



SEAWORTHY

The BoatU.S. Marine Insurance and Damage Avoidance Report*



Getting A Jump On Spring

Quick & Easy Winter Projects To Make Your Boat Safer (And Avoid Big Headaches Later)

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*The BoatU.S. Damage Avoidance Program is dedicated to helping you enjoy accident-free boating. *Seaworthy* looks at real claims and how they might have been avoided. Material in *Seaworthy* may be reprinted with credit to "Seaworthy, the BoatU.S. Marine Insurance and Damage Avoidance Report."



Sometimes, it's the little things that get overlooked; something as minor as a worn impeller or dead battery can ruin a day on the water. Even major things like a dismasting from a cracked fitting or a ruined engine

due to clogged manifolds can be prevented by a quick inspection. This winter, devote some time to a few easy inspections or simple projects to make sure next spring your boat is ready for smooth (and safe) sailing.

Change Your Impeller

As the Nike ad used to say, "Just do it." Unless you changed your impeller within the last two years, go ahead and replace it. Impellers can fail even (and

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Power Line Heights (And Liability)

I anticipate moving my boat in a few years to Cape Coral, Florida, where I have a house on a canal. My concern and question is, what is the difference on nautical charts between the "clearance" quoted for bridges and "authorized clearance" quoted for power cables?

I must transit a canal with a 55-foot authorized clearance and my boat has a 53-foot mast height. I talked to the Coast Guard and the power company, neither of which will say whether it is safe to cross under this line. The Coast Guard (young guy) just beats around the bush talking about tides. I talked to someone in the engineering department at LCEC, the local power company, and he refused to give me the height of the lines. The reasoning was that the NOAA charts were the only determinant, and if they gave out specific information, they might be held liable. Amazing!

I'm not too worried about the 55-foot bridge as long as it's low tide, but if the power line arcs to my mast, it could be disastrous.

Finally, it's easy for everyone to say "give the power lines 25 feet of clearance," but that's just not realistic. What really is acceptable?

Michael Hailey
Cape Coral, Florida

Nick Perugini at NOAA said that if a utility company wants to build anything around the water, they need a permit from the U.S. Army Corps of Engineers (USACE). The USACE will approve a permit for an "authorized clearance"—usually relative to Mean High Water (MHW). A utility company that gets a permit for a minimum clearance of 50 feet at MHW can build the wire with a true clearance that might be 60 feet, but it cannot be less than 50 feet. However, NOAA doesn't chart the true vertical clearance.

According to the U.S. Coast Pilot, "The charted clearances of overhead cables are for the lowest wires at mean high

water unless otherwise stated. Vessels with masts, stacks, booms, or antennas should allow sufficient clearance under power cables to avoid arcing. It is up to the prudent mariner to build in a 'safety factor' for arcing.

As for what is 'safe', several years ago Seaworthy put the question to several electrical experts and was told that power lines could arc 'several inches to a foot or more, depending on the voltage in the wire.' You'll notice everyone seems to be a little vague (note the 'or more'). Power lines sag in hot weather, adding to the discomfort. If your power company is prudent, the power lines should have been built to something well above the 'authorized minimum clearance.' You're probably safe, especially at low tide, but since you won't be moving to Cape Coral for a year or two, you may want to continue to press the power company for a more specific answer.

Keeping An Eye On The Weather

Regarding your article on Weather ("Keeping An Eye On The Weather"), why didn't you discuss combining XM Satellite with a Garmin display to actually watch and track storms and fronts?

David Smith
Largo, Florida

Seaworthy focused on the vast free resources available to boaters. Subscription satellite services, like XM Weather, charge a monthly fee (from \$10 - \$50 per month) and require a special receiver. They include most of the information the free services provide, along with some extras, but with the ability to receive it without an Internet or cell phone connection or when you're out of VHF range. Other subscription services use single-sideband radio or Inmarsat receivers.

GREAT caution article on weather. After owning *Windward* for two weeks, I got caught on the St. Johns River in Jacksonville in a storm that deserved a

name! Yes, it was a smallish river but it scared me to death. I have never owned a boat and just had to try out my 34-foot Tollycraft.

Now I have the weather channels on 24/7!

Tom Beames
Jacksonville, Florida

Misdiagnosing Fuel Pump Problems

I just read in your October issue about John Bickford's problem with his fuel cooler module failing and fuel exiting through the exhaust. I think the MerCruiser service director should be made aware of this problem, as it seems to be misdiagnosed by MerCruiser mechanics.

My 2005 Sea Ray Amberjack with 350 MAG MPI engines had the problem with fuel leaking in the exhaust. The mechanic began by replacing the fuel injectors. This was expensive and the leak persisted.



SEAWORTHY

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Eventually the cause was diagnosed correctly and the problem corrected, but I think my mechanic and all MerCruiser mechanics should be instructed to look at the fuel pump/cooler before replacing the expensive injectors!

Dave Tappan
Hopkinton, Massachusetts

Ultra Low Sulfur Diesel

In reference to your article on ultra low sulfur diesel (ULSD), since 2002, I have owned a 1978 Fisher Motor Sailer that still has the original diesel engine, a 22-hp Yanmar 2QM20. I use this boat year round (averaging around 250 engine hours per year). I mix my own B20 biodiesel fuel using 80 percent marine low sulfur diesel, 20 percent B100 biodiesel, and Hammerdown DFT 1500 diesel treatment. I have had no fuel problems at all with this B20 biodiesel mix during the last nine years. In fact, one time when the old rubber seal between the crankcase and the fuel pump ruptured and filled the crankcase with B20, no harm was done to the engine because of the very high lubricity of the B20 fuel mixture. Since I have switched to the Hammerdown-treated B20 Biodiesel mix, the engine always starts immediately (even in the winter), runs quieter, and no longer puts out any exhaust smoke.

Dave Herndon
White Stone, Virginia

I'd like to share some additional information on ULSD. I've been using ULSD since it came on the market in my boat with only frequent filter changes in the beginning from system scrubbing by fuel. During winter storage I keep the tank about 7/8 full with a stabilizer and use a conditioner at the start of the season. With extended storage, the fuel tank should be pumped out, as asphaltene in the fuel will drop out. These organic compounds form a black goo in the tank's bottom and will plug filters if you manage to get the engine started.

Andy Kriscoe
Toms River, New Jersey

Very helpful article regarding diesel fuel in the latest *Seaworthy*.

Question: What is the general consensus regarding adding over-the-counter diesel fuel additives to diesel?

I use both biocide and stabilizer additives.

Kim Coleman
San Francisco, California

Both a biocide and stabilizer are a good idea. You could check with your marina to see if the distributor is already adding one or both. Adding a cetane booster or lubricity additive should not be necessary.

I have a 1980s John Deere three-cylinder backhoe. From the time I bought it through an engine rebuild, the dealers told me to avoid ordinary pump diesel. They felt the low sulfur content could be harmful—cause valve problems—to older engines. I began using biodiesel, which I buy from a farmer friend who buys 5,000 gallons at a time, with additives. I haven't had any problems, except it smokes a little more and seems to have slightly less power.

I live in Pennsylvania but spend as much time as possible at Kentmore Park on the Sassafras River in Maryland (my boat is gasoline powered). Another interesting note, we just found a zebra mussel on one of our floating docks several weeks ago. Verified by a DNR inspection.

Jack Edson
Berwyn, Pennsylvania

Mini Lifesavers

Good article on mini lifesavers. I have had SPOT for years and didn't know about the linkup. I like that I can afford both an EPIRB for my boat/ditch bag, and a SPOT that I wear on my inflatable life vest. If I get knocked out of the boat while sailing, I have a beacon; if the

boat is in trouble, I have the EPIRB. I likely will never carry my EPIRB in my dinghy, but I will have my SPOT.

Art Grant
Dana Point, California

Good Night, Irene

Many thanks, BoatU.S., for the communication before Irene, letting me know that you would pay half of the cost to haul out my boat. I keep it at the Ocean Gate Yacht Basin at the mouth of the Toms River in New Jersey. The staff worked night and day to haul well over a hundred boats (including mine). When the storm finally hit, I felt much more comfortable knowing my boat was (on the hard) and well chocked.

John T Wagner
Bayville, New Jersey

Checklists

I was recently out on my Catalina 36 and returned to dock and was going through my checklist before leaving the boat for the week. Lines secure, all power off, through-hulls closed. While closing the through-hull under the sink, I noticed more water than usual in the bilge.

I removed the floorboard and there was significantly more water than usual. I checked the float switch and discovered the problem. My girlfriend's flip flop was wedged above the switch, thus preventing it from activating. I showed her the offending item and her comment was, where is my other flip flop? After more searching, the other one was found wedged way up in the bilge. I assume when I opened the bilge cover earlier, they must have fallen in unnoticed.

Now added to my checklist: Check the bilge for obstructions and do not store items on the cabin sole that can fall into the bilge. The flip flops must have been on top of the hatch when I opened it. The table was down, converted to a bed, so I didn't notice them fall in.

Bob Landini
Pasadena, Maryland



Shrinkwrap And Heat Guns



Almost every year there is at least one fire in the BoatU.S. Marine Insurance claim files that involves a boat owner who started a fire while using a heat gun to shrinkwrap a boat. In this case, the owner put down the heat gun for a minute while he moved a ladder. When he turned around, he saw flames and ran to get a hose, which, after fumbling around for a few valuable minutes, he discovered was too short. Back he went to look for a second hose. By the time he finally coupled the hoses together and turned on the water, the fire was so intense that he had to call the fire department. Even though they arrived within minutes and quickly extinguished the flames, the damage had been done; the boat was a total loss (Claim #1028291).

Two suggestions: Before you begin your shrinkwrap project, make sure you have hoses and fire extinguishers at the ready, and keep the heat gun away from flammable surfaces.

Chainplates And Bulkheads

Some winter projects are simple, while others may require a little more effort. Maybe a lot more effort. Case in point: On most sailboats, chainplates pass through the deck and are anchored to a bulkhead. Over time, the sealant around the chainplates breaks down and, depending on how your boat was constructed, water can begin leaking into the deck core and even the bulkhead. Potential problems that may need to be addressed include delamination (deck), rust (chainplate), and rot (bulkhead), none of which qualify as a simple repair.

To begin an inspection, take the handle of a screwdriver and tap the deck surrounding the chainplate. Start by tapping a foot or so from the chainplate, so you can recognize the sound of a “healthy” deck (thwap, thwap). Next tap around the deck



next to the chainplate. If it sounds “softer” (thump, thump), you likely have delamination and possibly a rusted chainplate. The only way to know for sure is to remove the chainplate.

If the problem has been neglected for too long, water may have leaked into the bulkhead. The same tapping technique used on the deck can be used on the bulkhead. Any problems should be addressed immediately, either by you or, more likely, a professional;

removing chainplates and repairing decks and bulkheads takes considerable skill.

The photo above shows the inevitable outcome of neglecting to rectify the problem (Claim #1014201).



Shore Power Fires

If your boat is going to stay in the water this winter, check the ends of your shore power cord — the connections — looking for blackened connections, corrosion, or melted plastic. Over time, especially in a saltwater environment, the metal blades on the boat’s inlet and the plug at the pedestal can corrode, which causes electrical resistance and heat. Damaged connections are another source of heat.

If you find any sign of overheating, you can start by replacing the cable. It is also likely that the shore power inlet on the boat will need replacing. This boat (Claim #0811588) was destroyed when the shore power inlet overheated and ignited the cabinet where the electrical connections were located. The owner had never had any problems with the system until hours before the fire when the boat’s electrical system quit. After jiggling the shore power connection a few times, the power returned, a clue that should have warned the owner that a thorough inspection of the cable and inlets was in order.

Fittings On Deck, Part I: Boats In The Water

One of the things *Seaworthy* has always advocated over the winter is visiting your boat occasionally, especially if it's kept in the water. A preemptive visit can identify chafed docklines, prevent dock rash, or find a stuffing box leak before it sinks your boat.

A deck fitting that's overlooked can also sink a boat. In this case, (Claim #0804746), the boat sank after a hose slipped off a cockpit scupper and rain gushed directly into the boat's hull. As a practical matter, a boat doesn't have to sink very far, maybe a few inches, before seawater finds a way into the boat. Sometimes the seawater enters the boat through a submerged exhaust port. In other cases, water pours in through a cracked fitting near the waterline. The remedy when you visit your boat is to check all of the fittings — below the waterline, above the waterline, and on deck.



Fittings On Deck, Part II: Boats Ashore

Another example of an overlooked deck fitting causing severe damage, in this case to a 41-foot sailboat that was stored ashore. The fittings and hoses were all intact but water backed up into the cabin via cockpit scuppers that were clogged with leaves. In the months that nobody came to visit, water continued trickling into the hull whenever it rained. The result was mold and mildew, which ruined much of the interior. The repairs took months to complete (Claim #1015899).

Fittings On Deck, Part III: Fuel System Vents (And Fills)

Deck drains that are ignored don't just sink boats. This boat's fill fitting crumbled, allowing gasoline to spill into the bilge when the boat was refueled. The vapors accumulated and exploded when the owner started the boat. One person was injured (Claim #0614148).

This spring, one of the most critical jobs will be to check the condition of your boat's fuel fittings and hoses. Joints in the fuel system should also be checked for leaks (use your fingers or look under the fitting for stains) and make sure fuel lines are well supported with non-combustible clip or straps with smooth edges. Other potential trouble spots include the fuel filter, fuel tank, and brittle or mushy hoses.

One more important point: The claim is also a good example of why it's important to open the hatch and sniff — using your nose — for odors before starting the engine. *Running your blower won't eliminate vapors from spilled fuel!*



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The impeller on the left is worn out; the vanes could break off and get stuck in your engine's cooling system, causing overheating. Now is the time to replace it if you haven't done it in a couple of years.

especially) if they're not used much. Over time, they take a "set" and the vanes become less flexible and less efficient at moving water. Eventually, the vanes crack at the base and break off, finding their way into your engine's cooling system where they can cause overheating (and are often very difficult to remove). Replacing your impeller is easy and cheap insurance. If your engine's pump is hard to access, consider installing a product called Speedseal, which is a replacement cover that uses four knurled screws, allowing much easier inspection and replacement of impellers.



Zinc anodes in the engine's cooling system wear out like any other anode. Forgetting to replace them can lead to corrosion, ruining expensive components.

Inspect the Other Zincs

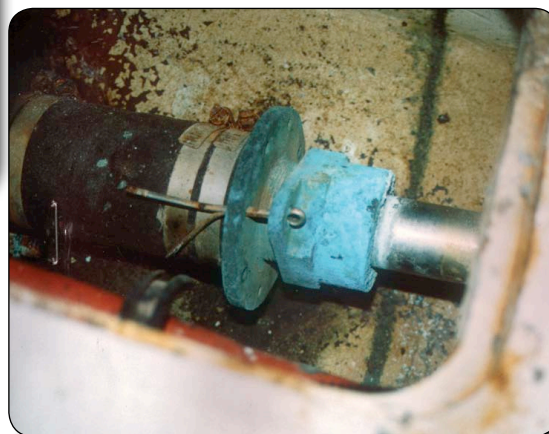
Many engines, especially smaller diesels and generators, have zinc anodes in the cooling system to prevent corrosion. Most heat exchangers are made of copper

and other dissimilar metals, which can corrode if not protected. The anodes (usually pencil anodes) are screwed into the heat exchanger housing and should be inspected at least once a year; if they're half wasted, replace them. Check your engine manual to find out if your boat has one.

If you have a water heater, you may have a zinc anode in it as well. Those anodes tend to last a long time (decades), but when they're finally used up, corrosion can occur. Another surprising issue with worn-out water-heater anodes is that they can cause a foul odor in the hot water when the zinc wears off its iron support rod. These anodes are usually attached to the inside of the water heater's outlet nipple and can be replaced by removing the nipple.

Upgrade Your Stuffing Box

Replacing the packing in a stuffing box often gets put off since it can be hard to access. But a study by *Seaworthy* a few years back found that 35 percent of inboard-powered boats that sank at the dock had leaking stuffing boxes (also called packing glands). A stuffing box should only drip when the shaft is spinning—never when the boat is at the dock. Tightening it will only solve the problem for so long since the packing gets hard over time and over-tightening will damage the shaft.



Replacing your old flax packing with a high-tech type can eliminate drips and extend the interval between changes.

The job is straightforward and can even be done in the water (an absence of packing produces only a modest trickle that can easily be handled by the bilge pump), though it's easier and less scary while the boat is hauled. There are a couple of ways to upgrade your stuffing box: The simplest and easiest is to replace the old flax packing with a dripless type such as GORE-TEX. It's as easy to install as flax packing, doesn't cost much more, and lasts for years. Best of all, it rarely drips, even underway. Another way to upgrade a stuffing box is to replace it with a "drip-free" unit that uses a high-tech rotating seal. The shaft has to be removed, however, which means the boat must be out of the water. These packing glands typically don't drip at all, but they do require occasional inspections.

Install a Carbon Monoxide/Vapor/Bilge Water Alarm

Boats over 26 feet built after 2003 that have sleeping areas should have carbon monoxide alarms installed from the factory. But any older boat that is gasoline powered (or has a gas generator) and/or has an open-flame stove needs one. Carbon monoxide can't be detected by smell, has no color, and impairs judgment, so it's critical to have a warning before levels get high enough to cause serious injury or death. Carbon monoxide alarms are inexpensive and easy to install—and can save your life.

Gasoline and propane vapor alarms are another upgrade that could someday save your life. Gasoline vapor detectors are mounted in the engine room of gas-powered boats and will signal an alarm before vapor levels become explosive. Propane alarms are used near the galley, down low, where heavier-than-air propane vapors can collect.

A high bilge water alarm alerts you to rising water and can give you enough time to find a leak before it's too late. It can even be linked to a boat's horn, assuring it will be heard at the dock when the boat is unattended. These alarms are as easy to install as a bilge pump switch, and in fact, the ABYC requires that boats with enclosed accommodation

spaces be equipped with them by the manufacturer after 2006.

Change Waste Hoses

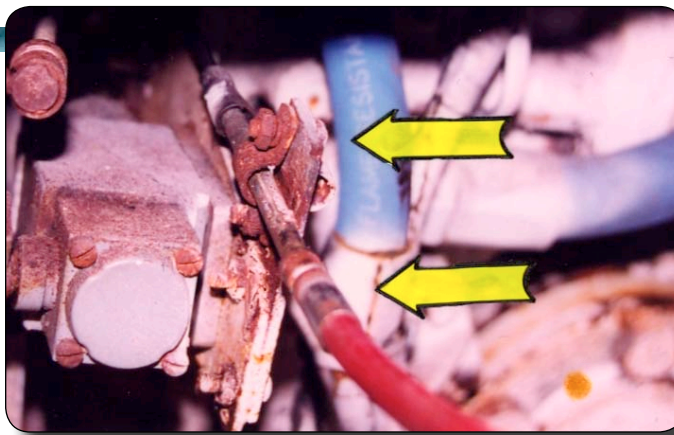
Most foul head odors are caused by old sanitation hoses. Even the best hoses begin to permeate odors after a few years, and the last thing you want onboard is a *leaking* sanitation hose. Winter is the best time to tackle this project (less odor). Run a clean cloth over the hoses—if the cloth smells, the hoses need to be replaced. Choose the best hoses or you may be doing this unpleasant job again sooner than is necessary. Smooth-walled, thick hoses last longest. Check the West Marine catalog advisor; they have recommendations for good, better, and best. Don't scrimp. Make sure hoses are run so there are no sags where water can stand and ripen. One problem with replacing sanitation hose in winter is that they become stiffer and unwieldy. Dip them in hot water to make them more pliable, especially the ends.



Exercising your seacocks now can prevent a surprise like this later, when you might have an emergency.

Work Your Seacocks

Seacocks that rarely get closed tend to stiffen up until eventually they can't be closed at all, which could be a disaster in an emergency. Check all of them; they should open and close without force. Those that are stiff or stuck need to be taken apart and serviced. Or, consider replacing them with Marelon (plastic) fittings, which have corrosion resistant.



Steering and throttle cables can get stiff inside from corrosion. Take a few minutes to inspect them, and don't forget the ends. This cable bracket was loose, preventing the skipper from reversing; the boat smashed into a dock.

Check Steering Linkages

Cable steering systems can fail, potentially causing a severe accident. Visually checking them is not enough; in one case a seven-year-old cable failed, tossing the vessel's occupant into the Gulf of Mexico.

He was quickly rescued but was surprised later to find that while the sheath was intact, the cable inside was rusted. Here is a simple test: Grasp the steering cable with both hands and twist and bend it back and forth. Cable that sounds and feels "crunchy" indicates corrosion. Replace it immediately. If the steering feels stiff, it could be an indication that the cable needs replacing or, then again, the stiffness could be caused by a lack of lubrication at the engine's or I/O's pivot point.

To test it, disconnect the cable at the engine and turn the wheel back and forth. If it still feels stiff, the cable is bad and needs to be replaced. If the wheel turns easily, get out your engine manual and lubricate the pivot. Also, check the outer jacket. If it's faded, it's a good sign the cable is getting old and should be monitored. Cracks or swelling is a strong indicator that the cable needs replacing. Don't forget to check and lubricate throttle and shift cables, which are usually made the same way.

Check Your Batteries

One of the most common calls to TowBoatUS is for dead batteries. Batteries

have a hard life on a boat since they often sit unused for months (wet cell batteries typically self-discharge 5-10 percent a month). This winter, take them to an auto parts store; most will check them for free. The devices they use subject the battery to a heavy load and will give a much better indication of their health than a simple voltage check.

Don't forget to check the battery cable for corrosion. Batteries need a good supply from the alternator to keep them charged, so spend a few minutes looking at the alternator drive belt. Look for black dust, cracks, or shiny surfaces that might indicate slipping. Tighten or replace them.

For Sailboats



A few minutes checking swage fittings can save your rig. Look for bulging or cracks like this that signal corrosion. Replace any suspect fittings immediately.

Inspect the Mast and Rigging

One of the largest and most expensive

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pieces of equipment on a sailboat is the mast and its rigging. For all its strength, a small defect can bring the whole thing down. A missing cotter pin can allow a turnbuckle to loosen; a corroded swage fitting can let go under stress; or an accidental jibe can allow a partially broken wire to part. It only takes a few minutes to inspect the deck-level rig. Start by checking that all open turnbuckles have cotter or round pins that prevent them from loosening. Then check swages. Look for tiny cracks and bulges that might indicate the fitting is corroding. Carefully run a wad of tissue paper up each shroud as high as you can to locate any broken strands—replace any damaged wires immediately. Check fittings on the mast and boom for security and corrosion. Loose rivets should be drilled out and replaced with the next larger size. Inspect chainplates for signs of weakness—discoloration, delamination, and rot. If you chose to remove your mast over the winter, the rest of your inspection is infinitely easier. If the mast is on the boat and you choose not to go up, use binoculars to check fittings at the spreaders and as far up as you can see. If you have any doubts, call a rigger.

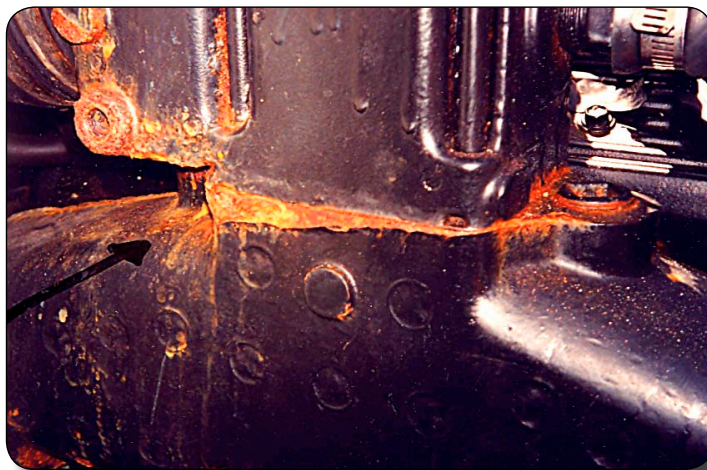
Service the Winches

Over time, salt and grime find their way into winch internals, which can make them hard to operate and cause premature wear. Most winches are pretty simple (though three-speed racing winches have a dizzying amount of parts) and cleaning and lubricating can be done fairly easily. If the winches are easy to remove, take them home and service them in the warmth of the kitchen (where dropped parts won't go "ker-splash"). Rebuild kits are available at West Marine for most winches (many manufacturers have online instructions for disassembly) and the job can be done in less than an hour.

For Power Boats

Check Manifolds

Gas engine manifolds have a relatively short lifespan, especially when used in saltwater and warm climates. Manifolds are a tube-within-a-tube arrangement and if corrosion causes a breach between the tubes, water can get inside the engine



A quick check of the outside of your risers can tell you a lot about the inside. If you can see rust streaks, chances are there is corrosion inside as well. A corroded riser can allow water inside the engine, destroying it.

and destroy it. Look for rust stains on the outside of manifolds and risers; if there is rust, the inside is almost certainly rusting as well. If you're handy, you can remove the manifolds and have them pressure checked—the only sure way to verify their integrity. In warm saltwater locations, manifolds may only last five years, while in cold fresh water, they can last for 10 years or more. If your manifolds have reached the end of their lifespan, have them replaced now, while shops are less busy.

Check Fluid Levels

Checking engine oil is something that's done routinely during the season, but other fluids are often ignored. Check the fluid levels for the transmission, power steering, and trim tabs. Don't forget to make sure the cooling system is topped up too. It's usually not possible to check the level of the outdrive oil, but you can add some to it to make sure there's enough. Most outdrives have two screws, one low and one high; the upper one must be opened first, then a small hand pump is used to pump oil into the lower one until it overflows out of the upper hole (make sure the drive is all the way down). Some newer boats have a reservoir in the engine compartment that can be checked and filled if necessary. Incidentally, if the outdrive fluid is milky, there is water mixed in and it needs to be investigated immediately.


Trailers

Check Your Trailer

Give it a once-over, looking for rust,

especially at joints and welds. A little sanding and painting now can add years of additional life to your trailer. Hubs that have been immersed in water during the season are likely to be contaminated unless bearing protectors were installed. If you haven't done it already, now is a good time to fit them, though you'll probably need to clean and repack the bearings first. Bearing failures are one of the most common calls for BoatU.S. Trailer Assist. A frozen bearing can cut short a weekend outing and often damages the hub so badly that it has to be replaced.

Take the tires off if possible—it prolongs their life and reduces the chance of theft. Check the

tires for cracking and worn spots. Adding support blocks under the trailer's frame rails takes the weight off the tires and the springs, prolonging their life over the winter. If you have surge brakes, check the fluid level and top off if needed. If the fluid is really low or you have to keep adding fluid, check the brake lines—they can rust and leak. Don't put off fixing them, they'll only get worse and could cause an accident. Unless the manufacturer specifies otherwise, be sure to use DOT three or DOT four brake fluid since DOT five can damage brake seals. 



Spend a few minutes going over your trailer. Sand and paint any rust areas, check brake lines and wiring and top up brake fluid.



Snowstorms & Boathouses

How Can “Gently Falling Snow” Sink Hundreds of Boats?

When most people think of snowstorms, places like Buffalo, New York, or Denver come to mind. Oklahoma is usually not at the top of the list. But this past February, a massive snowstorm dumped nearly two feet of snow in the Grand Lake area, near Tulsa, where about 5,000 boats are kept. When the snow finally stopped, roads were impassable and no one knew how the boats and marinas fared. The biggest area of concern was the many covered floating docks that dot the lake. When helicopters finally flew in to the area, it was a grim sight. Many of the metal roofs had caved in, but the worst of the damage would not be seen until investigators were able to access the docks. Tom Benton, a Society of Accredited Marine Surveyors (SAMS) surveyor from Tulsa, was sent by BoatU.S. to assess the situation. His report was bleak: 14 marinas, along with countless private docks, were damaged or destroyed by the snow and over 600 boats were damaged, many of which were sunk. As the snow load increased on the roofs, the floats couldn't support the weight and eventually, the snow-covered roofs settled onto the boats, forcing many of them underwater. Benton noted that in some cases, private dock owners, whose structures seemed to fare better, didn't notice damage until much later, when they began to de-winterize their boats. Even though the roofs appeared sound, the weight had forced the docks — and the boats — under water just enough to cause back-siphoning through scuppers and exhaust systems, ruining the engines.

The snowstorm on Grand Lake was not

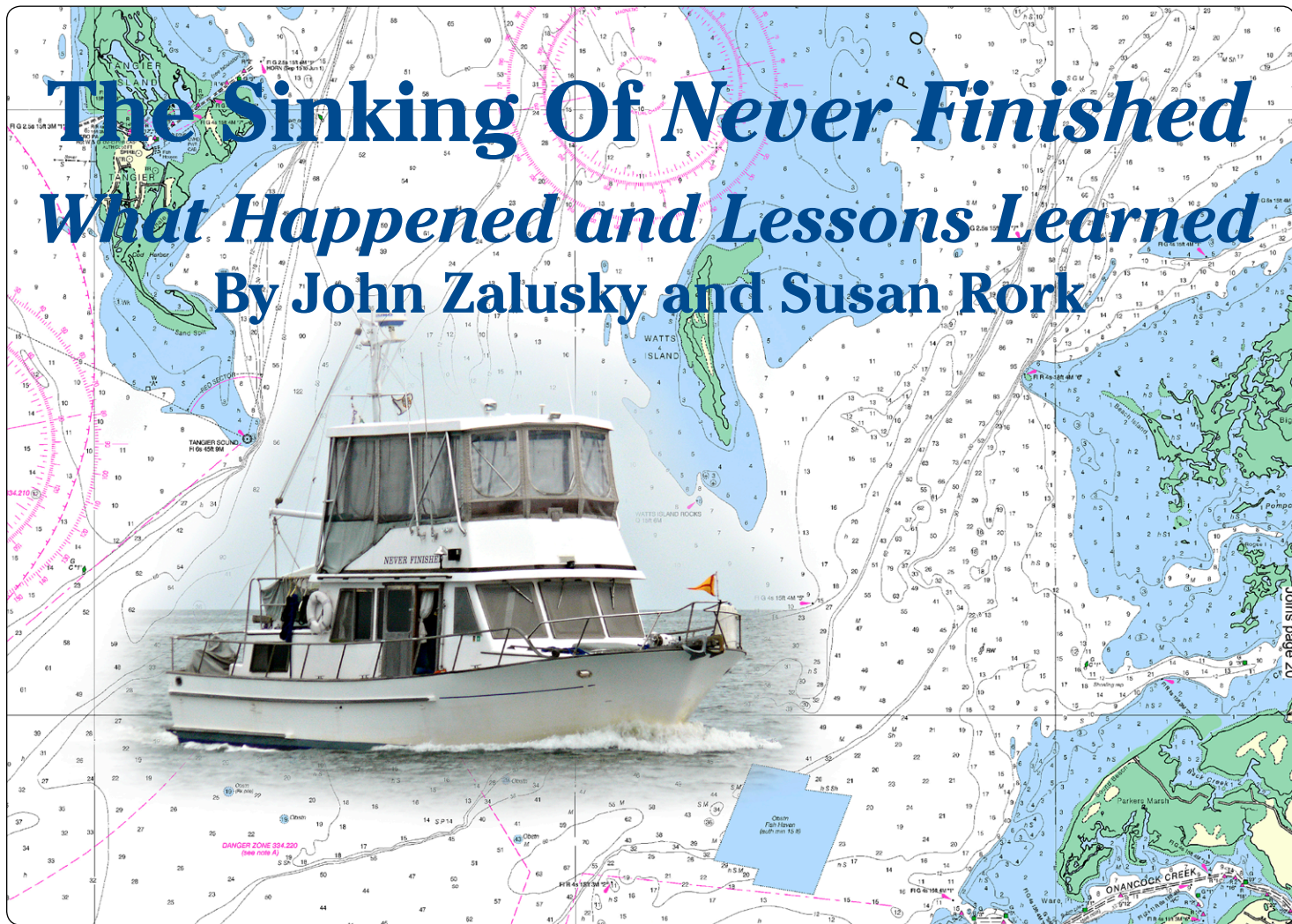
the first, nor will it be the last of its kind. *Seaworthy* wrote about a similar storm in 1996, in Washington state. At one marina, 24 out of 26 roofs collapsed onto the 400 boats underneath. Of those boats, 100 were sunk and 200 were damaged but still afloat. At another marina, two more roofs collapsed, destroying 244 empty slips and sinking 37 boats.

Calculating Snow Loads

The weight of snow varies greatly. A dry, fluffy snow might weigh a little over five pounds per square foot while a wet snow can weigh 15 pounds or more. Unfortunately, warmer areas tend to have the wet snows. If buildings ashore rarely have problems with snow loads, why have the very same loads been such a menace to floating docks? *Seaworthy* talked to Shannon Kinsella, a structural engineer with Reid, Middleton, Inc. who said codes for marina structures include snow loads only for the roofs, not for the floats. Years ago, in the Washington storm, the roofs were built to hold about 25 pounds per square foot (psf) of snow load, but the flotation that the structure sat on was only designed to hold 10 psf, which was a recipe for disaster. These days, most larger marina roofs are built to withstand 30 psf of snow load. As for the floats, engineers do their best to design floats that will stand up to anticipated loads but are limited by things like the width of finger piers and even water depth. Other engineering remedies include designing steeper roofs made with slippery materials that may shed at least some of the snow.

So what's a boat owner to do? As with any boat, the safest winter storage is ashore; boats don't sink on land. If you choose to leave your boat afloat, monitor winter storms as you would hurricanes and, if practicable, prearrange to have your boat hauled at a nearby marina if a severe snowstorm threatens your area. As a last resort, move the boat from under any roof that seems questionable. Tom Benton observed that very few of the boats left outside the covered dock areas at the lake sank from excess snow. A well-fitting cover can direct snow overboard. Timely visits to your boat can prevent snow buildup on covers and in scuppers.

One more thing: One of the biggest lessons learned from the Grand Lake storm is the value of a good marine insurance policy. While BoatU.S. sent help quickly and started the claims process for every insured's boat, numerous other boat owners were frustrated having to wait for their insurance companies to respond; Benton said that one insurance company that specializes in houses and automobiles refused to send a representative to look at the company's damaged boats for two months, forcing owners to pay out of pocket to remove their wrecked boats. Others thought the marina's insurance would pay for the damage — it didn't. Still others, who had liability-only coverage, watched helplessly as their boats foundered under the wreckage, knowing they didn't have the means to revive them. In retrospect, of course, the risk was not worth taking. ⚓



It has been over a year since our 35-foot trawler *Never Finished* sank in shallow water on a typical August day on the Chesapeake Bay. Damage to the boat has been repaired and we've had time to reflect on the events of that day and what we could have done differently. Below is an account of the accident—and the lessons we had to learn the hard way.

This story begins on August 20, 2010, when we departed our slip in Lusby, Maryland, bound for Cambridge, Maryland. I had completed my checklist and we got underway about 10 a.m. It was a pleasant summer morning on the Chesapeake Bay—already hot and humid with almost no wind. The seas were calm.

The trip out of the Patuxent River and up

the Chesapeake Bay went smoothly. About noon, we were approaching the Choptank River, gingerly passing through a field of crab traps when we heard a thump, thump, thump from under the boat. A split second later, the thumping stopped and the engines resumed humming along nicely; we figured those expensive cutters on the props had cut loose whatever it was we hit.

About 10 minutes later, Susan, my wife, was headed below to make sandwiches when she made a frightening discovery: We were taking on water—a lot of water. She screamed. I went below, opened the engine compartment, and found the water had risen half-way up to the sides of the twin Lehman diesels. Given the depth of the water, discovering the source wasn't practical.

The boat was near the mouth of the Choptank, in 35 feet of water. We donned our life jackets and ensured Coalbie, our standard poodle, had her life jacket on tight. I issued a mayday on the VHF and gave our position. I then turned my attention to getting the boat to shallow water.

Susan took over the VHF, which seemed to be transmitting well, but others said they were having trouble receiving us. Susan also used her cell phone to call 911 and alert the Coast Guard and TowBoatU.S. Friends on two boats heard our mayday and kept us in sight, which was comforting in the event we would have to abandon ship.

The boat was north of Trippe Bay, about a mile or so from Cook Point. There was

never any thought of looking for an “ideal spot” to ground the boat—next to a dock or pilings. The boat was sinking far too quickly. We kept plodding ahead until finally, after what seemed like an eternity, the boat grounded in soft mud. It had been the longest 20 minutes of my life!

I climbed down off the flybridge and peered over the side of the hull; the water was only two inches from the engine’s air intakes. We probably had a scant few minutes—five at the most—before the engines would have locked up and the boat headed for the bottom. That would have left the two of us overboard with our dog, who was also aboard for the trip and would likely have been very scared.

The Coast Guard and TowBoat U.S. were within yards by the time we finally grounded. The 2nd Class Petty Officer said, “Nice job, Master Chief.” That small gesture helped take the edge off my jittery nerves.

The TowBoatU.S. captain, Trevor Hammond, came aboard and explained the salvage rules. He also pointed out that because we carried BoatU.S. Marine Insurance, salvage would not be a problem. (He was obliquely pointing out that, unlike some other company’s policies, the BoatU.S. insurance policy covers salvage costs.) My wife wondered why, if *Never Finished* was on the beach, it would be treated as a salvage case. Captain Hammond responded that when a boat is full of water and on the bottom, it is a “sunk vessel.” The lesson: If you don’t have a BoatU.S. policy, make sure your insurance coverage includes the cost of salvage; the bill came to \$8,400.

Captain Hammond put one large battery-driven bilge pump aboard, and because it was not making any headway against the incoming flow of water, he deployed a much larger engine-driven pump that had a two-inch-diameter discharge. Slowly, the water level began to recede until we could see the source—water had been pouring in through the shaft log. The three-inch hose that was clamped to the outer end of the shaft log had moved forward about three inches, which allowed a steady 2 1/2-inch stream of seawater to pour into the bilge.

"I went below, opened the engine compartment, and found the water had risen half-way up to the sides of the twin Lehman diesels. Given the depth of the water, discovering the source wasn't practical."

The repair was simple: With a large pair of channel locks, Captain Hammond pulled the hose back over the shaft log and then tightened the hose clamps on the hose and stopped the flow of water. The hose clamps that let go—evidently at the same time—were the type that are available at all marine stores; the screw engages the threads to draw down the clamp. With the hose clamps securely refastened, Trevor towed us for three hours to Yacht Maintenance Company in Cambridge, where a crew was standing by to pickle

the engines and begin repairs on the boat.

Learning The Hard Way

Susan and I are not new to boating. Susan crewed on a sailboat across the Pacific, and I have been boating alone on power and sailboats for over 60 years, since I was 12 years old. I am also a retired USN Boatswain Mate, Master Chief. Nonetheless, I am ashamed to say that I neglected to activate a 406 EPIRB that was aboard for just this sort of emergency. Also, I had two Uniden VHF radios aboard, both of which were equipped with the DSC position-locating feature. However, I had such difficulty figuring out how to mate them with my GPS that I had given up (there were no instructions). I have since contacted the nice folks at West Marine and both are now installed.

I am sure the hose clamps were in place when we left home three hours earlier, and that they failed. Before casting off, I used my 10-hour checklist that included the shaft packing gland. I believe what happened was that we picked up one or two crab pots, wrapped them around the shaft, and they hit the bottom a few times. That whipped the shaft and caused the clamps to come loose. 🦀

A few lessons:

- Be careful to avoid crab (or lobster) pots. Don't even get close. While cutting corners is tempting, you are better off in deep water.

If you notice that you might have hit something, go below immediately
- and check the bilge for flooding. Even if the bilge looks OK, check again later just to be sure nothing was loosened.
- Be aware that even the best towing plan won't cover the cost of salvage. For that, you'll need a good marine insurance policy (read the fine print) that covers all salvage costs.
- Invest in a high-water alarm. A typical bilge pump, even if it runs full time, will never handle a major leak.
- From time to time, do a “sinking drill” just like you do (or should do) for a “man overboard” drill. Don life jackets, locate the EIPRB (don't activate the thing), simulate a mayday call and DSC broadcast. Divide up the crew's roles. The goal is to make the event seem routine. Furthermore, do not forget the cell phone has an active and useful role: calling 911.
- Use the strongest possible hoses and stainless steel clamps, especially with through-hulls below the waterline. Since the unfortunate run-in with the crab pots, I've installed “T” bolt clamps, which are much more secure.

Emergent Technologies, Evolving Hazards

New Lithium-Ion Batteries Pack A Lot of Energy. Here's Why That Could Be A Problem On Boats



Batteries, like these conversional wet-cells, have always had the potential to start fires due to their high energy content. These caught fire when an errant wrench contacted both terminals (Claim #0205712). Newer technology batteries with higher capacities and less forgiving charging characteristics will require even more caution along with sophisticated monitoring.

All Juiced Up

Of course, battery fires have always been a hazard on boats. But as the nature of batteries evolves, the nature of the threat evolves as well. The key to keeping this hazard in check? Understanding these changes.

In the past few years, numerous examples of computer and cell phone battery fires resulting in mass recalls have shared one

thing in common: Whether it's a wafer-thin half-ounce power cell or a 400-pound behemoth of a car battery, Lithium-ion has been the culprit. But Li-ions have a long list of significant advantages over traditional batteries—they're lighter; they hold their charge better; can handle more charge/discharge cycles; and don't have charge-memory problems. These advantages are significant, especially when you compare hard numbers. A Li-ion has the ability to store up to between 125 and 180 watt-hours per kg of battery, while an average NiMH (nickel-metal hydride) battery can store closer to 100 watt-hours per kg and a common lead-acid battery stores less than half that amount. Unfortunately, since Li-

Boatbuilders have long been obsessed with shaving weight to improve efficiency and boost speed, especially when it comes to high-tech professional racing sailboats. So it's no surprise that the Volvo Ocean Race team Emirates New Zealand opted for the latest, greatest, and lightest in marine batteries when they installed Mastervolt MLI 24/160 lithium-ions (commonly called Li-ion) in their boat, *Camper*. That produced a battery weight reduction of about 70 percent, though at a retail cost of tens of thousands of dollars. As the technology matures and costs drop, however, the batteries we see on high-tech boats like *Camper* today will trickle down to recreational boats like ours, tomorrow. Unfortunately, a lack of knowledge about these batteries could also cause a trickle-down of new dangers.

When Li-ions first appeared on boats, they presented a significant risk. "We had one in *Playstation* [the Maxi-cat that set a trans-Atlantic speed record in 2001] and it caused a serious fire," said Tom Weaver, owner of Eastport Yachts and managing partner of Weaver-Price Design & Con-

struction. "The weight advantage was huge, but when charging, the lithium-ions were super-volatile."

And while this technology has certainly become better in recent years, some danger remains. According to Ed Sherman, the author of *Advanced Marine Electrics and Electronics Troubleshooting*, "It's still the Wild West out there when it comes to lithium-ion systems. Thank goodness we have these cutting-edge sailboat racers who can act as early adopters, and help work the bugs out. But the technology is still so new and it's moving so fast, that even in some well-engineered systems, there have been unexpected issues."

ion batteries represent the latest technology has to offer, we haven't necessarily figured out the best and safest ways to store the punch that they pack.

The basic way these batteries work is the same as traditional batteries: Electrons move across an electrolyte, between an anode and a cathode, to create a flow of electricity. Since lithium is a highly-reactive alkali metal, it's possible to cram more energy into a smaller space. All that power, however, tends to cause overheating in certain circumstances. Insulating membranes and built-in circuits can prevent it, but subtle manufacturing defects or battery damage can be problematic.

"We really need to start thinking about Li-ions as systems," Sherman explained, "not just as batteries we use and then recharge with a charger. They need to be controlled and managed precisely, because failure is always a possibility with any series of circuits. And in this case, there's a lot of power to deal with."

The American Boat and Yacht Council's vice president and technical director, John Adey, agrees. "The amp rates can be enormous, and the cells in Li-ions need to be equally charged and monitored for temperature and equalization. So you really need a high-end monitoring system," he said.

If Li-ions are dangerous, why haven't we heard more about high-tech battery fires on boats in specific? For the most part, because so few are currently in marine use. In fact, Weaver is one of the few boatbuilder/designers around with extensive Li-ion experience going back over more than a decade. And in his opinion, even today, Li-ions are still too dangerous for recreational boating use. "For a professional racing sailboat saving 10 pounds is like the holy grail, much less saving 100," he said. "But I've seen boats on fire because of them and I wouldn't even consider putting one on a recreational boat just yet. Even when we use them for dayracing, we actually keep the batteries on a separate boat, and run them out just before the beginning of the race."

As the expense drops and technology advances, however, the popularity of Li-ions is sure to grow in the recreational marine marketplace. And that means boaters need to get ahead of the curve. Fortunately, organizations like ABYC are already on the job. "We're laying the groundwork for new battery system standards now," Adey said. "We'll have them done by July, and

they should be out by the following July."

High Returns

As both Sherman and Adey point out, using the latest and most advanced monitoring systems is a big part of reducing the danger of Li-ions. These systems include microprocessors which can "talk" with the battery to vary the charge characteristics from start to finish, as well as providing over-current protection. Merely hook up your Li-ion to a standard marine battery charger which blindly pumps out juice, and you'd be asking for trouble.

Unfortunately, this isn't where battery charger problems end as they relate to onboard fires. We want our power and we want it fast, and regardless of battery type, that translates into higher amperage demands. Simple single-stage bulk chargers are available these days all the way up to 50 or more amps. That's a lot of power, and trying to cram it quickly into a battery of any sort doesn't work very well because batteries don't charge in a linear fashion. When they're fully or mostly discharged they can accept a charge quickly, but as they become closer and closer to fully charged, they accept less and less juice. That's why "smart" multi-stage chargers, which sense the battery's state and reduce charge accordingly, are far less likely to cause problems.

Just what exactly happens inside a battery, if a not-so-smart and all-too-potent charger is used to jam power into it? It can overheat and explode, or it can cause venting. Since the gas that escapes from a lead-acid battery is hydrogen (a small amount of which is created when charging most batteries, hence the constant need for good ventilation), this can create a major hazard. Hydrogen gas is extremely explosive, and can be set aflame by electrical accessories other than the battery and charger if it gathers in an area that's not 100-percent spark-protected.


Worse yet, in the case of a Li-ion battery, venting can occur in the form of open flames. Li-ions become more unstable when overcharged because the lithium forms a metal plating on the anode, while the cathode becomes an oxidizing agent and produces carbon dioxide, increasing pressures inside the battery cells. If the charging continues, eventually the battery will release that pressure—period.

The likelihood of encountering these types

Marine Li-ions

Few Li-ion batteries are designed specifically for the marine world, but Mastervolt has entered the market with the MLI 12/320 and 24/160 (www.mastervolt.com). These offer space and weight reductions of 70 percent, triple the lifespan of a lead-acid battery, and faster charging. Introduced in 2010 the MLI garnered significant attention in the industry, winning the Pittman innovation award presented by Sail Magazine as well as an IBEX Innovation Award. Most experts agree that, when combined with Mastervolt's management systems with MasterBus CANBus battery/charger communications, it represents the best technology available on the market today. Unfortunately, this new technology does not come cheap—a single battery and management system can retail for well over \$6,000.

Another manufacturer of cutting-edge batteries designed for marine use is an Australian company called Aquawatt (www.aquawatt.au). This company introduced a lithium battery this year, along with what may be the world's biggest electric outboard, a 30-hp powerplant. Aquawatt says their lithium yttrium phosphate design is safer than standard Li-ions, but we haven't seen these particular batteries in action just yet. Aquawatt doesn't have an American distributor at the time of this printing but they hope to have one by the end of 2012, so you should look for this technology to hit our shores in the very near future.

of problems on boats grows as we grow our own desire for power. In the past five to 10 years, larger electric outboard and inboard propulsion systems, the use of more inverter-driven onboard accessories, and generally increased electrical demands has expanded our use of larger and more potent battery banks. Couple these needs with the newer and less thoroughly vetted technologies, and it's easy to see why fire concerns are growing, rather than shrinking. Today those concerns may be focused on tricked-out competition sailboats like *Camper* and *Playstation*. But tomorrow, there's a good chance they'll apply to the object of your own obsession, as well. 

On Wednesday, November 31, the 2011 Atlantic Hurricane season officially came to a close. In terms of hurricanes, the six hurricanes in 2011 mean that it was only slightly above average. The season's 19 tropical storms, however, make it the third most active tropical storm season since 1851, the first year records were recorded.

For people living along the Gulf and Southeast Atlantic coasts, 2011 will be remembered as a quiet year; there were no hurricanes or tropical storms. But for anyone living near the Mid-Atlantic and Northeastern coasts, their memories of the 2011 hurricane season are likely to be far different, even though only a single hurricane—Irene—came ashore.

By historical standards, Irene didn't pack much of a punch; it came ashore as a category one hurricane and was soon downgraded to a tropical storm. It's path however, swept up some of the most populated areas of the Atlantic seaboard, from North Carolina to New England, inflicting close to \$10.1 billion worth of damage, including \$300 million to boats. In terms of destruction, Irene—a relatively "minor" storm—was the 12th costliest hurricane in U.S. history.

Speaking of natural disasters, 2011 has been a heck of a year (and as *Seaworthy* goes to press, it's still not over). Aside from the single hurricane, there have been blizzards, tornados, heat waves, droughts, heavy rain, and catastrophic flooding. The insurance company Munich Re calculated that in the first six months of 2011 there were 98 natural disasters in the United States, about double the average of the 1990s. Ouch!

Last fall, the Department of Energy (DOE) released the results of its tests on the effects of E15 on marine engines—inboards, outboards, and I/Os. Without going into detail, all of the engines tested with E15 had problems, including severe damage to components, misfiring, and an increase in exhaust emissions. Two of the three outboards that were being tested conked out before the tests were completed. In contrast, the engines in an E0 control group did not exhibit any fuel-

related issues. After reviewing the results, Margaret Podlich, the president of BoatU.S., said that while the organization supports the effort to develop renewable fuels, the trend of using higher and higher levels of ethanol is clearly not the solution to America's energy problems.

If not E15, then what? The answer may be butanol, which, like ethanol, is an alcohol that can be made from corn, beets, and various cellulosic raw materials—switchgrass, wood chips, or a host of other organic materials. Unlike ethanol, however, butanol is less corrosive, doesn't attract moisture, can be shipped through existing pipelines, and has a much higher energy value (110,000 Btu per gallon vs. 84,000 Btu for ethanol). In a recent test, an unmodified 1992 Buick, powered solely by 100-percent butanol, was driven coast to coast, averaging 26 mpg, which was a significant improvement over the 22 mpg that the car had been getting with E0 gasoline. Finally, in terms of flammability, butanol is similar to diesel fuel and would be far safer on a boat than gasoline or ethanol.

The next and obvious question is, why aren't we all using butanol? Part of the answer has to do with how the stuff is—or was—made. Back in the 1980s when the government started looking into various biofuels, the cost to produce butanol was significantly higher than it was to produce ethanol. That cost advantage gave ethanol a 30-year head start in the race to become the nation's biofuel. In the last few years, however, improved technology has meant that the cost to produce a gallon of each fuel is roughly the same (although butanol is far cheaper to produce in terms of the amount of energy delivered per gallon).

It's also possible that butanol may have some long-term effect on engines that has yet to be uncovered. (Remember, many years ago, everyone thought ethanol would solve the nation's energy problems.) There is also the not-too-insignificant reality of ethanol's financial and political momentum in the marketplace. But hope springs eternal; ethanol plants can be converted to make butanol, and if the stuff proves to be as promising as scientists believe it is, there may be good news down the road for anyone who owns a car or boat.



The frightening photo above is of the bow of the boat featured on the last page of the October *Seaworthy* that was driven ashore near Norfolk, Virginia, in Hurricane Irene. Our first reaction was that the damage is indicative of a light fiberglass lay-up; it's certainly not the hull of a stoutly built, offshore cruiser. But it also is a good example of why you need to rig a nylon bridle to absorb the shock loads when using an all-chain rode in heavy weather. In this case, the bow was being thrown high into the air by the hurricane-driven waves, and with nothing to absorb the shock-load, the windlass was yanked out of the deck. The chain then began sawing into the hull. Aside from taking pressure off the windlass, a nylon bridle would also have helped to take pressure off the anchor.

And, as we said in the October issue, the photo is also a good reminder of why you shouldn't go boating in a hurricane.



Brett Carlson, a marine surveyor in Miami, Florida, sent *Seaworthy* this photo of a large piece of glass that buried itself in

an outboard cowling during Hurricane Irene. The boat was being stored ashore at Abaco Yacht Services at Green Turtle Cay in the Bahamas and the glass was believed to have come from a large trawler, although there were several other boats nearby that also had large windows blown out. Anyway, it's a good reminder of why you should stay inside during a hurricane. And board up—or at least tape up—larger windows on your home and boat.



Several years ago, a BoatU.S. employee was on Long Island Sound and overheard a mayday being broadcast by someone who obviously was new to boating. Not only was a mayday unwarranted—he was merely lost—but when the Coast Guard asked for his position, the best the man could do was, “Out to sea, you fool.” That’s not the sort of response that’s likely to get someone rescued, at least not in a hurry.

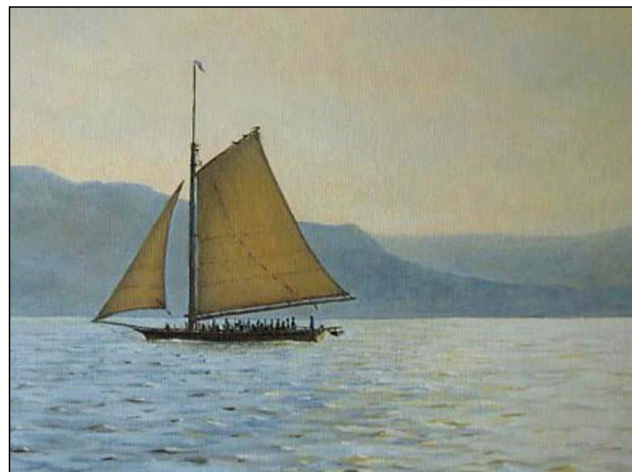
Mitch Kramer of TowBoatU.S. Oyster Bay on Long Island Sound says that about a third of the people who call for assistance can’t give their boat’s position and even have trouble describing where they are. Many give their street addresses. Others have referred to the Long Island Sound as “the ocean” and said things like, “the sun is to our left” or “we can see the buildings in New York.” Kramer said he’s learned to be patient, although he often wonders what the outcome would be if one of these befuddled skippers were having a medical emergency.

There are a host of solutions, not the least of which is for inexperienced skippers to take a boating course and become familiar with charts, GPS, and other arcane nautical instruments like the compass. In the meantime—you gotta love this—anyone with an Android or iPhone can download the (free!) TowBoatU.S. app, which allows the harried him or her to relay the phone’s (and boat’s) Lat/Long position with the tap of a finger. The towboat captain will instantly know your position within a few square yards as opposed to, say, a few hundred square miles.

Two other features of interest: First, you can text, e-mail, or post your position on Facebook to anyone—friends or family. It’s also worth noting that you can relay your Lat/Long position using your VHF even if you’re out of cell range.

The app is available by going to www.BoatUS.com/app.

While we’re on the subject of new seagoing apps, Sea State is a new app for iPhone4, iPod Touch, and iPad2 that measures the effective wave action on a boat. Using the phone or tablet’s built-in gyroscope and accelerometer functions (who knew?), the app measures dominant wave period and wave height, which can be used to document sea conditions in your log or maybe get someone else busted in a no-wake zone. Unfortunately, Sea State’s precision may make it more difficult for you to exaggerate conditions to friends and family when you’re safely ashore. The app can be downloaded for \$0.99.



In the last issue of *Seaworthy*, there was a story about Scott Croft’s near-encounter with a tug and barge late one night while he was aboard a sailboat on

the Hudson River. Scott is the assistant vice president of Public Relations here at BoatU.S., and his account brought a nostalgic response from John Smith, a marine surveyor in Sheldon, South Carolina.


Many years ago, John was an enthusiastic young boatswain on *Clearwater*, the 106-foot sailing vessel that has been the flagship of a movement to clean up the Hudson River since 1969. Late one night, *Clearwater* was making its way down the river after spending three days in the town of Hudson, educating “boatloads” (his pun) of school children on the nature and ways of the river. The ship was bound for Lower Manhattan so that the crew could give a similar presentation to more kids at 8 a.m. He remembers it being a long night.

There was a slight mist, almost a fog, on the water. *Clearwater* was approaching a bend in the river under power when John saw a spotlight. He immediately called out to the captain that there was a tug approaching.

He was expecting the ship to slow down and change course so that the tug could pass safely. Instead, *Clearwater* kept plowing down the middle of the channel. John peered out into the misty darkness and watched nervously as the light grew steadily brighter. He called back a second time, but again, there was no response. John suspected that *Clearwater*’s powerful diesel was drowning out his warnings so he sprinted aft and told the captain that a tug was just around the bend and moving quickly! John said the captain smiled and told him to watch and wait.

We’ll let John tell you what happened:

“We entered the turn in the river. Moments later, a Hudson River Line locomotive blew past our port side heading north from Grand Central Station to Poughkeepsie. The tracks were elevated just a few feet above the water and the locomotive’s headlight was shining bright, bouncing up and down as it passed us. As its taillights disappeared into the darkness, the captain just chuckled.

“I had learned yet another lesson about how things looked different at night on the water.” 

Where's Phil?

Late afternoon
on Reindeer Lake:
Where's Phil?



In the last issue, *Seaworthy* mentioned two BoatU.S. employees who were vying for the coveted “How I Spent My Summer Vacation” award. The first was Scott Croft, who narrowly avoided being run down one night on the Hudson River by recognizing that five blasts from a tug’s horn means DANGER. The other nominee was Pat Piper, whose 24-foot sailboat was dragged around *backward* by a huge fish that he never landed. Shortly after the October issue went to press, we received a late entry from Phil Pomponi, the chief financial officer at BoatU.S.

The story began when Phil and two of his sailing friends went to Reindeer Lake in Northern Canada on a fishing trip in late August. The trio stayed in one of those camps where guides pack lunches, steer the boats, bait hooks, and explain how a reel works. In Phil’s case, that was helpful because he’s definitely not a fisherman. Phil is, however, an accomplished sailor who put a lot of thought into equipping his 44-foot sailboat, including installing the latest electronic safety gizmos. His first question to the guide was, “What happens if something goes wrong—do you even have VHF radios aboard your boats?” The guide answered, “Nothing ever goes wrong.”

You can guess where this is going.

The first time Phil went fishing, the boat was bouncing across a large expanse of open water when its small outboard sputtered and died. Apparently someone back at the camp put the day’s supply of gasoline into the wrong boat’s tank. Phil and friends eventually drifted to a heavily wooded island where they narrowly averted being rolled over in the surf by using a bait-cutting board and an old paddle to coax the boat into a small cove. (This is a story unto itself.)

A few things to keep in mind: Reindeer Lake is roughly the size of the Chesapeake Bay and has over 5,000 islands. Reindeer Lake also has a lot of bugs. The northern edge of the lake is only 100 miles from the Canadian timberline, which means that in late August—the very end of the fishing season—it gets dark early and is cold at night. Finally, it’s helpful to remember that Phil is an accountant—and not very outdoorsy.

Now, back to the action: Once safely ashore, the guide made a fire to signal any would-be rescuers, who weren’t likely to notice a boat was overdue until late in the day. Even so, the fire idea would probably have worked but the wind was blowing 15 knots and the smoke—remember, they were on a lee shore—was being blown back into

the woods. As the hours ticked by, Phil wondered what sleeping in the woods without a tent or sleeping bag would be like with who-knows-what sniffing around for a meal.

Just before sunset, they heard a boat’s engine somewhere off in the distance and the guide began piling damp pine needles onto the fire. The smoke continued disappearing into the woods. The sun was directly in front of them, however, which meant that for at least a few more minutes, they’d be basking in bright sunlight—and much more visible to anyone on the lake. It was their only bit of luck that afternoon, but the timing was perfect. Phil took off his yellow foul-weather jacket and waved it over his head. The sun reflected off the jacket like a giant spotlight. It worked; the sound of an engine grew louder and soon they saw a boat heading directly for their island. They were saved!

As a sort of epilogue to the story, Phil—the non-fisherman—went on to catch (and release) the largest pike (48 inches) caught on Reindeer Lake in 2011! So, with regrets to the other two BoatU.S. employees whose gripping stories were published in the October issue—Phil wins the 2011 “How I Spent My Summer Vacation” award. 🎣