fieldhouse yacht surveys

SEALION

Insurance Survey

Completed for

Chris Bernard,
63 Western Road,
Havant,
Hampshire
PO10 9TY.

On Friday 26th August 2019

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Law and Jurisdiction

This document is to be construed under English Law and English Law shall be used in interpreting the document and for resolving all claims or disputes arising out of or connected with the document.

1. INTRODUCTION

1.1. This is to certify that Nic Fieldhouse, Principal Surveyor of Fieldhouse Yacht Surveys and Consulting Ltd, carried out an Insurance Survey on SEALION in accordance with instructions received from Chris Bernard of 63 Western Road, Havant, Hampshire.

1.2. The primary aim of this document is to report on the factual condition for insurance purposes only, of SEALION , at the time of the survey. Where the equipment has been inspected or tested and found to be in an unsatisfactory condition, recommendations for rectification, repair or replacement will be detailed in this report. These recommendations will be assigned one of the five categories detailed in Section 8. For clarity, all recommendations will be printed in upper case and red font thus: RECOMMENDED.

1.3. Where reference is made to the condition, this must be considered in relation to the age of the vessel.

1.4. The vessel was inspected whilst dried out on the beach of Emsworth Quay on Friday 26th August 2019.

1.5. The survey was conducted by Nic Fieldhouse, Principal Surveyor of Fieldhouse Yacht Surveys and Consulting Ltd.

1.6. The survey was carried out in accordance with Fieldhouse Yacht Surveys Standard Terms and conditions and with relevant codes of practice published by the International Institute of Marine Surveying.

1.7. Those present during the survey were:

Chris Bernard, Client (for parts of the survey)

Eur Ing Nic Fieldhouse BEng (Hons) CEng MIMechE AssocIIMS

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2. SUMMARY

2.1. SEALION was seen to be a good example of a Hirondelle MkII, a cruising catamaran with twin keel plates & masthead sloop rig. The GRP hull seemed to be in good structural condition and retained a fair cosmetic finish.

2.2. The deck moulding, masthead rig, outboard motor, domestic services and interior finish were generally all in serviceable condition.

2.3. Once the recommendations detailed below have been addressed, there is no reason why SEALION should not give good service.

2.4. TYPE A2 RECOMMENDATIONS

2.4.1. There were five **type A2 recommendations** that must be implemented before the vessel is taken cruising. Please refer to Section 8 for a full description of the categories of recommendations used in this report.

2.4.2. It is RECOMMENDED (type A2 recommendation) that two buckets (with lanyards) are stowed on board. These should be between 9 and 14 litres in capacity (see paragraph 6.1.3).

2.4.3. There was no motoring cone found on board. This is required by COLREGS. It is RECOMMENDED (type A2 recommendation) that one is procured and stowed ready for use (see paragraph 6.2.4).

2.4.4. Four fire extinguishers were found on board. These are summarised in Table 3. Most fire extinguishers have a five year service life. Ensure that the extinguishers are serviced or replaced after this five year period. Regularly shake dry powder extinguishers to prevent the powder coagulating. For a vessel of this size, it is RECOMMENDED (type A2 recommendation) that at least one of the fire extinguishers is serviced or replaced (see paragraph 6.3.1).

2.4.5. One faded orange horse shoe life buoy was stowed on its stainless steel frame on the port side of the pushpit. The flotation lamp for this buoy was stowed in the heads compartment. The bulb of this lamp was very dim. It is RECOMMENDED (type A2 recommendation) that the batteries of the lamp are replaced. It is suggested that a second lifebuoy is stowed on board. This buoy should be fitted with a buoyant lifeline at least 18 metres in length (see paragraph 6.7.1).

2.4.6. No emergency flares were found on the vessel. It is RECOMMENDED (type A2 recommendation) that if the vessel is to venture out of the harbour, a set of flares (size and quantity appropriate to the sea areas and sea states expected to be encountered) is procured and stowed ready for use (see paragraph 6.8.1).

2.5. TYPE C RECOMMENDATIONS

2.5.1. There were six **type C recommendations** that do not require immediate attention but are to be dealt with within a specified time period:

2.5.2. Cracks were noted around each of the lower shroud chain plates, located on the coachroof. It was found that the starboard lower chain plate was not tightly secured. Examination of the parts of the starboard lower chainplate that were inside the vessel found that the external cracks extended as far as the edges of the internal backing plates. This indicated that the stainless steel backing plates were not of adequate size. It is RECOMMENDED (type C recommendation with an implementation time of six months) that both lower shroud chain plates are provided with additional support. It is suggested that an additional plywood backing pad is inserted between the underside of the coachroof and the existing stainless steel backing plates. Each plywood pad should extend forwards and aft of the chain plate by approximately 200 mm. Each plywood pad should be bonded to the underside of the coachroof with epoxy resin, thickened with colloidal silica (see paragraph 5.3.2.4).

2.5.3. The two anchor locker covers were constructed from GRP mouldings. These mouldings were in acceptable condition, but were found to be cracked and distorted due to many years of foot traffic. It is RECOMMENDED (type C recommendation with an implementation time of two years) that both covers are reinforced with one or two timber battens, secured to the underside of each moulding with layers of GRP cloth (see paragraph 5.3.4.2).

2.5.4. The Southern Sails furling genoa was furled on the forestay reefing foil. It was fully unfurled and inspected without taking down. The white sacrificial UV strips were decayed and torn. There was some wear to the cloth at the tack and clew. Several repairs to the cloth and stitching were found. The tack tape was degraded, due to UV exposure. It is RECOMMENDED (type C recommendation with an implementation time of six months) that the UV strips are replaced and anu worn cloth repaired. The tack and head tape should be replaced (see paragraph 5.4.8.2).

2.5.5. The anchor was secured to a length of chain by a single steel shackle. The shackle was corroded, with some wasting of the material. It is RECOMMENDED (type C recommendation with an implementation time of one year) that the shackle is replaced. Additionally, seizing wire should be used to lock the shackle bolt, or the end of the thread should be peened over to prevent loosening (see paragraph 5.6.1.2).

2.5.6. Connected to the LPG butane gas cylinder was an isolation valve. From the valve, a length of rubber hose lead the gas supply to a pressure regulator, mounted on the side of the storage locker. The rubber hose was manufactured in July 2014. Gas hose should be replaced every five years. There was no evidence of cracking or degradation of the hose. It is RECOMMENDED (type C recommendation with an implementation time of six months) that this hose is replaced by a maximum length of one metre of appropriately labelled gas hose. The hose should be marked to BS 3212 type 2 or BS 3212:1991 or BS EN 1763 class 2/3/4. This work should be performed by a qualified gas technician, such as those listed on the gas safety register. This recommendation also applies to the gas hose beneath the galley stove (see paragraph 5.6.3.7).

2.5.7. There was no date on the LPG pressure regulator to indicate its age but it is likely that the regulator was approximately ten years old. It is RECOMMENDED (type C recommendation with an implementation time of six months) that the regulator is replaced with a new one of marine grade (see paragraph 5.6.3.8).

3. SCOPE & LIMITATIONS

3.1. The vessel was inspected while she lay ashore. There was good, all-round access to the exterior of the hull. Access to the bottom of the keels was limited to the parts not resting on the shingle beach.

3.2. At the time of survey the ambient temperature was approximately 23°C, with full cloud cover and a light wind. There was some rainfall during the night preceding the survey.

3.3. Internal inspection was limited to the areas that are normally accessible directly or through lockers, inspection hatches, removable panels, etc. No part of the vessel was dismantled; no bolts were removed for inspection and no linings removed. Consequently, any part of the vessel, her equipment or fittings, which were unexposed or inaccessible, cannot be confirmed to be free from defect.

3.4. Window hatches and external doors have not been tested for water tightness.

3.5. We have not inspected fibreglass laminate, woodwork or 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 defects, rot or deterioration.

3.6. The vessel and her equipment were not assessed for design or suitability for any particular purpose, or compliance with any rules, regulation, standard or code.

3.7. Note that the terms “serviceable” or “serviceable condition”, as used in the report, means that the item remained usable, despite possible wear or deterioration. The item may nevertheless require maintenance or replacement in due course.

3.8. No dismantling of the outboard motor took place and so the internal condition of the outboard motor cannot be commented upon. Components hidden from view, such as the sump, crankshaft, camshafts, pistons, valves and cylinder head gaskets could not be examined for latent defects. No compression tests of the cylinders took place. Comments can only be made with regard to the general condition of the engine on the day of the inspection. No guarantee can be made regarding the life expectancy of the outboard motor.

4. The Vessel

4.1. Details

Name	SEALION
Sail Number	242
Designed by	Chris Hammond
Built by	Brian Carvill & Assoc. (UK)
Model	Hirondelle MkII
Type	Catamaran with twin keel plates & masthead sloop rig
Build date	Not known
SSR number	xxx This number is likely to be expired
Engine manufacturer & Model	Yamaha 8 HP, 4-stroke petrol outboard

Table 1: Vessel Details

4.2. Dimensions

Dimension	Metres	Feet / inches
Length Overall	6.91	22 feet and 8 inches
Length on Waterline	6.10	20 feet and 0 inches
Beam	3.05	10 feet and 0 inches
Draft Max	1.22	4 feet and 0 inches
Draft Min	0.38	1 feet and 3 inches
Displacement	1,043 kg	2,300 lb

Table 2: Vessel Dimensions (sailboatdata.com)

4.3. Vessel's Name

4.3.1. SEALION had her name positioned across her stern in black self-adhesive lettering. This text was in good condition and clearly readable.

5. THE SURVEY

5.1. HULL EXTERIOR

5.1.1. Material & Details of Construction

5.1.1.1. The hull of SEALION was moulded in one piece with hand laid GRP, made up of polyester resin, mixed-strand fibreglass mat and woven rovings, covered with a red pigmented gel-coat and finished with an application of red paint on the topsides. The GRP casing of each keel board was bonded to the inside of the hull with layers of GRP tabbing. The shallow keels were integrally moulded with the hull.

5.1.2. General Appearance

5.1.2.1. The hull was sighted from a distance fore and aft and visually inspected all round. Her lines were symmetrical, fair and true, with no signs of distortion or flat areas.

5.1.3. Topsides & Underside of Main Cabin

5.1.3.1. The majority of the topsides were finished with a number of coats of red paint. This paint application covered most surfaces, but had not been applied to the underside of the main cabin, positioned beneath the saloon area. The paint had been applied with a brush and roller. The paint had been applied to a good standard and was generally well adhered to the hull. The paint coating retained a fair level of gloss, with no evidence of UV degradation or blistering.

5.1.3.2. The topside surfaces were visually inspected. Particular attention was given to the parts of the moulding where the inboard sides of the moulding curved round to form the underside of the main cabin. In heavy seas, this is where the laminate stresses are likely to be high. No evidence of cracking or delamination of the gel-coat or laminate in these regions were found.

5.1.3.3. The paint had a few minor scuff and scratch marks from fenders and mooring buoys & chains.

5.1.3.4. Three star shaped cracks were found on the outboard side of the starboard hull, positioned between 4’ and 6’ from the bow and approximately one third of the way down from the deck edge. One series of horizontal cracks were also found on the outboard side of the starboard hull, positioned 3’ aft of the stem and 1’ above the waterline. Hammer testing of the laminate around these cracks was performed. The testing gave sound returns, indicating no significant loss of strength in the damaged areas. Moisture readings around the cracks were medium to high, suggesting that the rate of moisture absorption into the laminate is greater around the areas of damage.

5.1.3.5. There was one small area of gel-coat damage located towards the aft end of the starboard hull, outboard side. The missing gel-coat was positioned just above the waterline. During the survey, the exposed laminate was cleaned by the Owner and repaired with epoxy resin.

5.1.3.6. The teak rubbing strakes were in serviceable condition, with no significant damage from impacts. All timber was adequately secured to the hull-to-deck join. Some of the wooden plugs that secured the fastener heads were missing. The scarph joint on each beam was free of splits, cracks or significant lifting.

5.1.4. Hull Below the Waterline & Keels

5.1.4.1. The red ablative type antifouling paint below the waterline was in serviceable condition. Numerous coats of the antifouling have built up, giving a rough surface and these have been flaking in some areas.

5.1.4.2. Inspection of the hull surface showed that the hull below the waterline and the keels had been treated with a number of coats of brown epoxy resin. The epoxy treatment was found to be well applied and was bonding well to the underlying gel-coat, with no evidence of significant peeling, cracking or flaking.

5.1.4.3. The hull & shallow keels were visually inspected, except where the keels were resting on the shingle beach. Additionally, the antifouling was scraped off in few areas in order

to inspect the condition of the underlying gel-coat. There was no evidence of blistering or other damage attributable to water penetration. No evidence of scratching or chipping of the hull was found.

5.1.5. Moisture Readings

5.1.5.1. Moisture readings were taken using a Tramex Skipper Plus capacitance type moisture meter. The meter was set to range 2, which measures deep into the layup. Figures quoted are from the meter's percentage H_20 scale. Note that by convention, moisture meters are calibrated for timber, so the percentage moisture readings are not directly applicable to GRP. The true moisture content of GRP is very approximately 10% of those quoted.

5.1.5.2. Readings were taken both above and below the waterline in order to obtain a comparison. Note that high moisture content is not generally a structural defect and is to be expected in older boats. Where some moisture has been absorbed, the likelihood of moisture related problems occurring are higher. When this occurs, the actual state of the laminate cannot be completely guaranteed without destructive testing and chemical analysis. The opinion given in this survey report is based on all the evidence available at the time but without destructive testing.

5.1.5.3. Moisture readings taken on the topsides were between 8 and 12, with a few readings of 20 in the sides of the port anchor locker. This indicates a low moisture level in the laminate, with medium moisture in the laminate of the forward end of the port hull. Moisture levels around the cracks described in paragraph 5.1.3.4 were found to be very high, indicating that moisture is being absorbed into the hull laminate around these areas of damage.

5.1.5.4. Moisture readings taken on the hull below the waterline were found to be high. Note that prior to these readings being taken, the vessel was ashore for approximately eight hours, therefore these readings were likely to be slightly higher than the actual moisture levels in the laminate, due to some moisture being retained in the thick layers of antifouling.

5.1.6. Hammer Testing of Hull Surfaces

5.1.6.1. In order to identify any areas of delamination or poorly resinated laminate, the exterior surfaces of the hull were then tested with a small plastic-headed hammer. The test gave sound returns with no indications of softening, poor lay-up or delamination of the GRP.

5.1.7. Keel Plates

5.1.7.1. The port & starboard hulls were each fitted with a single drop plate. At the time of survey, these plates were held in their 'up' position by the braided polyester lifting line on each plate. The proximity of the shingle beach prevented these plates from being lowered and fully inspected. Where accessible for inspection, the plywood plates were found to be in very good condition, with no significant damage of the plywood or of the white paint coatings. The lifting lines were adequately secured to the plates.

5.1.8. Rudder & Steering

5.1.8.1. Each transom of SEALION was fitted with an unbalanced, transom hung, lifting rudder. The upper and lower parts of the blades were constructed from timber & plywood. The upper part of each blade was finished with red paint. The lowering parts of each rudder were finished with white paint. Both blade assemblies were inspected visually and found to be in serviceable condition and free from softening, rot, damage or significant cracking. The white paint coatings were in very good condition, with no evidence of wear of the lower edges of the blades. Some parts of the red paint on the upper sections of the rudders were missing.

5.1.8.2. The rudder hangings on each hull consisted of two sets of stainless steel pintles and gudgeons, connected by locking pins. The pins were locked with stainless steel ring clips. The gudgeon plates were secured to each transom by stainless steel bolts, supported by penny washers. The fastening holes were suitably sealed with mastic to prevent water ingress. The pintles were secured to the upper section of each rudder blade by a combination of stainless steel bolts and stainless steel screws. The

hangings and fastenings were inspected and found to be free of significant corrosion and were well secured to the rudder and transom.

5.1.8.3. The lower part of each blade was raised & lowered by a simple pull-cord mechanism. The lines and jammers were in good working order.

5.1.8.4. The upper section of each blade was fitted with a solid timber tiller. The two tillers were connected by a varnished timber link bar. The tiller arms, link bar and all stainless steel pivots were in good condition, secure and free of damage, but the varnish coatings were old.

5.1.9. Skin Fittings and Valves

5.1.9.2. No skin fittings or valves were dismantled as part of the survey but the following tests were performed:

Examination from outside and inside the vessel

All valves opened and closed to their full extent

The through-hull fittings, hose clips and valve bodies were hammer tested

The fittings were aggressively tested to assess their security of attachment to the hull

The hose clips were inspected and hoses were aggressively tested

5.1.9.3. Three skin fittings were installed below the waterline of SEALION . One of these was an un-used skin fitting of a speed impeller unit. This unit was no longer in use. The skin fitting was suitably sealed to prevent water ingress. The plastic fitting was in good condition, adequately secured and was free of evidence of impact damage or UV degradation.

5.1.9.4. The two skin fittings of the heads toilet inlet and heads toilet outlet were constructed from dezincification resistant brass. The external and internal parts of this fittings showed no signs of dezincification. Each of these skin fittings was fitted with an isolation valve, also constructed from dezincification resistant brass. These valves were free of significant corrosion, but both were slightly stiff.

5.1.9.5. The hoses of the heads toilet inlet and heads toilet outlet were constructed from reinforced material and were in good working order. All hoses were secured with two stainless steel hoses clips. All hose clips were in good working order. These hoses extended upwards to deck level, to form anti-siphon loops. These loops were adequately secured to prevent them from falling below the waterline.

5.2. HULL INTERNAL STRUCTURE

5.2.1. Access to Hull

5.2.1.1. Within the port & starboard hull sections there were a number of removable plywood sole boards. These were all lifted in order to inspect the internal hull and stiffening structure. Access to the hull structure was also gained via the two access covers of the aft deck lockers and also via the two anchor chain lockers.

5.2.1.2. The forward & aft ends of each hull were sealed off to provide water-tight buoyancy compartments. Each compartment was fitted with a small access hatch. These were also lifted in order to provide access to the hull.

5.2.1.3. The parts of the hull that were concealed beneath the GRP internal moulding of the central cabin section could not be accessed for inspection, therefore their condition could not be fully assessed.

5.2.2. Hull Internal Structure

5.2.2.1. The central part of the hull was reinforced by a GRP Hull Internal Moulding. This Hull Internal Moulding was bonded to the hull and strengthened & stiffened the hull moulding. It transferred the loads from the mast, via the mast compression post to the hull & keels. This moulding also transferred the loads from the shrouds, via two additional steel columns, to the hull.

5.2.2.2. The exposed surfaces of the Hull Internal Moulding were finished in beige gel-coat. The visible gel-coat surfaces of the internal moulding were in good condition, but with

minor surface scratches. Where accessible, the Hull Internal Moulding was inspected and no evidence of cracking or other damage was noted. There was no evidence of the debonding of the Hull Internal Moulding from the hull.

5.2.2.3. The hull moulding was also reinforced by plywood locker panels and the frames of the furniture. These were secured to the hull & deck by GRP cloth tabbing. Where accessible for inspection, the integrity of the tabbing was inspected and found to be free of de-bonding, cracks or movement. The plywood panels were in good condition, with no evidence of moisture ingress, wood rot or delamination.

5.2.2.4. Additional strength was provided by the GRP mouldings that formed the watertight compartments located at the forward & aft end of each hull. These mouldings were bonded to the hull sides by GRP tabbing. Where accessible for inspection, these GRP mouldings were found to be free of damage and with no evidence of debonding of the GRP tabbing that connected them to the hull.

5.2.3. Mast Compression Post & Cap Shroud Support Posts

5.2.3.1. A painted mild steel post supported the coachroof and transferred the mast compression load to the hull of SEALION . This post was constructed from 2” square -section mild steel tube. The base of the compression post was supported by a substantial timber beam that spanned the width of the central hull, installed beneath the GRP of the Hull Internal Moulding. Two further posts, also constructed from 2” square -section mild steel tube, supported the cap shroud chain plates and transferred the loads from the shrouds to the hull and Hull Internal Moulding. Inspection of the support posts and timber beam found that these supports were suitably sized, adequately installed and free from damage, distortion, rot or significant corrosion.

5.3. Deck and External Fittings

5.3.1. Hull / Deck Join

5.3.1.1. The deck was joined to the hull by the shoe box joining method. The external joint was concealed behind teak rubbing strakes running the full length of the vessel and across the stern. These rubbing strakes were bolted through the hull to deck join at approximately 9” intervals. Internally, the hull to deck joint was glassed over to provide additional strength and a watertight seal.

5.3.1.2. Inspection of the interior faces of the join was limited to the aft deck locker and the two chain lockers. As far as could be ascertained, the hull to deck joint appeared to be sound and in areas that could be accessed for inspection, there was no evidence of water ingress to the vessel interior through this joint.

5.3.2. Deck Moulding

5.3.2.1. The deck moulding was a balsa-cored GRP composite, finished with white pigmented gel-coat. It incorporated the decks, coachroof and cockpit. The parts of the deck moulding that were concealed beneath the fixed vinyl linings of the decks & coachroof could not be accessed for inspection, therefore their condition could not be fully assessed. Structurally the deck seemed to be in good order. Where accessible for inspection, there were no signs of damage or delamination between core and skin.

5.3.2.2. The gel-coat was serviceable condition, with numerous scuff and scratch marks. The gel-coat exhibited no evidence of significant UV degradation.

5.3.2.3. There were a few minor cracks in the gel-coat extending from the bases of many of the stanchion posts and also around the two bow roller fabrications.

5.3.2.4. Cracks were noted around each of the lower shroud chain plates, located on the coachroof. It was found that the starboard lower chain plate was not tightly secured. Examination of the parts of the starboard lower chainplate that were inside the vessel found that the external cracks extended as far as the edges of the internal backing plates. This indicated that the stainless steel backing plates were not of adequate size. It is RECOMMENDED (type C recommendation with an implementation time of six months) that both lower shroud chain plates are provided with additional support. It is suggested that an additional plywood backing pad is inserted between the underside of the coachroof and the existing stainless steel backing plates. Each plywood pad should extend forwards and aft of the chain plate by approximately 200 mm. Each

plywood pad should be bonded to the underside of the coachroof with epoxy resin, thickened with colloidal silica.

5.3.2.5. The integrity of the deck structure was checked by applying the Surveyor's weight to the deck surface. No excessive deformation was noted. Particular attention was paid to the condition of the coachroof around the mast foot. No cracks or deformation were noted in the gel-coat or underlying structure.

5.3.2.6. On SEALION , moisture levels in the deck and coachroof moulding were measured at regular intervals, paying particular attention to the laminate adjacent to deck fittings. All readings were found to be low, except for the port side deck, forward end. These moisture readings indicate that moisture may be present in the core material of the deck in this area. This port foredeck should be kept under observation. If it is found that the deck becomes soft under-foot or if excessive deformation is noted, the core material may need to be replaced.

5.3.2.7. The two GRP locker lids on the aft deck were in serviceable condition. These were held in place by elastic cords

5.3.3. Cockpit

5.3.3.1. The cockpit floor, seats and coaming were all in sound condition. There were a number of chips to the gel-coat surfaces at various locations. The GRP cover of the engine well was in sound condition.

5.3.3.2. Laminate repairs to some areas of the cockpit moulding were noted. These were located at the aft ends of the cockpit seats, where the seats join the cockpit coaming. Laminate repairs had also been carried out around the forward corners of the outboard motor well. These repairs had been carried out using fibreglass tape. All were found to be structurally sound, with no evidence of cracking or peeling of the resin bonds.

5.3.3.3. The bridgedeck incorporated a stowage locker, divided into three compartments. The hinging GRP lid of this locker was in serviceable condition. The port compartment of this locker was specifically equipped as a gas cylinder storage locker. See section 5.6.3 for details of the inspection of the gas locker. The central compartment provided stowage for warps and gave access to the single 12 volts d.c. battery isolation switch. The starboard compartment contained the single 12 volts d.c. battery.

5.3.3.4. A cave locker on each side of the cockpit provided stowage for the two polyethylene petrol tanks for the outboard motor.

5.3.3.5. Access to the main cabin was from two cockpit hatches, located on each side of the cockpit. The moulded GRP sliding hatches were supported by aluminium runners. These were secure and in good working order. Each hatch was closed off with two white painted plywood washboards. The washboards were held in place by stainless steel frames, securely bolted to the cockpit bulkhead. All were in good cosmetic condition and free of damage. Both hatches were adequately secured by padlocks.

5.3.4. Anchor Chain Lockers & Bulkheads

5.3.4.1. The galvanised steel CQR anchor and attached chain & warp were stowed in a locker, located in the port foredeck. A similar locker was installed in the starboard foredeck.

5.3.4.2. The two locker covers were constructed from GRP mouldings. These mouldings were in acceptable condition, but were found to be cracked and distorted due to many years of foot traffic. It is RECOMMENDED (type C recommendation with an implementation time of two years) that both covers are reinforced with one or two timber battens, secured to the underside of each moulding with layers of GRP cloth.

5.3.4.3. Each hatch cover was secured to the deck by one stainless steel hinge and a single plastic latch. The hinges and latch were in serviceable condition, but the latches were considered to be too light. These should be replaced with pieces of stainless steel, rather than thermoplastic strips.

5.3.4.4. The internal surfaces of the anchor lockers were formed by the sides of the hull moulding and also by plywood panels. The plywood was found to be free of damage or rot and was adequately bonded to the hull and deck by GRP tabbing.

5.3.4.5. Each locker was fitted with a single drain hole, located at the aft end of each locker. These were found to be adequately sized and free of blockage.

5.3.5. Deck Covering

5.3.5.1. The slip-resistant surfaces on the decks coachroof, both sliding hatches, cockpit seats, cockpit sole, bridgedeck and top of engine cover were provided by a grey, sand-filled paint. These surfaces were in good order and free of significant wear.

5.3.6. Hatches, Windows & Ventilation

5.3.6.1. One aft hinging GRP hatch (220 x 320 mm opening) was installed in the roof of the forward heads compartment. It was found to be securely attached and showed no signs of water ingress. The aluminium stay was in good condition. The rubber seal was in serviceable condition, but has hardened with age.

5.3.6.2. There were six fixed, clear acrylic windows bolted through the front and sides of the coachroof. The acrylic material had light scratching, was free of crazing, but with evidence of clouding due to UV exposure. They showed no signs of water ingress around the adhesive sealant.

5.3.6.3. There were two adjustable plastic vents located on the vessel: one in the heads compartment and one in the coachroof on the starboard side of the living quarters. Two small plastic louver vents have been installed at the aft end of the port & starboard cockpit coaming, located at the aft end of each quarter berth. All vents were in serviceable condition and free of damage. Ensure that adequate ventilation is provided at all times, particularly when using the galley stove.

5.3.7. Deck Fittings and Equipment

5.3.7.1. There were six large aluminium mooring cleats: Two on the foredeck and four across the aft deck. All were inspected and found to be free of damage and adequately secured to the deck. The cleats on the aft deck were fitted with adequately sized plywood backing pads. The two cleats on the foredeck were not supported by backing pads.

5.3.7.2. There were two aluminium fairleads on the foredeck and four across the aft deck. These were fitted to the top face of the GRP toe rails. They were in good condition and free of damage or deformation.

5.3.7.3. Two hardwood grab rails were located on top of the saloon coachroof. They were in serviceable condition, securely mounted. All fastener heads, apart from one on the starboard rail, were covered in white mastic.

5.3.7.4. The seven post pulpit was constructed from 1” outside diameter tubular stainless steel. It was mounted to the deck by a two fasteners at each post. The welded fabrication was adequately secured to the top face of the toe rails and was free of distortion.

5.3.7.5. The 600 mm high side stanchions were constructed from 1” diameter stainless steel tube. They were secured to the deck by welded stainless steel stanchion bases. These bases were bolted through the deck by four stainless steel fasteners at each post. They were fitted with twin stainless steel, 4 mm diameter, 1 x 19 construction safety wires. The forward ends of the wires were secured to the port side of the pulpit with lengths of cord and to the starboard side of the pulpit with stainless steel thimbles and Talurit swaged fittings. The aft ends of the wires were secured to the port side of the pushpit by Talurit swaged fittings and snap shackles and to the starboard side of the pushpit by lengths of cord. The stanchions, bases, fasteners and safety wires were found to be in good order. Ensure that the tethering lines are replaced every few seasons.

5.3.7.6. The four post pushpit was constructed from 1” diameter tubular stainless steel and was found secure and in good order. Each post was mounted to the deck moulding via the GRP toe rails, with two stainless steel bolts at each post. The stainless steel fabrication, bases and fasteners were found secure and in good order.

5.3.7.7. Both bow roller assemblies were fabricated from stainless steel plate and were secured to the deck moulding with four stainless steel bolts. Both were adequately secured and free of damage or deformation. The port fabrication was supported by timber backing plates.

5.3.8. Inflatable Dinghy

5.3.8.1. The three person, Twin Air 250 inflatable dinghy was stowed inside its zipped canvas storage bag on the foredeck. The dinghy was un-rolled for inspection, but was not inflated. The white PVC sponsons, light grey hull, black trim and grey plywood transom were in very good condition, with no evidence of significant use and no evidence of UV degradation. The bonded seams were intact, with no evidence of repairs to the sponsons or sole.

5.3.8.2. The Craft identification Number of the dinghy was CIN CN-HFMxxxxxF515. This number indicated that the dinghy was manufactured in June 2015.

5.3.9. Outboard Motor (for Dinghy)

5.3.9.1. The four-stroke, single cylinder, 2.5 horsepower, Suzuki DF 2.5 outboard motor was mounted to the starboard side of the vessel's pushpit. The serial number of the motor was xxxxx-xxxx.

5.3.9.2. The engine turned over freely. The three-blade aluminium propeller was in serviceable condition, with minor wear of the blade edges. The paint coatings of the engine were in good condition, but with some deterioration of the coatings on the leg. The zinc anode was free of decay.

5.4. Rigging and Sails

5.4.1. Mast & Boom

5.4.1.1. The dark grey, anodised aluminium, deck-stepped mast was examined as far as possible from the deck. The lower part of the mast was in sound condition, with no sign of significant corrosion or physical damage. The dark grey anodised protective coating was in good condition but was heavily faded. There was very minor corrosion of the aluminium where stainless steel hardware has been attached to the mast.

5.4.1.2. The welded aluminium tabernacle was inspected and found to be free from cracks or corrosion and was well secured to the deck. The four deck fastenings were free of corrosion and adequately secured.

5.4.1.3. The boom was in good condition, with no significant wear of the dark grey anodised coating. The stainless steel & bronze gooseneck was in good working order and free of significant wear. The rivets that secured the gooseneck to the mast and boom were adequately secured and free of damage. The boom was not fitted with a vang or kicking strap.

5.4.2. Shroud Chain Plates

5.4.2.1. The chain plates for the cap shrouds were 5.5 mm diameter stainless steel eye-bolts, secured through the deck with a single threaded shank and a single stainless steel nut. These were inspected from the outside of the vessel and found to be in good order and free of corrosion or evidence of cracking. The parts of the fasteners beneath the coachroof were supported by 2" square mild steel posts, which extended down to the Hull Internal Moulding. These posts are described in section 5.2.3. The fasteners and steel posts were all in good order and free of evidence of damage or distortion.

5.4.2.2. The chain plates for the lower shrouds were 7 mm diameter stainless steel U-bolts secured through the coachroof. These were inspected from the outside of the vessel and found to be in good order and free of corrosion or evidence of cracking. There was no access to the internal sides of the fastenings of the port chain plate, therefore these parts of the port chain plate could not be inspected. The coachroof lining around the starboard lower shroud chain plate was fitted with an opening that provided access to the underside of this chain plate. The fasteners and backing pads were secure and free of significant corrosion. It was considered that these backing plates were too small. See paragraph 5.3.2.4 for details of the recommendation relating to the reinforcement of these chain plates.

5.4.3. Forestay, Babystay & Backstay Chain Plates

5.4.3.1. The forestay deck plate was formed from 4.8 mm thick welded stainless steel plate, bolted through the deck moulding by two fasteners and through the hull-to-deck join by two fasteners. Inspection of the fasteners from within the main cabin showed that one of the two mild steel backing plates was heavily corroded. When tested with a hammer, this plate disintegrated. During the course of the survey, these backing plates were replaced by the Owner.

5.4.3.2. The parts of the forestay chain plate on the deck were closely examined. The fabrication was found to be free of damage, adequately secured to the hull and with no evidence of undue strain on the mountings. No cracks in the plate or welds were identified.

5.4.3.3. The baby stay chain plate was constructed from 4 mm thick stainless steel plate and was bolted through the forward face of the coach roof with two stainless steel fasteners. All were in good order and free of corrosion. There was no access to the internal parts of the chain plate; therefore these parts of the chain plate could not be inspected.

5.4.3.4. The twin backstay chain plates were constructed from 3.5 mm thick stainless steel plate. Each plate was secured to the deck & hull mouldings with four stainless steel fasteners. The chain plates and fasteners were found to be free of damage, adequately secured to the deck & hull and with no evidence of undue strain on the mountings. No cracks in the plates or welds were identified. All fasteners were suitably supported with a combination of penny washers and timber backing pads.

5.4.4. Jib Furling Mechanism

5.4.4.1. The Rotostay ‘E’ roller furling equipment was tested as far as practical and found generally in good working order, with the reefing line square to the drum and of suitable length. The drum was examined and no defects were seen in either the bearings or in the rigging screw attachment.

5.4.4.2. The aluminium alloy luff extrusion appeared to be straight and with no kinks.

5.4.5. Standing Rigging

5.4.5.1. The age of the standing rigging could not be verified. To be safe, stainless steel standing rigging should be replaced every ten years on a cruising yacht. If the rigging wires are likely to be more than ten years old, they should be carefully monitored for evidence of cracks in the swaged fittings and for evidence of broken, worn or pitted wire. Consideration should be made for the likelihood that replacement will be necessary in the near future. Even in the absence of problems, replacement of rigging wires that are more than ten years old should be considered before embarking on major offshore passages or extended cruises.

5.4.5.2. The masthead standing rigging was formed from 1x19 stainless steel wire, with swaged terminals secured to the chain plates by toggles and bottle screws.

5.4.5.3. The standing rigging comprised 5 mm diameter single lower shrouds and 5 mm diameter cap shrouds passing over single spreaders. There was a 5 mm diameter twin backstay terminating on each side of the transom and a 5 mm diameter babystay secured to the forward end of the coachroof. The forestay (diameter of this wire could not be measured) was formed by the headsail reefing foil.

5.4.5.4. The swaged terminals at deck level were inspected and appeared to be free from any bending or distortion that might occur during their manufacture. As far as could be ascertained, the bottle screws and toggles appeared to be in good condition, with no signs of bending, splitting, cracking or other failure. The bottle screws should be locked with seizing wire or stainless steel split pins.

5.4.5.5. As far as could be ascertained, those parts of the shrouds and stays that could be inspected from the deck appeared to be serviceable.

5.4.6. Running Rigging, Travellers, Cars

5.4.6.1. The running rigging that was stored on the vessel was inspected and showed only minor signs of wear. These all remain serviceable.

5.4.6.2. Barton headsail sheet leads were mounted on travelling cars on the side decks. The aluminium tracks were securely mounted. The track locating pins worked correctly. The plastic sheaves were free of wear or UV degradation.

5.4.6.3. The aluminium mainsheet track and stainless steel slider were securely mounted to the aft end of the cockpit coaming and were in good working order.

5.4.7. Winches, Jammers, Travellers

5.4.7.1. Two primary winches (Gibb single speed, ratchet type) were located on the cockpit coaming. They were found to be adequately secured and in good working order.

5.4.7.2. Two halyard winches (Gibb single speed, ratchet type) were mounted on the coachroof, on either side of the cockpit hatch. They were found to be adequately secured and in serviceable condition.

5.4.8. Sails

5.4.8.1. The Barter & Huggett, double-stitched white Dacron mainsail was stowed on the boom during the survey. The sail cover was removed and the sail examined without hoisting. The sail was found to be generally clean and well maintained. The sail cloth and stitching were in serviceable condition, with some evidence of wear and stretching. The stainless steel reefing eyes and tack & clew eyes were in serviceable condition and free of deformation. The aluminium headboard was in good order, with all rivets free of damage.

5.4.8.2. The Southern Sails furling genoa was furled on the forestay reefing foil. It was fully unfurled and inspected without taking down. The white sacrificial UV strips were decayed and torn. There was some wear to the cloth at the tack and clew. Several repairs to the cloth and stitching were found. The tack tape was degraded, due to UV exposure. It is RECOMMENDED (type C recommendation with an implementation time of six months) that the UV strips are replaced and anu worn cloth repaired. The tack and head tape should be replaced.

5.4.8.3. A cruising chute was stowed in its storage bag in the heads compartment. This was partially opened out and inspected. Of the parts inspected it was found to be clean, dry and in very good condition, with no evidence of significant use. No tears or repairs were noted.

5.5. PROPULSION

5.5.1. Outboard Motor

5.5.1.1. SEALION was fitted with a four-stroke, twin cylinder, 8 horsepower, Yamaha outboard motor. It was mounted in the outboard motor well, positioned in the centre of the cockpit.

5.5.1.2. The motor was built in 2001. The serial number was not seen. The model number was 68T-A0.

5.5.1.3. The motor was adequately secured to the forward end of the well. One of the securing fasteners was fitted with an anti-theft lock.

5.5.1.4. The engine turned over freely. The three-blade aluminium propeller was in serviceable condition, with minor wear of the blade edges. The paint coatings of the engine were in good condition, but with some deterioration of the coatings on the aluminium control arm. The control cables and pivots were well lubricated.The zinc anode was free of significant decay.

5.5.2. Fuel Supply

5.5.2.1. The Yamaha outboard motor was supplied with petrol from a 12 litre portable polyethylene fuel container, stowed inside the cave locker in the starboard side of the cockpit. The fuel container and integral cap & gauge were in good condition and free of

degradation. The fuel hoses were in good order and free of damage or cracking. The water separator unit was secured to the inside of the cave locker. This unit was in good condition.

5.5.2.2. A second, 12.5 litre polyethylene fuel container was stowed inside the cave locker in the port side of the cockpit. The fuel container & hose were in good condition and free of degradation.

5.6. SYSTEMS AND SERVICES

5.6.1. Anchor and Chain

5.6.1.1. The small galvanised steel CQR anchor was stowed in the port anchor locker. There was some surface corrosion of the anchor. It was considered that the anchor was suitably sized for cruising inside the confines of Chichester Harbour. If the vessel is to be taken cruising in The Solent, consideration should be given to carrying a 26 lbs CQR anchor on board.

5.6.1.2. The anchor was secured to a length of chain by a single steel shackle. The shackle was corroded, with some wasting of the material. It is RECOMMENDED (type C recommendation with an implementation time of one year) that the shackle is replaced. Additionally, seizing wire should be used to lock the shackle bolt, or the end of the thread should be peened over to prevent loosening.

5.6.1.3. The chain was generally free of wear & corrosion and in serviceable condition. The chain was attached to a length of 16 mm diameter warp with a spliced eye and a galvanised steel shackle. All were in good working order.

5.6.1.4. The anchor chain was made from short plain-linked galvanised steel. Dimensions of the chain were 8 mm x 26 mm x 39 mm. The recommended length of anchor chain that should be stowed on a small craft is 45 metres, which equates to a length: depth ratio of 5:1 in 9 metres of water. [Gerr, Dave. Boat Mechanical Systems Handbook. Adlard Coles Nautical, 2009]. The length of the chain was measured and found to be 20.3 metres. The warp was 32.3 metres long. For harbour cruising, it was considered that the existing length of chain and warp was adequate.

5.6.1.5. The bitter end of the warp was correctly tethered to a D-loop inside the port chain locker via multiple loops of a length of line that could easily be cut in an emergency.

5.6.2. Heads

5.6.2.1. The sea toilet was clean and the pump appeared to be serviceable. The toilet was a Jabsco manual pump type. The installation could not be fully tested while the vessel was ashore but the water pump-out mechanism was tested and worked correctly.

5.6.2.2. See section 5.1.9 for details of the condition & installation of the toilet isolation valves and connected hoses.

5.6.2.3. Next the toilet was a round polyethylene sink, which pulled out on sliders. The sink drained directly into the toilet bowl. The sink was in good condition. Water was supplied to the sink via a small fresh water container and 12 volts d.c. electric pump. All functioned well.

5.6.2.4. The plywood door of the heads was in serviceable condition and free of damage.

5.6.3. LPG Installation

5.6.3.1. SEALION had a Marine Gas Safety certificate The certificate did not have a serial number. This inspection was performed on 1st February 2019.

5.6.3.2. The certificate stated that the gas hoses and pressure regulator should be replaced in 2020. See paragraphs 5.6.3.7 and 5.6.3.8 for details of the recommendations relating to these items.

5.6.3.3. The certificate noted that there was no isolation valve installed next to the cooker. BS EN ISO 10239:2000, Small craft, liquified petroleum gas (LPG) systems, states that '*if there is only one appliance in the system and the main shut-off valve at the cylinder is readily accessible from the vicinity of the appliance, the shut-off valve on the low pressure supply line is not required*'. It was considered that the shut-off valve in the

cylinder storage locker was within reachable distance from the galley, therefore an additional valve in the galley area was not considered necessary.

5.6.3.4. The bridgedeck incorporated a stowage locker, divided into three compartments. The port compartment of this locker was specifically equipped as a gas cylinder storage locker. One 2.75 kg butane gas cylinder was stored in this locker.

5.6.3.5. The locker was constructed from single GRP moulding, finished with a white gel-coat. The locker was not tested for integrity but was considered to be gas-tight to a level above the pressure regulator.

5.6.3.6. A hole was cut through the bottom of the gas cylinder locker in order to allow any leaked gas to escape to the outside of the hull. This drain was tested with water and was found to be clear. The outlet of the drain hole was suitably located above the waterline.

5.6.3.7. Connected to the butane gas cylinder was an isolation valve. From the valve, a length of rubber hose lead the gas supply to a pressure regulator, mounted on the side of the storage locker. The rubber hose was manufactured in July 2014. Gas hose should be replaced every five years. There was no evidence of cracking or degradation of the hose. It is RECOMMENDED (type C recommendation with an implementation time of six months) that this hose is replaced by a maximum length of one metre of appropriately labelled gas hose. The hose should be marked to BS 3212 type 2 or BS 3212:1991 or BS EN 1763 class 2/3/4. This work should be performed by a qualified gas technician, such as those listed on the gas safety register. This recommendation also applies to the gas hose beneath the galley stove.

5.6.3.8. There was no date on the pressure regulator to indicate its age but it is likely that the regulator was approximately ten years old. It is RECOMMENDED (type C recommendation with an implementation time of six months) that the regulator is replaced with a new one of marine grade.

5.6.3.9. From the pressure regulator, copper pipe lead the supply to a junction on the side of the gas locker. The gas pipe was then routed beneath the starboard quarterberth bunk, to a length of armoured hose in the galley. A pressure test point was installed in the length of pipe running beneath the starboard quarterberth bunk. This armoured hose was manufactured in August 2014.

5.6.3.10. The copper pipe passing through the cabin was well protected and adequately supported at regular intervals.

5.6.3.11. There was no isolating valve in the galley, see paragraph 5.6.3.3 for the comments relating to the isolation valves.

5.6.3.12. The armoured gas hose was connected to a Plastimo Neptune 2000 twin hob & grill unit, mounted to the galley structure via a simple gimbal mechanism. The cooker was clean. All burners lit easily and burned with a clean blue flame. All burners were fitted with a safety cut-off valve. These functioned correctly.

5.6.3.13. The installation was not further inspected or pressure tested for leaks.

5.6.3.14. Note that this survey is not any kind of gas safety certificate. This is only obtainable after comprehensive pressure testing and assessment by a qualified person listed on the gas safety register. The above recommendations should be undertaken by a qualified gas technician, such as those listed on the gas safety register. See http://www.gassaferegister.co.uk for further details.

5.6.3.15. One spare 2.75 kg LPG (butane) gas cylinder was stored in the starboard anchor chain locker. The locker was inspected and found to be adequately constructed and was fitted with a suitably sized drain hole in the bottom of the locker. This cylinder should be supported to prevent movement in heavy seas. Ensure that no heavy objects are stored near to this cylinder.

5.6.4. Electrical System

5.6.4.1. SEALION had a 12 volts d.c. electrical system, with a single 35 Amp hour, lead / acid battery. This battery was stowed inside the starboard compartment of the bridgedeck locker. The battery was supported by polystyrene blocks. It is suggested that this battery is held down by a webbing strap. The ends of the strap should be securely attached to the sides of the locker. The battery was controlled by one quarter-turn isolating switch, mounted inside the central compartment of the bridgedeck locker.

5.6.4.2. The wiring connections to the battery were found to be securely connected and adequately routed and protected from chafing damage. The cables between the battery and the starter motor of the outboard motor were adequately sized.

5.6.4.3. Battery charging was from the power generator of the outboard motor or from the solar panel installed on the aft deck. The solar panel and Solara controller unit functioned correctly.

5.6.4.4. From the quarter-turn isolating switch, service power was then distributed via two switch panels. These switch panels consisted of five trip switches and four fused switches. Both units were in good order and free of damage.

5.6.4.5. The wiring that could be seen appeared to be serviceable, was adequately supported and was routed clear of the bilges.

5.6.5. Navigation Lights

5.6.5.1. An all-round white light was installed at the mast head. A bicolour light was mounted on the pulpit. Both lamps functioned correctly. The lens of the bicolour lamp was free of crazing and with no evidence of water ingress.

5.6.6. Navigation Equipment

5.6.6.1. A Plastimo Contest compass was mounted on the central cockpit bulkhead. The lens was free of crazing or discolouration. There were no air bubbles in the damping fluid. This compass was positioned very close to the boat speed indicator and the depth sounder display unit, which may affect the accuracy of the compass.

5.6.6.2. A Clipper speed display unit was mounted on the central cockpit bulkhead. This unit received the vessel's GPS speed via the GPS unit and the VHF / DSC radio. The speed display unit functioned normally.

5.6.6.3. A Nasa Target 2 depth display unit was also mounted on the central cockpit bulkhead. This unit powered up, but could not be fully tested with the vessel ashore.

5.6.6.4. A Silva S10 VHF / DSC radio was mounted on the port side of the main cabin. The serial number of this radio was xxx. This unit powered up, received signals, but was not tested for transmission.

5.6.6.5. A Garmin GPS12 unit was mounted on the port side of the main cabin. This unit powered up when switched on and subsequently gave a latitude & longitude reading.

5.6.6.6. An Autohelm 800 unit was mounted on the aft deck, connected to the tiller of the port rudder. This unit powered up and functioned correctly when the bearing adjustment buttons were pressed.

5.6.6.7. A clock & barometer were mounted on the door of the heads compartment. Both functioned normally, but the accuracy of the barometer could not be assessed.

6. Safety Equipment

Refer to the Boat Safety Handbook [RYA publication, 2012, ISBN 978-1-906435-53-0]. This book gives recommendations and advice concerning the selection and installation of safety equipment.

6.1. Bailing / Bilge Pumping

6.1.1. One Seaflo electric bilge pump was loosely stowed on the vessel. This pump was rated at 1100 gallons pert hour. It was fitted with a length of hose and the wiring was fitted with a 'cigarette lighter' type of plug. When tested, the pump powered up correctly.

6.1.2. Two Plastimo manually operated stirrup pumps were stowed in the starboard forepeak. These were in good working order.

6.1.3. It is RECOMMENDED (type A2 recommendation) that two buckets (with lanyards) are stowed on board. These should be between 9 and 14 litres in capacity.

6.2. Detection Equipment

6.2.1. One mouth operated plastic fog horn was found on the vessel. This functioned correctly.

6.2.2. A cylindrical, passive type radar reflector was stowed inside the starboard forepeak. This unit was in good condition.

6.2.3. There was one collapsible motoring cone found on board.

6.2.4. There was no motoring cone found on board. This is required by COLREGS. It is RECOMMENDED (type A2 recommendation) that one is procured and stowed ready for use.

6.3. Fire Fighting Equipment

6.3.1. Four fire extinguishers were found on board. These are summarised in Table 3. Most fire extinguishers have a five year service life. Ensure that the extinguishers are serviced or replaced after this five year period. Regularly shake dry powder extinguishers to prevent the powder coagulating. For a vessel of this size, it is RECOMMENDED (type A2 recommendation) that at least one of the fire extinguishers is serviced or replaced.

Type	Location	Date Stamp	Pressure Gauge
1 kg ABC dry powder	Cockpit, starboard cave locker	No date visible	Green
1 kg ABC dry powder	Cockpit, port cave locker	No date visible	Green
1 kg ABC dry powder	Galley	Manufactured January 2009	Green
1 kg ABC dry powder	Port side of main cabin	Manufactured January 2009	Green

Table 3: Fire Extinguishers on board SEALION

6.3.2. A fire blanket was hanging in the port side of the main cabin. It was located within suitable distance of the cooker.

6.4. First Aid Kit

6.4.1. There were two first aid kits and one thermal blanket found on the vessel, stowed in the starboard forepeak. The contents of the two kits should be checked and any items that have expired or are missing should be replaced.

6.5. Gas Alarm

6.5.1. A 'Pilot' gas (LPG) detector and alarm was installed on SEALION . The sensor for this device was mounted beneath the cooker, just above the plywood sole board. The alarm was tested by exposing the gas sensor to the gas from an un-lit cigarette lighter. The alarm was found to function normally.

6.6. Strong points

6.6.1. Two lifeline strong points were secured to the GRP structure of the cockpit aft coaming, one on each side of the cockpit. The large stainless steel loops were free of deformation and were well secured to the deck moulding. Both were supported by large plywood backing pads and stainless steel backing plates.

6.7. Man Overboard Recovery Equipment

6.7.1. One faded orange horse shoe life buoy was stowed on its stainless steel frame on the port side of the pushpit. The flotation lamp for this buoy was stowed in the heads compartment. The bulb of this lamp was very dim. It is RECOMMENDED (type A2 recommendation) that the batteries of the lamp are replaced. It is suggested that a second lifebuoy is stowed on board. This buoy should be fitted with a buoyant lifeline at least 18 metres in length.

6.7.2. The vessel's main sheet was set up with a snap shackle at its lowest point. This allowed it to be released from the main sheet track and used as a 'handy billy'. A second 'handy billy' apparatus was stowed inside the starboard forepeak. All were in good working order.

6.7.3. The vessel's inventory included a portable folding plastic & aluminium ladder. When secured to the toe rails, this ladder extended below the waterline to assist with man overboard recovery.

6.8. Pyrotechnics

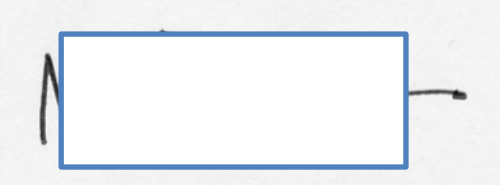
6.8.1. No emergency flares were found on the vessel. It is RECOMMENDED (type A2 recommendation) that if the vessel is to venture out of the harbour, a set of flares (size and quantity appropriate to the sea areas and sea states expected to be encountered) is procured and stowed ready for use.

7. VALUATION

Subject to the below, it was my considered opinion that, at the time of the survey, the yacht SEALION , including her inflatable dinghy and two outboard motors had a current market value between £xxx and £xxx.

The vessel should be placed and kept in sound and seaworthy condition, charter free and free of registered encumbrances and maritime liens and any charges, taxes, mortgages and other debts whatsoever.

The undersigned cannot and does not guarantee or otherwise warrant the value noted.



Date of publication: Sunday 28th August 2019

8. Types of Recommendations Used in This Report

The recommendations detailed within the body of this report are presented in five categories and are classified as follows:

Type A1	Structural, mechanical or other defects requiring IMMEDIATE attention i.e. those affecting structural strength, seaworthiness or safety which MUST be repaired BEFORE the vessel is relaunched at this time.
Type A2	Structural, mechanical or other defects affecting strength, seaworthiness or safety which may be repaired after the vessel is relaunched but MUST be repaired before the vessel is taken to sea.
Type B	Defects not affecting strength, seaworthiness or safety but which, by their nature, should be dealt with before putting the vessel afloat.
Type C	Structural, mechanical or other defects NOT requiring immediate attention but are to be dealt with within a specified time period.
Type D	Non-essential or cosmetic defects whose repair may be left to the Owner's convenience. All suggestions are, unless noted otherwise, of this type.

These recommendations are intended to be only a guide to necessary rectification work. Both type A and type B recommendations cover urgent remedial work to be carried out as soon as practical. Type C recommendations cover significant remedial works to be carried out within the specified time period. It should also be noted that, in some instances, defects are noted within this report without a covering recommendation. In such cases either no action is necessary or the remedy is self-evident.

9. Abbreviations Used in This Report

COLREGS	International Regulations for Preventing Collisions at Sea 1972
CQR	A design of anchor
d.c.	Direct Current
DSC	Digital Selective Calling
GRP	Glass Reinforced Plastic
HP	Horse Power
IIMS	International Institute of Marine Surveyors
LPG	Liquid Petroleum Gas
PVC	Polyvinylchloride
UV	Ultra Violet
VHF	Very High Frequency