

**GLADDING MARINE SURVEYING AND CONSULTING, LLC**

1738 PICKWICK PLACE-FLEMING ISLAND-FLORIDA-32003

PHONE: 904-945-0511 EMAIL: [gladdings@msn.com](mailto:gladdings@msn.com)

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**SURVEY REPORT VESSEL: xxx**

**Prepared by: Bill Gladding AMS® #810**

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## SURVEY BASIC DETAILS

SURVEY PURPOSE: prepurchase

FILE #: 2022-06-23 Nordhavn 55 2006

REQUESTED BY: xxx

REPORT DATE: June 27, 2022

CLIENT INFORMATION: xxx

SURVEY DATE: June 22 & 23, 2022

SURVEY LOCATION: xxx

ATTENDING: xxx

ENGINE SURVEYOR: basic external checks and lab oil analysis by hull surveyor

## VESSEL & MACHINERY DATA

**Vessel identification numbers (source: found on hull)**

Hull ID #: xxx

Documentation #: xxx

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**Vessel type and dimensions (source: vessel owner's manual except as noted)**

Manufacturer: Pacific Asian Enterprises Model: Nordhavn 55 Model year: 2006 Length: 55'0"

Beam: 18'0" Measured draft to painted waterline: 6'9"

Travelift scale weight: 132,000 lbs. (8,500 ballast)

Hull composition: fiberglass

**Engine main (source: data plate & owner's manual)**

Type and #: inboard straight-drive Horsepower: 330@2,300 rpms Fuel type: diesel

Manufacturer: John Deere Model: 6081AFM75 Serial #: RG6081A257672 Hours: xxx

**Engine wing (source: data plate & owner's manual)**

Type and #: inboard V-drive Horsepower: 70@2,500 rpms Fuel type: diesel Manufacturer: Lugger

Model: L984D.1 Serial #: 9841-2714 Hours: xxx

**Transmission main (source: data plate)**

Manufacturer: ZF Model: ZFW325 Ratio: 3.958 Serial #: 20059641

**Transmission wing (source: data plate)**

Manufacturer: ZF Model: ZF63IV-2.5 Ratio: 2.4/2.53 Serial #: 27676N

**2 x alternating current generators (source: sighted aboard)**

Manufacturer: Northern Lights Model: M844LW2-20KW & M753W2-8KW KW: 20 & 8

Fuel type: diesel Serial #: 20KW (8442-36054C), stbd (7532-36674C)

Hours: 20KW (xxx), 8KW (xxx)

## TENDER DATA

**Tender (source: data plates)**

Hull ID #: EMD-C3025I506 Registration #: NH2593GC Manufacturer: Caribe Model: CL-13

Model year: 2006 Length: 13'0" Beam: 6'4"

**Engine (source: decal on engine)**

Type and #: outboard Horsepower: 50 Fuel type: gas Manufacturer: Yamaha Model: F50TLR

Serial #: 6C1L1006979K

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## RECOMMENDATIONS

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

- 1. 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).**
- 2. Bridge deck engine stop button failed intermittently when used preventing main engine from restarting; service/replace button as necessary to ensure its reliable function.**  
*(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): unrestricted warm waters

**\*\*\*Warm water means water where the monthly mean low water temperature is normally more than 59 degrees Fahrenheit\*\*\***

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**VALUATION**

Subject vessel was found to be in overall above average condition. It appears to have been well maintained and is equipped well for its intended use for extended cruising. In the valuation determination, cost and market comparison approaches to value were considered on June 23, 2022. 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: xxx**

Market value assumes correction of significant survey findings

**Replacement cost: \$3,300,000 (surveyor’s estimate)**

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

Bucvalupro (average)..... \$979,500 to \$1,065,000  
Bucvalupro (above average)..... \$1,105,000 to \$1,205,000

Current listings

Yachtworld.com..... \$1,295,000  
(1 result – subject vessel)

Reported sales

Soldboats.com.....\$1,090,000 to \$1,399,000  
(6 results – sales reported since January 2020)

Valuation based upon depreciated replacement cost

\$3,300,000 depreciated annually..... \$1,224,938  
(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

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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

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## 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 sea-trial 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 with round bilges and full keel that protects propeller in aperture that has pocket above and skeg aft that extends below rudder; stem has moderate forward rake and hull sides that flare outward slightly at bow; sheer is nearly straight from the bow aft to amidships where it curves down sharply before continuing level to the stern; transom stern has forward rake on sides but is vertical in the middle and below the swim platform; swim platform is hollow molded fiberglass extension of hull with an additional bolted on molded fiberglass extension that overhangs the hull bottom
- Decks and superstructure – main deck is recessed slightly at bow with safety railings then fully enclosed inside Portuguese bridge where it continues aft along the port side before it ascends several steps to the upper deck and aft on the stbd side to stairs that descend to the lower deck; lower deck continues along the stbd side comfortably recessed inside a bulwark alongside and aft of the main cabin; upper deck is full beam to the stern and overhangs stbd side and aft lower decks; superstructure consists of pilothouse at bridge deck level with inverted windshield and straight sides; flybridge is above the pilothouse and extends its full length and width with short overhangs on all sides; flybridge has vinyl shade on welded stainless-steel frame overhead and signal mast/engine exhaust stack at its aft end

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**Interior arrangement** – interior accommodations are divided into two major areas. Lower level begins at the bow and extends aft with minor level variations to the aft deck; large equipment rooms are located forward below the sole, further aft ahead of the engine room then continuing aft through the engine room to the stern via the lazarette; pilothouse and additional accommodation are at bridge deck level noted the following:

- Staterooms – two at forward end of lower level, one at aft end of pilothouse level
- Heads – two at forward end of lower level, one at aft end of pilothouse level
- Galley – main cabin forward end port side
- Dinette – main cabin & pilothouse
- Saloon – main cabin & pilothouse
- Helm – flybridge, pilothouse, bridge deck forward stbd corner and aft deck aft stbd corner
- Other:
  - Large equipment space forward lower cabin below sole that extends from anchor locker bulkhead to master stateroom forward end
  - Laundry room below galley forward of engine room
  - Engine room aft of laundry room with benches along sides of main engine and hatch to lazarette
  - Spacious lazarette with considerable space for equipment and gear storage

## **Structural elements**

- Hull skin material and type cosmetic finish – solid molded fiberglass, gelcoat cosmetic finish
- Hull grid system layout and materials – six fiberglass (foam formed) longitudinal stringers port and stbd transverse supports at various intervals between constructed of fibreglassed marine plywood
- Hull deck joint – overlapping flanges bonded with adhesive, forward sections bolted and fibreglassed aft set with self-tapping screws
- Continuous transverse bulkheads locations and materials – fibreglassed composite at anchor locker and each end of engine room, partial bulkheads and partitions between
- Decks and superstructure materials and type cosmetic finish – molded fiberglass with balsa cored horizontal sections fibreglassed foam stringer system at underside, cabin sides have foam cored sides with vertical fibreglassed foam stringers inside, decks and superstructure have gelcoat cosmetic finish, natural teak overlay on flybridge deck, varnished teak cap on top of aft deck bulwark

## **SURVEY FINDINGS**

### UPGRADES/REBUILDS

Vessel remains as originally constructed without significant changes. It appears well maintained with timely replacements and upgrades of various components to ensure vessel utility and reliability.

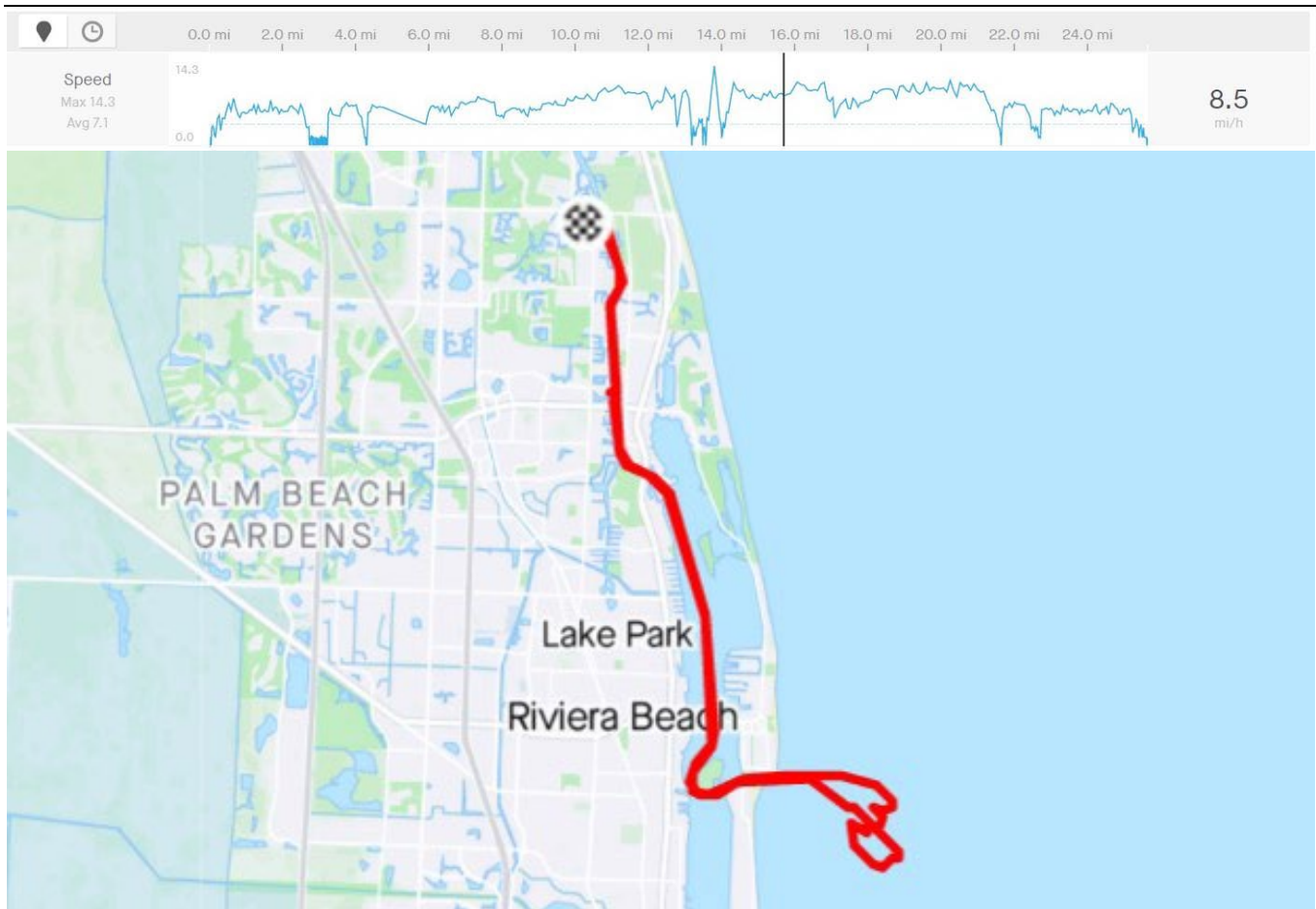


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## TRIAL RUN



- Location – ICW & Atlantic Ocean in the Palm Beaches area
- Conditions:
  - Temperature °F (88)
  - Wind direction & velocity mph (easterly @ 9-12)
  - Wave height estimated (1-2, 7 second period)
- Duration – 4 ½ hours moving time
- Number of passengers - three
- Tanks levels:
  - Fuel – 30%
  - Water – 100%
  - Waste - empty
  - Gray water - empty
- Hull performance – vessel performed well in all respects. Engine RPMs – speed in knots – fuel burn gph recorded as follows:
  - 1,540 – 7.4 – 3.9
  - 1,814 – 7.6 – 7.6
  - 2,150 – 8.5 – 13.1
  - 2,368 – 8.7 – 16.0
- Hull performance wing engine – 2,450 RPMs – 6-knots
- Engine performance:
  - Cold start - normal
  - Wide open throttle rpms (2,300 or better desired) – 2,368

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- Temperatures and pressures – remained normal at all operating speeds. Coolant temperature climbed higher at full powers
- AC generator performance:
  - Voltage and frequency - normal
  - Loads applied – air-conditioners were operated
- 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: above 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: above average

- Guards – sheer, hull sides aft & swim platform (stainless-steel on molded fiberglass)
- Swim platform – integral molded fiberglass & bolted on molded fiberglass extension
- Permanently installed means for reboarding – folding stainless-steel ladder

**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 (freeing ports)

Other drainage systems: scuppers Condition: above average

Weather decks with in-hull drain systems: weather decks at various locations to prevent water from puddling and lazarette 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

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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: average or better

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: above average Wear & tear: not significant Serviceable: yes

Location & type (installed at time of survey):

- Flybridge sunshade (Stamoid)
- Helm cover (canvass)
- Flybridge lounge seat cover (canvass)
- Flybridge seat cushions (vinyl skins)
- Windlass cover (canvass)
- Pilothouse window shades (vinyl screens)
- Aft deck cap rail cover (canvass)
- BBQ grill cover (canvass)
- Tender cover (canvass)
- Foredeck cushions (canvass skins)

## Exterior hardware

Condition/appearance: above average Anchoring & bedding appeared adequate: yes

Location & type – heavy gauge welded stainless-steel:

- Bow safety rail
- Bulwark handrails
- Ladder handrails
- Upper deck safety rails
- Upper deck/flybridge ladder (fiberglass treads)
- Flybridge safety rails
- Flybridge shade frame (Stamoid shade)
- Mast ladder

## Tie-up gear

Condition/appearance: above average Anchoring & bedding appeared adequate: yes

Location & type – stainless-steel horn cleat/hawses:

- Foredeck (2)
- Bridge deck port side (1)
- Stbd side stairs & lower deck amidships (2)
- Aft deck (3)
- Swim platform (2 x pop-up horn cleats)

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## Anchoring gear

Condition/appearance: above average Function: normal

Locations/descriptions:

- Anchor pulpit – n/a
- Chute(s) – double heavy duty stainless-steel (bronze rollers)

## Glazing materials

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

Location & type – windows Diamond Sea Glaze aluminum framed, glass lenses:

- Flybridge – venturi windscreen (plastic on stainless-steel)
- Pilothouse – fixed & hinged type windows
- Watch cabin – sliding type window
- Main cabin – fixed type windows

## Exterior hatches, portlights and doors

Condition/appearance: above average Function: appeared serviceable

Gaskets and seals: appeared serviceable

Location & type:

- **Secondary egress (escape) – foredeck & aft deck**
- Hull sides – portlights (stainless-steel frames, glass lenses & metal covers)
- Portuguese bridge centerline, lower deck stbd side & transom – hinged gates (molded fiberglass)
- Foredeck – watertight hatch (Freeman cast aluminum)
- Foredeck, bridge deck & flybridge aft end – hinged hatches (aluminum frames, plastic lenses)
- Pilothouse sides & main cabin aft end – Dutch doors (aluminum frame, glass lenses)
- Various locations – locker doors & lids (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 & stern thrusters

Condition/appearance: above average Exceptions noted: none

- Manufacturer/model – Side-Power SP240TCi

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- Type – 24-volt 12” tunnel type, counter-rotating propellers
- Location – lower cabin below sole forward end & lazarette aft end
- Battery service-disconnect – adjacent to each
- Overcurrent protection – adjacent to each (fuse)
- Reservoir – lower cabin below sole stbd side & lazarette
- Test performed – operated from each control location and observed in use during sea-trial

## Underwater gear

Condition/appearance: above average Exceptions noted: none

- Propellers – bronze alloy:
  - Main (38LH34 4-blade)
  - Wing (Gori® 24” diameter 3-blade feathering type)
- Shafting – stainless-steel:
  - Main (3”)
  - Wing (1 ½”)
- Shaft support:
  - Main (keel mounted shaft log bearing carrier)
  - Wing (I-type strut)
- Bearings – rubber Cutless® type
- Shaft log – integral fiberglass
- Shaft seal:
  - Main - self-aligning bronze packing gland
  - Wing – Tides Marine® self-aligning dripless type (spare seal installed on shaft)
- Fasteners – appeared secure
- Test performed – examined for damage, excessive wear and leakage while underway

## Rudders & linkages

Condition/appearance: above average Exceptions noted: none

- Rudder description – 42” x 42” fiberglass fin, stainless-steel stock
- Thru-hull seal – self-aligning bronze packing gland
- Supports:
  - Welded stainless-steel table with flange bearing on top
  - Rudder port
  - Keel shoe
- Linkages – stainless-steel tiller & ball joint swivels
- Steering components – 2 x bronze hydraulic cylinders
- Emergency tiller – lazarette overhead port side (installed to prove fit).
- Test performed - examined for damage, excessive wear and leakage while underway

## Stabilizers

Condition/appearance: above average Exceptions noted: none

- Manufacturer/model – ABT Trac Digital
- Type – engine driven hydraulic active fin
- Location – laundry room cabinetry

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- Reservoir – engine room port side
- Pump – main engine forward end port side
- Cooler – keel cooler
- Test performed – examined for damage, excessive wear, leakage and observed operating while underway

## Thru-hulls, seacocks, transducers

Condition/appearance: above average Exceptions noted: none

- Underwater - bronze alloy fitted with ¼ turn valves, bonded with stainless-steel clamps on hoses connections at the following bilge locations:
  - Lower cabin companionway below sole aft end port side – **black & gray water shared overboard discharge**
  - Lower cabin companionway below sole aft end port side – **lower cabin toilets shared direct overboard discharge**
  - Engine room forward end stbd outboard side – **pilothouse toilet direct overboard discharge**
  - Aft of main engine port and stbd side – **seachest inlets**
  - Transom port side – **AC generators exhaust water overboard**
- Topsides - bronze
- Transducers – engine room

## ACCOMMODATIONS, HOUSEHOLD SYSTEMS & COMFORT SYSTEMS

### Interior spaces

Bulkheads, partitions, and cabinetry 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 above average condition with less than expected wear and tear descriptions as follows:

- Doors – hinged & sliding
- Decks – varnished teak & spruce
- Cabinetry – varnished mahogany
- Bulkheads and partitions – varnished mahogany
- Ceilings – vinyl
- Counters – granite at galley & head enclosures, varnished mahogany elsewhere
- Cushions – leather skins
- Natural ventilation – opening appliances
- Powered ventilation – head enclosures
- Fixtures - serviceable
- Test performed – operated doors, drawers and fixtures at various locations

### Entertainment equipment

Condition/appearance: above average Exceptions noted: none

Locations/descriptions:

- Pilothouse – TV (Samsung)
- Main cabin:

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- TV (Samsung 46")
- Sound bar (Sonos)
- Other – various locations (Sonos sound system)
- Test performed – equipment powered up

## Galley & household equipment

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

Locations/descriptions - Located in galley except as noted:

- Double sink & disposal (stainless-steel, Waste King SS8000 disposal)
- Dishwasher (Miele G832 SCI plus)
- Microwave (GE JVM1490SH02)
- Range/oven/broiler (Viking Professional 4-burner LPG)
- Trash compactor (GE ZCG3500DSS-02)
- Refrigerator (Sub-Zero 700TC)
- Freezer (Sub-Zero 700TCI3)
- Laundry room:
  - Chest type freezer top opening (GE)
  - Clothes washer (Bosch WFR246UC85/III)
  - Clothes dryer (Bosch WTA4400US)
- Test performed – operated all fixed appliances

## Sanitary system

Condition/appearance: above average Exceptions noted: none

Locations/descriptions:

- Quantity - three
- Manufacturer – Raritan Engineering Atlantes
- Type – 24-volt marine toilets, freshwater rinse
- Y-valves (direct overboard discharge) - yes
- Vented loops (if required) - yes
- Test performed – operated all toilets. Vented loops were padlocked

## Air-conditioning

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

Locations/descriptions:

- Quantity – four zones
- Manufacturer - Cruisair
- Type – split type heat pump
- Controls - SMXir
- Equipment – lazarette (4 x condensing units 104,000-btu capacity)
- Cooling pump – lazarette (2 x Dometic P700B)
- Test performed – operated all units on cool program

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## 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 evidence of leakage to level filled where accessible for inspection:

- Tanks – 2,290-gallon capacity contained in four fiberglass tanks secured forward lower cabin below sole (130 each) and engine room outboard sides (995 each). Additional small capacity aluminum day tanks for main and wing engines
- Fills – bridge deck port side & stbd side deck stair steps
- Vents – adjacent to fills
- Plumbing materials – USCG approved Type-A hose
- Shut-off valves:
  - Tank outlets & day tanks (on/off)
  - Engine room stbd side (return manifold)
  - Engine room stbd side inside cabinet (fuel polisher/transfer manifold)
- Filters – Racor located as follows:
  - Main engine – engine room stbd side (dual 900s)
  - Wing engine – engine room aft end stbd side (900)
  - 20-KW Generator – engine room port side (500)
  - 8-KW generator – engine room stbd side (500)
  - Fuel polisher/transfer – engine room stbd side (900)
- Level gauges – engine room (sight gauges)
- Test performed – verified function of transfer pump and operated fuel system during sea-trial

### **Potable water**

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

- Tanks – 600-gallon capacity contained in fiberglass tank secured aft stateroom below sole
- Fills – stbd side deck stairs
- Vents – adjacent to fill
- Plumbing materials – blue & red plastic tubing
- Shut-off valves – forward stateroom below sole
- Filters – lower cabin companionway below sole
- Pressure pump – forward stateroom below sole aft end stbd side (Headhunter M5-115/60)
- Accumulator tank - forward stateroom below sole aft end stbd side (Groco PST-3A)
- Water heater – forward stateroom below sole (Torrid MV40-2 [40-gallon, 240-volt & main engine heated])
- Dock water inlet – not found
- Level gauges – pilothouse overhead console port side
- Test performed – operated water system and verified function of water heater 240-volt element



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## Black & gray water

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

- Tanks – 120-gallon black water and 110-gallon gray water fiberglass tanks secured aft stateroom below sole
- Deck fitting – Portuguese bridge forward gate coaming
- Vents – hull sides
- Plumbing materials – sanitary hose
- Y-valves – n/a
- Overboard valve – lower cabin companionway below sole aft end port side
- Discharge pumps:
  - Manual – lower cabin companionway below sole aft end port side (Munster Simms MFV)
  - 24-volt electric – aft stateroom below sole forward end port side (Dometic TW)
- Vented loop (if required) - yes
- Treatment device – not found
- Level gauges – pilothouse overhead console port side
- Test performed – operated all pumps

## LPG/CNG system

Condition/appearance: above average Exceptions noted: none

- Storage locker – aft deck bulwark port side cabinet
- Tank quantity, material & capacity – 3 x aluminum WC47.6 (20-lb. LPG each)
- 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: above average Exception noted: none

- Location - amidships
- Type/description – diesel 4-cycle 6-cylinder turbocharged (wing 4-cylinder naturally aspirated)
- Cooling system – closed loop freshwater keel cooler (wing raw-water cooled heat exchanger)
- Power transmission – close coupled straight-drive (wing V-drive)
- Mounting:
  - Foundations & beds – molded fiberglass liner
  - Mounts – adjustable vibration isolator type
- Cleanliness – above average
- Fluid levels and condition – visual inspection of the following (full/low/add):
  - Engine oil – full/normal

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- Engine coolant – full/normal
- Transmission oil – full/normal
- Accessibility – very good
- Test performed – examined the following:
  - Cold start
  - Exhaust smoke
  - Noise/vibration
  - Leaks
  - Charging

## Exhaust systems

Condition/appearance: above average Exceptions noted: none

- Exhaust manifolds – freshwater cooled
- Risers:
  - Main – dry stack
  - Wing – insulated stainless-steel, raw-water sprayed discharge
- Muffler:
  - Main – inline dry type
  - Wing – deck mounted can shaped fiberglass
- Exhaust outlet:
  - Main – stack
  - Wing - stbd hull side near stern
- Straight runs – fiberglass pipe (wing)
- Connecting hoses – black rubber
- Hose connection clamps – double stainless-steel
- Test performed – examined for evidence of leakage

## Engine ventilation

Condition/appearance: average Exceptions noted: none

Location & type:

- Thru-hull vents – main cabin aft corners & underside of upper deck stbd side overhang amidships
- Powered – AC blowers
- Test performed – blowers operated during sea-trial

## Engine controls

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

- Locations – pilothouse, flybridge, bridge deck and aft deck stbd side
- Manufacturer/model – ZF Clear Command
- Description – single lever type electronic
- Neutral safety interlock (prevents starting in gear) – yes
- Test performed - Engine start/stop controls tested all locations, wing engine controls dual lever sleeved cable manual system located pilothouse only.

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## Engine instrumentation

Condition/appearance: above average Exceptions noted: none

- Manufacturer – Lugger & Northern Lights
- Type – analog electric & digital data display
- Locations:
  - Pilothouse – main engine, wing engine & AC generators
  - Flybridge – main engine
- Alarms - yes
- Test performed – operated during sea-trial

## Steering

Condition/appearance: above average Exceptions noted: none

- Locations – flybridge & pilothouse (bridge deck using autopilot control)
- Manufacturer/model – Hynautic
- Description – wheel type electric hydraulic
- Reservoir – flybridge inside helm wheel console
- Pumps – lazarette aft end (2)
- Test performed – operated lock to lock with and without steering pump operating

## Pumps dewatering and utility

Condition/appearance: average or better Exceptions noted: none

Type & location – DC electric unless noted otherwise:

- Main cabin aft end below sole plumbed to keel sump – dewatering (Edson bronze manual diaphragm type)
- Keel sump – dewatering (Rule 3700 gph)
- Lazarette plumbed to keel sump – dewatering (Whale Gulper 320)
- Test performed – all pumps operated

## Rigging utility

Condition/appearance: above average Exceptions noted: none

Type & location:

- Signal mast – flybridge aft end (molded fiberglass)
- Tender crane – upper deck aft end stbd side (Airtex 240-volt 1,500-lb. capacity according to vessel listing, hydraulic pack in lazarette)
- Test performed – all tender crane functions operated without load

## Windlass

Condition/appearance: above average Exceptions noted: none

Descriptions (windlass located at foredeck unless noted otherwise):

- Manufacturer/model – Maxwell 3500
- Type – 24-volt vertical with wildcat & warping head
- Control locations – foredeck and all engine control locations

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- Battery service-disconnect – lower cabin companionway below sole
- Overcurrent protection – disconnect is breaker
- Clutch lever location – Portuguese bridge port side locker (regular & custom larger size)
- Test performed – anchor lowered to water and back several times, operated using all control locations, freefall function operated

## Accessories

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

Description:

- 3 x underwater lights – transom exterior (LED)
- Satellite TV antennae – mast (KVH Tracvision® G6HP)
- Outboard engine – flybridge aft end stbd side (Yamaha F4 serial: 1037022)
- Watermaker – lower cabin companionway below sole port side (Village Marine Tec 600-gpd)
- Test performed – watermaker features were demonstrated by Yacht Tech

## ELECTRICAL SYSTEMS

### Galvanic corrosion protection

Condition/appearance: above average Exceptions noted: none

Descriptions:

- Anodes (zinc unless noted otherwise) – quantities each location:
  - Thrusters (2)
  - Main engine keel cooler (2)
  - Wing prop shaft (1)
  - Wing prop (2)
  - Hull bottom aft (3)
- Bonding system - yes
- Galvanic isolators & Polarization transformers – inside pilothouse console
- Test performed – n/a

### 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 – Portuguese bridge front stbd side & transom exterior stbd side (each location: 2 x 240/50 & 1 x 120/30)
- Inlet circuit protection location (within ten feet unless noted otherwise) – lower cabin companionway stbd side upper locker, aft deck stbd side locker & main panel
- Main panel:
  - Location – lower helm console stbd side
  - Instrumentation - voltmeters & ammeters
  - Source selector switches – rotary type switches
  - Reverse polarity indicator – n/a
- Condition of shore cord – average or better
- Condition of shore cord inlet – average or better
- GFCI protection – as required

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- Tests and examinations:
  - Shoreline output - normal
  - Generator output - normal
  - Inverter output – normal (#1 & #2)
  - AC/DC grounding connection – yes
  - AC current leakage (<30ma desired) - <4ma

## DC electrical system

Condition/appearance: above average Exceptions noted: none

Locations & descriptions of significant components:

- Voltage – 24 & 12
- Panel locations – lower helm console stbd side
- Panel instrumentation – voltmeters, ammeters & battery condition meters
- Branch circuit protection – breakers
- Main disconnect switch – each buss has a disconnect switch
- Primary circuit protection – lazarette forward bulkhead stbd side
- Test performed – operated various DC equipment dockside and while underway during sea-trial

## Alternating current generators

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

Description:

- Engine type – diesel 4-cycle 4-cylinder (20-KW) & 3-cylinder (8-KW) naturally aspirated
- AC generator mounting – close coupled
- Location – engine room aft end port side (20-KW) & lazarette port side (8-KW)
- Circuit protection:
  - Generator – yes
  - Main panel – yes
- Accessories – drip pans, sound shields & 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 and loaded as near to capacity as possible

## Battery charging devices

Condition/appearance: above average Exceptions noted: none

Locations/descriptions:

- AC electric:
  - Inside watch berth (Xantrex Truecharge 20+ or similar)
  - Lazarette forward bulkhead port side (see inverter section that follows)
  - Lazarette port side aft end (Victron Energy Centaur 24-volt 100-amp)
- Alternators:
  - Main engine (24-volt 175-amp & 75-amp)
  - Wing engine (40-amp)
- Renewable – none

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- Controllers – n/a
- Test performed – observed all operating during trial-run

## Inverters

Condition/appearance: above average Exceptions noted: none

Locations/descriptions:

- Location – lazarette forward bulkhead port side
- Make/model – 2 x Xantrex SW4024MC2 inverter/charger
- Output:
  - AC power (4,000-watt)
  - DC current (105-amp)
- Battery disconnect location – lazarette forward bulkhead stbd side
- Battery overcurrent protection location & type – lazarette forward bulkhead stbd side
- AC output bypass (returns inverter supplied circuits power source to main buss) – yes (lazarette bulkhead port side)
- Inverter cautionary label – inverter circuits labeled on panel
- Test performed – operated both during sea-trial with AC power turned off

## Storage batteries

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

- Batteries – flat plate AGM securely fastened with insulators on terminals locations and purpose as follows:
  - Lower cabin companionway below sole forward end – bow thruster (2 x 8D)
  - Lower cabin companionway below sole aft end – house #1 (2 x 8D)
  - Lazarette forward end port side – generator and/or wing engine (2 x Group-31)
  - Lazarette aft end stbd side – generator and/or wing engine (2 x Group-31)
  - Lazarette stbd side upper cabinet – main engine (2 x 4D)
  - Lazarette stbd side upper & lower cabinets – house #2 to #4 (6 x 8D)
- Disconnects – lower cabin companionway below sole & lazarette
- Test performed – all batteries evaluated using a 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: above average Exceptions noted: none

- Flybridge:
  - Magnetic compass (Ritchie)
  - Furuno NAVnet 10" LCD display
  - ABT Trac stabilizer control
  - Icom IC-M510 VHF

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- Simrad AP70 autopilot control
- Simrad FU80 autopilot control
- Simrad AP51 wired remote autopilot control
- Furuno FI50 multi data display
- ACR searchlight remote control
- Pilothouse:
  - 4 x windshield wipers
  - Magnetic compass (Ritchie)
  - 2 x Furuno NAVnet C-Map displays (chart plotter, fishfinder & 2 x radars)
  - 2 x Furuno NAVnet control panels
  - Seatronics touchscreen panel running Timezero navigation software
  - Closed circuit camera system
  - Flir infrared camera
  - Floscan fuel management system
  - Furuno FA150 Class A AIS
  - Furuno SC50 satellite compass
  - Simrad AP70 autopilot control
  - Simrad FU80 autopilot control
  - Simrad AP50 autopilot control
  - Icom IC-M602 VHF
  - Icom IC-M802 single side band
  - Furuno FI50 wind
  - Furuno FI50 rudder
  - Furuno FI50 multi data
  - Furuno GP-37 GPS
  - ACR searchlight remote control
  - Flir infrared searchlight remote control
  - ABT Trac stabilizer graphical control screen
  - Samsung flat screen overhead TV
- Autopilot pump – not found
- Autopilot compass – not found
- Test performed – all equipment operated during sea-trial

## 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** (last service: 12/2021):

- Fixed:
  - Engine room port side (Sea-Fire FD1300M [indicated fully charged])
  - Lazarette forward bulkhead port side (Sea-Fire FD600M [indicated fully charged])
- Fixed fire system indicator – main electrical panel
- Fixed fire system manual activator – outside engine room door & main cabin aft end by door
- Portable handheld USCG Approved Sizes located as follows – (indicated fully charged):
  - Engine room forward end (AIIBCII)

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- Main cabin forward end stbd side cabinet (BCI)
- Aft stateroom stbd side cabinet (BCI)
- Lower cabin companionway cabinet (BCI)
- Pilothouse stbd side cabinet (BCI)

## Gas detection systems

Equipment types and quantities compliant **yes**:

- CO – main cabin, laundry room, pilothouse & aft stateroom
- Smoke – main cabin
- Test performed – performed self-test

## Emergency bilge pumps and high-water alarms

Configuration compliant **yes**:

- Dewatering pumps – vessel is equipped with three
- Audible alarms – yes
- Test performed – operated all pumps and bilge alarm

## Signaling devices

Equipment types and quantities compliant **no**:

- Distress signals:
  - Pyrotechnics – **not found**
  - Electronic & flag - **not found**
- Hull mounted sound - yes
- Handheld sound - pilothouse
- Bell – aft deck
- Epirb – upper deck forward end stbd side (Ocean Signal E100F battery: 08/2023)
- Test performed – operated sound signaling devices

## Navigation lights

Configuration defects: **none** Function: **normal**

- Side – flybridge forward corners
- Mast head – front of mast
- Stern – upper deck aft end
- Anchoring – top of mast
- Test performed – function verified all

## Flotation devices

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

- Lifejackets:
  - Lower cabin companionway cabinet (4 x inflatable types)
  - Lower cabin companionway below sole (4 x Type I)
  - Flybridge helm console (4 x Type II)
- Throwables:



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- Aft deck port side cabinet (horseshoe on lanyard)
- Upper deck stbd side railing (Lifesling)
- Liferafts – aft deck port side cabinet (Seasafe 6-person **due for inspection**)
- Immersion suits – not found

## Ground tackle

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

Locations/descriptions:

- Ready anchors & rodes – in chute:
  - 70-lb. Rocna, all chain rode
- Back-up anchors & rodes:
  - Fortress aluminum, chain lead & laid nylon
  - Additional chain lead & brait

## Additional required (non-safety)

Equipment types and quantities compliant **no**:

- Pollution placards (Vessels 26 feet and over with a machinery compartment) – **not found**
- Marpol Trash Placard (Vessels 26 feet and over) – **not found**
- Written trash disposal plan (Vessels 40 feet and over) - **not found**
- Navigation rules (Vessels 39.4 feet and over) – pilothouse stbd side cabinet
- Vessel identification locations:
  - HIN – transom upper stbd corner
  - Documentation # - lazarette centerline
  - Name - transom

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## SUMMARY REMARKS AND NOTES

Items on the following lists are grouped in 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. 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. **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).**
2. Code of Federal Regulations requires the following placards and documents be carried aboard, placards in one or more readily accessible locations:
  - a. Oil Discharge Placard.
  - b. Marpol Trash Placard.
  - c. Written Trash Disposal Plan (<http://www.gladdingmarinesurvey.com/pdf/uscgwaste.pdf>)

### 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:*

3. None currently.

### SUGGESTED REPAIRS AND/OR CHANGES

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

4. Hull above waterline & related:
  - a. Gelcoat non-skid has light mud cracking on swim platform port side, aft deck by transom gate and aft deck by main cabin entrance door; prep and refinish to match if condition is found to be rapidly worsening.
  - b. Plastic/rubber landing block is worn on swim platform reboarding ladder; replace with new to prevent damage to swim platform gelcoat.
  - c. Hull/swim platform caulking is worn; replace with new.
  - d. Paint on mast spreader light cans is worn; refinish to match.
  - e. Canvass covers snaps are corroded and difficult to operate at various locations; lube and replace as necessary to ensure their convenient use.
5. Hull below waterline & related:
  - a. Spaces where bow and stern thrusters are installed are sooty from normal discharge of carbon dust from thrusters; suggest installing filters on thruster motors to catch and contain carbon dust.
  - b. Bow and stern thruster legs require periodic maintenance including replacement of gear oil; during next scheduled haul-out replace gear oil in thrusters and reseal if necessary.
  - c. Engine room seachest for wing engine, AC generators and air-conditioners if fouled with marine growth; service as necessary to ensure its reliable function.

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- d. Air-conditioner cooling pumps would not prime after haul-out while AC generators were running, and continuous waterflow fouls their shared seachest; suggest installing dedicated inlet for air-conditioner pumps to improve utility and reliability of its raw-water cooling system.
6. Accommodations, household systems & comfort systems:
  - a. Galley range oven broiler would not stay lit; service galley range oven and broiler as necessary to ensure its reliable function.
  - b. Engine hatch in middle of main cabin forward latch is broken; replace broken latch with new.
  - c. Galley range oven door latch is misaligned; refasten in proper alignment.
  - d. Smelly water is oozing into engine room from keel below shaft log; seal oozing leak in keel.
7. Tanks, piping & related:
  - a. Fuel system day tank vent line outer cover is cracking; suggest wrapping with silicon marine repair tape to protect it from further deterioration.
  - b. Water heater is plumbed to main engine cooling system to make hot water while underway; suggest leaving valves off except when main engine is needed to heat water.
8. Engines, controls & related:
  - a. **Bridge deck engine stop button failed intermittently when used preventing main engine from restarting; service/replace button as necessary to ensure its reliable function.**
  - b. Autopilot wired remote control does not function at bridge deck control station; service bridge deck station as necessary to restore normal function of autopilot wired remote control.
  - c. 20KW AC generator sound shield has sections of insulation loose; refasten loose insulation as necessary.
  - d. 8KW AC generator exhaust mixing elbow has corrosion indicating it is failing; replace with new.
  - e. 8KW makes an unusual tapping sound after it has been running for several minutes; investigate further and service as necessary to ensure its reliable function.
  - f. AC generators and wing engine have raw-water open top vented loops mounted above them; suggest replacing open vented loops with types that have drain line to direct spillage away from related equipment.
9. Equipment & related:
  - a. Port side underwater light is inoperative; service as necessary to restore its normal function.
  - b. Watermaker leaked when operated possibly due to improper valve setting; prove its normal leak-free function.
  - c. Port side windshield wiper irrigator misses glass; service as necessary to restore its normal function.
  - d. Main engine transmission oil change hose is not connected to the transmission; reattach hose as necessary.
  - e. Various equipment was removed from vessel to provide convenient access for survey process such as engine room LED light fixtures, back-up anchor, roll-up tender, 240-volt shore power cord and others; return all loose equipment removed for survey.

# GLADDING MARINE SURVEYING AND CONSULTING, LLC

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- f. Only one of three dewatering bilge pumps has significant capacity; suggest installing or carrying one additional high-capacity electric dewatering bilge pump.
10. Electrical systems & related:
- a. Poor bonding connection found between hull zincs and rudder stock, main engine keel cooler, and wing engine underwater gear; service bonding system as necessary to restore/improve their connections.
  - b. Asea power converter on air-conditioner shore power system would not sustain operation at its rated output; service, repair or replace as necessary to restore its normal function.
  - c. 12-volt section of electrical panel ammeter does not function properly; service/replace as necessary.
  - d. House #2 batteries are end of life; replace with new.
11. Safety equipment:
- a. Liferaft is due for inspection; a full maintenance check should be made by a qualified service facility and a tag should be attached showing the date of such maintenance check.
  - b. Registrations for Epirbs, VHF MMSI, and certain other safety equipment is user specific; update equipment registrations to new vessel owner.
  - c. Anchor chain bitter end attachment was not sighted; suggest installation of line between bitter end of chain and hull attachment to provide quick convenient means to release rode in the event of emergency.

**(End of report photo pages to follow)**

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**PHOTOS**



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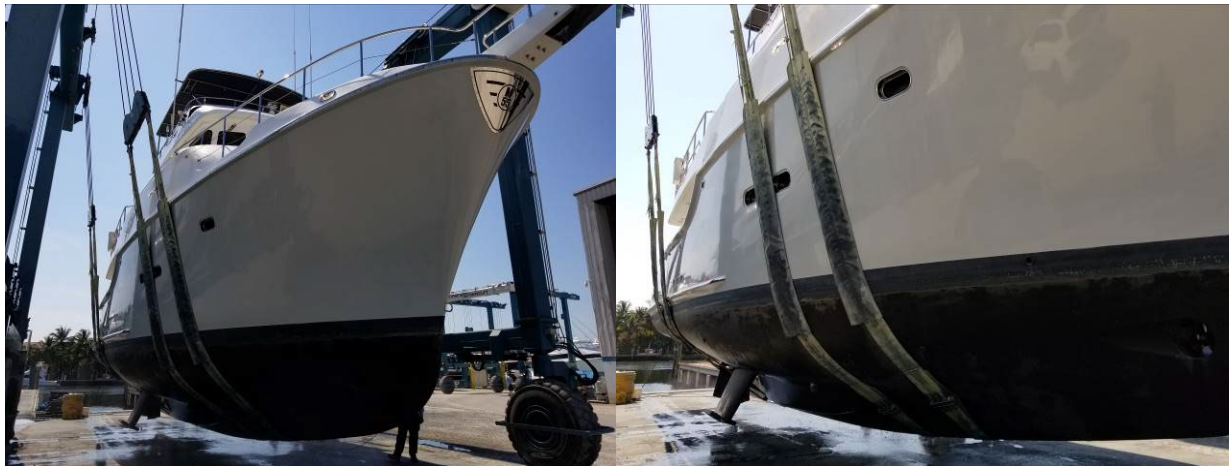


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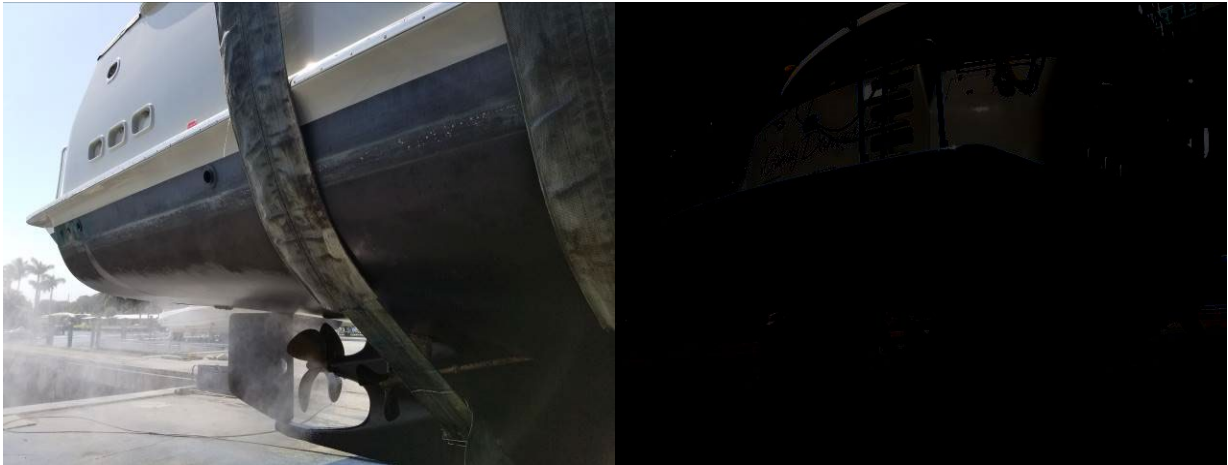


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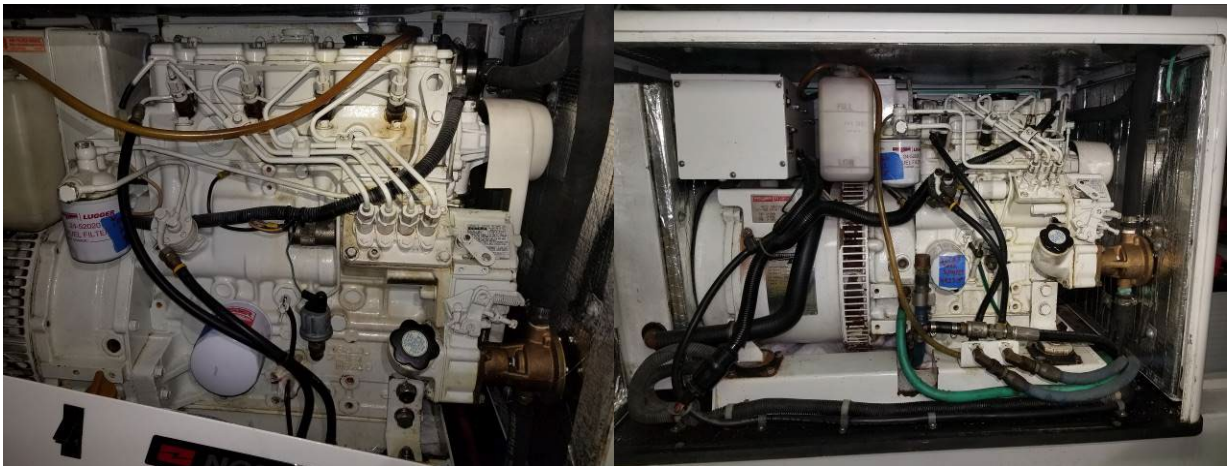


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