



Ten Lessons Learned from Recent Disasters

While thinking out loud in late 2013, the CCA Safety-at-Sea Committee concluded that there have been enough data in recent incidents and other anecdotal evidence to warrant a *summary of lessons* worth sharingⁱ. Interestingly, these lessons frequently fall under a heading of: **"Back to the Basics of Seamanship"**. The purpose of this note is to review and reinforce lessons, many of which we have learned before but may have forgotten.

1. **Lee Shores Can Be Dangerous.** You cannot always avoid a lee shore, but apply extra watchfulness. You should probably treat a lee shore as if it had large, yellow, caution signs displayed.
 - In the case of *Low Speed Chase*, a larger wave broke while the boat was skirting a shallower spot on a lee shore. Although the wave was unusual, it was well within the expected statistical bands for the conditions. That wave knocked down the boat leading to the loss of the vessel and loss of life.
 - In the *Uncontrollable Urge* case, the loss of a rudder only 2.5 miles off a lee shore, combined with an inability to steer the boat away, meant the boat ended up on the rocky shore of San Clemente Island, again with a loss of life.
 - In some cases, waves are more chaotic off a steep-to lee shore, as the reflected waves combine with the incoming waves to create much more dangerous conditions.

The issue with a lee shore is simple: any problem, either natural or an equipment failure, leaves you with much less of a security buffer, i.e. no wiggle room.

2. **Situational Awareness is Key.** In many of the cases, the crew focused too much on one thing, to the detriment of understanding the overall situation. Some examples of misplaced awareness include: concentrating on an initial

problem and not noticing subsequent developments, and racing as close to an island as possible after a long, tiring leg. Loss of your situational awareness can be deadly.

- Maintain awareness. Don't ignore input from crew, your sixth sense or your instruments. If any one of those causes any unease, collect new data, steer a safer course, or reconsider your decision. One example: a single data point does not justify a decision. Check GPS positions versus water depth or other position data to confirm locations.
- As a skipper, share responsibility. Well-run vessels actively encourage crew input while still maintaining a command structure. If you are handling all the roles in three positions, helmsman, skipper and navigator, you may miss good input from your crew. Also you (and all your crew) need to look around and re-assess the overall situation at regular intervals.
- It should not be said, but on short-handed boats, you must have someone on watch at all times. You can't have situational awareness if no one is awake and looking around.

3. **Crew Health and Condition Affects Your Capabilities.** Fatigue, seasickness, cold, and hunger from sporadic meals can reduce your total crew effectiveness. This frequently occurs when trying to "push on" a little bit more. For example, these risks increase when medium-length races (70-200 miles) are sailed as sprints without regular off-watch periods, or cruisers press on during a long day or a short overnight without regular off-watches, and with only pickup meals. In many of the accidents reviewed, creeping cold and hunger, combined with mild seasickness and fatigue combined to reduced the crew's effectiveness and reaction times. Skippers should enforce a watch structure or partial rotation to keep crew reserves at high levels, especially important if an emergency needs to be handled.

4. **Extreme Designs can have Unintended Consequences.** Seaworthy boats are often similar to what has been perceived to be a good sea boat and infrequently have extreme design features. Modern quantitative

seaworthiness measures (such as Limit of Positive Stability, Stability Index, etc.) allow consideration of capsizing resistance. *Wingnuts* inverted and did not come back upright, as may have been indicated by her low Stability Index.

Modern materials and construction methods produce good vessels, but some engineering can be troublesome. The *Uncontrollable Urge* incident started with the loss of a rudder on a new boat. *Rambler 100*, while having sailed thousands of miles, did suffer the loss of a keel.

Most of us protect ourselves by using proven designs and technologies. Modern design ideas are fine, and many modern boats are more seaworthy than the generation before. But radical designs warrant extra caution and investigation if being considered for offshore passages.

5. **Help MAY NOT BE on the Way as Quickly as You Think.** We are spoiled in US waters by the incredible skill and resources of the US Coast Guard. But, sometimes skippers do not comprehend how long it may take for help to make their way to them. The modern impression is that if you send off a distress call or ignite an EPIRB, you will be rescued by dedicated SAR professionals within a short amount of time. This often is not true, especially when out of USCG range.

The lesson is: you need to deal with emergencies as if SAR aid may not be available for a while.

- In the *Rambler 100* case, the Maritime Rescue Sub-Centre receiving the Personal Locator Beacon (PLB) signals had difficulty linking the PLBs to *Rambler 100*, creating a delay before a MAYDAY was issued. (All, please review your EPIRB registration at least annually and keep it up to date. Also, reregister your PLB before each race).
- Help may not be able to get to you due to weather (in the *Wingnuts* case, the USCG helicopter station was downwind, and the same 70-100 knot squall line that knocked *Wingnuts* down kept helicopters on the ground until it passed).
- In the *Uncontrollable Urge* case, by the time they called for help (after realizing they could not avoid being blown onto a lee shore) the USCG got a C130 over them in about 40 minutes, and a rescue helicopter on scene in about 1 hour 10 minutes. All crew were lifted

into the helo in one hour. However the time from the call for help until the boat grounding in the surf was only 40 minutes. At one point Uncontrollable Urge asked for a professional tow, and were told it was 21 hours away!

Sometimes there are other outside resources.

- In the *Wingnuts* case, other race boats, especially *Sociable*, rescued survivors out of the water.
- In the *Uncontrollable Urge* case, some race boats were willing to stand by initially, but were released when the victim vessel thought they could handle the incident.

In other cases boats need to handle the incident by themselves, either because they are far from other boats, or (as in the *Rambler 100* case) other nearby boats were unable to see their distress, or, as in the 1998 Sydney-Hobart Race, nearby boats were unable to help because they were dealing with their own issues.

Moral of stories: Request help sooner rather than later, but be prepared for no help at all.

6. **Seasickness – Stay on top of it, stop it up front, it is dangerous.**

Seasickness is a contributory factor in many of the incidents, rendering crew less able to carry his load in an emergency. While there is no way to eliminate seasickness, there are proven methods to decrease the effects, including taking proven medications before leaving. Skippers need ensure that all crew know their susceptibility, and the remedies that work best for them. Dr. Jeffery Wisch recently has written two good articles on dealing with seasickness. They are at http://www.cruisingclub.org/pdfs/sas_dy_seasickness.pdf and at http://www.cruisingclub.org/pdfs/sas_dy_seasickness_bullets.pdf. We urge you to study them.

7. **Practice Transferring Items from your Boat to a Distressed Party in Sea Conditions.** In the simplest case you may need to throw a rescue quito to a

person overboard. In more difficult problems, you could be asked to pass extra fuel to another boat in distress. This can be a dangerous maneuver if your mast and rig contact the other boat. But, with proper care, it can be done.

- In the case of the rescue of the crew from *Georgia*, the rescuer, *Telcoinbox Merit*, positioned themselves downwind to catch *Georgia's* liferaft, then the boats connected the life raft on a line, and pulled it back and forth between the two boats to transfer the entire crewⁱⁱ.
- In the case of *Lora Ann*, Richard Feeley writes "In transferring fuel or other items at sea (even a person in a dinghy or raft), the leading yacht should tow a line astern for the receiving yacht to snag. A small cushion or PFD can help keep the end afloat. Then the receiving crew hauls in the heavy payload attached to the line."ⁱⁱⁱ
- Personal experience in passing tow lines to a vessel in a gale suggests the passer must be the upwind vessel and the receiving vessel downwind.
- Another interesting write-up about passing aid during the 2006 ARC is at the Sailing World website, see endnote ^{iv} for source.

Moral: read tales and practice passing lines. You may have to aid someone, or be picked off your boat.

8. **Think Hard When Selecting Your Inflatable Harness.** Over the last year or two, there have been several separate discussions about inflatable harnesses and how they react in an emergency. The basic is still true: it is important that sailors wear tethers and harnesses with flotation. Three new considerations:

- In the *Rambler 100* case, one or more of the crew had to swim underwater, out of an inverted cabin, across half the beam of the boat, and below the now-upside-down lifelines. In that case, it was crucial that harnesses did not inflate automatically. Think about whether you need an automatic or manual-only inflatable harness.
- The second issue regards the fit of the harness. All harnesses must fit and be comfortable. For smaller people, you must assure the harness is not too long, as the tether-harness should not squeeze you below the ribcage. See the article at endnote ^v for more detail.

- The third lesson this year was from the *Uncontrollable Urge* incident. In this case, the crew floated to the beach through large, breaking waves. Most, but not all, had Spinlock Deck Vest harnesses, and in three cases the flotation chamber flipped over the head of the crew in the surf, causing distress. To evaluate the purchase of an inflatable harness, we suggest you follow this story in *Practical Sailor*, as well as using other resources.
- The last lesson is that several incidents have resulted in recommendations for sailors to use crotch or leg straps when wearing their harness. You should strongly consider this, and understand it is a US Sailing requirement.

9. **Review Your Safety Gear Regularly.** Annually, go over everything, and re-inspect key elements before going on longer cruises or offshore passages. Some examples:

- Check your EPIRB and PLB registrations to make sure contact information is correct and current.
- Check the battery and hydrostatic release dates on your EPIRB.
- Check flares for expiration.
- Replace all batteries in strobes and other lights.
- Orally inflate all PFDs and make sure they hold pressure for 24 hours.
- Check LifeSlings, throw bags, tossing quoits, etc. to make sure the line has not been sun-damaged, especially where tied to the boat.
- Make sure the MOM module and your life raft have been inspected and repacked by an authorized dealer and within the manufacturers cycle date.
- Have a good “looking over” at all safety, damage control and other key gear aboard to make sure it is still in good condition and stored properly.

10. **PRACTICE:** And do so in all sorts of conditions. This may be the most important item on this list! We can recommend the best ideas for safety at sea, but if you do not practice them, the ideas will be for naught. You and your crew need to go out on the boat, think through and walk through possible safety solutions and find out what works best for you.

Then you need to do it again, in rougher conditions that simulate when you will actually need to use them.

Summary and Conclusion:

In conclusion, skippers and crew need to practice the basic habits of good seamanship. In this busy world of ours, we never have enough time to study (although the CCA Safety at Sea web pages at <https://cruisingclub.org/sas> provide many useful articles from which you may start). We also seem to never have enough time to practice, especially in less-than-ideal conditions, but it is important to carve out that time and practice on the water.

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ⁱ The primary sources for this note include the US Sailing Incident reports of the *Wingnuts* incident in the 2011 Chicago-Mackinac Race, the *Rambler 100* incident in the 2011 Fastnet Race, the *Low Speed Chase* incident in the 2012 Farallones Islands Race, the *Aegean* incident in the 2012 Newport to Ensenada Race and the *Uncontrollable Urge* incident in the 2013 Islands Race. The US Sailing reports on these incidents can be found on the CCA Safety-at-Sea website, under "In-Depth Documents" or at the US Sailing site. Knowledge from other incidents are used in this article too.

ⁱⁱ This rescue is described at http://www.cruisingclub.org/pdfs/safety_sydney_hobart_rescue.pdf

ⁱⁱⁱ This article has many lessons and is found at: http://www.cruisingclub.org/pdfs/safety_disaster_averted.pdf.

^{iv} <http://www.sail-world.com/CruisingAus/index.cfm?SEID=2&Nid=30254&SRCID=0&ntid=39&tickeruid=0&tickerCID=0>

^v http://www.cruisingclub.org/pdfs/sas_safety_moment_harness_height.pdf