GLADDING MARINE SURVEYING AND CONSULTING, LLC
1738 PICKWICK PLACE-FLEMING ISLAND-FLORIDA-32003
PHONE: 904-945-0511 EMAIL: gladdings@msn.com

SURVEY REPORT VESSEL: *XX*

Prepared by: Bill Gladding AMS® #810

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SURVEY BASIC DETAILS

SURVEY PURPOSE: prepurchase
REQUESTED BY: xxxxxxxxx
FILE #: 2023-05-11 Kadey-Krogen 39 2004
REPORT DATE: May 14, 2023

CLIENT INFORMATION: xxxxxx
OWNER INFORMATION: xxxxxx

SURVEY DATE: May 11 & 12, 2023
SURVEY LOCATION: xxxxxx
ATTENDING: xxxxxx
ENGINE SURVEYOR: basic external checks & lab oil analysis of engine, gear, and generator

VESSEL & MACHINERY DATA

Vessel identification numbers (source: found on hull)
Hull ID #: CBK39XXXXX04 Documentation #: XXXXXXX

HULL NUMBER PHOTOS

Vessel type and dimensions (source: source: owner's manual except as noted below)
Manufacturer: Kadey-Krogen Model: 39 Trawler Model year: 2004 Length overall: 43'8" Beam: 14'9" Draft: 4'4" (measured) Weight lbs.: 33,470 Ballast lbs. 2,000 Hull composition: fiberglass
Engines (source: engine decal & online references)
Type and #: single inboard Horsepower: 120@2,400 rpms Fuel type: diesel
Manufacturer: John Deere Model: 4045TFM50 Serial #: CD4045T742831
Hours: 2,000 (according to vessel owner)
Transmissions (source: data plate)
Manufacturer: ZF Model: ZF220 Ratio: 2.478 Serial #: 20044931
Alternating current generator (source: data plate)
Manufacturer: Northern Lights Model: M753-8KW KW: 8.0 Fuel type: diesel
Serial #: 7532-32144C Hours: 5,212

RECOMMENDATIONS

(Items on this list should be addressed on a priority basis)

1. **Portable handheld fire extinguishers have exceeded their useful service life; replace with new.**
2. **Unexpired visual distress and/or electronic distress signals & flags not found aboard; put aboard at least three unexpired USCG approved day/night visual distress signals or other type USCG Approved system that satisfies the requirement (certain battery powered beacons accompanied with day signal are now approved).**
3. **Stern running light lens has heavy crazing; repair/replace fixture as necessary.**
4. **Fixed and portable fire extinguishers are due for inspection; a full maintenance check should be made by a qualified fire extinguishing service facility in accordance with the maintenance instructions on the name plate of the extinguisher. A tag should be attached showing the date of such maintenance check.**
5. **Vessel accommodations are not equipped with CO/smoke alarms; install one each in forward stateroom and main cabin in vicinity of galley.**

6. **Reboarding ladder does not work smoothly; clean, polish, and lubricate to ensure its reliable function.**
7. **LPG locker has an open hole into flybridge console; close off hole to prevent gas from entering helm console.**
8. **Main engine throttle control works erratically; service as necessary to restore its normal function (system may need bleeding or filters replaced).**
9. **Main engine temperature climbs unacceptably when operated above 1,700 rpms; service as necessary to restore its normal function.**
10. **Main engine raw-water pump leaks seawater and lube oil; service as necessary to restore its normal function.**
11. **Main engine raw-water hose between seacock and seawater pump is too long and is spliced; replace with shorter hose that is one piece.**
12. **Main engine serpentine belt has cracks; replace with new.**
13. **AC generator raw-water pump leaks seawater; service as necessary.**
14. **AC generator exhaust mixing elbow is corroded and leaking; replace mixing elbow with new and clean corrosion from generator and repaint affected areas if necessary.**
15. **Engine room stbd outboard side above house battery windlass breaker/disconnect switch knob is broken off; repair/replace breaker/disconnect as necessary.**
16. **House batteries do not appear to be charging from main engine alternator; investigate further and service as necessary.**
17. **House batteries voltages were different indicating they may not be tied together properly; investigate further and service as necessary.**
18. **AC generator battery ground is tied into house battery forward of it with small sized conductor; AC generator battery ground tie-in conductor size should match starter conductor sizes, replace cable if necessary.**

(In addition, see Summary Remarks and Notes section at end of survey where the above are also cited)

This vessel was surveyed using the USCG 33CFR requirements and NFPA and ABYC standards and recommendations in effect today for guidance. This survey addresses those items thought to be necessary for safety but does not suggest complete compliance with current regulations or standards and recommendations.

INTENDED USE: recreational
SUITABLE FOR INTENDED USE: yes (upon completion of recommendations cited above)
NAVIGATIONAL LIMITS (as equipped): warm coastal waters

*****For regular use more than 12 miles offshore suggest carrying Epirb and offshore type lifejackets*****
*****Warm water means water where the monthly mean low water temperature is normally more than 59 degrees Fahrenheit*****

VALUATION

Subject vessel was found to be in overall average condition. It appears in average condition and to have had adequate care and maintenance. Exterior gelcoat is weathered typical for this model and year due to materials available during that time. In the valuation determination, cost and market comparison approaches to value were considered on May 12, 2023. In the sales comparison approach Yachtworld.com and the subscription website Soldboats.com was reviewed. Current listings and actual reported sales figures were taken into consideration. Price Guide "Book" values were also taken into

consideration. In cases where limited relevant comparables are available for comparison a depreciated replacement cost may be used to develop a value. In the opinion of the undersigned the following values should apply:

Estimated current fair market value: $XXXXXXX

Market value assumes correction of significant survey findings

Replacement cost: $1,200,000 (Kadey-Krogen)

Values are dependent on the limiting conditions and assumptions noted in the report.
These values are statements of opinion. No guarantee can be given that these opinions of value will be sustained or that they will be realized in an actual transaction.

Specific references

Pricing guides
Abos.com…….....$148,250 to $189,649 ($228,493 retail)
Bucvalupro……..$342,000 to $375,000
NADAguides.com…….. prices not given
Powerboat Guide..…….. prices not given
(Options not added to guide values unless noted otherwise)
Current listings
Yachtworld.com……. $359,000 & $389,500
(2 results – 1999 & 2003 models)
Reported sales
Soldboats.com…….$264,000 to $422,500
(11 results – searched January 2020 to present)
Valuation based upon depreciated replacement cost
$1,200,000 depreciated annually……$381,902
(Depreciation rate based upon surveyor's experience)

APPROVAL

This survey may be used for valuation, insurance, or mortgage requirements. This survey checks for compliance with U.S. Coast Guard regulations and American Boat and Yacht Council, Inc. Recommended Standards and Practices. In addition, the general structural condition of the vessel and suitability for its intended service will be examined.

The undersigned has conducted this survey and issued this report for the sole use of the specified requesting party for an agreed fee based upon the intended use of the report; accordingly, others are not to use this report and not rely upon the contents of this report without payment to the Company of an additional agreed fee based upon the reevaluation of the same factors.

The survey contains opinions and observations based on my skill, experience and training as a marine surveyor and consultant. Acceptance and use of this report by the client acknowledges the client's understanding that the report has been composed of information that is believed to be true after reasonable investigation and inquiry but is not warranted to be so. The information was obtained without drilling, diving, ultrasonic testing, cleaning, or opening up to expose parts or conditions ordinarily concealed. There were no tests for tightness or soundness conducted other than the conditions noted visually.
Acceptance and use of this report acknowledges the client's understanding that no determination of stability or structural strength has been made and no opinion is expressed. Acceptance and use of this

report acknowledges the client's understanding that Gladding Marine Surveying and Consulting, LLC does not accept any responsibility for damage or deterioration not found or discovered during the course of survey, nor for consequential damage, deterioration, or loss due to any error or omission.

The Client hereby undertakes to keep the Surveyor/Consultant and its employees, agents and subcontractors indemnified and to hold them harmless against all actions, proceedings, claims, demands or liabilities whatsoever or howsoever arising which may be brought against them or incurred or suffered by them, and against and in respect of all costs, loss, damages and expenses (including legal costs and expenses on a full indemnity basis) which the Surveyor/Consultant may suffer or incur (either directly or indirectly) in the course of the services under these Conditions.

Notwithstanding the above clause, in the event that the Client proves that the loss, damage, delay or expense was caused by the negligence, gross negligence or willful default of the surveyor/Consultant aforesaid, then, save where loss, damage, delay or expense has resulted from the Surveyor's/Consultant's personal act or omission committed with the intent to cause same or recklessly and with knowledge that such loss, damage, delay or expense would probably result, the Surveyor's/Consultant's liability for each incident or series of incidents giving rise to a claim or claims shall never exceed a sum calculated on the basis of ten times the Surveyor's/Consultant's charges.

William K. Gladding, AMS® #810
Society of Accredited Marine Surveyors
Gladding Marine Surveying and Consulting, LLC

SCOPE OF SURVEY

The vessel was inspected in and out of the water without making removals or opening parts normally concealed and without making borings to ascertain thickness or condition of structural members. Because of this, some areas were not reached behind cabinetry, under decks and other areas not readily accessible. Fixtures and appliances were powered up and exercised where indicated. Locker doors and drawers were worked and examined for proper function. Potential leak sources such as portlights and deck hatches were examined for evidence of water stains or other indications of leakage. The hull exterior was inspected visually for defects. In addition, other non-destructive methods may have been used such as tap testing or employing moisture detection equipment. The underwater gear and other fittings were inspected and checked for indications of damage, abuse, or excessive wear. The vessel was attended during a trial run during which various readings regarding the vessel performance were monitored and systems aboard were observed while functioning.

Key to highlighted comments as follows:

- Positive comment related to safety or functionality
- Informational comment no finding generated
- High priority finding related to safety, utility, or reliability
- Moderate to low priority finding related to utility or reliability

Test equipment that may be referenced in the report:

- Tramex Skipper or GE Aquant moisture meter
- Flir® C3 infrared camera
- AC electrical circuit analyzer
- AC electric three light plug in tester
- Non-contact digital tachometer
- Multi-meter electrical tester
- Assorted hammers and measuring devices
- Loos gauges to check rigging tension

VESSEL GENERAL DESCRIPTIONS

Exterior arrangement – mono-hull powerboat noted the following:

- Hull – displacement type hull with round bilges and full keel that protects propeller and rudder; stem is nearly plumb and hull sides flare outward slightly at bow; curved sheer slopes downward from bow to stern with more so amidships before turning back upwards to the stern; wine-glass shaped transom is plumb with bolted on swim platform
- Decks and superstructure – foredeck/bridge deck is slightly recessed with stainless-steel railings around its perimeter; lower deck is four steps down and comfortably recessed from amidships aft; superstructure consists of pilothouse on bridge deck level followed by the main cabin at the lower deck level with ample walkways alongside each; flybridge is above the pilothouse; upper deck extends aft to the stern shading the side and aft decks; utility mast is located at the flybridge deck aft end

Interior arrangement – lower cabin forward below foredeck, pilothouse at foredeck level, main cabin at aft deck level noted the following:

- Staterooms – one in lower cabin
- Heads – one in lower cabin stbd side
- Galley – main cabin forward end stbd side

- Dinette – main cabin aft end stbd side
- Saloon – main cabin
- Helm – pilothouse & flybridge
- Other – very spacious engine room, below decks equipment rooms & lazarette

Structural elements

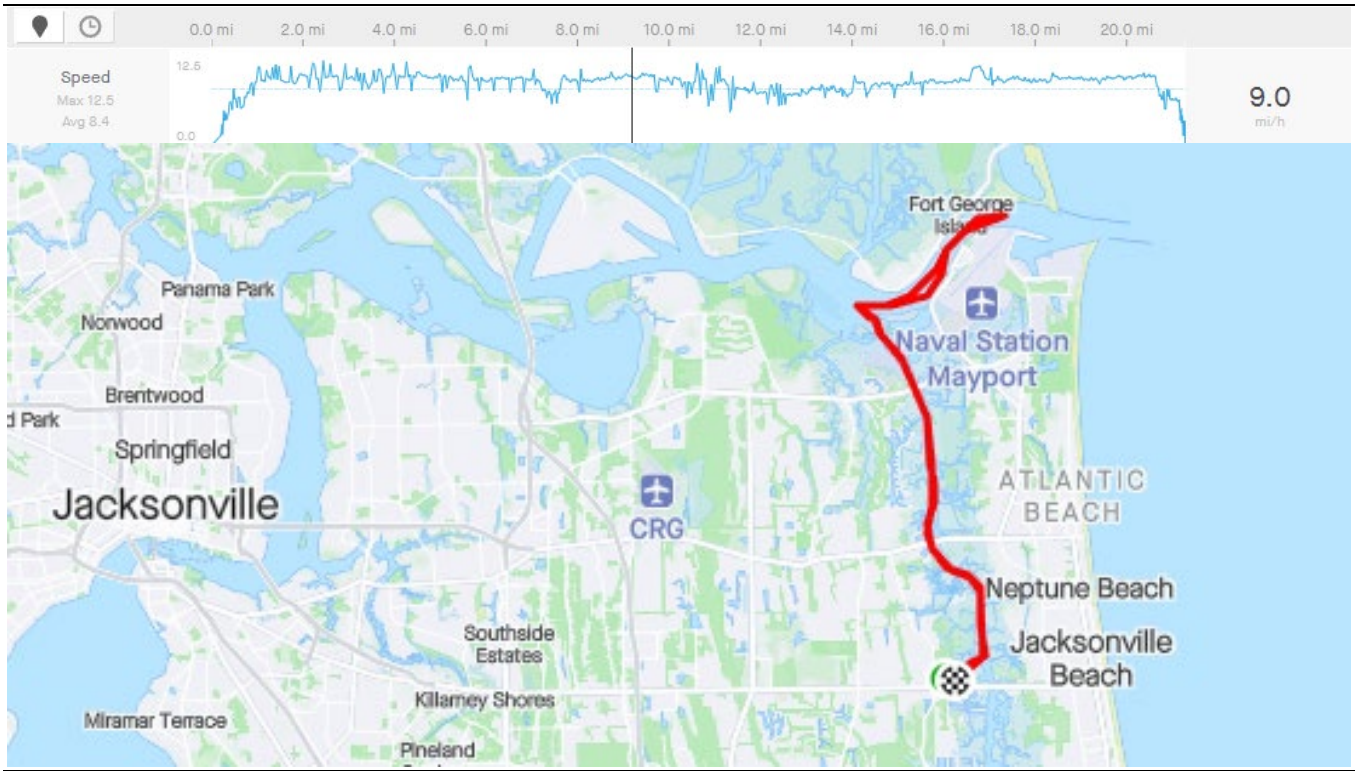
- Hull skin material and type cosmetic finish – molded fiberglass foam cored six inches above the waterline to the sheer, gelcoat cosmetic finish
- Hull grid system layout and materials – four continuous fiberglass stringers, transverse supports at various intervals between
- Hull deck joint – matching flanges mechanically fastened and fiberglassed
- Continuous transverse bulkheads locations and materials – fiberglassed plywood at anchor locker and each end of engine room, deck level bulkheads between anchor locker and engine room
- Decks and superstructure materials and type cosmetic finish – solid and balsa cored molded fiberglass, gelcoat cosmetic finish, natural teak overlay on lower deck, painted teak cap rail on bulwark

SURVEY FINDINGS

UPGRADES/REBUILDS

Vessel remains as originally constructed without significant changes

TRIAL RUN



- Location – ICW & St. Johns River

- Conditions:
  - Temperature °F (76)
  - Wind direction & velocity mph (ESE@6.6)
  - Wave height estimated (small chop)
- Duration – 2.75 hours moving
- Number of passengers - five
- Tanks levels:
  - Fuel – 35%
  - Water - <25%
  - Waste - unknown
  - Gray water – n/a
- Hull performance – vessel performed well in all respects. Speeds noted were variable depending on tides. RPMs – speed in knots recorded as follows:
  - 1,500 – 7.2
  - 1,700 – 6.0 to 8.0
  - 2,450 – 9.2
- Engine performance:
  - Cold start - normal
  - Wide open throttle rpms (2,400 desired) – 2,450
  - Temperatures and pressures – normal except that coolant temperature climbed above 1,700 rpms
- AC generator performance:
  - Voltage and frequency - normal
  - Loads applied – air-conditioners, water heater & other normal house loads
- Comments – uneventful trial-run

HULL ABOVE WATERLINE AND RELATED

Structural elements

Condition: above average

Condition of structural elements such as stringers, transverse framing, bulkheads, partitions, and other similar type hull supports based upon visual inspection to insure they are maintaining their proper shape and remain securely attached, tap tested to insure they are not delaminated or deteriorated and in some cases examined using a moisture meter

Topsides

Structural condition: above average

Structural assessment based upon visual examination of hull's shape for damage, distortions, sagging, hogging or other signs structure is failing or is not adequately supported; moisture testing to locate areas where abnormal readings may indicate deterioration of laminates or cores; and tap testing areas that are suspect because of abnormal indications from visual inspection and readings from moisture meter

Cosmetic condition: fair to average

Cosmetic condition of paint, gelcoat and varnish based upon surveyor's opinion of appearance compared to similar type vessels considering factors such as gloss, extent of oxidation, flaking, discoloration, wear and tear or other factors

Condition other features: average

- Chaffing gear:

  - Foredeck cap rail (stainless-steel striker)
  - Hull sides (stainless-steel striker on molded fiberglass rub rail)
- Swim platform – molded fiberglass resting on stainless-steel brackets
- Permanently installed means for reboarding -

Comments - Reboarding ladders should be secured in a way they can be deployed by passengers who may find themselves in the water unexpectedly, so they may reboard unassisted.

Deck drainage

Primary drainage system: direct overboard
Other drainage systems: scuppers Condition: above average
Weather decks with in-hull drain systems: aft deck hatch gutter
Comments - Surveyor has witnessed several sinking and flooding events due to clogged deck drains backing up rainwater on deck then flooding to hull interior. In order to prevent this type of event from occurring deck drain fittings and piping should be maintained leak free, kept clean and free of debris and hatch seals maintained to prevent water from leaking to hull interior or accumulating on weather decks and spilling to hull interior.

Decks & superstructure

Structural condition: above average

Structural assessment based upon visual examination of hull's shape for damage, distortions, sagging or other signs structure is failing or is not adequately supported; moisture testing to locate areas where abnormal readings may indicate deterioration of laminates or cores; and tap testing areas that are suspect because of abnormal indications from visual inspection and readings from moisture meter

Cosmetic condition: fair to average

Cosmetic condition of paint, gelcoat and varnish based upon surveyor's opinion of appearance compared to similar type vessels considering factors such as gloss, extent of oxidation, flaking, discoloration, wear and tear or other factors

Exterior soft goods

Condition/appearance: average Wear & tear: light Serviceable: yes
Location & type (installed at time of survey):

- Flybridge Bimini (canvass on stainless-steel frame)
- Flybridge seat cushions (canvass skins)
- Pilothouse window shades (Textilene® screen)

Exterior hardware

Condition/appearance: above average Anchoring & bedding: appeared adequate
Location & type:

- Foredeck & upper deck – bow pulpit & safety rails (welded stainless-steel)
- Aft deck – ladder (welded stainless-steel, teak treads)

Tie-up gear

Condition/appearance: above average Anchoring & bedding: appeared adequate
Location & type – stainless-steel horn cleat/hawses:

- Anchor pulpit (2 x horn cleats)

- Foredeck (2)
- Lower deck forward end (2)
- Aft deck (4)

Anchoring gear

Condition/appearance: above average Function: normal
Locations/descriptions:

- Anchor pulpit – molded fiberglass bolted on foredeck
- Chute(s) – 2 x stainless-steel (plastic rollers)

Glazing materials

Condition/appearance: above average Function: appeared serviceable
Gaskets and seals: appeared serviceable
Location & type – Diamond Seaglaze® aluminum frames, glass glazing:

- Pilothouse – fixed windows
- Main cabin – sliding windows

Exterior hatches, portlights and doors

Condition/appearance: above average Function: normal Gaskets and seals: appeared serviceable
Location & type:

- **Secondary egress (escape) – top of trunk cabin**
- Trunk cabin sides & pilothouse aft end – rectangular portlights (stainless-steel, glass lens)
- Main cabin sides – circular portlights (stainless-steel, glass lens)
- Top of trunk cabin & pilothouse – hinged hatches (aluminum frame, plastic lens)
- Pilothouse sides – Dutch doors (aluminum & glass)
- Main cabin aft end – hinged door (composite, glass glazing)
- Aft deck bulwark – hinged gates (molded fiberglass)
- Aft deck sole – hinged hatch (molded fiberglass)

Comments - Hatches, portlights, doors, etc. used for primary and emergency ingress/egress, and access to gear and equipment were thoroughly checked for condition and function. Others were examined for general condition and evidence of leakage but not operated.

HULL BELOW WATERLINE AND RELATED

Hull below the waterline

Structural condition: above average

Structural assessment based upon visual examination of hull's shape for damage, distortions, sagging, hogging or other signs structure is failing or is not adequately supported; tap testing for purposes of comparing variations in tap sound indicative of previous repairs, delaminating, moisture intrusion or blistering; and moisture testing if hull is sufficiently dried and does not have coatings that interfere with moisture meter function to locate areas where abnormal readings may indicate deterioration of laminates or cores

Cosmetic condition: above average

Cosmetic condition based upon surveyor's opinion of hull appearance compared to similar type vessels considering factors such as paint build-up, smoothness of hull, blistering and other features that affect its appearance

Bow thruster

Condition/appearance: average or better Exceptions noted: none

- Manufacturer/model – American Bow Thruster
- Type – 24-volt tunnel type, counter-rotating propellers
- Location – inside forward berth
- Battery service-disconnect – inside forward berth
- Overcurrent protection – inside forward berth (fuses)
- Reservoir – inside forward berth
- Test performed – examined for damage, excessive wear & observed in use during trial-run

Underwater gear

Condition/appearance: above average Damage, abuse, or excessive wear: none noted
Function: normal

- Propellers – 26"LH17" 4-blade bronze alloy
- Shafting – 1 ¾" stainless-steel
- Shaft support – keel & shaft log mounted bearing carriers
- Bearings – rubber Cutless® type
- Shaft log – integral fiberglass
- Shaft seal – Tides Marine® self-aligning dripless type
- Spare seals - three
- Fasteners – appeared secure
- Test performed – examined for damage, excessive wear & leakage

Rudders & linkages

Condition/appearance: above average Damage, abuse, or excessive wear: none noted
Function: normal

- Rudder description – welded stainless-steel 34" tall x 25" long
- Thru-hull seal – Tides Marine® self-aligning dripless type
- Supports – keel shoe, rudder port, composite table with Tides Marine® bearing
- Linkages – stainless-steel tiller & swivel joint
- Steering components – bronze hydraulic cylinder
- Emergency tiller – lazarette (tiller installed to prove fit)
- Test performed – examined for damage, excessive wear & leakage

Stabilizers

Condition/appearance: above average Exceptions noted: none

- Manufacturer/model – ABT Trac® 220
- Type – engine driven hydraulic active fin
- Location – engine room forward end outboard sides
- Reservoir:
    - Hydraulics – engine room forward bulkhead stbd side
    - Stabilizer fins – adjacent to each

- Pump – back of transmission (Vickers V10-6S$S-12C20)
- Cooler – port side of main engine (raw-water cooled)
- Test performed – examined for damage, excessive wear, leakage and observed operating while underway

Thru-hulls, seacocks, transducers

Condition/appearance: above average Damage, abuse, or excessive wear: none noted
Function: normal

- Underwater – bronze alloy fitted with ¼ turn valves, bonded with stainless-steel clamps on hoses connections at the following bilge locations:
  - Inside forward berth by bow thruster – **raw-water washdown inlet**
  - Engine room forward end port side – **blackwater discharge, inlets & strainers for main engine & air-conditioner**
  - Engine room aft end port side – **inlet & strainer for AC generator**
- Topsides - bronze
- Transducers – lower cabin companionway below sole stbd side

ACCOMMODATIONS, HOUSEHOLD SYSTEMS & COMFORT SYSTEMS

Interior spaces

Bulkheads, partitions, and cabinetry were found to be solid and in good condition, locker and cabinet doors and drawers found to be in above average condition and working order. Interior décor was found to be in overall average condition with normal wear and tear descriptions as follows:

- Doors - hinged
- Decks – varnished teak & holly in pilothouse, varnished teak parquet elsewhere
- Cabinetry – varnished teak
- Bulkheads and partitions – varnished teak & laminate
- Ceilings – padded vinyl
- Counters – cut composite in galley & head, laminate elsewhere
- Cushion covers – fabric skins
- Natural ventilation – opening appliances
- Powered ventilation - none
- Fixtures – serviceable
- Test performed – doors, drawers & fixtures operated at various locations as required to perform inspections

Entertainment equipment

Condition/appearance: average Exceptions noted: none
Locations/descriptions – main cabin port side:

- Satellite stereo (XM)
- Stereo (Pioneer DEH-P3700MP)
- Test performed – not operated

Galley & household equipment

Condition/appearance: average or better Exceptions noted: none
Locations/descriptions - Located in galley except as noted:

- Refrigerator/freezer (Norcold DE0061)
- 3-burner range/oven (Force 10 73351)
- Single sink (stainless-steel)
- Pilothouse – washer/dryer (Splendide WD802CO)
- Lower cabin companionway below sole – refrigerator/freezer (Engel)
- Test performed – operated all equipment except clothes washer

Sanitary system

Condition/appearance: above average Exceptions noted: none
Locations/descriptions:

- Quantity - one
- Manufacturer – Dometic Vacuflush
- Type – 12-volt marine toilet, freshwater rinse
- Y-valves (direct overboard discharge) – lower cabin companionway below sole
- Vented loops (if required) – n/a
- Test performed – flushed several times. System holds vacuum reliably

Air-conditioning

Condition/appearance: above average Exceptions noted: none
Locations/descriptions:

- Quantity - two
- Manufacturer - Cruisair
- Type – split-type heat pump
- Controls – SMXir:
  - Forward stateroom
  - Main cabin
- Equipment – engine room forward end outboard sides (2 x condensing units)
- Cooling pump – engine room forward end port side (Taylor Made PMA1000C)
- Test performed – operated both units heat and cool programs, and measured Delta-T +15 degrees

TANKS, PIPING AND RELATED

(Capacities listed in this section are based upon published specifications for this model unless stated otherwise. Accuracy of tank level monitors should be verified prior to relying upon their readings.)

Fuel

Found the following to be in above average condition without significant corrosion or evidence of leakage to level filled where accessible for inspection:

- Tanks – 700-gallon capacity contained in two aluminum tanks secured engine room outboard sides
- Fills – side decks on steps (2)
- Vents – hull sides

- Plumbing materials – copper tubing & USCG Approved Type-A hose
- Shut-off valves – tank outlets
- Filters:
  - Main engine – engine room forward bulkhead stbd side (dual Racor 500s)
  - AC generator – engine room middle stbd side (Racor 500)
- Transfer pump – engine room forward bulkhead stbd side (Groco SPO-80-R)
- Level gauges – tank sight gauges
- Test performed – examined for evidence of leakage, verified transfer pump runs

Comments – AC generator returns to stbd fuel tank only

Potable water

Found the following to be in above average condition without significant corrosion or evidence of leakage to level filled where accessible for inspection:

- Tanks – 300-gallon capacity contained in one stainless-steel tank secured lower cabin below sole
- Fills – bridge deck stbd side
- Vents – hull side
- Plumbing materials – copper tubing
- Shut-off valves – not sighted
- Filters – not sighted
- Pressure pump – engine room forward end port side (Shurflo 3901-0216)
- Accumulator tank – engine room forward end port side (Jabsco 18810-0000)
- Water heater – engine room forward end port side (Raritan Engineering 171211 [12-gallon, 120-volt & engine heated])
- Dock water inlet – none (removed)
- Level gauges – lower helm console
- Test performed – examined for leakage, operated fixtures at various locations and verified hot water using shore power

Black water

Found the following to be in average condition without evidence of leakage to level filled where accessible for inspection:

- Tanks – 35-gallon capacity contained in one plastic tank located in lower cabin equipment room port side
- Deck fitting – bridge deck port side
- Vents – hull side
- Plumbing materials – PVC hose
- Y-valves – none
- Overboard valve – engine room forward end port side
- Discharge pump – lower cabin equipment room port side (Sealand 12-volt diaphragm type)
- Vented loop (if required) – n/a
- Treatment device - none
- Level gauges – lower helm console
- Test performed – examined for leakage and verified overboard discharge pump runs

LPG/CNG system

Condition/appearance: above average Exceptions noted: yes (see summary remarks & notes)

- Storage locker – flybridge in stbd side bench seat
- Tank quantity, material & capacity – 2 x aluminum WC-10.8
- Solenoid valve, regulator, pressure gauge and control - yes
- Leakage test (should hold steady pressure for three minutes) - Passed

Comments - Periodic leak testing of LPG system is recommended: (excerpt from ABYC A-1: With the appliance valves off, open the cylinder supply valve. Close the cylinder supply valve. Observe the pressure gauge reading. The pressure indicated should remain constant for not less than three minutes. If any leakage is indicated by a drop in pressure, check the entire system with a leak detection fluid or detergent solution to locate the leak. Test solutions shall be non-corrosive and non-toxic. Repairs shall be made before retesting and operating the system).

ENGINES, AND ENGINE AND VESSEL CONTROLS

Engines

Condition/appearance: average Exceptions noted: yes (see summary remarks & notes)
Function: normal

- Location - amidships
- Type/description – diesel 4-cycle 4-cylinder turbocharged
- Cooling system – closed loop freshwater, raw-water cooled heat exchanger
- Power transmission – close coupled straight-drive
- Mounting:
  - Foundations – hull stringers
  - Beds – continuous welded aluminum
  - Mounts – adjustable vibration isolator type
- Cleanliness – above average
- Fluid levels and condition – visual inspection of the following (full/low/add):
  - Engine oil – full/normal
  - Engine coolant – full/normal
  - Transmission oil – full/normal
- Accessibility - good
- Test performed – examined the following:
  - Throttle engagement idle/full
  - Cold start
  - Exhaust smoke
  - Raw-water flow
  - Noise/vibration
  - Leaks
  - Charging

Comments – transmission oil cooler is engine coolant cooled

Exhaust systems

Condition/appearance: average or better Exceptions noted: none

- Exhaust manifolds – freshwater cooled cast iron
- Riser/mixing elbow – insulated stainless-steel, raw-water sprayed discharge

- Exhaust fittings – fiberglass adapter
- Muffler – straight fiberglass
- Exhaust outlet – transom
- Straight runs – fiberglass pipe and black rubber hose
- Connecting hoses – black rubber & blue silicon
- Hose connection clamps – double stainless-steel
- Test performed – examine for evidence of damage and leakage

Engine ventilation

Condition/appearance: above average Exceptions noted: none
Location & type:

- Thru-hull vents – main cabin sides
- Powered – DC supply blower
- Test performed – operated DC blower

Engine controls

Condition/appearance: average or better Exceptions noted: yes (see summary remarks & notes)

- Locations – upper & lower helms
- Manufacturer/model - Hynautic
- Description – dual lever type manual hydraulic
- Reservoir – engine room forward bulkhead port side
- Neutral safety interlock (prevents starting in gear) – yes
- Test performed – operated controls dockside with engine off and observed in use during trial-run

Engine instrumentation

Condition/appearance: average or better Exceptions noted: yes (see summary remarks & notes)

- Manufacturer - VDO
- Type – analog electric
- Locations – upper & lower helms except as noted below:
  - RPMs
  - Coolant temperature
  - Oil pressure
  - Volts
  - Hours (lower only)
- Alarms – yes
- Test performed – observed working during trial-run

Steering

Condition/appearance: above average Damage, abuse, or excessive wear: none noted
Function: normal

- Locations – upper & lower helms
- Manufacturer/model - Hynautic
- Description – wheel type manual hydraulic

- Reservoir – lazarette forward bulkhead
- Test performed – operated dockside lock to lock upper & lower helms, and observed in use during trial-run

EQUIPMENT

Pumps dewatering and utility

Condition/appearance: average or better Exceptions noted: none
Type & location – DC electric unless noted otherwise:

- Inside forward berth below sole:
  - Dewatering (Rule 2000 gph)
  - Raw-water washdown (Groco C-60 automatic pressure type)
- Lower cabin companionway below sole:
  - Dewatering (Rule 2000 gph)
  - Sump box (Rule 800 gph in plastic box)
- Engine room forward centerline - sump box (Rule 800 gph in plastic box)
- Engine room aft centerline – dewatering (Rule 2000 gph)
- Lazarette – dewatering (Rule 2000 gph)
- Test performed – all pumps operated using level switches. Noted helm switches indicator lamps function

Rigging utility

Condition/appearance: average Exceptions noted: yes (see summary remarks & notes)
Type & location:

- Utility mast – flybridge deck aft end (painted aluminum, hinged base, single spreaders, stainless-steel wire stays, manual tackles, single speed winch, reported in owner's manual to have 600-lb. lifting capacity)
- Test performed – not operated

Windlass

Condition/appearance: average or better Exceptions noted: yes (see summary remarks & notes)
Descriptions (windlass located at foredeck unless noted otherwise):

- Manufacturer/model – Maxwell VWCLP 2200
- Type – 12-volt vertical with wildcat & warping head
- Control locations – foredeck & both helms
- Battery service-disconnect – engine room middle above stbd house battery
- Overcurrent protection – disconnect is breaker
- Clutch lever location – helm seat lounge base
- Test performed – anchor run out of chute to water, controls operated all three locations, and anchor returned to rest position.

Accessories

Condition/appearance: average or better Exceptions noted: none
Description:

- Main engine drip pan – below main engine (molded fiberglass)
- Spare propeller – engine room middle port side (26LH17 3-blade bronze alloy)
- Flexible shaft coupling – engine end of propeller shaft (PYI®)
- Watermaker – lower cabin companionway below sole (Village Marine Tec)
- Test performed – watermaker pumps were switched on briefly to prove they would run

ELECTRICAL SYSTEMS

Galvanic corrosion protection

Condition/appearance: average or better Exceptions noted: none
Descriptions:

- Anodes (zinc unless noted otherwise) – quantities each location:
  - Propeller shaft (1)
  - Rudder (1)
  - Transom (1)
- Bonding system - yes
- Galvanic isolators – yes (Guest 2450)
- Test performed – verified low resistance bonding connections

AC electrical system

Condition/appearance: above average Exceptions noted: yes (see summary remarks & notes)
Locations & descriptions of significant components:

- Voltage – 240 & 120
- Inlet types & locations – foredeck & aft deck port side (240-volt, 50-amp each location)
- Inlet circuit protection location (within ten feet unless noted otherwise) – foredeck more then 10-feet
- Main panel:
  - Location – pilothouse port side
  - Instrumentation – voltmeter & ammeter
  - Source selector switches - rotary
  - Reverse polarity indicator - yes
- Condition of shore cord – average or better
- Condition of shore cord inlet – average or better
- GFCI protection – yes, except engine room
- Tests and examinations:
  - Shoreline output - normal
  - Generator output - normal
  - Inverter output - normal
  - AC/DC grounding connection – yes
  - AC current leakage (<30ma desired) - <30ma

DC electrical system

Condition/appearance: above average Exceptions noted: none
Locations & descriptions of significant components:

- Voltage - 12
- Panel locations – pilothouse port side
- Panel instrumentation – voltmeter & ammeter
- Branch circuit protection – breakers
- Main disconnect switch – main DC panel
- Primary circuit protection – engine room port side (fuses)
- Test performed – various DC equipment operated

Alternating current generators

Condition/appearance: above average Exceptions noted: yes (see summary remarks & notes)
Description:

- Engine type – diesel 4-cycle 3-cylinder naturally aspirated
- AC generator mounting – close coupled
- Location – engine room aft end
- Circuit protection:
  - Generator – engine room aft bulkhead
  - Main panel – none
- Accessories – drip pan, sound shield & remote control/monitoring
- Fuel, exhaust, cooling water and electrical connections – serviceable
- Vented loop (may be necessary for deep draft installation) – yes
- Test performed – operated during trial-run

Battery charging devices

Condition/appearance: average Exceptions noted: yes (see summary remarks & notes)
Locations/descriptions:

- AC electric – engine room forward bulkhead port side:
  - Bow thruster – 24-volt (Phase Three PT-24-40)
  - House – 12-volt (Promariner Pronautic 12-50P)
  - Start batteries – 12-volt (Xantrex Truecharge™20+)
- Alternators – main engine
- Renewable – none
- Controllers – n/a
- Test performed -

Inverters

Condition/appearance: average Exceptions noted: none
Locations/descriptions:

- Location – engine room port side
- Make/model – Xantrex Xpower Inverter 1500
- Output:
  - AC power (1,500-watt)
  - DC current (n/a)
- Battery disconnect location – adjacent to inverter

- Battery overcurrent protection location & type – adjacent to inverter (fuse)
- AC output bypass (returns inverter supplied circuits power source to main buss) – not integrated into buss
- Inverter cautionary label – n/a
- Test performed – not operated

Storage batteries

Condition/appearance: average Exceptions noted: yes (see summary remarks & notes)

- Batteries – purpose and locations as follows:
  - Bow thruster – inside forward berth (2 x 8D AGM)
  - House – engine room middle and stbd side (3 x 8D AGM)
  - Main engine starting – engine room middle port side (2 x Group-24 FLA)
  - AC generator starting – engine room aft end stbd side (Group-27 FLA)
- Disconnects:
  - Bow thruster – inside forward berth
  - House – main DC panel
  - Main engine – adjacent to battery
  - AC generator – adjacent to battery
- Test performed – batteries conditions evaluated using Midtronics conductance type tester

Comments:

- Battery disconnects or primary circuit protection for high amperage DC systems such as engine & AC generator cranking, windlasses, capstans, bow & stern thrusters and davits should be toggled off when not in use to prevent them from energizing unexpectedly due to failed components or short circuits that can lead to equipment damage or fire while vessel is not in use or unattended

ELECTRONICS AND NAVIGATION EQUIPMENT

Condition/appearance: average Exceptions noted: yes (see summary remarks & notes)

- Pilothouse:
  - Magnetic compass (Danforth)
  - 3 x windshield wipers (no irrigators)
  - Rudder angle indicator (VDO)
  - VHF (Icom IC-M604)
  - Radar (Simrad 7" LCD)
  - GPS (Furuno GP-31)
  - Echo sounder (Furuno LS-4100)
  - Dash autopilot control (Simrad AP26)
  - Wired autopilot remote control (Simrad AP27)
- Flybridge:
  - Fishfinder (Garmin Fishfinder 160 Blue)
  - VHF mic (Icom HM-157SW)
  - Rudder angle indicator (VDO)
- Autopilot pump – engine room aft end port side (Simrad RPU-160)
- Autopilot compass – not found

- Test performed – attempted to operate all equipment

SAFETY EQUIPMENT

(Items in this section checked for compliance with Code of Federal Regulations & ABYC Standards)

Fire safety equipment

Equipment types and quantities USCG compliant yes (due for service):

- Fixed – engine room forward end port side (Fireboy MA2-700-FE241 [indicated fully charged)
- Fixed fire system indicator – lower helm console
- Fixed fire system manual activator – not found
- Portable handheld USCG Approved Sizes located as follows – (indicated fully charged):
  - Engine room forward bulkhead stbd side (BCI)
  - Pilothouse lounge seat base (BCI)
  - Pilothouse port side cabinet (BCI)
  - Main cabin aft end port side cabinet (BCI)

Gas detection systems

Equipment types and quantities compliant no:

- CO – not found
- Smoke – engine room (inoperative)
- LPG – not found
- Test performed – none to test

Emergency bilge pumps and high-water alarms

Configuration compliant no:

- Dewatering pumps – vessel is equipped with four
- Audible alarms – none (indicator lamps on lower helm console bilge pump switches)
- Test performed – operated all pumps

Signaling devices

Equipment types and quantities compliant no:

- Distress signals:
  - Pyrotechnics – not found
  - Electronic & flag – not found
- Hull mounted sound – yes (inoperative)
- Handheld sound – pilothouse lounge seat base
- Epirb – not found
- Test performed – tested handheld horn

Navigation lights

Configuration defects: none Function: normal

- Side – pilothouse sides
- Mast head – front of mast

- Stern – upper deck aft end
- Anchoring – top of mast
- Other – spreader lights on mast
- Test performed – operated all lights

Flotation devices

Condition/appearance: average Equipment types and quantities compliant yes:

- Lifejackets:
  - Main cabin aft end port side cabinet (2 x Type I)
  - Lazarette (4 x Type II)
- Throwables – lazarette (2 x Type IV cushions)
- Liferafts – not found
- Immersion suits – not found

Ground tackle

Condition/appearance: above average Equipment types and quantities compliant yes:
Locations/descriptions:

- Ready anchors & rodes – in chute:
  - 66-lb. Rocna, all chain rode
  - 45-lb. CQR, chain lead & laid nylon rode
- Back-up anchors & rodes – lazarette:
  - Danforth with chain lead
  - Additional chain lead

Additional required (non-safety)

Equipment types and quantities compliant yes:

- Pollution placards (Vessels 26 feet and over with a machinery compartment) – engine room on hydraulics tank
- Marpol Trash Placard (Vessels 26 feet and over) – inside galley sink cabinet door
- Vessel identification locations:
  - HIN – transom upper stbd corner
  - Documentation # - lazarette top of stbd stringer
  - Name - transom

SUMMARY REMARKS AND NOTES

Items on the following lists are grouped into several categories according to the source of their advice. Items in bold face are also listed in the Recommendations section at the beginning of this report and should be addressed on a priority basis. Underlined items should be considered for timely action at your convenience. The remaining items on the lists that follow will likely not interfere with the safe and reliable function of the vessel but may improve its utility and/or convenience.

REGULATORY AND/OR STATUTORY DEFICIENCIES

Items on this list may not affect vessel safety but if ignored may result in fines and/or penalties:

1. **Portable handheld fire extinguishers have exceeded their useful service life; replace with new.**
2. Upper deck has no portable handheld fire extinguisher; install at least one on flybridge or upper deck.
3. **Unexpired visual distress and/or electronic distress signals & flags not found aboard; put aboard at least three unexpired USCG approved day/night visual distress signals or other type USCG Approved system that satisfies the requirement (certain battery powered beacons accompanied with day signal are now approved).**
4. Vessel horn is inoperative; service as necessary to restore its normal function.
5. Vessel is equipped with several Type IV throwable cushions; suggest stationing mounted throwable flotation devices on vessel exterior at aft deck and upper deck.
6. **Stern running light lens has heavy crazing; repair/replace fixture as necessary.**

STANDARDS DEFICIENCIES

ABYC Standards and Technical Information Reports *are advisory only; their use is entirely voluntary. They are guides to achieving a specific level of design or performance, and are not intended to preclude attainment of desired results by other means:*

7. Engine room convenience outlets are not GFCI protected: Outlets installed in a head, galley, machinery space, or on a weather deck shall be protected by a Type A (nominal 5 milliamperes) Ground Fault Circuit Interrupter (GFCI) (see E-11.11); install GFCI protection for outlets as required where not currently fitted.
8. Forward shore power inlet breaker is more than ten feet from inlet; install breaker within ten feet of inlet.
9. **Fixed and portable fire extinguishers are due for inspection; a full maintenance check should be made by a qualified fire extinguishing service facility in accordance with the maintenance instructions on the name plate of the extinguisher. A tag should be attached showing the date of such maintenance check.**
10. Helm fixed fire system indicator light is inoperative; service as necessary to restore its function (may have never been connected).
11. Fixed fire system is type with manual discharge mechanism, but none is installed; suggest installing manual discharge mechanism.
12. **Vessel accommodations are not equipped with CO/smoke alarms; install one each in forward stateroom and main cabin in vicinity of galley.**
13. Vessel is not equipped with audible signal to indicate when excess water is in bilge; install level switch in engine room above normal bilge water accumulation that sounds audible alarm when excess bilge water is present.

SUGGESTED REPAIRS AND/OR CHANGES

Items based upon surveyor's observations or experience that may improve the vessel's reliability, utility, or longevity:

14. Hull above waterline & related:
    a. Exterior gelcoat/paint is weathered; compound, buff and wax or refinish to preserve, protect and improve its cosmetic appearance.
    b. Gelcoat is chipped in various locations on rub rails and port side aft freeing port; repair and refinish to match.
    c. Rub rail is missing from swim platform; locate/replace and reinstall.
    d. **Reboarding ladder does not work smoothly; clean, polish, and lubricate to ensure its reliable function.**
    e. Aft deck port side gate hinges are tight; clean and lubricate as necessary to restore their normal function.
    f. Hinged hatches screen latches are broken; replace with new.
15. Hull below waterline & related:
    a. Keel exterior aft end has several bulging blisters; grind out, fill, sand straight, prime and refinish during a scheduled haul-out.
    b. Keel rudder shoe has no protective anodes; install anode(s) on rudder shoe.
    c. No preventive maintenance reported on bow thruster; suggest replacing gear box seals and gear oil.
    d. Stabilizers last reported service 2017; perform recommended services and maintenance necessary to ensure their reliable function including replacement of hull seals.
16. Accommodations, household systems & comfort systems:
    a. Inside forward berth anchor locker drain valve is seized; service as necessary to restore its normal function.
    b. Engine room stbd side overhead light fixture is missing parts and one bulb; locate/replace missing parts and reinstall.
    c. Aft deck shower fixture box is damaged and sprayer leaks; replace fixture with new.
    d. Main cabin stereo system was not operated; prove its function.
    e. Washer/dryer was not operated; prove its function.
    f. Engine room port side above main engine one clothes washer water supply valve has been removed and bypassed; locate/replace missing valve and reinstall.
17. Tanks, piping & related:
    a. Fuel transfer pump fuse holder is damaged; replace with new.
    b. Blackwater tank and toilet plumbing is equipped with bronze check valves that should be unnecessary, and plumbing is hanging from overhead using plastic ty-wraps; suggest returning system to its original configuration and servicing duck bill valves on pumps if they are leaking back. Discharge seacock should be shut except when in use.
    c. Lower helm blackwater tank level indicator is inoperative; service as necessary to restore its normal function.
    d. Galley LPG control switch bezel is not fastened down tight; refasten as necessary.
    e. **LPG locker has an open hole into flybridge console; close off hole to prevent gas from entering helm console.**
18. Engines, controls & related:

a. **Main engine throttle control works erratically; service as necessary to restore its normal function (system may need bleeding or filters replaced).**
b. **Main engine temperature climbs unacceptably when operated above 1,700 rpms; service as necessary to restore its normal function.**
c. **Main engine raw-water pump leaks seawater and lube oil; service as necessary to restore its normal function.**
d. **Main engine raw-water hose between seacock and seawater pump is too long and is spliced; replace with shorter hose that is one piece.**
e. **Main engine serpentine belt has cracks; replace with new.**
f. Perform normal routine services to main engine and generator to establish starting point for future services.
g. Engine has areas with excessive rust and corrosion; descale, clean, prime and refinish to match.
h. Engine hour meter is unreadable; replace with new and examine meter to determine if there is a way to see current hours logged.
i. Main engine helm instruments are analog electric; suggest installing mechanical coolant temperature and oil pressure instruments in engine room to provide more reliable indication of engine condition.
j. Water heater is plumbed to main engine cooling system to make hot water while underway; install isolation valves on or near main engine where water heater hoses attach so they can be turned off when the engine heat is not needed to make hot water to avoid possible leakage and loss of main engine coolant that may result in overheating damage of the main engine.
k. Engine room hull vents allow regular exposure to dirt, pests, and circulation of damp air during periods vessel is not in use; suggest covering engine room vents when vessel is not in use to preserve and protect machinery from exposure related wear and tear.
l. Bow thruster controls do not turn off from helm controls; service as necessary to restore their normal on/off control (lower helm breaker disables control system).
m. **AC generator raw-water pump leaks seawater; service as necessary.**
n. **AC generator exhaust mixing elbow is corroded and leaking; replace mixing elbow with new and clean corrosion from generator and repaint affected areas if necessary.**
o. AC generator seawater vented loop is type that can leak and is located in main cabin aft port side cabinet; suggest replacing with fixture that has drain that can be directed to bilge.
p. Hull stabilizers appeared to function well during trial-run but indicated “!bypass!”; investigate further to determine cause and remedy if necessary.

19. Equipment & related:
    a. Mast rigging lines and tackles are dirty; clean or replace with new.
    b. **Engine room stbd outboard side above house battery windlass breaker/disconnect switch knob is broken off; repair/replace breaker/disconnect as necessary.**
    c. Windlass freefall function was not checked; verify windlass freefall function works, service windlass if necessary.
    d. Windlass gear case is leaking oil; service windlass as necessary to stop leakage.

e. Watermaker pumps run and system appears serviceable; perform maintenance necessary to ensure its safe reliable function prior to returning to service.
f. Vessel is segmented into four watertight compartments with one bilge pump at each location; suggest carrying portable pump as back-up.

20. Electrical systems & related:
    a. Phase Three battery charger is missing its lower cover; locate/replace and reinstall.
    b. Promariner battery charger lower cover is loose; refasten as necessary.
    c. Battery chargers wiring is in disarray; reorganize cabling.
    d. **House batteries do not appear to be charging from main engine alternator; investigate further and service as necessary.**
    e. **House batteries voltages were different indicating they may not be tied together properly; investigate further and service as necessary.**
    f. House battery sample tested poorly; replace house batteries with new upon verification charging systems are working properly.
    g. Stbd house battery fuse holder is not mounted and interferes with opening battery box lid; secure fuse holder to bulkhead clear of battery box lid.
    h. Main engine and AC generator boxes are missing and batteries are not tied down properly; locate/replace and reinstall boxes and tie-downs.
    i. Stbd house battery one of two tie-down straps is damaged; repair/replace and reinstall.
    j. Bow thruster batteries tested poorly but operated bow thruster adequately; monitor their performance and replace with new if their condition worsens.
    k. **AC generator battery ground is tied into house battery forward of it with small sized conductor; AC generator battery ground tie-in conductor size should match starter conductor sizes, replace cable if necessary.**

21. Navigation equipment & related:
    a. Autopilot system tie-in hoses are Aeroquip or similar push lock types that are typically rated for 250 psi working pressure versus steering system required 1,000 psi rating and are dripping oil; replace tie-in hoses with types that have at least 1,000 psi rating.
    b. Lower helm echo sounder is screen is difficult to see; service replace as necessary.
    c. Lower helm dash autopilot control screen is difficult to see; service replace as necessary.

(End of report photo pages to follow)

PHOTOS