



# ANCHOR HOUSE MARINE SURVEYS

## **Structural Survey Report**

**Elan E4**

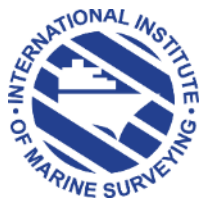
**2023 Demonstrator**

Deacons Marina, Bursledon, Hampshire, UK

Friday 24<sup>th</sup> November 2023

Prepared on Behalf of the Purchaser

Mr. [REDACTED]



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## Summary

This is an Elan E4 built in 2022 by Elan Yachts of Begunje na Gor in Slovenia to a design by Humphreys Yacht Design. She is a 2023 model year demonstrator and was found to be in an as-new condition but requiring some very minor maintenance works. She appears not to have been altered from her original design. The main summary of points is as follows:

1. The topsides, deck and superstructure are in a sound condition structurally, though there is a small area of scuffing / gelcoat damage extreme starboard aft. The internal structure where seen is sound with no evidence of any movement, though there are areas of old salt water in various bilge sections.
2. The antifoul is adhering well. The outer bottom laminates were tested for moisture content and are mainly in the dry to low medium scale.
3. The keel is securely fitted with a clean keel to hull joint. Internally, the bolts and backing plates are all in a sound condition.
4. The saildrive is in a sound condition, though the propeller blades require freeing up and the service anodes require replacement.
5. The steering gear is in a sound condition.
6. The mast and rigging chainplates and reinforcements are in a sound condition.
7. All seacocks are in a clean condition, though the galley seacock cannot be fully opened.
8. The engine and saildrive mounts are securely fitted, are in a clean condition and there are no leaks through the saildrive ring.
9. Though not part of this survey, it was noted that the plastic air vents by the main hatch both have damage to the edges and corners.

Structurally, this is an as-new example of an Elan E4 and requires only minor maintenance issues to be addressed. With these issues resolved, this Elan E4 will continue to give good service for many years.

Within this report, any issues found are graded for your information according to severity as:

<b>“Urgent Recommendation”</b>	Must be done urgently before re-floating and certainly before any use is made of the vessel.
<b>“Recommendation”</b>	Should be done at the earlier of next docking or within twelve months or such other time scale as may be specified.
<b>“Suggestion”</b>	For information and consideration but not particularly significant to safety at this stage.
<b>“Note”</b>	For information only.

## Circumstances

The survey was carried out on the 25<sup>th</sup> of November 2023. She was inspected ashore at Deacons Marina, Bursledon, Hampshire, UK. The mast and rigging were standing. The weather at time of inspection was partly overcast with light to north easterly winds at 9°C. The survey was carried out on the instruction of Mr. [REDACTED] to ascertain the structural condition of the yacht and produce a report prior to purchase.

No fastenings were drawn and no paint was removed above or below the water line. Moisture meter readings were taken to determine the moisture content of the hull laminate. The hull was examined externally above and below the water line and internally where accessible, elsewhere internal mouldings prevented examination. The cabin soles, bunk boards, hatches and portable joinery were removed as necessary to gain access to the interior of the vessel. The engine was not stripped, the tanks were not opened unless stated, nor their capacities checked.

**Please note:** This condition report is correct as per the date of survey stated above and as such, it cannot be guaranteed for any time after the survey was undertaken.



**Description of the Yacht**

This Elan E4 is an all glass fibre construction, round bilge, fin and bulb keeled sailing yacht. She has a plumb entry and a transom stern, carrying her maximum beam aft of amidships.

She was built by Elan Yachts of Begunje na Gor in Slovenia in 2022 to a 2023 design.

The yacht's principle dimensions as supplied are set out below:

<b>Length Overall</b>	10.60m
<b>Length of Waterline</b>	10.19m
<b>Beam</b>	3.50m
<b>Draft</b>	2.15m (approx.)
<b>Displacement</b>	5.13 tonnes (approx.)
<b>Engine</b>	Volvo Penta D1-30F 3-cylinder diesel
<b>Stern Gear</b>	Volvo Penta Saildrive 130S-D
<b>Fuel Capacity</b>	75 litres (approx.)
<b>Water Capacity</b>	185 litres (approx.)
<b>HIN</b>	[REDACTED]
<b>RCD Category</b>	A



## Hull and Internal Structure

### *Hull:*

All GRP construction with plumb entry and round bilge with a shallow bilge running aft to a transom stern. She has a fin and bulb keel and her maximum beam is carried just aft of midships. The hull is in very good condition overall.

### *Port Topside:*

This is in white GRP with an angled turn from midships running to aft and a black decal waterline stripe. The topside is sound and there are no clear signs of any damage or repair. There is no fender and there are factory and Gosport Marina fore and aft sling tags fitted below and at the deck edge, though these do not line up with each other.

### *Starboard Topside:*

This is in white GRP with an angled turn from midships running to aft and a black decal waterline stripe. The topside is generally sound but there is an apparent small scuff and some gelcoat damage at the angled turn extreme aft, though access and visibility was very limited, but there are no clear signs of any major damage or repair. There is no fender and there are factory and Gosport Marina fore and aft sling tags fitted below and at the deck edge, though these do not line up with each other.



**Fig.1** – small area of gelcoat damage and scuffing extreme starboard aft.

### *Bow:*

This is in a sound condition with no signs of any major damage or repair.

### *Transom:*

This is in white GRP with a fitted, hinged bathing platform. This is in a sound condition where accessible, as the stern of the yacht was over the water, so access and visibility here was limited. However, the platform is securely fitted as best as could be established and the locks at each end are also securely fitted.

### *Coatings:*

The antifoul is in black over a grey primer, is adhering well to the substrate and is factory production standard. No areas of paint were removed.

### *Hull and Gelcoat Condition:*

The hull surface was inspected and this is in a clean and smooth condition with no clear signs of any damage, delamination or blistering.

### **Suggestion**

Ensure the right sling tags are used.

### **Recommendation**

Repair the gelcoat damage / scuff.

### **Recommendation**

Consider the application of an epoxy resin coating when the antifoul is up for renewal.

#### *Keel and Bolts:*

There is an iron fin and bulb keel securely bolted to the hull and this is in a sound condition bar a couple of small corrosion spots at the base of the bulb aft on both sides. The keel to hull join is flush, with no signs of any cracking or weeps and the sealant is clean, though some of the paint along the sealant line has detached. Internally all the stainless steel bolts, fixings and backing plates are clean and dry and hammer sounding returned good readings.



**Fig.2** – keel bolts, fixings and backing plates.

#### *Hull Below Waterline:*

Moisture readings were taken with a 'Protimeter' Aquant 2 meter at more than 100 positions over the outer bottom two days after being lifted ashore. The scale used is 0 – 160 (dry) / 161 – 200 (medium) / 201 – 999 (wet) and produced the following readings:

- Hull – this produced readings ranging from 90 to 178 which is in the dry to high medium scale. The highest readings are along the centreline as this is the lowest part of the hull and likely to still be a little damp in areas.
- Keel to hull join – this produced readings ranging from 135 to 168 which is in the dry scale.
- Rudder – the GRP port rudder produced readings ranging from 80 to 178 which is in the dry to high medium scale. The starboard rudder was over the water and so not be accessed.

**Note:** It is expected that these readings will be lower after a sustained period of drying out ashore.

#### *Inner Tray:*

There is a GRP inner tray matrix bonded to the hull with marine ply wooden flooring incorporating removable sole boards screwed to this. This is in a clean condition with no signs of any movement where seen. However, there are areas of old salt water and forming crystals in certain bilge compartments, such as forward of the keel step and those containing bilge pumps and some thru-hull fittings. It is possible that this is from pump testing when the yacht was signed off, as there are no clear signs of any incoming, fresh leaks and the keel bolts and keel bilge are fine and dry. There is some salt water remnant around the base of the transducer as a possible entry point, but that would not explain other areas that are not connected up via the limber drainage holes. The broker said he will check with Elan to see if this is the result of pump testing when they built the yacht. There is also some fresh water in the steering gear compartment forward on the centreline, which is likely to be coming through one of the various deck fixings, but there is no obvious entry point.

#### **Recommendation**

Remove all traces of water (fresh and salt) and monitor for any return and trace the source(s).

### *Floors and Stiffening:*

There are floors, stringers and partial frames with limber drainage holes bonded to the hull and where seen, there were no signs of any movement.

### *Bulkheads:*

The main and partial bulkheads are in veneered marine ply securely bonded to the hull and where seen, there were no signs of any movement.

## **Cathodic Protection**

### *Anodes:*

- There is a collar anode securely fitted to the saildrive.
- There are 2 x service anodes fitted to the propeller.

### *Bonding:*

The electrical bonding from the anodes to the saildrive leg and propeller has good continuity with resistances below or around 1Ω.

### *Wastage:*

The collar anode is wasted by approximately 3%, but both of the service anodes need replacing.

## **Hull Openings, Fittings and Seacocks**

### *Sea Water Coolant Inlet:*

The engine coolant inlet is located in the leading edge of the saildrive leg and is clear of debris. Internally, the seacock is located on the port side of the gearbox body and is a brass bodied ball valve type securely fitted. No 'CR' marks were noted. This was seized open but is in a clean and serviceable condition. This is double clipped to clear, wire reinforced hose which runs to the strainer.

### *Toilet Inlet and Outlet:*

- The toilet inlet is located aft of midships on the starboard side and is the forward of the three skin fittings. This is a secure, small bore bronze fitting and internally is fitted to a brass body ball valve seacock which operated satisfactorily and is in a clean and serviceable condition. No 'CR' marks were noted. This is double clipped to clear, wire reinforced hose.
- The toilet outlet is located aft of midships on the starboard side and is the aft of the three skin fittings. This is a secure, large bore bronze fitting and internally is fitted to a brass body ball valve seacock which operated satisfactorily and is in a clean and serviceable condition. No 'CR' marks were noted. This is double clipped to sanitary grade hose.

### *Grey Water Outlets:*

- The galley sink outlet is located aft of midships on the port side and is a secure, small bore bronze fitting and internally is fitted to a brass body ball valve seacock which operated satisfactorily and is in a clean and serviceable condition. No 'CR' marks were noted. This is double clipped to clear, wire reinforced hose. Note that the seacock cannot be fully opened, as the handle hits the deck tray.
- The heads sink outlet is located aft of midships on the starboard side and is the middle of the three skin fittings. This is a secure, medium bore bronze fitting and internally is fitted to a brass body ball valve seacock which operated satisfactorily and is in a clean and serviceable condition. No 'CR' marks were noted. This is double clipped to clear, wire reinforced hose.
- The heads shower outlet is located above the waterline and above the 3 heads fittings. This is a chromed fitting and internally is double clipped to clear, wire reinforced hose.

### *Bilge Outlets:*

Located extreme aft on the port side are chromed skin fittings serving the manual and electric bilge pumps and internally, these are double clipped to clear, wire reinforced hoses.

### *Exhausts:*

- The engine exhaust is a large bore steel outlet located aft of the bilge pump outlets.
- Located on the starboard side of the transom is a chromed heater exhaust.

## **Recommendation**

Replace the propeller service anodes, ensuring good electrical conductivity.

## **Recommendation**

If seized, free up the engine coolant seacock.

## **Recommendation**

Ensure the galley seacock opens fully.

## **Note**

All seacocks must be 'CR' or 'CW602N' marked types, full bronze types or 'Marelon' plastic types. Do **not** use 'CW617N' marked brass types.



*Cockpit Drains:*

The cockpit drains directly overboard.

*Tank Vents:*

The fuel and water tanks vent via flush fittings in each topside.

*Transducers:*

There is an 'Airmar' Triducer thru-hull transducer securely fitted forward and just starboard of the keel. Internally, this is securely fitted, but there is a little salt water around the base with salt water smatterings locally suggesting either a possible small leak, as a result of removing the speed unit and not cleaned up after or a test of the seal's watertightness.

**Stern Gear**

*Saildrive:*

There is a 'Volvo Penta' saildrive of aluminium construction securely fitted. This is standard production protective coated and is in a sound cosmetic condition. The thru-hull cover plate is in a serviceable condition, and internally, the ring seal is pliable with no clear signs of any leaks.

*Propeller:*

The propeller is a 'Flexofold' 2 bladed, folding type of all bronze construction in good condition. This is securely fitted, rotated satisfactorily with no damage to the tips or edges, but they are very tight to open and close and are unlikely to open via the engine speed.

*Shaft:*

The saildrive shaft rotated smoothly when turned by hand and there is a rope cutter attached which operated satisfactorily.

**Steering Gear**

*Mechanism:*

The rudders are turned via cockpit mounted 'Jefa' helm units linked to the rudder stock heads and the helm pedestal units are securely fitted.

*Rudder:*

The GRP rudders are unsupported aerofoil cross section types and are in good condition with no signs of any major damage or repair where checked. The starboard rudder could not be accessed, as this is over the water but there were no visible issues noted.

*Stock:*

The stocks are in aluminium and are in a serviceable condition, but access and visibility was limited.

*Rudder Trunk and Gland:*

The stocks runs inside a GRP and aluminium sleeve trunk with the boot covered gland located at the top, through which the stock extends to the deck above. There were no clear signs of any leaks through the glands.

*Bearing:*

There was negligible play detected in the port rudder bearing, but the starboard rudder could not be accessed to check.

**Deck and Superstructure**

*Deck:*

The side decks and cockpit deck are in white GRP with non-slip panels moulded into the horizontal surfaces. This is sound with no signs of any major damage or repair and the cockpit and helm seats are laid with securely fitted teak panels in a clean condition.

*Superstructure:*

The superstructure is in white GRP with non-slip panels moulded into the horizontal surfaces. This is sound with no signs of any major damage or repair.

*Hull Deck Joint:*

The deck is laid over the hull inward flange, bonded together and with the cleats and stanchion bases bolted through the join. Where visible, there is no sign of any movement.

**Recommendation**

Clean up all the salt water remnants in this area and monitor for any return after sailings.

**Recommendation**

Free up the blades so they open out when the engine is running / close when turned off.

## Hatches, Windows and Portlights

### *Main Hatch:*

The main hatch consists of a smoked acrylic washboard located between the helm moulding and teak guides and hinged sill cover. This securely locks to a smoked acrylic sliding cover with teak pusher running on top of the moulding and the operation is smooth.

**Note:** Both air vent covers by the main hatch have broken corners and edges etc.

### *Fore Hatch:*

There is a 'Lewmar' aft hinged, smoked acrylic lid sealing over a raised coming securely fitted over the forward cabin. This has 2 x internal lockable handles, 2 x rotary stays and no leaks were evident.

### *Additional Hatches:*

- There is a 'Lewmar' forward hinged, smoked acrylic lid sealing over a raised coming securely fitted over the saloon. This has 2 x internal lockable handles, 2 x rotary stays and no leaks were evident.
- There are 'Lewmar' outboard hinged, smoked acrylic lids sealing over raised coamings securely fitted over the aft cabin and heads. These have internal, non-lockable handles and no leaks were evident.

### *Windows:*

- There are 2 x smoked, tempered glazed windows located in and flush fitted with the coach roof sides. These have clean sealant and internally, there were no signs of any leaks.
- Fitted in each topside is a shaped acrylic window which is flush bonded to the hull with clean sealant. Internally, there were no signs of any leaks.

### *Portlights:*

- There are 3 x 'Lewmar' openable, black painted aluminium framed and acrylic glazed snap-lock handle portlights with clean seals, securely fitted in the aft cabin and heads.
- There is a 'Lewmar' openable portlight with clean seal securely fitted into each side window aft.

## Mast and Rigging Connections

### *Mast Foot and Step:*

The mast is keel stepped and passes through the coach roof via a deck collar and boot. The boot is securely fitted and in a clean condition and the cast aluminium collar is securely fitted with no cracks across the corners. Internally, the mast is securely riveted to the cast aluminium foot, which is securely bolted to the keel moulding, with no signs of any cracking across the corners where accessible. There is a small amount of fresh water exiting the mast at the port aft corner and it appears the earthing / lightning strap is not connected up.

### *Stay and Shroud Chainplates and Reinforcements:*

- The shroud chainplates are bolted through the upper topsides are in stainless steel. These are securely fitted with no signs of any cracking or movement in the surrounding GRP, though there is some light corrosion staining starting on some of the bolt heads on the starboard unit. Internally, these are located behind wooden linings and so could not be inspected.
- The forestay chainplate is securely bolted through a bonded frame, forward in the chain locker, with no evidence of any movement.
- The aft stay chainplates are securely bolted through each corner, extreme aft in the cockpit, with no evidence of any movement.

## Machinery

### *Bearers and Mounts:*

The engine and gearbox is firmly secured to lengthwise strong GRP beams via 2 x engine mounts and the saildrive mount. These are in a clean condition and there is no excessive movement of the engine when shook by hand. The saildrive mount and ring seal are in a clean condition, with no clear signs of any leaks where accessible.

### **Suggestion**

Replace both vent covers.

### **Suggestion**

Check that all mast thru-wiring openings etc have grommets / are sealed.

## Statement

This report is a true and accurate description of this Elan E4 as far as could be ascertained at the time of the survey, but no guarantee is given or implied. We have not inspected equipment, woodwork or other parts of the structure which are not included within this report or were covered, unexposed or inaccessible and we are therefore unable to report that any such part is free from defect.

The potential purchaser should satisfy themselves that all systems which could not be tested or inspected at the time of survey are operable.

The yacht has not been examined for compliance with any code, rule, or craft directives and no opinion as to such compliance is expressed or implied.

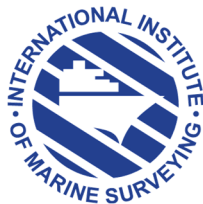
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This report is submitted without prejudice.



Rupert Keyzar  
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**Anchor House Marine Surveys**  
27<sup>th</sup> of November 2023



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