

An analysis of the causes of withdrawal for monohull competitors in the 109th Chicago Yacht Club Race to Mackinac

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The 2017 Chicago Yacht Club Race to Mackinac was one to remember. In addition to the normal great competition, fun parties and challenging sailing, the 109th Mac saw a large number of boats retire early. About 1/3 of the fleet did not complete the race; it's been many years since the fleet has had so many retirements. The fleet faced both heavy seas and storms in the early part of the race, followed by little wind in the latter half. Although not a unique set of circumstances, by all measures 2017 was a challenging year to do the Mac.

The goal of the CYC Mac Committee is to invite boats that are able to compete and complete the race. To support this goal, the CYC Mac Committee launched an analysis to determine what the causes were for so many retirements amongst the monohull fleet, and we wanted to share the results with our fellow sailors in the hope that we can all learn a little bit and be better prepared to face challenging conditions in future years.

Each year, competitors who retire or suffer significant damage or injury to a crew member are required to complete an 'incident form' and submit it to the Mac committee. In typical years, we receive 10-20 such incident forms. In 2017, we received 98. Not all of these represent boats that withdrew, but in the majority of cases the boats did retire.

We analyzed these incident reports. We categorized them in to several "buckets" to simplify our analysis:

- Equipment damage or failure – 47 boats
- Seasickness or injury – 36 boats
- Flooding – 1 boat
- Man overboard – 1 boat
- Ran out of time or desire to compete – 13 boats

In many cases, boats fell into more than one 'bucket' – for example, they may have had equipment damage and an injury on board. Also note that this data is all self-reported;

we could not verify any of the reports independently. While each of the 97 boats that retired from the race completed a report, we cannot account for those boats that should have, but did not, complete the form.

Over 48% - nearly half - of the reports involved **damage to equipment on the boat** (47 boats). By far the leading type of damage was to sails (15 boats), which is not surprising given the storms faced by much of the fleet. What was surprising was that few of the competitors indicated that they made any attempt to repair the sails onboard and continue racing, given that the Mac is a distance race of over 300 miles. Standing rigging (14 boats) and running rigging (6 boats) both took a beating in 2017, again not surprising due to the storms. Five yachts suffered failures to their electrical systems, generally unrelated to weather. Instead, there were equipment failures including failed alternators, failed batteries and in some cases, crew error causing batteries to be discharged. Three competitors suffered steering or rudder failures, which may or may not have been related to weather.

In general, many of the boats which retired due to equipment issues did so with equipment that in many cases could have been repaired onboard and the competitor could have kept racing. A take-away is to ensure that your crew has sufficient skills to jury rig repairs for minor to medium damage, and that you carry sufficient tools and spares to allow those repairs to be made underway. Finally, a thorough pre-race examination of all systems on the boat should be performed to ensure that they can withstand the expected conditions of the race, and suitable sails should be carried for the forecast conditions.

The next leading cause was **seasickness, hypothermia or injury to a crew member** (36 yachts). In addition to a small number of traumatic injuries common on sailboats (bumps and bruises), a large number of yachts reported sea sickness to multiple crew members as being the cause of retirement (or in some cases, just a single member of the crew). Several other boats reported symptoms of hypothermia in one or more crew members.

The number of retirements due to illness was surprising to the Committee. The lesson to be learned here is that crew members need to be educated on seasickness in offshore races, both its prevention and treatment. Crew members should consider taking anti-seasickness medication prior to starting the race. A consultation with a physician would be appropriate for those who might require prescription medications due to a propensity for seasickness. Failure to take adequate preventative measures for seasickness can leave you incapacitated and turn you into a burden on the entire crew.

Boats should carry sufficient medical supplies including anti-seasickness remedies and treatment for dehydration that would allow the crew members to be treated onboard and the yacht to continue racing. All crew members on the boat should be trained to recognize and treat mild hypothermia in their fellow crew members. Finally, the CYC Mac Committee strongly recommends that at least two members of each crew (and ideally many more than that) be trained in first aid to the standards of World Sailing - <https://www.ussailing.org/competition/offshore/senior-first-aid-certification/>. In a 'normal' year, the greatest risk to competitors is illness or injury to a fellow crew

member. All competitors should take steps now to ensure they are prepared to respond in such circumstances.

A significant number of competitors – 12% - retired from the race essentially because they **ran out of time** or had other commitments. The light air faced by much of the fleet in the last third of the race was no doubt frustrating to many competitors who had been banged around earlier in the race. We do want to remind competitors that finishing on Monday is no guarantee – historically the Race sees many Tuesday and even Wednesday finishers, and occasionally after that. All boats should be prepared to complete the race in however much time it takes, and that includes ensuring that you have adequate provisions and your crew has adequate time to finish the Race. A pattern of withdrawal due to running out of time is something the Mac Committee will consider in choosing whether to extend invitations to future Races.

Finally, we turn to two rare but significant causes of withdrawal, both affecting a single competitor.

One boat, a J/111, was off of Manitowoc, WI, when a crew member discovered **flooding** - water above the floorboards in the forepeak, as well as water under the starboard settee which was in danger of covering the battery boxes. The crew deployed pumps and buckets to dewater the boat. Unable to determine the source of the water, they chose to retire. The competitor noted in his retirement report that a portable dinghy pump they had on board was very helpful in dewatering the boat. "If I did not have that portable dinghy pump, we could have been in real trouble. Still trying to determine where the water was coming from, but suspect the anchor locker was filling with water and getting by the water tight seal on the sprit when bow was submerged in the waves." The crew addressed the situation well and used the safety equipment on board, but as the skipper noted, it was a portable pump (not required by the Chicago Mac Safety Regulations - CMSRs) that was the most important tool he had to face the emergency. This emphasizes that the CMSRs are *minimum* safety equipment requirements. All competitors should consider what other safety equipment they need to carry to safely compete in an offshore race, and when faced with a challenge, they should deploy all available tools and resources in fighting it. In this case, the non-required dinghy pump saved the day.

The last incident, again affecting a single boat, was a **crew overboard** (COB) which affected *Meridian X*. A good first-hand version of the incident was published in *Spinsheet* and should be required reading for all Mac sailors - <https://www.spinsheet.com/racing/chicago-mackinac-race-man-overboard-night>. In this case, the navigator went overboard with his PFD only partially attached (the harness was not buckled in front). In the conditions faced by the remaining crew, it took some time to get the spinnaker down and the boat turned around to search for the COB. With the PFD only partially on, the COB found it difficult to hold onto, and his safety light worked only sporadically. He was unable to close his harness once the jacket had inflated. Once again, it was his whistle that attracted the attention of those remaining on the boat. It took over an hour for the boat to turn around, find and retrieve the COB. The COB was suffering from mild hypothermia but was otherwise OK.

There are obviously many lessons to be learned from the crew overboard incident, but here are a few.

- First, in rough conditions or at night, do not go onto deck until your PFD is completely, properly on, including leg or crotch straps. Take the 10 seconds below deck to ensure it is on properly; doing so can stop a minor situation (a sail douse) from turning into a major emergency (a COB).
- Second, equipment fails, even new and well-maintained equipment. In this case, a brand new safety light did not work properly. Any safety-critical equipment deserves a backup – two safety lights, for example. Also, look for equipment that is failure-resistant, such as a whistle or chemical glowsticks, which requires neither electricity nor moving parts.
- Third, practice COB drills repeatedly and make sure that crew are interchangeable, as there is no way to know *who* is going overboard. In this case, the crew reacted well and retrieved their COB.
- Fourth, call for help. A COB is a mayday call and also should have the remaining crew hit the distress button on the VHF radio. Doing so allows the Coast Guard to deploy resources to help and lets everyone with a DSC radio know that you are in trouble *and* where you are. Many sailors heard a Mayday call but did not receive the lat long on their DSC radios because the Distress button was not pressed. Each of us is one slip, one trip or one wave from being the person in the water. In this case, a well-trained crew rescued their COB, but things could have turned out far worse.

A summary of all retirement reports is available for download on the Mac website with identifying information removed. Take the time to read through them and learn so you can have a safer race in 2018. We also urge all competitors to review the many safety-related resources on the Race website, www.cycracetomackinac.com.

CONCLUSIONS AND RECOMMENDATIONS

After reviewing these reports, we would like to make the following specific safety recommendations to all competitors in the race.

PERSONAL SAFETY

- Make certain that each crew member knows how to properly wear their Mac-compliant PFD and that the PFD be completely on and properly closed, with leg straps attached, prior to coming on deck.
- Test all PFD safety equipment (light, whistle) immediately prior to the race, and consider supplementing PFD safety equipment with a PLB; AIS/DSC beacon; or handheld VHF; a chemical glow stick or two; and a flashlight.
- Carry a backup for each safety critical device – whistle, light – on your PFD.

MOB CONSIDERATIONS

- Practice MOB drills repeatedly, with crew members rotating positions.
- A MOB at night is a Mayday call. Be sure that all crew know how to press the Distress button on the VHF radio, which broadcasts latitude and longitude of the distress, which significantly aids all responding vessels (including fellow competitors) in finding the source of distress.

FIRST AID, SAFETY AT SEA TRAINING

- Make sure your crew is properly trained in first aid and capable of treating injuries and illnesses typically seen on offshore races, such as seasickness, dehydration, and hypothermia, on board. Know how to prevent and treat seasickness so that the boat can keep racing even when one or more crew members are sick.
- The Mac Committee recommends that all crew members be current in First Aid training and Safety at Sea Training.
- All sailors should be aware of the risk of seasickness and take appropriate preventative methods to avoid becoming incapable of racing.

PRE-RACE CHECKS, EMERGENCY PROCEDURES

- Do a thorough pre-race inspection of your boat, with special attention given to standing and running rigging.
- Review your boat and crew's ability to deal with flooding and dewatering the boat; consider carrying additional pumps beyond those required by the CMSRs
- Recognize that the CMSRs represent *minimum* equipment requirements; all skippers should supplement that safety equipment with equipment necessary and proper for the boat and the conditions of the race. Make sure all crew knows where safety equipment is stowed and how it is used.
- Know how to repair sails and rigging and have sufficient equipment on board to make repairs so a torn sail or snapped line does not require a withdrawal from the race.

(Note that this analysis does not address the causes of retirement for multihull competitors).

Matt Gallagher is a member of the Chicago Yacht Club Race to Mackinac Committee. He served as chairman of the race in 2014 and 2015. He also serves on the US Sailing Safety at Sea Committee. He is a member of the Chicago Yacht Club and New York Yacht Club and races his Beneteau 37 in the Mackinac race and also races his J/70.