

**IAN WHITE**  
ACCREDITED MARINE SURVEYOR®

**1988 CS 36 Merlin**



MEMBER OF THE SOCIETY OF ACCREDITED MARINE SURVEYORS®(SAMS®)

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# Report of Marine Survey

Of The Vessel



1988 CS 36 Merlin

Conducted by  
Ian M. White

ACCREDITED MARINE SURVEYOR®

PREPARED FOR:



September 11, 2015

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# I. INTRODUCTION

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## SCOPE OF SURVEY

Acting at the request of [REDACTED], the attending surveyor did attend onboard the *1988 CS 36 Merlin*, [REDACTED] on , September 10, 2015 1000-1330 where an out-of the water survey and inspection of underwater machinery and the exterior of the hulls wetted surface area was performed at , Collins Bay Marina, Kingston, Ontario. The Hull Identification Number [REDACTED] was verified from the transom. A sea trial was not performed. The reason for the survey, was to ascertain the physical condition and value of the vessel. Moisture readings taken and referenced throughout the body of the report, were taken with the Rayplex Dolphin moisture meter. DC power was used to check operation of the electrical systems specified in this report. No AC power was available. No reference or information should be construed to indicate evaluation of the internal condition of the engines or the propulsion systems operating capacity. Electronic equipment was checked for "power up."

This vessel was surveyed without removals of any parts, including fittings, tacked carpet, screwed or nailed boards, anchors and chain, fixed partitions, instruments, clothing, spare parts and miscellaneous materials in the bilges and lockers, or other fixed or semi-fixed items. Locked compartments or otherwise inaccessible areas would also preclude inspection. Owner is advised to open up all such areas for further inspection. Further, no determination of stability characteristics or inherent structural integrity has been made and no opinion is expressed with respect thereto. This survey report represents the condition of the vessel on the above dates, and is the unbiased opinion of the undersigned, but it is not to be considered an inventory or a warranty either specified or implied.

### CONDUCT OF SURVEY:

TRANSPORT CANADA "CONSTRUCTION STANDARDS FOR SMALL VESSELS, TP1332E," AND TRANSPORT CANADA "SAFE BOATING GUIDE, TP 511E," AND THE VOLUNTARY STANDARDS AND RECOMMENDED PRACTICES DEVELOPED BY THE AMERICAN BOAT AND YACHT COUNCIL (ABYC) HAVE BEEN USED AS GUIDELINES IN THE CONDUCT OF THIS SURVEY.

NOTE: It is recommended and understood that all DIESEL/GAS engines be surveyed by a qualified Engine Surveyor to determine the condition of the engines, gears and pumps, heat exchangers, coolers, etc.

NOTE: It is recommended and understood that all sails be surveyed by a qualified Sail maker to determine their condition, etc.

# I. INTRODUCTION

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## VESSEL DESCRIPTION

[REDACTED] 1988 CS 36 Merlin is a sloop rigged, fin keel, displacement sailing vessel with a keel stepped mast and blade rudder hung on a short skeg. The vessel is constructed of fibre reinforced plastic (FRP) and is white in color with a copper bottom and navy blue boot and gold cove stripe. She has an ample foredeck, low profile raised cabin and large aft cockpit. Below decks she has a forward cabin with a V berth and head aft to starboard with lockers to port. There is a large salon with dinette to starboard and settee to port with a drop leaf table between. The galley encompasses the aft portion of the main saloon to port and to starboard is the navigation station and access to the aft cabin under the cockpit. The vessel has white FRP decks and cabin tops and a blue canvas dodger.

## II. GENERAL INFORMATION

### GENERAL INFORMATION

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FILE NUMBER: .....	1548
SURVEY PREPARED FOR: .....	[REDACTED]

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NAME OF VESSEL: .....	[REDACTED]
TYPE OF SURVEY: .....	Condition and valuation survey
OVERALL VESSEL RATING: .....	AVERAGE
ESTIMATED MARKET VALUE: .....	\$45,000.00
ESTIMATED REPLACEMENT COST: .....	\$324,500.00
YEAR/MAKE/MODEL OF VESSEL: .....	1988 CS 36 Merlin
YEAR BUILT: .....	1988
HULL IDENTIFICATION NUMBER (HIN): .....	[REDACTED]
HOME PORT: .....	Kingston Yacht Club, Kingston ON.
REGISTRATION NUMBER: .....	[REDACTED]
PLACE OF SURVEY: .....	Collins Bay Marina, Kingston, Ontario
DATE/TIME OF SURVEY: .....	September 10, 2015 1000-1330
HULL MATERIAL: .....	FRP (Fiber Reinforced Plastic).
HULL TYPE: .....	Full displacement hull, fin keel and skeg mounted rudder.
LENGTH OVER ALL (L.O.A.): .....	36 ft. 3 in. per BUC
BEAM: .....	11 ft. 6 in. per BUC
DRAFT: .....	6 ft. 3 in. per BUC
DISPLACEMENT: .....	13000 lb. per BUC
PROPULSION SYSTEM: .....	Sail and auxiliary diesel.
FUEL TYPE: .....	Diesel.
INTENDED USE: .....	Coastal Cruising

## II. GENERAL INFORMATION

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### DEFINITION OF TERMS:

The terms and words used in this report have the following meanings as used in this Report of survey:

**APPEARS:** Indicates that a very close inspection of the particular system, component or item was not possible due to constraints imposed upon the surveyor(e.g. no power available, inability to remove panels, or requirements not to conduct destructive tests).

**FIT FOR INTENDED USE:** Use which is intended by Survey Purchaser(present or prospective owner).

**SERVICEABLE:** Fit for use.

**ADEQUATE:** Sufficient for a specific requirement.

**POWERS UP:** Power was applied only. This does not refer to the operation of any system or component unless specifically indicated.

**EXCELLENT CONDITION:** New or like new.

**GOOD CONDITION:** Nearly new, with only minor cosmetic or structural discrepancies noted.

**FAIR CONDITION:** Denotes that system, component or item is functional as is with minor repairs.  
(MONITOR OFTEN)

**POOR CONDITION:** Unusable as is. Requires repairs or replacement of system, component or item to be considered functional.

**SOUND:** Free from defect, decay, or damage; in good condition.

# III. SYSTEMS

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## HULL DECK AND SUPERSTRUCTURE

### EXTERIOR HULL & UNDERWATER MACHINERY

TYPE:

Full displacement hull, fin keel and skeg mounted rudder.

MATERIAL:

FRP (Fiber Reinforced Plastic).

PORTLIGHTS:

None in hull.

STEM:

Sound.

TRANSOM:

**\*C1**

Sound

KEEL EXTERNAL:

**\*B1**

Keel is attached directly to hull.

CONDITION & MOISTURE CONTENT:

**\*B2, B3**

The anti foul paint is serviceable. There are no signs of blisters. The hull was percussion tested throughout with no remarkable findings.

The Rayplex Dolphin meter was used to check the full area of the hull of the vessel using a comparative scale of 0-30 where 0-15 is dry, 16-23 is medium and 24-30 is wet. The findings are as follows:

Topsides above the waterline - 5-10

At the waterline on the anti foul paint - 10- 15.

Below the waterline - 15-25. Progressively higher readings were encountered as the depth below the waterline increased.

Note: Readings were taken from the interior of the vessel beneath the aft berth, in the cockpit locker and under the V berth and found to be 10-15 in areas where below they were 20-25. Interference with the moisture meter on the exterior is possible due to marine growth, the barrier coat and or the recent removal of the vessel from the water.

Rudder - 30. Soundings of the rudder indicate that the core is wet and possibly de laminating.

Penetration damaged sighted on port side aft 18 in. above waterline.

PROPELLER:

Gori prop. Sound.

# III. SYSTEMS

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## HULL DECK AND SUPERSTRUCTURE

### EXTERIOR HULL & UNDERWATER MACHINERY (*continued*)

PROPELLER SHAFT(S):

Stainless steel. Sound

SHAFT BEARING(CUTLASS):

Serviceable.

STRUT(S):

Single strut. Sound.

RUDDER(MATERIAL):

FRP

RUDDER (MOUNTING):

Blade rudder mounted through stern rudder tube and hinged to bottom of short skeg.  
Serviceable.

THRU HULLS, TRANSDUCERS (SCOOPS, STRAINERS, SCREENS):

All sound.

GROUNDING PLATE(S):

None sighted.

ZINCS:

1 Sighted on propeller shaft. Serviceable

### DECK

TYPE:

Molded FRP with integral cockpit and cabin coach roof.

COCKPIT:

Integral with deck mold.

CONDITION & MOISTURE CONTENT:

**\*B4**

Condition sound. The Rayplex Dolphin meter was used to check the full area of the deck, deckhouse and cockpit of the vessel using a comparative scale of 0-30 where 0-15 is dry, 16-23 is medium and 24-30 is wet. The findings are as follows:

The entire area of the deck, cabin top and cockpit was tested and found to be 5-10 except for the starboard side deck from abeam the head hatch to abeam the starboard sheet winch which was found to be 20 -30 generally 25. Soundings of this area compared to the opposite deck are indicative of a presence of moisture in the lay up.

### HULL-TO-DECK JOINT

TYPE:

Visible from the fore peak in the chain locker the hull to deck joint was of the deck overlap type (coffee can approach) with stainless bolt fasteners on estimated 8" centers. Appeared serviceable where sighted. No indications of water intrusion.

# III. SYSTEMS

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## HULL DECK AND SUPERSTRUCTURE

### HULL-TO-DECK JOINT (*continued*)

**BEDDING COMPOUND:**

Reported to a butyl tape. Visible in places.

**REINFORCEMENT:**

Fastened through aluminum toe rail.

### DECK FITTINGS

**PUSHPIT (STERN PULPIT):**

SS tubular Steel. Sound.

**BOW PULPIT (BOW RAIL):**

SS rails. Sound.

**STANCHIONS:**

Stainless steel stanchions and cable lifelines, run perimeter of deck from boarding gate to boarding gate port to starboard. Appears serviceable.

**TOE RAILS:**

Aluminum Toe Rail system. Appears sound.

**VENTILATION:**

Adequate as provided by ports and hatches.

**SCUPPERS:**

Decks drain overboard. Cockpit has scuppers at port and starboard aft corners. Appears serviceable.

**CHOCKS AND CLEATS:**

Chocks and cleats appeared to be stainless steel all sighted were thru-bolted and serviceable.

**WINDLASS/GIPSY:**

None Sighted.

**HAWSE PIPES:**

None sighted.

**DECK SURFACE:**

White gel coat with molded in non-skid. Condition is serviceable.

**HATCHES:**

4 opening deck hatches located on cabin top appear sound.

**GRAB RAIL:**

Stainless steel grab rails on cabin house. Sound.

### SUPERSTRUCTURE (DECKHOUSE)

**MATERIAL/TYPE:**

Cabin house and deck are one unit molded FRP (fiber reinforced plastic). Sound

# III. SYSTEMS

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## HULL DECK AND SUPERSTRUCTURE

### SUPERSTRUCTURE (DECKHOUSE) *(continued)*

WINDOWS/PORTS/DOORS:  
Sound.

FITTINGS AND HARDWARE:  
All sound.

JOINERY STRESS:  
None Sighted.

CANVAS AND SUPPORT STRUCTURE:  
**\*C2**

Blue canvas cockpit dodger on steel frames. Serviceable.

SUPERSTRUCTURE HOUSE TO DECK JOINT:  
Deck house and deck appeared to be molded seamlessly, no joint was observed . Serviceable.

### HULL INTERIOR (STRUCTURAL & MECHANICAL)

BULKHEADS:  
Sound as sighted through lockers in the main salon, head, storage lockers and forward cabin.

STRINGERS:  
Engine stringers are dry and sound.

BILGE:  
Clean. Some standing water in bilge beneath table.

CHAIN LOCKER & DRAINAGE:  
Drains overboard, starboard bow.

KEEL AND KEEL BOLTS:  
Appear sound.

### ADDITIONAL EQUIPMENT AND ACCESSORIES

ACCESSORIES:  
Portable BBQ sighted in aft locker.

FENDERS:  
Adequate sighted

DOCK LINES:  
Adequate sighted.

# III. SYSTEMS

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## CABIN APPOINTMENTS

### GENERAL:

#### JOINERY AND FINISH:

In serviceable condition.

#### WATER INTRUSION SIGNS:

Headliners and ports appear dry.

#### STORAGE AREAS:

Clean and dry.

#### HEADLINERS:

Clean and well maintained.

#### DOORWAYS:

Sound.

#### CABIN SOLE:

Teak and holly, serviceable.

#### FLOOR AND WINDOW COVERINGS:

None sighted.

#### LIGHT FIXTURES:

12 volt cabin lights throughout the vessel. all serviceable.

#### FABRIC AND CUSHIONS:

Appeared Serviceable.

#### VENTILATION:

Adequate

### GALLEY AND HEAD(S)

#### GALLEY LOCATION:

Port side aft.

#### GALLEY SINK(S):

Double Stainless steel. Serviceable.

#### REFRIGERATION:

Cold plate refrigeration in galley. Compressor in cockpit locker. Not tested.

#### STOVE/OVEN:

Force 10 3 burner propane with oven. Not tested. Appears to be in serviceable condition.

#### MICROWAVE:

None Sighted.

#### HEAD(S) LOCATION:

Forward to starboard.

# III. SYSTEMS

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## CABIN APPOINTMENTS

### GALLEY AND HEAD(S) *(continued)*

SHOWER/TUB:

None sighted. Hand held shower head.

VANITY(S), SINK(S) & FAUCETTES:

All sound.

WATER PRESSURE PUMP(S):

Pressure water pump powers up.

## PROPULSION

### MAIN ENGINES

MANUFACTURER, TYPE, HP & # OF CYLINDERS:

Volvo Penta 28D 2003

SERIAL NUMBERS:

2300030938

INDICATED HOURS:

Not sighted.

THROTTLE CONTROLS:

Mechanical lever at helm. Sound

ENGINE MOUNTS AND BED:

Sound and dry.

DRIP PANS:

None sighted.

VENTILATION:

Adequate.

EXHAUST SYSTEM:

**\*B5**

The Aqua lift Vetus type exhaust system was serviceable where sighted.

INSULATION:

**\*C3**

Sound deadening insulation was noted in engine room.

ENGINE ALARMS:

At helm. Not tested.

ENGINE SHUT DOWN:

At helm. Not tested.

# III. SYSTEMS

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## PROPULSION

### MAIN ENGINES (*continued*)

CONDITION AND DEFICIENCIES:

Engine appeared serviceable. Engine started well and produced clean exhaust and cooling water.

### COOLING SYSTEM

TYPE:

Freshwater reservoir type cooling with raw water cooled wet exhaust.

RAW WATER STRAINERS:

None sighted.

HOSES AND CLAMPS:

All appear sound well organized.

BELTS AND PULLEYS:

Belts condition appears serviceable.

SEACOCKS AND STRAINERS:

Raw water seacock was a ball valve type and was operable.

### TRANSMISSIONS

MANUFACTURER, TYPE:

Volvo

CONTROLS:

Mechanical lever at helm.

PROP SHAFT:

Stainless steel. Sound.

COUPLER (SAFETY WIRE):

Yes, safety Wired.

PACKING GLAND:

Hex type bronze nut packing glands. Appeared serviceable.

## FUEL SYSTEM

### MAIN ENGINE(S) FUEL SYSTEM

FUEL TYPE:

Diesel.

TANK MATERIAL & LOCATION:

Metal tank under cockpit.

SECURED:

Yes

# III. SYSTEMS

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## FUEL SYSTEM

### MAIN ENGINE(S) FUEL SYSTEM *(continued)*

MANUFACTURING LABEL:

None Sighted.

FILL PIPE LOCATIONS:

Port side deck, aft.

FILL PIPE GROUNDED:

**\*B6**

Not grounded.

HOSE CONNECTIONS, CLAMPS:

Appears serviceable and approved where sighted.

FUEL LINES AND FITTINGS:

Approved materials and clamps.

SHUT-OFF VALVE:

None sighted.

FUEL FILTERS:

Racor type located under aft berth. Sound.

## ELECTRICAL SYSTEMS

### ELECTRICAL SYSTEM (D.C. SYSTEM)

VOLTAGE:

12V

BATTERIES:

Three batteries. One starter battery in engine compartment. 2 house batteries located in box under galley counter aft - not accessible for inspection.

MAIN BATTERY SWITCHES:

Under navigation table.

PANEL:

At Navigation station.

BREAKERS/FUSES:

On panel.

ROUTING/SUPPORT & CONNECTORS:

Well supported and secured where sighted.

CHARGING SYSTEM (BATTERY CHARGER):

Xantrex TrueCharger - 20 A Not tested.

CHARGING SYSTEM (ALTERNATOR):

On engine.

# III. SYSTEMS

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## ELECTRICAL SYSTEMS

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

OUTLETS:

None Sighted.

### ELECTRICAL SYSTEM (A.C. SYSTEM)

SHORE POWER INLET:

Located in anchor locker.

SHORE POWER CORD:

Cord stored in the anchor locker.

MAIN BREAKER:

Yes in the main electrical panel at the navigation station.

BRANCH BREAKERS:

3

CIRCUIT LOAD MONITORS:

None sighted.

WIRE TYPE (SIZE AND RATING):

Size and rating, where sighted, appears well routed and supported, serviceable for intended use.

ROUTING AND CONNECTORS:

Well routed and supported where sighted.

OUTLETS:

**\*A1**

Various A.C. outlets available throughout yacht, appear adequate and conveniently located. Not tested for polarity or for GFCI protection due to no AC power available.

POLARITY:

Not tested.

GALVANIC ISOLATOR:

None Sighted.

## FRESH WATER SYSTEM

### FRESH WATER SYSTEM: (POTABLE WATER)

STORAGE TANKS MATERIAL, NUMBER AND CAPACITY:

2 plastic tanks located under port and starboard settees.

FILL PIPE LOCATION:

Side decks, port and starboard.

VENT PIPE LOCATION:

topsides

# III. SYSTEMS

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## FRESH WATER SYSTEM

### FRESH WATER SYSTEM: (POTABLE WATER) *(continued)*

ACCUMULATOR TANK:

None Sighted.

PUMPS:

A 12 volt demand diaphragm type water pump. Powers up.

FILTERS:

None Sighted.

HOSES AND CLAMPS:

PVC pipe, and reinforced plastic tubing at various areas throughout vessel, copper lines sighted at fixtures and appliances. Appears serviceable where sighted.

DOCK SIDE PRESSURE REGULATOR:

None Sighted.

### FRESH WATER SYSTEM (HOT WATER SYSTEM)

MANUFACTURER, TYPE AND CAPACITY:

Unit located aft of cockpit. Not accessible for inspection.

PRESSURE RELIEF VALVE:

Yes

HEAT EXCHANGER AND PLUMBING:

Not sighted.

## SANITATION

### SANITATION (BLACK WATER)

HEAD(S) MANUFACTURER & TYPE:

Wilcox toilet.

LOCATION OF HEADS:

Forward to starboard

RAW WATER SUPPLY AND CLAMPS:

**\*B7**

Yes, appears serviceable where sighted.

DISCHARGE HOSES AND CLAMPS:

Sound as sighted at head and holding tank.

PUMP-OUT LOCATION:

Port side forward.

SYSTEM INSTALLATION:

Sound.

## III. SYSTEMS

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### SANITATION

#### SANITATION (BLACK WATER) *(continued)*

HOLDING TANK(S) TYPE AND CAPACITY:  
Forward under v berth.

#### SANITATION (GREY WATER)

BASINS, SHOWERS, HOSES AND CLAMPS:  
The basins and showers on this vessel drain overboard in the near vicinity of the specific basin or shower pan. No sump collection sighted.

### STEERING SYSTEM

#### STEERING SYSTEM

MANUFACTURER & TYPE:  
Pedestal type.

PULLEYS, CABLE AND CHAIN CONDITION:  
None sighted due to access.

RUDDER STOCK:  
Stainless steel rudder stock size not determined due to access.

PACKING GLAND:  
Not sighted.

EMERGENCY TILLER:  
Yes, access in cockpit locker; tiller arm was sighted in the lazarette.

### GROUND TACKLE

#### GROUND TACKLE

ANCHORS:  
1 Plow mounted on rollers.

RODE MATERIAL:  
Chain and nylon sighted in anchor locker.

WINDLASS:  
None Sighted.

### ELECTRONICS AND NAVIGATION EQUIPMENT

#### ELECTRONICS AND NAVIGATION EQUIPMENT

VHF:  
Standard Horizon Quest-X GX1500S. Powers up  
West Marine handheld VHF - nt tested.

AUTOHELM:  
Auto helm ST 4000 instrument sighted. Not tested.

## III. SYSTEMS

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### ELECTRONICS AND NAVIGATION EQUIPMENT

#### ELECTRONICS AND NAVIGATION EQUIPMENT *(continued)*

SPEED LOG:

Raymarine powers up.

DEPTH SOUNDER:

Raymarine powers up.

COMPASSES:

**\*B8**

6" Galaxy.

OTHER:

Raymarine wind - powers up.

#### ELECTRONICS (ENTERTAINMENT)

STEREO SYSTEM:

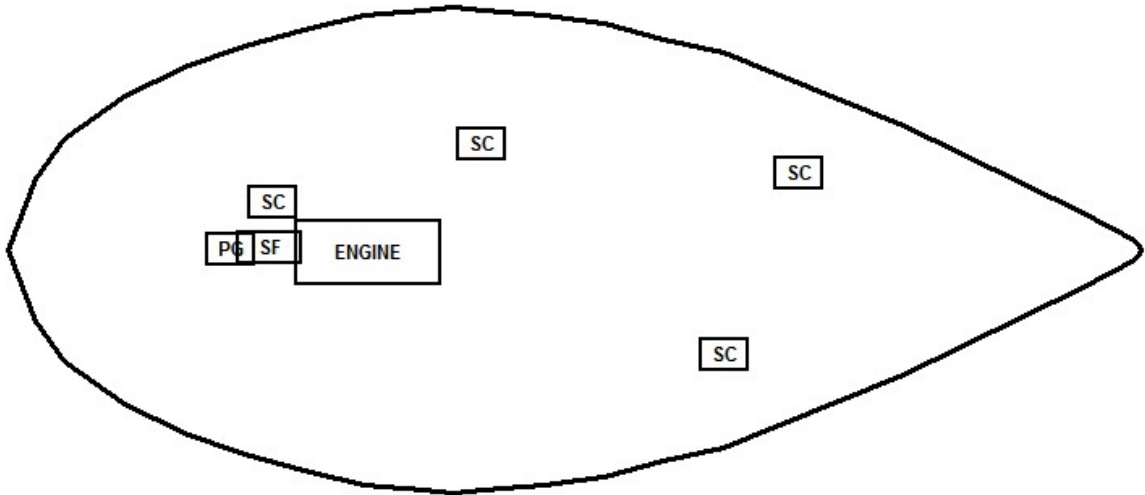
None sighted.

# III. SYSTEMS

## THRU-HULLS

### THRU-HULLS:

THRU-HULLS BELOW WATER LINE (DIAGRAM):



Abbreviation	Description
ENGINE	Engine
PG	Pkng Gland
SC	Seacock
SF	Shaft

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

#### NOTE:

The below the water line thru-hull valves on this vessel were ball valve type and were all operable.

#### BONDED:

No bonding of thru hulls sighted.

#### FILL PIPES AND VENTS:

All appear serviceable.

#### GALVANIC ISOLATION:

None Sighted.

#### DRAIN PLUGS:

None sighted

# III. SYSTEMS

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## SAFETY EQUIPMENT

### SAFETY EQUIPMENT (TRANSPORT CANADA)

NUMBER AND TYPE OF PFD'S:

Several sighted.

NUMBER OF THROWABLE PFD'S:

1 Life ring sighted.

FIRE EXTINGUISHERS:

**\*B9**

One sighted in aft locker. One sighted in main saloon. Both pressurized but not tagged as inspected.

VISUAL DISTRESS SIGNALS:

Expired flares sighted.

SOUND DEVICES:

None Sighted.

NAVIGATION LIGHTS:

**\*A2**

Port starboard and stern lights are serviceable. Steaming Light and anchor light at mast head are not serviceable.

NOTE:

**\*A3**

It is the responsibility of the vessel operator to ensure that the vessel is equipped and operated in accordance with Transport Canada Safe Boating Guide (TP511) on each occasion of use.

OTHER:

**\*B10**

Boarding ladder is tied in the up position.

### AUXILIARY SAFETY EQUIPMENT

LIFE RAFT:

None sighted.

E.P.I.R.B.:

None Sighted. But highly recommended.

SMOKE DETECTOR:

**\*B11**

None Sighted. Highly recommended.

# III. SYSTEMS

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## SAFETY EQUIPMENT

### AUXILIARY SAFETY EQUIPMENT (*continued*)

BILGE WATER ALARM AND SAFETY SWITCHES:

**\*B12**

None sighted. Highly recommended.

FIXED FIRE EXTINGUISHING SYSTEM/ FIRE EXTINGUISHER PORT:

**\*B13**

None sighted.

SEARCH LIGHT:

None sighted.

FIRST AID KIT:

None sighted. Highly recommended.

FUME SNIFFER ALARM SYSTEMS:

None sighted.

CARBON MONOXIDE DETECTOR:

**\*B14**

none sighted.

### BILGE PUMPS

LIST:

1 electric. 1 manual. Manual not tested. Electric seems to be automatic only and is controlled by sealed float switch. Did not power up.

## LIQUIFIED PETROLEUM GAS SYSTEM (LPG)

### LIQUIFIED PETROLEUM GAS SYSTEM (LPG)

GENERAL:

**\*B15**

LPG.

LOCATION:

Port and starboard aft seat lockers.

REGULATOR:

Yes

PRESSURE GAUGE:

No

SHUT-OFFS:

Yes at tanks.

# III. SYSTEMS

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## LIQUIFIED PETROLEUM GAS SYSTEM (LPG)

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

LINES AND FITTINGS:

Not sighted except at tank where they are sound.

COVER AND GASKET:

Cover is not gasket and is not secured.

DRAINS, VENTILATION:

Drains overboard thru locker bottom.

## STANDING RIGGING

### STANDING RIGGING

MAST:

Mast surveyed from deck as sound.

MAST STEP:

Not visible with mast stepped.

SPREADERS:

Double spreader rig.

SHROUDS AND STAYS:

**\*B16**

Rod rigging. Appears serviceable but has exceeded the manufacturers recommended service life.

BOOMS:

Aluminum boom with mechanical vang. Appeared Serviceable.

TURNBUCKLES:

Stainless turnbuckles of the open design appeared serviceable.

CHAIN PLATES:

**\*B17**

Chain plates sighted from deck only are serviceable.

OTHER:

**\*B18**

The stern boarding ladder is tied into the up position and is not accessible from the water.

## RUNNING RIGGING

### RUNNING RIGGING

WINCHES:

2 Lewmar 52 sheet winches.

2 Lewmar 45 Halyard winches. Serviceable.

## III. SYSTEMS

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### RUNNING RIGGING

#### RUNNING RIGGING *(continued)*

SAIL TRACK:

Two deck mounted sail tracks port and starboard. Appeared serviceable.

MAIN SHEET TRAVELER:

**\*B19**

Mainsheet traveler forward of wheel. Appeared serviceable.

ROLLER FURLING GEAR:

Profurl system appears serviceable.

### SAILS

#### SAILS

GENERAL:

Sighted but not inspected.

## IV. FINDINGS AND RECOMMENDATIONS

Deficiencies noted under "**SAFETY**" should be addressed before vessel is next underway. These findings represent an endangerment to personnel and/or the vessel's safe and proper operating condition. *Findings may also be in violation of Transport Canada regulations.*

Deficiencies noted under "**OTHER DEFICIENCIES**" should be corrected in the near future so as to maintain standards and to help the vessel to retain it's value.

Deficiencies will be listed under the appropriate heading:

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

### A. SAFETY DEFICIENCIES:

#### A.1 (PAGE 13) OUTLETS:

Various A.C. outlets available throughout yacht, appear adequate and conveniently located. Not tested for polarity or for GFCI protection due to no AC power available.	
FINDINGS	RECOMMENDATIONS
<b>Unable to test outlets for polarity and GFCI conformity.</b>	<i>Test when system is connected to shore power and repair if necessary.</i>

#### A.2 (PAGE 18) NAVIGATION LIGHTS:

Port starboard and stern lights are serviceable. Steaming Light and anchor light at mast head are not serviceable.	
FINDINGS	RECOMMENDATIONS
<b>Navigation lights not operable.</b>	<i>Ensure that Navigation lights are serviceable in accordance with Transport Canada Safety requirements specified in TP511 prior to next use of the vessel.</i>

#### A.3 (PAGE 18) NOTE:

It is the responsibility of the vessel operator to ensure that the vessel is equipped and operated in accordance with Transport Canada Safe Boating Guide (TP511) on each occasion of use.	
FINDINGS	RECOMMENDATIONS
<b>Check vessel equipment prior to each use.</b>	<i>Ensure vessel is equipped in accordance with Transport Canada Safe Boating Guide (TP511) prior to each use.</i>

## IV. FINDINGS AND RECOMMENDATIONS

### B. OTHER DEFICIENCIES NEEDING ATTENTION:

#### B.1 (PAGE 5) KEEL EXTERNAL:

Keel is attached directly to hull.	
FINDINGS	RECOMMENDATIONS
<p><b>Keel to hull joint is roughly faired. The keel to hull joint is open at the aft end 6-8 inches. Keel bolts are dirty but show no signs of corrosion. Reportedly, at construction, the top of the keel was dressed with FRP chopped strand filler and then attached to the hull with keel bolts. No motion in the keel was detected as the vessel was hauled and placed on blocks. While the gap at the aft of the keel is a concern, there are no other indications that the current installation is not sound.</b></p>	<p><i>Investigate further. Repair as necessary. Full service by an expert.</i></p>

#### B.2 (PAGE 5) CONDITION & MOISTURE CONTENT:

<p>The anti foul paint is serviceable. There are no signs of blisters. The hull was percussion tested throughout with no remarkable findings.</p> <p>The Rayplex Dolphin meter was used to check the full area of the hull of the vessel using a comparative scale of 0-30 where 0-15 is dry, 16-23 is medium and 24-30 is wet. The findings are as follows:</p> <p>Topsides above the waterline - 5-10          At the waterline on the anti foul paint - 10- 15.          Below the waterline - 15-25. Progressively higher readings were encountered as the depth below the waterline increased.</p> <p>Note: Readings were taken from the interior of the vessel beneath the aft berth, in the cockpit locker and under the V berth and found to be 10-15 in areas where below they were 20-25. Interference with the moisture meter on the exterior is possible due to marine growth, the barrier coat and or the recent removal of the vessel from the water.</p> <p>Rudder - 30. Soundings of the rudder indicate that the core is wet and possibly de laminating.</p> <p>Penetration damaged sighted on port side aft 18 in. above waterline.</p>	
FINDINGS	RECOMMENDATIONS
<p><b>Penetration damage.</b></p>	<p><i>Further investigate and repair as necessary.</i></p>

## IV. FINDINGS AND RECOMMENDATIONS

### B. OTHER DEFICIENCIES NEEDING ATTENTION:

#### B.3 (PAGE 5) CONDITION & MOISTURE CONTENT:

The anti foul paint is serviceable. There are no signs of blisters. The hull was percussion tested throughout with no remarkable findings.

The Rayplex Dolphin meter was used to check the full area of the hull of the vessel using a comparative scale of 0-30 where 0-15 is dry, 16-23 is medium and 24-30 is wet. The findings are as follows:

Topsides above the waterline - 5-10

At the waterline on the anti foul paint - 10- 15.

Below the waterline - 15-25. Progressively higher readings were encountered as the depth below the waterline increased.

Note: Readings were taken from the interior of the vessel beneath the aft berth, in the cockpit locker and under the V berth and found to be 10-15 in areas where below they were 20-25. Interference with the moisture meter on the exterior is possible due to marine growth, the barrier coat and or the recent removal of the vessel from the water.

Rudder - 30. Soundings of the rudder indicate that the core is wet and possibly de laminating.

Penetration damaged sighted on port side aft 18 in. above waterline.

FINDINGS	RECOMMENDATIONS
High moisture readings and possible delamination of rudder.	Investigate further and repair or renew as necessary.

#### B.4 (PAGE 6) CONDITION & MOISTURE CONTENT:

Condition sound. The Rayplex Dolphin meter was used to check the full area of the deck, deckhouse and cockpit of the vessel using a comparative scale of 0-30 where 0-15 is dry, 16-23 is medium and 24-30 is wet. The findings are as follows:

The entire area of the deck, cabin top and cockpit was tested and found to be 5-10 except for the starboard side deck from abeam the head hatch to abeam the starboard sheet winch which was found to be 20 -30 generally 25. Soundings of this area compared to the opposite deck are indicative of a presence of moisture in the lay up.

FINDINGS	RECOMMENDATIONS
Higher moisture readings.	Investigate further to determine the source of water penetration to the deck and take steps to repair so as to prevent further damage. Monitor deck condition on an annual basis and repair when/if necessary.

## IV. FINDINGS AND RECOMMENDATIONS

### B. OTHER DEFICIENCIES NEEDING ATTENTION:

#### B.5 (PAGE 10) EXHAUST SYSTEM:

The Aqua lift Vetus type exhaust system was serviceable where sighted.	
FINDINGS	RECOMMENDATIONS
<b>Flexible exhaust hose from muffler to exit point is starting to crack and deteriorate.</b>	<i>Refit, refinish, refurbish, or replace as necessary.</i>

#### B.6 (PAGE 12) FILL PIPE GROUNDED:

Not grounded.	
FINDINGS	RECOMMENDATIONS
<b>Fuel fill not grounded to tank as per Transport Canada requirements</b>	<i>Ground fuel fill to tank in accordance with Transport Canada TP 1332 7.9.</i>

#### B.7 (PAGE 14) RAW WATER SUPPLY AND CLAMPS:

Yes, appears serviceable where sighted.	
FINDINGS	RECOMMENDATIONS
<b>Raw water intake hose is cracked.</b>	<i>Further investigate and repair as necessary.</i>

#### B.8 (PAGE 16) COMPASSES:

6" Galaxy.	
FINDINGS	RECOMMENDATIONS
<b>Compass is cloudy and sun damaged.</b>	<i>Refit, refinish, refurbish, or replace as necessary.</i>

#### B.9 (PAGE 18) FIRE EXTINGUISHERS:

One sighted in aft locker. One sighted in main saloon. Both pressurized but not tagged as inspected.	
FINDINGS	RECOMMENDATIONS
<b>None of the extinguishers have recent inspection tags.</b>	<i>Have Fire extinguishers inspected annually and tagged in accordance with NFPA 10, CHP 7.</i>

#### B.10 (PAGE 18) OTHER:

Boarding ladder is tied in the up position.	
FINDINGS	RECOMMENDATIONS
<b>Not possible to re board the vessel from the water.</b>	<i>Arrange ladder so that it can be released from the water.</i>

## IV. FINDINGS AND RECOMMENDATIONS

### B. OTHER DEFICIENCIES NEEDING ATTENTION:

#### B.11 (PAGE 18) SMOKE DETECTOR:

None Sighted. Highly recommended.	
FINDINGS	RECOMMENDATIONS
<b>No smoke detector sighted.</b>	<i>Install smoke detector in accordance with NFPA 302 12.2 standards.</i>

#### B.12 (PAGE 19) BILGE WATER ALARM AND SAFETY SWITCHES:

None sighted. Highly recommended.	
FINDINGS	RECOMMENDATIONS
<b>No bilge high water alarm sighted.</b>	<i>Install bilge high water alarm in accordance with ABYC H22.7.3.</i>

#### B.13 (PAGE 19) FIXED FIRE EXTINGUISHING SYSTEM/ FIRE EXTINGUISHER PORT:

None sighted.	
FINDINGS	RECOMMENDATIONS
<b>No fire suppression in engine box.</b>	<i>Install fixed fire fighting equipment in engine compartment OR install a firefighting port in accordance with NFPA 302 chp. 12</i>

#### B.14 (PAGE 19) CARBON MONOXIDE DETECTOR:

none sighted.	
FINDINGS	RECOMMENDATIONS
<b>No Carbon Monoxide detector sighted.</b>	<i>Recommend installation. This is a living space.</i>

#### B.15 (PAGE 19) GENERAL:

LPG.	
FINDINGS	RECOMMENDATIONS
<b>System is not fully compliant with ABYC standards.</b>	<i>Refit propane locker and equipment in accordance with ABYC A-1. Tanks should be in a top loading locker with latched and gasketed lid. The locker should be dedicated to the storage of propane. The locker should be sealed from the vessel interior and drained directly overboard with a drain located in the bottom of the storage container. The tanks should be equipped with regulator, pressure guage and solinoid cutoff switch controlled from the device.</i>

## IV. FINDINGS AND RECOMMENDATIONS

### B. OTHER DEFICIENCIES NEEDING ATTENTION:

#### B.16 (PAGE 20) SHROUDS AND STAYS:

Rod rigging. Appears serviceable but has exceeded the manufacturers recommended service life.	
FINDINGS	RECOMMENDATIONS
Rig exceeds expected service life.	Investigate further. Repair or replace as necessary. Full service by an expert.

#### B.17 (PAGE 20) CHAIN PLATES:

Chain plates sighted from deck only are serviceable.	
FINDINGS	RECOMMENDATIONS
Chain plate attachments to vessel are covered so as to prevent inspection.	Remove covers and inspect during seasonal maintenance.

#### B.18 (PAGE 20) OTHER:

The stern boarding ladder is tied into the up position and is not accessible from the water.	
FINDINGS	RECOMMENDATIONS
No means or re boarding the vessel from the water.	Arrange the release of the boarding ladder so that it can be released from the water.

#### B.19 (PAGE 21) MAIN SHEET TRAVELER:

Mainsheet traveler forward of wheel. Appeared serviceable.	
FINDINGS	RECOMMENDATIONS
Cable extension used to connect sheet to boom is SS wire covered with vinyl. Vinyl is cracked, cable exposed appears to be deteriorating.	Investigate further and repair or renew as necessary.

### C. SURVEYOR'S NOTES AND OBSERVATIONS:

#### C.1 (PAGE 5) TRANSOM:

Sound	
FINDINGS	RECOMMENDATIONS
Port side gel coat damage at corner.	Further investigate and repair as necessary.

#### C.2 (PAGE 8) CANVAS AND SUPPORT STRUCTURE:

Blue canvas cockpit dodger on steel frames. Serviceable.	
FINDINGS	RECOMMENDATIONS
Canvas is serviceable but worn and slightly faded.	Monitor condition and replace when necessary.

## IV. FINDINGS AND RECOMMENDATIONS

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### C. SURVEYOR'S NOTES AND OBSERVATIONS:

#### C.3 (PAGE 10) INSULATION:

Sound deadening insulation was noted in engine room.

<b>FINDINGS</b>	<b>RECOMMENDATIONS</b>
<b>Insulation appears to be deteriorating and dust is accumulating in the engine space. Some material held in place with duct tape.</b>	<i>Refit, refinish, refurbish, or replace as necessary.</i>

## V. SUMMARY AND VALUATION

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### STATEMENT OF OVERALL VESSEL RATING OF CONDITION:

It is the surveyor's experience that develops an opinion of the **OVERALL VESSEL RATING OF CONDITION** After a the survey has been completed and the findings have been organized in a logical manner.

The grading of condition, developed by **BUC RESEARCH**, and accepted in the marine industry, for a vessel at the time of survey, determines the adjustment to the range of base values in the **BUC USED BOAT PRICE GUIDE**, for a similar vessel sold within a given time period, as a consideration to determine the Market Value.

The following is the accepted marine grading system of condition:

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

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

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

**"FAIR CONDITION"**, requires usual maintenance to prepare for sale.

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

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

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

**OVERALL VESSEL RATING:**

AVERAGE

## V. SUMMARY AND VALUATION

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### STATEMENT OF VALUATION:

1. The "**FAIR MARKET VALUE**" is the most probable price in terms of money which a vessel should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller, each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus.

Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

- a. Buyer and seller are typically motivated.
- b. Both parties are well informed or well advised, and each acting in what they consider their own best interest.
- c. A reasonable time is allowed for exposure in the open market.
- d. Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and
- e. The price represents a normal consideration for the vessel sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

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

**\$45,000.00**

*Forty Five Thousand Dollars and Zero cents*

### NOTE:

Valuation is based on BUC ValuPro for a 1988 CS 36 Merlin in the Great Lakes and Mid West region in BUC condition. Values are expressed in USD. This valuation assumes that any issues with the keel, rudder and deck are resolved.

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

**\$324,500.00**

*Three Hundred Twenty Four Thousand Five Hundred Dollars and Zero cents*

## V. SUMMARY AND VALUATION

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### SUMMARY:

In accordance with the request for a marine survey of the [REDACTED] for the purpose of evaluating its present condition and estimating its Fair Market Value and Replacement Cost, I herewith submit my conclusion based on the preceding report. The subject vessel was personally inspected by the undersigned on September 10, 2015 1000-1330. Subject to correction of deficiencies listed in section IV A. (Safety), the vessel is considered to be suitable for its intended use. Other deficiencies list should be attended to in a timely fashion.

### SURVEYOR'S CERTIFICATION:

I certify that, to the best of my knowledge and belief:

The statements of fact contained in this report are true and correct.

The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, unbiased professional analyses, opinions, and conclusions.

I have no present or prospective interest in the vessel that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.

My compensation is not contingent upon the reporting of a predetermined value or direction in value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulate result, or the occurrence of a subsequent event.

I have made a personal inspection of the vessel that is the subject of this report.

This report is submitted without prejudice and for the benefit of whom it may concern.

ATTENDING SURVEYOR:

  
Ian M. White



## VI. PHOTOGRAPHS



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IMG\_0255.JPG



IMG\_0256.JPG



IMG\_0257.JPG

## VI. PHOTOGRAPHS



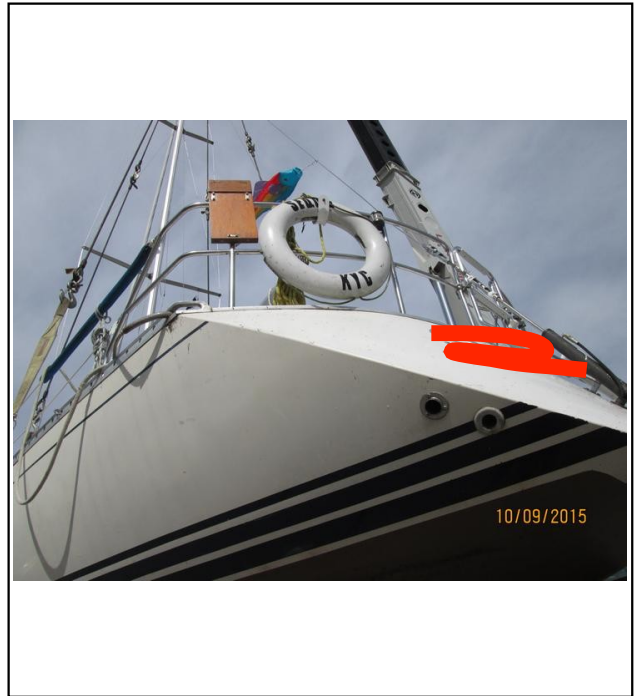
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Gap between keel and hull.



Hole in topsides, port side.



Chips in transom

## VI. PHOTOGRAPHS



**Boarding ladder accessibility.**



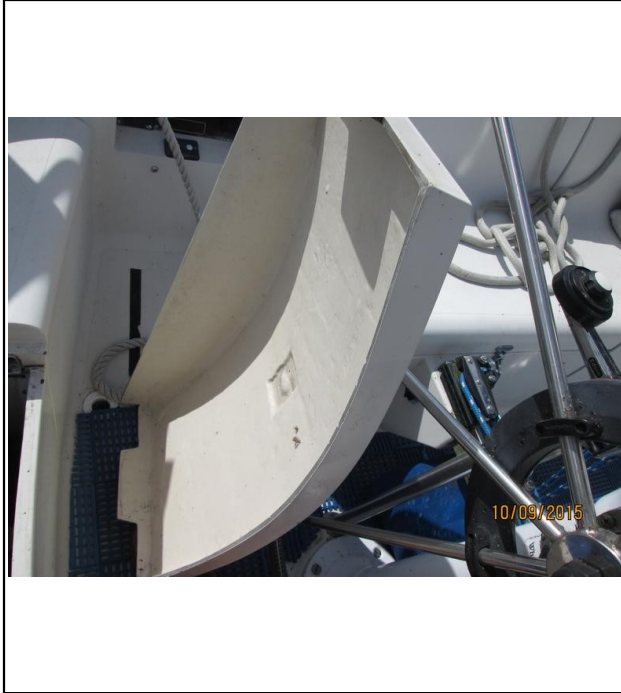
**Compass clouded.**



**High moisture readings from meter aft to sheet winch.**



## VI. PHOTOGRAPHS



**propane locker**



**No pressure guage.**



**Propane locker exposed to center locker.**



**Spare tank locker.**

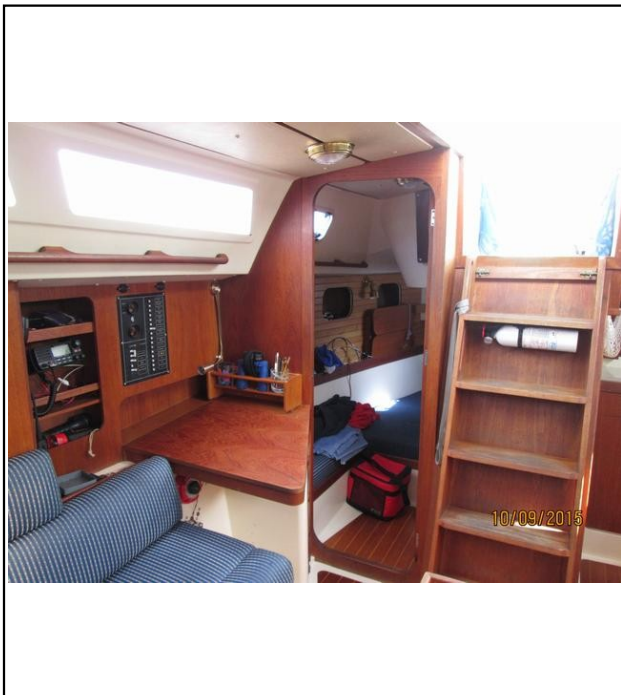
## VI. PHOTOGRAPHS



Cable attachment to main sheet.



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IMG\_0395.JPG



IMG\_0396.JPG

## VI. PHOTOGRAPHS



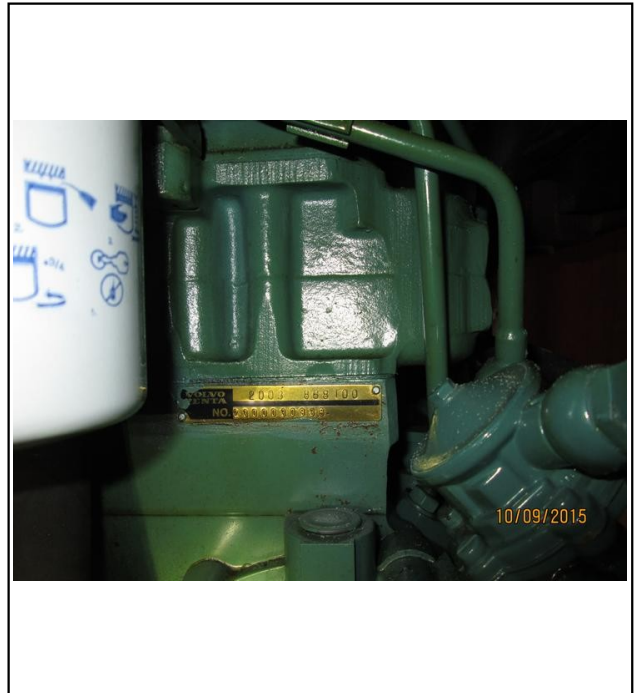
Cracked raw water hose for head.



Aft keel bolts.



Cracked exhaust hose.



Engine # [REDACTED]