG required navigation lights not operational. Anchor and steaming lights not operable.	*Renew or repair navigation lights to comply with USCG regulations for navigation light requirements.*
A.16 (PAGE 13) INLAND NAVIGATION RULE BOOK (12M-39'4" OR LONGER):	
No navigation rule book sighted.	*USCG regulations require all vessels over 12 meters (39 feet) to carry onboard a copy of the Inland Navigation Rule Book.*
A.17 (PAGE 13) LIST:	
The aft bilge pump discharge hose is kinked due to the weight of a bronze in-line check valve.	*Replace and support aft bilge pump hose to avoid kinks.*

IV. FINDINGS AND RECOMMENDATIONS

A. SAFETY DEFICIENCIES:

FINDINGS	*RECOMMENDATIONS*
A.18 (PAGE 15) MAST STEP:	
A mild steel (magnetic) plate used to distribute the main mast load on the keel has deteriorated due to corrosion.	*Further investigate and repair as needed. Un-stepping the mast will likely be needed to complete this repair.*
A.19 (PAGE 16) ROLLER FURLING GEAR:	
Roller furling gear damaged and inoperable.	*Further investigate and repair or replace as needed.*

B. OTHER DEFICIENCIES NEEDING ATTENTION:

FINDINGS	*RECOMMENDATIONS*
B.1 (PAGE 3) STANCHIONS/LIFELINES:	
Lock-nuts on lifeline terminals are not secure.	*Tighten lock-nuts to secure lifeline terminal end fittings.*
B.2 (PAGE 4) GRAB RAIL:	
Starboard teak handrail on main cabin top is split and not secure.	*Repair or replace handrail and secure handrail to deck.*
B.3 (PAGE 5) AIR CONDITIONING UNITS:	
Forward air conditioner power wire is wired with plug to a receptacle.	*Correct air conditioner power wire, hard wire to power supply, to comply with ABYC E-11 Electrical Systems on Boats. E-11.13.3.4; A branch circuit supplying a combination of receptacle loads and permanently connected loads **shall not supply permanently connected loads** in excess of the following: 11.13.3.4.1 600 watts for a 15-ampere circuit; 11.13.3.4.2 1000 watts for a 20-ampere circuit.*
B.4 (PAGE 5) ENGINE MOUNTS AND BED:	
The aft starboard engine mount has corrosion due to exhaust leak of engine cooling water.	*Repair raw water cooling leak in exhaust. Clean engine mount of corrosion and paint.*
B.5 (PAGE 6) STUFFING BOX:	
Stuffing box is leaking when engine is not in use.	*Adjust stuffing box for proper water flow both at rest and underway.*
B.6 (PAGE 6) CONDITION AND DEFICIENCIES:	
Loose alternator and water pump belts sighted on engine. Excessive belt dust due to abnormal wear sighted.	*Adjust engine belt tension and alignment.*
B.7 (PAGE 9) GENERATOR EXHAUST SYSTEM:	
Severe corrosion (rust) sighted on generator exhaust elbow.	*Monitor condition of generator exhaust elbow often and renew as needed.*
B.8 (PAGE 10) SHOWER DRAIN PUMPS:	
Aft head shower sump pump did not power up.	*Repair or renew as needed.*

IV. FINDINGS AND RECOMMENDATIONS

B. OTHER DEFICIENCIES NEEDING ATTENTION:

FINDINGS	*RECOMMENDATIONS*
B.9 (PAGE 11) WINDLASS:	
Lewmar electric windlass mounted on bow. Did not power up.	*Further investigate and repair or replace as needed.*
B.10 (PAGE 13) BILGE HIGH WATER ALARM AND SAFETY SWITCHES:	
High bilge water alarm did not function when test button pushed.	*Further investigate and repair or replace as necessary.*
B.11 (PAGE 13) LIST:	
Engine room bilge pump not checked for its ability to pump water.	*Test bilge pumps often to verify their ability to pump water.*
B.12 (PAGE 16) RUNNING RIGGING:	
All running rigging is worn and UV/weather degraded.	*Include replacement of running rigging in a maintenance and upgrade schedule.*

C. SURVEYOR'S NOTES AND OBSERVATIONS:

FINDINGS	*RECOMMENDATIONS*
C.1 (PAGE 4) HATCHES:	
Forward FRP hatch is cracked at hinge.	*Repair or replace hatch to maintain weather tightness of vessel.*
C.2 (PAGE 4) HATCHES:	
Teak hatch track for sliding aft cabin hatch is split.	*Repair of teak hatch track should be added to a maintenance and upgrade schedule.*
C.3 (PAGE 7) NOTE:	
There are electrical connections in the engine room with corrosion.	*Cleaning and checking for tightness of electrical connections/terminals should be added to a regular maintenance schedule.*
C.4 (PAGE 9) GENERATOR NOTES:	
Wire ties are being used to perform an unknown function on the generator.	*Further investigate and repair as necessary.*
C.5 (PAGE 10) LINES AND FITTINGS:	
Copper hydraulic fluid steering line damaged/kinked in engine room.	*Renew or repair as necessary.*
C.6 (PAGE 10) RUDDER SHAFT PACKING GLAND:	
The rudder shaft seal was leaking at time of inspection.	*Adjust packing nut tension and/or replace packing material as needed to stop shaft seal leak.*

C. SURVEYOR'S NOTES AND OBSERVATIONS:

FINDINGS	*RECOMMENDATIONS*
C.7 (PAGE 11) ANCHORS:	
One of the shackles attaching the primary 60 pound anchor to its chain rode is smaller than industry standards would recommend for chain size.	*Replace with new marine grade shackle of recommended size for the 3/8 chain.*
C.8 (PAGE 11) AUTOPILOT:	
Autohelm ST7000 autopilot. Inoperable.	*Further investigate and repair or replace as needed.*
C.9 (PAGE 11) ABOVE WATERLINE THRU-HULL FITTINGS:	
All above the waterline plastic thru-hull fittings have been degraded due to UV damage.	*Replacement of plastic above waterline thru-hull fittings should be added to a maintenance and upgrade schedule.*
C.10 (PAGE 13) LIST:	
No manual bilge pump sighted.	*A manual bilge pump is highly recommendedby this surveyor.*
C.11 (PAGE 14) SHAFT BEARING (CUTLASS BEARING):	
Cutlass bearing is worn allowing shaft play.	*Cutlass bearing replacement should be added to a maintenance and upgrade schedule.*
C.12 (PAGE 16) SHROUDS/STAYS/TERMINAL ENDS:	
Minor corrosion sighted on several swage fittings at wire entry to fittings.	*Monitor often for an increase in corrosion.*
C.13 (PAGE 16) WINCHES:	
One mast winch drum is not secure and falls off. All winches are in need of service.	*Service all winches are repair or replace as needed.*
C.14 (PAGE 16) SAIL INVENTORY:	
Mainsail slide webbing is wearing out from the top down and several slides have already been lost.	*Replace webbing securing slides to sail.*

V. SUMMARY AND VALUATION

STATEMENT OF OVERALL VESSEL RATING OF CONDITION:

It is the surveyor's experience that develops an opinion of the **OVERALL VESSEL RATING OF CONDITION** After a the survey has been completed and the findings have been organized in a logical manner. The grading of condition, developed by **BUC RESEARCH**, and accepted in the marine industry, for a vessel at the time of survey, determines the adjustment to the range of base values in the **BUC USED BOAT PRICE GUIDE**, for a similar vessel sold within a given time period, as a consideration to determine the Market Value.The following is the accepted marine grading system of condition:

''EXCELLENT (BRISTOL) CONDITION'', is a vessel that is maintained in mint or bristol fashion - usually better than factory new - loaded with extras - a rarity.

''ABOVE AVERAGE CONDITION'', has had above average care and is equipped with extra electrical and electronic gear.

''AVERAGE CONDITION'', ready for sale requiring no additional work and normally equipped for her size.

''FAIR CONDITION'', requires usual maintenance to prepare for sale.

''POOR CONDITION'', substantial yard work required and devoid of extras.

''RESTORABLE CONDITION'', enough of hull and engine exists to restore the boat to usable condition.

As a result of my investigation, as shown in the **SYSTEMS AND FINDINGS AND RECOMMENDATIONS** section of this **REPORT OF SURVEY,** and by virtue of my experience, my opinion is;

OVERALL VESSEL RATING: AVERAGE

STATEMENT OF VALUATION:

1. The ''FAIR MARKET VALUE'' is the most probable price in terms of money which a vessel should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller, each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

A. Buyer and seller are typically motivated.

B. Both parties are well informed or well advised, and each acting in what they consider their own best interest.

C. A reasonable time is allowed for exposure in the open market.

D. Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and

E. The price represents a normal consideration for the vessel sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

F. The sources referenced for this valuation **will have included one or more of the following**: ABOS, BUC ValuPro, NADA, Soldboats.com and Yachtworld.com.

G. There are currently five sisterships of similar vintage offered for sale with an average asking price of $48,500.00.

H. The past three years average selling price for 12 sisterships of similar vintage was $37,750.00, an average of 86% of asking price.

I. The BUC ProValue guide gives a retail average of $37,800.00

Therefore, after consideration of the reliability of the data, the extent of the necessary adjustments and **condition of the vessel**, it is **your surveyor's opinion** that the ''FAIR MARKET VALUE'' of the subject vessel is:

$38,000.00

Thirty Eight Thousand Dollars and Zero cents

The ''ESTIMATED REPLACEMENT COST'' indicates the retail cost of a new vessel of the same make/model with similar equipment offered by the same or comparable manufacturer. ''ESTIMATED REPLACEMENT COST'' of the subject vessel is:

$341,000.00

Three Hundred Forty One Thousand Dollars and Zero cents

V. SUMMARY AND VALUATION

SUMMARY:

The Morgan 415 "SailAway" is in average condition for a vessel of its age. It is certainly in need of upgrade of some equipment due to age. Some effort will be needed to complete some deferred maintenance.

SURVEYOR'S CERTIFICATION:

I certify that, to the best of my knowledge and belief: The statements of fact contained in this report are true and correct. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, unbiased professional analyses, opinions, and conclusions. I have no present or prospective interest in the vessel that is the subject of this report, and I have no personal interest or bias with respect to the parties involved. My compensation is not contingent upon the reporting of a predetermined value or direction in value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulate result, or the occurrence of a subsequent event. I have made a personal inspection of the vessel that is the subject of this report. This report is submitted without prejudice and for the benefit of whom it may concern.

ATTENDING SURVEYOR: