

Keeping Your Boat Afloat

An analysis of a year's worth of sinking files reveals the 10 most common reasons that boats end up under the water.

By Beth Leonard

From an insurance perspective, a boat is sinking if it must be actively pumped out to remain afloat and undamaged.

This definition highlights two key issues. First, a sinking boat is not watertight. There is always a source of water that must be located and stopped to keep the boat floating. The second is that well-designed boats do not sink due to failed bilge pumps. A boat should stay afloat in the conditions for which it was designed without water having to be pumped out of it — even in heavy rain and big seas (relative to the size of the boat).



T

hree decades ago, Max Fletcher, then in his 20s, was getting ready to captain a Westsail 32 from New Zealand back to the East Coast of the United States by way of the Southern Ocean and Cape Horn. He happened to meet up with sailing legend Eric Hiscock who had completed three circumnavigations of the globe with his wife Susan, the first in the early 1950s. When Fletcher asked for advice about his upcoming voyage, Hiscock replied, "Keep the water out!"

Indeed, boats — and boaters — are in a constant battle with the water all around them, and more often than we would like, the water wins. Hurricanes aside, sinking is the costliest source of

That's not to say that adequately sized, functioning bilge pumps are not important. In addition to removing nuisance water, they can keep your boat afloat long enough for you to find a leak and fix it. But that time should be measured in minutes and hours, not days and weeks. When it comes to gradual leaks due to slowly failing parts, too many of the boats in our claim files existed in a zombie state somewhere between floating and sinking, completely dependent upon the bilge pump to keep them on the water instead of below it. The bilge pump merely postponed the sinking until it failed, lost power, or was overwhelmed by the volume of water. Had someone fixed the leak in those days, weeks, or months, that boat would not have become part of these statistics.

As the pie chart shows, more than two-thirds of the reasons why boats sank could be considered preventable.

Half of those preventable

claims for the BoatUS Marine Insurance program, so we undertook a thorough analysis of a year's worth of claims to see what lessons we might find for our readers. Because we expanded our net to look at boats that sank as a result of some previous incident — a collision or grounding, for instance — our findings are somewhat different than in 2006 when we last took a hard look at sinking. But they are not inconsistent. As was the case then, more than one-third of sinkings happened when some small part, most often below the waterline, gave up its fight with the water due to age or fatigue. Those sinkings might have been prevented with good maintenance, and another third might have been avoided with some care while underway and docking.

Here's what you can do to reduce the odds that your boat will be part of a future sinking analysis:

When faced with a year's worth of sinking claims, the first ques-

claims, or one-third of the total, involved boats that sank due to the gradual failure of a part below the waterline. This is the single most common reason boats sink at the dock. While failed parts also cause sinkings underway, it's much more common that they result from the boat hitting something, whether another boat, the bottom, or something floating in the water. Failing to secure an otherwise working fitting, such as a drain plug or a sea strainer, when the boat is in the water comes third on the list.

Based on an analysis of a year of sinking claims, boats sink at the dock more than twice as often as they sink underway.

tion to answer is, "What exactly do we mean by sinking?" Is a trawler sinking when sitting at the dock with water leaking in through the stuffing box at a rate the bilge pump can keep up with? Is it sinking if the bilge pump can no longer keep up? Is it sinking if the bilge pump fails? How about a ski boat that gets swamped by waves? Or a boat with positive flotation awash to the gunwales?

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One big change we have seen is that swamping, responsible for eight percent of the sinkings in our files, is much less likely to occur underway than it was in 2006 when we last looked at our sinking claims. The low-cut transoms that were so common in the 1990s have largely been replaced by splashwells separated from the interior of the boat by a high transom. This time around, only

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one boat sank as a result of a wave swamping the boat from astern. Instead, boats were swamped at the dock when tied stern to open water in chop or waves raised by strong winds. Finally, as was the case in 2006, five percent of the boats that sank got caught under the dock by waves or tide due to problems with their dock line arrangements.

You can greatly reduce the chances of your boat sinking due to wear, tear, and corrosion by adhering to a regular maintenance schedule. While all maintenance is important, the first six items in the list below represent the most common maintenance-related failures that led to sinking in our claim files. The additional four items in the list could be considered good seamanship, and will help to prevent boats from sinking due to causes other than age and deterioration.

These 10 items address the 10 most common causes of sinking in our year of claim files.

1. Inspect your sterndrive bellows annually and replace them every 3-5 years.



The bellows on stern drives are required to remain watertight for years while withstanding flexing and bending, exposure to water and marine growth, and extremes of temperature. Talk about a difficult job! The shift bellows is the smallest, which makes it most susceptible to cracks that start in the folds. By tilting and turning the stern drives, you can inspect the bellows, and this should be done annually. Marine growth can puncture the bellows, so remove any

that you find. Replace the bellows if you see any sign of wear, but at least every five years. If one bellows is worn, chances are all of them are, so replace them as a set.



2. Check your stuffing box every time you visit the boat; repack every spring.



Stuffing boxes are one of the few thru-hull fittings designed to allow some water into the boat, at least when the motor's in use.

But it's way too easy for that one to two drips a second to turn into a stream. The only way to prevent it is with diligent maintenance, repacking the stuffing box rather than simply tightening down the packing screw again and again, and possibly damaging your prop shaft in the process. And make sure to check your stuffing box every time you visit your boat. If the bilge pump is running regularly on an older boat with a stuffing box, you can almost bet that it will be the source of the water.

3. Replace your engine raw-water hoses at the first sign of wear.



A ruptured raw-water hose or one that has come off a fitting due to a corroded hose clamp or deterioration on the end of the hose can sink the boat at the dock if the problem is below the waterline.

But even cooling hoses above the waterline can bring lots of water into the boat if the problem is downstream of the raw-water pump and the engine is running. Hoses should be replaced at the first sign of wear with the appropriate type and size. If your hoses are 10 years old or more, why not give your boat a spring treat and replace them before putting the boat back in the water?

4. Replace your impeller every 2-3 years.



Your cooling system can sink your boat without even springing a leak. If your impeller deteriorates due to age and wear, the amount of water it can move through the water pump will decline and eventually it won't be pumping anything at all. Well before that point, your engine will overheat. If you don't shut it down right away, the hot gases can melt the hose, allowing water to enter the boat. Changing your impeller every few seasons — whether it needs to be or not — is cheap insurance indeed.

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5. Make cockpit and live-well plumbing accessible and inspect regularly.



A large cockpit is nothing more than a bathtub when rain starts to fall. If the cockpit drains don't do their work, the boat can be overwhelmed by a heavy downpour. Problems in the claim files include missing hose clamps, broken drain fittings, broken thru-hulls, and loose hoses. In several small powerboats, hoses were never fitted to drains when the boat was built. It pays to inspect everything from the drain to the waterline at the beginning of every season. And don't forget live-wells, bait wells, and fish boxes. Inundating suspect areas with a hose and seeing where the water goes will uncover any problems. Unfortunately, on many boats all of these drains, hoses, and thru-hulls can be difficult to get to. If that's the case on your boat, you'll have to create access and cover the openings with watertight deck hatches.

6. Inspect all below waterline fittings at the beginning of each season.



While you're at it, take a good look at all below-waterline thru-hulls, hoses and hose clamps inside the boat, paying particular attention to transducers and sensors. These penetrate the hull well below the waterline, and unlike most below waterline fittings, they do not have a seacock. Any sort of a failure will bring water into the boat. If you see

dampness around a transducer, use epoxy only for a temporary fix. Water may have intruded into the hull itself, resulting in saturation or delamination. Haul the boat and deal with the leak as soon as possible.

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7. Don't forget the drain plug.



OK, so it sounds like something you would never do. But you can be fairly certain that's what the people who forgot to put in the drain plug before launching thought too — until they did it. We all make mistakes,

some are just more embarrassing than others. The drain plug in the photo was found right where you see it when the boat was raised. To make sure you never have to fess up to sinking your own boat, figure out a way that will keep you from ever forgetting. One option is to keep the drain plug on your boat key ring or, better yet, on the stern tie-down strap.

8. Keep a proper lookout and know where you are at all times when underway.



About 15 percent of the sinking claims in 2012 were the result of hitting something while underway. But in many cases, the sinking did not occur until later, in some cases hours, and in others, days. Sterndrives are particularly vulnerable to a minor grounding or to hitting something floating just below the surface of the water. If you have any doubt about whether your boat is still watertight after you hear a thud, bump, or crunch, do a short haul and check everything below the waterline. In most cases, your BoatUS insurance policy will cover it, but check in with the claims department first.

9. Remove trailerable boats from the water when storms are forecast.



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While a few boats were swamped underway, usually by waves in shallow water, most cases involved trailerable boats left tied to a dock with the stern open to the fetch. If the forecast calls for strong winds and your dock is not well-protected, the best course of action is to put the boat on its trailer. If that's not feasible, then tie the boat with the bow facing open water and put the cover on it. Make sure the batteries are charged and the bilge pump is working.

10. Use a line management system to keep the boat centered in its slip.

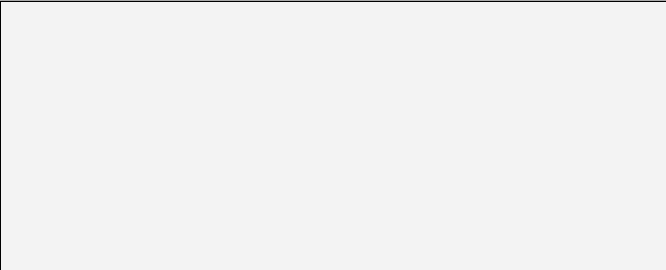


It seems like if there is a way for a boat to find its way under a dock, it will do so. When boats are refloated and no source of water intrusion can be found, investigators start looking for scratches and dinged gunwales, indications the boat got wedged under the dock as the tide came back in. In several cases, one or more docklines were tied to a ring meant to slide up and down a



metal pole attached to a piling as the tide rose and fell. The ring got caught at the top or bottom of the pole, and the boat was left unable to move with the tide. A line management system like TideMinders can remedy this situation, allowing you to keep your lines relatively taut and letting the movement up and down the

piling deal with the tide. Long spring lines can also help keep the boat centered while allowing it to rise and fall with changes in the water level. 🚩



Beth Leonard is the Director of Technical Services for BoatU.S. and editor of Seaworthy, the BoatU.S. Marine Insurance Program's publication dedicated to keeping you and your boat safe on the water.

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