HULL SURVEY GUIDE

Top 10 Hull Issues Found During Surveys (and How to Prevent Them)

> *From osmosis blisters to corroded keels — what surveyors encounter most often below the waterline, and the practical steps that keep these problems at bay.*

14 min read · Hull Maintenance · Survey Findings

THE TEN ISSUES

The hull is the most fundamental part of any vessel — and the area where surveyors spend the most time. Below the waterline, problems develop slowly and invisibly, often going undetected until a haul-out reveals the true picture. The ten issues covered here account for the vast majority of hull-related findings in survey reports, ranging from cosmetic nuisances to structural emergencies.

Understanding what each issue looks like, how it develops, and — critically — how to prevent it, is the foundation of responsible boat ownership.

10	3	80%	2–5 yr
Common hull defects covered in this guide	Critical severity issues that can sink a vessel	Of hull issues are preventable with routine maintenance	Typical interval between thorough hull inspections

Severity key:	**CRITICAL** Poses immediate risk to vessel safety or seaworthiness	**HIGH SEVERITY** Significant structural or functional concern	**MEDIUM SEVERITY** Important maintenance matter; escalates if ignored

01 Osmotic blistering

HIGH SEVERITY

WHAT IT IS

Osmotic blistering occurs when water permeates the gelcoat and reacts with water-soluble compounds in the laminate, creating fluid-filled blisters beneath the surface. Left untreated, it progressively weakens the hull structure and becomes increasingly costly to remediate.

HOW TO PREVENT IT

- Apply a high-quality epoxy barrier coat during every haul-out
- Allow the hull to dry fully before recoating — moisture meters are essential
- Inspect the waterline area visually each season for early bubble formation
- Address any gelcoat damage promptly to prevent water ingress

02 Delamination

CRITICAL

WHAT IT IS

Delamination is the separation of fibreglass layers within the hull laminate, typically identified by a dull, hollow sound when tapped — the surveyor's standard percussion test. It can result from impact, osmosis, manufacturing defects, or prolonged water saturation and represents a serious structural risk.

HOW TO PREVENT IT

- Maintain the barrier coat to prevent water from saturating the laminate
- Repair all impact damage immediately — even minor dings
- Commission moisture readings at every haul-out
- Dry-sail when possible to reduce prolonged water exposure

03 Keel bolt corrosion

CRITICAL

WHAT IT IS

Keel bolts are the fasteners that attach the ballast keel to the hull. Corrosion — particularly in steel bolts on older vessels — weakens these critically important connections. Rust weeping, keel movement, or cracking of the hull-keel joint are serious indicators. Keel loss at sea is catastrophic.

HOW TO PREVENT IT

- Inspect the bilge around keel bolt heads at haul-out for rust staining
- Check keel-hull joint externally for cracks or weeping
- Have bolts ultrasonically tested every 10–15 years on older vessels
- Replace any questionable bolts proactively — far cheaper than the risk

SURVEYOR'S NOTE

Keel bolt condition is one of the first things an experienced surveyor investigates. On vessels over 20 years old, they will almost always recommend ultrasonic testing regardless of visible condition — because the worst corrosion is internal and invisible.

04 Rudder degradation

CRITICAL

WHAT IT IS

Foam-filled GRP rudders are prone to water ingress through damaged leading edges or cracked gelcoat. Once water enters, it saturates the foam core, causes delamination, and can freeze in cold climates, splitting the rudder open. Bearing wear and stock corrosion also affect steering reliability.

HOW TO PREVENT IT

- Tap and probe the rudder during haul-out for soft or hollow areas
- Seal all gelcoat damage on the rudder promptly, particularly the leading edge
- Drain rudder drain holes at lift-out if fitted
- Check rudder bearings annually for play and lubricate as specified

05 Through-hull & seacock failure

CRITICAL

WHAT IT IS

Every hole in the hull below the waterline is a potential point of failure. Bronze through-hulls can suffer dezincification; plastic fittings become brittle with age; seacocks seize if not exercised regularly. A failed through-hull will sink a vessel very quickly.

HOW TO PREVENT IT

- Exercise every seacock through its full range at least twice per season
- Inspect all through-hulls at haul-out for pitting, dezincification, or brittleness
- Replace any through-hull over 10 years old as a precaution
- Keep a correctly sized softwood bung adjacent to each through-hull

"The hull below the waterline is where the truth of a vessel's maintenance history is written — and where surveyors find what sellers didn't know, or chose not to mention."

06 Impact damage & hidden repairs

HIGH SEVERITY

WHAT IT IS

Grounding and collision damage can be concealed beneath antifouling paint or poorly executed repairs. Surveyors use percussion testing, moisture meters, and close-quarters visual inspection to identify areas that have been damaged and repaired — or damaged and not repaired.

HOW TO PREVENT IT

- Inspect the hull immediately after any grounding or collision
- Always disclose previous incidents to your surveyor
- Use a professional yard for structural repairs, not DIY polyester filler
- Photograph and document all damage and repair work as it occurs

07 Gelcoat crazing & stress cracking

MEDIUM SEVERITY

WHAT IT IS

Fine networks of cracks in the gelcoat — particularly around deck hardware and high-stress areas — indicate structural flex, impact, or age-related deterioration. While often cosmetic, stress cracks can allow water ingress and may indicate deeper structural issues if consistent with flexing.

HOW TO PREVENT IT

- Seal any gelcoat cracks promptly with compatible epoxy or gelcoat filler
- Investigate crack patterns around deck hardware for underlying flex
- Ensure deck fittings are properly bedded and backed to distribute loads
- Apply UV-protective wax or polish annually to slow gelcoat degradation

08 Electrolytic & galvanic corrosion

HIGH SEVERITY

WHAT IT IS

When dissimilar metals are in contact in a marine environment — or when stray electrical current passes through the hull — accelerated corrosion attacks metal fittings, propellers, shafts, and structural components. Pitting on bronze, wasting on the propeller, or discolouration around the shaft are warning signs.

HOW TO PREVENT IT

- Fit and replace sacrificial anodes regularly — inspect at every haul-out
- Ensure the vessel's bonding system is intact and properly connected
- Fit a galvanic isolator if connecting to shore power regularly
- Avoid mixing metals in underwater fittings wherever possible

09 Antifouling failure & paint build-up

MEDIUM SEVERITY

WHAT IT IS

Antifouling paint protects the hull from marine growth, preserving hull speed and reducing engine burden. Failure — through incompatible products, inadequate preparation, or excessive build-up of old coats — results in heavy fouling that masks surface defects and increases fuel consumption dramatically.

HOW TO PREVENT IT

- Strip back to bare GRP every 5–7 years to prevent unmanageable paint build-up
- Use compatible antifouling products and follow manufacturer application guidance
- Apply the correct antifouling type for your usage pattern and cruising area
- Anti-foul immediately before launching — not weeks in advance

10 Structural fatigue & flexing

HIGH SEVERITY

WHAT IT IS

Over time, hulls subjected to heavy offshore use can develop fatigue in high-stress areas: bow sections, the hull-deck joint, keel attachment, and where mast compression loads transfer. Surveyors look for crazing patterns, movement between joined surfaces, and soft spots indicating the structure is working beyond design parameters.

HOW TO PREVENT IT

- Operate the vessel within its intended design parameters
- Inspect the hull-deck joint annually for separation, cracking, or weeping
- Have a structural assessment if the vessel has suffered heavy weather
- Maintain proper rig tension — abnormal loads accelerate fatigue

A final word on maintenance culture

The single most effective thing a boat owner can do to prevent hull issues is simple: haul out regularly and look. A biennial haul-out with a thorough visual inspection, moisture readings, and attention to every fitting and fastener will catch the vast majority of these issues at an early, manageable stage.

Surveyors consistently find that vessels with complete, documented maintenance records — where defects were caught early, professionally repaired, and recorded — are in dramatically better condition than those whose owners deferred problems season after season.

MAINTENANCE REALITY

The cost of prevention is almost always a fraction of the cost of cure. A £200 epoxy barrier coat job is not comparable to a £12,000 osmosis treatment. Invest in the haul-out, invest in the materials, and keep the records.

Prevention is always cheaper than cure.

Haul out regularly, maintain thorough records, and address defects the moment they appear. The ten issues in this guide are almost entirely manageable when caught early — and almost always catastrophic when ignored.