

Safety at Sea

aka

“International Offshore
Safety at Sea with Hands-On”

Hosted by Encinal Yacht Club

Presented by Pacific Cup Yacht Club



Why are we here?

Required

Learn or refresh safety
techniques

Emphasize value of safety
as good seamanship

Common practices among
crew and fleet



The FUN Race to Hawaii

Today's Instructors

- Michael Moradzadeh, Moderator, Pool Trainer
 - US Sailing Certified, 17x ocean crosser, large boats, Past PCYC Commodore
- Rebecca Hinden, Organizer of this Seminar, MOB trainer
 - Multiple Pac Cups small and large boats
- Julia Paxton, Fire Trainer
 - Multiple race crossings, Merchant Mariner certified
- Will Paxton, Damage Control
 - Sailmaker @ Quantum, Expert racer and fixer of things. Julia's cousin



And thanks to...

- Encinal YC
- Pacific Cup Organizing team
 - Including Rebecca Hinden, Commodore Bob Hinden, Bob & Betty Grey, and scads of volunteers
- Chuck Hawley
 - Who put in literal decades building this program, and who you saw an awful lot of in the online course.



Today's Agenda

- Welcome
- Updates and recent chilling examples
- Culture of Safety
- Break
- Preview of Breakouts
- Hands On 1 and 2
- Lunch
- Hands On 3 and 4
- Calling for and getting assistance
- Group exercise: what if...?
- Sum Up



Fighting fire
MOB methods
In-water methods
When stuff breaks



The FUN Race to Hawaii

Guidelines

- Do not do anything that you think makes you unsafe
- No video, per US Sailing guidelines and personal privacy
- Stay hydrated!
- Aim flares over water
- Watch out for your fellow participants in the water
- Follow instructors' instructions



Updates in the World of Safety

- New SER items
 - Keel Inspection: Haulouts and after grounding
 - EPIRBS will need AIS after 2027
 - But don't toss the old one
 - Storm/Heavy Weather Sails design standards
 - <https://www.ussailing.org/competition/offshore/safety-information/ser-world-sailing-special-regulations/>
- Liferafts
 - Switlik and Winslow no longer making compliant rafts
 - ORC rafts not OK for Pac Cup any more
- Sunscreen (p.s. Skin Cancer is a killer)
 - Be reef-safe



Spindrift V

- Skipper readies for Pac Cup return with minor leg infection
 - Corpsman crew expresses concern
- Rough weather at start
- Infection gets worse
 - Tries to send image to GW. Can't
 - Calls Pac Cup; We activate support
- Boat diverted with Antibiotics. They don't help
- Evacuation ordered 1000 miles offshore.
 - Where is the boat? No AIS???
 - Backup VHF antenna saves the day
- Iridium phone to me, to ship, and back to coordinate rendezvous
- USCG + National Guard + Navy + Air Force sends medics, then evacuates 600 miles offshore.
- Skipper saved. Leg saved. Heck of a story.





Oaxaca

- Coastal Cup. 20-25 kt, 6 ft seas
- Midnight watch change:
 - New crew comes up, Spinnaker trimmer shifts position to weather coaming
- Broach
 - Trimmer flipped up and over leeward lifelines
 - Surprise! Not clipped in despite orders.
- Helmsman stuffs it, stopping boat in 30 seconds
 - 2 crew go forward to douse kite
 - Trimmer never let go of sheet
 - Navigator issues Mayday
 - Skipper hits MOB button
 - Lifejacket beacon makes EVERYTHING go “BOOP BOOP BOOP”
- Trimmer appears magically at transom (we think from pressure on the kite)
 - 2 crew plus skipper move to transom. Gate won't open
 - Takes about 5 minutes to get her back on board



Takeaways

- If you can't or won't follow boat rules, don't sail on the boat
 - If it's your boat, make it clear what is not optional
- You can stop a boat under spinnaker at 75 deg off the wind
- In emergency, maintain command structure
- Fellow crew shoulda called out trimmer for not clipping in
- Verify reboarding gear (and procedures) are in good condition
- Just because you have sailed around the world 7 times, you are not immune to the laws of physics!



Newport Bermuda Fatality

- Skipper: No harness, no tether
- 11 am , big wave washes him overboard
- Crew does eye contact, MOB button, lifesling
- Skipper dons Lifesling but passes out. Line chafes, skipper slips out of sling
- Distress call failure:
 - VHF on Low
 - Iridium-linked phone in Skipper's pocket
- Difficulty starting engine?

A Newport Bermuda Race fatality occurred in the 2022 race when experienced skipper Colin Golder, 74, went overboard and died in strong winds about 325 miles from Bermuda. An independent review found his death was preventable, caused by his failure to wear a safety harness and tether, despite the race's requirements. The event highlighted broader safety concerns, including inadequate communication and crew training for emergencies



Takeaways



WHAT CREW DID
RIGHT... AND WRONG.



WHAT ABOUT THE
SKIPPER?



WHAT ABOUT THE
BOAT?



Some Thoughts

- Crew:
 - Admirable, mostly correct, MOB procedures
 - BUT!
 - Poor use of halyard. Did not have a non-chafing plan
 - Maybe should have deployed the MOM-8
 - Should have demanded systems briefings
 - Big fail: “Hey Skipper, you need your life jacket and tether!”
- Skipper
 - The life jacket thing
 - Failure to train crew on engine and boat comms
 - Having sole control of Iridium in his pocket
 - Failure to foster culture of safety in this regard
- Boat
 - Don’t blame the boat.
 - But you damn well should know how to operate it.



Not a pool
lifeguard



The FUN Race to Hawaii

“Culture of Safety”

- *Safe is Fast. Safe is Fun. Safe is Good Seamanship*
- It's a shared duty. Don't make one person be the “schoolmarm.”
- Physically and mentally rehearse response to issues
 - What needs to be done to make the issue less likely or deliver a better outcome?
 - Do that
- Everyone can *and should* call out anyone
 - Too many dead owners with zippers down
- Just say NO to eye-rollers.
 - Don't take one. Don't be one.
- Good Sailors Sail Safely



The FUN Race to Hawaii

Breakout: Fire and Flares

Julia Paxton



The FUN Race to Hawaii

Breakout: Man Overboard Recovery

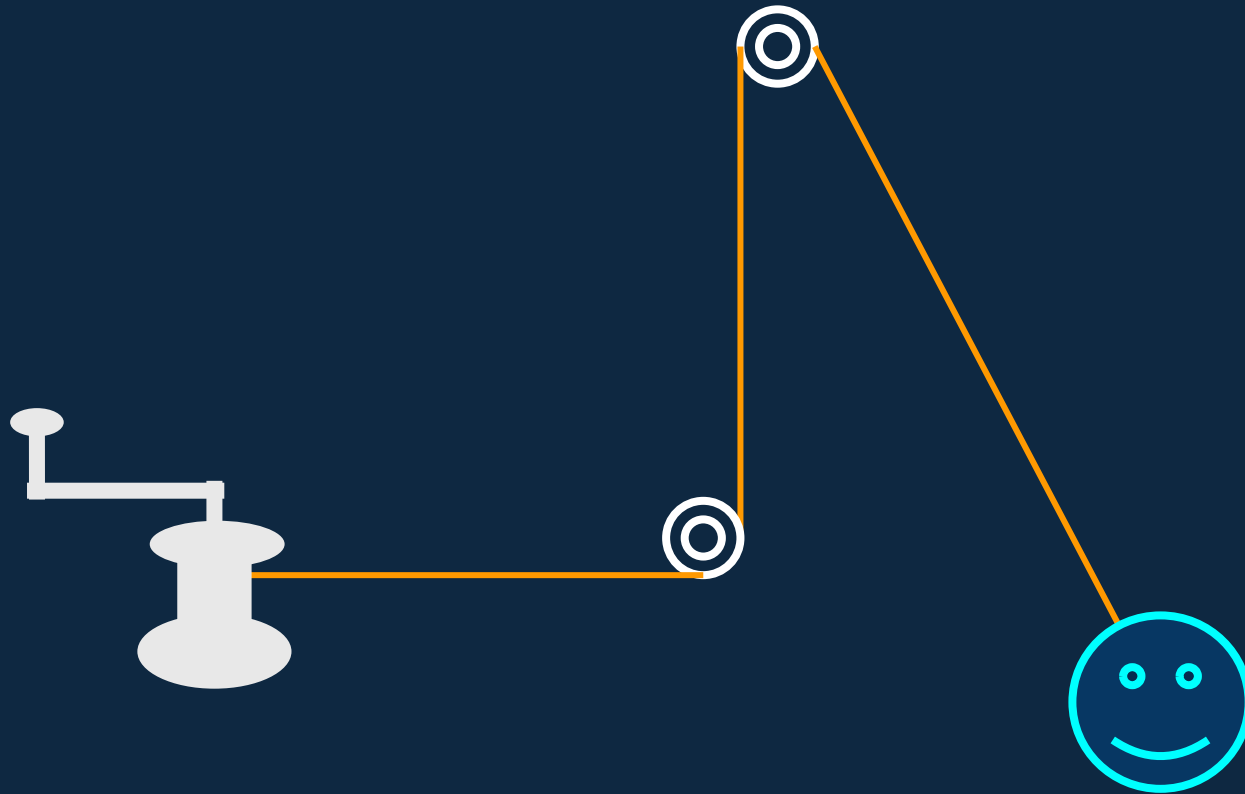
Rebecca Hinden

- We will be focusing on reboarding the casualty using the following techniques:
 - 1:1 lift
 - 3:1 tackle
 - Midline lift
 - Assisted Recovery



1:1 Lift

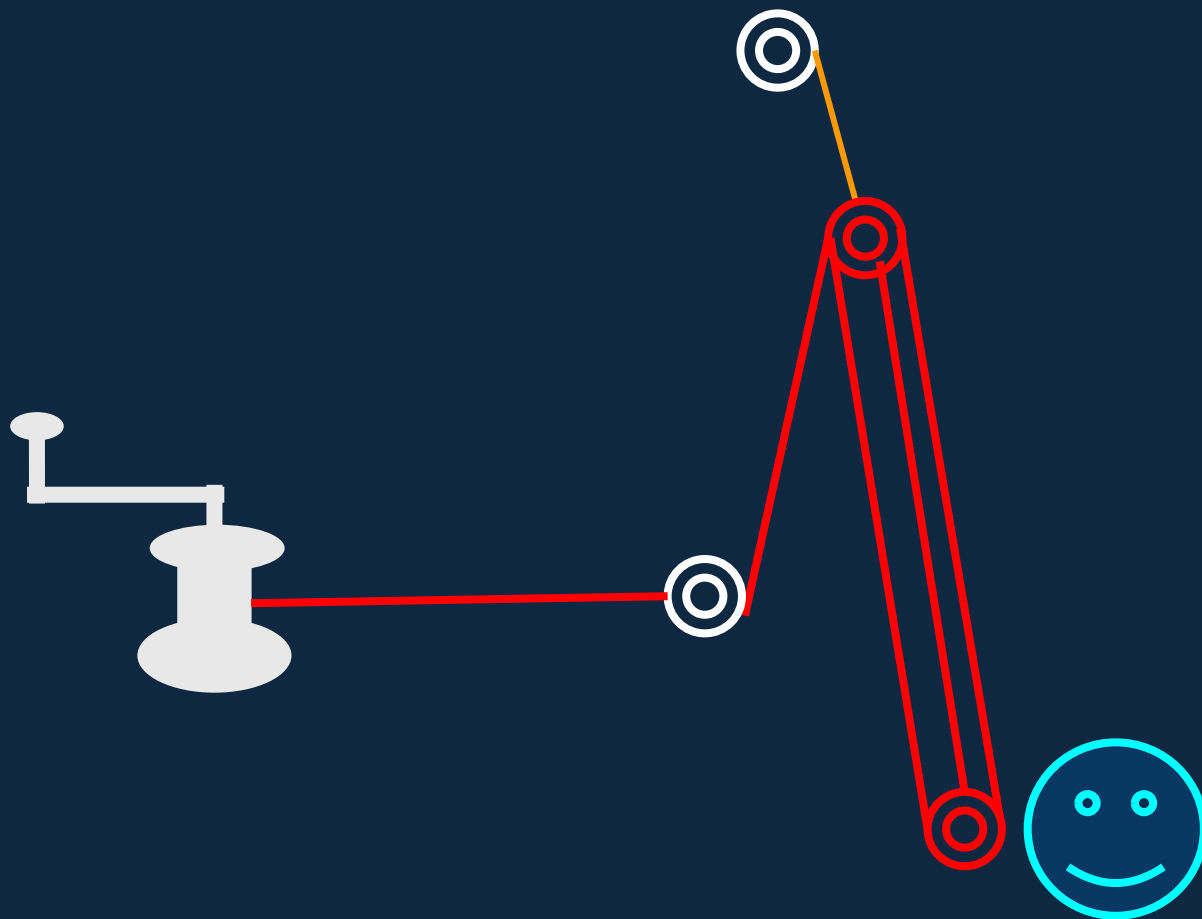
Use with lifesling, harness, or PFD



The FUN Race to Hawaii

3:1 Lift

Utilize mechanical advantages for boats with small winches



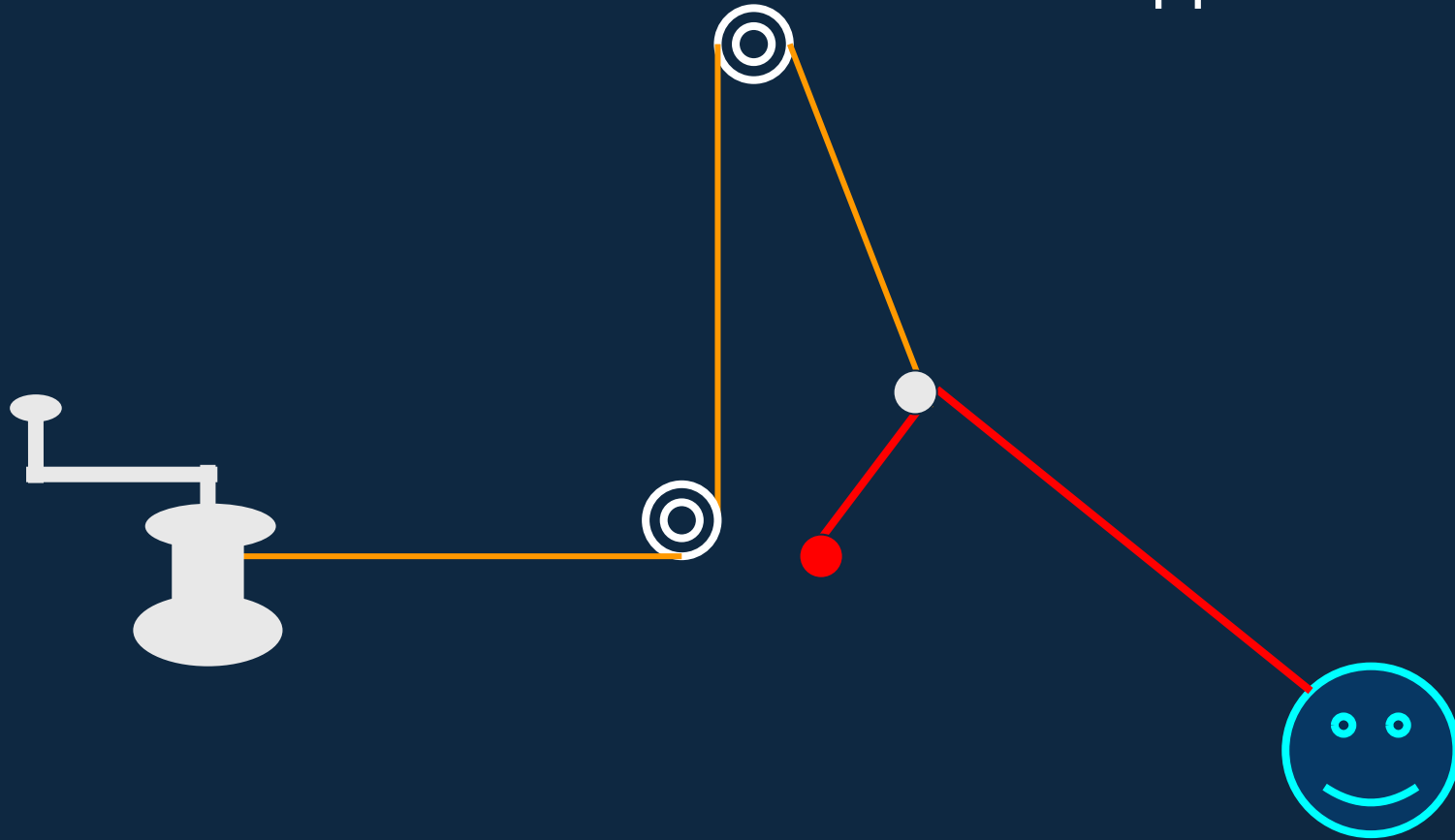
The FUN Race to Hawaii

Midline Lift

Lifts the MOB up as they approach the boat

Requires horsepower on the winch due to mechanical disadvantage

Can be used with a tether if crew falls over while clipped in.



The FUN Race to Hawaii

Assisted Recovery

Requires lowering a crewmember over the side with a halyard
Allows for reaching a incapacitated MOB member in rough conditions



Clipper Race MOB recovery



The FUN Race to Hawaii

Breakout: Pool

Michael Moradzadeh

- Take your beacon outta your lifejacket
 - And spectacles, wallet, and watch
- Enter in pairs. Check your buddy
- Methods:
 - H.E.L.P
 - Starfish
 - Caterpillar
 - Huddle
 - Lifteraft boarding, righting



The FUN Race to Hawaii

Breakout: Dealing with Damage

Will Paxton

- Some emergencies can be anticipated
 - Failed standing rigging
 - Torn sail
 - Lost steering
 - Dismasting
 - Leaky deck
- Others.... Not so much
 - Rudder post leak
 - Failed water pump
 - Broken alternator bracket



Breakouts and Lunch

PSA: Local Coast Guard personnel are currently protecting you without pay.

Consider supporting them through the Coast Guard Foundation

<https://CoastGuardFoundation.org/Donate>

And designate “**San Francisco Sector Emergency Fund**” as the Organization Name



ASSISTANCE



CALLING FOR IT



GETTING IT



GIVING IT



Mayday Mayday Mayday

- Distress calls have a particular template.
 - Promotes efficient info and drives faster response
- Three Levels
 - MAYDAY – serious imminent risk of loss of life or vessel
 - PAN-PAN (“pahn-PAHN”) – Serious injury to person or vessel
 - SÉCURITÉ (“say-CURE-ee-TAY”) – Safety alert like debris in the water
- Special
 - Calling for someone else: add “RELAY”
 - Eg MAYDAY RELAY MAYDAY RELAY MAYDAY RELAY
 - Situation resolved? Add “FINI”
 - Eg “MAYDAY FINI, we have recovered our person in the water. She’s fine.”
 - Need everyone on the radio to STFU?
 - “SILENCE SÉCURITÉ please leave this channel clear for emergency traffic only” and later “SILENCE FINI”



The FUN Race to Hawaii

Distress Comms Script

ALERT

MAYDAY MAYDAY MAYDAY

This is the sailing vessel Surprise, Surprise, Surprise. (add call sign) [break]

LOCATION

MAYDAY SURPRISE

We are located at 24 degrees 15.8 minutes North, 151 degrees 56.7 minutes West.

PROBLEM

We are taking on water, and we can't find the source of the leak.

REQUEST

We need a high capacity pump and possible evacuation of crew.

Surprise is a 38 foot sailboat with a tan deck and dark blue hull.

IDENTITY
& STATUS

There are 6 souls on board all wearing lifejackets. We have an EPIRB and a life raft.

This is the sailing vessel Surprise, standing by on Channel 16.



Use entire script before waiting for reply



The FUN Race to Hawaii

COMMS Tools

- Inland and Coastwise
 - VHF is absolute best
 - Tied in to global and national rescue networks
 - DSC Emergency Button
- Offshore
 - SSB Radio (still works, boomer!)
 - Satphone and Starlink-phone app
 - Have USCG and other assistance numbers programmed in
 - Issue VHF call anyway, someone might be nearer
 - EPIRB and other devices



The FUN Race to Hawaii

Practice

- Using deactivated VHF Radios
- Distressed Boat
 - Make up an emergency. Communicate it.
- Answering station
 - Acknowledge call. Make a relay to another boat. Suggest a course of action
- Relay answering station
 - Keep passing it on!



EPIRBs and COSPAS SARSAT

- 406 MHz Beacons

 - Category 1 float free, largely commercial vessels

 - Category 2 manual launch, largely recreational vessels

- Unique ID number for each unit

- Register it with NOAA

 - www.beaconregister.com

- World wide coverage

- Most now have an internal GPS receiver

Waterproof, reliable, independent, buoyant, rugged



The FUN Race to Hawaii

Your chances of being located rely to some degree on the quality of the information on your Beacon Registration Form.

Check the data at least annually. Make sure your emergency contacts know they are contacts.

Use the Additional Data field to provide information that might help narrow the search. Eg. If in a race, give the url for the race.



Tip from Stan:
A second EPIRB signal from the same location dramatically improves likely response time.



Access your beacon registration online 24/7 at www.beaconregistration.noaa.gov

Official 406 MHz PLB Registration Confirmation

PLB Information

Beacon Hex ID	Checksum	Serial No.	Manufacturer	Model
2DCE6 3256C FFBFF			ACR	PLB350-C

Registration Expiration Date
January 06, 2024

Owner/Operator Information

Name and Address	Telephone	Home/Work/Cell
CHARLES G HAWLEY	+1 831-406-XXXX	☐ H ☐ W ☐ C
124 P...ST	+1 831-588-XXXX	☐ H ☐ W ☐ C
SANTA CRUZ		☐ H ☐ W ☐ C
CA 95062 USA		☐ H ☐ W ☐ C
E-mail hawley.chuck@gmail.com		

General Use Data

USAGE: ☒ Private/Non-Commercial ☐ Commercial ☐ Government/Military ☐ Government/Non-Military
SPECIFIC USAGE (Please include areas you frequent in Additional Data section below)
☒ Hiking ☐ Hunting ☐ Fishing ☒ Other General Boating
VEHICLE TYPE (Please include Home Port for Boat or Principal Airport for Aircraft in Additional Data section below)
☐ Land Vehicle ☒ Boat ☐ Aircraft ☐ None ☐ Other
If Boat checked above, provide the following:
Radio Call Sign _____ Vessel MMSI # _____ AIS MMSI # _____
If Aircraft checked above, provide the following: Registration (Tail) No. _____
Additional Data (i.e., areas you frequent on land, boat home port, aircraft principal airport, if applicable):
Will likely be used along the CA coast in the vicinity of Santa Cruz, CA. May also be used for hiking in the Sierra Nevada mountains near Lake Tahoe. Vessels include small rigid inflatable boats (RIBs), sailboats, and trawlers.

Emergency Contact Information

Name of Primary 24-Hour Emergency Contact: Thomas Hawley		Name of Alternate 24-Hour Emergency Contact: Kate Hawley	
Telephone	Home/Work/Cell	Telephone	Home/Work/Cell
831626XXXX	☒ H ☐ W ☐ C	831XXXX	☒ H ☐ W ☐ C
8315XXXX	☐ H ☐ W ☒ C	831XXXX	☐ H ☐ W ☒ C
	☐ H ☐ W ☐ C		☐ H ☐ W ☐ C
	☐ H ☐ W ☐ C		☐ H ☐ W ☐ C

OMB Auth. (0648-0295) Expires: 30SEP2025
Rev. 09/2022

If you have any questions about this form or beacon registration in general, please call 1.888.212.SAVE (7283) or 301.817.4515
For information on the U.S. Search & Rescue Satellite-Aided Tracking system (SARSAT), please visit www.sarsat.noaa.gov

Mail or fax correspondence to SARSAT Beacon Registration, NOAA, NSOF, E/SPO53, 1315 East West Highway, Silver Spring, MD 20910
Fax No. 301.817.4565

If YOU Get the Call: Rendering Assistance

- Assistance may be:
 - Relaying the message
 - Providing information
 - Standing nearby in case help is needed
 - Giving a tow or providing supplies
 - Evacuating crew
 - Searching for MOB



Giving Assistance is Law

International Law

“The master of a ship at sea which is in a position to be able to provide assistance, on receiving a signal from any source that persons are in distress at sea, **is bound to proceed with all speed to their assistance**, if possible

US LAW

“A master or individual in charge of a vessel **shall render assistance** to any individual found at sea in danger of being lost, so far as the master or individual in charge can do so **without serious danger** to the master's or individual's vessel or individuals on board. (46 USC 2304(a)(1)).

Racing Rules of Sailing

“A boat or competitor shall give all possible help to any person or vessel in danger”



What are your obligations?

1. Lend assistance if you can
2. Respond to emergency communications
3. Log your actions in a logbook



Stages of a typical rescue

- **Awareness**
- **Contact**
- **Analyze your ability to respond safely**
- **Calculate the distance and time to be on site**
- **If racing, log the time and place where you stopped racing**
- **Make way to the vessel in distress**
- **Stand by the vessel in distress**
- **Maintain communication with vessel in distress and rescue agencies**
- **Transfer crew if necessary**

This is not
a time for
social
media

How much risk is too much risk?

- Take “prudent risks” to assist the other crew
- Both *proximity* and *ability* are required
- “without serious damage...to vessel or individuals”
- A great reason to have your own vessel under control



You may need to maneuver close to a vessel in distress

Why?

- Communication

- Transfer of crew or gear

- Passing a line

Methods

- Use a dinghy

- Toss a line directly

- Float a line downwind on a fender

Never fasten a line between a sinking vessel and yours!



Receiving Assistance

- Do not let quest for pickle dish cost a life.
 - Ask for help and accept it when needed.
 - Contact early, cancel if needed.
- Get Help Safely
 - Inform assisters of constrained navigation, lines or things in the water, other dangers
 - Watch out for hard contact, tangling rigs
 - Helicopter basket: let it touch water or grounded metal before you
 - “Laser flares” may repel helicopter
 - Wear lifejackets
 - Sleep when you can



Case Study: Cayenne and Tiburon

Tiburon (SC37): triple failure

Loss of drinking
water

Failed rudder
post

Failed
emergency
steering



Contacts PCYC for
assistance coordination

Cayenne (Passport 40)

Commodore
relays message

12 miles away

Breaks off
racing



“Boys, we’re gonna be late
for the party”



The FUN Race to Hawaii

Issues and Assets

- VHF Comms no good
 - Turns out, Cayenne's antenna *fell off!*
 - We rely on satphone till in handheld range
- Tiburon crew EXHAUSTED
- Cayenne has watermaker, tools, spare rudder, lines, etc
- Tiburon has Will Paxton
- “Free Bowl of Soup” J105 standing by Tiburon. We let them go



What Cayenne did

- Arrived at sunset.
 - Decided to wait till sunrise before approaching
 - We circled them all night to “keep their spirits up”
 - Skipper revised watch and bunks to get full night sleep
- At dawn
 - Tried to sail close enough to toss tow line. Not safe, almost tangled rigs
 - Floated tow line on cushion. Took Tiburon under tow
 - Used tow line and a loop to ferry water (50 gll), food, tools, spares to Tiburon
 - Kept them under tow while they jury-rigged steering. 19 hours total



What Tiburon Did

- Call for help
- Evaluate situation
- Wait out the night
- Stow new water
- Use rescue time to formulate a jury rig
- Improve it. Jury rigs can be exhausting
- Have the courtesy not to arrive at finish before the boat that helped them



Tiburon
in Tow



Flat boom becomes new rudder



Group Activity

What would you do if...

US Sailing Safety at Sea Course
Thanks to Chuck Hawley



Show a little tenderness

The wind has been ideal for a brisk sail, but now it's time to head back to the harbor. Swell and wave height is about 5' combined. About a mile from the harbor, you see a guy and gal in a 16' aluminum fishing boat; he's waving an oar.

What are your obligations?

If she is shaking uncontrollably, does that change your actions?

If the harbor entrance is breaking all the way across, how does that impact your ability to help the fishing boat?



The FUN Race to Hawaii

Try a little tenderness!

You've been sitting in Cojo Anchorage for 18 hours, waiting for the winds to subside around Pts. Conception and Arguello. Luckily, you anticipated that you might have to wait, and you're well-provisioned for the rest of the passage to San Francisco, with fuel, food, and some videos.

One of your crewmembers, who is normally pretty jovial, seems quiet and uncomfortable. He reports a dull pain in his abdomen, and takes a couple of Advil before taking a nap. When he awakes, the pain is worse, and on his lower right side.

What do you do first?

Is this a valid reason to broadcast a Mayday?



Water, water, everywhere...

You're six days into a Pacific Cup, and you're second in class. What could go wrong? But one of your crew comes on deck and declares the manual water pump indicates the tank is dry. Switching tanks doesn't solve the issue; the pump can't get water out of it, either. You have two gallons of emergency water.

What are some of the potential remedies?

What other sources of water might you have?

How can you get more?



Like no other Farallones Race

The predicted front shows up as, well, predicted in the middle of the Doublehanded Farallones race. The regular-as-clockwork northwesterly dies and is replaced by a 30-knot southeasterly. Your course back to the Golden Gate starts sagging more and more to the north, and you realize that you can't lay the entrance, nor will your 3.5HP outboard, stored below, be of any help. Your Express 27 feels tiny as the waves increase in height.

Your reefing lines aren't led, and your smallest jib is a #3 which is way over its wind range.

What are your priorities?



Milk run? More like sour milk run.

Because you've never been able to say no to a friend, you find yourself at night, powering north, in a slick 35 foot sloop that has virtually no creature comforts, with some poor soul who also couldn't say no. No dodger, no stove, certainly no heater; just a stripped out racer with a small Yanmar engine and racing electronics. Headlights on Highway 1 are discernable, and the flash of the Pigeon Point light is strangely reassuring.

Then the lights go out. Every light: navigation, instrumentation, interior, VHF radio. The boat is entirely dark, although the engine continues to rumble. Every circuit is inoperative for some reason.

What do you do?



Wait, all the shrouds are slack?

About 800nm north of Kauai, you discover during a periodic survey that the rigging seems over loose on the 68' cruising sloop that you're helping to return to the mainland. Lowers, intermediates, uppers: they are all sloppy-loose. A trip below reveals the likely reason: the mast step has been crushed for some reason and it looks like it's going to continue to disintegrate. This is only going to get worse.

You've got a banding tool, and spectra line, and three bilge pumps, some plywood bits, and an electric drill, but will they be of any use? Now the mast partners are showing some damage as the mast gently sways.



The FUN Race to Hawaii

Presentations



Thank You!



- Questions, Comments?
- Enter the race, Join PCYC
- <https://admin.pacificcup.org/shop>



November 16
Pacific Offshore
Academy Prep Seminar

Expert advice on race
topics

Sign up now

