

# Storm Sails

## Heavy Weather Technique

Offshore Safety at Sea Seminar

Ed Cesare

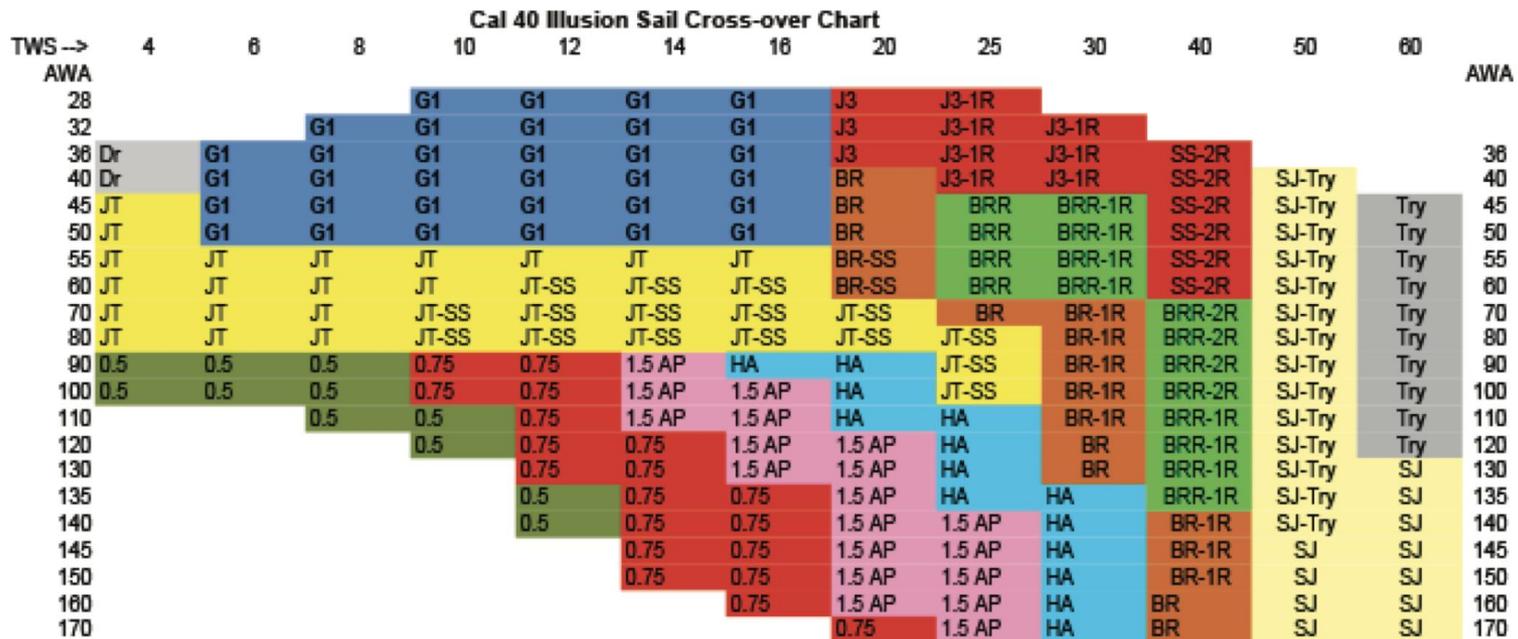
US Sailing / Storm Trysail

# Sail inventory

---

- Set up intermediate forestay and runners
- Bend on sails which may be needed
  - Trysail, sheets and lead blocks
  - Heavy weather jib and storm jib with sheets
- Reeve deep reef lines
- Inspect running rigging for chafe
- Storm sail images courtesy of Carol Hasse, Port Townsend Sailmakers

# Storm Sails



MAIN CODE	DESCRIPTION
	Full
1R	1st reef
2R	2nd reef
Try	Storm Trysail

JIBS CODE	DESCRIPTION
G1	155 3DL genoa
JT	Jib Top, 155%
J3	#3 115% Kevlar
BR	125% Blast Reacher
BRR	Blast Reacher, reefed clew & tack
SS	Upwind Staysail
SJ	Storm Jib

KITES CODE	DESCRIPTION
0.5	500 Airx
0.75	700 AIRX
0.8	.8/.75 bean bag
1.5 AP	1.5 oz. All-purpose
HA	1.5 oz 2-ply heavy air

# De-power the sail plan

---

- Flatten sails
  - Backstay, halyard tension, foot tension
- Traveler down
- Sheet outboard
- Select flatter, newer sails
  - Don't try to use a blown out sail on the assumption that it might, in fact, blow out

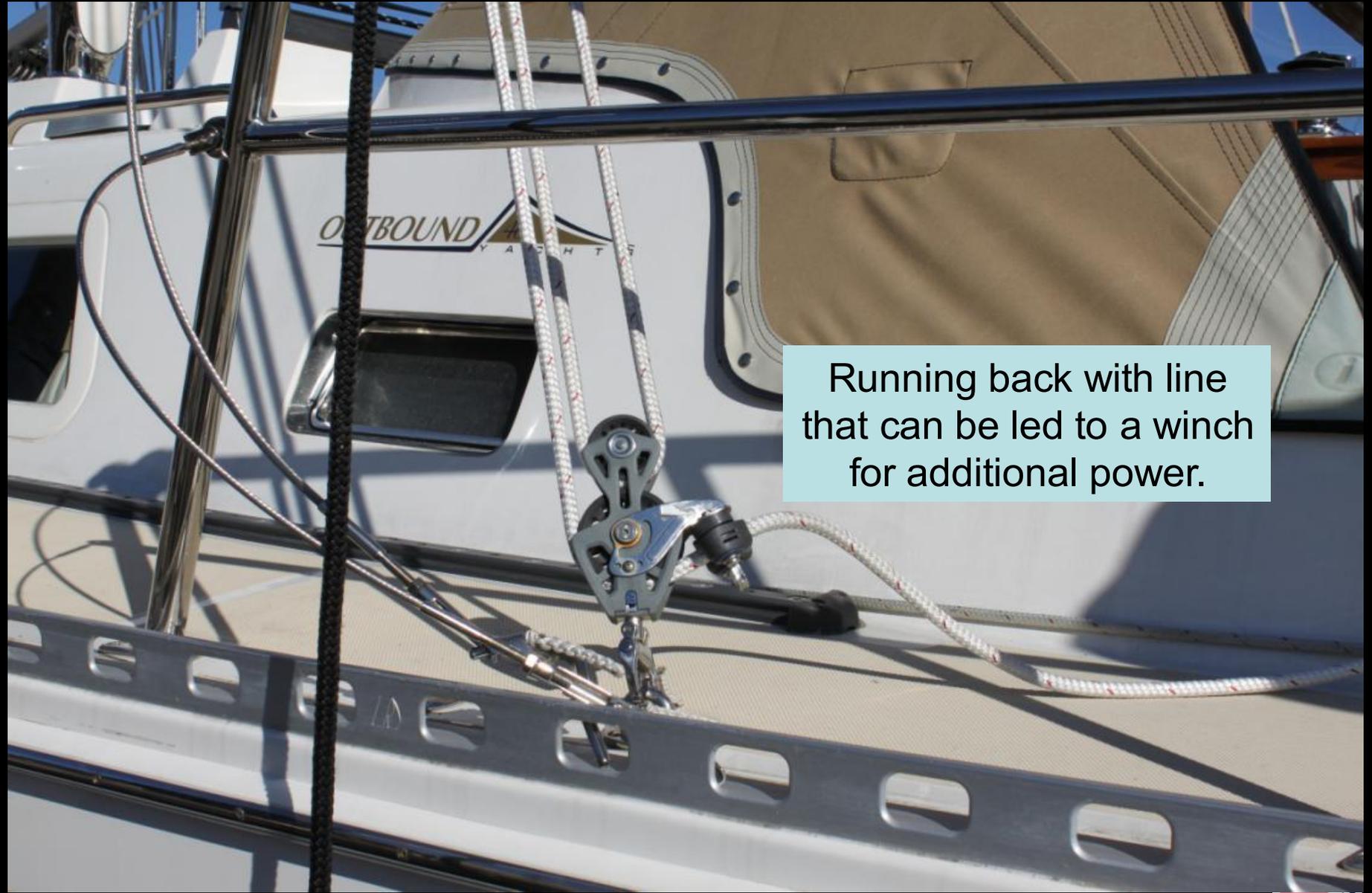


# Shorten sail as the wind builds

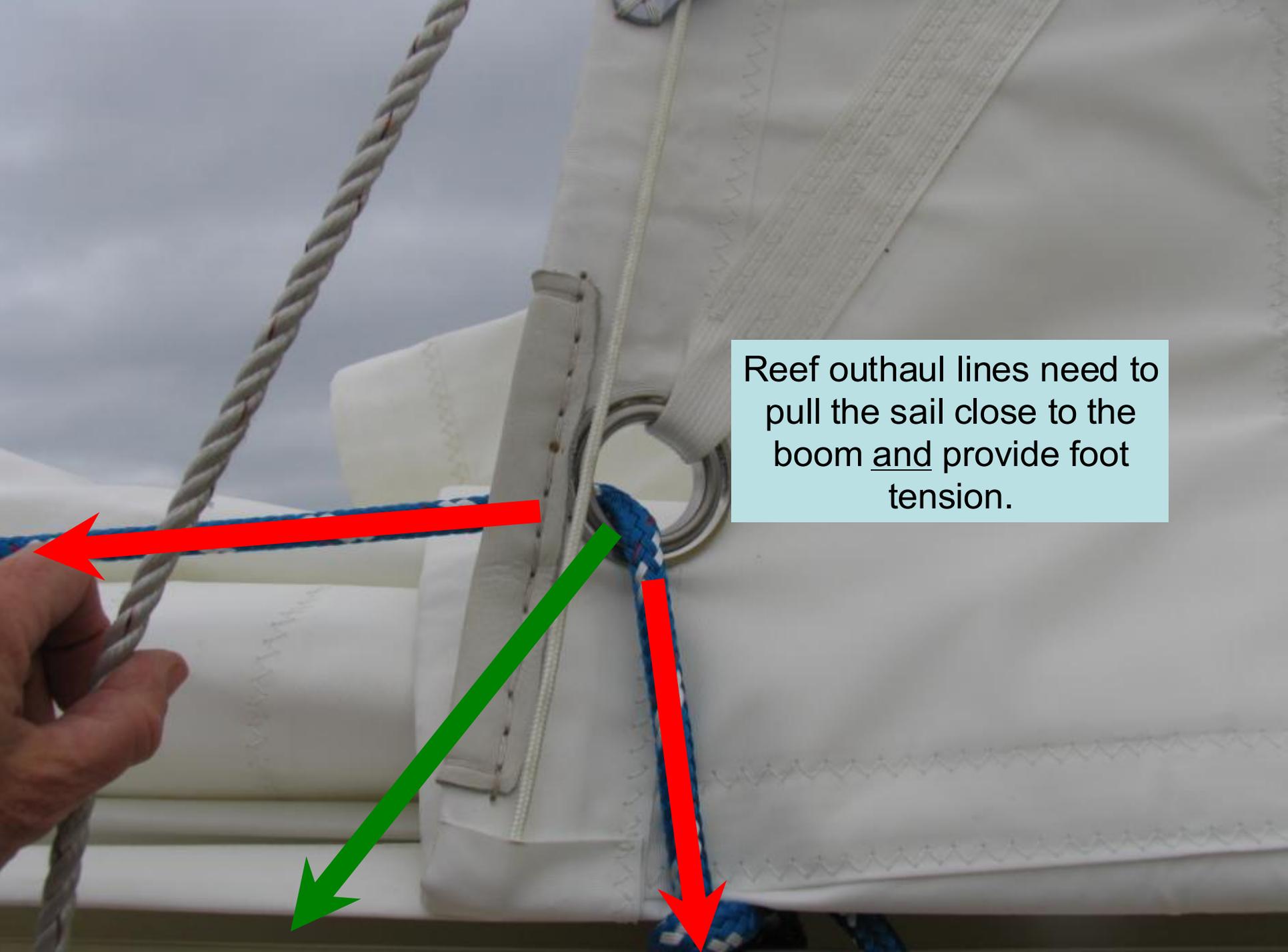
---

- Experiment with sheet leads and hydraulic settings before you experience storm conditions
- Keep helm balanced
- Move CE towards center of boat
- Counteract stays'l tension with runners/checkstays





Running back with line that can be led to a winch for additional power.



Reef outhaul lines need to pull the sail close to the boom and provide foot tension.

A close-up photograph of a person's hands adjusting a reefing tack on a sailboat. The person is wearing a dark blue long-sleeved shirt. The tack is a metal fitting with a chain and a rope attached. The sail is white with a decorative zig-zag pattern. The background shows a body of water and a distant shoreline under an overcast sky.

Reefing tacks need to approximate the location of the tack when the sail is unreefed.

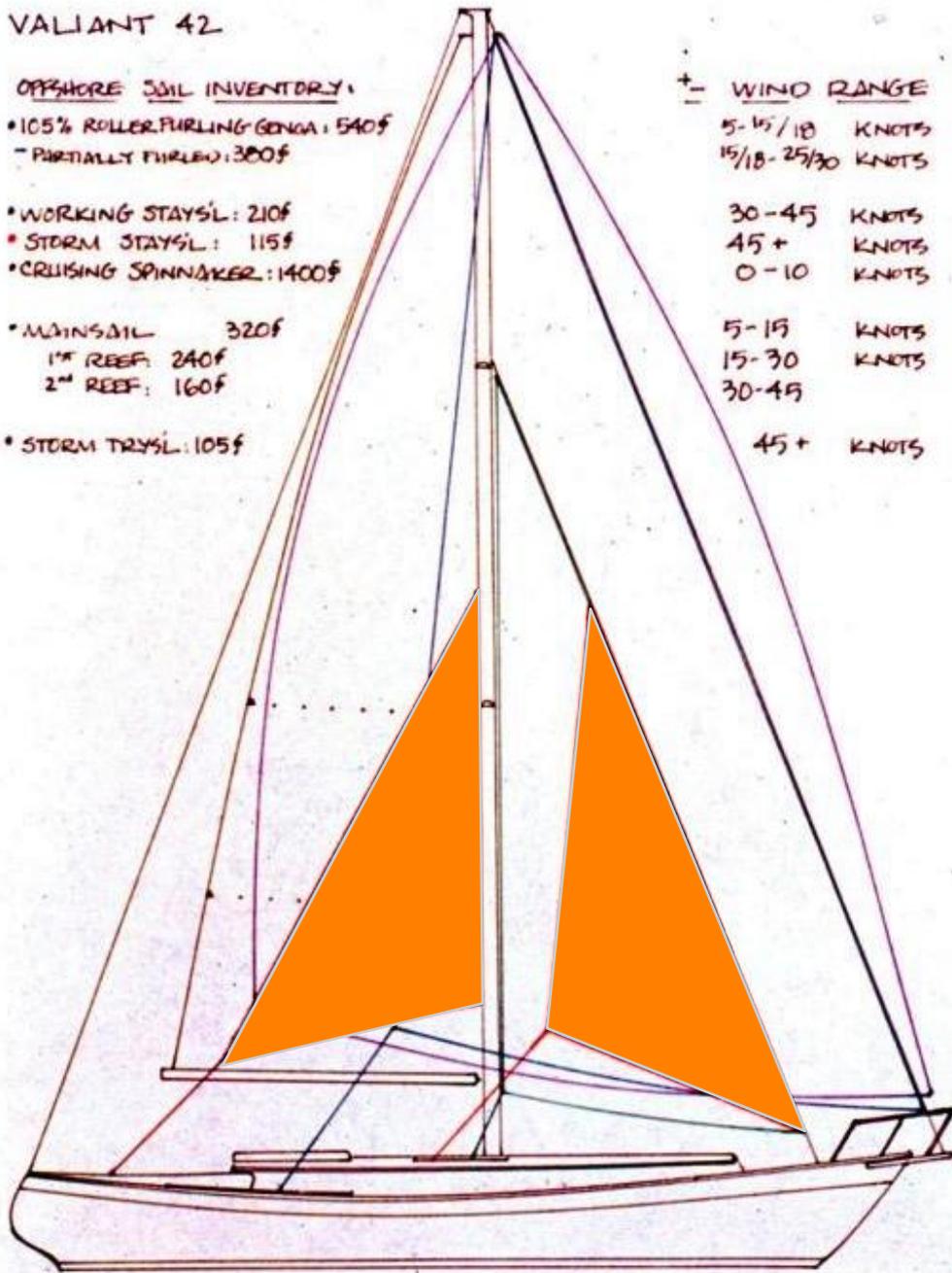
# VALIANT 42

## OFFSHORE SOIL INVENTORY:

- 105% ROLLER FURLING GENOA: 540f
- PARTIALLY FURLED: 300f
- WORKING STAYSIL: 210f
- STORM STAYSIL: 115f
- CRUISING SPINNAKER: 1400f
- MAINSAIL 320f
  - 1<sup>st</sup> REEF: 240f
  - 2<sup>nd</sup> REEF: 160f
- STORM TRYSIL: 105f

## + - WIND RANGE

- 5-15/18 KNOTS
- 15/18-25/30 KNOTS
- 30-45 KNOTS
- 45+ KNOTS
- 0-10 KNOTS
- 5-15 KNOTS
- 15-30 KNOTS
- 30-45
- 45+ KNOTS





This is what happens if you try to use your furling genoa as a storm jib.



# Storm Sails: Storm Jib

---

- Offshore Special Regulations require that it be no larger than 5% of luff squared  
Luff = 50', SA < 125 ft<sup>2</sup>
- Cannot rely on headfoil or other slotted headstay
- High clew to allow waves to pass underneath
- Move inboard to stays'l stay to keep CE inboard







Put storm jib hanks on a length of line to keep the sail from being lost over the side.

Transfer one hank at a time from the length of line to the stay.



The storm jib is bent on with the bright head panel.

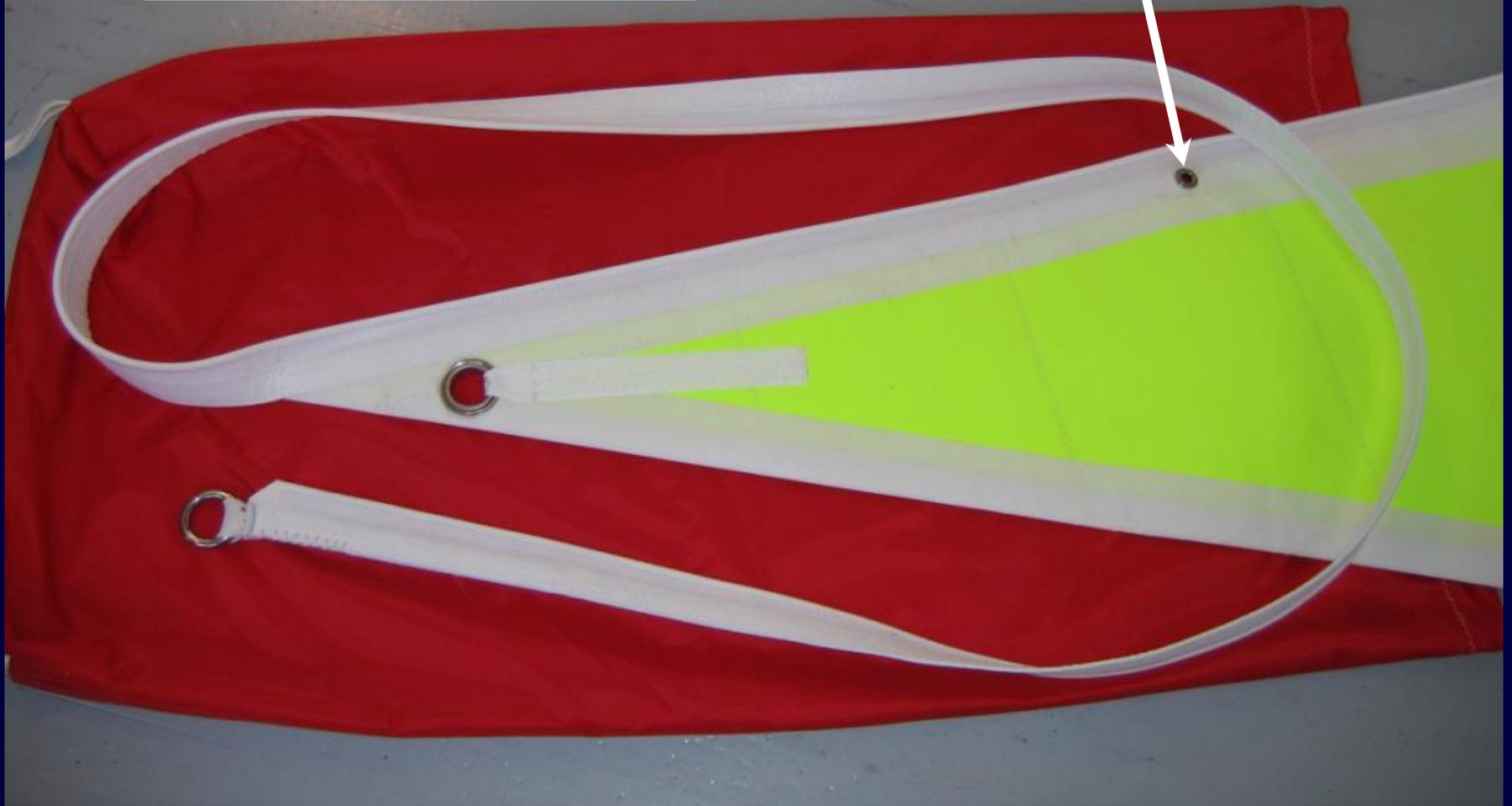




Completed sail showing chafe protection, pennant, turnbuckle, etc.

Extra long luff tape spreads the load so the sail doesn't pull out of the headfoil.

Extra grommets for attaching the sail if the headfoil is broken.



# Storm Sails: Storm Trysail

---

- Does not rely on boom (which may have been broken already)
- Generally sheets to gunwale aft
- Uses two sheets, like a genoa
- May require second track on many masts



VERTUE CLASS SLOOP

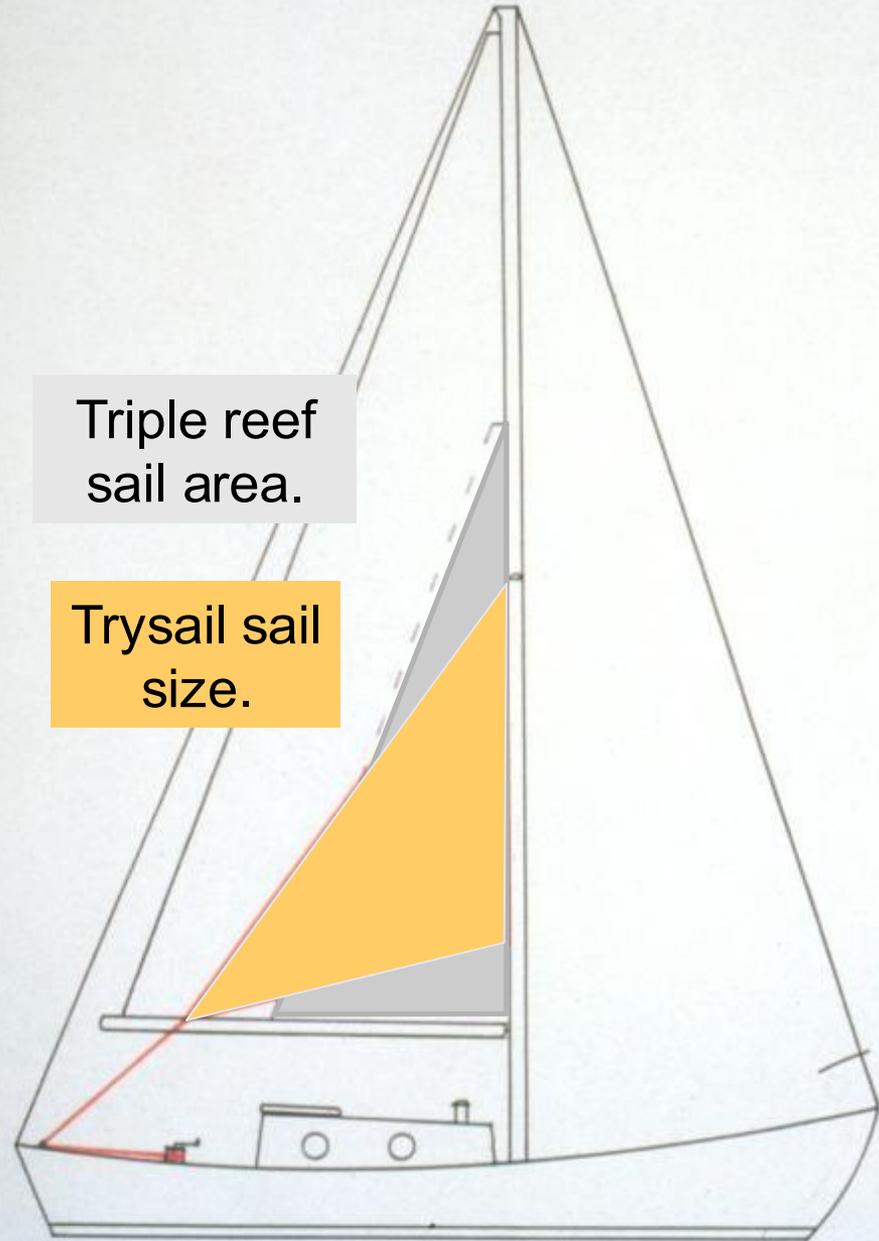
TRYSAIL

SQUARE FOOTAGE =  $\frac{1}{3}$  MAINSAIL

The size of the storm trysail should be about  $\frac{1}{3}$  of the area of the main.

Triple reef sail area.

Trysail sail size.

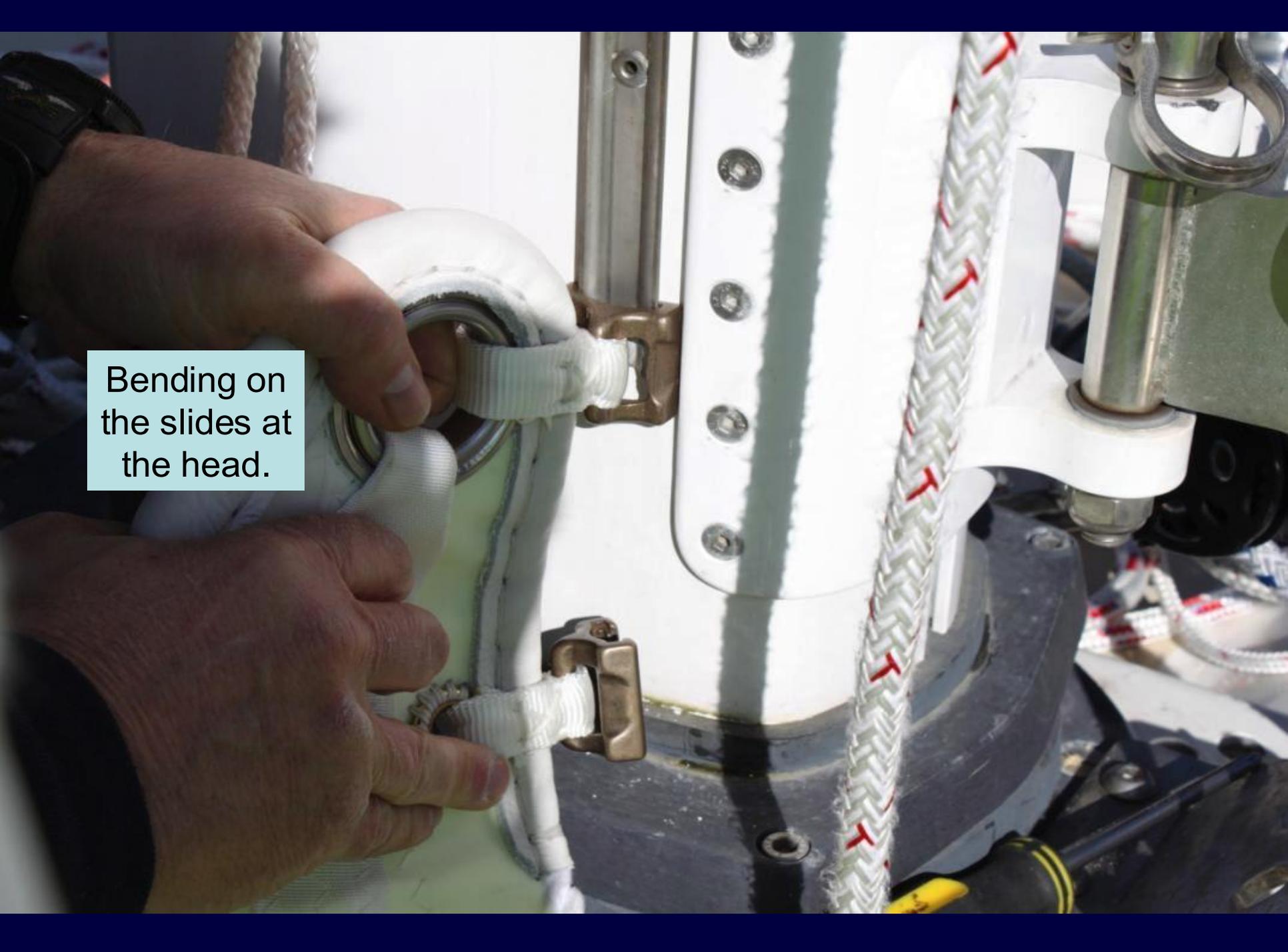




Track for  
storm  
trysail.



Track stop  
at the  
bottom of  
the trysail  
track.



Bending on  
the slides at  
the head.

Storm trysail bent on  
and ready for hoisting.  
Sail can be bagged  
and left in place.



Storm  
trysails  
require two  
sheets, like  
a jib.





Example of trysail sheets interfering with Stack Pack mainsail cover.

Trysails will require a pennant so they can fly clear of the main.





Boats in in-mast furling can also use trysails if they have a mast track for that purpose



# Crew Maintenance

---

## Maintain yourself

### **Eat**

*before you're hungry*

### **Dress**

*before you get wet*

### **Add Layers**

*before you get cold*

### **Rest**

*before you're exhausted*

### **Drink**

*before you're thirsty*



# Storm Technique

---

- C Choices are Condition/Boat Dependent!
- Evaluate the Characteristics of your boat
- Evaluate the Characteristics of your crew
- Evaluate the duration of the Wx Event
- Choices are Condition/Boat Dependent!

# Storm Technique

---

## How To Heave-To

1. Tacking without releasing the headsail sheet. The sail will backwind.
2. Adjust the main or trysail for a slight amount of drive (forward and to leeward).
3. Tie off the helm so the boat will head up if it picks up too much speed.

TIP: To avoid taking breaking waves on the beam, balance the boat with the bow about 40–60° off the wave angle.

# Storm Technique

---

- Close Reaching – TWA 60 – Shortened Sail
- Motor sailing to slowly to windward
- Lying Ahull
- Running Off – Drogues, Warps, Sea Anchors

# Final Thoughts

---

“Weather the storm you cannot avoid,  
and avoid the storm you cannot weather.”

- Understand what techniques work with your boat.
- Prepare your vessel in advance.
- Have small, strong sails and reliable means of setting them.
- Bring lots of drivers!

# Final thoughts

---

- Avoid heavy weather if possible
- Prepare in advance
  - Keep crew rested, hydrated and fed
- Have good weather information
- Have the proper tools
  - Storm sails
  - Drag devices
  - Lots of drivers