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‘ _____ ’

Pre-Purchase Survey

Report Date: 15th August 2019

Survey Date: 12th & 13th August 2019

Place of Survey: Lefkas Marina, Lefkas, Greece

Vessel name: _____

Vessel Type: Sailing Yacht

Builder: Hanse

Client

Mr. _____

Length Overall: 56' 3" (17.16m)

Beam: 17' 0" (5.18m)

Draft: 7' 5" (2.28m)

Built year: 2013

Builder: Hanse Yachts

HIN no: -----

SSR: -----

Engine Make: Volvo Penta

Engine Model: D3-110

Fuel Type: Diesel

*Above taken from various sources, not checked.

Contents

1. About the Survey and this Report
2. General Description
3. Keel
4. Hull below Waterline
5. Topsides above Waterline
6. Deck Moulding
7. Hull to deck join
8. Coachroof
9. Cockpit
10. Hull interior and Structural Stiffening
11. Rudder & Steering
12. Stern Gear
13. Skin Fittings and Through Hull Apertures
14. Cathodic Protection
15. Access to Accommodation
16. Ports, Windows and Hatches
17. Stanchions
18. Rigging Attachment Points
19. Mooring Arrangements
20. Deck Gear and other fittings
21. Mast and Spars
22. Standing Rigging
23. Running Rigging
24. Sails and Covers
25. Navigation Lights
26. Bilge Pumping Arrangements
27. Fire Fighting Equipment
28. Lifesaving, Emergency and other Equipment
29. Engine and Installation
30. Controls and Running Checks
31. Fuel System
32. General Accommodation
33. Conclusion, Recommendations and Advice
34. Fresh Water System
35. Heads
36. Electrical Installation
37. Electronic and Navigation Equipment
38. Heating and Refrigeration
39. Dingy and Other Equipment
40. Conclusion, Recommendations, Advice
- I. Addendum- Photographs

1. About the Survey and this Report

Terms & Conditions

This Survey was carried out under the Yacht Designers and Surveyors Association current Terms of business which were e-mailed to the client prior to the survey.

Limitations

- We have not inspected woodwork or any other parts of the structure which are covered, unexposed or inaccessible and we are, therefore, unable to report that any such part of the structure is free from defect.
- In some cases it is not possible to detect latent and hidden defects without destructive testing, not possible without the owner's consent.
- Where repairs, further opening up or dismantling is required, additional decay, damage or necessary work may be uncovered.
- The engine, tanks and other normally installed mechanical equipment were in situ which limited inspection and examination in these areas.
- A Sovereign Quantum Marine Moisture Meter, a capacitance-type moisture meter was used. The calibration of the meter was checked on the day of the survey, prior to readings being taken. Readings are taken in the relative mode, which ranges from 0-100. The values are regarded as an index and do not represent moisture content as a percentage of the dry weight. Where appropriate both shallow and deep modes were employed. Direct comparisons with other meters, be they Sovereign or others are not valid.
- The vessel was not surveyed with respect to any particular code or standard or navigation body's rules or bylaws unless specifically stated. No documentation or compliance with any regulations has been checked as part of this survey. No guarantees or warranties are given or implied with respect to the vessels suitability or fitness for purpose.
- The vessel was inspected on the hard at Lefkas Marina, Lefkas, Greece. Access to the hull was generally good except in areas where the boat was resting on posts.
- The vessel had been UHP water blasted to remove any fouling to the hull.
- The vessel had been coated in anti fouling beneath which lay a number of layers of epoxy coatings. Coupons of antifouling were removed, however, layers of epoxy coating were not removed to establish moisture meter readings as part of the survey.
- This report carries no warranties regarding ownership of the vessel or any outstanding mortgage, charges or debts which there may be on the vessel.
- This report has been prepared for the use of the commissioning client Mr. ————— and no liability is extended to others who may see it.

Scope of Survey

- This is a Pre-Purchase survey with sea trial and its purpose is to establish the structural and general condition of the vessel. Where items of equipment have been tested this will be stated in the text.

- The survey is not a parts and labour guarantee and it should be noted that defects may exist in the vessel that the survey could not detect due to limitations of time, vessel presentation and the range of tests acceptable to the owner.
- Please note that where reference is made to condition in all cases this must be considered in relation to the vessels's age, for example: very good condition should not be taken to mean new condition.
- A general inspection of the engine, installation and systems was made, but this is a visual inspection only and an item has only been operated if stated. It should be appreciated that some components may appear serviceable but be found defective when run under load and for a prolonged period.

Recommendations

Recommendations will be restricted to those defects which should be rectified before vessel is used, (or with a given time span if specified, and items which may affect insurability).

Recommendations are listed at the end of each section, labelled with priorities listed below:

- **Dangerous:** Items which must be repaired prior to the vessel being re-floated or used for habitation/navigation. Vessel deemed uninsurable with this issue.
- **Urgent:** Items which are not classed as dangerous, however, should be repaired preferably prior to the vessel being re-floated or used for habitation/navigation. Vessel deemed an increased risk for insurers with this issue.
- **Priority:** Items of repair should be carried out as soon as possible. Repair should be carried out no later than within six months. Vessel only insurable with restrictions or safety precautions.
- **Caution:** Items would require monitoring and further investigation. Repair may be required within the next twelve months.
- **Advisory:** Items are advised for safety or maintenance. These do not pose an insurance risk to the vessel.

Recommendations will be printed in blue, for quick reference. The recommendations are contained in the body of the report in order that they may be read in context.

Suggestions will be printed in italics as they do not constitute a requirement. Suggestions are this surveyors opinion only and can be looked on as 'helpful advice' to preserve the craft for the long term or improve handling and comfort.

Legislation & Ownership

Note: The inspection is not undertaken with any intention to ascertain that the vessel would comply with any rule or code of practice as may be required by any authority under whose jurisdiction the vessel may be operated. It carries no warranty regarding ownership of the vessel or any warranty regarding outstanding mortgages, charge or other debt there may be on the vessel.

V.A.T Status & Proof of Ownership

The original invoice for the vessel was not seen and therefore there was no evidence that United Kingdom V.A.T has been paid. There was no proof of ownership found on the vessel.

No evidence of when the vessel was built was seen at the time of survey. Vessels built prior to July 1998 do not have to adhere to the requirements of the Recreational Craft Directive.

A builders plaque was seen attached to the cockpit of the vessel exhibiting a 'CE' mark. This is an indication that the watercraft conformed to the essential requirements and allows it to be sold anywhere in the EU. The vessels watercraft HIN number ————— was seen embossed on the starboard aft quarter of the vessels hull.

Surveying conditions

The conditions on the day the survey was conducted on were good. The conditions when readings were take were as follows.

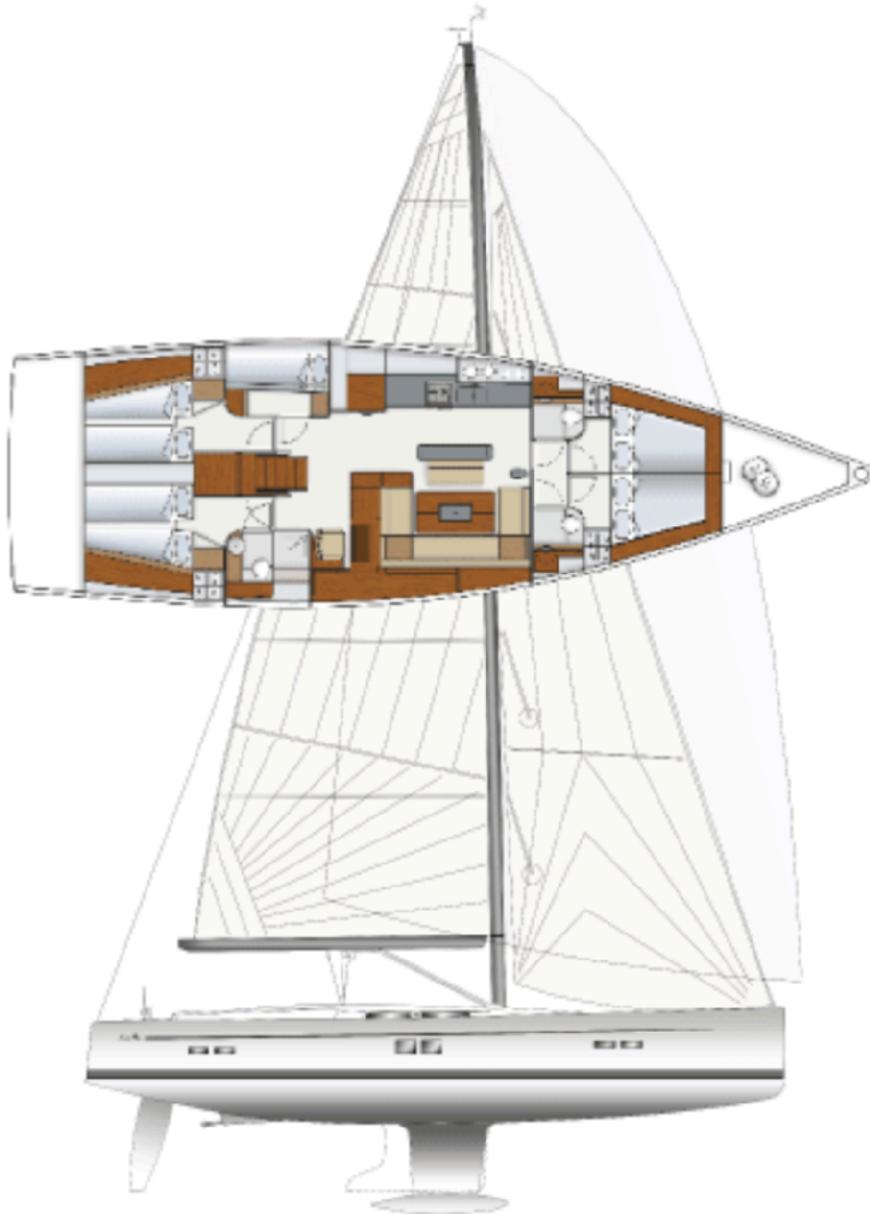
- Air Temperature: 32.1°C
- Surface Temperature: 31.4°C
- Humidity: 42.3%
- Dew Point: 8.7°C

The conditions were good for obtaining moisture readings within structural components of the vessel.

2. General Description

'—————' was reported as being built in 2013 by Hanse Yachts. The vessel which was a highly successful production vessel of the cruising class was built in Germany. She was an aft cockpit, displacement cruising yacht with a shoal-draft cast iron keel. The vessel had a sloop rig with alloy mast and boom. The auxiliary engine was a Volvo Penta diesel, with shaft and single propeller. The hull was of moulded GRP finished in white gel coat.

The general condition of this particular vessel indicates that she has not been intensively sailed. She is of a known, tried and tested design. The original build quality was to a high standard. There are a considerable number of items which should be rectified as noted in the recommendations.



3. Keel

The vessel had a shoal draft cast iron keel. The keel had been coated with the same anti fouling as the rest of the underwater hull which was in good serviceable condition.

- The keel was visually inspected and found to be fair. Light hammer soundings did not reveal any areas of thick filler on the sides, leading or trailing edges.
- A limited visual inspection of the surface of the bottom of the keel found it to be fair with no indication of groundings noted.
- Externally, the curved section around the keel root (the keel to hull joint) was visually inspected and hammer tested with consistent, robust soundings returned. Particular attention was paid to the flatter sections of the hull just forward and aft of the keel where damage from groundings can be sustained - no indication of crazing, deformation, or delamination was found.

- Moisture readings close by the keel in the flat sections forward and aft on the hull were not different to anywhere else on the underwater hull.
- Externally there was no evidence of corrosion or staining at the hull to keel join.
- The keel was through bolted into place. Eight 40mm, and two 30mm keel bolts which were located and inspected in the bilge. These were found beneath sole boards within the saloon.
- These were positioned within the matrix in sets in a 1,4,4,1. All noted to be non ferrous and in good serviceable condition, and all found set on substantial ~20mm backing plates.
- The keel bilge was dry and clean, with no signs of rust or corrosion around the keel bolts. There were no previous dirty water marks noted.
- The keel bilge and surfaces around the keel bolts were inspected and hammer tested, and no evidence of delamination, de-bonding or movement were noted. It was not possible to inspect the GRP laminate around the keel studs as this was obscured by the backing plates.
- Inspection of the laminate close to the keel bolts found no fractures in the longitudinal and transverse members, and no cracks in the surrounding joiner work. Hammer testing of the GRP structures and surfaces returned clear, robust and consistent soundings.

4. Hull below Waterline

The hull was of a GRP construction which included a balsa core. The hull were reported as being hand laid using polyester epoxy for all inner laminates and Vinylester resins in all outer laminates to resist blistering, as well as an Isophthalic gelcoat.

- A visual inspection of the hull found her to be true, with no obvious unfairness of the hull.
- The hull was hammer sounded, with areas of significant stress where one might expect the hull to flex given additional attention. No voids were sounded, however, no guarantee can be given that such voids do not exist.
- The original gel coat had been covered in an epoxy barrier coat, believed to be Gelshield 200, which was in good condition.
- A visual inspection revealed no significant evidence of crazing, deflections or movement.
- A small area on the starboard under water bow was noted to have sustained some damage which had penetrated through to anti fouling and epoxy barrier coats.
- **Recommendation - Advisory: Having the gelcoat and epoxy damaged areas at the port bow repaired as soon as practically possible.**

Over 40 moisture meter readings were taken over the underbody of the vessel in places where coupons of antifouling were removed exposing the epoxy barrier coat. The table below shows the range of moisture readings taken.

Mode	Range Below Waterline	Range Above Waterline
Shallow Mode	23 - 32	15 - 17
Deep Mode	20 - 31	13 - 15

Moisture levels across the underbody of the hull were considered to be medium-high, however, readings should be read in the context of the vessel having only come of the water

on the morning of survey and the vessel having been in the water for many months prior to this. There were no visible signs of osmosis or wicking noted.

Note: The vessel had been covered in a number of layers of green and grey epoxy barrier coat considered to be International Gelshield 200. Coupons of antifouling were removed in a number of places to take moisture meter readings as part of the survey, however, the epoxy barrier coat was not penetrated at the wishes of the current owner. It was not established whether this epoxy barrier coat had been applied as part of the production process or by the previous owners as preventive in nature and no receipts outlining work were seen onboard the vessel.

**For reference, readings of 0-17 are considered low, 18-25 are considered medium and at the top of this range to be approaching the point where the risk of moisture related defects developing becomes significant. Readings beyond 25 are considered high and at a level where the risk of moisture related defects is considerable, but not yet physically detectable. Readings above 30 indicate high levels of moisture within the GRP laminate and will usually accompany physically detectable defects.*

5. Topsides above Waterline

Topsides above the waterline were visually inspected and hammer sounded.

- Access internally was limited, however, where access to the hull topsides allowed via certain lockers the construction was cored with longitudinal strengthening, (reported as being balsa but this cannot be confirmed without further destructive testing) for lightweight and increased stiffness.
- The topsides were visually inspected and the white gel coat was found to be in good serviceable condition, with a high polished finish to the gel coat noted.
- Visual inspection in high sunlight revealed no significant areas of damage to the gel coat, however, a small area of repair was noted around the port aft quarter, below which the gelcoat had become removed at the seam.
- A repair above the waterline stem was noted on the interior of the vessel, which had been carried out to a reasonable standard. The cause for the repair could not be established.
- A number of small chips to the gelcoat were also noted at the stem of the vessel.
- Some minor crazing was also noted in the area surrounding the passerelle attachment on the port aft quarter.
- No evidence of hard spots or delamination were noted.
- [Recommendation - Advisory: Having the small area of gel coat damage surrounding the port aft quarter repaired.](#)
- [Recommendation - Advisory: Repair the gel coat and epoxy damaged areas at the stem/bow as soon as practically possible.](#)

6. Deck Moulding

The deck was visually inspected and hammer sounded and tested under the weight of the surveyor.

- The decks were of moulded GRP which were integral with the coach roof and cockpit.
- The deck areas were of a cored sandwich construction to increase the strength and insulation. (note: the core material could not be determined without destructive testing, but said to be balsa).

- Backing washers to fittings, such as cleats and deck attachment points, were not noted in the anchor locker and stern lazarette. (note: headliners limited inspection of the underside of the deck in the accommodation). It should, however, be noted that this is part of the reported Hanse design.
- Decks were covered with a wooden decking, which did not allow for moisture readings to be taken. These were visually inspected and hammer sounded and tested under the weight of the surveyor and no areas of delamination noted. (note: it cannot be guaranteed that such voids do not exist).
- In a number of areas at the edges of the decking sealant was noted to be significantly breaking down.
- Areas of stress such as around rigging attachment points showed no signs of flex or delamination.
- Recommendation - Advisory: Retrospectively apply backing washer and nuts to all through deck attachment points.
- Recommendation - Advisory: Sealant in areas at the edges of the decking should be removed and made new.

7. Hull to Deck Join

The hull to deck join was visually inspected and hammer sounded.

- The deck edge rests atop of the edge of the hull topsides, which has an inboard flange.
- Where seen via the anchor/sail locker and lazarette, this join was secured with bonding paste.
- Where seen the bonding paste remained in place and the join was deemed to be in serviceable condition with no signs of leaking or splitting noted.
- The toe rail was visually inspected and was integral to the deck.

8. Coachroof

The coachroof was visually inspected, hammer sounded and tested under the weight of the surveyor and found to be firm.

- This was covered with wooden decking.
- No areas of craze cracking were noted and the cabin top was in good serviceable condition.
- Where possible moisture meter readings were taken and noted to be the same as on the topside, which were satisfactory.
- A straight edge was used and no deflections or undulations were detected to the coach roof, including around the mast.

9. Cockpit

The cockpit was visually inspected and hammer sounded. The cockpit was of moulded GRP and integral with the decks and cabin moulding. The cockpit gave way to the main accommodation companionway.

- The cockpit seats were covered with the same wooden decking, which did not allow for moisture readings to be taken. These were visually inspected and hammer sounded and tested under the weight of the surveyor and no areas of delamination noted. (note: it cannot be guaranteed that such voids do not exist).

- The cockpit sole was found to be firm under the weight of the surveyor.
- There were no signs of crazing or other damage, with moisture meter readings satisfactory.
- Cockpit drainage was by means of the open transom and two cockpit drains on either side of the aft cockpit which spilled out via the tender housing below.
- The GRP wheel pedestals were integral to the cockpit mould with stainless steel grab rails built around which were found securely affixed.
- Both electric cockpit tables were securely fastened to the cockpit sole, with folding out leaves.
- Both tables were noted to raise and lower in a serviceable manner.
- The hinges to the table leaves were noted to be damaged.
- [Recommendation - Advisory: Repair damage to cockpit table hinges.](#)

10. Hull Interior and Structural Stiffening

The structural stiffening of the vessel was visually inspected and hammer sounded. Internal stiffening was by means of GRP moulded grid up to the turn of the bilge (only visible in certain locations under the sole boards in the bilge).

- Longitudinal cored construction was noted giving the vessel lightweight strengthening.
- Numerous plywood bulkheads and structures were tabbed to the hull giving further stiffening.
- Where seen GRP tabbing was substantial and remained intact, (*note: access was limited by coverings and sole boards, furniture and fittings*).
- Where internally accessible, the hull and stiffening members were hammer sounded and gauged for moisture content.
- Hammer soundings were consistent and indicated no delamination at the time of survey.
- Moisture meter readings of the structural stiffening were noted to be inline with those taken of the top sides.

11. Rudder & Steering

The rudder and steering mechanism were visually inspected, hammer sounded and moisture readings taken. No areas of delamination were detected to the rudder, and moisture levels were higher than those of the under water hull, however, still at an acceptable level.

- The rudder was physically tested to port and starboard under the weight of the surveyor and did not yield.
- No significant horizontal or lateral movement was noted in the rudder.
- A nylon bushing cap which sits around the top of the outer rudder stock and fixes to the underside of the hull was noted to be no longer affixed.
- The gaiter between the rudder tube and stock was noted to be severely perished with a number of holes noted in the gaiter.
- Fastenings to the quadrant were visually inspected and hammer sounded and found to be secure.
- Steering chains were visually inspected where accessible and found to be secure with no signs of significant wear noted to the chains and cables.
- Two carbon wheels were noted securely affixed to their pedestals.
- The chain to the auto pilot drive was noted to be significantly slack.

- The emergency steering was not tested as part of the survey as there was no emergency tiller found onboard the vessel at the time of survey.
- A Quick retracting bow thruster was not serviceable at the time of survey. The thruster was noted to be half retracted. Blades were all noted to be serviceable and anodes were ~40% wasted.
- Staining noted around the seal and corrosion at the base of the thruster and electrical terminals were also noted.
- A Quick retracting stern thruster was serviceable at the time of survey. The thruster was noted to retract smoothly. Blades were all noted to be serviceable and anodes were ~40% wasted.
- The outer housing to the bow thruster was noted to have sustained damaged to the leading edge and cracks were also noted at the aft attachments.
- As part of the sea trail the helm was noted to walk significantly and above that which one would expect under normal conditions.
- Recommendation - Advisory: Reaffixed nylon bushing at the top of the rudder stock to the underside of the hull.
- Recommendation - Urgent/Dangerous: The rudder tube/stock gaiter should be replaced prior to the vessel being re-floated.
- Recommendation - Priority: The auto-pilot chain should be removed and shortened or replaced as soon as practically possible.
- Recommendation - Priority: An emergency tiller should be procured, tested and stowed in a secure accessible location prior to the vessel embarking on extended navigation.
- Recommendation - Priority: The bow thruster should be removed and the thruster, electrics and seal should be serviced and replaced as appropriate and seen to be serviceable.
- Recommendation - Advisory: The damage sustained to the bow thruster outer housing should be repaired as and when the bow thruster is removed and serviced.
- Recommendation - Priority: The walk noted in the helm should be further investigated with consultation from Hanse Yachts.

12. Stern Gear

There was a three bladed golden metal folding propeller. This was visually inspected and hammer tested and found to ring true. The blades had not been cleaned back to a golden metal finish.

- No excess movement in the three blades was found with all three blades moving readily.
- Blades were lightly hammered and scraped and no signs of dezincification noted.
- The cutlass bearing was visually inspected and physically tested under the weight of the surveyor and no excess movement noted.
- The inboard shaft seal was of the dripless type and thought to be of PSS design. A visual inspection was severely limited by access and a physical inspection was not possible.
- Water was noted beneath the seal, however, it could not be confirmed if the seal was the source of any ingress.
- The shaft coupling was noted to be significantly corroded.
- Recommendation - Urgent: The age of the dripless shaft seal should be ascertained and must be serviced in accordance with the manufacturers recommendations.

- Recommendation - Advisory: The shaft coupling should be serviced and further inspected as part of the service.

13. Skin Fittings and Through Hull Apertures

The following through hull fittings were inspected. Those situated below the water line were moderately accessible in the bilge through the lifting of sole boards. Those in the topsides at and above the waterline were easily accessible within cabinets or behind furnishings. Where accessible the through hulls were hammer sounded internally and externally to check for movement and corrosion, valves were checked for smooth operation and hoses and clips checked for security.

Port moving aft

- a. Fwd: 0.20M - Anchor locker drain. Above waterline. 12mm open drain hole with external 'eyebrow cover'
- b. Fwd: 1.70M - Sail locker/Crew quarters. At the waterline. 18mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- c. Fwd: 1.80M - Forward heads holding tack discharge. At the waterline. 30mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- d. Fwd: 5.20M - Forward heads in. Below waterline. 18mm yellow metal skin fitting and ball valve seacock. Double jubilee clipped.
- e. Fwd: 5.30M - Air-conditioning return. Below waterline. 18mm yellow metal skin fitting and ball valve seacock. Double jubilee clipped.
- f. Fwd: 5.70M - Forward heads sink out. Above waterline. 25mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- g. Fwd: 5.70M - Bilge pump. Above waterline. 25mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- h. Fwd: 5.70M - Forward heads/Holding tank out. Below waterline. 30mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- i. Fwd: 5.80M - Breather. Above waterline. 20mm plastic fitting.
- j. Mid: 6.30M - Breather. Above waterline. 20mm plastic fitting.
- k. Mid: 10.30M - Breather. Above waterline. 20mm plastic fitting.
- l. Mid: 10.60M - Aft heads/Holding tank out. Below waterline. 30mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- m. Mid: 10.60M - Air-conditioning in. Below waterline. 25mm yellow metal skin fitting, and ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- n. Mid: 10.70M - Engine in. Below waterline. 30mm yellow metal skin fitting, and ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- o. Mid: 10.70M - Generator in. Below waterline. 13mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- p. Mid: 10.80M - Air-conditioning out. Below waterline. 13mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- q. Mid: 10.80M - Aft heads in. Below waterline. 13mm yellow metal skin fitting, and ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.

- r. Mid: 10.80M - Air-conditioning return. Below waterline. 13mm yellow metal skin fitting, and ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- s. Mid: 10.90M - Generator out. Below waterline. 25mm yellow metal skin fitting, and ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- t. Mid: 10.90M - Shower drain. Below water. 25mm plastic skin fitting, and ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- u. Aft: 11.50M - Aft head sink drain out. 25mm plastic skin fitting, and ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.

Starboard moving aft

- a. Fwd: 0.20M - Anchor locker drain. Above waterline. 12mm open drain hole with external 'eyebrow cover'
- b. Fwd: 2.30M - Capped off. Below waterline. 18mm yellow metal skin fitting, ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- c. Fwd: 2.40M - Forward/Crew cabin. 16mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- d. Fwd: 5.30M - Transducer/Log. Plastic fitting.
- e. Fwd: 6.10M - Air-conditioning in. Below waterline. 18mm yellow metal skin fitting, ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- f. Fwd: 6.10M - Forward showers out. Below waterline. 25mm yellow metal skin fitting, ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- g. Mid: 6.60M - Breather. Above waterline. 20mm plastic fitting.
- h. Aft: 10.60M - Aft heads out. At waterline. 30mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- i. Aft: 11.00M - Aft heads in. Below waterline. 18mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- j. Aft: 11.90M - Aft Sink out. At waterline. 18mm plastic skin fitting, yellow metal ball valve seacock. Ball valve functioned when turned by hand. Double jubilee clipped.
- k. Aft: 16.30M - Generator Exhaust. Above waterline. 40mm silver metal fitting.
- l. Aft: 16.50M - Engine Exhaust. Above waterline. 70mm silver metal fitting.

Transom

- a: Aft: Gas locker drain - Above waterline, plastic sink fitting.
- b: Aft: Manual bilge pump - Above waterline, plastic sink fitting.
- c: Aft: Automatic bilge pump - Above waterline, plastic sink fitting.

- Metal and Plastic through hulls skin fittings were noted above and below the waterline. Plastic skin fittings should not be used below the waterline, and cannot be considered best practise.
- A number of skin fittings were found to be not well bedded to the hull and were noted to be lifted from the hull surface.
- Engine, Generator & Air conditioning skin fittings were not of the strainer type, which led to increased amounts of marine grass being noted, within the internal Vetus water strainers prior to & after sea trail.

- Hoses were in good condition with double jubilee clips and bungs noted attached to skin fitting/ball valves.
- Ball valves opened and closed easily, however, the forward capped off valve and the forward crew heads inlet were severely corroded, as well as a number of the heads outlet vales.
- The main air-conditioning skin fitting was noted to be leaking and sealant noted to be wet.
- Recommendation - Dangerous: Plastic below waterline skin fittings should be replaced with bronze or DZR fittings prior to the vessel being re-floated.
- Recommendation - Dangerous: Skin fittings which were not bedded flush to the hull should be pulled and re-bedded or replaced and re-bedded.
- Recommendation - Dangerous: Two forward skin fitting and ball valves, servicing the crew heads in, and capped off fittings, should be replaced with Bronze or DZR skin fittings and ball valves.
- Recommendation - Dangerous: Replace heads ball valves which were found to be corroded with Bronze or DZR skin fittings and ball valves.
- Recommendation - Dangerous: Leaking main air conditioning skin fitting should be pulled and re-bedded.
- Recommendation - Advisory: Replace skin fittings for Engine, Generator and Air conditioning with Bronze or DZR strainer type fittings.

14. Cathodic Protection

There were a number of zinc anodes mounted to thrusters, propeller shaft, propeller and the hull. These were visually inspected and hammer tested.

- Bow thruster: Two disc anodes mounted on both outer sides of the propellers. Both found to be ~40% wasted.
- Bow thruster: Two rectangular anodes mounted within the thruster housing. Both found to be ~40% wasted.
- Stern thruster: Two disc anodes mounted on both outer sides of the propellers. Both found to be ~40% wasted.
- Bow thruster: Two rectangular anodes mounted within the thruster housing. Both found to be ~40% wasted.
- Propeller shaft: Anode noted around the shaft. Found to be ~40% wasted.
- Propeller: Anode noted at the aft of the propeller. Found to be ~50% wasted.
- Hull: Anode noted securely flush mounted to the hull. Found to be ~40% wasted.
- A bonding cable was identified to the aft most keel bolt plate.
- Recommendation - Advisory: All anodes should be inspected when the vessel is next hauled out within the next 12mths and replaced as appropriate in order to avoid destructive galvanic corrosion to key components.

15. Access to Accommodation

There were several ways of access down below:

- Via the main companionway, which had an acrylic lifting washboard and sliding hatch and via several ~700mm & ~600mm sq, powder coated alloy framed acrylic hatches on the coach roof over the forward cabin and saloon. (*note – none of the hatches or port lights were hose tested for water tightness.*)

- The acrylic washboard and hatch cover were in good order with some limited crazing and signs of UV degradation noted
- Together they had a locking mechanism which was found to be serviceable.
- The companionway sliding hatch moved with ease on its rails.
- The forward and mid hatches opened fully and seals were found in good order, with no signs of leaks below.
- [Recommendation - Advisory: Hose testing portholes & hatches to determine water tightness, and change of seals as necessary.](#)

16. Ports, Windows and Ventilation

On the fore deck and cabin top the following hatches were visually inspected and holding and locking mechanisms tested.

- One ~700mm sq, Lewmar powder coated, alloy framed hatch with tinted acrylic giving access to forward sail locker.
- One ~700mm sq, Lewmar powder coated, alloy framed hatch with tinted acrylic over the forward cabin.
- Two ~600mm x 700mm, Lewmar powder coated, alloy framed hatches with tinted acrylic over the forward heads & shower.
- Two ~600mm x 700mm, Lewmar powder coated, alloy framed hatches with tinted acrylic over the forward saloon.
- Four ~ 600mm sq. Lewmar powder coated, alloy framed hatches with tinted acrylic over the main saloon.
- Two ~500mm sq. Lewmar powder coated, alloy framed hatches with tinted acrylic over the aft cabins.
- Two ~500mm x 350mm, tinted angled acrylics over the aft cabins. The starboard acrylic was noted to have a large crack.
- Two ~500mm x 250mm, Lewmar powder coated, alloy framed hatches with tinted acrylic over the aft heads.
- Two ~450mm x 150mm, Lewmar powder coated, alloy ports with tinted acrylic at the sides of the aft cabins.
- Acrylics, except for the starboard aft, noted above were in serviceable condition with seals intact and no signs of leakage below. Some signs of light crazing was noted to a number of the acrylic hatches.
- On a number of hatches small sections of white and black powder coating were noted to be beginning to flake off.
- Several blinds within the vessel were noted to be broken or failing.
- [Recommendation - Advisory: Hose testing portholes & hatches to determine water tightness, and change seals as necessary.](#)
- [Recommendation - Advisory: The starboard aft cabin angled acrylic should be replaced as soon as practically possible.](#)
- [Recommendation - Advisory: Service or replace blinds within the vessel.](#)

Along both sides of the top sides six fixed ports were noted.

- Four ~400mm x 100mm fixed ports on port and stbd of the forward cabin.
- Four ~400mm x 250mm fixed ports on port and stbd of the main saloon.

- Four ~400mm x 100mm fixed ports on port and stbd of the aft cabin.
- Acrylics were in good serviceable condition, seals intact and no signs of leakage below. Some signs of scratches were noted to a number of the acrylic ports.
- **Recommendation - Advisory: Complete a general hose testing of all the hatches and port lights, replace seals as necessary.**

17. Stanchions

There was a two-rail pulpit and pushpit at the bow and the stern quarters. Two stainless steel gates to port and starboard, and four stainless steel stanchions each side all in 25mm stainless steel tubing.

- The pulpit was visually inspected and the starboard side noted to be bent inward.
- The pulpit, pushpit and stanchion attachments were visually inspected from within the anchor locker and lazarette and weight tested and were found to be robustly attached.
- Stanchions and structures were visually inspected and weight tested and were found to be robustly attached. It was not possible to visually inspect these from within the accommodation due to fixtures and fittings.
- There were two runs of 4mm stainless steel guard wires. These were inspected and found to be in good serviceable condition.
- Guard wire attachments were visually inspected and found to be in good serviceable condition, however, a split pin on the starboard side was noted to be missing, and several others bent out of shape.
- **Recommendation - Advisory: The starboard pulpit be straightened.**
- **Recommendation - Priority: Missing and bent split pins be replaced. The top guard wire is currently unsafe.**

18. Rigging Attachment Points

Rigging attachment points were visually inspected and hammer sounded by loading the stays sideways under the weight of the surveyor and checking for movement.

- There were two shroud attachment points on port and starboard in the form of stainless steel through hull side chain plates.
- Examination above deck indicated the chain plate arrangement to be well made and secure. There was no deformation or crazing of the GRP around the immediate area where the chain plates were mounted, nor any deformation or indentation of stress on the surrounding wider radius.
- Visual and physical examination below decks of the fixed chain plate attachments was not possible due to fixtures and fittings obscuring physical examination.
- The forestay was secured with a chain plate tang through bolted to the stem. This was hammer tested and found secure. Inspection internally via the chain locker found the fixings to be secure with backing washers and nuts securely in place.
- The combination, stainless anchor roller was securely attached to the stem, however, no backing washer or nuts were noted. It should be noted that this is part of the reported Hanse design.
- The split backstay was attached to fixed points port and starboard on the aft deck. These were hammer tested externally and internally and found secure.
- **Recommendation - Advisory: Retrospectively applying backing washer and nuts to the combination stainless steel anchor roller.**

19. Mooring Arrangements

- A Quick electric anchor windlass with capstan was noted securely affixed at the bow.
- A Quick remote control located within the forward sail locker/crew cabin was found not to be serviceable.
- A Quick key fob remote was found at the chart table was found to be serviceable.
- The windlass was tested and found to be serviceable, with the anchor seen raised from ground level.
- A ~30Kg Delta type anchor was noted resting at the stem head roller, attached to a length of 10mm chain by means of a swivel.
- A spare Delta ~30Kg anchor was noted within the sail locker / crew cabin and was visually serviceable.
- The bow roller was noted to be heavily worn.
- A pile of 10mm chain was noted within the anchor locker. The full length was unknown - said to be 110M. Chain was visually inspected and seen to be serviceable where seen. The bitter end was secured within the anchor locker.
- There were three paired, 300mm pop up cleats at the bow, amidships & astern. These were visually and physically inspected and found to be only partially serviceable, with a number found not to pop up or to be very stiff.
 - Port forward - not serviceable
 - Starboard forward - serviceable
 - Port mid - serviceable
 - Starboard mid - not serviceable
 - Port aft - semi serviceable
 - Starboard aft - not serviceable
- Cleats were hammer tested and found to be secure.
- A visually inspection from within the anchor locker noted a repair around the starboard forward cleat.
- Backing washers and nuts were not universally found to the backs of cleats, which is reported as a Hanse manufacturing design, however is not considered to be best practise.
- Multiple mooring lines and fenders were seen onboard.
- **Recommendation - Advisory:** Laying the bow anchor chain out on the dock for a full inspection.
- **Recommendation - Advisory:** Attaching the bitter end of the chain to the fixed attachment point within the locker by means of a line which maybe cut in the event of an emergency.
- **Recommendation - Priority:** Ensuring all cleats are serviceable and have either backing plates or washers and nuts applied.
- **Recommendation - Advisory:** The bow roller should be replaced as soon as practically possible.

20. Deck Gear and other Fittings

- The attachment for a soft dodger at the companionway was visually inspected and found to be serviceable.
- The soft dodger was visually inspected and noted to be of a quality material. A small repair to the upper side was noted and had been carried out to a professional standard.

- Sort dodger windows were noted to be clear and zips serviceable, however, a starboard fastening to the forward window was noted to be missing and held with a safety pin.
- The aft attachments for the bimini cover were visually inspected and found to be serviceable. The bimini was visually inspected and noted to be of a quality material.
- The bimini was physically tested and noted to have significant horizontal movement.
- A stainless steel swimming / boarding ladder was noted to securely attach to the super scoop transom. When physically tested this was found to be secure.
- **Recommendation - Advisory: Add an additional fastening to the bimini.**

21. Mast & Spars

The mast, boom & vang were Seldon aluminium alloy extrusions. The mast was rigged in a Bermudian sloop fashion, with a fractional rigged forestay, split backstay and keel stepped mast.

- Below deck the mast was visually inspected and found to be in serviceable condition with no signs of compression or distortion noted.
- Above deck the mast was visually inspected and found to be in serviceable condition with no signs of compression or distortion noted.
- Sighting up the mast, the mast was seen to be in column.
- The mast had three sets of swept back spreaders. (*Note: The spars, boom and rigging were visually inspected from the deck level only and observations much above eye level were distant and could not be supported by any testing.*)
- Where inspection was possible the mast was noted firmly attached to the shoe with no signs of movement noted. (*Note: Visual inspection of through bolting was limited within the accommodation due to fixtures and fittings.*)
- Wiring for the mast-head electronics exited from the base of the mast within the accommodation and was seen to be serviceable.
- Air-foil shaped spreaders were attached to the mast with cast alloy fittings, and no undue movement was seen when the rigging was loaded from side to side under the weight of the surveyor. (*Note: As with other fittings at height, detailed attachment points were not visible from deck level.*)
- The alloy gooseneck and fittings were visually inspected and seen under moderate load as part of the sea trial and no excessive movement was noted.
- Mast, boom and vang and associated turning blocks, rope clutches and cleats were firmly attached, and serviceable.
- The boom was straight and in good order, with all halyards and lines lead back to the cockpit via blocks and deck organiser turning blocks.
- The vang, along with block and tackle were firmly attached.
- The rubber mast boot (gaiter) was noted to be missing, with a piece of sail cover material and rope used as a temporary gaiter.
- **Recommendation - Advisory: Procuring and securely attaching a rubber mast boot (gaiter) to prevent water ingress down the mast.**

22. Standing Rigging

The vessel had a single forestay, split backstay, upper cap, and lowers and running back stays. These were all in stainless rigging wire, except for the running back stays. Shrouds

were inspected from deck level only. Seen at a distance the mast attachment points aloft could not be clearly observed.

- Standing rigging was in 12mm 1x19 wire and connected by swaged fittings to bottle screws, except for the split back stay where 10mm 7x9 wire was employed.
- All deck fittings lay in a straight line up to their mast terminals with no bending or distortion noted, and were able to articulate smoothly where seen.
- Toggle fixings were seen between the shroud bottle screws and chain plates, and found to be secure with spilt pins in place.
- The rigging screws all had properly spread split pins in place.
- A general visual inspection from deck level only, indicated the shrouds to be in serviceable condition for coastal cruising in normal conditions.
- The condition of the forestay could not be fully inspected as it was covered by the roller reefing foil.
- The roller reefing foil was noted to be exhibiting pitting to the lower leading edge of the foil. Whether this extended further up the foil could not be comprehensively verified from deck level.
- The electric jib furler was visually inspected and hammer tested and noted to be securely toggled to its chain plate which was securely through bolted.
- The condition of the running back stays was visually inspected from deck level only and were serviceable as far as visible aloft. Fixed attachment points and blocks were securely affixed to the toe rail.
- The split backstay was properly toggled to the stainless steel attachment points securely through bolted at the aft deck.
- **Recommendation - Advisory: A full rig survey or inspection is advisable so that all aloft rigging and rigging attachment points may be inspected in detail.**

Note: Many insurers will not cover standing rigging older than a certain age (normally 7 to 10 years) and put the onus on the owner to prove age. No documentation was seen to verify standing rigging age.

23. Running Rigging

Running rigging was visually examined and fittings were manually tested. These were also under load as part of a sea trial and were found to be serviceable.

- Sheets and Halyards were mostly 10mm and 12mm braided polyester. All were, where visually inspected, found to be slightly worn but serviceable where seen from deck level.
- The jib furling line, blocks and clutches were seen to be serviceable.
- The mainsail halyard was inspected and seen to be serviceable.
- Paired primary Lewmar electric winches were mounted on the aft cockpit coaming and were found to be serviceable.
- Paired secondary Lewmar winches were mounted on the forward cockpit coaming and were found to be serviceable.
- Two electric winch deck button controls were noted securely mounted to the sides of the winches and found to be serviceable.
- A Selden self tacking traveller was through bolted on the fore deck. This was hammer sounded and inspected. No signs of stress or movement were seen. (*Note: headliners limited inspection of fittings below decks*). This was noted to be stiff and self tacked with difficulty.

- Various sail control lines (mainsail outhaul, mainsail curler, kicker, topping lift) were lead back to the cockpit through deck organisers, to coachroof mounted clutches. No signs of stress or movement were noted, and these were found to be securely mounted.
- Multiple turning blocks and running rigging fittings were noted to be serviceable.
- **Recommendation - Advisory:** Check the state of halyards where they pass over turning blocks and mast sleeves.
- **Recommendation - Advisory:** The Selden self tacking traveller should be serviced.

24. Sails and Covers

As part of a sea trial the main sail was seen unfurled from within the mast. A Jib was also seen unfurled from around a foil on the forestay.

- The 'Elvsstrom' main sail was unfurled from the mast. The action was smooth, and the sail set well, with fair curvature. The leach line was noted to be loose causing the back of the sail to appear loose. No chafing on the sheets or halyards was noted. Tabbings, UV strips and eyelets were all in good serviceable condition.
- The 'Elestrom' Jib was unfurled from the foil. The action was smooth, and the sail set well, with fair curvature and was not stretched or baggy. No chafing on the sheets or halyards was noted. Tabbings, and eyelets were all in good serviceable condition.
- A storm sail was noted within a bag within the sail locker. No comment can be made on its serviceability.
- A foldable bimini was noted over the cockpit and was seen to be in good serviceable condition.
- **Recommendation - Advisory:** Have sails professionally serviced on an annual basis.

25. Navigation Lights

- The masthead Tricolor light and anchor light were not seen as it was not possible to see them in bright daylight. Their serviceability could not be confirmed.
- The stern light was not seen to work.
- The port & starboard bow navigation lights were not seen to work.
- The steaming light was seen to work.
- The lower spreaders lights were seen to work.
- **Recommendation - Priority:** Ensuring all navigation lights are seen to be serviceable prior to extended navigation.

26. Bilge Pumping Arrangement

- One manual Plastimo type bilge pump was installed in the cockpit, running to the bilge at the centre of the vessels bilge. There was no water in the bilge to test the pump.
- One Rule 1100 GPH electric bilge pump with automatic float switch was installed in the bilge aft of the mast. The pump was heard running when the float switch was activated. There was no water in the bilge at the time of to survey and full serviceability could not be confirmed.
- One Rule 1100 GPH electric bilge pump with automatic float switch was installed in the bilge aft of the saloon. The pump was heard running when the float switch was activated. There was no water in the bilge at the time of to survey and full serviceability could not be confirmed.
- **Recommendation - Priority:** Prove all bilge pumps on manual and automatic are working as appropriate with water being seen to be expelled over the side prior to leaving harbour.

27. Firefighting Equipment

- One 1kg ABC powder fire extinguisher was noted in the forward accommodation. The green sector was noted, service date 3/2018.
- One 1kg ABC powder fire extinguisher was noted in the port aft accommodation. The green sector was noted, service date 3/2018.
- Two 1kg ABC powder fire extinguisher was noted in the port and starboard aft accommodation. The green sector was noted, service date 3/2018.
- One 2kg ABC powder fire extinguisher was noted in the saloon accommodation. The green sector was noted, service date 3/2018.
- One 1kg ABC automatic powder fire extinguisher was noted within the engine compartment. No sector indicator was noted, and no service date seen.
- One 1kg ABC powder fire extinguishers noted within the starboard cockpit locker. No sector indicator was noted, and no service date seen.
- Smoke or carbon monoxide alarms were seen throughout the vessel and noted to be serviceable.
- A fire blanket marked BS EN 1869 was located aside in the galley, securely affixed with a galley unit.
- **Recommendation - Priority: Update fire extinguishers for cabins, saloon and engine compartment.**

28. Lifesaving, Emergency and other Equipment

The lifesaving, emergency and additional equipment onboard were extensive and in good serviceable condition.

- A manual fog horn was seen onboard and heard to be serviceable.
- An ICOM hand held VHF was seen onboard, and seen to turn on.
- Jack stay lines were seen onboard and affixed on deck.
- Two horseshoe buoys was seen onboard, and mounted to the pushpit.
- A Jon Buoy was seen onboard, and mounted to the pushpit.
- Emergency bungs were noted attached to every through hull.
- A number of life jackets were seen onboard, and visually serviceable.
- A number of harnesses were seen onboard, and visually serviceable.
- An rescue sling was seen onboard, and mounted to the pushpit
- An 8 man 'Lifeguard' life raft was seen onboard - manufacture date 2013, last service date 5/2013. Next service date March 2020, visually serviceable.
- An EPIRB was seen onboard. Expiry date seen 9/2019.
- Category 'C' first aid kit was seen onboard.
- A number of offshore flare packs were seen onboard. These were out of date.
- A 'grab bag' was seen onboard and visually serviceable. Thermal blankets, water and lines seen inside.
- No emergency tiller was found onboard the vessel at the time of survey.
- **Recommendation - Priority: An emergency tiller should be procured and securely stowed.**
- **Recommendation - Advisory: RYA or RNLI can advise on appropriate safety equipment.**
- **Recommendation - Advisory: Checking the websites below and adding additional equipment as appropriate.**

- The Royal National Lifeboat Institute - www.rnli.org.uk
- The Boat Safety Scheme - www.boatsafetyscheme.org
- The Royal Yachting Association - www.rya.org.uk

29. Engine Installation

The vessels auxiliary engine was a Volvo Penta D3-110 Diesel, 4 cylinder turbo diesel. The engine was visually inspected and seen in service as part of a sea trial.

- No significant coloured smoke was noted during the sea trial.
- The turbo was noted to be screaming excessively once the engine was engaged above 2090 RPM.

- Engine performance was noted to be significantly sluggish even with the turbo engaged. At 2000 RPM the boat speed was noted to be 7.1kts
- Engine hours were 2419.0 hrs as shown on the engine display.
- The engine was installed in a bay beneath the companionway steps with good access from front and sides.
- The engine was flexibly mounted and bolted onto GRP bearers.
- All mounts were inspected and found to be serviceable but displaying signs of corrosion.
- The exhaust was noted to be sound externally with no evidence of leaks.
- No signs of oil leaks beneath the engine sump were noted, however, the engine sump was noted to be full with water. A constant leak from the calorifier which sits above the engine compartment is considered to be the most probable source.
- The shaft was inspected where possible and so signs of wear or pitting were noted.
- A PSS type dripless shaft seal was visible, however, access was severely limited and no accurate comment could be made on the functional serviceability of the seal. Water was noted beneath the seal, however, no visible signs of leaks from the seal were noted.
- The oil was noted to be up to the correct level and visibly clear.
- The water pump was visually serviceable.
- The alternator belts were checked with good tension noted.
- External surfaces were clean, and painted surfaces were in fair condition, however, significant amounts of corrosion were noted within the engine compartment.
- The coolant in the heat exchange reservoir was topped up to the correct level.
- The flexible exhaust system ran from a nylon lift boxing up to the aft with no leaks noted.
- The flexible exhaust was securely fastened to the stainless exhaust through hull.
- **Recommendation - Priority:** It is highly advised to instruct the services of a professional marine diesel engineer/mechanic and have a full marine diesel engine service. Failure of the engine to start upon ignition, engine sluggishness and the excessive screaming of the turbo would suggest there maybe a number of significant issues with the engine.
- **Recommendation - Urgent:** The dripless seals age should be established beyond doubt and serviced in accordance with the manufacturers recommendations.

30. Engine Controls and Running Checks

Engine Controls and running checks were carried out as part of the sea trial.

- No excessive smoke was noted whilst the vessel was on sea trail.
- Ignition controls and indicators were installed on a starboard helm station including ignition, and gear shift and throttle actuator.
- Engine starting was slow with the engine noted to take between 5-15 seconds of turning over before firing up.
- The engine was started and stopped as part the sea trail and engine controls were found to be serviceable, however, even after the engine had been running warm for a prolonged period the engine restarting delay persisted and was unchanged.
- Morse type gear shift and throttle actuator were seen to function properly.
- Oil and water temperature and oil pressure were seen to be steady with no lights or alarms sounding or indicating a service issue.
- No vibrations on the shaft were noted, and the stern gland was not seen to leak, however, the severely limited access to the stern gland did not allow access for the seal to be fully visually or physically inspected.
- The turbo was noted to be excessively loud with the engine compartment closed and deafening when the doors were removed.
- Battery charging rose to 13.85v following the ignition of the engine.
- Revolutions climbed smoothly as speed was increased and no ignition misses were noted.
- The power of the engine and the corresponding speed were noted to be significantly sluggish even after 2000 RPM and the turbo had engaged.
- No oil, fuel or exhaust leaks were noted within the engine compartment of the vessel.
- The engine was noted to be steady on its mounts, with no excess vibrations noted.

- Compass heading and GPS and Autopilot were noted and found to be within acceptable divergence.
- Operation of the radar, GPS chart plotter, VHF radio, and log and depth transducers were confirmed.
- Panels and structures were checked for movement and distortion and none were noted.
- The engine emergency start and stop were noted to not be serviceable.
- The blower within the engine compartment was noted to not be serviceable.
- **Recommendation - Priority:** It is highly advised to have a marine diesel engine service. Failure of the engine to start upon ignition, engine sluggishness and the excessive screaming of the turbo would suggest there maybe a number of significant issues with the engine.
- **Recommendation - Advisory:** The blower should be serviced or replaced.

31. Fuel System

A large polyethylene fuel tank was noted beneath the saloon cabin sole. No significant opening to the top of the tank would allow for inspection of the tank, which was located beneath sole boards which were securely fastened down.

- No fuel line delivery cut off valves were seen or noted.
- The fuel line was seen travelling through a Volvo Penta pre-filter prior to the engine mounted filter. All hoses were appropriately marked and well clipped in place and in good serviceable condition with no signs of leaks from the fuel system being noted.

32. General Accommodation

The vessel was laid out with a separate forward V sail locker/crew berth. Aft of this lay the main forward cabin with double berth and heads to port and shower to starboard. Aft again and the main saloon with seating to starboard and galley to port. At the aft end of the saloon on starboard the navigation station. The two aft quarters comprised of two cabins with en suite heads with showers.

- Doors, draws and lockers all opened smoothly, however, a number of push catches were noted to not be serviceable or missing.
- Varnished surfaces had been generally well maintained with only a few marks, bumps or scratches noted.
- Soft furnishings were upholstered in quality fabrics and were all in good serviceable condition with little evidence of wear. Those in the saloon were covered with blue covers.
- The headliners and topside liners were in good condition with no evidence of leaks or condensation.
- The veneered sole boards retained an unblemished varnished finish, although a number of chips were noted.
- The forward engine room door piston catch fitting was noted to be broken off.
- Significant staining, which appears to be a burn marks were noted behind both port and starboard aft cabin doors.
- Water damage to the starboard aft lower berth wood was noted, with water also noted in the bilge. The source of the water ingress was not confirmed, however, maybe related to the leaking calorifier.
- **Recommendation - Advisory:** Fix or replace cabinet catches.
- **Recommendation - Advisory:** Fix or replace forward engine room door catch.

33. Gas Installation

A full gas installation inspection can only be carried out by a suitably qualified gas operative registered with Gas Safe. Please note this survey is not any kind of gas safety certificate. This is only obtainable in the UK after comprehensive pressure testing and assessment by a qualified person listed on the Gas Safe Register.

Ionian Marine Surveys, London, SW2

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- Two dedicated gas bottle storage lockers, were found beneath the cockpit in the tender garage. Neither were labelled.
- One of the two hinged lockers was found to have broken hinges meaning the locker would not fully close.
- The gas locker drainage to the live gas bottle was noted to no longer be connected to the bottom of the housing, thus making the drainage into the vessel. The spare bottle locker drainage was noted to be serviceable with the drainage hose connected and running over the transom.
- A visually serviceable regulator was noted with two 2.5kg gas cylinders noted. The regulator was attached to a gas line, via a gas grade hose.
- The hose was serviceable, and dated (in the UK these must be replaced every 5 years)
- The bottles were securely held in place with webbed strapping. No copper delivery pipe was seen. *Note: There was no access to the pipe which was behind liners, fixtures and fittings)*
- An inline gas shut off valve was located within the galley and was serviceable.
- Down steam the gas supplied a three burner gas hob and oven situated in the galley. All rings and oven were found to be serviceable.
- A LPG Gas alarm was noted in the galley, and seen to be serviceable.
- **Recommendation - Advisory: The gas bottle storage locker should be replaced.**
- **Recommendation - Priority: The gas locker drainage hose should be reattached to the locker base.**

34. Fresh Water System

There were two large polyethylene water tanks installed beneath the forward berth and saloon sole boards and the tanks were only partially visually inspected and noted to be serviceable, with no leaks noted.

- Water pressure pumps were seen to work with no leaks noted with water delivered to galley, forward & aft head taps, and showers when tested.
- Shower drain pumps were tested and heard to be serviceable. It was noted that the forward shower drained very slowly.
- A hot water calorifier was noted securely mounted in the space above the engine & behind the companion way steps. This was powered by AC shore power and the engine cooling circuit.
- The calorifier was noted to be leaking significant amounts of water which was found percolating down into the engine compartment.
- **Recommendation - Priority: The leak from the calorifier should be serviced as soon as practical possible.**

35. Heads

Three standard electric sea toilets were installed in the forward and two aft heads compartments. An additional manual toilet was found in the sail locker / crew quarter.

- All four heads were tested whilst the vessel was afloat. The three electric heads were found to be serviceable, the manual one was not.
- The forward sail locker / crew cabin was noted to have a shower and wash basin. The water supply was noted to be disconnected, pumps found not to be serviceable, mixer taps hanging off, and shower drainage pipes cut off and draining into the bilge.
- The plumbing hoses were of a sanitary odour resistant type, and attached with double hose clamps.

- The heads allowed ran to holding tanks which lay behind a fixed cabinets. The tanks were not visually inspected.
- The holding tanks allowed black water waste to be released out to sea.
- Both forward and aft head sinks drained overboard.
- Recommendation - Advisory: Thorough regular servicing of heads rubber gaskets, valves, and seals.
- Recommendation - Advisory: The forward heads toilet should be serviced.
- Recommendation - Advisory: Forward sail locker / crew quarter should have all hoses reconnected, and fixtures and fittings remounted and serviced.

36. Electrical Installation

The electric installation was found to have been done to the high standard of a reputable boat builder.

- Four sets of batteries were identified securely fastened beneath berths and the saloon seating. All were visually inspected and voltages measured with a multi meter.
- Two sealed Varta 12v 95Ah AGM batteries for the bow thruster, windlass were noted in the forward sail locker/crew quarter. These were located on a dedicated shelf, however, not within a dedicated battery box, however, wooden cabinetry did prevent accidental shorting. Webbed strapping to prevent against movement was noted to be secure. These were tested with a multimeter and found to be serviceable at 13.28v and with cables of an adequate thickness and runs neatly laid.
- Four sealed Victron 12v 165Ah AGM batteries for domestic use were noted beneath the saloon seating. These were noted within a dedicated housing, securely positioned with closing lid to preventing against accidental shorting and movement. These were tested with a multimeter and found to be serviceable at 12.53v, with cables of an adequate thickness and runs neatly laid.
- One sealed Victron 12v 90Ah AGM battery for engine starting was noted within the forward engine bay compartment. This was noted resting on a dedicated shelf, however, no lid or terminal protectors was noted to protect against accidental shorting. Webbed strapping to prevent against movement was noted. This was tested with a multimeter and found to be serviceable at 12.88v, with cables of an adequate thickness and runs neatly laid.
- Two sealed Varta 12v 95Ah AGM batteries for the stern thruster and tender winch, were noted beneath the aft starboard berth. These were located on a dedicated shelf, however, not within a dedicated battery box, however, wooden cabinetry did prevent accidental shorting. Webbed strapping to prevent against accidental shorting and movement was noted to be secure. These were tested with a multimeter and found not to be serviceable at 11.52v and cables were of an adequate thickness and runs neatly laid.
- Battery connecting leads were of proper quality and appropriate gauge wire.
- 12v isolation switches for domestic batteries were situated aside of the navigation station and serviceable.
- 12v isolation switch for the engine was aside the engine compartment on the starboard side cabin and serviceable.
- Battery charging was by way of a Victron Multiplus charger inverter 12v/120amp AC/DC charger securely installed behind the salon seating. This was not seen to be serviceable with the vessel plugged into shore power at the time of survey.
- A Victron 'Digital Multicontrol' was noted at the navigation station, and seen serviceable, however, it was not possible to switch the control across onto battery charging when connected to shore power.
- An engine mounted 12 volt alternator, was visually inspected, and found secure.

- A Sterling ProCharge B 12v to 24v inverter was noted securely mounted aside the navigation station, this was not seen serviceable at the time of survey.
- A Mastervolt inverter was noted securely mounted aside the navigation station, this was not seen serviceable at the time of survey.
- The AC/DC distribution panel aside the chart table was well positioned and laid out. Access behind the panel was good, and wiring and terminals clean and well laid out, with no signs of corrosion noted.
- An appropriate three prong 16amp 230v shore power plug for domestic and air conditioning was situated within the starboard side cabinet by the helm. These were both visually inspected and were serviceable.
- Two 230v RCD switches were noted installed. One for the domestics in the starboard cockpit locker and one for the generator beneath the port berth. Both were noted to be serviceable.
- A Panda marine generator was noted installed above the Volvo Diesel engine within the engine compartment. Surface corrosion to the aluminium frame and fastenings upon which the generator was mounted was noted.
- The generator was heard to switch on, however, no raw water cooling was noted and the generator was noted to shut off automatically after 30 seconds. It could not be confirmed at the time of survey if the unit was fully operational.
- The Panda control unit was noted at the navigation station and noted to be serviceable.
- Recommendation - Advisory: The Victron Multiplus, charger inverter should be serviced and seen to be fully operational.
- Recommendation - Advisory: The Panda marine generator should be serviced and seen to be fully operational.
- Recommendation - Advisory: Although a number batteries were noted to be showing voltages above 12v the state of the batteries cannot confirmed. As the battery charger was found to not be serviceable with shore power connected it should be considered that the batteries may not have been adequately charged over a prolonged period of time.
- Recommendation - Advisory: The Sterling ProCharge inverter and Mastervolt inverter should be seen to be serviceable.

37. Electronic and Navigation Equipment

The following equipment was switch tested. *(Note: switch testing is not a test of operational functionality)*

- All 12 volt cabin lights - seen to turn on.
- Simrad RS35 VHF - seen to turn on.
- Fusion stereo - seen to turn on.
- Fusion stereo remote - seen to switch on.
- ICOM handheld VHF - seen to switch on.
- Simrad VHF - not seen to switch on.
- 2 x B&G T8 Chart plotters at the port & starboard helms - seen to switch on.
- B&G Radar - seen to switch on.
- B&G Autohelm unit - seen to switch on.
- Television - seen to switch on.
- B&G Autohelm unit - seen to switch on.
- Quick chain counter - not seen to be serviceable.
- 2 x Richie magnetic compasses - seen to be serviceable .

- Recommendation - Advisory: The Simrad VHF should be charged and seen to be serviceable.
- Recommendation - Advisory: The Quick chain counter should be serviced.

38. Heating and Refrigeration

- A Vitrifrigo front opening fridge and freezer was installed aside the galley counter top and noted to be serviceable, being heard to switch on and cool to touch, when the compressor was turned on. It was noted that the freezer did not freeze over.
- Three Climma marine air conditioning units were seen onboard the vessel at the time of survey, with control head units noted in the saloon and forward and aft cabins. These were not seen to be serviceable at the time of survey, and so full serviceability could not be confirmed.
- A 240v washing machine was noted beneath the galley counter top securely affixed. This was not seen in service at the time of survey.
- Recommendation - Advisory: The Vitrifrigo freezer should be further tested once the battery charger and batteries have been serviced.
- Recommendation - Advisory: The Climma marine air condition units should be seen to be serviceable at the time of survey. These should be seen to be serviceable once the generator has also been serviced.
- Recommendation - Advisory: The washing machine should be further tested once the generator, battery charger and batteries have been serviced

39. Dingy and other Equipment

- A Williams rigid inflatable tender was noted at the time of survey. This was tested as part of the sea trial and found to be only partially serviceable, despite the throttle being accelerated the tender did not accelerate.
- The seals around the aft of the tender were noted to be perishing and damage to the GRP hull was also noted in a number of areas.
- The wheel was noted to be significantly bent out of shape.
- A Quick winch for retracting the tender was located in the garage below the cockpit. This was visually inspected and found to be serviceable.
- The aft hydraulic folding transom was visually inspected and found to have damage in a number of places to the gelcoat along the leading edge, with the starboard corner being the most significant.
- The wooden boards on the bathing platform were noted to be uneven and did not close flush to the platform.
- The hydraulic pistons were noted to have sustained significant pressure to the ends of the rams where the threaded ends met the coupling attached to the transom. This has led to the rams being bent, which also meant the transom did not close flush to the hull when closed.
- A Bensenzoni passerelle was mounted to port side of the transom and was found to be serviceable. Two of the fastening screws were noted to not be fully tightened on the exterior of the mounting.
- Corrosion to the passerelle hydraulic piston was noted to the lower end of the piston.
- The passerelle wooden boards were noted to be suffering from water damage and lifting, and one of the guard rail stanchions was noted to be bent with one of the pins having been snapped off.
- A plywood backing pad to the passerelle was noted within the vessel and the mounting bolts and nuts were noted to have sustained significant amounts of pressure, pulling the bolts nuts into the ply.

- No leaks were noted surrounding the hydraulic box which was noted to be serviceable.
- Recommendation - Advisory: The Williams inflatable dingy should be fully serviced as it is currently not fully serviceable.
- Recommendation - Advisory: The passerelle should be serviced.
- Recommendation - Advisory: The hydraulic bathing platform pistons should be replaced.
- Recommendation - Advisory: The wooden boards on the bathing platform serviced or replaced.

40. Conclusion

'————' was found on the hard and in the water at Lefkas Marina, Lefkas, Greece. An out of the water pre-purchase survey was conducted, and an in the water sea trial at the request of the purchaser Mr. —————.

The vessel was of the Hanse 575 which is a successful, cruising class yacht built in Germany.

This particular vessel has not been intensively sailed, although she is thought to have been coded and put into charter. She is of a known and tested design and the original build quality was to a high standard. There are however a considerable number of items which should be serviced or replaced to bring her back up to a standard.

Although moisture meter readings on the underwater hull were medium-high no signs of osmotic blistering or wicking were noted, and moisture meter readings taken on the interior and the topsides of the vessel were significantly lower. Consideration should also be taken that she had only been placed on the hard standing on the morning of the survey. It was also noted that she had been epoxy coated, although this was only two layers of epoxy and no underlying supporting documentation was found onboard the vessel at the time of survey as to why this had been carried out.

The list of recommendations is extensive, with key systems such as the engine performance, generator, climate control, batteries and battery charging being the larger standout items. However, items such as the plastic below waterline skin fittings; Skin fittings not being flush mounted to the hull and leaks to the interior, holes in the rudder stock gaiter and transom piston rams should also be addressed as a matter of priority. The way in which the helm also significantly walked when under way should also be further investigated for its irregularity.

Rolf Thuncke

DipMarSur, MBMSE, AffilYDSA, AffilIIMS, AssocRINA

Ionian Marine Surveys

15/8/19

I. Addendum - Photographs









