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## SAMPLE Marine Survey Report

1988 Grand Banks 32  
named

“XXXXXXXXXX”



Report prepared exclusively for:  
Mr. XXXXXXXXXXXX

XXXXXXXXXX  
XXXXXXXXXXXX

Date of Report: May 11, 2006

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## **Purpose of the Inspection**

At the request of Mr. XXXXXXXX, the undersigned marine surveyor did attend the vessel named "XXXXXX", a Grand Banks 32 of fiberglass construction, when afloat and hauled out at the West Haverstraw Marina, New York.

The purpose of this marine inspection was to determine - insofar as possible within the limitations of visual and physical accessibility, through non-invasive and non-destructive means - the condition of the vessel's structure, its systems, equipment and its cosmetic appearance for pre-purchase considerations.

Guidelines used for this inspection were the Rules and Regulations for Recreational Boats, as excerpted from the *United States Code (USC)* and the *Code of Federal Regulations (CFR)* published by the American Boat and Yacht Council (ABYC), as well as the *Standards and Technical Information Reports for Small Craft*, also published by the ABYC, and *NFPA 302: Fire Protection Standard for Pleasure and Commercial Motor Craft*, published by the National Fire Protection Association (NFPA).

The Scope of Survey can be found in **Appendix A**.

For Terms and Definitions used in this report see **Appendix B**.

Where in this report recommendations have been made, it should be noted that recommendations related to the USC and the CFR are mandatory, while recommendations made to ABYC and NFPA standards are voluntary.

Recommendations marked \*\*\* relate to the USC and the CFR.

Recommendations marked \*\* relate to ABYC and/or NFPA standards and other safety issues.

Recommendations marked \* relate to maintenance issues and upgrades.

Recommendations marked (P) are considered priority items, which should be addressed prior to operating the vessel.

## **Summary**

The vessel appeared to be a standard production version of a Grand Banks 32; no unusual modifications or changes were observed.

"XXXXXX" was sound, well maintained and in average to above average condition overall at the time of the survey, with only a few repairs and modifications to be made.

Searches of the "USCG Recall Notice database" and the BoatUS "On Watch" database revealed no recalls or warnings on this particular model.

The vessel was manufactured prior to enactment of some of the current ABYC and NFPA recommendations. This survey report addresses those recommendations thought to be necessary for safety, but does not suggest complete compliance with current requirements or standards.

A Summary of Recommendations is given in **Appendix E**.

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With the recommendations related to regulatory issues (marked \*\*\*) and industry standards and other recommended safety issues implemented (marked \*\*), the vessel should be considered suitable for its intended service if operated in a seamanlike manner by a knowledgeable master and crew. The ultimate responsibility for the maintenance and safe operation of this vessel lies with the owner and master.

Recommendations concerning maintenance and upgrades (marked \*) should be considered normal maintenance or improvements to be done by a prudent owner.

When further inspections and repairs have been recommended, they should be made to the current Codes of Federal Regulations and/or professional industry standards by competent professional and qualified craftsmen, and when applicable, to any manufacturer's recommendations. A prudent purchaser of a vessel would obtain additional inspections and estimates for repairs for consideration in the course of a purchase.

### Valuation

Estimated Current Fair Market Value (in US dollars):       \$ xxxxxxxx

Estimated Replacement Cost New (in US dollars):       \$ xxxxxxxx

The Fair Market Value given herein is defined as the estimated highest price that can be obtained by a willing seller from a willing buyer, with neither being compelled to sell or buy, at the time of the inspection and the vessel having been offered on the open market for a reasonable time.

The assigned valuation assumes that components, systems or equipment, not accessible or proven during the inspection, were serviceable and/or operational. Discoveries made as a consequence of recommended additional testing or inspection procedures may significantly lower this valuation

The Replacement Cost New is the estimated current cost of replacing the subject vessel, as equipped, with an identical or equivalent vessel. This figure does not necessarily reflect available discounts or sales practices, fluctuation in international currency exchange rates, sales taxes, etc.

The guidelines used for the valuation are as provided by industry pricing guides, such as the current edition of the "BUC" book, "BUC ValuProfessional", the N.A.D.A.. Appraisal Guide, the Power Boat Guide and actual selling prices reported by SoldBoats.com, adjusted for the vessel's equipment and overall condition

Estimates based on currently listed asking prices, along with market conditions, were also considered.

Valuations are provided for use by underwriters and lenders only and do not constitute any guaranty that these figures are attainable in actual current or future markets. Valuation opinions are subject to prevailing economic conditions, both general and those specifically relating to local patterns of competition, consumer intensity, payment terms, etc. Parties having a secured interest in the valuation of the vessel should periodically review the currency of the valuation basis, in order to protect their financial interests.

## General Information

**Listing broker:** xxxxxxxxxxxx

**Date of survey:** May 8, 2006

**Weather during survey:** 50 degr.F, partly cloudy, light breeze

**Inspection was attended by:** xxxxxxxxxxxx

## Vessel Particulars

**Name of vessel:** "XXXXXX"

**Hailing port:** XXXXXX

**Owner:** XXXXXX

**Type:** trawler

**Builder:** American Marine Ltd., Singapore

**Model:** Grand Banks 32

**Model year:** 1988

**Year of manufacture:** 1987

**Designer:** Ken Smith

**Hull ID number:** GNDBXXXXXXXX88 (Molded in transom. See **Appendix B** for picture)

**Yard Number:** xx

**Official Number:** XXXXXX

(See **Appendix B** for picture and Coast Guard Vessel Documentation Query.)

**State registration number:** n/a

**Validation decal:** none

**LOA:** 31' 11"      **LWL:** 30' 9"

**Beam:** 11' 6"      **Draft:** 3' 9"

**Gross Tonnage:** 14    **Net Tonnage:** 11

**Displacement:** 17,000 lbs

**Engine:** single diesel engine    **hp:** 210

**Fuel capacity:** 150 gallons

**Potable water capacity:** 110gallons

**Holding tank(s) capacity:** 30 gallons (estimate)

**Colors:** off-white hull; solid teak overlay on decks; blue boot; blue antifouling.

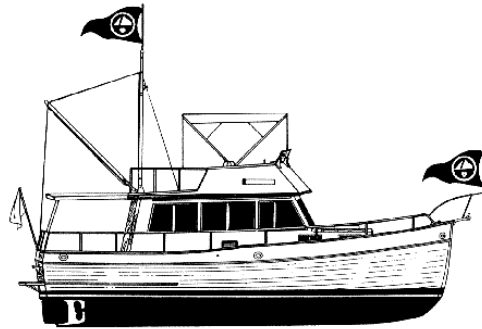
**Intended service:** recreational inland and near-coastal cruising

**Navigation limits:** Underwriter determined

### **Comments:**

Measurements, capacities and weights were taken from available published information. No actual measurements were made by the surveyor.

Documented vessels must have their official number, preceded by the abbreviation "NO.", marked in block-type Arabic numerals not less than three inches in height on some clearly visible interior structural part of the hull. The number must be permanently affixed to the vessel so that alteration,



removal or replacement would be obvious. It may be on a separate plate fastened in such a manner that its removal normally would cause some scarring of or damage to the surrounding hull area. The name and hailing port must also be displayed.

**Recommendation:** *Provide vessel with official number and hailing port as per 46 CFR 67.121 and 67.123.\*\*\**

Documented vessels must display a current State validation decal on both sides of the bow.

**Recommendation:** *Display State validation decal on both sides of the bow.\*\*\**

### **Hull, Decks, Deckhouses and Cockpit**

**Design:** production displacement trawler with round-bilge, full length skeg, raked stem with anchor platform, transom with swim platform, pilot house, cabin trunk, cockpit, fly-bridge, short mast with derrick.

Propulsion was by a single Cummins diesel engine.

**Hull:** molded fiber reinforced plastic (FRP); simulated planking; gelcoat finish

**Interior structure:** longitudinal stringers, transverse plywood bulkheads and partitions and joinery bonded to the hull.

**Decks and cockpit:** teak overlay

**Superstructure:** FRP, gelcoat finish

**Hull-to-deck-joint:** bulwark type with teak cap rail

**Rub rails:** full upper and partial lower rub rail; integrated parts of hull molding with bronze striker

#### **Comments:**

The vessel generally appeared to have been built to accepted recreational marine industry production standards and practices at the time of its construction, using commonly accepted materials.

The hull was sighted from all sides.

The hull and deck moldings appeared to be as manufactured and showed no evidence of having been materially modified to make the vessel different from its production sister ships.

Hull and decks were sounded at random with a phenolic mallet for evidence of hollow or dull areas in the lay up.

Moisture meter readings were taken randomly at clean and dry locations with a Protimeter Aquant, which has a scale from 0-1000, on which readings below 150 represent a dry condition, between 150 and 225 a border line state and over 225 a damp condition.

It should be noted that moisture meter readings on a fiberglass vessel are only indicators and are not absolute since the composition of the laminate, surface coatings and the anti fouling bottom paint may greatly affect the readings.

#### **Topsides**

The topsides were found to be symmetrical overall, fair and smooth without indications of hard edges or stress and with only minimal flutter and no visible print- through sometimes observed in laminated FRP products.

There was no readily visible evidence of collision damage.

The finish of the hull was the original gelcoat, which was in good cosmetic condition.

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Soundings did not reveal voids or delamination.  
Moisture meter readings were unremarkable.

### **Transom**

The wood overlay of the transom was in good condition.  
The teak swim platform was secure.

### **Bottom**

The vessel was hauled and power washed at the time of the inspection.  
The antifouling paint was found to be in fair condition.

Soundings did not reveal voids or delamination.

A careful visual examination of the bottom showed no evidence of (osmotic) blisters. It should be noted however that small blisters can often only be observed if the bottom paint would have been removed. This was not done.

The causes of various forms of blistering are complex and absence of blisters at this time is no guarantee that no blisters will develop at a later time.

The development of blisters depends on many factors such as the temperature and salinity of the water, the quality of the workmanship and the type of resin used when the vessel was built, etc.

Dry storage appears to have a limiting effect on the development of blistering and/or its progress

Moisture meter readings were taken of the bottom, but since the vessel was hauled shortly before taking the measurements and the surface did not dry completely, these could not be totally relied upon.

Moisture meter readings were generally below 225.

Based on prior experience and visual observation of the hull, it was not believed that there were structural problems at this time

### **Cathodic protection:**

Two sacrificial zincs were fitted on the transom, which were about 50% wasted.

***Recommendation:*** *Replace sacrificial zincs on transom.\**

### **Deck, cockpit and cabin trunk**

The teak overlay of was in good repair for its age.

There were no missing bungs.

The caulking was generally tight, except at a location just aft of the hatch in the cockpit, where water had entered between the FRP deck and the teak overlay.

***Recommendation:*** *Re-caulk teak overlay where separated in order to prevent the ingress of water between the overlay and deck. Treat all teak overlay with teak oil.\**

Areas with teak overlays were sounded and these were sharp and clear.

Moisture meter readings of FRP sides of the superstructure were unremarkable.

Soundings were crisp

### Interior structure

Access to the interior structure was limited by liners, cabinetry, furniture, tanks and other equipment and was only inspected where visible. No attached materials were removed during the inspection. Where inspected, the interior structure and bonding between partial bulkheads, stringers and the hull were secure.

### Rudder and Steering Gear

**Rudder type:** single semi-balanced rudder of FRP construction, supported by an upper bearing and by a bearing in a bronze sandshoe bolted to the skeg.

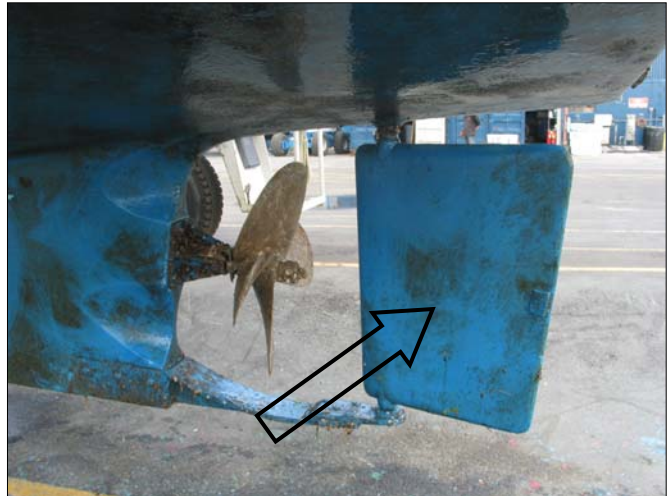
**Rudder stocks:** bronze/stainless steel

**Steering gear:** Upper and lower helm station; cable-over-pulley system; bronze quadrant clamped on rudder stock

**Auto pilot:** Autohelm ST 7000

#### **Comments:**

The exterior of the rudder was smooth and fair, but some weeping was noted from a pin hole to port.



**Weeping pin hole rudder**

Moisture meter readings were high, indicating that moisture had entered the rudder.

No excessive play was noted between the rudder stock and its bearings.

There was no play between the rudder stock and the rudder blade.

***Recommendation:*** Seal pin hole in port side of rudder. Monitor the rudder for swelling and play between the rudder stock and rudder blade at each haul out. If this occurs, the FRP rudder blade should be opened up for inspection and repairs.\*

The rudder turned lock-to-lock with no apparent binding.

The steering cables were in good condition as seen.

Little of the rudder stock was visible, but where viewed, no notable pitting or corrosion was observed.

### Bow Thruster

**Make:** Vetus

**Model:** 341 85 021

**Power:** 3000W

**Housing:** bronze

**Propeller:** composite material; three-blades; diameter 7"

#### **Comments:**

The bow thruster was functional.

## Thru-hull Fittings and Plumbing

**Material:** bronze

**Seacocks:** bronze rubber plug type valves

**Hoses:** reinforced flexible hoses

**Emergency wood plugs:** none

**Comments:**

The location of the thru-hulls is shown in **Appendix D**.

ABYC standards require seacocks for thru-hulls which are below the 7 degrees heeled waterline. The following discharges were close to the waterline and did not meet this ABYC standard:

Starboard

- discharge sink in head
- discharge bilge pump
- discharge shower pump

Port

- galley discharge
- drain (unidentified)

**Recommendation:** *Install seacocks at thru-hulls located on waterline.\*\**

**Recommendation:** *Attach soft tapered wood plugs of appropriate size to thru- hull fittings for possible emergency use.\**

All thru-hulls were tight to the hull and there were no signs of galvanic corrosion. All hoses were serviceable, with no signs of failure. Hoses were retained with double clamps.

The cockpit drains were clamped to logs at the transom just above the waterline. Crude repairs were made to the logs with putty. The log to port was leaking. Since failure of the hose connections to the log would flood the vessel, the putty should be removed and proper repairs should be made.



**Log port cockpit drain with putty repairs**

**Recommendation:** *Repair both logs of cockpit drains as found necessary.\*\**

**Recommendation:** *It is the surveyor's opinion and a recognized prudent practice, that all through hull valves located below the waterline be closed while the vessel is left unattended, whether alongside a dock, at anchor or at a mooring.\**

### Hatches, Portlights and Windows

**Deck hatches:** one in wood frame; with opaque acrylic lens; in cabin trunk  
three wood engine room hatches in pilot house  
two PRP/teak hatches in cockpit sole

**Portlights:** three in cabin trunk (one to port; two to starboard)

**Windows:** acrylic in aluminum frames and wood trim in pilot house

**Windshield at operating station:** acrylic deflector

**Access door:** FRP/teak with window

#### **Comments:**

The hatch in the forward cabin was of adequate dimensions to serve as an emergency escape hatch. All hatches, portlights and windows were in good repair. There was no evidence of leakage.

### Operating Station at the Flybridge

**Arrangement:** console, two fore and aft benches. Canvas enclosure

**Controls:** steering wheel, shift and throttle levers, bow thruster controls.

**Instrumentation:** engine instrumentation, navigation equipment, VHF, horn

### Rails, Stanchions, Lifelines and Ladders

**Pulpit:** stainless steel

**Rails:** stainless steel stanchions mounted on bulwark and teak rail.

**Height:** 28"

**Ladders:** teak ladder from cockpit to flybridge

**Grab rails:** stainless steel at sides of pilot house and top cabin trunk

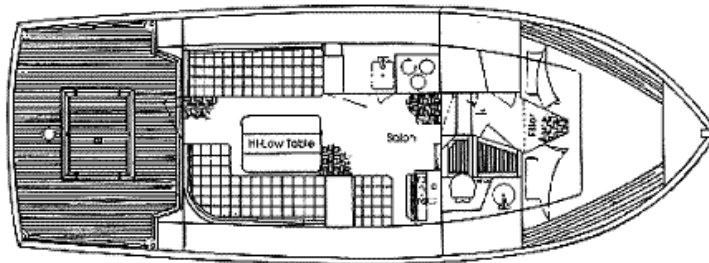
**Swim ladder:** folding ladder fitted to swim platform

#### **Comments:**

Pulpit and all rails were secure and in good repair.

### Accommodation

#### Lay-out:



Stateroom

There was a stateroom aft of the forepeak bulkhead with a bed that sleeps two, a large closet to port and a head compartment to starboard.

Salon

Two steps led from the lower level to the main salon, with a L-shaped sofa and operating station to starboard, a straight sofa which converts to a double bed and the galley to port. A teak drop leaf table was installed close to the center line.

Head compartment

The head compartment housed a marine toilet, a vanity with hot and cold water and a hand shower.

**Comments:**

The accommodation was clean and well maintained throughout.

The condition of the upholstery was serviceable.

The teak cabin sole remained in good condition.

Furniture and cabinetry were found in good repair.

Doors between cabins closed easily.

Drawers and locker doors were functional.

No internal water leakages were observed.

**Galley Furnishings:**

**Counter top:** laminated material

**Sink:** single stainless

**Stove:** three-burner, make Hillerange/ Princess

**Fuel:** LPG

**Refrigeration:** Norcold; dual voltage

**Comments:**

**Recommendation:** Affix a label near the stove with the following information:

*“CAUTION: Open-flame appliances consume oxygen. Lack of oxygen can cause asphyxiation or death. Maintain open ventilation when stove is in use.” (NFPA 8.5.14.7).\*\**

**Operating Station in pilot house**

**Arrangement:** console, operator's bench

**Controls:** steering wheel, shift and throttle levers, remote control windlass, controls bow thruster

**Instrumentation:** engine instrumentation, navigation equipment, VHF and switches for navigation lights, electric horn, and blower. Alarm panel.

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### Fresh Water System

**Tanks:** one steel tank

**Remote level reading:** no

**Pumps:** Jabsco diaphragm plumbed to galley, head compartment and cockpit

**Accumulator:** yes

**Hot water tank:** 12 gallons Raritan with 120 VAC heating element and heat exchanger with engines.

**Safety valve:** yes

**Dockside water connection:** no

**Piping:** reinforced plastic hose

**Comments:**

The fresh water system was tested and was functional.

The type of antifreeze/coolant in the engine was unknown. This antifreeze runs through the heat exchanger of the hot water tank. Although leaks in these heat exchangers are rare, they would cause toxic antifreeze to get into the hot water side of the potable water system, which could be fatal.

***Recommendation:*** *Change ethylene glycol antifreeze by propylene glycol which is less toxic and label the engine cooling system to type of antifreeze.\*\**

### Sea Water System

**Pump:** unknown make; plumbed to washdown system in cockpit and fore deck

**Piping:** reinforced plastic hoses

**Comments:**

The system was functional

### LPG system

**Gas:** LPG for cooking purposes

**Tanks:** two steel, 10 lbs (one of which is spare)

**Locker:** sealed from interior of vessel

**Location:** under port side seat at fly bridge

**Drain:** to deck fly bridge

**Solenoid valve:** solenoid valve with control panel in galley

**Regulator:** yes

**Low side pressure relief device:** yes

**Pressure gauge:** no

**Fuel lines:** copper with flexible hoses marked Aeroquip 2556 MSHA-2G-9C/1 IQ 87

**Gas detector:** no

**Comments:**

The tanks were last tested in 1986 and their valves were not updated to the new type with an over fill protection device required as of April 2002 by NFPA 58.

**Recommendation:** *Replace LPG tanks valves by new type with over fill protection.\*\**

No pressure gauge was installed

The gas hose appears to be original and was not marked gas rated. Considering its age it would be prudent to replace it by a new gas rated hose.

The locker was provided with a drain to the flybridge deck. It would be prudent to close this drain and install a 1/2" drain directly overboard through the sides of the fly bridge.

The system was not pressure tested.

**Recommendation:** *Install a pressure gauge in the LPG line within the locker. Provide the LPG locker with a drain directly over board. Replace flexible gas hose by a gas rated hose with end fittings permanently attached to it.\*\**

**Recommendation:** *Install a LPG gas detector in the lowest point of the hull where vapor will collect, which is near the steps to the forward stateroom (ABYC A-14.8.1).\**

A radio speaker was mounted in the gas locker, which may be an ignition source.

**Recommendation:** *Re-locate the radio speaker mounted in the LPG locker.\*\**

### **Head/Sanitation System (MSD's)**

**Heads:** one manual make Groko

**Discharge:** overboard or to holding tank

**Holding tanks:** in engine compartment

**Level indicator:** no

**Macerator pump:** Jabsco 18590 series

**Comments:**

The head was tested and found functional.

No leaks were observed.

No means were provided to prevent accidental discharge of sewage where not permitted.

**Recommendation:** *Provide means to prevent accidental discharge of sewage by closing the seacock, padlocking the sea cock or diverter valve, or using a non-releasable wire-tie in order to comply with CRF 33.159.7.\*\*\**

### **Heating and Cooling Systems**

**Heaters:** Espar 6BT5-9M

**Fuel:** diesel fuel

**Comments:**

The system appeared to be new. It was not tested.

## Bilges and Bilge Pumping

**Electric bilge pumps:** two Rule 2000; with float switches

**Manual bilge pump:** no

**High bilge water alarm:** no

**Sump pumps:** Rule 450

### **Comments:**

The bilge pumps and sump pump were functional.

The bilges contained water as result water in the discharge line flowing back after shutting off the pump.

**Recommendation:** *Install check valves in the discharge lines of the bilge pumps.\**

## Machinery and Auxiliary Systems

### Engine

**Make:** Cummins **Model:** 6BT5.9M

**no.cyls:** 6

**Serial numbers:** xxxxxxxxxxxx

**Power:** 210 hp @ 2600 rpm (per  
Manufacturer's Specification)

**Type:** diesel fuel

**Last overhauled:** unknown

**Hours of operation:** 1372 on meter

**Cooling:** closed fresh water

**Aspiration:** turbo charged

**Instrumentation:** tachometers, cooling  
water temperature, lub.oil pressure,  
charging Amps

**Transmission: make:** Twin Disc

**Model:** MG-506-1

**Serial number:** illegible

**Engine control:** push-pull cables; dual lever

**Engine compartment ventilation:** electric exhaust blower



### **Comments:**

The engines and their installation were visually inspected only; no diagnostic analyses were made. The engine and engine compartment were found clean.

Flexible mounts were supported by aluminum capped FRP stringers. They appeared to be new.

The stringers sounded where accessible and soundings were sharp and clear.

Their moisture content was unremarkable.

The existing cooling water hoses were serviceable, with no signs of failure.

**Recommendation:** *Due to the age of the vessel, it would be prudent undertake a program of preventative maintenance by replacing selected hoses over a period of time.\**

The crankcase oil of the engine was close to the mark and black.

The gear box was checked and was found to be close to be slightly over-filled and clear.

**Recommendation:** *Confirm when crankcase oil of engine and transmission was last changed and change as needed. The oil filters should be replaced at the same time.\**

The coolant was checked and was at normal level.

**Recommendation:** *Check when anti-freeze was last replaced and drain, flush and change as needed.\**

### **Fuel System (diesel)**

**Tanks:** twin steel saddle tanks, located in engine compartment; capacity 127 gallons each

**Fuel gauge:** sight hoses on tanks

**Filters:** one Racor primary and one engine mounted secondary.

**Fuel fill hose:** not accessible

**Fuel vent hose:** not accessible

**Distribution and return hoses:** flexible hose; not marked

**Fuel shut-off valve:** on tanks

#### **Comments:**

The blue distribution hoses were not marked but appeared to be Aeroquip, which are acceptable hoses.

They were in good condition as seen.

It could not be established if the fill hose was double clamped.

**Recommendation:** *Keep valves of the fuel gauge hoses in the "Closed" position except when checking fuel levels.*

*Applying a label adjacent to each sight gauge containing the following wording:*

*"WARNING! Leaking fuel is a fire and explosion hazard. Keep sight gauge valves closed except when checking fuel level." (ABYC H-33.5.8.1 and H-33.16.2.) \*\**

### **Exhaust System**

**Type:** wet exhaust

**Lines:** FRP and hoses

**Muffler:** FRP Verna Lift waterlift type

**Alarm loss of cooling water:** no

#### **Comments:**

The exhaust hoses were not marked, but appeared to be in good condition where visible.

No leaks were observed. All connections were double clamped.

Measurements taken during the sea trial revealed no elevated levels of CO.

### **Drive train**

**Propellers:** four-bladed bronze; 23" diameter

**Propeller shafts:** stainless steel 40 mm diameter

**Bearing housing:** cast bronze with rubber cutless bearings

**Rope cutters:** yes

**Couplings:** six-bolt coupler clamped on propeller shaft

**Shaft seals:** traditional stuffing boxes; double clamped; with water injection

**Comments:**

The propeller was in good condition, snug to its shafts and properly secured.

There was no undue play in the cutless bearings.

The stuffing box showed no undue leaking with the vessel at rest or underway.

Temperature of the stuffing box when underway was normal.

Checking the propeller shaft/engine alignment was beyond the scope of the survey and was not done.

***Recommendation:*** *Have the propeller shaft/engine alignment checked by a qualified marine mechanic. This should be done when the vessel is in the water and fuel tanks are filled to their normal levels.\**

## Electrical System

### 12 Volt DC System

**Power source:** three 4D batteries; one starting and two house

**Location:** in engine compartment

**Secured:** in acid proof, covered battery boxes

**Battery switches:** one four-position make Perko at power distribution panel; a second battery switch make Cole Hersee near the batteries allowed for emergency cross-over between banks

**Battery charging system:** by engine alternators or battery charger powered by shore power

**Battery isolator:** yes

**Battery cables:** welding cables

**Power distribution:** combination AC/DC panelboard in pilot house with branch circuit breakers,

**Comments:**

Batteries were not load tested but appeared to be fairly new and in good repair.

The house batteries were not properly tied down.

***Recommendation:*** *Tie house batteries down so that they can not move more than 1" in any direction (ABYC E-10.7.4).\*\**

Battery cables were non-marine welding cables which have poor corrosive resistance (as they are not tinned) and the insulation is soft, not oil resistant and easily damaged, creating the risk of short circuits.

***Recommendation:*** *Monitor the battery cables regularly for signs of corrosion and damage to insulation. Replace when found necessary\*.*

The back of the power distribution panel could be accessed through a panel below the steering wheel. When open, 120VAC terminals could be accessed, which could be fatal when connected to shore power.

***Recommendation:*** *Affix a label to the access panel below the steering wheel in the pilot house with the following information:*

*"CAUTION" 120 VAC power. Disconnect shore power cable before opening this panel.\*\**

All 12 V circuits were tested and were functional.

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**120 Volt AC System**

**Power sources:** shore power

**Shore power inlet:** two 50 Amps; at bow and at transom; single pole fuse

**Shore power cords:** 50 Amps

**Circuits:** one

**Reverse polarity indicator:** yes

**Galvanic isolator:** not observed

**Battery charger:** make Sentry; 40 Amps

**Inverter:** no

**Power distribution:** combination AC/DC panel

**Comments:**

Shore power inlet and cable were serviceable and there were no signs of over-heating.

The 120VAC circuits were tested with an Ideal Sure Test Circuit Analyzer ST-2D for proper wiring, reverse polarity, voltage drop, ground-neutral voltage and line impedance.

Proper grounding was established.

Polarity of all receptacles was in order.

Ground and neutral wiring were properly separated.

All 120 VAC circuits were tested and found functional.

The receptacles in the galley, head and engine compartment were not protected by a Ground Fault Circuit Interrupter (GFCI).

**Recommendation:** *Protect 120VAC receptacles in galley, head and engine compartment by GFCI's as per NFPA-302 and ABYC E-11.13).*\*\*

**Wiring**

Wiring was multi-stranded PVC insulated cable.

12VDC cables were coded. All wiring was well supported and in good condition as seen.

**Ground Tackle and Mooring Equipment**

**Anchor roller:** anchor platform with two fittings and bronze rollers

**Windlass:** electric 12-Volt, make Lofrance; model Tigres; horizontal with chain gypsy and drum; operated by foot switch and remote from lower operating station

**Anchor and rode:** CQR anchor, 25 lbs, with 5/16" chain

Danforth, model D1650; with chain lead and 1/2" nylon rode

**Anchor/chain locker:** chain locker, accessible from forward cabin

**Chainstopper:** no

**Mooring equipment:** on each side three bronze cleats and four bronze chocks integrated in bulwark

**Comments:**

The windlass was securely installed.

The winch was functional, but was not fully tested.

The shaft of the Danforth anchor was bent. Since both anchors were somewhat light for this type of vessel it is recommended to replace the Danforth anchor by a heavier Danforth anchor such as the 20 lbs model TII-2500.

**Recommendation:** *Replace Danforth anchor by a heavier Danforth anchor such as model TII-2500.\**

The visible anchor chain and nylon rode were serviceable, although they were not removed from the locker for a complete inspection.

***Recommendation:*** *Pull up anchor rodes from anchor locker and check their condition.\**

The mooring equipment appeared to be adequate and secure.

### **Canvas**

**Bimini:** yes

**Curtains:** front, side and aft

**Other:** covers for hatch fore deck, cover windlass, various unidentified covers

#### **Comments:**

The condition of canvas and acrylic windows was good.

### **Fire Fighting Equipment**

**Portable Fire Extinguishers:** one class BC size I dry chemical

**Fixed Fire Extinguishers:** 1 Fireboy Automatic Halon 1301, model 70CG, in engine compartment.

**Discharge indicator:** no (NFPA 10-3.4)

**Smoke detector:** no

#### **Comments:**

The number and type of portable fire extinguishers met USCG minimum standards, but did not current ABYC and NFPA recommendations.

USCG requires for this vessel one size I portable fire extinguisher rated for class B and C fires.

ABYC and NFPA standards recommend for this vessel two size I fire extinguishers rated for Class A, B and C class fires in addition to the fixed fire extinguisher.

***Recommendation:*** *In order to meet ABYC and NFPA standards, install two size I fire extinguishers rated for Class A, B and C fires.*

*One of the extinguishers should be installed within reach of the helmsman.\*\**

***Recommendation:*** *Inspect portable fire extinguishers monthly. Pressure gauges of dry chemical extinguishers should be checked. Halon type extinguishers should be weighed.*

*Recharge or replace units after any discharge and have all units checked annually by a qualified person. A tag should be attached showing the date of such maintenance check (ABYC A-4, Ap.5.4.2 and 6.3).\*\*\**

The 2004 edition of the NFPA Fire Protection Standard for Pleasure and Commercial Motor Craft calls for smoke detectors on boats with a length of 26 feet or over.

***Recommendation:*** *Install a single station smoke alarm, listed to UL217, in the forward state room and one in the salon (NFPA 302-12.3).\*\**

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## Safety Equipment

**Personal Flotation Devices (PFD's):** six USCG type II

**Life ring/horse shoe:** yes

**Flares:** flare launcher with cartridges and several hand held flares

**Distress flag:** no

**First Aid kit:** no

**CO detector:** no

### **Comments:**

The service life of all flares had expired.

**Recommendation:** Equip vessel with at least 3 day and 3 night, or 3 day-and-night flares with current dates, in order to meet USCG requirements(33CFR 175.110).\*\*\*

An electric distress light meeting the standards of 46CFR 161.013 may be used instead of the requirements for night flares (33CFR 175.130).

An orange distress flag may be used instead of the requirements for day flares (33CFR 175.130).

ABYC standards recommend CO detectors on all boats with an enclosed accommodation if a gasoline engine is installed. Although diesel exhaust does not normally have CO concentrations as high as gasoline exhaust, diesel exhaust does produce dangerous levels of CO.

**Recommendation:** Install Carbon Monoxide (CO) detectors in the salon and stateroom.

*The power source of the detectors may be self-contained batteries or a direct connection to the energized side of the vessel's battery switch. The detectors should meet the requirements of UL 2034. If a circuit breaker is installed, it should be non-switchable (ABYC A-24). \*\**

## Navigation Instruments/Electronics

**Compass:** 4" Danforth Constellation at fly bridge and pilot house

**Compass deviation chart:** not sighted

**Radar:** Furuno R20 Raster Scan in pilot house

**GPS:** Garmin GPS Map 182C at fly bridge with chart

**Loran:** Raynav 570 in pilot house

**Depth:** Data Marine at flybridge; Int. Offshore in pilot house

**VHF:** Standard Horizon Eclipse in pilot house; Standard at flybridge

**Weather Station:** Davis Weather Wizzard

**Auto Pilot:** Autohelm ST 7000

**Stereo system:** Alpine AM/FM/cassette

**TV:** no

### **Comments:**

The instruments were powered up and appeared to be functional.

No deviation card for the magnetic steering compasses was sighted. An uncorrected compass can not be relied upon.

**Recommendation:** Swing the compass or perform checks with GPS readings.\*

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## Other Navigation Equipment

**Navigation lights:** side lights, masthead light, stern light, anchor light.

**Radar reflector:** no

**Navigation shapes:** not observed

**Sound Producing Devices:** electric horn

**Bell:** no

**Navigation rules:** no

### **Comments:**

The port side light, the stern light and the anchor light were not functional.

**Recommendation:** *Diagnose non-functioning of port side light, stern light and anchor light and repair as found necessary.*\*\*\*

The International and Inland Navigation Rules require that a vessel at anchor shall exhibit during the day a dayshape in the form of a ball.

**Recommendation:** *Equip vessel with a dayshape in the form of a ball (Navigation Rules Annex I).*\*\*\*

Some States, including Connecticut and New York, require that every motorboat 26 feet or more in length is equipped with a bell capable of producing a clear bell-like tone of full round characteristics. The bell does not have to be mounted, but must be accessible.

**Recommendation:** *Equip vessel with a bell.*\*\*\*

## Miscellaneous Equipment

**Oil Discharge Prohibited Placard:** no

**Waste Discharge Prohibited Placard:** no

**Barometer:** yes

**Clock:** yes

**Spot/floodlight:** no

**Various:** fenders, dock lines

### **Comments:**

Vessels 26 feet or more in length must have a Discharge of Oil Prohibited Placard fixed in a conspicuous place in each machinery space.

**Recommendation:** *Equip vessel with an Oil Discharge Prohibited Placard (33CFR 155.450).*\*\*\*

Vessels 26 feet or more in length are required to display a Waste Discharge Placard in a prominent location.

**Recommendation:** *Equip vessel with a Waste Discharge Prohibited Placard (33CFR 151.59(b)).*\*\*\*

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### Sea Trial

**Departure time:** about 15.40

**Returning time:** about 16.30

**Where held:** Hudson River

**Wind:** Southerly about 12 knots

**Sea state:** waves 1-2 feet

**Captain:** XXXXXXXXX

**Other attendants:** XXXXXXXXXXXXXXXXX

The engines started promptly and ran in forward and reverse gears at various speeds, without any abnormal indications.

The gear shift engaged smoothly.

There was no excessive movement of the engine on its mounts when backing up.

The exhaust was clean.

Throttle and gear shift functions were normal.

The engine was run to full throttle and achieved about 2300 rpm which was somewhat lower than specified by the engine manufacturer. This may indicate that the propeller is over-pitched.

No excessive vibrations were felt over the whole speed range. No wobbling of the stuffing box was noted.

Cooling water temperatures and lubrication oil pressures were normal (respectively 175 degr. F and 58 psi) and remained fairly constant within the speed range.

The vessel tracked well without excessive adjustments of the helm. Steering response was good.

The autopilot held course and responded to commands.

No leakages were observed of cooling water or lubrication oil during or after the sea trial.

### Survey Practice Statement

This report is prepared for the exclusive use of the Client whose name and address appears on page one of this report, and this report is not transferable to any other person or entity. The intended users of this report and appraisal are the client and those lenders and underwriters considering financing or insuring this vessel for this Client only.

The report is not intended for distribution to any persons or entities having a subsequent interest in the vessel.

The surveyor warrants that this report is a true and unbiased opinion of the vessel, based upon a visual inspection on the date of the survey.

It is the nature of marine vessels that deterioration, wear, and accidents do occur and as such this report can only be indicative of the condition and value of the vessel at the time the survey was conducted.

The findings, opinions and conclusions are based upon the best professional judgment of the undersigned surveyor.

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If this report does not discuss a specific item, equipment or machinery, it is not covered by this survey.

While every effort has been made to conduct a thorough survey, there can be no guarantee or warranty, express or implied, as to the condition or suitability of the vessel and her equipment or machinery.

This report makes no representation and does not purport to describe any condition which may have changed since the date of the inspection and the recommendations herein are limited to those that, in the opinion of this surveyor, are reasonably necessary and appropriate, based upon the conditions and circumstances as they existed at the time of the inspection.

The surveyor assumes no responsibility for any defects and is to be held harmless for conditions subsequently arising.

The undersigned has no present or prospective interest in the subject vessel. There is no bias or interest toward the parties involved. Compensation for this service is not contingent on any action or event resulting from the findings, opinions or conclusion in this report.

Respectfully submitted,

Jan W. Muntz, SAMS  
Accredited Marine Surveyor

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## Appendix A Scope of Survey

Hull and deck moldings were subjected to close visual inspection and random percussion soundings with a light phenolic mallet and moisture meter readings with an Electrophysics Moisture Meter Model GRP33 and/or a Protimeter Aquant, unless stated otherwise in the report.

The interior structure of the vessel was visually inspected.

Certain parts of the vessel's structure, systems and equipment could only have been inspected after removing bulkheads, joinery, liners, cabin soles, tanks, etc. This would have been prohibitively time consuming, potentially destructive and costly to restore. Unless noted otherwise, components requiring access with tools or by disassembly have not been inspected and core material of deck or hull, if any, were not sampled.

Dirt, marine growth, coatings buildup or corrosion may also have restricted the surveyor's ability to examine the hull off the vessel.

The installation and external condition of machinery, plumbing, electrical systems and equipment was visually inspected. Complete inspection could only be made by disassembly or by continuous operation. This has not been done. No mechanical tests were performed on propulsion or auxiliary generating equipment. No compression tests were performed.

No fluid samples were drawn. Unless expressly stated, there has been no operation or opening or removal of any portion of the vessel's machinery, electronics, ancillary equipment, tanks or fittings for internal examination.

The inspection of flexible piping was limited to the condition of its external casing and only where readily accessible for visual inspection.

Batteries and their installation were visually inspected, but the batteries were not load tested. The external condition of electrical wiring, connections and system installation was inspected. If shore power was readily available, the 120VAC wiring system was tested with an Ideal Circuit Analyzer. Electronic and electrical equipment was tested by powering up and observing basic function. No measurements were taken; no calibrations or adjustments were made.

A complete analysis of the vessel's electrical systems was beyond the scope of the survey.

Propulsion and rudder shafts were not drawn for inspection, and no engine/propeller shaft alignment was checked.

Bimini tops, awnings, winter covers, etc, that were not rigged or laid out for inspection, have not been evaluated.

If the vessel was in a state of winter lay-up, operation of winterized systems was precluded.

If this survey report did not discuss a specific item, equipment or machinery, it was not covered by this survey. Small defects such as loose hinges or scratches, minor chips in the cosmetic finish, normal wear & tear were not discussed in this report.

No evaluation was made of the vessel's stability or other design aspects.

An assessment whether the vessel was in full compliance with all of the rules regulations and standards mentioned in the section "Purpose of the Survey" of this report, was beyond the scope of the survey. The surveyor does not warrant expressly or implied, or guarantee compliance of the vessel with all of these rules, regulations and standards.

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## **Appendix B** **Definition of Terms**

**Appeared:** means that a close or complete inspection and/or testing of the particular item or system, was not possible due to constraints imposed upon the surveyor e.g. no power available, the item was not clearly visible or readily accessible, the limits of non-destructing testing or the requirement not to conduct destructive tests, etc.

**Powered up:** means that the unit was turned on and powered up. Calibration or verification of proper operation was not done. It does not mean that the unit is fully operational or functional unless specifically stated in this report.

**Fit for Intended Service:** service intended by the Client and stated in the report.

**Good Marine Practice:** a time-honored practice, method or technical configuration that has proven to be practical, sound and/or to improve the safety of vessels and/or their crews.

### **Terms used in the context of describing the condition of a component or system:**

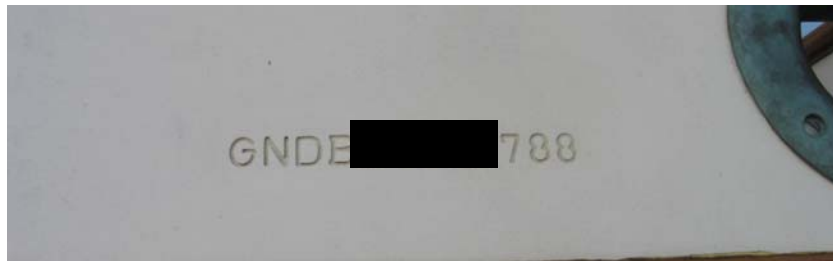
- **Poor Condition:** means that the item or system required more than minor attention, or had more than a few deficiencies, or was in need of service, repairs, or replacement.
- **Fair Condition:** means that the item or system was marginally serviceable, or cosmetically poor, but still functions. The term may also mean that the overall system is less than in good condition.
- **Serviceable or adequate condition:** means that the item or system was in reasonable condition and sufficient for a specific requirement.
- **Good Condition:** means that the item or system was nearly new, with only minor cosmetic or structural discrepancies.

### **Terms used in the context of describing the overall condition of a vessel:**

- **Restorable Condition:** means that enough of the hull and machinery existed to restore the vessel to useable condition.
- **Poor Condition:** means the vessel was unusable as is. It required repairs or replacement of systems, components, or other gear in order to be considered functional.
- **Fair Condition:** means that the vessel needed major additional work and/or additional equipment.
- **Average Condition:** means that the vessel was ready for its intended service, requiring no major or extensive additional work and was normally equipped for a vessel of its size and its intended service.
- **Above Average Condition:** means that the vessel had been cared for above average and/or was equipped with extra (electrical) equipment and electronic gear.
- **Excellent Condition:** means that the vessel was new or like new.

- USCG:** United States Coast Guard
- USC:** United States Code
- CFR:** Code of Federal Regulations
- ABYC:** American Boat and Yacht Council
- NMMA:** National Marine Manufacturers Association
- NFPA:** National Fire Protection Agency

**Appendix C**  
**Picture Official Number**  
**Coast Guard Vessel Documentation Query**

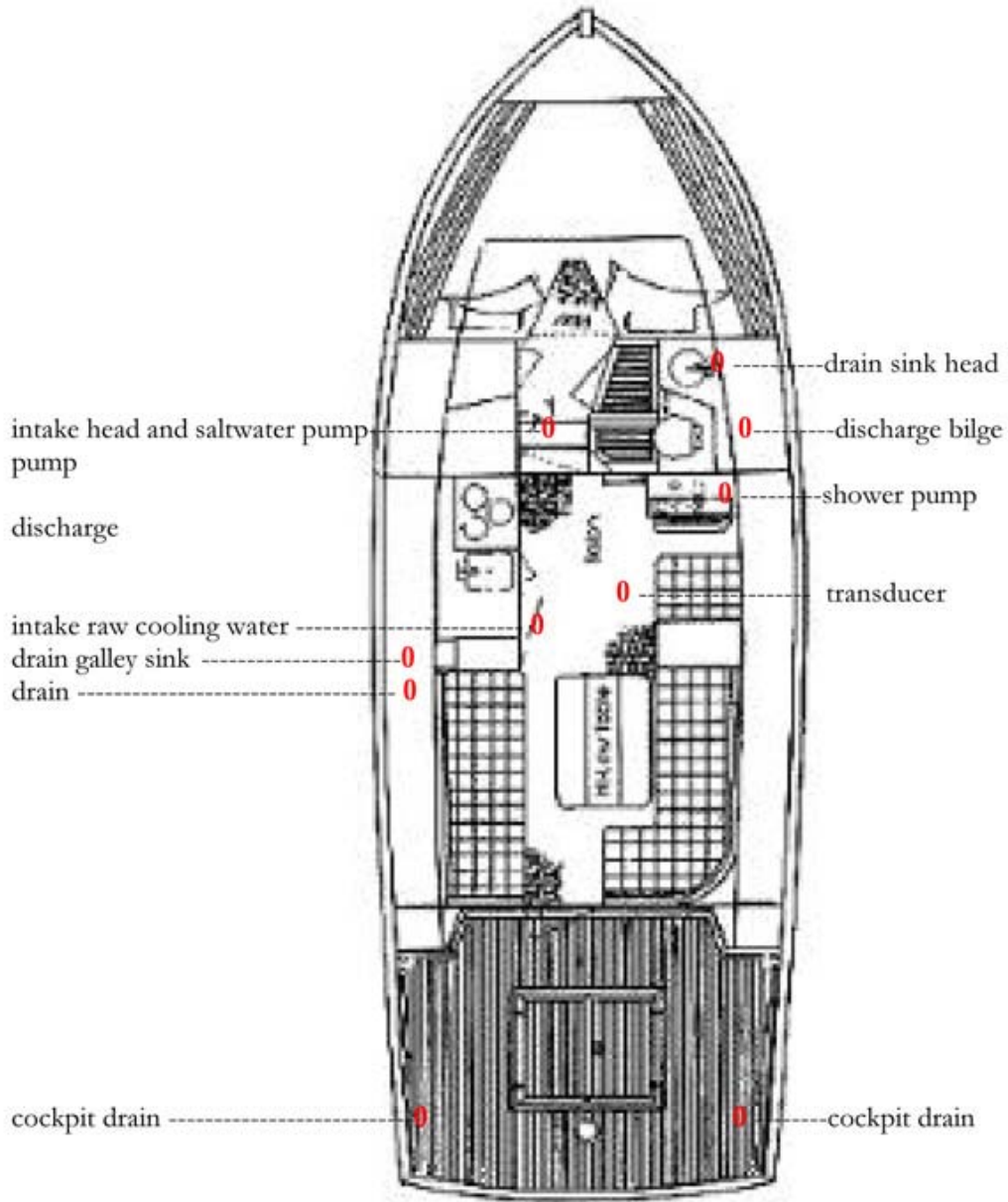


**Coast Guard Vessel Documentation**

**Data found in current database.**

Vessel Name:	XXXXXXXXXX	USCG Doc. No.:	XXXXXXX
Vessel Service:	RECREATIONAL	IMO Number:	*
Trade Indicator:	Recreational	Call Sign:	*
Hull Material:	FRP (FIBERGLASS)	Hull Number:	GNDBXXXXL788
Shipyard and Address:	AMERICAND MARINE (S) PTE *	Year Built:	1987
Hullyard and Address:	* SINGAPORE	Length (ft.):	31.9
Hailing Port:	XXXXXXXXXX	Hull Depth (ft.):	6
Owner:	XXXXXXXXXXXXXX	Hull Breadth (ft.):	11.5
		Gross Tonnage:	14
		Net Tonnage:	11
Documentation Issuance Date:	XXXXXXXXXX	Documentation Expiration Date:	XXXXXXXXXXXXXX
<b>Previous Vessel Names:</b>	XXXXXXXXXX	<b>Previous Vessel Owners:</b>	XXXXXXXXXXXXXX

**Appendix D**  
**Schematic Location Below-Waterline Location Thru-hulls**



## Appendix E

### Summary of Recommendations

#### Recommendations related to USC and CFR's \*\*\*

1. Provide vessel with official number and hailing port as per 46 CFR 67.121 and 67.123.
2. Display State validation decal on both sides of the bow.
3. Provide means to prevent accidental discharge of sewage by closing the seacock, padlocking the sea cock or diverter valve, or using a non-releasable wire-tie in order to comply with CRF 33.159.7.
4. Inspect portable fire extinguishers monthly. Pressure gauges of dry chemical extinguishers should be checked. Halon type extinguishers should be weighed.  
Recharge or replace units after any discharge and have all units checked annually by a qualified person. A tag should be attached showing the date of such maintenance check (ABYC A-4.Ap.5.4.2 and 6.3).
5. Equip vessel with at least 3 day and 3 night, or 3 day-and-night flares with current dates, in order to meet USCG requirements(33CFR 175.110).
6. Diagnose non- functioning of port side light, stern light and anchor light and repair as found necessary.
7. Equip vessel with a dayshape in the form of a ball (Navigation Rules Annex I).
8. Equip vessel with a bell.
9. Equip vessel with an Oil Discharge Prohibited Placard (33CFR 155.450).
10. Equip vessel with a Waste Discharge Prohibited Placard (33CFR 151.59(b)).

#### Recommendations related to ABYC and/or NFPA standards and other safety issues\*\*

11. Install seacocks at thru-bulls located on waterline.
12. Repair both logs of cockpit drains as found necessary.
13. Affix a label near the stove with the following information:  
"CAUTION: Open-flame appliances consume oxygen. Lack of oxygen can cause asphyxiation or death. Maintain open ventilation when stove is in use." (NFPA 8.5.14.7).
14. Change ethylene glycol antifreeze by propylene glycol which is less toxic and label the engine cooling system to type of antifreeze.
15. Replace LPG tanks valves by new type with over fill protection.
16. Install a pressure gauge in the LPG line within the locker. Provide the LPG locker with a drain directly over board. Replace flexible gas hose by a gas rated hose with end fittings permanently attached to it.
17. Re-locate the radio speaker mounted in the LPG locker.
18. Keep valves of the fuel gauge hoses in the "Closed" position except when checking fuel levels.
19. Applying a label adjacent to each sight gauge containing the following wording:  
"WARNING! Leaking fuel is a fire and explosion hazard. Keep sight gauge valves closed except when checking fuel level." (ABYC H-33.5.8.1 and H-33.16.2.)
20. Tie house batteries down so that they can not move more than 1" in any direction (ABYC E-10.7.4).
21. Protect 120V AC receptacles in galley, head and engine compartment by GFCI's as per NFPA-302 and ABYC E-11.13).
22. In order to meet ABYC and NFPA standards, install two size I fire extinguishers rated for Class A, B and C fires.  
One of the extinguishers should be installed within reach of the helmsman.

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23. *Install a single station smoke alarm, listed to UL217, in the forward state room and one in the salon (NFPA 302-12.3).*
  24. *Install Carbon Monoxide (CO) detectors in the salon and stateroom.  
The power source of the detectors may be self-contained batteries or a direct connection to the energized side of the vessel's battery switch. The detectors should meet the requirements of UL 2034. If a circuit breaker is installed, it should be non-switchable (ABYC A-24).*

### **Recommendations concerning regular maintenance and upgrades\***

25. *Replace sacrificial zincs on transom*
  26. *Re-caulk teak overlay where separated in order to prevent the ingress of water between the overlay and deck. Treat all teak overlay with teak oil.*
  27. *Seal pin hole in port side of rudder. Monitor the rudder for swelling and play between the rudder stock and rudder blade at each haul out. If this occurs, the FRP rudder blade should be opened up for inspection and repairs.*
  28. *Attach soft tapered wood plugs of appropriate size to thru- hull fittings for possible emergency use.*
  29. *It is the surveyor's opinion and a recognized prudent practice, that all through hull valves located below the waterline be closed while the vessel is left unattended, whether alongside a dock, at anchor or at a mooring.*
  30. *Install a LPG gas detector in the lowest point of the hull where vapor will collect, which is near the steps to the forward stateroom (ABYC A-14.8.1).*
  31. *Install check valves in the discharge lines of the bilge pumps.*
  32. *Due to the age of the vessel, it would be prudent undertake a program of preventative maintenance by replacing selected hoses over a period of time.*
  33. *Confirm when crankcase oil of engine and transmission was last changed and change as needed. The oil filters should be replaced at the same time.*
  34. *Check when anti-freeze was last replaced and drain, flush and change as needed*
  35. *Have the propeller shaft/engine alignment checked by a qualified marine mechanic. This should be done when the vessel is in the water and fuel tanks are filled to their normal levels.*
  36. *Monitor the battery cables regularly for signs of corrosion and damage to insulation. Replace when found necessary*
  37. *Replace Danforth anchor by a heavier Danforth anchor such as model TII-2500.*
  38. *Pull up anchor rodes from anchor locker and check their condition.*
  39. *Swing the compass or perform checks with GPS readings.\**
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