

WATCH SYSTEMS AND FATIGUE MANAGEMENT

Pacific Cup Offshore Academy

March 2012

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Goals to accomplish via your boat's watch system:

- Keep the boat headed in the intended direction
- Respond to changes in sailing conditions
- Accomplish critical functions:
 - such as meal preparation, navigation, check-ins, battery charging, sail changes, difficult driving conditions, preventative maintenance, personal hygiene
- Avoid damage to boat and gear
- Safety of crew
- Have fun

There are scheduled or predictable events for every boat that races PacCup to Hawaii:

- Most likely a wet and windy reach for several days from the start.
- Most likely night time squalls for several nights toward the finish.
- For certain, total darkness nearly all night long at the start of the race and for at least several hours every night -- New moon is July 18 and full moon is not until most of you will be in Hawaii, on August 1.
- Battery charges
- Meal preparation/clean-up
- Communications for weather, check-in, social, email
- Emergencies or all hands events -- crew injury or illness, round-ups, knock-downs, sail changes.

Working out the watch system for your boat is a balancing process taking into account the particularities of your boat, the number of crew you have on board, their anticipated individual strengths and limitations, and the scheduled or predictable events that you need to address.

Some points:

- Your goal is to have an alert standing watch on deck as needed for existing, variable conditions, around the clock, all 24 hours of the day and night, for 10 or 12 or more days and nights.
 - Fact: Very hard to have this happen at all times on a long race with a minimal crew
- You should have a planned watch system in mind as you assemble crew -- who will be doing what assignments at what times of the day's cycle. Who is a day person, who is a night owl?
- Your boat should have its intended watch schedule decided among the crew early, weeks ahead.
- Your watch schedule should be written down, laminated and posted before the start of the race.
- Your watch system should be started, with scheduled off-watch crew below decks and off watch, within about fifteen minutes of crossing an imaginary line drawn between Point Bonita buoy and Mile Rock.

- Your watch system needs to be flexible -- change what isn't working as you go, adapt to what circumstances present themselves -- Could be a night vision problem, could be harsh sea state and driving skills, could be sea sickness, could be injury, could be temporary exhaustion of a crew member. All of these can change who is available to be on watch and which of the available crew should be on watch.

Alertness, drowsiness and fatigue:

- Alertness is a mental condition of wakefulness and focus.
- Drowsiness can occur without fatigue (for example, a well rested crew person standing watch at 2:00 a.m.) and will cause loss of focus for that crew person
- Fatigue tends to be a cumulative state resulting from physical and mental stress over prolonged time. A fatigued crew person loses alertness even when not drowsy, and loses alertness all the more when less than fully awake.
- It is the goal of the watch system to minimize fatigue for the crew as a whole and to maximize on watch crew alertness.
 - Fact: Almost everyone on board will be fatigued by the end of the race, some more than others.
- The largest culprit for fatigue is lack of restful sleep; and the best antidote is sleep. Set up a watch system that permits each crew to get meaningful sleep for a reasonable length of time. And when off watch – go to sleep!
- Other fatigue factors: cold, wet, noise, unfamiliar circumstances, uncomfortable bunks, boat motion, sea sickness, sunburn and fright. It wears a body down to be constantly on guard, to wonder if you're ever going to take a dump after two or three days of putting food in one end and nothing coming out the other, to worry about rounding up, about driving while puking.
- Fatigue and lack of alertness produce poor responses to challenging circumstances -- screwing up a gybe, rounding up, carrying too light a spinnaker into too strong a breeze, not looking at the compass, chafing through a halyard, catching a finger in a winch, trips and falls, injury, poor tactical decisions (like ending up on the wrong side of the squall).

Antidotes and tips:

- Plan your watch schedule with all the crew together. Example watch plans are attached.
- Divide or balance your watches on the strengths and limitations of the crew:
 - Watch captains
 - Drivers
 - Trimmers
 - Navigators
 - Bowpersons
 - Cooks
- Make it the job of all crew:
 - to watch for fatigue factors for others on their watch.
 - To help others fight or recover from fatigue – give them a break, help out with tasks.
 - to make sure the others (and themselves) get rest, keep warm at night and hydrated during the day.
- Make sure all crew have good personal gear. Stay dry, stay warm.
- Plan your food provisioning so there are plenty of good snacks to keep energy up.
- Catch a nap. A fifteen minute nap before you take the helm for an hour can be huge.
- Remind yourself how cool it is to be doing what you're doing -- 8 billion people on the planet and you are one of the few hundred in the world who get to sail the ocean and play in the wind and waves on a sailboat going from San Francisco to Hawaii.
- Have confidence. You are on the crew because you know how to sail a boat well, how to respond to adverse sailing conditions.
- Get fit. At your most fit, you're less susceptible to physical and mental fatigue.

Links:

- “Crew Selection” From Marion Bermuda Race Tips:
<http://www.marionbermuda.com/archive/2011/crewselection.pdf>
- “Best Watches” – Dobbs Davis – SailNet.com –
<http://www.sailnet.com/forums/seamanship-articles/19365-watch-best.html>
or
<http://bit.ly/x3d5rg>
- “Watch Keeping Advice” – Mark Mathews – SailNet.com -
<http://www.sailnet.com/forums/seamanship-articles/19306-watch-keeping-advice.html>
or
<http://bit.ly/z3INL4>
- “The Art of Standing Watch” - John Rousmaniere - SailNet.com –
<http://www.sailnet.com/forums/her-sailnet-articles/20997-art-science-standing-watch.html>
or
<http://bit.ly/wrSzjY>
- "Prevention and Treatment of Seasickness in Offshore Sailing" - MIT:
http://mvl.mit.edu/MVLpubs/MVL_88.03_OMAN.pdf
- S.F. Bay SSS “Singlehanded Tips”:
<http://www.sfbaysss.org/tipsbook/SinglehandedTips.pdf>
(Sleep - chapter 2 pages 12-16)
- Fatigue at Sea Can Transform Reality” – Lee Tolliver – Active.com -
http://www.active.com/sailing/Articles/Fatigue_at_Sea_Can_Transform_Reality.htm
- “The Ten Golden Watchkeeping Rules” – John Jamieson – sail-world.com –
<http://www.sail-world.com/Cruising/international/The-Ten-Golden-Watchkeeping-Rules/83922>
or
<http://bit.ly/x41btz>