

**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: xxxxxx**

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

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## SURVEY BASIC DETAILS

SURVEY PURPOSE: prepurchase

REQUESTED BY: xxxxxxx

FILE #: 2023-01-09 Defever 44 Offshore Cruiser 1999

REPORT DATE: January 11, 2023

CLIENT INFORMATION: xxxxxxxxxxxxxxxxxxxxxxxxxxxx

OWNER INFORMATION: xxxxxxxxxxxxxxxxxxxxxxxxxxxx

SURVEY DATE: January 9<sup>th</sup> & 10<sup>th</sup>, 2023

SURVEY LOCATION: xxxxxxxxxxxx

ATTENDING: xxxxxxxxxxxx

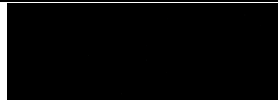
ENGINE SURVEYOR: basic external checks & lab oil analysis by hull surveyor

## VESSEL & MACHINERY DATA

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

Hull ID #: xxxxxxxxxxxx Documentation #: xxxxxxx

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**Vessel type and dimensions (source: 2018 Powerboat Guide except as noted below)**

Manufacturer: Defever Model: 44 Offshore Cruiser Model year: 1999 Length: 43'9" Beam: 14'9"

Draft: 60" (measured top of paint transom) Weight: 50,000 lbs (Travelift scale)

Hull composition: fiberglass

**Engines (source: data plates & boatdiesel.com)**

Type and #: twin inboard Horsepower (commercial rating): 114@2,500 rpms Fuel type: diesel

Manufacturer: Perkins Model: M135/15

Serial #: port (YA30194U687612D), stbd (YA30194U687643D) Hours: xxxxxx

**Transmissions (source: data plates)**

Manufacturer: Newage Coventry Model: PRM 500D2.5 Ratio: 2.5

Serial #: port (0611922G00947), stbd (0611918G00947)

**Alternating current generator (source: decal)**

Manufacturer: Westerbeke Model: 12.5BTDA KW: 12.5 Fuel type: diesel

Serial #: engine (40754D807), generator (32821) Hours: xxxxxx

## TENDER DATA

**Tender (source: data plates)**

Hull ID #: xxxxxxxxxxxx Registration #: xxxxxxx Manufacturer: AB Inflatables

Model: 10VS Model year: 2019 Length: 10'6" Beam: 5'7"

**Engine (source: data plate)**

Type and #: outboard Horsepower: 20 Fuel type: gas Manufacturer: Suzuki Model: DF20A

Serial #: 02002F-911230

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**RECOMMENDATIONS**

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

1. **Mast head/anchor lights are inoperative; service as necessary to ensure forward light shines with side and stern when navigating and mast head/anchor only when anchoring.**
2. **Port main engine alarm buzzer functioned intermittently; service engine audible alarms as necessary to ensure their reliable function.**
3. **CO alarms not found in accommodations; install at least one CO/smoke alarm in each stateroom and main cabin.**
4. **AC generator battery is bad; replace with new.**

*(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 above average condition. It appears very well maintained and has several notable rebuilds/upgrades as described in that section of the report that follows. In the valuation determination, cost and market comparison approaches to value were considered on January 11, 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: \$XXXXXXXX**

Market value assumes correction of significant survey findings

**Replacement cost: \$1,240,000 (Buvalupro.com)**

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..... builder not listed
- Bucvalupro.....\$230,000 to \$252,500 (above average)
- NADAguides.com..... \$132,000 to \$150,400
- Powerboat Guide..... prices not given

(Options not added to guide values unless noted otherwise)

Current listings

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Yachtworld.com..... \$259,950 & \$320,298  
(2 results – searched 1990 to 2004 model years)  
Reported sales  
Soldboats.com.....\$44,000 to \$295,000  
(5 results – searched January 2020 to present)  
Valuation based upon depreciated replacement cost  
\$305,359 depreciated annually.....\$305,359  
(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

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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

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## VESSEL GENERAL DESCRIPTIONS

**Exterior arrangement** – mono-hull powerboat noted the following:

- Hull – displacement type with full prop protecting keel and rounded chines; stem is raked forward and hull sides outward at bow; curved sheer slopes downward to amidships then continues level to the stern; transom is plumb full height to main deck level with bolted on molded fiberglass swim platform
- Decks and superstructure – main deck is slightly recessed from the bow to the aft trunk cabin where it steps up and continues level to the stern; superstructure consists of pilothouse/main cabin with flybridge its full length and beam above; flybridge has spoiler over its aft end; aft deck has composite shade that also provides upper deck for tender storage

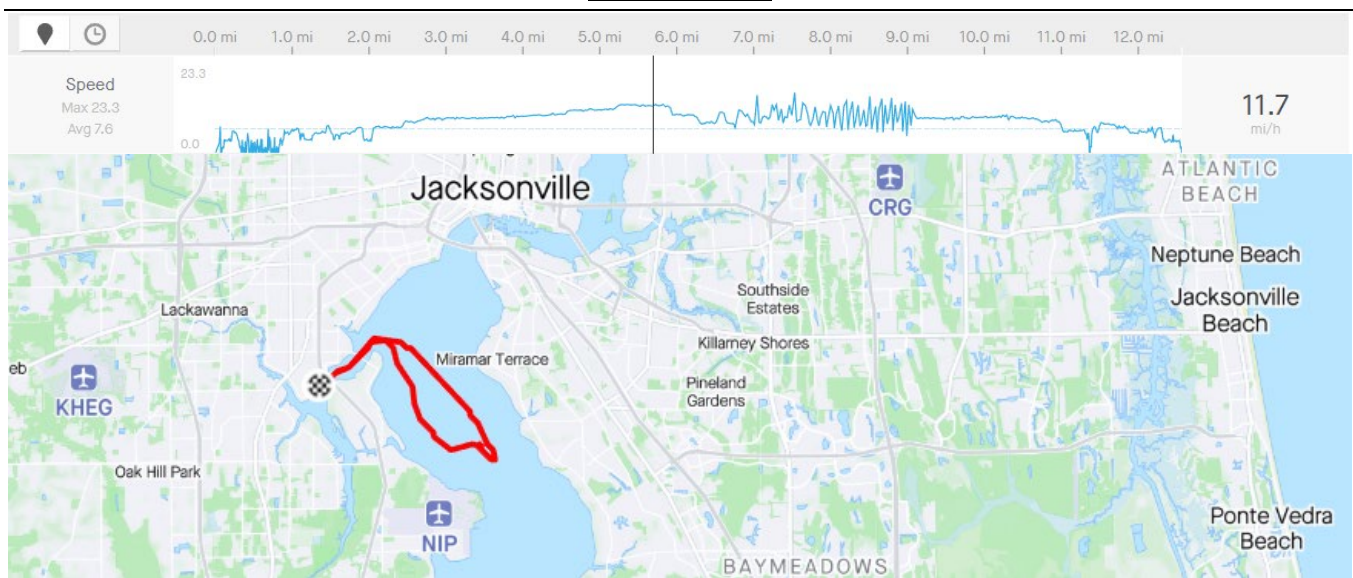
## SURVEY FINDINGS

### UPGRADES/REBUILDS

Including but not limited to the following since 2020 according to owner's invoices found aboard:

- Complete 24-volt bow thruster system installed including batteries and charger
- New tender & outboard
- Exterior canvass replaced
- 2021 – propellers reconditioned

### TRIAL RUN



- Location – Ortega & St. Johns Rivers
- Conditions:
  - Temperature °F (60 to 65)
  - Wind direction & velocity mph (NW@4-7)
  - Wave height estimated (calm)
- Duration – two hours moving time
- Number of passengers - four
- Tanks levels:

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- Fuel – 90%
- Water – 90%
- Waste – 50%
- Hull performance – vessel performed well in all respects. RPMs – speed knots – headings noted as follows:
  - 600 – 5.0 – (Ortega River)
  - 1,700 – 7.9 – south
  - 2,000 – 9.1 – south
  - 2,450/2,425 – 10.3 – south
  - 2,450/2,425 – 8.6 – north450
- Engine performance:
  - Cold start - normal
  - Wide open throttle rpms (2,500 desired) – 2,450/2,425
  - Temperatures and pressures – remained normal at all RPMs
- AC generator performance:
  - Voltage and frequency - normal
  - Loads applied – all air-conditioners & 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: 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

- Chaffing gear:
  - Sheer (stainless-steel on natural teak cap rail)
  - Hull sides (stainless-steel on painted wood & molded fiberglass)
- Swim platform – molded fiberglass with natural teak inlays resting on stainless-steel supports
- 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.**



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## Deck drainage

Primary drainage system: direct overboard

Other drainage systems: freeing ports Condition: average or better

## 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: 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

**Comments – some areas of decks and superstructure have been refinished. Others may require refinishing as age-related wear and tear occurs.**

## Exterior soft goods

Condition/appearance: above average Wear & tear: not significant Serviceable: yes

Location & type (installed at time of survey):

- Flybridge Bimini (canvass on stainless-steel frame)
- Flybridge & aft deck enclosures (canvass & Eisenglass)
- Flybridge helm seat cushions (vinyl skins)
- Flybridge lounge seat cushions (fabric skins)
- Tender cover (canvass)
- Windlass cover (canvass)

**Comments – aft deck enclosure is currently stowed in aft stateroom stbd side locker.**

## Exterior hardware

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

Location & type:

- Foredeck safety rail (welded stainless-steel)
- Aft deck safety rail (natural teak on stainless-steel stanchions & composite dodger)
- Aft deck roof supports (welded stainless-steel)
- Transom ladder (welded stainless-steel, natural teak treads)
- Aft deck/flybridge ladder (varnished teak)
- Aft deck/flybridge ladder handrail (welded stainless-steel)

## Tie-up gear

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

Location & type – stainless-steel:

- Foredeck (Samson post & 2 x horn cleat/hawses)
- Amidships (2 x horn cleat/hawses)
- Aft deck (2 x Samson post & 4 x fair leads)

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## Anchoring gear

Condition/appearance: average Function: normal

Descriptions:

- Anchor pulpit – none
- Chute(s) – single stainless-steel with bronze roller

## Glazing materials

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

Location & type:

- Flybridge – venturi windshield (Plexiglass on stainless-steel brackets)
- Main cabin – fixed & sliding windows (built-in glass)

## Exterior hatches, portlights and doors

Condition/appearance: above average Function: appeared serviceable

Gaskets and seals: appeared serviceable

Location & type:

- **Secondary egress (escape) – foredeck & transom**
- Hull sides – portlights (stainless-steel, glass lens)
- Transom – large portlights (stainless-steel, plastic lens)
- Foredeck – hinged hatch (stainless-steel, plastic lens)
- Foredeck, aft deck & flybridge – hinged locker lids & doors (molded fiberglass)
- Main cabin sides – sliding doors (wood & fiberglass)
- Main cabin aft end – hinged door (wood & fiberglass)
- Aft deck hard-top – sliding hatch (molded fiberglass)

## 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

**Comments – recent bottom job. Antifouling appears serviceable as is.**

### Bow thruster

Condition/appearance: above average Exceptions noted: none

- Manufacturer/model – Vetus 16024 Extended Run
- Type – 24-volt 250mm tunnel type, single propeller
- Location – inside forward berth
- Battery service-disconnect – inside forward berth (remote control switch)

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- Overcurrent protection – inside forward berth (fuse)
- Reservoir – n/a
- Test performed – examined for damage, excessive wear, and observed in use during trial-run.

## Underwater gear

Condition/appearance: above average Exceptions noted: none

- Propellers – 26” x 20” 4-blade bronze alloy
- Shafting – 1 ¾” stainless-steel
- Shaft support – bronze shaft log & bronze I & V-type struts each side
- Bearings – rubber Cutless® type
- Shaft log – integral fiberglass
- Shaft seal – fixed bronze packing gland
- Fasteners – appeared secure
- Test performed – examined for damage, excessive wear, leakage, and observed operating while underway

## Rudders & linkages

Condition/appearance: above average Exceptions noted: none

- Rudder description – welded stainless (blade section is bolted to stock)
- Thru-hull seal – fixed bronze packing gland
- Supports – welded stainless-steel brackets, bronze bearings
- Linkages – bronze tillers & clevises, stainless-steel tie-bar
- Steering components – bronze hydraulic cylinders
- Emergency tiller – **not found**
- Test performed – examined for damage, excessive wear, leakage, and observed operating while underway

## Stabilizers

Condition/appearance: above average Exceptions noted: none

- Manufacturer/model – Naiad:
  - Reservoir (model 174)
  - Actuators (model 172-1)
- Type – active fin engine driven hydraulic
- Location – engine room forward end outboard sides
- Reservoir – engine room aft bulkhead port side
- Pump – port engine transmission PTO
- Cooler – integral to reservoir, raw-water from port engine
- Test performed – examined for damage, excessive wear, leakage, and observed operating while underway

## Thru-hulls, seacocks, transducers

Condition/appearance: above average Exceptions noted: none

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- Underwater - bronze alloy fitted with ¼ turn valves, bonded with stainless-steel clamps on hoses connections at the following bilge locations:
  - Engine room forward end stbd side – **forward toilet & blackwater tank overboard discharges**
  - Engine room seachest – **inlets for engines, AC generator & air-conditioner/washdown**
  - Aft stateroom outboard cabinet – **aft toilet direct overboard discharge**
- Topsides - bronze
- Transducers – appeared serviceable

## 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 average wear and tear descriptions as follows:

- Doors - hinged
- Decks – varnished teak parquet
- Cabinetry – varnished teak
- Bulkheads and partitions – varnished teak
- Ceilings – teak trimmed padded vinyl
- Counters – teak trimmed Formica
- Cushion covers – vinyl skins
- Natural ventilation – opening appliance
- Powered ventilation – circulating fans
- Fixtures – serviceable
- Test performed – operated doors, drawers, and fixtures

### **Entertainment equipment**

Condition/appearance: above average Exceptions noted: none

Locations/descriptions – main cabin:

- TV (Samsung 32")
- Apple TV (A2169)
- Blu-ray player (LG BP175)
- Test performed – power-up only. No channel played on TV.

### **Galley & household equipment**

Condition/appearance: above average Exceptions noted: none

Locations/descriptions - Located in galley except as noted:

- 3-burner range/oven (Seaward Princess 3342-1112)
- Microwave (Panasonic NN-S559BA)
- Hand mixer (Naitesen stainless-steel)
- 2-slice toaster (Cuisinart stainless-steel)
- Refrigerator/freezer (Summit)
- Refrigerator (Norcold DE0041)

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- Aft deck – freezer (Isotherm CR63F)
- Test performed – operated all fixed appliances

## Sanitary system

Condition/appearance: above average Exceptions noted: none

Locations/descriptions:

- Quantity - two
- Manufacturer – Dometic Vacuflush
- Type – 12-volt marine toilet, freshwater rinse
- Y-valves (direct overboard discharge) – yes:
  - Forward – forward stateroom below sole
  - Aft – inside vanity
- Vented loops (if required) - yes
- Test performed – both toilets flushed several times

## Air-conditioning

Condition/appearance: above average Exceptions noted: none

Locations/descriptions:

- Quantity - three
- Manufacturer – Cruisair
- Type – split-type heat pump
- Controls - SMXii
- Equipment – engine room forward end port side (3 x condensing units)
- Cooling pump – engine room forward centerline (March Pump AC-5C-MD 115V)
- Test performed – operated all units heat & cool programs, and measured Delta-T.

## 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 – 900-gallon capacity contained in three fibreglassed steel tanks secured engine room aft outboard sides and inside aft berth
- Fills – side decks port & stbd (2) and aft deck stbd side (1)
- Vents – hull sides
- Plumbing materials – copper tubing & flexible USCG Type-A hose
- Shut-off valves:
  - Tank outlets (on/off)
  - Main engine fuel filters (filter selectors)
  - Engine room aft bulkhead (manifold)
- Filters:
  - Main engines – engine room centerline (dual Racor 900s & Perkins each engine)

# GLADDING MARINE SURVEYING AND CONSULTING, LLC

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- AC generator – engine room centerline (Racor 500)
- Fuel polishing – engine room aft bulkhead port side (Walbro pump & Racor 900)
- Level gauges:
  - Engine room (tank sight gauges)
  - Aft berth (engine room aft end stbd side)
- Test performed – operated fuel system during trial-run and verified function of polishing/transfer pump

## 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 – 350-gallon capacity contained in two stainless-steel tanks secured engine room outboard of main engines
- Fills – side decks port & stbd sides (2)
- Vents – hull sides
- Plumbing materials – copper tubing & reinforced plastic hose
- Shut-off valves – tank outlets
- Filters – screen at pump inlet
- Pressure pump – engine room aft bulkhead (Jabsco Par-Max Q401J-1155-3A)
- Accumulator tank – engine room aft bulkhead (Well-X-Trol WX-102)
- Water heater – engine room aft bulkhead port side (Raritan Engineering 171211 [12-gallon, 120-volt & engine heated])
- Dock water inlet – main cabin stbd side
- Level gauges – sight gauges on tanks
- Test performed – operated fixtures at various locations, ran clothes washer, and verified hot water.

## Black water

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

- Tanks – 60-gallon capacity contained in one fiberglass tank secured below sole in forward stateroom
- Deck fitting – stbd side deck by pilothouse door
- Vents – hull side
- Plumbing materials – PVC hose
- Y-valves – none
- Overboard valve – engine room forward stbd side outboard
- Discharge pump – engine room forward stbd side (12-volt macerator)
- Vented loop (if required) - yes
- Treatment device - none
- Level gauges – lower cabin on port side of stairs
- Test performed – verified macerator pump runs.

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## ENGINES, AND ENGINE AND VESSEL CONTROLS

### **Engines**

Condition/appearance: above average Exceptions noted: none

- Location - amidships
- Type/description – diesel 4-cycle 6-cylinder naturally aspirated
- Cooling system – closed loop freshwater, raw-water cooled heat exchanger
- Power transmission – close coupled straight-drive
- Mounting:
  - Foundations – hull stringers
  - Beds – continuous welded steel
  - Mounts – 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 – very good
- Test performed – examined the following:
  - Cold start
  - Exhaust smoke
  - Raw-water flow
  - Noise/vibration
  - Leaks
  - Charging

Comments – port engine lube oil ¼” to ½” above full mark likely to account for oil that drains down from filters when engine is stopped.

### **Exhaust systems**

Condition/appearance: above average Exceptions noted: none

- Exhaust manifolds – freshwater cooled iron
- Mixing elbows – raw-water cooled stainless-steel
- Exhaust fittings – n/a
- Muffler – fiberglass cans
- Exhaust outlet – transom outboard sides (stainless-steel)
- Straight runs – black rubber hose
- Connection of fittings – n/a
- Hose connection clamps – double stainless-steel
- Test performed – examined for evidence of damage and leaks

### **Engine ventilation**

Condition/appearance: above average Exceptions noted: none

Location & type:

- Thru-hull vents - amidships

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- Powered – 2 x DC blowers (one each in & out direction)
- Test performed – operated blowers

## Engine controls

Condition/appearance: above average Exceptions noted: none

- Locations – upper & lower helms
- Manufacturer/model - Morse
- Description – dual lever type sleeved cable manual system
- Neutral safety interlock (prevents starting in gear) – **none**
- Test performed – operated controls engines off and running

## Engine instrumentation

Condition/appearance: above average 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 (lower only)
- Alarms – yes
- Test performed – observed operating during trial-run

## Steering

Condition/appearance: above average Exceptions noted: none

- Locations – upper & lower helms
- Manufacturer/model – Teleflex Capilano
- Description – wheel type manual hydraulic
- Reservoir – integral to helm units
- Test performed – operated lock to lock upper & lower helms

## EQUIPMENT

### Pumps dewatering and utility

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

Type & location – DC electric unless noted otherwise:

- Forward stateroom below sole:
  - Dewatering (Rule 2000 gph)
  - Sump box (Rule 1500 gph in fiberglass box)
- Engine room forward centerline:
  - Dewatering (Rule 2000 gph)
  - Dewatering (Rule Lopro 900 gph)
- Engine room aft centerline – sump box (Rule 1500 gph in fiberglass box)
- Aft stateroom forward end below sole – dewatering (Rule 2000 gph)



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- Test performed – operated all pumps except engine room Rule 900 gph

## Rigging utility

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

Type & location:

- Tender crane – flybridge aft end port side (welded stainless-steel, 12-volt winch, stainless-steel wire rope)
- Test performed – verified function of winch motor

## Windlass

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

Descriptions (windlass located at foredeck unless noted otherwise):

- Manufacturer/model – Maxwell 2200
- Type – 12-volt vertical with wildcat & warping head
- Control locations – foredeck & helms
- Battery service-disconnect – lower helm console
- Overcurrent protection – disconnect is breaker
- Clutch lever location – foredeck stbd side locker
- Test performed – windlass operated forward and reverse from all control locations, and attempted to freewheel wildcat

## Accessories

Condition/appearance: above average Exceptions noted: none

Description:

- Prop shaft line cutters – propeller shafts by props (Shaft Shark or similar)
- Boarding ladder – aft deck stbd side (Marquipt four step)
- 6 x fender holders – bow rail (stainless-steel)
- Oil changer – engine room aft end port side (Reverso GP-3012-12 3-valve)
- Test performed – verified oil change pump runs

## ELECTRICAL SYSTEMS

### Galvanic corrosion protection

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

Descriptions:

- Anodes (zinc unless noted otherwise) – quantities each location:
  - Bow thruster (1)
  - Propeller shafts (2)
  - Rudders (1)
  - Transom (1)
- Bonding system - yes
- Galvanic isolators/Isolation transformers – not found
- Test performed – verified bonding system has low resistance connections

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## AC electrical system

Condition/appearance: above average Exceptions noted: none

Locations & descriptions of significant components:

- Voltage – 120 (240-volt inlet)
- Inlet types & locations – main cabin port side (240-volt, 50-amp)
- Inlet circuit protection location (within ten feet unless noted otherwise) – main panel
- Main panel:
  - Location – main cabin forward end port side
  - Instrumentation – voltmeter & ammeter
  - Source selector switches – rotary type
  - Reverse polarity indicator – n/a
- Condition of shore cord – above average
- Condition of shore cord inlet – above average
- GFCI protection – some outlets
- 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: yes (see summary remarks & notes)

Locations & descriptions of significant components:

- Voltage - 12
- Panel locations – main cabin forward end port side
- Panel instrumentation – voltmeter, ammeter, and Hz
- Branch circuit protection – breakers
- Main disconnect switch – main panel
- Primary circuit protection – not found
- Test performed – operated various DC equipment

## Alternating current generators

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

Description:

- Engine type – diesel 4-cycle 4-cylinder naturally aspirated
- AC generator mounting – close coupled
- Location – engine room aft end stbd side
- Circuit protection:
  - Generator – yes
  - Main panel – yes
- Accessories – local instrument panel & remote control
- Fuel, exhaust, cooling water and electrical connections – serviceable

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- Vented loop (may be necessary for deep draft installation) – not found
- Test performed – operated during trial-run

## Battery charging devices

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

Locations/descriptions:

- AC electric:
  - Bow thruster – inside forward berth (Promariner Pronautic 24-20P)
  - House/engine/AC generator – engine room aft bulkhead stbd side (Phase Three PT-40CE)
  - House/engine – see inverter section that follows
- Alternators – main engines (70-amp each)
- Renewable – none
- Controllers – n/a
- Test performed – verified function of alternators & chargers except as noted

## Inverters

Condition/appearance: above average Exceptions noted: none

Locations/descriptions:

- Location – engine room forward bulkhead
- Make/model – Xantrex Freedom Marine 25
- Output:
  - AC power (2,500-watt)
  - DC current (120-amp)
- Battery disconnect location – main battery switch
- Battery overcurrent protection location & type – inside electrical cabinet (fuse)
- AC output bypass (returns inverter supplied circuits power source to main buss) – not found
- Inverter cautionary label – inverter indicated on main panel
- Test performed – verified function as inverter & charger

## Storage batteries

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

- Batteries:
  - Port engine/house – outboard of engine (2 x 8D FLA)
  - Stbd engine/house – outboard of engine (2 x 8D AGM)
  - AC generator – engine room aft centerline (Group-24 maintenance-free FLA)
- Disconnects – engine room & main panel
- Test performed – battery condition evaluated using 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

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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)

- Main cabin:
  - Magnetic compass (Danforth Constellation)
  - 3 x windshield wipers
  - Autopilot control (Simrad AP24)
  - Multifunction display (Garmin GPSmap 4212)
  - Tridata (Raytheon ST60)
  - VHF (Icom IC-M127)
- Flybridge:
  - Magnetic compass (Ritchie)
  - Autopilot control (Simrad AP28)
  - Multifunction display (Garmin GPSmap 4212)
  - Wind instrument (Garmin GNX)
  - VHF (Icom IC-M127)
- Other:
  - Radar (Garmin GMR24HD)
  - AIS (Garmin AIS 800 transceiver)
  - Depth sounder (Garmin GSD)
  - Satellite radio antennae (GXM51)
- Searchlight & wireless remote control (Golight)
- Autopilot pump – engine room forward end stbd outboard side
- Autopilot compass – not found
- Test performed – attempted to operate all

Comments – lower MFD indicates depth indicated is below transducer

## 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: 01/2023):

- Fixed – engine room port side (Fireboy MA2-650-227 [indicated fully charged])
- Fixed fire system indicator – lower helm console
- Fixed fire system manual activator – lower helm console
- Portable handheld USCG Approved Sizes located as follows – (indicated fully charged):
  - Forward stateroom (2.5-lb. ABC)
  - Engine room forward bulkhead (5-lb. ABC)
  - Aft stateroom (2.5-lb. ABC)
  - Galley (2.5-lb. ABC)
  - Flybridge (2.5-lb. ABC)

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## Gas detection systems

Equipment types and quantities compliant **no**:

- **CO – not found**
- Smoke – main cabin
- Test performed – performed self-test

## Emergency bilge pumps and high-water alarms

Configuration compliant **yes**:

- Dewatering pumps – vessel is equipped with multiple
- Audible alarms – yes
- Test performed – verified function of high-water alarm system

**Comments – lower cabins have one dewatering pump each**

## Signaling devices

Equipment types and quantities compliant **yes**:

- Distress signals:
  - Pyrotechnics – ditch bag in upper helm console (expiration: 11/2023)
  - Electronic & flag – not found
- Hull mounted sound - yes
- Handheld sound – ditch bag in upper helm (whistle)
- Epirb – aft deck (ACR Global Fix V4 battery expiration: 06/2030)
- Test performed – verified expiration dates

## Navigation lights

Configuration defects: **none** Function: **see summary remarks & notes**

- Side – flybridge sides
- Mast head/anchoring – top of mast
- Stern – upper deck aft end
- Test performed – verified function of side & stern running lights

## Flotation devices

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

- Lifejackets – flybridge helm console (8 x Type II [includes one youth size])
- Throwables:
  - Flybridge helm console (2 x cushions)
  - Aft deck (Lifesling)
- Liferafts – not found
- Immersion suits – not found

## Ground tackle

Condition/appearance: **above average** Equipment types and quantities compliant **no**:

Locations/descriptions:

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- Ready anchors & rodes – in chute:
  - 88-lb. Rocna, all chain rode
- Back-up anchors & rodes:
  - Swim platform (FX-37 anchor)
  - Forward stateroom port side locker (Fortress type in bag)

## **Additional required (non-safety)**

Equipment types and quantities compliant **yes**:

- Pollution placards (Vessels 26 feet and over with a machinery compartment) – forward lower cabin
- Marpol Trash Placard (Vessels 26 feet and over) – forward lower cabin
- Written trash disposal plan (Vessels 40 feet and over) - yes
- Navigation rules (Vessels 39.4 feet and over) - yes
- Vessel identification locations:
  - HIN – transom upper stbd corner
  - Documentation # - engine room centerline
  - Name – flybridge sides & 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. **Mast head/anchor lights are inoperative; service as necessary to ensure forward light shines with side and stern when navigating and mast head/anchor only when anchoring.**

### 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:*

2. **Port main engine alarm buzzer functioned intermittently; service engine audible alarms as necessary to ensure their reliable function.**
3. 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.
4. Shore power system does not appear to be equipped with galvanic isolator or isolation transformer; install one to provide added measure of protection from galvanic corrosion when shore power is in use.
5. Overcurrent protection not found for main DC panel feed conductors; suggest installing fuses or breaker/disconnects in engine room for the rated capacity of the feed conductors at or near their source using ABYC E-11 for guidance.
6. **CO alarms not found in accommodations; install at least one CO/smoke alarm in each stateroom and main cabin.**

### SUGGESTED REPAIRS AND/OR CHANGES

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

7. Hull above waterline & related:
  - a. Elevated moisture readings noted around tender davit base; rebed davit base and fasteners to prevent moisture ingress.
  - b. Elevated moisture readings noted in foredeck locker lids; rebed hinge fasteners to prevent moisture ingress.
8. Hull below waterline & related:
  - a. Port side stabilizer lock bar bolt is broken; replace broken bolt.
  - b. Flybridge stabilizer buttons are damaged; replace buttons with new.
  - c. Air-conditioner cooling pump sea strainer bowl drain fitting is broken; replace drain fitting with new.
  - d. Air-conditioner pump has plated steel hose adapter; replace with non-ferrous type or plastic.
9. Accommodations, household systems & comfort systems:

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- a. Clothes washer/dryer vent hose shutter is mounted backwards pinning it shut when dryer is running; turn fitting around.
10. Engines, controls & related:
- a. Main engines and AC generator exhaust spillover height does not appear to be recommended 12" minimum above the waterline; install antisiphon valves on engines raw-water systems before exhaust mixing elbows to prevent raw-water from entering them.
  - b. 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.
  - c. AC generator has flaking paint and corrosion in vicinity of thermostat housing; monitor for active leakage, repair if necessary, then repaint.
  - d. Engine coolant temperature gauges read much lower than recorded at engines; service as necessary to restore their accurate function.
11. Equipment & related:
- a. Lower helm dewatering bilge pump indicator lamps are inoperative; service as necessary to restore their normal function.
  - b. Engine room Lopro dewatering bilge pump could not be operated; prove its function and install manual/automatic switch in engine room for it.
  - c. Tender crane would not run reliably due to poor connection in its upper plug set; service as necessary to ensure its reliable function.
  - d. Stainless-steel rope used on tender crane winch is susceptible to overriding causing damage to it; replace with Dyneema® or other synthetic line when it requires replacement.
  - e. **Anchor windlass is loose in deck; rebed and refasten as necessary.**
  - f. **Anchor windlass wildcat does not freewheel when clutch is released; service as necessary to restore its normal function to allow dropping anchor without running windlass motor.**
12. Electrical systems & related:
- a. Engine room aft bulkhead battery charger 120-volt power cable was not found; locate/replace cable and prove function of charger to use as back-up.
  - b. AC generator battery has no charger/maintainer; install battery charger/maintainer on it.
  - c. Modified sine wave inverter/charger may be incompatible with some electronic devices; replace with pure sine wave type with remote control at main electrical panel.
  - d. **AC generator battery is bad; replace with new.**
  - e. Stbd engine/house batteries tested bad; replace with new if their diminished capacity interferes with their convenient use.
13. Navigation equipment & related:
- a. Stbd windshield wiper blade hardware is damaged and will not stay on arm; repair/replace as necessary.
  - b. Flybridge compass is serviceable but has bubble; service or replace as necessary.
  - c. Upper & lower VHF radio screens are bad and transmission from upper has loud hum; repair/replace as necessary.
  - d. Upper wind instrument was not operated; prove its function.



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- e. Lower helm Tridata alarms continuously; service as necessary to restore its normal function.
  - f. AIS transceiver does not appear to be transmitting; investigate further and service/repair as necessary.
  - g. Searchlight articulates light does not come on; service/repair as necessary.
  - h. Radar mast wiring impinges when mast is raised; modify routing of wiring to avoid damaging it.
14. Safety equipment:
- a. Bitter end of 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.
  - b. Vessel is not equipped with rode for back-up anchor; suggest putting aboard back-up chain lead and brait line to replace primary in the event it becomes lost or fouled in anchor locker or if additional holding power is required.
15. Miscellaneous items for convenience:
- a. Install pop-up mooring cleats on swim platform to tie up tender.
  - b. Install engine synchronizer.
  - c. Install mechanical engine coolant and oil pressure gauges in engine room.

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

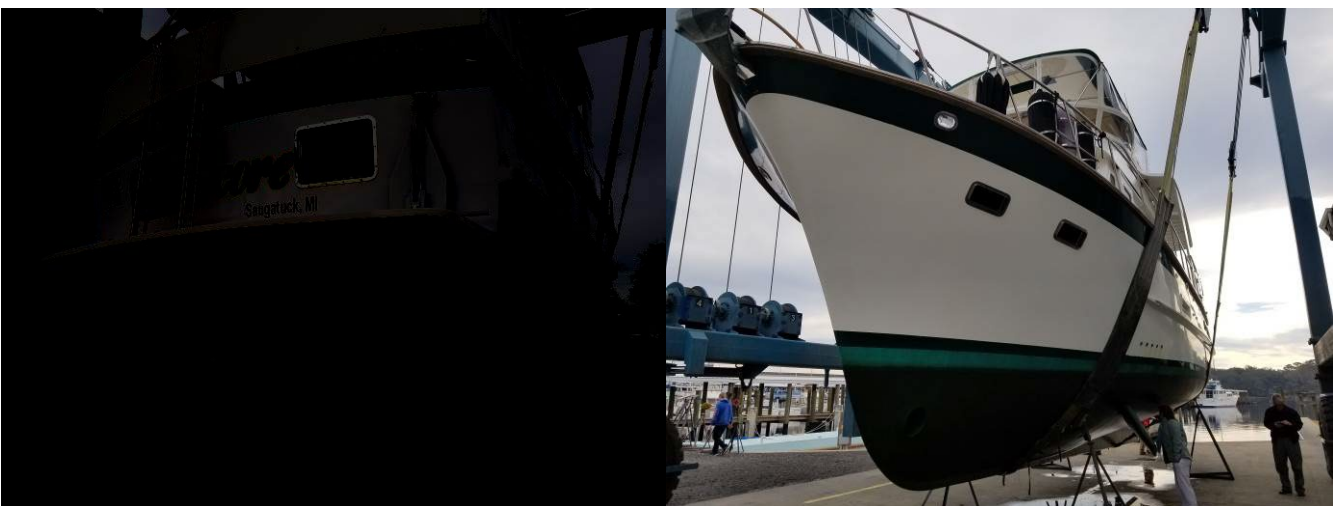
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**PHOTOS**



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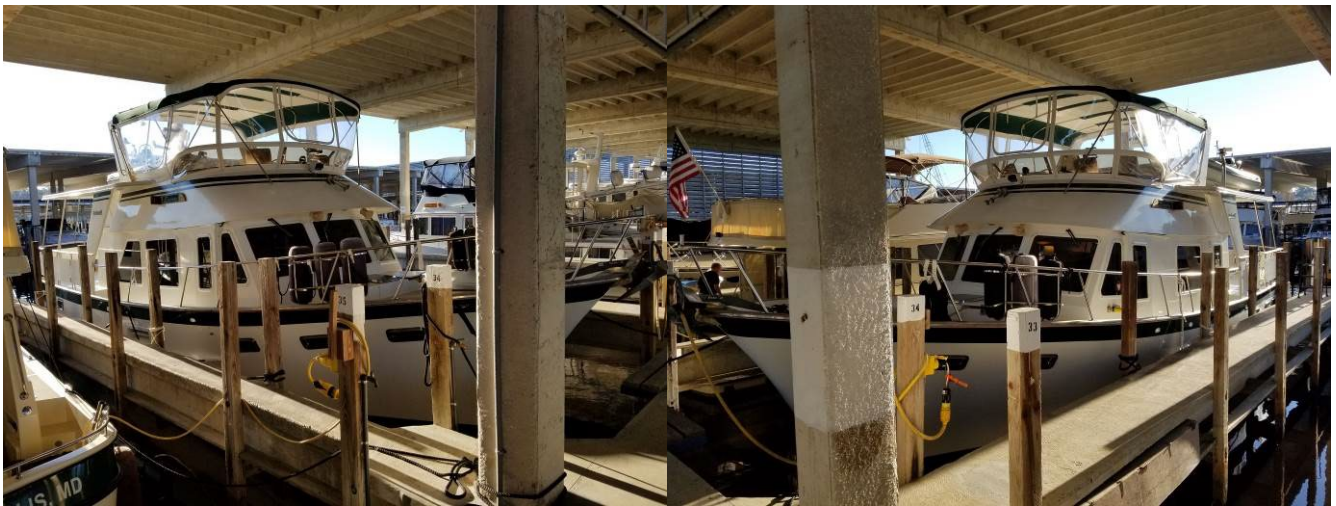


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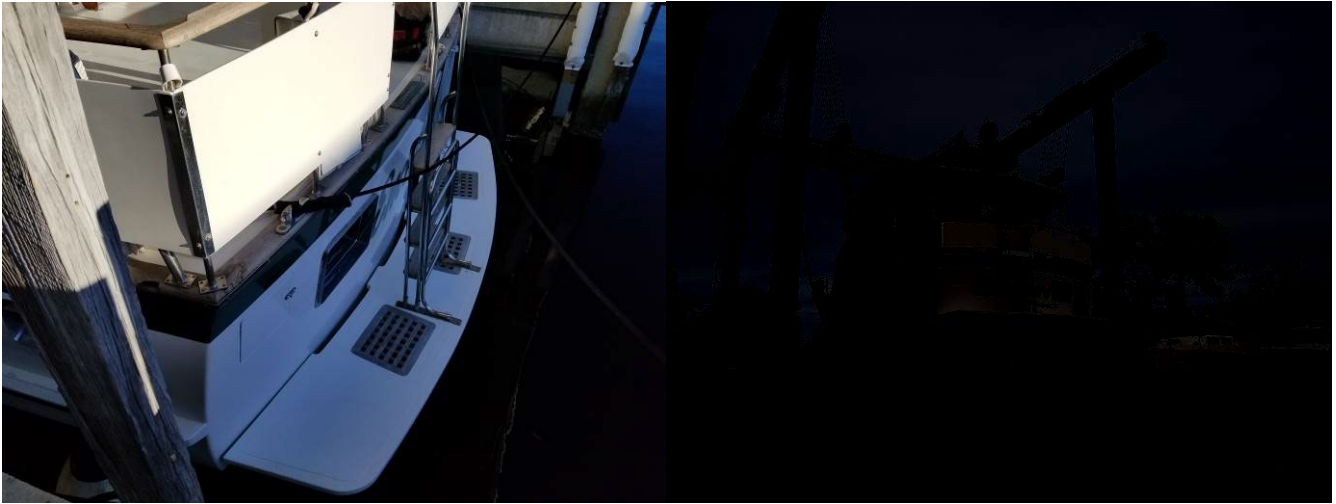


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