Heavy Weather and Storm Sails

Am I going to need to know this?

What sails do I need?

How should they be set up?

The de-powering sequence

Tips

Heavy air strategy and tactics

Heavy Weather is relative

- 10 knots is heavy weather to an 8 year old in a dinghy
- 25 to 33 knots is small craft warning in the US Northeast
- It blows a steady 25 knots in Hawaii in the summer
- In the southern oceans we might see a steady 45 knots. If it drops to 30 knots if feels like light air.
- The more you practice in wind, the easier it gets

Performance Cruiser

Cruising

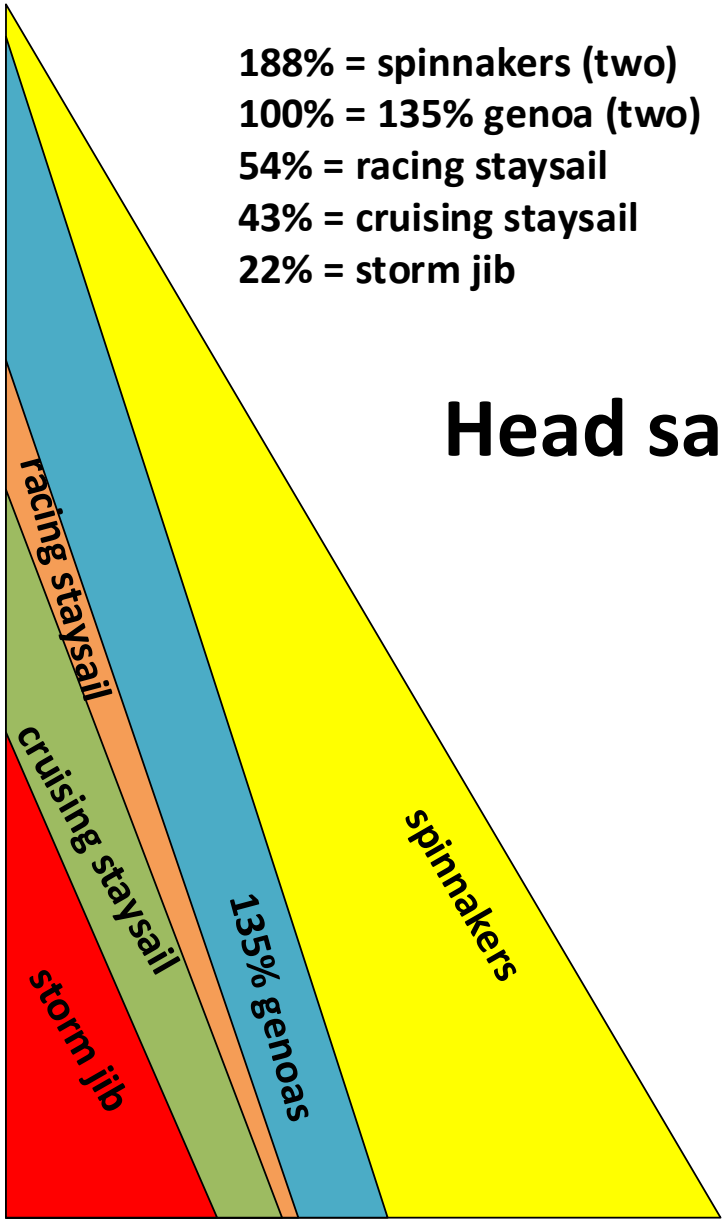
- Mainsail with 2 or 3 reefs
- Mid-size all purpose genoa (135%)
- Additional options:
  - Staysail
  - cruising asymmetric spinnaker
  - set of sails for racing

Heavy Weather

- Storm trysail
- Options:
  - Small/working jib (85% - 95%)
  - Staysail
  - Storm jib

188% = spinnakers (two)
100% = 135% genoa (two)
54% = racing staysail
43% = cruising staysail
22% = storm jib

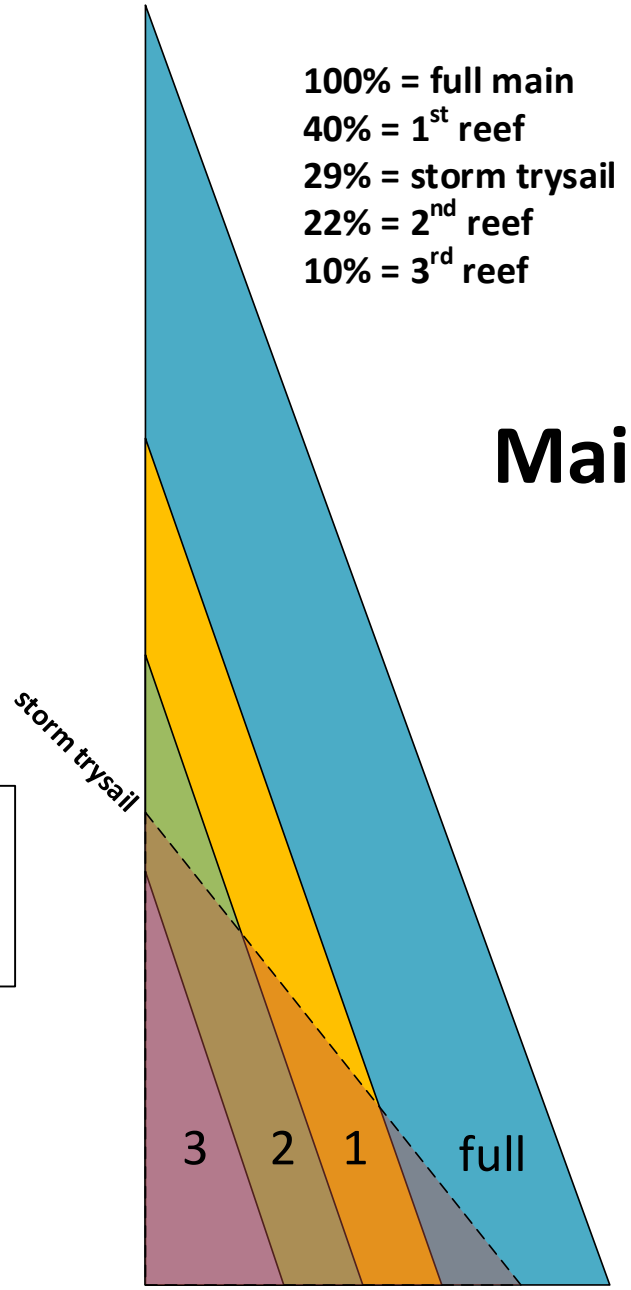
Head sails



Comparative areas of sails

100% = full main
40% = 1st reef
29% = storm trysail
22% = 2nd reef
10% = 3rd reef

Main sail



Practice before you go!

De-powering sequence – performance cruiser

Sail Configuration	Wind Speed
Full Main/Full Genoa/Spinnaker	0 – 15
1 reef Main/Full Genoa	15 – 20
1 reef Main/partial furl genoa, staysail	19 – 25
2 reef Main/working jib, staysail	24 – 35
3 reef Main, storm trysail/storm jib, staysail	35+

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 at sea, find a safe port or anchorage.
- Know your limitations. Once you are committed, there is not turning back.

Voyage planning considerations for weather

- How robust are your communications for receiving weather information?
- Are there intermediate ports if weather threatens?
- How difficult are the entrances (seas running, at night, etc.)? Do you have good charts?
- Will you be on a lee shore?
- How seaworthy is the boat? How far and fast can you travel on the engine? (wind often dies as a major storm approaches).

Tip #2 = It’s all about the crew

- Steering is the key to sailing in heavy weather
- Your pool of helmsmen is critical
- Ideally everyone can steer
- Let your least experienced helmsmen steer during day when visibility is good and conditions reasonable.
- Save your best helmsmen for night time, when visibility is poor and when squalls build up.
- Autopilot? Yes, but not always. Many considerations.

Tip #3 Panic early … avoid the rush

On Deck preparations

- Jack lines rigged (should be rigged at sea at all times anyway)
- Remove extra cockpit canvas & dodgers
- Hatches secured and taped if needed
- Reef lines led (if applicable)
- Coil and secure all lines and halyards.
- Rig inner forestay and backstays (if applicable)
- Position storm and heavy weather sails (any sheets & hardware should already be rigged on these sails)
- Hatch board in and secured
- Cockpit lockers secured

Tip #3 Panic early … avoid the rush

Below Deck preparations

- Secure heavy objects
- Lock gimballed stove & reefer/refrig doors
- Bilges clean, pump strainers clean, test pumps
- Close unneeded through hulls
- Charge batteries
- Stow galley equipment
- Prepare thermos of hot soup, make sandwiches, put out snacks & energy bars. Have bottles to hydrate (important).
- Call in to your shore support to report position and situation.

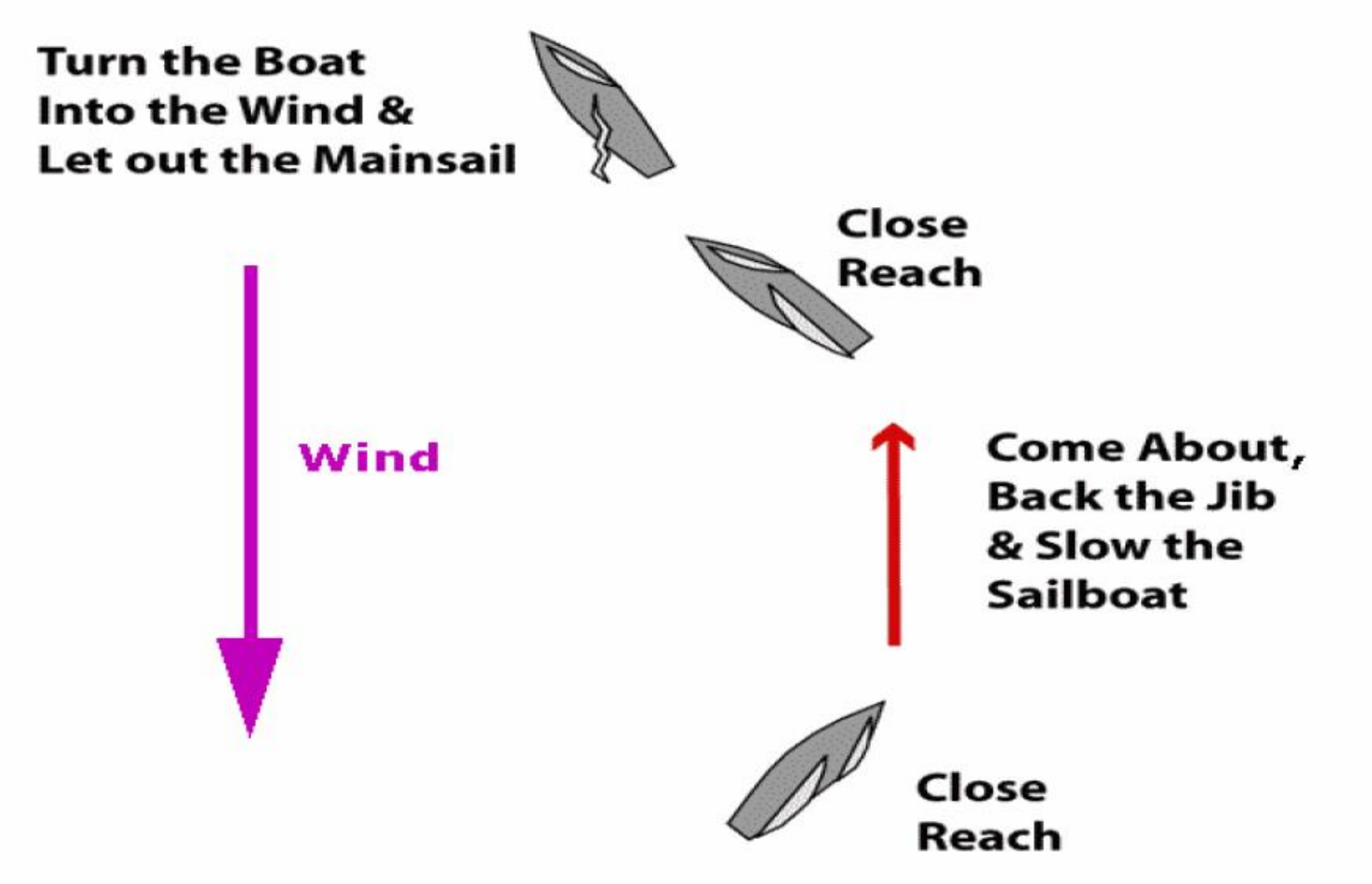
The crew

- Eat when you can.
- Keep the bunks dry.
- Have headlight, knife, AIS MOB beacon
- Have reliable routines & timely watch relief
- Drink plenty of fluids. Dehydration often occurs in heavy weather.

Slowing Down – 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 20 to 70 degrees off the wind at 4 to 7 knots.

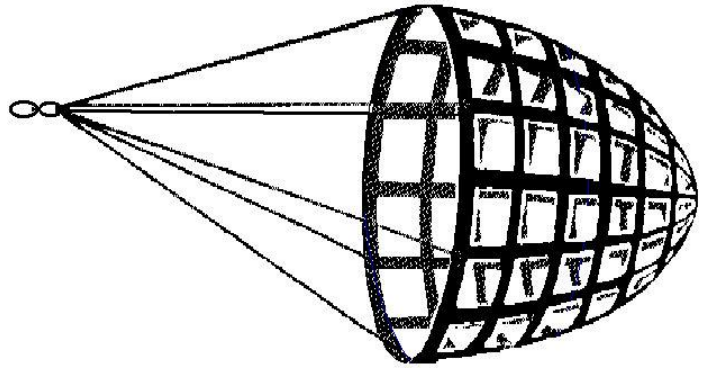
Heave-To


Turn the Boat
Into the Wind &
Let out the Mainsail
Close
Reach
Wind
Come About,
Back the Jib
& Slow the
Sailboat
Close
Reach

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 helmsman, and go surfing.
- If you are cruising or short handed, reduce sail early and put on your best helmsman
- Dead downwind is probably not the best option.

Slowing Down – warps and drogues



- Anything towed from the stern to slow the boat down.
- Ideally a drogue should be deployed 2 waves back, so when the boat is on the face of a wave, the drogue is on the back of the second wave.
- You need strong attachment points and chafe free lead for the rode. A bridle works best.
- Leading the rode to a winch will help retrieve the drogue and make it easier to control.

Sea Anchor

- Deployed off the bow. A drogue is deployed off the stern.
- Can be used to:
  - Stop the boat off a lee shore
  - To make repairs in more comfortable conditions
  - To give the boat a break in heavy weather to rest the crew and restore the boat.

Heavy Air can be fun!

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