The founding of the BoatU.S. Hurricane Catastrophe (CAT) Team goes back to the fall of 1983 when Hurricane Alicia devastated much of the Texas Gulf coast, including the newly built outer harbor at the Houston Yacht Club. Dozens of boats that had been in the harbor came ashore and were piled, one on top of the other, in a massive clump that proved to be a daunting challenge to would-be salvors. BoatU.S., which insured many of the boats, had been in touch with the club’s officers and volunteered to send several BoatU.S. employees to the Houston Yacht Club to, in the words of one employee, “do whatever we could to help clean up the mess.”

Bill Oakerson, who was part of the original group, said Houston was the start of a learning process that has continued to expand with each new storm for almost three decades—how to evaluate would-be salvors, set up staging areas to store damaged boats, and negotiate contracts. Thanks to the CAT Team, BoatU.S. members’ boats have typically been at the front of a very long line of boats waiting to be repaired. And when members’ boats

Continued on page 6
Seaworthy’s Math Doesn’t Add Up

When something loses half its value, we say it’s dropped in value by 50%. When something’s down by 75%, it’s down to a quarter of its original value. And when something goes down by 100%, it’s dropped to zero.

So I was surprised to learn in the April article on boating changes in the past 50 years that the boating death rate has dropped by 600%! Are we resurrecting people? Or do your journalists need to brush up on their math? I think what you meant to say is that the boating death rate has dropped by 84% in the past 50 years.

Your faithful mathematician (and long-term BoatU.S. insured).

Luther Abel
San Jose, California

Zapping Itsy Bitsy Spiders

Regarding John Ringer’s quest to find a spider repellant in his boathouse: He should try Bengal Roach Spray found in Lowe’s Home Improvement stores. It has a picture of a Bengal tiger on the can. Bengal Roach Spray is not cheap ($15.00), but it has worked great for me. I use it in my gazebo also.

Jim Frazier
Winston-Salem, North Carolina

Effects Of Lightning

A very good article on lightning and the effects of a lightning strike. Our boat was hit at the dock and sank. Fortunately, it was a sailboat with a deep keel; when the tide went out, the gunnels were above water and we were able to pump the boat out once the hole was plugged. The hole was where the knot meter extended through the hull.

Along with other damage, the lightning went down the wiring and out the hull. Oh yes, another article on lightning noted that a wet nylon boltrope had less electrical resistance than stainless steel rigging.

C. Henry Depew
Tallahassee, Florida

Happy Ending To A Near-Grounding Experience

My name is John Michael Villa and the purpose of this letter is to enlighten you to the fact that Michelle Levitt is nothing short of superb at her job. As a BoatU.S. member and policyholder since the early 1990s, I had the good fortune of never having to file a claim, until recently. While I won’t bore you with the details of my near-grounding experience, which led to a malfunction in my Yamaha outboard, I do want you to know that from the moment I called BoatU.S. to secure a towboat until today, I have been exposed to the highest level of customer service that I have ever experienced from any company.

This is particularly evident in Ms. Levitt. Not only has she been lightning quick in her responses to my numerous questions, but from the onset of what I incorrectly expected to be a fight to the finish, has kept me calm and stress free with her thorough explanations of the process, every step of the way. I have been in advertising and marketing most of my adult life and I can tell you with authority that few businesses actually perform at the level that they portray themselves in the marketplace. Congratulations on being the exception. BoatU.S. Marine Insurance is in a unique industry—your customer’s evaluation of your performance can only occur after an unpleasant event. My hat is off to you and you team for a job well done.

Thanks from a happy BoatU.S. member … a member for life, I might add!

Michael and Julie Villa
Tampa, Florida

Replacing Older Chainplates

I am a member of BoatU.S. and my boat is insured by BoatU.S. Last spring I replaced the chainplates on my 1982 37-foot Pacific Seacraft sailboat. Not having any further need for the old chainplates, I gave them to a friend who runs a metal working and welding shop. These chainplates are 1/4-inch 304 Stainless steel and appeared to be in good condition.

My friend recently had need of a piece of the plate and attempted to cut one of them with a hydraulic shear. Instead of shearing cleanly, the metal crumbled. He immediately called to inform me of this and to congratulate me on having changed the plates when I did.

I thought the photo might help warn others of possible problems.

Dianne and Charles Burke
Edison, New Jersey

TowBoatU.S. Kudos

Our experience with BoatU.S. last fall was a 10! Capt. Woody was great. He arrived right on time and was concerned with our possible problems.

Tampa, Florida
needs. I was very happy with the service and would encourage any boat owner to have a BoatU.S. membership with unlimited TowBoatU.S. towing. It was well worth it to have the security of knowing someone is there to help.

Sean and Beverly Reynolds
Mount Pleasant, South Carolina

A Better Mousetrap?

I’ve read many articles over the years that recommend keeping the gas tank as full as possible, especially when the boat is laid up for the winter. I understand what can happen to old gas in the spring.

I made a device that eliminates or at least minimizes the amount of water brought in through the tank vent. I thought I would share it with BoatU.S. with the thought that some of your readers would be interested.

The reason I made it is that I’m one of the “keep the tank mostly empty” believers with the goal of keeping the gas fresher. As most powerboaters know, a problem occurs when the air temp cycles daily and a small amount of moist air condenses in the tank. This is a significant problem with a mostly empty tank because of the larger volume of air. The problem is amplified in coastal areas.

To dry out the air, I made a tube containing calcium chloride and attached it to my tank vent. See the attached photos. I plan to keep it on when the boat is not in use, which unfortunately is about 99 percent of the time.

There are many styles of tank vents so this attachment method will not work for all. The boat it is shown on is a Malibu Flightcraft. Some of your readers who are do-it-yourselfers might want to make something similar that will work on their boats. Plumbing fittings, fuel-resistant hose, and calcium chloride can be bought at West Marine or most hardware stores. The key feature of any design is that the reacted calcium chloride and water be allowed to drain away from the boat.

I hope your readers can use this approach or something similar.

Gary Magoon, Engineer
Manchester, Connecticut

It’s What You Don’t See That Could Cause Trouble

Our fellow BoatU.S. members would be interested in a little surprise I found while doing some maintenance on my boat this spring. I own a 1999 Pursuit 3000 Express with twin Cummins diesels. It is equipped with dripless shaft seals. With the boat being over 10 years old, I found the seals starting to leak at the end of last season. I planned on changing the shaft seals this spring. When I removed the hose that carries the seal carrier, I found that the bronze shaft log had been eaten away. I am now in the middle of removing the log, which was bedded in 5200. I may replace it with a new bronze log or may install a fiberglass shaft log, so that I won’t have any more corrosion worries. At the same time I am replacing the cutlass bearings (they showed signs of drying up), adding a set of drive savers, and adding the newly designed Tides seal carrier. Taking care of the items that you can see is easy; it’s what you can’t see that we need to take care of!

Mark Tripi
Miller Place, New York

BoatU.S. Claims Makes Member Feel “Pretty Darn Good”

My boat Sweet Dreams is docked in the upper section of the Santa Cruz Harbor—the part that was most impacted by the recent tsunami that sunk more than a dozen boats and damaged hundreds of others. To my amazement, a representative of BoatU.S. Marine Insurance called me within several hours of the impact to be sure I had their claims phone number, should I find that my boat had sustained any damage.

While I have not needed to file a claim, it makes me feel pretty darn good that my boat insurance company is proactive and does not retreat in the face of adversity.

Mike Chamberlain
Santa Cruz, California

Benefits Of Texting An SOS

The April 2011 Seaworthy expressed wonder at using a text message to call for help for an overturned canoe (p.15).

Seaworthy is right that the ability to reach many people simultaneously is a great feature of text messages. Another major advantage is that a text message can get through when antenna reception is marginal or antennas are busy, better than voice calls can. I hope Seaworthy will publicize this advantage. Apparently many boaters do not realize it. The advantage applies whether sender or recipient has marginal reception.

Since the accident happened 45 miles south of Albany, reception may have been weak for both sender and recipients.

Paul Burke
Harpers Ferry, West Virginia
More On Wires And Fires

Looking at this photo, it’s tempting to conclude that the fire started at the stereo speakers, especially when you read in the claim file that the speakers had recently been installed by the boat’s owner. As it turns out, the speakers and speaker wires weren’t the culprits; fire investigators found that when the speakers were installed, some high amperage wires to the boat’s air conditioning system had been pinched and shorted.

Even simple do-it-yourself electrical jobs must be done with considerable care and attention to detail. Carelessly pinching a group of high-amperage wires presents a fire hazard and maybe a shock hazard. With any wiring job, take your time or, if you’re not sure what you’re doing, hire a professional. The boat, incidentally, was a total loss (Claim #0504376).

Carbon Monoxide (CO) Detectors and Boat Cabins

According to BoatU.S. Marine Insurance claim files, the number of deaths on recreational boats from carbon monoxide (CO) poisoning has been declining, if only slightly, over the past decade. There are several reasons for this fortunate turn of events, the most notable being that CO detectors are now much more reliable and found on more boats than in years past. Starting in 1998, changes in the American Boat & Yacht Council standards meant that most boats with enclosed accommodation spaces and gasoline propulsion engines or generators would be sold with CO detectors installed. (Detectors are not required on boats with diesels, which produce far less CO than gasoline engines.) Carbon Monoxide is colorless and odorless and the only way to know that the deadly gas is present is with a CO detector. Any boat with gasoline engine and accommodation spaces must have a CO detector. No exceptions.

Note that whenever a CO alarm sounds, it must be taken seriously; NEVER assume that because you can’t see or smell anything, the detector must be giving a false alarm. There have been serious injuries and even deaths from CO because someone shut off an alarm instead of the boat’s engine or generator.

Entering An Unfamiliar Inlet

The owner of the sportfisherman being salvaged at the St. Augustine Inlet in Florida was following the markers through the inlet and failed to notice a small, temporary marker that indicated the shifted channel. Capt. Scott Strebleton of TowBoatU.S. St. Augustine says several boats a year find themselves on the very same shoal, which has been gradually getting worse and now runs about halfway across the inlet. A lot of people have been complaining about the need to have the inlet dredged, but money is tight these days and thus far nothing has been done.

In the meantime, Capt. Strebleton notes that the juxtaposition of permanent and temporary markers can be confusing and he advises visiting skippers who are planning to pass through St. Augustine Inlet to contact TowBoatU.S. St. Augustine to get the latest advice on how and when to get through.

The problems at the St. Augustine Inlet aren’t unusual. There is always the potential for problems when big, big oceans and bays are squeezed through narrow little openings to quieter harbors, and contacting the local TowBoatU.S. tower is a good strategy for cruising skippers at any unfamiliar inlet.
The boats shown here were blown up on the beach in Santa Barbara, California, last winter when a sudden storm swept up the coast. Jim Wood, a marine surveyor who handles claims for BoatU.S. Marine Insurance, said boats anchored in Santa Barbara’s free anchorage wind up on the beach every winter. Some of the fault is with the undersized anchors and chain that are sometimes used, but the biggest factor is the anchorage’s lack of protection from storms coming up from the south. Jim’s advice is simple: Always anticipate the worst when you are looking for a secure anchorage.

Selecting An Anchorage

The boats shown here were blown up on the beach in Santa Barbara, California, last winter when a sudden storm swept up the coast. Jim Wood, a marine surveyor who handles claims for BoatU.S. Marine Insurance, said boats anchored in Santa Barbara’s free anchorage wind up on the beach every winter. Some of the fault is with the undersized anchors and chain that are sometimes used, but the biggest factor is the anchorage’s lack of protection from storms coming up from the south. Jim’s advice is simple: Always anticipate the worst when you are looking for a secure anchorage.

Inspecting Your Rig

You might think the cause of this dismasting was rot in the boat’s aging wood mast. But, as with most dismasting, the culprit was a cracked metal fitting.

It’s a good idea to inspect the fittings on a sailboat at the start of every season. (You can download a guide to inspecting your boat’s mast and rigging at www.BoatUS.com/Seaworthy/ rigging/default.asp.) If your rig is more than 10 years old, it’s a good idea to hire a professional to do the inspection; signs of imminent failure are often subtle and are more likely to be discovered by someone with an experienced eye.

Inspecting Your Rig

You have no doubt seen the warning on the back of pressurized aerosol cans—“CAUTION: Contents under pressure, do not store in direct sunlight, in enclosed vehicles, or high-temperature areas above 120 degrees F/49 degrees C. Exposure to heat may cause bursting of can.” You’ve probably also seen an air horn rolling around near the helm—in direct sunlight—so that it could be reached quickly. Warnings are on just about every product these days, which is why people tend to ignore them.

That was likely the why the owner of a 24-foot powerboat didn’t think much about leaving an air horn behind the windshield when he buttoned the boat up with a full-length cockpit cover that extended to the top of the windshield frame. The following afternoon, the canister burst, spewing safety-glass fragments from the windshield onto a neighbor’s boat and puncturing his boat’s cover.

Portable Air Horn Canisters and Heat

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Being inquisitive, the surveyor who was handling the claim for BoatU.S., pointed an infrared sensor gun at a similar vessel with the same cover to ascertain the onboard, midday temperature. The weather conditions were the same as on the day of the explosion (92 degrees in the shade) and the readings on the outside of the windshield varied from 118 degrees to 122 degrees; reaching under the cover with the sensor gun, the temperature on the console just behind the windshield shot up from 136 degrees to 142 degrees, well above the 120 degree caution range. On vessels without cockpit covers, but with bimini tops, the console temperature hovered around 120—right on the edge.

Considering the damage to the windshield and cover, storing the horn canister at eye level on the console is risky to anyone nearby. The solution is to keep the horn lower in the cockpit where it is cooler and out of direct sunlight. It may not be as readily accessible, but the trade-off is well worth it.
could not be repaired, the experience of the CAT Team has meant that salvage boats are sold to minimize the impact to the BoatU.S. insurance program. One other significant benefit of the CAT Team, which now counts over 35 members, has been the unparalleled body of knowledge they have accumulated on what works and doesn’t work when boats are prepared for hurricanes. Seaworthy talked to several of the senior members to see what lessons they have learned that might help members prep their boats for the next inevitable storm.

Mike McCook: I’ve been working with the BoatU.S. CAT Team almost 30 years, and I’ve seen a lot of boats that were destroyed. Typically, the cause could be traced to the vulnerability of the boats’ locations and/or the lack of preparation. There have been exceptions. One that stands out was in Galveston after Hurricane Ike. There was a beautiful sportfisherman whose owner had done a thorough job of stripping the boat and adding many more lines, all of which were well protected from chafe. Rather than relying on his usual docking arrangement, the owner had also used longer lines that were led to more distant pilings, which had given the boat a much better chance of rising with Ike’s 15-foot surge. Finally, the boat had been stripped of anything removable that would have created windage. But despite being a textbook example of how to secure a boat in its slip for a hurricane, the sportfisherman had sunk.

The owner’s mistake was that he had placed far too much faith in the dock’s aging bollards, which were secured to the concrete docks with badly rusted bolts. The bollards were yanked out and the edge of the boat’s stern was pushed up onto the bulkhead during the surge. When the water receded, the edge of stern was left high and dry while the remainder of the boat was left dangling at an awkward angle down to the water. The cockpit flooded and the boat rolled over and sank.

A lot has been written on the importance of a marina’s location; marinas that are only protected by a low-lying seawall or spit of land are not a good place to secure your boat in a hurricane. I also think it’s important to look at the condition of the marina—rusted fittings, worm-eaten pilings, and narrow slips will put your boat at greater risk in a storm.

From Jonathan Klopman: In theory, canals should be an ideal place for a boat in the water during a hurricane; most are well protected with almost no wave action. The surge can be dealt with by tying boats off in the center of the canal with more and longer lines to accommodate the surge. In my experience, however, canals may not offer any more protection. All it takes is for one absentee owner to leave their boat poorly secured, and it can break loose during the storm and become a wrecking ball. The end result may be that the boat gets tossed up in someone’s backyard.

The solution is relatively simple: Boat owners who live on a canal should work together to devise a “community plan” for all of the boats. The meeting should also involve the property owners to work out permission on how the boats can be anchored to trees or anchor points in lawns. This includes keeping spools of line on hand for making longer lines to shore, compiling a list of which boats will be leaving before boats are tied off, and deciding who will prep boats if some people are unavailable. The end result of a collective effort should be more boats surviving the storm and far fewer boats on lawns, in living rooms, or sunk in the canals.

Other things to keep in mind when boats are stored in canals: Boats that were tied with the usual four lines have proven to be vulnerable. The lines must be tied with as much scope as possible and drawn up tight. Any slack left in the line will allow for shock loading and the lines could snap like a guitar string once the boat starts heaving in the surge. Boats raised up on lifts are not protected—they will either get tossed out of the slings or slammed against the pilings and holed. They should be taken down and either stored ashore on their trailers or tied off in the canals.

David Wiggin: After Hurricane Gloria swept up the coast, I recall the beaches were littered with boats that had only been anchored with homemade concrete moorings. People had poured concrete into things like tractor tires and bathtubs. That was it. There were also moorings made out of large wheels or gears from old locomotives.

A few years later, Hurricane Bob came ashore in New England with the same result—boats on moorings didn’t fare well. The two monster hurricanes changed all of that. The various New England towns that had seen their harbors decimated...
began mandating stricter rules on what could and couldn't be used to anchor a mooring. The homemade "anything goes" stuff has been largely replaced with helix anchors, much heavier deadweight anchors, and properly sized mushroom anchors.

Another important change since Gloria and Bob has been that there are now tighter rules about how often a mooring needs to be inspected. It used to be that the mooring components like chain and shackles in some harbors were likely to have become badly corroded before they were required to be replaced. I've been on the Bourne Shore and Harbor Committee for many years. Anything that has caused problems in the past has been addressed. Aside from replacing under-sized anchors, for example, we no longer allow the use of some foreign-made chains or shackles because they don't hold up in seawater. The old adage about a chain only being as strong as its weakest link certainly applies to moorings.

Dan Rutherford: I remember a high-rise marine storage facility—a "boatel"—near Miami that was destroyed in Hurricane Andrew and another outside of Charleston, South Carolina, that was collapsed by Hurricane Hugo. Like most storage buildings, they probably appeared to be sturdy but upon closer inspection, they lacked diagonal struts. There were gussets on the frames but gussets didn't provide the support needed to withstand a strong hurricane and the structures were blown over. There were several hundred boats stored inside and all but a few were a total loss. Collapses of rack storage buildings bring with them several other concerns, including the potential for fuel leaks, fires, and explosions. That's why the area around a collapsed building must be secured by first responders.

After Hurricane Andrew in 1992, the standards for marine storage buildings were strengthened so that a newer building is far more likely to survive a hurricane than an older, pre-Andrew facility. There have been at least a dozen of these older buildings destroyed in recent hurricanes and there are plenty of them still being used that are packed with boats. It's almost guaranteed one or more will be blown over whenever a major storm comes ashore.

If I were planning to dry-store a boat in a building, I'd begin by asking the manager when it was built and how much wind it was designed to withstand. I guarantee you that if it's a relatively new building in a hurricane-prone area, he or she will be able to answer those two questions. Of course there are no guarantees; if the eye wall of a Category 5 hurricane were to hit the rack—just about any rack—then all bets are off. And I have seen some buildings withstand the wind only to fall victim to storm surge. If it's a well-constructed building, your boat will be much more likely to weather a storm than if it were at a dock.

If you keep your boat in an older building that's likely to be vulnerable, your hurricane plan should be to put the boat on a trailer and take it inland.

Jack Hornor: Those of us who have spent weeks and sometimes months sorting out the maritime aftermath of hurricanes are seldom surprised by what we find when we visit a site for the first time. It's not long before all marinas and boatyards start looking alike, but there is one that stands out for me. It stands out not for the damage and destruction—although there was plenty of that, too—but for the lack of damage to many vessels there due to the forethought and planning of conscientious boat owners and a forward-thinking marina owner.

When I first arrived at Sebastian River Marina following Hurricane Frances in 2004, the entrance at the north end of the property was blocked by cranes, boat lifts, and equipment, so I turned around and parked along the eastern shoulder of US1 adjacent to the marina. I climbed down the brush and tree-lined embankment to discover a row of powerboats standing as proud and erect as Terra Cotta Warriors. None had any damage and all had been secured, with straps and lines, to anchors embedded in the concrete pads.

Anyone who had dealt with the aftermath of a hurricane knows that the greatest damage, by far, is done by storm surge, water, and waves, and not simply the force of the wind. Boat owners preparing for a storm need to get the boats out of the water and onto high ground. Tying boats down is an added preventative measure and seems to be gaining in popularity among many marinas. When recently searching out a location to store my own boat in Ft. Pierce, Florida, both Harbortown and Riverview marinas offered the tie-down service for boats in storage. Needless to say, mine is now strapped down.

For more on how to prepare boats and marinas for hurricanes, go to: www.boatU.S.com/hurricanes/hurr_prep.asp.
The urgently shouted words “start bailing!” are a sure attention-getter on a boat. And if you happen to be on a little boat in a big ocean, perched on the motor well as you untangle inch-thick braided nylon line from around a propeller, these words do more than merely get your attention—they’ll also trigger a healthy shot of adrenaline. I can remember hearing them with startling clarity, probably because it marked the moment that I realized I was in serious danger, along with the other four people who’d come along on this ill-fated offshore fishing trip. The following hour would prove to be the closest I’ve ever come to having a boat sink out from under me, and the chain of events provides some excellent lessons on what to do—and what not to do—if you’re ever in a similar situation.

The initial trigger of our near-sinking was an unlikely candidate: a 10-pound fish. We had run to Poor Man’s Canyon, about 50 nautical miles from the Ocean City, Maryland inlet, to catch mahi-mahi near the fish-trap buoys they congregate around. The captain spotted the mahi in question, finning at the surface on the far side of a buoy. He tried to pull within casting distance, and got a little too close to the line attaching the buoy to a huge steel cage some 600 feet below. The port outboard’s propeller grabbed the line, spun it around the lower unit, and suddenly we were anchored by the stern in a three-foot sea. In such a position, the laws of physics dictate that your boat will no longer rise and fall with the waves, the bow will no longer be facing the waves, and you will no longer have the control you need to remedy the situation.

LESSON #1: Any item that can ensnare your propellers and/or running gear is more than a mere inconvenience, it’s a serious hazard. Treat them with respect, and wariness—and give them a wide berth.

Though our boat had a full transom (as opposed to the more easily swamped cut-out transoms), it had a motor well with a mere eight inches of clearance over the waterline. The well immediately filled with water, which weighed down the stern and reduced the transom’s height above the water significantly. I scrambled out onto the motor well to untangle the line as the captain shut down and tilted up the snarled outdrive. My move, though necessary, shifted even more weight aft.

LESSON #2: When you’re tethered by the stern, transfer as much weight as far forward as possible to shift the boat’s center of buoyancy aft. In retrospect, as I climbed onto the motor well, I should have instructed several of the other people onboard to move to the bow.

I was leaning off the back of the boat, spinning the prop backwards while pulling on the buoy-end of the line, when I heard that “start bailing” yell. I jerked my head up, looked into the cockpit, and saw knee-deep water sloshing from gunwale to gunwale. With a silent apology to the owner of the fishing gear, I grabbed a bait knife and furiously sawed at the line. Waves that had been soaking my pants moments ago began slapping me in the waist, and then the shoulders, until the line parted and I scrambled back over the transom.

As quickly as possible, the captain put the boat into forward and goosed the throttles to shift the flooding aft, as he turned the bow back into the seas. This should have been the end of it; the cockpit should have de-watered via the scuppers, and the bilge pumps should have pumped the bilge dry. But as all good mariners know, Murphy must have been a boater—and his Law was about to be enforced without mercy.

Ten minutes later, our sighs of relief became fewer and farther between as we noticed that, despite the cockpit’s dryness, the motor well remained flooded. The boat continued to ride far lower than normal, and responded sluggishly to the seas. Though the
indicator light at the dash showed the bilge pumps were turned on, when I looked over the sides of the boat, there were no streams of water coming out. The obvious solution was to bail the bilges manually. Unfortunately, the only bilge access was via a pair of pry-out pie plates, located in the mostly submerged motor well.

I grabbed a bucket, walked back to the transom, and my eyes were greeted by a pair of perfectly round eight-inch holes where the pie plates used to be. Even if the bilge pumps had been working, water would have simply reentered through the holes. Even manually bailing seemed impossible since the only bilge access was underwater.

Though we didn't know it at the time, with a later inspection of the bilge on dry land, we were able to piece together what had happened: The bilge pump hoses didn’t have anti-siphon loops, which prevent water from back-flowing through the outlet. Anti-siphon loops are an ABYC requirement, but since this boat had been bought second-hand, we didn’t know if it was originally manufactured without them or if the pump hoses had been replaced by a former owner, who was unaware of the anti-siphon loop’s importance. As a result, when the boat’s waterline was lowered by tension on the buoy line and water in the cockpit, the bilges quickly flooded. Air pressure created by water sloshing in the bilge then blew the pie-plate covers off, leaving the openings exposed.

LESSON #3: If you haven’t done so already, inspect your boat immediately and make sure there are anti-siphon loops in the bilge pump hoses. The fact that they’re a requirement doesn’t necessarily mean you have them. Also make sure you don’t have pry-out plates capping an otherwise enclosed bilge (or any compartment subject to building air pressure); if you do, replace them with screw-on plates.

After we plugged the holes in the motor well with pie plates from a pair of forward access ports, the captain told me that the bilge pumps had been “finicky” on his last few trips, as he fiddled with the bilge pump switch. Sure enough, after some vigorous jiggling, they started pumping. But after two or three minutes, they both failed again. Working on the pumps a week later, he determined that the switch had gone bad.

LESSON #4: If you have multiple bilge pumps—and you should—they need to be wired to independent switches. And it goes without saying that this boat owner had made a major blunder by running offshore when he knew there was a problem with the pumps.

Before we could think of a way to dewater the bilge without pumps or bucket access, one of the engines began to sputter. I looked at the captain, his face now turning as white as his boat’s gel-coated hull, and reminded him that a power loss combined with our inability to dewater the bilge could have catastrophic results. It was time to make a pan-pan call (indicating a state of urgency and potential danger) over the VHF.

This far offshore I didn’t think we’d be able to reach the Coast Guard, but there was a boat within sight (we had been making our way toward it since the “adventure” began, in case we needed help) and hopefully, he’d be monitoring Channel 16. Much to my surprise, however, when we issued our call, the voice that responded was from USCG station Ocean City.

LESSON #5: Although common boat-to-boat VHF communications are limited by line of sight to about 20 to 25 miles, clear communications are possible with Coast Guard stations from a much farther distance, thanks to their tall base-station antennas. Never hesitate to call for help simply because you think you’re out of range—you might be surprised at who answers.

The story has a happy ending: We headed toward shore at about eight knots with the troubled engine intermittently dropping a cylinder, as a 45-foot Coast Guard rescue boat ran out to meet us. Once on-site they shadowed us the rest of the way home, right up to the boat ramp. After pulling the boat and removing the garboard plugs, we stood in the parking lot for 20 minutes as the bilges drained. Still in wet clothing and growing impatient, I climbed up onto the motor well and looked into the access ports, only to discover that the bilges were still nearly half-full. I glanced down at my friends, and in a calm and adrenaline-free voice, said the words, “I’m bailing.”

- A hand-held VHF
- A SPOT satellite messenger (or a similar portable emergency distress beacon)
- Spare AA batteries
- An extra inflatable PFD
- Two flares
- A whistle
- A first-aid kit
- A sealed bottle of water

**The Final Lesson**

Whenever you board someone else’s boat, don’t take anything for granted. Who in their right mind would head 50-plus miles into the ocean, when they knew their bilge pumps were acting up? Who wouldn’t ensure that their bilge pump hoses had anti-siphon loops? In this case, an experienced captain I had known and trusted for years.

Had the situation taken a turn for the worse, I would have been relieved I had my “buddy bag” onboard. This is a scaled-down, waterproof ditch-bag full of safety gear and foam padding (so it floats). I always take it along when getting on a friend’s boat for a trip into open waters, and every mariner should have one. This is what’s inside:
After a few drinks at a popular Florida resort, a group of friends climbs aboard a boat for a moonlight tour of the harbor. About midnight, despite a 20-knot wind and choppy seas, they decide to go swimming. The engine is shut down and the boat is allowed to drift in a channel that’s about 200 yards from a deserted island. Shortly after they enter the water, the wind begins sweeping the boat away. The engine is started and the boat backed up toward the swimmers. One by one, the party climbs back aboard but a 40-year-old woman is missing. Since the woman had not alerted any of the other swimmers that she was in trouble, everyone remains optimistic. But despite a lengthy and increasingly frantic search, the woman is never found.

Experienced skippers should quickly recognize the obvious risks that were taken that night: the decision to go boating in the dark after drinking; the decision to go in the water in blustery conditions, and the foolish way the boat was backed down toward the swimmers. But the risks that are obvious to most people were lost to those aboard that night.

It’s no secret that alcohol often causes people to take foolish risks while at the same time inhibiting their ability to think quickly and cope in critical situations. What many people do not realize, however, is the extraordinary number of drowning deaths that involve alcohol. Seventy-five percent of all boating deaths are the result of drowning, according to the Coast Guard. And while estimates vary, studies have shown that alcohol may have been a factor in about 50 percent of all adult drowning deaths. Some studies put the figure as high as 70 percent. Drowning is the second leading cause of unintentional deaths among adults 20 to 44 years old.

Obviously, anyone who is dead drunk is going to have trouble swimming. But many of the people who drown are not legally drunk and researchers have found several reasons why even moderate amounts of alcohol may affect a person in the water.

In the case above, the victim was a good swimmer and in good health. She probably had considerably less to drink than some of the others on the boat. Her dinner, according to police interviews with her peers, consisted of a salad and two glasses of white wine. A combination of alcohol, too few carbohydrates, and exercise—in this case, swimming—meant that she ran the risk of developing hypoglycemia, which is a drastic reduction in a person’s glucose levels. Hypoglycemia causes sudden weakness, confusion and affects the body’s normal temperature-regulating mechanisms. Medical researchers warn that alcohol and aquatic exercise without taking sufficient carbohydrates represents a “foolish confrontation with death.”

Not all swimmers enter the water voluntarily. At least 25 percent of the drownings are caused by falls overboard, according to the Coast Guard (88 percent were not wearing life jackets). Boats are inherently unstable anyway, and when someone has been drinking, the tendency to fall overboard is that much greater.

The Coast Guard conducted tests to document the effects of environmental stressors—sun, wind, wave motion, glare, and vibration—on a boat operator’s reaction time and error rate. What they found was that these stressors produced a kind of boater’s hypnosis, a fatigue that reduced the operator’s performance much as alcohol would. But when operators were both intoxicated and exposed to environmental stressors, they missed 10 times as many cues as operators who were merely exposed to stressors.
Environmental stressors and alcohol can combine to cause many boating accidents, including falls overboard. Both stressors and alcohol were probably factors in an incident (Claim #0242617) involving a young skipper and the accidental drowning of his friend. After spending most of the day sunning, sailing, and drinking beer on his small boat, the man stumbled and fell into the chilly New England waters. He was unable to climb back aboard and tried to swim ashore. His body was recovered two weeks later.

Hypothermia, a lowering of the body's core temperature, may also have been a factor in this case. Hypothermia causes swimmers to become sluggish in water as warm as 60 degrees. Alcohol inhibits the body's signaling system so that swimmers don't realize how cold they've become. Although it is rarely listed as the cause of death, researchers believe hypothermia is a contributing factor in as many as half of all drowning deaths.

**Disoriented Swimmers**

Besides hypoglycemia and hypothermia, there are other ways that alcohol affects someone in the water. Sudden cooling of the skin can cause caloric labyrinthitis and/or hyperventilation, which may have contributed to the drowning death of a swimmer on a balmy spring day on the Potomac River (Claim #932487A). The victim, an experienced swimmer, had been talking and drinking beer aboard an anchored boat in a quiet cove when, perhaps to cool off, he jumped into the water. He was never seen again.

Caloric labyrinthitis, an inner ear disturbance associated with sudden temperature drop, causes a person to become disoriented and explains why swimmers may sometimes swim down instead of up. Researchers believe that alcohol may increase the chances of caloric labyrinthitis as well as hyperventilation. Hyperventilation can cause a person to gasp and "breathe in" water.

Many drowning victims are strong swimmers. A professional diver hired to retrieve a fishing rod drowned after only a few minutes in the water. An autopsy disclosed a high blood alcohol content. While it can never be known exactly why he drowned, investigators had little doubt that alcohol was a major factor (Claim #062509A).

**Drowning Victims: Their Silent Plea for Help**

Many people drown within easy reach of other swimmers. Children have drowned within a few feet of their parents. “She was splashing and playing and then suddenly she was gone” was the way one parent described the last few seconds of his daughter’s life. “She never called for help.”

Recognizing drowning behavior is especially important because researchers have found that someone who is drowning lacks the lung capacity to call for help. Drowning victims act instinctively, moving his or her arms as though climbing a ladder, taking quick gulps of air, and then slipping back underwater. With an adult, this reflexive behavior lasts about 60 seconds before the victim sinks underwater for good. With a child, drowning behavior lasts only about 20 seconds. The struggle is quiet, and often looks “playful.”

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— Michele and Barry Holt, Apponaug, RI
A few years ago, the owner of a 30-foot sailboat thought he smelled a faint burning odor in his boat as he and his family sailed on Puget Sound in Washington state. At first, he dismissed it as his imagination but his wife and kids thought they smelled it too. He went down below and began using the only tool he had to locate the problem—his nose. The odor seemed to be coming from under a quarter berth and as he lifted the cover, the smell really hit him. He quickly located a positive wire that had been pinched against a battery ground post and was slowly melting. Had he not investigated, a fire could easily have started.

Most people would have a hard time ignoring a blaring alarm or flashing light, but those same people might not trust their own senses to tell them when something is wrong. While modern boats are equipped with all kinds of sensors, the best ones are likely on your face—your ears, eyes, and nose. When something doesn’t smell, look, or sound right, trust your senses and investigate before it’s too late.

The Sniff Test

Gasoline fumes are highly explosive and even a quick whiff of gasoline needs to be investigated immediately. Fuel tanks are a common leak area. Aluminum fuel tanks don’t last forever and a tank that is over 10 years old should be the prime suspect if gas is smelled. Owners have often reported fuel tank leaks just after a particularly rough outing; corroded sections can open up after being severely jostled. Fuel hoses age and can begin to leak as well. Hose manufacturers say that fuel hoses are designed to last about 10 years (USCG-approved hoses are stamped with their manufacture date). Take a clean rag and run it along your fuel hoses. Put your nose to use: If the rag smells like gasoline, the hose is due for replacement. Or—using your eyes—look for cracks or bulges that indicate the fuel line is due (overdue) for replacement. Fuel line connections are another common source of leaks.

In one claim (#0303086), a large sailboat was destroyed in a dramatic explosion that blew the skipper into the water. The cause appeared to be gasoline from portable containers stored on deck that dribbled down the mast step. The owner reported smelling fumes when he arrived the day before and had opened the hatches, and even thought he may have also smelled gas just prior to the explosion. Unfortunately, he did not take the time to investigate the source of the fumes and eliminate the hazard. If you smell gas, don’t discount it—trust your nose. If you can’t locate the source of a fuel leak but still smell gas, call in a professional before using your boat.

Propane is another odor that humans can detect easily, thanks to the distinctive smell manufacturers add. Even the slightest odor of propane should be cause for alarm since it’s under pressure and will continue leaking until the leak is found and eliminated. Propane is heavier than air and will sink to the lowest part of the bilge—the slightest spark can ignite it. If you smell propane, turn off the main valve, open hatches and get off the boat until the leak is found and repaired. The most common propane leaks are from old, cracked, or cut hoses and connections. Propane installation should follow ABYC standards and for that reason, any work should be performed by an ABYC-certified shop with a technician who is experienced in all phases of propane repair and installation. (For more on propane safety, see "Keeping Propane Safe," Seaworthy July 2009.)

The next time you board your boat, take a deep breath. Does it smell fresh or is it (phew) dank and musty? While mildew can’t destroy your boat like a gas leak can, it can nonetheless be very expensive to eliminate. Smelling mildew (the fuzzy stuff that is produced by mold) means there is a lot of moisture down below. The moisture could be coming from a leaking portlight or hatch; on a sailboat, chain plates and stanchions are common areas for leaks. Clogged cockpit scuppers can spill water into the cabin. Leaks can cause rot in wooden bulkheads and deck cores, so smelling mildew means making a careful inspection of the inside of your boat to find the source of the water. Mildew is encouraged by poor air circulation and condensation, which can usually be remedied by adding traditional dorades or low-profile vents. An even better remedy would be to add solar-powered vents, which move a surprising amount of air and can even run at night using a small battery. Chemical dehumidifiers can be used in confined spaces. They’re cheap and easy to use.

Listen Up

Some sounds are obviously trouble—a loud bang or crunch. Some noises are more subtle—a squeal or rumble. Any unusual noise, especially a noise that changes or gets louder, should be checked out.
Last year, the owner of a 32-foot powerboat and his girlfriend were nearly killed by carbon monoxide poisoning while they were sleeping at anchor with the generator running. The boat was well kept, with only 500 hours on the engines. The owner noted that he had been hearing an unfamiliar noise coming from the generator when it was operating, but had never investigated. The noise, it turned out, was a leak in the generator’s exhaust system, which was the source of CO that was entering the cabin. Had the gas tank not run dry, it’s likely that both people would have died. Here’s another noise associated with CO that you should not ignore: the CO detector blaring. It sounds obvious to pay attention to an alarm, but many older detectors are prone to false alarms and owners either ignore them, or worse, unplug them. Newer detectors are far more accurate and when they sound, it’s critical to get everyone out of the cabin and into fresh air until the source of the CO has been repaired. Note that this is one situation where you can’t trust your senses; carbon monoxide is colorless and odorless.

Everybody has heard the bilge pump come on a time or two. The skipper of a 34-foot sailboat, for example, heard his bilge pump running occasionally but thought nothing of it. Boats leak a little . . . the bilge pump should be able to handle it. But that’s exactly the wrong thinking. Bilge pumps are designed to handle nuisance leaks until they can be repaired. Over time, even a small chronic leak can sink a boat if the bilge pump were to fail. Small leaks can also become large leaks and overwhelm the pump. In the case of the 34-foot sailboat, the owner told the investigator that he’d meant to get to the bottom of the frequently running bilge pump when he had a chance. Unfortunately, that never came. The boat sank at the slip when a rusting stuffing box clamp finally let go, flooding the boat so quickly that the bilge pump couldn’t keep up (Claim #0987635).

Another claim involved a 26-foot powerboat whose engine squealed whenever it was started. Since the sound went away after the engine warmed up, the owner ignored it. The squeal turned out to be a drive belt that ran the boat’s cooling water pump. The pump was worn, which caused it to bind up, which in turn caused the belt to squeal as it slipped. During a family outing, the engine overheated enough to cause a lot of scary-looking smoke from the engine compartment. The boat had to be towed in and the repairs were far more expensive than a new pump.

Alarm thud on the hull is certainly a cause for alarm, but unfortunately some skippers just cross their fingers and hope it was nothing, which is asking for trouble. Running into a log or other floating debris can knock a hole in the hull, tear out a transducer, or rip off an outdrive, all of which can trigger a leak. Even small leaks can eventually sink a boat. If you strike something in the water, stop the boat and thoroughly explore the bilge. Note, however, that a leak may not be immediately obvious and it is a good idea to check again later. The skipper of a 32-foot sailboat heard a loud bang on the hull while sailing fast on Lake Pontchartrain in Louisiana. After glancing below and not finding any rising water, he eventually sailed back to his marina and docked his boat. The next day, the marina called, telling him his boat had sunk. An investigator found the “bang” damaged the stuffing box, causing it to leak slowly. As the boat filled and lowered in the water, the cockpit scuppers were forced under, adding to the inflow. The boat sank (Claim #0987364).

Some sounds are harder to place than a squeal or a bang. A grumbling noise while underway could be a worn cutlass bearing, an engine out of alignment, or a transmission in need of maintenance before it catastrophically fails. Try to have a listener pinpoint the area while the boat is underway. That way, back at the dock, you or your mechanic will have a much better idea of where to start looking.

Open Your Eyes

For the most part, problems you might see on your boat are obvious—smoke billowing from the engine compartment, a crack in the hull, and so on. But there are some more subtle clues you might see that you shouldn't discount. For example, black smoke coming from your diesel exhaust could be a sign of a clogged air filter; lots of steam could be a failing water pump impeller. See a little corrosion on your outdrive? Don’t ignore it, as it may be an early (and preventable) sign of stray current corrosion. In another case, the owner of a 36-foot sailboat was looking up his mast when he noticed that it appeared slightly crooked. He had it inspected by a rigger, who found that a tang on the mast had cracked and was forcing the mast out of alignment, something that could have brought the whole rig down if not addressed.

Trust Your Feelings

Everyone knows when they aren't feeling well—a little dizzy or wobbly—it’s time to see a doctor. Trust those same senses on your boat. If it seems like it’s handling a little sluggish, don’t ignore it. Several years ago, a man noted that he got an indication of a problem when his boat began to feel sluggish—it was hard to steer and seemed to be slowing down. Thinking it was his imagination, he continued on for a few more valuable minutes until it began to roll erratically. By then it was too late; the boat had been taking on water (through a broken stuffing box) and the boat had begun sinking.

A muskrat chewed through the inside of the engine’s exhaust hose and set up housekeeping in this 34-foot powerboat. The aroma from the critter’s frequent buffet dinners, which should have alerted the owner that something was amiss, was ignored and the boat eventually sank.

If something smells “fishy” in your boat, don’t assume it will go away. Trust your nose and find the source before it’s too late.

Another thing you shouldn’t ignore is stiff steering. Many boats use cables to steer the boat and the cables can corrode internally over time. When that happens, the cable is living on borrowed time. Replace any cables that are excessively sticky or have cracks or bulges.

Finally, pay attention to what your feet are telling you. If you feel a new vibration from the cockpit, it could be an out-of-alignment engine (which can damage the transmission over time) or a bent prop, which can also cause transmission or engine damage.

If you trust your senses and react quickly, you can save yourself and your boat a lot of grief later.
dirty windshield (and, for that matter, dirty eyeglasses) scatters whatever light there is. With “clear” plastic spray dodgers, most of which are at least slightly foggy, it’s best to open the panels.

4. Eliminating “backscatter” from your boat’s lights. Backscatter from the all-round white light can create glare that makes it impossible for your eyes to adjust to darkness. Raising the all-round light and/or putting an oval shield under the light creates a shadow that will protect your vision. Dimming the instrument panel as much as possible is also recommended.

5. Avoiding alcohol. Studies have shown that as little as .04 percent (roughly the equivalent of two beers) can degrade a person’s ability to discern faint lights or other objects; notice objects outside the direct line of sight (peripheral vision); respond to a constantly changing stimulus; and select a response based on the nature of the stimulus.

6. Having your eyes examined once a year. Eyeglass prescriptions should be up to date and cataracts, if any, should be removed. There is nothing to be gained by procrastinating.

When he isn’t towing boats, Capt. Mike Dunn and his wife Stacy (also a Capt.) of TowBoatU.S. Crystal River, Florida, “relax” by doing a lot of volunteer work, including helping injured or trapped manatees with an organization called Manatee Rescue. The manatee shown above had been caught in a crab trap on the Homosassa River and couldn’t move.

Note that adult manatees can grow to over 13 feet long and weigh over 3,500 pounds! That’s a lot of weight. As for the group trying to lift the thing out of the water, Capt. Mike is the guy in the red shirt with the bright red face.

A BoatU.S. member in Maryland—Patrick—sent along a newspaper account of three beefy men aboard a 24-foot boat that was too small for the blustery conditions on the Chesapeake and had started taking on water. The bilge pump couldn’t keep up with the rising water and the boat capsized. Fortunately, two men in a larger boat pulled the trio out of the water. Unfortunately, their larger boat was only a foot larger and with five beefy men aboard, it too started sinking. All five had to be rescued by the Dept. of Natural Resources.

Patrick’s e-mail ended by saying, “There has to be a lesson here somewhere.”

Seaworthy put the question to readers on its Facebook page: What’s the lesson? Many of the responses were practical. Reggie Good made the point that they should have paid more attention to weather reports and maybe had a better method for getting water out of the boat. Jim Bennet wondered if only transferring one or two of the crew to the rescue boat would have helped both boats. All good points.

Caroline Ajootian, the director of the BoatU.S. Consumer Protection Bureau, thinks some of the problem could be with the Coast Guard’s capacity labeling. To arrive at a boat’s rated capacity for the number of people that can be safely aboard, the Coast Guard assumes that the average American’s weight is 160 pounds. According to the Center for Disease Control, however, the average American now weighs 191 pounds. So if a boat is rated to carry four passengers, it could be carrying 124 (or more) extra pounds.

The people aboard are only part of the problem. In addition to a weight capacity plate, the Coast Guard also requires that outboard-powered boats be rated for maximum horsepower. The system used until recently by the Coast Guard to arrive at a boat’s horsepower was based on two-stroke outboards. Something like 70 percent to 80 percent of all outboards sold these days are four-strokes, however,
which weigh considerably more than their two-stroke counterparts. A 115-hp Honda four-stroke, for example, weighs 496 pounds. A 115-hp Yamaha two-stroke weighs 407 pounds—a difference of 89 pounds. That would be double for dual engine outboards and all of the weight will be on the transom, which is where it has the potential to cause the most problems. Doing the math, a boat with four passengers aboard that was repowered with two, four-stroke outboards could have several hundred more pounds aboard than it was designed to carry.

It’s something for owners of small boats to think about when the weather is rough and they’re thinking about going fishing.

Nobody can accuse Rick of not learning from his mistakes. While he has always been diligent about wearing a life vest, he is now planning to carry, at a minimum, pocket flares, a strobe light and maybe even a waterproof VHF. If he ever goes overboard again, other people are going to know about it. Of course no one expects to tumble overboard, but as he said, “If the safety officer of two yacht clubs can fall overboard on a calm day, it can happen to anyone.”

A good man-overboard story, this one from Rick Saber, a member in San Rafael, California. On a flat-calm day, Rick was by himself on his trawler Eagle and had been getting lines and fenders ready for docking when his “well-fed center of gravity” shifted and he suddenly tumbled into San Francisco Bay, about 400 yards east of Alcatraz. The inflatable life vest Rick had been wearing inflated with a reassuring whoosh and he quickly bobbed to the surface. Eagle kept plowing through the water toward its eventual encounter with a pier (Claim #1014005). He said watching his boat heading for the horizon without him was devastating.

Rick is by nature very safety conscious; he is the safety officer of two yacht clubs and, ironically, had recently given Coast Guard Auxiliary seminars on man-overboard procedures. In 50 years of boating, this was his first accident. But while he was familiar with techniques for getting other people back aboard Eagle, he was still a little fuzzy on how to get himself back aboard a boat. Any boat. Rick remembers thinking, “This is going to be a very interesting day.”

He reached for his iPhone, which, after 15 seconds underwater, was kaput. That left him with only one signaling device—his arms, which he waved occasionally to attract the attention of boats passing in the distance. Finally, after bobbing up and down for maybe half an hour, he attracted the attention of Alma, a well-known sailing scow built in 1891. As Alma hove-to a few yards away, Rick asked sheepishly if they had any Grey Poupon aboard. One of Alma’s crew responded by asking, “Where’s your boat?”

Jim Schofield, who retired last year as director of the BoatU.S. Coop Marina

A few other things you should know about smelly hot water heaters. • Not all marine water heaters have anodes and if that’s the case, you’ll either have to replace the heater or try to live with the smell. • Since water in the tank is fresh, the anode is magnesium. • Anodes can usually be ordered directly from the water heater’s manufacturer. • Depending on the composition of the water, the anode may need replacing in as little as four years, although most water heater anodes typically last much longer. In Jim’s case, his boat was over 25 years old and he’s confident that the anode had never been replaced. • Your water heater at home probably has an anode.

Finally, anyone who has spent much time around boatyards (or anyone with a really big boat) will appreciate this photo of the mother of all Marine Travelifts, taken at the Grave One Marine Shipyard in Lumut, Malaysia. According to Ghafar Sanusi at Grade One, the travelift is capable of hoisting 700 tons and is used routinely to haul everything from oceangoing ships to megayachts.
The July issue seems like a good time to introduce Seaworthy’s “Relax-o-meter,” which is a contrarian technique that can be used to predict hurricane activity. Rather than relying on measurements of rainfall in sub-Saharan Africa or the whereabouts of El Niño, the recently developed technique tries to gauge how relaxed people are prior to hurricane season; if they’re too relaxed, the possibility of a hurricane coming ashore increases.

Skeptical? Consider that after a long string of quiet hurricane seasons, 1994 was also predicted to be “below average” with only three hurricanes. The absence of storms meant that the Relax-o-meter had fallen to 1 (“Barely a pulse”). One of the hurricanes turned out to be Andrew, which at the time was the costliest hurricane in U.S. history! Remember the 2006 hurricane season? Everyone was still reeling from the disastrous 2004 and 2005 hurricane seasons. The Relax-o-meter was at 10 (“We’re moving to Canada”) and nothing much happened. Incidentally, the Relax-o-meter is the brainchild of Seaworthy editors, which means none of this involves much math.

To understand what the meter is saying about the 2011 hurricane season, you have to start with the dire predictions for 2010. People on the East and Gulf Coasts had been bracing for a “very active” season (Relax-o-meter jumped to 8) when a bit of meteorological good luck—a displacement of the Bermuda high coupled with a persistent trough of low pressure in the upper atmosphere—combined to push all 12 hurricanes out to sea. Once again, the meter’s accuracy was uncanny! It means, however, that a major hurricane hasn’t come ashore in the U.S. since Ike in 2008—almost three years ago. People with short memories have started to relax.

Uh-oh!

Seaworthy contacted Steve Letro, the meteorologist in charge of the National Weather Service in Jacksonville, Florida. Steve doubts that the same favorable conditions that kept storms offshore last year will be repeated two years in a row. In the meantime, Dr. William Gray and Philip Klozbach, the well-regarded hurricane prognosticators at Colorado State University, are predicting a “well above average” number of hurricanes in the upcoming season with 16 named storms and nine hurricanes. If their prediction is correct, and their predictions are at least always close, this could be among the most active hurricane seasons ever.

Hopefully, that makes Seaworthy readers—you!—nervous enough to go to www.BoatUS.com/Seaworthy/hurricanes and start reading up on hurricane prep.