

## **SAFETY ESSENTIALS**

The cruising life has granted us countless magical memories. Just to mention a few: Sailing under the Cape of Good Hope at sunset with the cliffs of the cape painted red and gold and sea lions playing in our bow wave. After sailing west for three years we KNEW the world was round when we found ourselves back where we had started and completed our first circumnavigation. Everything was bathed in golden light as we sailed along the Arctic Circle of Iceland's northwest corner on midsummer's eve in 2001 and watched the sun touch the horizon and then rise again. Our entire year of cruising in Chile was spectacular and also raised our sailing and seamanship skills to a new level. During the 9,000 mile nonstop Southern Ocean passage from the Beagle channel to Fremantle in Australia we were surrounded by albatross and whales in their natural habitat.

In addition to the innumerable marvelous experiences, during the past 75,000miles we have also encountered eleven terrible situations where there was a meaningful possibility of losing our boat or dying.

We have learned a lot from these eleven experiences. When sailors talk about safety, most of us automatically add the words "at sea." Yet only four of these eleven incidents occurred on passage, and of those, only two of them – the Gulf Stream storm and the near crew overboard – were problems *because* we were on passage and not coastal sailing and able to pull into a safe harbor. That means that nine of our eleven worst experiences were not related in any way to offshore passage-making, and were, in fact, most often a function of being too close to rocks or docks.

The first thing to realize about even extreme sailing is that it is a very safe activity. According to UK government statistics it has about as many injuries as golf and a much higher safety record than many more popular activities.

| <b>Sport</b> | <b>Injuries per 100,000 participants/year</b> |
|--------------|---|
| Rugby        | 430   |
| Soccer       | 199   |
| Cricket      | 125   |
| Netball      | 84  |
| Sailing      | 12  |

We have identified four underlying factors, one or more of which contributed to each of our eleven dangerous incidents.

1. The principle reason we have gotten into trouble is simple: not paying enough attention to the immediate situation. Humans cannot remain focused and at full attention all the time, but we can make sure we relax at anchor or in open water where there are few dangers. When in near shore waters, we can't let a good conversation or daydreams distract us from sailing the boat. Rather, we need to focus on the here and now and pay close attention to the immediate environment – the sails, the horizon and the chart. Our current boat has a sizable hard dodger that allows us to stay warm and sheltered on deck

even in extreme cold, heat, rain and wind. It enables us to keep a good watch and stay alert in unpleasant conditions (including the debilitating heat of the tropics).

2. Exhaustion begets errors of judgment. Fatigue has contributed to many of our worst situations. Most mishaps occur due to a string of fatigue-induced poor judgments and/or lack of energy to take necessary actions. We have learned to be extra cautious and less adventurous when we are tired. Two elements of preparation are a tremendous help in keeping the fatigue level manageable. First, bulletproof autopilot/self-steering systems are essential. Hand steering offshore will quickly exhaust a shorthanded crew and should be avoided if at all possible. Second, the crew must include one experienced person the captain trusts with the watch. Otherwise, the captain will never be able to relax enough to sleep well and will always be fighting fatigue.

3. Charting and waypoint problems have contributed to half of our screw-ups. We have learned to position our waypoints so that even if we get pushed off course, or the chart has errors, we will still have a clear run to each waypoint. Our chart plotter on HAWK allows us to see exactly where the boat is and if we have a clear run to the next waypoint...but we have to be very careful not to get sucked into believing the virtual reality on the plotter is truly real. Electronic charts can have GPS datum errors; there may be temporary obstacles not shown on the chart from oil drilling rigs to fishing floats; sand bars and reefs may have moved or grown.

4. Trying to leave a dock while pinned by a beam wind has played a role in a quarter of our worst situations. Investing some time in learning how to handle a boat in this situation before you go off cruising will save a lot of grief later. Our docking decisions used to be made based on the easiest approach. Now we decide based on what will make it easiest to get off again if we get pinned, which usually means going starboard side to the dock. We also consider whether we should drop an anchor before approaching a dock to help us off later.

When we asked other long term cruisers about their worst experiences they most frequently mentioned horrendous anchoring situations. We have been fortunate with our anchoring, perhaps both because we use a “storm sized” anchor every day and we have a very conservative approach to picking anchorages and setting to sea when weather approaches that might make our anchorage dangerous.

While proper equipment, experience and preparation are obviously important contributors, the will to survive is the most essential factor in survival. This has been proven time and time again in both alpine and military survival situations. Eric Lee, Secretary of the Naval Lifesaving Committee (UK), summed up his vast experience with, “Men with a minimum of equipment, but with a strong will to live, have survived for long periods, whereas other men with ample equipment have succumbed in less.”

This resonates with our experiences. To survive our worst situations, we needed to jump into immediate simple corrective action, not freeze up, and our fancy & expensive ‘safety’ equipment has been of relatively little use. Frequently our first action did not

solve the problem, and our eventual success depended upon immediately trying another approach, and continuing to try things until something did the trick. Developing fall-back plans are an integral part of sound seamanship – as Mother Nature all too often interferes with plan A. We need to continually think about and plan for such contingencies as: Where are we going to go if the wind shifts at night and makes this anchorage untenable? What are we going to do if the main batteries fail mid-passage?

For the captain, the best way to ensure the crew acts and doesn't freeze is to lead by example, intentionally and visibly being a good role model for the crew. Be positive and optimistic. Don't sugar-coat the situation but keep your darkest thoughts to yourself. Don't let yourself or your crew develop a passive attitude, huddling down below. Give them confidence that you are in control and in command of the situation.

Ground tackle, charts, medical supplies, satellite communication (Iridium and Inmarsat C) and our drogue have been the pieces of safety gear that we have actually used. We now over-invest in these areas (especially charts) and are skeptical of the reliability & value of much of the other safety equipment available. Avoiding and overcoming difficult situations depend much more on basic gear such as a strong hull, large anchor, and good sails than on what is typically sold as safety equipment – life rafts, EPIRBs, and so on. But, to repeat the above point: Mental attitude is more important than even the most basic equipment.

Now that GPS has eliminated the offshore daily position fix with sextant and tables, the navigator's time and energy should be devoted to studying the weather. We have spent much of the past decade working with top weather routers, studying GRIBs and weather faxes and simply looking at the sky and the sea. We have learned to pick good weather patterns for leaving on a passage and managed to avoid a few serious storms at sea. However, weather systems are a classic real world example of chaos theory and are therefore difficult to predict no matter how much information you have. Any boat heading offshore has to be capable (high stability, watertight companionway & hatches and storm sails & reef points in good condition) and well stowed (clean decks and everything secured below) to deal with an unexpected storm on the open ocean.

Various comparative studies have indicated that sailing is just about as safe as golf, and has a much lower injury and death rate than mountain climbing or rugby. That's consistent with our experience. Our worst moments have almost all been caused by our own stupid mistakes, and we have so far managed to get out of all them without permanent damage. We embrace these challenges as part of the cruising life. They are the price we pay for the thousands of indelible memories cruising has given us. And we have even learned to take pleasure in the emotional highs and lows, rather than striving for consistent moderate satisfaction as we seem to do when living ashore.