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Our Time and Experience
is our Stock in Trades

SFR-IP
c/o Mr. Neil Emmott
Email: Neil@superyachtsac.com

RE: "IONIAN PRINCESS" 2005 150' Christiansen Hull No. 018

Note: In addition to this text, there are 31 pages of recommendations which are an integral part of the report and should be read in conjunction with this text.

To Whom it may concern,

At your request via Mr. Neil Emmott of Super Yacht Sales these undersigned independent marine surveyors have inspected the Motor Yacht "IONIAN PRINCESS" while she was dockside at the Safe Harbor Lauderdale Marine Center in Fort Lauderdale FL.

Date of Inspection:	February 24 through 28, 2025
Scope of Inspections:	Pre-purchase
Trial Run:	Atlantic Ocean Off Fort Lauderdale FL.

Hauled Out: 420ST Travel Lift at Safe Harbor Lauderdale Marine Center

Attending Surveyors: Walter Richardson – Patton Marine Surveyors Inc.
Chris Smith – Patton Marine Surveyors Inc.
Mike Schneider – Patton Marine Surveyors Inc.

Engines & Generators:

This is a pre-purchase/value/insurance survey only and is not to be used for other purposes. The following is a report on those findings.

LIMITATION OF SCOPE OF SURVEY:

The survey of this yacht is based solely on a careful visual and non-destructive inspection of easily accessible portions of its structure and available equipment. Complete inspection can be made only by removal of flats, soles, decking, head liners, ceiling or hull lining, tanks, gas freeing and joiner work removals. This would be damaging in nature and prohibitively time-consuming and as we do not want to be held responsible, it was not done.

The information contained in this report, concerning sizes, accuracy of build, hull or superstructure geometry, ratings, capacities, speeds, etc., was ascertained from maker's plates, logs, documents, plans and certificates on board together with statements of the instructing entity. Unless specifically noted otherwise, none of the information was ascertained by direct measurement or calculation and, although all the information contained is believed to be correct, the accuracy thereof is in no way guaranteed.

Complete inspection of machinery, auxiliaries, piping, tanks, systems, electrical wiring, electrical and electronic equipment can be made only by continuous operation or by disassembly. This has not been done. It is recommended and understood that the engines and electrical systems are to be surveyed and tested under load by a qualified marine engineer and/or marine electrician to further determine the condition of the engines, gears and pumps, heat exchangers, coolers, or electrical systems etc.

Further, no determination of stability characteristics or inherent structural integrity has been made, but some opinion may be expressed with respect thereto. It implies no guarantee against faulty design, hidden or latent defects. This report represents the condition of the yacht on the survey report date(s), and is the unbiased opinion of the undersigned, but it is not to be considered a warranty either specified or implied.

No warranty is made regarding the classification or regulatory status of the yacht. While the details reported are believed correct, the regulatory status of the yacht can only be confirmed directly by the certifying authorities. This report carries no warranty regarding ownership or any warranty regarding outstanding mortgage, charges, lien or other debt there may be on the yacht.

This report is submitted for the exclusive use of the instructing client and no liability will be accepted to any third party who may subsequently read or hold a copy of this report or any of its contents. Copyright remains with the instructing client who has paid for the survey and the surveyor or surveyors. The survey is not to be given out indiscriminately. The instructing client only has the right to disperse this survey at his/or her discretion.

The scope of the examinations was (further) limited by:

The following report is the result of a (strictly) limited survey and is not to be considered a full-condition survey. Please observe 'x' marked boxes.

Specific Client Instructions (Note: this includes specific client instructions or lack of required time)

x. Due to the yacht's interior construction, it was not possible to access all bilges and internal hull construction.
x. Yacht or vessel does not comply with MCA.

GENERAL:

"IONIAN PRINCESS" has a raked stem, deep Vee forward, euro stern, with swim platform. The decks are flush, teak overlaid with an open aft deck. She has a wide body main deck and walkaround bridge deck. She is twin high speed diesel engine powered. The yacht is fitted with a fixed multi-platform arch mast above the sundeck. The construction is typically referred to as "tri-deck" because a main, bridge and sun deck are provided. There is a fourth deck, called "lower deck."

She is of Jamaican Ship Registry, her Certificate of Yacht Registry was seen, and it states:

-Name:	"IONIAN PRINCESS"
-Official No.:	JMP20067
-IMO No.:	9357133
-Home Port:	Montego Bay
-Call Sign:	6YUO9
-MMSI NO.:	339963000
-Length:	45.72M
-Breadth:	8.23M
-Depth:	4.11M
-Type of Yacht:	Private Yacht
-Gross Tonnage:	416 GT
-Net Tonnage:	124 NT
-Propulsion Method:	Diesel
-Builders Name & Details:	Christensen Shipyards LTD Vancouver, Washington USA
-Year of Build:	2005

-Propulsion Type: Motor
-Construction Material: F.R.P.
-Power (HP/KW): 2998
-Name of Owner: SFR-IP LTD.
-Address: 251 Little Falls Dr. Wilmington DE
-Name of Authorized Rep: MEGA Yacht Registry Services Inc.
Suite 11 Winchester Business Centre
15 Hope Road, Kingston 10, Jamacia W.I.
-Date of Registry: August 20,2020
-Date Issued: July 19, 2024
-Period of Validity: August 18, 2021 – August 17, 2025

Builder Data:
Builder: Christensen/Palmer Johnson
Builder's Hull Number: 18

Her principal dimensions are as follows:

-Length Overall: 45.72M
-Length Waterline: 40M
-Beam: 9.5M
-Designed Draft: 4.5M
-Displacement: 250 tons
-Air Draft: 15.3M

HULL CONSTRUCTION:

Authority	Type of Certificate	Date Issued	Expires
JSR	Port Authority letter Private Yacht Registration		
JSR	International Load Line		
JSR	Minimum Safe Manning 300 tone or more		
JSR	Ship Radio Spectrum License 6YUO9	14 Sept 2020	13 Sept 2024
SATCOM	Cert of Shore Based Maintenance of MGDSS		Annual
Bardwell	Annual SART Test Cert		Annual

Authority	Type of Certificate	Date Issued	Expires
Bardwell	AIS Radio Survey		Annual
SarSat	ACR RBL-41 EPIRB test – Battery 01/2032		Annual
Bardwell	03 deck EPIRB MK2 test – Battery 01/2032		Annual
MedAire	Global MedKit Category A -14 crew	11 Mar 2022	March 2023
	Salvage and Maritime Firefighting Contract		Annual
Summit	Fire hose, couplings & gasket inspection Cert.		Annual
Summit	Engine Room Fixed CO^2 System	3 May 2024	Annual
Summit	33 Portable Fire Extinguishers	3 May 2024	Annual
Summit	Galley Wet Chemical System	3 May 2024	Annual
Summit	Scott SCBA inspection	New	Annual
Summit	Fire Bunker Gear Inspection	New	Annual
Summit	Inspect Ansul Auto Pulse IQ301 24Smoke detectors	New	Annual
Inflatable services	4 x 12person DK SOLAS A Life Raft Inspection	27 Sep 2024	Sept 2025

CLASSIFICATION CERTIFICATES:

Pleasure Yacht ✠A1, Yachting Service, AMS Certificate No. 05112454-3685904

Authority	Type of Certificate	Date Issued	Expires
ABS	Certificate of Class No.: 9357133	20 Apr 2022	22 Apr 2025
ABS	International Tonnage Certificate - 1969	17 Jul 2019	NA
ABS	SOPEP Booklet per MARPOL 73/78 Annex	20 Nov 2024	
ABS	IOPPC and Supplement	20 Nov 2024	22 Apr 2025
ABS	ISPPC Headhunter TW-HMX600 SN2558	22 Nov 2024	22 Apr 2025
ABS	International Anti-Fouling System	20 Nov 2024	22 Apr 2025
ABS	IAPPC and Supplement	20 Nov 2024	22 Apr 2025
ABS	IEEC and Supplement	20 Nov 2024	22 Apr 2025
ABS	Cargo Ship Safety Radio Cert & Form R	20 Nov 2024	22 Nov 2025
ABS	Approved GMDSS Radio Installation	20 Nov 2024	Annual

HULL:

The hull is protected by a hard-painted rubber rub strake with stainless steel cap attached at the deck sheer on port & stbd sides.

No. of Port Lights:	Ten (10) Oval aft each side Four (4) round each side forward. (All opening type with storm covers sighted)
Hull Color:	AlexSeal Matterhorn White
Boot-stripe:	White/Dark Blue/White
Name on Transom:	"IONIAN PRINCESS"
Hailing Port:	Montego Bay, Jamaica

It could not be verified that the hull construction drawings and/or laminate schedules sighted onboard were of the vessel.

The following was taken from information on other Christensen Yachts hull drawings.

The vessel is built on 16 stations, with the transom aft, at frame 16 and the bow forward of station 0 is -1. The stations are spaced 8' 6" apart.

The hull is cored FRP (composite fiberglass) construction with bulbous bow forward, single hard chine with spray rail from bow aft to transom with a Euro stern and swim platform. There is an external skeg type keel running aft from approximately station 5 to station 13.

There are shallow propeller pockets that extend aft to the transom. The yacht's superstructure, main, upper and sun decks are also all FRP composite construction. The exterior above water surfaces of the hull and superstructure are faired and painted.

The hull is built with four (4) main longitudinal stringers of composite material running the length of the bottom, and additional cored composite longitudinal stringers at the hull sides. The composite hull bottom and sides are cored and includes a layup from outer skin to inner skin as follows:

- 2 x 1.5" Vinyl Resin Laminate & 5 x CDM 2408
- 3 x 1" Airex Foam Core
- 3 x CDM 2408

As seen on other Christiansen Yachts the hull penetrations are de-cored and solid laminate.

There are seven (7) watertight bulkheads:

- The collision bulkhead forward
- Stepped bulkhead aft of the forepeak
- Between crew and guest
- Between forward and aft guest

- Forward engine room
- Aft engine room
- Forward steering flat

The interior hull is well-finished with good limber holes and drainage.

There is limited access on the interior for examination of hull construction; however, where accessible, fiberglass work is found in good condition. No delamination or cracking was noted at this time.

Bulwarks:
The bulwarks are closed construction, faired and painted both sides. The bulwarks have ample freeing ports each side the closed chocks are polished stainless steel and are recessed in the main deck & foredeck bulwarks to a height of 40".

Superstructure:
The main and upper deck level superstructure is fabricated from composite FRP. The superstructure exterior surfaces are fully faired with epoxy filler and painted the metallic blue base coat clear coat paint that is in poor condition.

The hull and superstructure layup, tabbing and finish appear to be good quality. The hull and structure have been constructed using proven infusion techniques to provide excellent penetration and bonding of resins, core materials and fibers.

Hull:
There are Ten (10) oval port lights and four (4) round port lights per side. The hull was reportedly last painted in 2019 in Greece with AlexSeal Matterhorn white, the hull is due for a paint job.

HAULOUT and BOTTOM INSPECTION:

Bottom inspection was done. The bottom was sounded with a Phenolic hammer no voids or soft spots were found no evidence of osmotic blisters or and signs of damage repair were sighted the bottom. The hull is in good sound condition.

- Location: Safe Harbor Lauderdale Marine Center
- Weight on scale: 276-ST
- Drydocked: 485-ST Cimolai Travel Lift

Bottom Description:
- Semi-displacement hull with single chine.
- Fine V entry with molded shape.
- External skeg type keel, single hard chine aft with semi-circular propeller tunnels.
- Two (2) active fin stabilizers. No bilge keels are fitted.
- Antifouling paint: The bottom was not pressure washed - good condition
- Underwater lights: Total Seven

- The bottom was pressure washed, and the AF Coatings are in serviceable condition.
- Props and Shafts are coated with PropSpeed in good condition

Measured Draft from scum line to lowest point of:
(Approximate due to the unevenness of the ground)

- Draft @ keel: 8'4"
- Draft @ Prop: 7'10"
- Stabilizer Fin: 7' 2"

Stabilizers:
Fin Foils: Height-46" X Width 78" - Approx. 38.5 ft²

Stabilizer fins are constructed of Fiber glass. The fins were sounded with a phenolic hammer, the outboard side of the starboard fin has a delaminate section approximatly 10" in circumference. No other damage sighted

Through-Hull Fittings:
Primary Intakes: Two (2) 8" with external grill
Water maker intake: Aft with external bronze grill

THROUGH-HULLS:

As an annual maintenance project or at each haul out, it is recommended that all of the seacocks and sea strainers be disassembled, cleaned, inspected, and lubricated.

Overboard Discharges:

- Engine Room Port Aft Manifold
  - Bilge Ovbd.
  - HVAC Chiller SW Ovbd
  - Deck Drain Header Port

- Engine Room Stbd Fwd Manifold
  - Bilge Ovbd
  - Water Maker Brine Ovbd
  - Oil Water Separator Ovbd
  - Deck Drain Header Stbd

- Below Waterline:
  - Main engine SW cooling over boards

- Other Over boards
  - Generator Cooling Water / Water Drop from mufflers

Zincs:

It is important to maintain the proper zinc level on any yacht, particularly aluminum or steel vessels. It is important that proper zincs of a well-known composition be used. There are two grades of zincs that are specific for bottom applications. They are, military spec #A-18001H, the other is an ASTM No. B-418-67. Either specified zinc is the proper zinc to be used for underwater protection on aluminum or steel hulled yachts.

The vessel is fitted with hull mounted sacrificial zinc anodes fitted; each anode is mounted onto studs, which are fixed to mounting brackets on the vessel's hull.

- 1 X collar zincs port and starboard propeller shafts 0-5% spent
- 1 X bar zincs port and starboard sea chest grills. 0-5% spent
- 2 X round zincs each propeller shaft struts 0-5% spent
- 1 X bar zincs bottom of each rudder. 0-5% spent

STEERING SYSTEM:

Manufacturer:	Jastram
Power pack 1:	Engine driven pump, 20 Gallon oil reservoir with return line filter, sight glass and steering manifold on port side of ER
Power pack 2:	Electric driven pump, 20 Gallon oil reservoir with return line filter, sight glass and steering manifold on aft ER bulkhead.

Steering Tests:

- Tested Operational at three emergency stations.
- Center to Hard Over port & stbd. – 5.65sec

Rudder stocks:	5" – 3.5" tapered Aqualoy 17
Stock seals:	Tides Marine
Rudder foils:	Approx. 11 ft²
Actuators:	Two (2) Cylinder rams S-300
Rudder angle indicators:	Two (2)
Rudder feedbacks:	Two (2)
Steering wheel:	30" Stainless-steel electric steering
Steering control:	Autopilot / NFU / FFU on wheelhouse & wing stations
Tie bar:	Fitted
Tiller Arms:	NiBrAl

Emergency Steering:

Location:	Control room aft starboard
Operation:	Open and close 4 valves
Features:	Rudder angle indicator, phone intercom to bridge
Wheel:	Four turns lock to lock 35º P 35ºS
Jog Steering:	10 seconds lock to lock
Emergency in Laz:	14 turns center to lock port and Stbd.
Pump Solenoid ends:	Pump 1 & 2: 12.5sec lock to lock port and stbd

Steering was satisfactorily test operated by autopilot on the trial run.

STABILIZERS:

There are two (2) active Naiad 510 hollow foil section FRP fin stabilizers fitted external to the hull. The fins were seen in good condition.

Dimensions:	Width: 92” x height: 49”
Maker:	NAIAD with Quantum controls.
Model:	510
Head SN.:	Port-950702, Starboard-950703
Type:	Active Underway and At Anchor
Fin Head Location:	Port Guest SR No.: 3 under berth and Stbd. technical space. They are located approximately at station 7. Both are fitted with bolted FRP panels that are not fastened.
Controls:	Quantum Hydraulics Zero Speed
Operating Pressure:	3270psi
Reservoir:	10 gallons

Please See Recommendations.

BOW THRUSTER:

Tunnel Diameter:	22 ½”
Propeller Clearance:	¼”
Propeller:	6 blade bronze offset to port

There is a transverse bow thruster tunnel fitted just forward of Station 1 and provided with molded hull scalloped section aft. There are no tunnel-gratings provided.

RUNNING GEAR & PROPELLERS

Rudders:	Stainless-steel hallow foil
Dimensions:	Height: 49.5” x width 38”
Position:	Outboard of the shaft line with a 1” toe in setting

The rudders are well secure in the bearings with no excessive movement noted.

The main engines and transmissions are close coupled with a pair of rubber design resilient mounts forward and ZF trunnion and pin mounts aft.

Reverse gear coupling:	Rubber coupling
Shaft material:	Stainless Steel nonmagnetic
Shaft couplings:	None

Shaft grounding brushes: Not supplied
Shaft Seals: Tides dripless shaft seal
Shaft gland lubrication: From each port and starboard main engine cooling water discharge by-pass

Shaft Bearings:
Shaft support: Heavy wall GRP stern tube
Aft 'V' strut all bearings are in good condition showing no wear.

Shaft Overhang form Aft Strut:
Port Side: 2 3/8"
Starboard: 2 ½"

Propellers:

- Manufacturer: Ellis Propeller Inc.
- Material: Bronze
- No. Of Blades: Five
- The props were turned by hand against a straight edge and tracked true, no damage sighted and the PropSpeed coatings are in good condition.

	Port	Starboard
Stamped markings.	52 Ellis 41 LH12-02 2055	52 Ellis 41 RH12-02 2055
Size:	52	
Pitch:	41	

Tip Clearance from Hull Bottom: 11"

TRIAL RUN:

The following gauge readings were taken during the trial run. Noise readings were also taken and they will follow.

Note: Temperature is in ºF and pressure is in PSI.
Duration of trials: Approximately 5 hours
Persons onboard: 14

Weather Condition:
Air temperature: 76 ºF
Barometric Pressure: 30.00inHg
Humidity: 60%
Wind: SE5kts
Seas: 1'-2'
Sea temperature: 76.5 ºF

Consumables Onboard:

Fuel:	4920 gallons
Fresh Water:	65%
Holding Tank:	50%

	Port	Starboard
Engine hours start:	138	137
Generator Hours Start:		

During the trial run, the following systems were test operated and/or monitored.

- Main engine gauge readings
- Exhaust temperatures monitored
- Controls - tested at all stations
- Bow thruster test performed
- Steering by autopilot
- Anchor windlass test operated
- Noise level readings taken
- Gear temperatures monitored
- Main engine remote starts and stops
- Stabilizers test operated underway and stationery
- Electronics and navigation equipment turned on and monitored
- Water maker test operated
- Hull potential readings taken
- Generator load testing conducted on return to dock

RPM	Speed Kts	Eng. Load %	Ltr Per HR	Eng Temp ^{0}C	Eng Oil psi	Gear Temp
600	5.0	5 – 6	10 – 11	63 – 70	392 – 394	37 – 37
1000	8.0	20 – 23	34 – 37	74 – 82	360 – 352	38 – 38
1200	9.8	23 – 25	46 – 49	81 – 80	396 – 372	44 – 42
1400	11.0	26 – 26	75 – 72	80 – 80	412 – 380	44 – 42
1600	12.5	37 – 38	102 – 107	79 – 79	420 – 388	44 – 42
1800	14.0	44 – 49	155 – 164	79 – 77	428 – 396	44 – 42
2000	15.4	58 – 62	222 – 239	79 – 80	432 – 400	44 – 42
2100	16.0	68 – 79	270 – 287	79 – 80	438 – 404	44 – 42
2200	17.2	74 – 79	304 – 322	80 – 81	452 – 412	45 – 43
MAX	18.5					
P2370		90	372	82	460	46
S2367		92	372	84	416	43

SEATRIAL DATA:

Date: 02 /27 / 2025
Yacht: IONIAN PRINCESS
Water Temperature: 73°F
Ambient Air Temperature: 84°F

Engine Room ambient temperature port forward:	103 °F
Engine Room ambient temperature port aft:	89 °F
Engine Room ambient temperature starboard forward:	86 °F
Engine Room ambient temperature starboard aft:	97°F
Starboard main engine exhaust blanket temperature:	113°F
Port main engine exhaust blanket temperature:	100°F
Starboard shaft log temperature @ 1600-RPM:	91 °F
Port shaft log temperature @ 1600-RPM:	90°F
Starboard shaft log leaking?:	No drips or leaks
Port shaft log leaking?:	No drips or leaks
Hydraulic oil temperature Bow thruster tank: Stabilizer tank:	120 °F 100°F
Hydraulic pressure Bow thruster: Stabilizer:	Not Working 1300PSI
Comments on port stabilizer:	Minor oil seepage
Comments on starboard stabilizer:	Steady drip of oil from valve block
Comments on bow thruster:	No issues
Comments on port rudder assembly:	No leaks. Tie-bar is tight along with tillers
Comments on starboard rudder assembly:	No leaks
Black water diaphragm pump tested? Grey water diaphragm pumps tested?	Diaphragm compromised Diaphragms need replacement
Water Maker tested?	Yes. No issues

DB Noise levels were taken with a Digital Noise level meter set on Slow Mode. Noise levels were taken near the center of each room.

Room	DB @ 1400 Rpm	DB @ Zero Speed
Wheelhouse	57.3DB	57.9DB
Bridge Deck Study	56.5DB	55.4DB
Sky Lounge	52.8DB	50.0DB
Master State Room	45.5DB	36.4DB
Master Foyer	51.7DB	38.1DB
Main Deck Foyer	60.0DB	58.3DB
Dining Salon	58.2DB	54.8DB
Main Deck Salon	64.0DB	53.7DB
Guest Foyer	58.5DB	54.0DB
Port Fwd. Guest	56.2DB	48.1DB
Stbd Guest Massage Rm	59.0DB	45.3DB
Port Mid Guest	60.2DB	52.5DB
Port Aft Guest	60.1DB	51.6DB
Starboard Mid Guest	62.0DB	51.5DB
VIP Guest	65.0DB	51.5DB
Galley	59.2DB	54.8DB

TANKS:

All onboard liquid contents tanks were visually examined, externally only with the exception of the freshwater, aft fuel and aft holding tanks which were opened and found in good condition. Unless otherwise mentioned in the "RECOMMENDATIONS" section of this report, no external signs of leaks or damage were found during these examinations. It is to be noted that the tanks are not totally accessible or visible on all sides. For a complete evaluation of tank tightness, they should be hydro-tested.

The tank capacities are in gallons and the frame locations are taken of the drawings and are not exact.

Tank Name	Position	Frame Location	Reported Capacity
Grey Water Fwd	Centerline	3.4 to 3.1	220
Grey Water Aft	Centerline	6.5 to 7.0	279
Sewage	Keel tank	4.6 to 13.2	1447
Potable Water	Centerline	1.3 to 2.9	2267
Lube Oil	Starboard	11.7 to 11.8	150
Dirty Oil	Port	11.7 to 11.8	150
Fuel Oil 1	Centerline	3.5 to 4.7	1829
Fuel Oil 2	Centerline	4.7 to 6.4	1785
Fuel Oil 3	Centerline	7.0 to 9.0	2339

Tank Name	Position	Frame Location	Reported Capacity
Fuel Oil 4	Centerline	9.0 to 11,8	2607
Storage Fuel Total			**8560**
Fuel Day Tank	Centerline	11.7 to 11.8	752
Fuel Overflow	Starboard	5.4 to 5.6	38
Total Fuel Oil			**9312**

FUEL FILLING & TRANSFER SYSTEMS

Number of tanks: Six (6) including the day tanks
Total Capacity: 9312 Gallons
Tank Fills: port and starboard house sides

Fuel Separator:
Make: Alfa Laval
Model: MAB103B-24

Transfer Pumps:
Make: Oberdorfer
Model: OB-990RH
Type: Bronze head gearwheel pumps with relief valve built into the head.

Fuel Counter: Gasboy for transfer only total reading: 23543 gallons

Filters: Triple Racor filters for main engines
Bank of 5 Racor filters for fuel transfer

Note: The generators only have one engine fuel filter.

Testing:
Both fuel transfer pumps were operated
Pump 1: 132 gallons per min
Pump 2: 3 gallons per min

The fuel separator was not proven due to its condition.

Comments: The fuel system has been run in stainless steel and flex hose, the system is well installed and supported.

The fuel oil system has been modified with the installation of pneumatic isolation valves at the main engines and generators.

LUBRICATING OIL FILLING & TRANSFER SYSTEMS

Tanks: Clean and waste oil tanks are located withing the upper outboard corners of the day tank

The lube oil system consists of manually fitted flexible hoses and a portable pump for both clean and dirty oil.

Each main engine and generator have been provided with an isolation valve and a quick disconnect fitting at the sumps.

The system was not operated at this time.

SEA WATER SYSTEM

- Two (2) independent sea chests port and starboard engine room forward
- Sea Chest take offs for air conditioning, engine and generator cooling
- Two (2) Seawater service pumps providing cooling for stabilizers and bow thruster

Testing:

- The seawater cooling system was monitored during the trial run.

Comments: The system has been run in copper.

FUEL FILLING & TRANSFER SYSTEMS

Number of tanks: Five (5) includes the daytank
Total Capacity: 8013 Gallons per monitor system
Tank Fills: Port and starboard house sides

Fuel Separator:
Make: Alfa Laval
Model: MAB103B-24

Transfer Pumps:
Make: Oberdorfer
Model: OB-990RH
Type: Bronze head gearwheel pumps with relief valve built into the head.

Fuel Counter: Gasboy for transfer only

Filters: Triple Racor filters for main engines
Bank of 5 Racor filters for fuel transfer
Single Racor filter for each generator

Testing:
Both fuel transfer pumps were operated
Pump 1: 25 gallons per min
Pump 2: 25 gallons per min

Comments: The fuel system has been run in stainless steel and flex hose, the system is well installed and supported.

The fuel oil system has been modified with the installation of pneumatic isolation valves at the main engines and generators. These shut-off valves engage when the CO_2 fire suppression system is deployed.

LUBRICATING OIL FILLING & TRANSFER SYSTEMS

Tanks: Clean and waste oil tanks are located withing the upper outboard corners of the day tank

The lube oil system consists of manually fitted flexible hoses and a portable pump for both clean and dirty oil.

Each main engine and generator have been provided with an isolation valve and a quick disconnect fitting at the sumps.

The system was not operated at this time.

SEA WATER SYSTEM

- Two (2) independent sea chests port and starboard engine room forward
- Sea Chest take offs for air conditioning, engine and generator cooling
- Two (2) Seawater service pumps providing cooling for stabilizers and bow thrusters. Only one pump can be run at a time.

Testing:
- The seawater cooling system was monitored during the trial run.

Comments: The system has been run in copper.

FRESH WATER SYSTEM

Tanks: One (1)
Capacity: 2267 gallons
Tank Fills: Port and starboard house sides

Pumps:

Quantity:	Two (2)
Maker:	Headhunter
Model:	Mach 5 230/50

Heaters:

Quantity:	Two (2)
Maker:	1 x Sunpower 300 liters
	1 x Maltezoz approximately 200 liters (no data plate visible)

Circulation Pump:

- Single Wilo-Maxo circulation pump located outboard of the water heaters in the bosun's locker

The vessel has been provided with a sundeck Jacuzzi tub, due to the electrical and coating condition this was not proven, when rewiring and re-coating are complete this should be proven.

Testing:
Both freshwater pumps were operated and seen to make and hold good pressure.
Both water heaters operating, all faucets and toilets tested.

Comments: The freshwater system is very basic with just a single tank and two (2) freshwater pumps supplying the end users. The freshwater system has been run in copper throughout except for the new pump installation with hose and bronze fittings.

WATER MAKERS

Maker:	Blue Water Desalination
Model:	Explorer
Quantity:	Two (2)
Low pressure pumps:	Plastic head centrifugal pumps
High pressure pumps:	Blue Water stainless steel head reciprocating
Membranes:	Two (2) each unit replaced 12/21
Filters:	5 & 20 micron primary & carbon for back flush

Testing:
The water makers were operated during the trial run with the following results:

	Upper	Lower
Brine Flow:	3.0 GPM	3.0 GPM
Low Pressure:	20 psi	20 psi
High Pressure:	720 psi	720 psi
Product Flow :	50 GPH	50 GPH
Quality:	120 ppm	140 ppm

Both water makers started easily and made potable water.

BLACK & GREY WATER SYSTEM

Tanks:	Single keel tank
Toilets:	Kohler household freshwater flush modified with Flushmate installations to reduce water consumption

The toilets drain all gravity to the keel tank which is then drained by transferring to the waste treatment system. There is a dedicated drain pump which pumps the contents directly overboard or to a shore side fitting.

Waste Treatment System:

Maker:	Headhunter
Model:	Tidal Wave HMX-600LP
Capacity:	600 Gallons per day
Date of Manufacture:	Jan 2020
Sterilization:	Chlorine tank and transfer pump provided

Comments: The waste treatment system is certified by USCG, ISO & BV

Testing:

- The treatment plant was operating during the survey, all pumps were proven during the trial run.
- All toilets were flushed.

Gray Water:

Tanks:	Two (2)
Pumps:	Two (2) Edson 120 diaphragm pumps

All vanities, showers and tubs drain to the relevant holding tank which is then pumped directly overboard. The systems are run in PVC pipes and are well supported where visible.

Testing:

- All discharge pumps were proven during the trial run and all vanities were operated to sight drains

OIL WATER SEPARATOR:

Maker:	Boss Separators
Model:	MiniBoss 110
Capacity:	0.5m³/hr.
Manufacture Date:	Jan 2020
Monitor:	Bilge Mon 488
Tested:	2019-11-12
Pump:	FloJet Model 04300529
Certified:	Last certified by ABS 02/10/2025

The oily water separator draws water from the engine room bilge. At 15-PPM the filtered water is discharged overboard port side aft. The monitor was demonstrated to operate satisfactorily.

AIR CONDITIONING:

The yacht is fitted with a heating, ventilation and air conditioning system consisting of two (2) reverse cycle chiller plants which provide chilled water to multiple fan coil units fitted around the yacht. During colder climates the chiller plants are put into reverse cycle and provide warm water to the fan coils. The reverse cycle circuit was tested on the inboard chiller. The outboard chiller digital display is not working.

Chiller Plant x 2:

Location:	Port side Lazarette
Manufacturer:	Frigomar
Type:	NT Series
Cool Capacity:	360,000 BTU's
Refrigerant:	R410a
Hours:	Could not be determined

The two (2) skid mounted chiller plants consist of a fully hermetic compressor, plate type condenser, plate type evaporator, oil separator, liquid receiver, and Tx valve.

Each chiller has its own touch screen controller / display installed on the front of the unit and as well as control also provides a lot of data for pressures and temperatures.

Each compressor is speed controlled from 0 – 180Hz using a built-in inverter so the units have very low start up current are efficient and very quiet. Sea water is provided to the chillers using one of the two (2) pumps. Chilled water is circulated through the evaporator and around the vessel using one of the two (2) pumps.

Chilled water pumps:

Location:	ER port aft corner
No. of Pumps:	Two (2)
Manufacturer:	Baldor pumps – 5hp

There are two (2) centrifugal cast iron pumps installed in a drip tray in the port aft corner of the ER. One is used with the other in standby, however currently both pumps are being run. The chilled water system pressure kept dropping and had to be topped up by the C. Eng. Please see "RECOMMENDATIONS".

Sea water pumps:

Location:	Lazarette port side
No. of Pumps:	Two (2)
Manufacturer:	Scot pumps – 1hp

The two (2) sea water pumps are installed outboard of the chillers. One pump is run with the other in standby and supply sea water to both chillers before being discharged overboard on the port side of the ER. There were several sea water leaks noted. Please see “RECOMMENDATIONS”.

Fan Coils:
The vessel is fitted with approximately 25 fan coil units as per outdated drawings #0018. Exact number was not determined. The fan coils are controlled by Easy Touch Micro displays.

Testing:
A selection of the fan coils was accessed for inspection, several are relatively new. Some of the fan coils need cleaning and disinfecting.

Make-up air-handler unit. A MUAH unit originally was installed in the pilot house but no longer exists. It was taken out and not replaced.

Ambient temperature: 85.0°F
Outlet temperature in cool mode 47°F

For test purposes the Easy Touch Micro-displays were set to 66°F with fan speed set too high. At this time the doors to each accommodation space were closed for approximately one hour. The following measurements were taken in each area with a Flir thermo-imaging scanner:

Ambient °F	Cool-Supply/Return
Main Salon:	59° / 64°F
Dining Salon:	60° / 68°F
Master Stateroom:	62° / 71°F
VIP Stateroom	66° / 68°F
Galley:	59° / 70°F
Wheelhouse:	70° / 74°F
Port Guest Stateroom aft:	70° / 70°F
Port Guest Stateroom mid:	68° / 71°F
Port Guest Stateroom fwd.:	60° / 70°F
Starboard Guest Stateroom:	68° / 71°F
Crew Lounge:	69° / 74°F
Bridge Deck Study:	66° / 73°F

Comments: Several of the fan coil units have been replaced (reportedly 5-6 units). The fan coil units are slightly fouled with dirt and in some instances mold. Overall, the system performed well.

VENTILATION SYSTEM

The engine room ventilation system consists of two plenums (one port & one starboard). The port plenum which measures 38" is used mainly to supply air to the engine room and delivers it from a grill on the main deck. The starboard plenum measures approximately 28" and exhausts on the starboard side bridge deck.

Both fans are controlled by two ABB variable speed frequency drives and are reversible.

Each plenum has a fire flap which is controlled in the port and starboard fiddley area. Both were tested.

The galley range hood, dryer exhaust duct, Bosuns locker and separate squirrel cage fans for each head are also installed. These units exhaust on the main deck overhead.

HYDRAULIC SYSTEMS

The vessel has been provided with a centralized hydraulic system servicing the following equipment:

- Anchor Windlasses (3300 psi)
- Capstans (2000 psi)
- Bow thruster (2250 psi)
- Upper deck tender crane (3300 psi)
- Stabilizers

The tender crane was a modification of the hydraulic system and is not represented on the drawings provided.

The 20-gallon American bow thruster reservoir is provided a breather, return oil filter with alarms and sight glass.

Power is provided by a PTO on the end of generator 2 and a 20Hp (approx. – specification plate is corroded) hydraulic pump and motor for when alongside.

Stabilizer power is driven off a gear driven pump set on each main engine while underway. While anchored an 11KW/15Hp 400V motor drives the stabilizer fins.

BILGES:

Tanks:	Single keel tank
Toilets:	Kohler household freshwater flush modified with Flushmate installations to reduce water consumption

The toilets all gravity-drain to the keel tank which is then drained by transferring to the waste treatment system. There is a dedicated drain pump which pumps the contents directly overboard or to a shore side fitting.

Waste Treatment System:

Maker:	Headhunter
Model:	Tidal Wave HMX-600LP
Capacity:	600 Gallons per day
Date of Manufacture:	Jan 2020
Sterilization:	Chlorine tank and transfer pump provided

Comments: The waste treatment system is certified by USCG, ISO & BV

Testing:

- The treatment plant was operating during the survey, all pumps were proven during the trial run.
- All toilets were flushed.

Gray Water:

Tanks:	Two (2)
Pumps:	Two (2) Edson 120 diaphragm pumps

All vanities, showers and tubs drain to the relevant holding tank which is then pumped directly overboard

The systems are run in PVC pipe and are well supported where visible.

Testing:

- All discharge pumps were proven during the trial run all vanities were operated to sight drains

COMPRESSED AIR SYSTEMS

Compressors:	One (1)
Make:	Gast
Model:	7HDD-57-M750X
Type:	Reciprocating piston
Capacity:	9.1 CFM up to 100 psi

The compressed air system services the following:

- Air horns
- Oil Water Separator
- Fuel Isolation valves
- Working air chucks

BILGES:

There are nine (9) main bilge areas onboard. They were opened and examined at this time. And though it was overcrowded with gear and spares were found in good condition.

Bilge Sections

- Chain Locker Forepeak Bilge
- Bow Thruster Bilge
- Crew Bilge Voids Port & Stbd
- Guest Bilge Voids Forward Incl. Cofferdam
- Guest Bilge Voids Aft Port & Stbd
- Engine Room Bilge
- Electrical Room Bilge
- Lazarette Bilge
- Swim Platform Bilge

Examinations & Tests

- Each of the bilge areas were opened out, entered, and examined visually.

Forepeak Bilge:

Condition:	Painted
Access:	Through foredeck square flush hatch,
Lighting:	Not operational
Bilge Alarm:	Not sighted
Bilge Suctions:	Gravity-drain overboard

Bow Thruster Area Bilge:

Condition:	Painted, clean
Access:	"Through deck" removable hatches in stbd fwd crew cabin
Lighting:	Provided Not operational
Bilge Alarm:	Provided
Bilge Alarm Tested:	*Operational*
Bilge Suctions:	1 x Main Bilge Pump, 1 x Rule 3700 24 VDC Pump
24 VDC Pump:	Rule 3700GPH with Ultra float switch

Crew Area Bilge: (Port & Stbd Areas)

Condition:	Painted, wet from AC air handler condensate drains into bilge Please See Recommendations
Access:	"Through deck" removable hatches in crew area lower deck
Lighting:	Provided
Bilge Alarm:	Provided
Bilge Alarm Tested:	*Operational*
Bilge Suctions:	2 x Main Bilge Pump

Guest Area Bilge Forward (Port & Stbd Areas):

Condition:	Painted, clean
Access:	Through deck removable hatches in guest area
Lighting:	Provided
Bilge Alarm:	Provided
Bilge Alarm Tested:	Not *Operational*
Bilge Suctions:	1 x Main Bilge Pump, 1 x Rule 3700 24 VDC Pump

Guest Area Bilge Aft (Port & Stbd Areas):

Condition:	Painted, standing water from AC condensate
Access:	Through deck removable hatches in guest area
Lighting:	Provided
Bilge Alarm:	Provided
Bilge Alarm Tested:	*Operational*
Bilge Suctions:	2 x Main Bilge Pump

Engine Room Bilge:

Condition:	Painted
Access:	Through removable deck plates
Lighting:	None, except engine room lights
Bilge Alarm:	Provided
Bilge Alarm Tested:	1 x *Operational*
Bilge Suctions:	Main Bilge Pump

Electrical Room Bilge

Condition:	Painted, used for parts storage
Access:	Through removable deck plates
Lighting:	None
Bilge Alarm:	None
Bilge Alarm Tested:	None
Bilge Suctions:	Drains to the engine room through weep holes at fwd bulkhead

Lazarette Bilge

Condition:	Painted, clean
Access:	Through deck hatches
Lighting:	None
Bilge Alarm:	Provided
Bilge Alarm Tested:	*Operational*
Bilge Suctions:	1 x Main Bilge Pump, 1 x Rule 3700 24 VDC Pump

Swim Platform Bilge

Condition:	Painted, clean
Access:	Through lazarette aft bulkhead hatch
Lighting:	Provided
Bilge Alarm:	Provided
Bilge Alarm Tested:	*Yes*
Bilge Suctions:	1 x Rule 3700 24 VDC Pump

BILGE and FIRE SYSTEM:

Fire & Bilge Pumps:

Location:	Port side ER aft
No. of Pumps:	Three (3)
Manufacturer:	MP Bronze head centrifugal
Rating:	5hp

Both centrifugal pumps capable of pumping the bilges.

The forward cofferdam bilge was filled with fresh water and after rebuilding the Manifold Valves, was satisfactorily pumped down with both bilge and fire pumps.

Fire hydrants (6):

- There are six (6) fire hydrants with hoses and three (3) remote start-stop switches for the fire pump.
- Both of the fire & bilge pumps were individually tested to provide good water pressure at the aft lazarette hydrant and hose.
- Hoses nozzles are capable of full stream or fire wall discharge.

Portable Emergency Fire & Bilge Pump:

- Maker: Endurance Equipment
- Model: EFP1.5BS
- Engine: Forced Air cooled, 4 stroke OHV
- The motor is pull-start and started easily and produced a good stream of water.

OIL WATER SEPARATOR:

Maker:	Boss Separators
Model:	MiniBoss 110
Capacity:	0.5m³/hr.
Manufacture Date:	Jan 2020
Monitor:	Bilge Mon 488
Tested:	2019-11-12
Pump:	FloJet Model 04300529

The oily water separator draws bilge water from the engine room only and discharges either overboard or into a plastic sludge tank on centerline in the ER. The monitor was demonstrated to operate satisfactorily.

Testing:

- The separator was operated at the end of the trial run and seen to go into alarm, however this did not register on the vessel monitoring system.

GENERATORS:

Generators:
The vessels Caterpillar generators are resilient mounted and are located in in the engine room. Each generator is arranged with General Electric three-phase over current protection breakers located in the respective sections of the main switchboard. The generators are fitted with 24VDC starters with separate starting banks.

Number of sets: 3, Three (3) Three phase 230/400Volt, +N,50 Hz

Generator 1

Make:	Caterpillar
SN.	N/A
Model:	3304
Kva:	106, Kw:85, Amps:151. Volts:230/400, Hz: 50
Run hours:	Accurate hours not available

Generator 2

Make:	Caterpillar
Model:	3304
SN.	9AB04852
Kva:	106, Kw:85, Amps:151, Volts:230/400, Hz: 50
Run hours:	Accurate hours not available

Generator 3

Make:	Caterpillar
Model:	3304
SN.	5AA05566
Rated:	50Kw /Kva 63, Amps: 95, Volts: 230/400, Hz: 50
Run hours:	Accurate hours not available

MAIN ENGINES:

For full engine details and performance please refer to the separate engine survey carried out by Pantropic Caterpillar.

- Maker: Caterpillar
- Model: C32
- Arrangement No.: 3637036
- Engine Family: KCPXN32 – Teir 3
- Port Serial No.: RPM01139
- Engine Hours: 137
- Stbd. Serial No.; RPM01142
- Engine Hours: 136

The wrapped exhausts come of each turbo charger into a “Y” section to combine them, from there the go to the overhead and outboard then down into a De-Angelo water injected spray ring. After the spray ring the exhausts pass into a GRP muffler box which has two discharges to the hull.

MARINE GEARS

- Maker: ZF
- Model: BW465
- Ratio: 3.037:1A
- Port Serial No.: 1394
- Stbd. serial No.: 1395

ELECTRICAL SYSTEMS:

Onboard electrical generation and distribution system.

Alternating Current System	230/400 Volt 50 Hz three-phase
	220/110 Volt 50 Hz single-phase
Direct Current System	24Volt

The yacht is provided with generation and distribution system for the voltages of 230/400 volt at 50 Hz and 24 VDC system supplied by several battery banks

AC System:

The ships AC system comprises of:
- 1 x Main Modular Enclosed Switchboard
- 2 x 85 kW Caterpillar Generators
- 1x 50 kW Caterpillar Generators
- 1 x 90 kVA Atlas shore power converter

General Description:
The ship has three (3) main generators which are star wound to produce 230/400 volts at 50 cycles three phase. This is supplied to the main switchboard buss via General Electric breakers and then distributed to the 230/400 Volt distribution boards. Most large current consumers are rated at 400-volt three phase.

The main switchboard has been configured as a TN-S system which means the neutral and the neutral cables are separated and grounded at one point only in the main switchboard shore power section.

When the yacht is alongside the yacht can take on shore power through the 90 kVA Atlas shore power frequency converter. This is placed onto the main bus manually; the system is not arranged for seamless transfer.

Each generator and shore power are fitted with over-current protection breakers mounted in the respective sections of the main switchboard. Parallel and synchronization are provided by Woodward SPM-A synchronizer and load sharing modules.

Main Switchboard:
The main switchboard is a modular unit designed for 230 / 400 volts, three phases, 50Hz with a neutral buss, conforming to marine requirements built by Controlled power Inc, SN # 3949 and is fitted with all necessary meters and controls, and is installed in starboard aft lazarette area.

The main switchboard is arranged with supply to the main buss from either of the main generators, or the shore power. The switchboard is divided into four (4) sections and is arranged as follows:

- Section1, Generator 1 section
- Section 2, Generator 2 section
- Section 3, Generator 3 section
- Section 4, Shore power section

The main switchboard has (4) three copper busses one for each phase and one for neutral, and each buss is adequately separated with adequate space for arch prevention. The switchboard section doors can fully open allowing adequate access to internal components consistent with class requirements.

The main switchboard is designed to be operated as a single buss system, no provisions have been made to split the buss during power management failure.

The system is designed to operate in two modes, automatic and manual. In automatic mode the system is controlled by the power management system including generator auto /start / stop, paralleling and load sharing, in the manual mode operation is completely manual and controlled by the operator.

The system's power management system is not operating correctly, allowing manual control only.

Shore Power:
The vessel is fitted with a shore power inlets port and starboard aft steering flats, each input is fitted with Glendenning CM-8 cable reels, over current protected is provided with local General Electric three phase breakers. The shore power is conditioned through the 90 kVA Atlas frequency converter, the converter interfaces electrical power between shore power supplies and the vessel's distribution systems. The converter converts the shore power characteristics to a clean signal before going to the vessel's distribution system, the converter's output is then directed to the main switchboard mounted over current protection breaker. The shore power converter complies with the IEC and EN standards and CE directives.

Shore Power Converter:

Location:	Stbd side Lazarette
Manufacturer:	Atlas
Type:	SPA-90F
Manufacturer date:	2015
S.N	48452
Input:	180-530V 40-70Hz
Output:	230/400V 50Hz
Rating:	90kVA
Run hours:	51285

Generators:

The vessels Caterpillar generators are resilient mounted and are located in in the engine room. Each generator is arranged with General Electric three phase over current protection breakers located in the respective sections of the main switchboard. The generators are fitted with 24VDC starters with separate starting banks.

Number of sets:	3, Three (3) Three phase 230/400Volt, +N,50 Hz,
Make:	Caterpillar

Generator 1:

Make:	Caterpillar
SN.	N/A
Model:	3304
Kva:	106
Kw:	85
PF	0.8
Amps:	151
Volts:	230/400
Hz:	50
Run hours:	Accurate hours not available

Generator 2

Make:	Caterpillar
Model:	3304
SN.	9AB04852
Kva:	106
Kw:	85
PF	0.8
Amps:	151
Volts:	230/400
Hz:	50
Run hours:	Accurate hours not available

Generator 3

Make:	Caterpillar
Model:	3304

SN.	5AA05566
Kva:	63
Kw:	50
PF	0.8
Amps:	95
Volts:	230/400
Hz:	50
Run hours:	Accurate hours not available

The generators comply with NEMA, IEEE, and ANSI standards for temperature rise. The generators were individually operated several times, during run operations the generators ran well and during heavy applied load the generators frequencies and voltage remained steady, and the recovery time for transient variations was less than 1.2 seconds. The generators' automatic functions were not operational, the system can only operate in the manual position only.

120V Power Supply:
The vessel is fitted with a 7.5kVA transformer providing 110-volt receptacles throughout the vessel, the transformer transforms the voltage but does not change the frequency.

110-volt transformer:

Location:	Port side Lazarette
Manufacturer:	Acme Electric
Rating:	7.5kVA
Input:	230V
Input Hz:	50
Output:	120V 5
Output Hz:	50

Power is supplied from the main switchboard via a 32 Amp breaker. After transforming the voltage, power is a led to a distribution panel P-17 in the ER via a 63 Amp breaker. Power is then distributed to the galley, guest and wheelhouse distribution panels.

Distribution.
The vessel distribution panels provided are sufficient for consumer requirements. Each distribution panel is supplied from the main switchboard 230/400-Volt three phase consumer breakers.

Each supply is fitted with over-current protection at the source. Distribution to consumers is then individually protected via individual consumer protection breakers. The consumers over current breaker protection and connected conductors appear to be correctly sized and the circuit breakers trip curve appears to correct for the loads protected.

Enclosure I.P Ratings:
Electrical enclosures, pump and motor starter panels, Local operator panels, machinery space boxes have been provided conforming to required I.P ratings.

Electrical enclosures pump and motor starter panels, Local operator panels have been installed in readily accessible locations

Motors and Pumps:
The 230/400-volt pumps, motors and fans are supplied from individual over current protection breakers.
Contactors and overload relays were labeled well. Machinery that was reviewed indicated the overload protection was set to the correct trip settings.

Pump and motor starter panels, and local operator panels have been installed in accessible locations; locations are well illuminated and ventilated.

Pumps, motors and fans installed onboard are individually over current protected, each system is start protected using motor soft starters, frequency drives or start contactors. Each system is provided with marine grade constructed enclosures with clearly labeled operator switches and indicator lights.

Cable:
The vessels cable system is constructed in compliance with industry requirements. Cable trays and cable raceways are installed with adequate support and chafe protection, although faults have been noted in the electrical recommendations. Cables installed appear to be the correct gauge required for connected loads, each circuit has been protected with over-current protection breakers at the source; breaker tip rating and trip curve appear to be correct for the loads protected. Cable runs were seen are run conforming to classification bend radius minimums.

Emergency Lights:
The vessel is fitted with an automatic 24 VDC emergency light system. The system automatically operated during loss of ships VAC power, the system was demonstrated serval times during loss of ships power and operated correctly.

Alarm & Monitoring System:
There is an alarm & monitoring system installed on the yacht by Intech. It is a very basic system but has been accepted by ABS. The AMS consists of two (2) Automation Direct PLCs located in the bridge and lazarette, ethernet network, twin touch screens in the wheelhouse and one touch screen in the lazarette. They have graphic pages for the following:

- Bilges
- Fresh water tank
- AC PMS
- Entry System
- Fuel Tanks
- Black & grey Tanks
- DC
- Alarms

Multiple input / output junction boxes have been installed in various locations on the vessel for collecting data. The system had several issues with incorrect data and noted in the recommendations.

Grounding:
The vessels distribution panels and equipment are grounded with individual conductors from the source or local grounding links connected directly to the hull. Insulation resistance between components was good at less than 1ΩOhms, unless otherwise noted in the electrical recommendations.

The vessel's grounding system is a TN-S grounded neutral system requiring a single ground to neutral point only, this connection is within the main switchboard.

DC Systems:
The yacht is provided with local 24V direct current power systems, typically for instrumentation and control. The generators and main engines are 24 VDC starting, the navigation electronics, as well as the GMDSS communication system also utilize 24 VDC sources, 24 VDC power is provided by various rectifiers and battery banks located throughout the vessel.

Main Engine Start Batteries:

Location:	ER centerline bilge
Number of Batteries:	Two 12 volt 225 AH
Charger location:	Aft ER bulkhead port side
Manufacturer:	Mastervolt 80 amp

The main engine start banks are fitted with isolation and parallel switches located on each engine, the banks are fitted with monitoring devices but not seen on the vessels alarm and monitoring system.

Main Engine back up start batteries

Location:	Port aft engine room
Number of Batteries:	Four (4) 12V 130 AH, AGM for each bank
Wired:	Series/ parallel to produce 24 Volts
Charger location:	Port aft engine room
Charger:	Dolphin 24Volt, 20 amp.

The main engine start banks are fitted with isolation and parallel switches located on each engine, the banks are fitted with monitoring devices but not seen on the vessels alarm and monitoring system.

Generator Start Batteries x 2:

Location:	ER centerline bilge
Number of Batteries:	Two 12-volt 225 AH
Charger location:	Aft ER bulkhead port side
Manufacturer:	Mastervolt 80 amp

The generator start banks are fitted with isolation switches located on each engine, the banks are fitted with monitoring devices but not seen on the vessels alarm and monitoring system.

House batteries:

Location:	Under wheelhouse console
Number of Batteries:	Four (4) 12V 245 AH, AGM for each bank
Charger location:	Under wheelhouse console
Manufacturer:	Mastervolt 80 amp
Protection:	250-amp ANL local fuse

The house battery bank is fitted with isolation and parallel switch located next to the battery bank, the bank is fitted with an output over current 250-amp ANL fuse next to the batteries, the bank is monitored on the vessels alarm and monitoring system.

Emergency batteries:

Location:	Under wheelhouse console
Number of Batteries:	Four (4) 12V 245 AH, AGM for each bank
Charger location:	Under wheelhouse console
Manufacturer:	Mastervolt 80 amp
Protection:	100 amp ANL local fuse

The emergency battery bank is fitted with isolation and parallel switch located next to the battery bank, the bank is fitted with an output over current 100-amp ANL fuse next to the batteries, the bank is monitored on the vessels alarm and monitoring system.

Hull Potential:

The hull potential reading was taken using a silver-silver chloride reference cell connected to a Flir DM`284 Multimeter. Readings were taken with shore power disconnected and vessel stationery offshore.

Readings:

Port stern	0.998	Starboard stern	0 .990
Port amidships	0.978	Starboard amidships	0.987
Port forward	0.956	Starboard forward	0 .965

Readings are within recommended protection levels of -750-1050 Millivolts for fiberglass hulled vessels.

Power Quality.

The vessels electrical system was connected to a Fluke 435 quality power analyzer; this test was performed with focus on the vessels power quality regarding harmonic distortion.

Test results indicate that the vessels electrical system has a THD (Total harmonic distortion) peaking at approximately 3.9 %, which is below the acceptable maximum level of 8%.

Power Quality Report

All marine classification bodies are concerned about harmonic voltage distortion and the possible consequences should some critical item of equipment malfunction or fail. Often viewed as a potential SOLAS (Safety of Life at Sea) issue, classification bodies have imposed strict limitations on the magnitude of harmonic voltage distortion permitted on vessels classed under their voltage distortion limits (8% for ABS, BV, GL, DNV, Rina and Lloyds Register).

Harmonic currents are caused by nonlinear loads connected to the distribution system. A load is nonlinear when the current it draws does not have the same wave shape as the supply voltage, the flow of harmonic currents through the system impedances in turn causes voltage distortion in the distribution system. Harmonic currents increase the RMS current in electrical systems and deteriorate the supply voltage quality and stress the electrical network and potentially damage the equipment and can disrupt normal operation of devices.

Electronic equipment such as computers, PLC modules, and microprocessor-based equipment, and lighting system failure has been linked to harmonic distortion. Harmonic distortion is the corruption of the fundamental sine wave at frequencies that are multiples of the fundamental.

The major impact of voltage and current harmonics but not limited too is the increase in machine heating caused by increased iron losses, and copper losses, both frequency dependent, high harmonic distortion changes a normal sinusoidal waveform to a complex waveform, which can contribute to electronic equipment failure, light flicker, motor, and transformer premature failure due to overheating, communication errors, circuit breaker tripping and loss of synchronization. When harmonic distortion is present false readings can occur on the vessels instrumentation, alarm, and monitoring systems, and can cause problems with voltage regulation on generators.

Test results

The vessels electrical system was connected to a Fluke 435 quality power analyzer; this test was performed with focus on the vessels power quality regarding harmonic distortion. During this test, the hotel 230/400-volt supply was provided from port 85 Kw generator during sea trials.

Test results indicate that the vessels electrical system has a THD (Total harmonic distortion) peaking to approximately 3.9 %, which is below the maximum 8% acceptable level, the average load during this test was approximately 30-35 kW.

The harmonics present may not indicate immediate adverse effects; however as harmonic levels increase, the likelihood of experiencing problems also increases.

The total harmonic voltage distortion (THD) should not exceed 8%, as measured at any point of common coupling (PCC), with any individual harmonic voltage distortion not exceeding 3% of the fundamental voltage value.

The harmonic distortion on the 3rd harmonic (150Hz) was good at 1.8%, the 5th harmonic (250 Hz) was also good at 2.3% and the 7th harmonic (350Hz) also good at 1.4 %, the THD at this point was captured at 3.9%. and voltage wave form showed very little corruption, at this point the voltage crest factor was captured good at 1.49, and the PST (light flicker not seen by the naked eye) also good at 0.56.

Screen shots

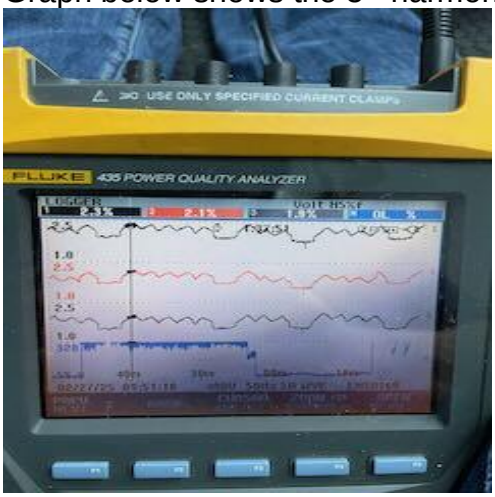
The screen shots below support the findings mentioned in this report. Screen shots were taken directly from the attached Fluke 435 quality power analyzer

Graph below shows the THD at good at 3.9%.

Graph below shows the clean voltage wave form.

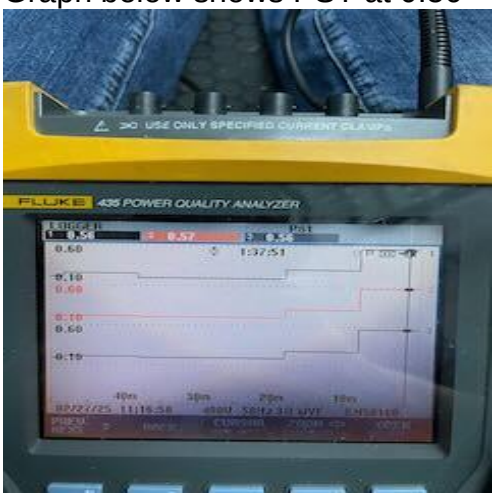
Graph below shows the 3rd harmonic (150Hz) at 1.6%

Graph below shows the 5th harmonic (250Hz) at 2.3%



Graph below shows the 7th harmonic (350Hz) at 1.3%

Graph below shows PST at 0.56



Graph below shows the voltage crest factor at 1.48

Conclusion

The majority of harmonic distortion is caused by onboard non-linear loads including frequency drives. The THD was captured at 3.9 %, which is below the acceptable level of 8%, and in addition 3rd,5th and 7th individual harmonics was all below the acceptable level of 3%. It is this surveyor's opinion that no action is required at this time.

It is suggested the vessels harmonic distortion is coming from the Air conditioning compressors frequency drives and the engine room fan frequency drives.

The use of passive filters is a pre-requisite to the use of active filters and the first step in harmonics reduction.

It is expected a line reactor or DC choke can reduce the loads harmonic level by 60-70%, however, should passive line reactors show insufficient reduction the next step is to install an active filter. Active filters monitor the line or load current and determine the amount and nature of harmonics current, then injects the equal amount of current in the opposite phase illuminating harmonic distortion. Adjusting the frequency drives carrier frequency could smooth the wave from but increasing the IGBT (insulated Gate Bipolar Transistor) switching speed could cause overheating in the drive and therefore not recommended.

Recommendation
The vessels harmonic distortion at his time is acceptable with no detrimental corruption to the system caused by harmonic influence, no action is required at this time.

Although it is recommended that a full harmonic analysis be conducted yearly and if additional frequency drives are installed. Failure to address harmonic distortion issues could lead to premature equipment and electronics failures, and a multitude of related issues.

Before any onboard systems failures can be correctly diagnosed, the vessels power system is to be a "clean system," failure to address the vessels THD, the likelihood of experiencing problems will continue to increase.

GROUND TACKLE:

Anchor Windlass x 2:

Manufacturer:	MUIR
Model No.:	V10,000HYD
Type:	Vertical Hydraulic
Rating:	10,000lbs / 10m per min

- Stainless steel band brakes
- Stainless steel chain stoppers
- Stainless steel devil's claw retainers w/ remote controllers

Anchors x 2:
- Stowed in stainless steel anchor pockets
- 450 pounds each
- Galvanized stockless type

Anchor chains x 2:
- Connected via stainless steel swivel links
- 450 ft each
- ¾" inch galvanized, linked chain
- Seawater chain wash

Aft Capstans:

Manufacturer:	MUIR
Model No.:	VC5,000
Type:	Vertical Hydraulic
Rating:	5,000lbs / 10m per min

Note: The Anchor windlass capstan chrome finish is worn.

Additional Ground Tackle and Deck Mooring Gear:

Foredeck:
- Two (2) each, port and starboard stainless-steel bulwark fairleads
- Two (2) each, port and starboard side stainless-steel deck mooring bits

Port & Starboard Main Deck:
- Two (2) each, port and starboard side bulwark stainless-steel fairleads
- Two (2) each, port and starboard side stainless-steel deck mooring bits

Aft Deck:
- One (1) each, port and starboard side bulwark stainless-steel fairleads
- One (1) each, port and starboard side stainless-steel deck mooring bits

Swim Platform:
- Two (2) each, port and starboard side stainless-steel deck mooring bits

Port and starboard main anchors were powered down and then allowed to free-fall; chain wash was proven satisfactory. Chain retrieval was achieved with the single speed windlasses.

ELECTRONICS, COMMUNICATION, and NAVIGATION EQUIPMENT:

The following electronics, communication, and navigation equipment were seen aboard the yacht. All was tested and proven to be operational unless otherwise noted in "RECOMMENDATIONS".

- Shore Based Maintenance – Satcom Solutions Inc – Feb11,2026
- 4 x GE Security 17” Monitors
- 2 x Haitland 17” monitors
- 2 x Nauticomp 15” monitors
- Furuno GP1871F GPS
- Furuno GPS 7” Plotter
- TimeZero-Pro chart system
- 2 x Furuno X band radars with ARPA
- Anshutz Pilotstar D Autopilot
- Anshutz S20 Gyro Compass - New
- Cassen & Plath magnetic compass Corrected last 2022
- Furuno LCD FCV1200L Color depth sounder
- 2 x Furuno FA170 universal AIS
- Furuno BR530 BNWAS
- SIMRAD IS20 Apparent wind, Speed/ Depth
- Furuno NX
- Koden KGR920 GPS Navigator
- 2 x Furuno FM8500 DCS VHF Radios
- 4 x ACR Searchlights RCL100 Remotes – No up/down function
- 2 x Raymarine Load hailer
- Tripple array air horns
- Dual set of Navigation and NUC Lights.
- KVH Tracphone – Not operational.
- Panasonic KX-T7736 phone intercom system
- HP office Jet pro8610 Printer scanner

ENTERTAINMENT EQUIPMENT:

The following entertainment equipment were seen aboard the yacht. All was tested and proven to be operational unless otherwise noted in "RECOMMENDATIONS".

- System: RV-Star link, Apple TV, SAT dome receivers not operational. Note Crestron Control system is not operational.
- Master: 32” Samsung TV on drop down panel – No controls for the drop panel
- Main Deck Salon: 41” LG TV
- Sky Lounge: 64” Samsung TV – No operational surround sound system
- Bridge Deck Study: 32” TV
- VIP Guest: 32” Samsung TV on drop down panel – No controls for the drop panel
- Port Forward Guest: 31” Samsung TV
- Stbd Massage Room: 27” LG TV
- Stbd Mid Guest: 40” Samsung TV
- Port Mid Guest: 31” Samsung TV
- Captain cabin: 42” LG TV
- Crew Mess: 28” LG & 19” CCTV monitor

APPLIANCES:

The following appliances were seen aboard the yacht. All was tested and proven to be operational unless otherwise noted in "RECOMMENDATIONS".

Galley:
- Range Master extraction Hood with wet chem fire suppression
- AEG 5 burner cooktop
- 2 x Miele Convection ovens
- 2 x Warming Drawers
- undercounter wine cooler
- 2 x Electrolux ice makers
- Chef King 50 Dish washer
- 4 x Liebherr refrigerator/freezers
- Sharp microwave oven

Sky Lounge wet bar:
- Nordcold refrigerator – Loud compressor – Not Operational

Sundeck wet bar:
- Small bar refrigerator
- Brema Ice Maker – Not operational

Crew Mess:
- GE refrigerator/freezer – Not Operational
- Bosch Dish washer
- GE Microwave oven
- Porcelain sink

Laundry:
- 3 x Speed Queen washers – Two not operational
- 3 x Speed queen Driers
- 1 soaking sink

TEAK DECK:

The exterior swim platform, port and starboard main and bridge decks are worn thin with numerous exposed fastener heads visible. There are also several open seams with water intrusion.

Deck Level	Plank Width	Seam Width	Outer Margin	Iner Margin	Seam dep	Plank Len
Main Deck	2 ¼”	1/8”	3 ¾”	3 ¼”	3/8”	10’
Bridge Deck	2 ¼”	1/8”	3 ½”	2 ½”	½”	10’
Sundeck	2 ¼”	3/16”	3 ¾”	3 ¼”	3/8”	10’
Swimplatform	2 ¼”	1/8”	3’	NA	3/8”	88”

WINDOWS and DOORS:

The superstructure windows have been reefed and re-caulked during the present ownership. The port and starboard main salon windows are severely delaminated and will need replacement.

TENDERS:

There is one outboard RIB tender that is in very poor condition and a buyer should expect to replace.

Maker:	Novurania
HIN:	PKD14513F304
Year:	2004
Length:	10’3”
Engine:	Yamaha
Model:	F70AET
Serial number:	6CJ-L-1046924A
Hours:	NA (no battery)

2 x JET SKIES:

Maker:	Yamaha
Model:	VX Cruiser
Length:	11’
HIN:	YAMA33353J819
Hours:	28.8
HIN:	YAMA3349J819
Hours:	30.1

Good condition and started easily

TENDER LIFT:

Foredeck Crane:

Location:	Foredeck starboard side, the crane can also be relocated to the port side foredeck and port and starboard aft deck
Manufacturer:	NA
Capacity:	1,100 lbs.

- Manual slewing/rotation. In a rolling sea the boom swings wildly unless properly secured with lines.
- 24V DC electric self-tailing winch w/ remote via AC inverter for the hook

Sun Deck Crane:

Location:	Sundeck aft port side
Maker:	Nautical Structures 4000
Capacity:	4000lbs
Type:	Hydraulic off Gen PTO, Lever control, slewing, boom extension and lift

There is a DC emergency feature for 24V that has been disconnected. The foredeck crane was satisfactorily test operated to function only under no load. The upper deck crane was in the process of repair and not tested at this time.

EXTERIOR FINISH:

- The yacht last full paint application was in 2019 in Greece and is presently it is in poor condition and is due for a full paint job.

CANVAS and COVERINGS:

- Only the exterior tables are provided with covers, and they are generally worn and in poor condition.

DECK GEAR and EQUIPMENT:

Passerelle:

- Manufacturer: Besenzoni
- Type: Electrohydraulic, 3 section telescopic, Med gangway
- Features: up/down, teak grating with tread lights, pop-up outer hand hold.
- Deploys from the starboard aft transom.
- Comment: The Passarelle was extended out and is steady under foot. The teak grating is in very poor condition, the tread lighting is not operational. No SWL sighted.

INTERIOR:

Note: A detailed design/layout and cosmetic conditions of the interior of this vessel will not be covered in this report. It is assumed that prospective owners or representatives are well informed by brokers or sellers about the vessel interior appointments, specific cosmetic conditions and layout.

Generally, the interior is in need of woodwork refinishing, fresh carpeting, stone tile repairs and the crew quarters flooring needs replacement.

Six (6) staterooms: For a maximum of twelve (12) guests
Captain's cabin: On the upper-deck port side (2) crew
Crew accommodations: Four (4) cabins forward for (8) crew

- All cabins and staterooms have ensuite bathrooms with separate shower stalls.
- Starboard forward on the lower deck is a massage room.
- The lower deck aft VIP is full beam with ensuite tub and his and her heads.
- Master stateroom forward on the main deck is full beam with bathtub, separate shower with his and hers heads.
- Large open main salon with dining table forward
- Sky lounge with office and bar on the boat deck
- Large well-laid out main galley amidships
- Flooring is a combination of beige carpet and marble
- Overheads are lined with beige vinyl.
- Wood used in cabinetry and bulkhead finishes is cherry

The interior is tastefully decorated but much of the interior bright work has a milky finish. Please see "RECOMMENDATIONS".

SAFETY EQUIPMENT: The following safety equipment was noted aboard. Those items not operational are noted in the "RECOMMENDATIONS."

Equipment	**Date of Inspection**
Annual 2 x SART ACR Pathfinder Test Cert	Current
AIS Radio Survey	Current
EPIRB ACR Global Fix V4 EPIRB test – Battery 01/2032	Current
2 x ACR SR203 GMDSS Handheld VHF Radios	
Spill Response Contract Certification	Not Sighted
Global MedKit <10>	April 2025
Salvage and Maritime Firefighting Contract	Not Sighted
Fire hose, couplings & gasket inspection Cert.	May 3, 2024
Engine Room Fixed CO^2 System	May 3, 2024
Portable Fire Extinguishers	May 3, 2024
Galley Wet Chemical System	May 3, 2024
Scott SCBA inspection	May 3, 2024
Inspect 35 adult & 6 Child foam PFD	Current
Fire Bunker Gear - New	Current
Ample Inflatable PFD	Current
New Thorn Tyko Smoke alarm 46 Smoke detectors and call points	Current
4 x 12person Viking DK SOLAS A Life Raft Inspection – current	Sept 27, 2025
4 x Life Rings with 1 each light & smoke and throw line	Current
Ample set of flairs	Feb. 2026
2 x Rocket line throwers	2032
Ships bell on foredeck	Needs re-chroming

COMMENTS:

"IONIAN PRINCESS" is a well-designed and well-built yacht. She is in POOR to FAIR yacht condition.

STATEMENT OF OVERALL VESSEL RATING OF CONDITION:

It is the surveyor's experience that develops an opinion of overall vessel rating of condition after a survey has been completed, and the findings have been organized.

The grading system accepted in the marine industry for a vessel at the time of survey determines the adjustment to the base range of values for a similar vessel sold within a given time period as a consideration to determine the Market Value.

The following is an accepted marine grading system of condition

EXCELLENT CONDITION – The vessel has been maintained in mint or "Bristol" fashion – usually better than factory new and loaded with extras – a rarity

ABOVE AVERAGE CONDITION – The vessel has had above average care and is equipped with extra electrical, mechanical, electronic or interior outfitting

AVERAGE CONDITION – The vessel is ready for sale requiring little or no additional work and normally equipped for her size

FAIR CONDITION – The vessel requires usual maintenance to prepare for sale

POOR CONDITION – The vessel requires substantial yard repairs and does not have "extras"

RESTORABLE CONDITION - The vessel is currently unusable but has enough of hull and engines remaining to restore vessel to a suitable condition.

As a result of the examinations carried out and reported above, and by virtue of my experience, my opinion is that the
OVERALL VESSEL RATING of CONDITION for the subject vessel is:

"POOR to FAIR"

VALUE:

Fair Market Value

The "FAIR MARKET VALUE" is the most probable price in terms of money which a yacht should bring in a competitive and open market under all condition's requisite to a fair sale, the buyer and seller, each acting prudently, knowledgeable 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 condition whereby:

- Buyers and sellers are typically motivated.
- Both parties are well informed or well advised, and each act in what they consider their own best interest.
- A reasonable time is allowed for exposure in the open market.
- Payment is made in terms of cash in US dollars or equivalent thereof; and
- The price represents a normal consideration for the yacht 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 the undersigned surveyor's opinion that the "FAIR MARKET VALUE" of the subject vessel, as seen and equipped, is in the region of:

US $7,000,000.00 to US$7,500,000.00
(Seven Million to Seven Million Five Hundred Thousand US Dollars)

Reproduction (Replacement) Cost

The replacement cost of a similarly built yacht to the " IONIAN PRINCESS ", completed, duly certificated and ready for use in the intended service (large pleasure yacht) is approximately:

US $45,000,000.00
(Forty-Five Million US dollars).

Note: The values appearing in this report are subjective and are based on comparable yachts and the yacht resale market at the time of the survey. The values are based on an average selling price of a yacht of this type and size similarly equipped, considering all extras and accessories onboard. The values are intended for insurance and financial evaluation only but are not intended to influence the purchase or non-purchase of the yacht.

SURVEYOR'S CERTIFICATION

The undersigned surveyor certifies that, to the best of his 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 personal, unbiased professional analyses, opinions, and conclusions.
- The undersigned surveyor has no present or prospective interest in the vessel that is the subject of this report, and 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 that favors the cause of the instructing client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.
- I have conducted a personal examination of the yacht/vessel that is the subject of this report.

SUMMARY:

"IONIAN PRINCESS" is a good yacht with good gear and equipment. Once her few safety and asterisked "RECOMMENDATIONS" have been complied with, she will be considered a good marine risk for coastal and Transocean cruising. Any extended limits and extensions would have to be set by an arrangement with the underwriters.

GENERAL NOTES

Note: This survey report is issued by the undersigned, who have exercised reasonable care in conducting a visual inspection of the accessible areas, in connection with the examination, of the subject vessel. All details and particulars in this report are believed to be true but are not guaranteed accurate.

All judgements, conclusions, and recommendations are expression of opinion of the undersigned, based on his skill, training, and experience, after a routine visual examination of the vessel's systems, and after discussions with owners, crew, and others familiar with the vessel.

Unless otherwise stated, no actual measurements or calculations were made by the surveyor at the time of this examination. Reported measurements and capacities were obtained from the vessel's/yacht's papers/documentation and/or from other published sources.

No part of this report is issued as an expressed or implied warranty of the condition, life expectancy, seaworthiness, or value of the vessel/yacht or its systems, machinery, or equipment.

The undersigned has conducted his visual examinations and issued this report for the sole use of the specified requesting party for an agreed fee based upon the intended use of the report and legal liability of the undersigned.

Accordingly, others are not to use this report, and not to rely upon the contents of this report, without payment to the undersigned of an additional agreed fee, based upon re-evaluation and examination of the same factors. Further, the undersigned shall have no liability for consequential, no liability for personal injury damages, no liability for property loss damages, and no liability for punitive damages, all of which shall be deemed to have knowingly and voluntarily waived upon receipt and use of this report.

Further, in no event shall the legal liability for the undersigned of this report, or Patton Marine Surveyors and Consultants, Inc., ever exceed the fee, less expenses, paid by the requesting party for the issuance of this report, regardless of the number of claims, or suits, and regardless of whether under theory of tort, contract, warranty, outrage, or otherwise.

This survey is prepared for SFR-PI LLC, and as aforesaid does not expressly or impliedly warrant or in any way guarantee the condition, seaworthiness, or value of the vessel. It is further agreed by the aforesaid SFR-PI LLC that Patton Marine Surveyors and Consultants Inc., Mr. Walter Richardson, of Cutter Marine Inc., Mr. Chris Smith of Safety Offshore Inc. and Mr. Mike Schneider of Custom Offshore Systems Inc. shall not be held liable under any circumstances whatsoever or responsible in any way for any error in judgment, default or negligence nor for any inaccuracy, omissions, oversights, misrepresentation or misstatement in this report and that the use of this report shall be construed to be an acceptance of the foregoing conditions.

The above report has been prepared and submitted without prejudice to the rights or obligations of any party.

PATTON MARINE SURVEYORS
AND CONSUTLANTS INC.

Walter Richardson	*Chris Smith*	*Mike Schneider*
Marine Surveyor	Marine Surveyor AMS®	Accredited Marine Electrical Surveyor

WR/CS/MS:isa

–NOTICE–