Fresh to Frightening…
Heavy Weather Sailing
• What sails do I need?
• How should they be setup?
• The De-powering Sequence
• Tips: Getting them up and down.
• Keeping them in one piece
• Heavy Air Strategy and Tactics
Heavy Weather is Relative

10 knots is heavy weather to an 8 year old in a sabot.

21 knots is small craft warning in California.

It blows a steady 25 knots in Hawaii in the summer.

In the Southern Ocean, you might see a steady 45 knots of wind for days at a time, when it dropped to 35 knots it feels like light air sailing.

The more you practice in wind, the easier it gets.
Performance Cruising

Working sails

- Mainsail w/2 or 3 reefs
- Mid-Size all purpose genoa

Heavy weather

- Small /working jib 85-95%LP
- Staysail /storm jib
- Storm Trysail
Moderate Air
Heavy Air
Heavy Air Sails: 
the ORC #4
No Larger than 13.5% of I2
Storm Jib

- 5% of I²
Storm Jib vs. Heavy Weather Jib
Navy 44

Heavy weather jib not greater than 13.5% of $I^2$

Independent means of attachment for any luff groove devices
How are you going to do it now?
It’s Easier with Hanks
Do it bare-headed!
The Inner Forestay Alternative
You Could Roll it...
Getting Serious
• Mainsail Reefs

Setup

Where?

How Many?

Reef Placement / Planform
Zarafa Mainsail (m²)

<table>
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<th>Reef</th>
<th>Number of Points</th>
<th>Oftset (m)</th>
<th>Stack (m)</th>
<th>Width (m)</th>
<th>Parallel to Foot</th>
<th>Leech Ht (m)</th>
<th>Luff Ht (m)</th>
<th>Luff Angle (°)</th>
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Apply
Cancel
Trysail
THIRD REEF OR STORM TRY SAIL?
Separate track
What About In Mast Furling?
The Depowering Sequence
Race

- Full Main / Light #1 0-8
- Full Main / Medium #1 8-14
- Full Main / #2 or Heavy Jib 14-20
- Full Main / #3 or H+ Jib 19-25
- Full Main / #4 ORC Jib 24-28
- Reef Main / #4 28-32
- Reef Main / #5 32-36
- Double Reef / #5 36-40
- Three Reefs or Trysail / SJ 40+
The Depowering Sequence
Cruise

- Full Main / Full Genoa 0-12
- Reef Main / Full Genoa 12-20
- Full Main / Partially furled Genoa 14-20
- Reef Main / Working Jib 19-25
- Double Reef Main / Working Jib 24-35
- Three Reefs or Trysail
  - / SJ/Staysail 35+
Keeping Them in One Piece

- Spreader/stanchion/pulpit patches
- Batten pockets against rig
- Sew or tie in battens (carry spares)
- Minimize flogging
- Watch what you are pulling on
Strategy and Tactics
Strategic Tip #1…
Know When to Say No

- If your trip is less than 5 days, given the availability of modern weather forecasting, you will probably never have to experience extreme conditions
- If possible, stay in port until bad weather passes
- If underway, find a safe port or anchorage
- Know your limitations… Once you are committed there is no turning back
- Are there intermediate ports to use in the event that weather threatens?

- How difficult are the entrances? Can they be negotiated in foul weather, with a sea running, or at night? Do you have the right charts?

- Will you be on a lee shore?

- How seaworthy is the boat? How fast can she travel under power (including range) and under sail? The wind often dies in the approach path of a major storm system.
Strategic Tip #2
It’s All About the Team

- Steering is the key to sailing in heavy weather
- Your pool of helmsmen is critical
- Ideally everyone can steer
- Let your inexperienced crew steer during the day when visibility is good and conditions are reasonable
- Save your best helmsmen for night time, when visibility is poor and when squalls build up
Strategic Tip #3
Panic Early… Avoid The Rush

On Deck Preparation

• Jack Lines Rigged
• Remove all extra cockpit canvas and dodgers
• Hatches secured and taped
• Reef lines led
• Coil and secure all lines and halyards
• Rig inner forestay and backstays
• Preposition all storm and heavy weather sails
• Hatch boards in and secured
• Cockpit lockers secured
• Rubber Flap over Engine Exhaust at Transom
Below deck Preparation

- Secure all heavy objects batteries, floorboards, books etc.
- Lock gimbaled stove and reefer doors
- Stow sails in proper order heavy on top
- Test pumps (lanyards on pump handles)
- Close all unnecessary thru hulls
- Call in position
- Charge batteries
- Install or have ready ventilator caps
- Preposition buckets below
- Have a grab (ditch) bag at the ready
- Stow all galley equipment (pots Pans)
- Pre prepare thermos of hot soups make sandwiches and put out snacks and energy bars Freeze dried food
- Get rigging cutters out with a lanyard attached
- Rig lee cloths on the bunks
The Crew

- Eat when you can; bring all your clothes
- Keep the bunks dry
- Have headlight, knife, personal epirb
- Have reliable routines and timely watch relief
- You are going to be cold, wet, exhausted and miserable… embrace it
The Squall

Get it down

- all hands on deck; battle stations
- mainsail halyard ready to run
- sail ties ready
- GPS dialed in
Surviving... Upwind
Fore reaching

- A way to slow the boat down to get some rest.
- With a reefed main, sheet it close to the centerline, and lock the helm amidships.
- Adjust the helm so the boat sails up into the wind, starts to stall, then bears off and starts sailing again.
- The boat sails, up and then back, averaging 60 to 90 degrees off the wind and at 4 to 7 knots.
Heave-To

Turn the Boat Into the Wind & Let out the Mainsail

Close Reach

Wind

Come About, Back the Jib & Slow the Sailboat

Close Reach
Parking Your Cat
Downwind

- Traditional Approach – Slow the boat
- With Modern Designs – Speed is your friend
- Higher speed allows more steering control
- Overtaking wave will have less impact
- If you are racing, put up the biggest sails you can handle, put on your best helmsmen, and go surfing
- If you are cruising or short-handed, reduce sail early and put best helmsmen on the wheel
- Dead downwind is probably not the best option
Don’t Auger In...
A Traditional Approach… the drogue

- Anything towed from the stern to slow the boat down.
- Ideally it should be deployed 2 waves back, so when the boat is on the face of the wave, the drogue is on the back of the second wave.
- You need strong attachment points and chafe free for the rode.
- Leading the rode to an anchor windlass or electric winch will help retrieve the drogue
Sea Anchor

● A tool to be used when normal seamanship techniques are inadequate. It is deployed off the bow, where a drogue is deployed off the stern.

● Can be used to:
  ● Stop the boat off a lee shore
  ● To make repairs in comfortable, quiet conditions
  ● To jury rig after a broken rudder or mast
  ● To allow a boat overwhelmed by heavy weather a break to rest crew and put the boat back in order.
Beware of a Lee Shore

Breaking waves will occur at a depth of 1.3x the wave height at shoals (10’Wave Breaks in 13.3’of water)
Heavy Air Can Be Fun!

- Prepare your boat
- Prepare your crew
- Practice when it is windy
- Have a positive attitude
- Enjoy it, don’t fear it