



Session 3: Hulls, Rigging & Sails

Topics We Will Reinforce:

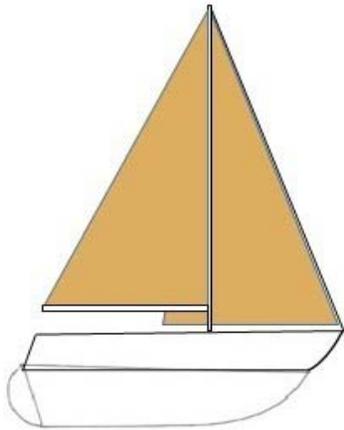
- Common Hull Configurations
- Common Sailboat Configurations/Rig Types
- Types of Rigging
- How the Wind Makes the Boat Go

Topics We Will Reinforce:

- Points of Sail
- Sail Trim
- Tacking
- Jibing

Common Sloop Hull Configurations

Types of fixed keels



Full

Least heel
Slowest
Most comfortable



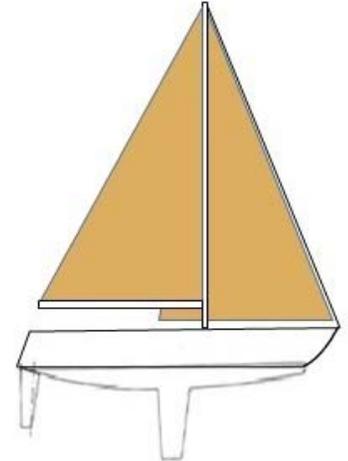
Modified Full

Great heel reduction
Slow
Very comfortable



Fin with skeg rudder

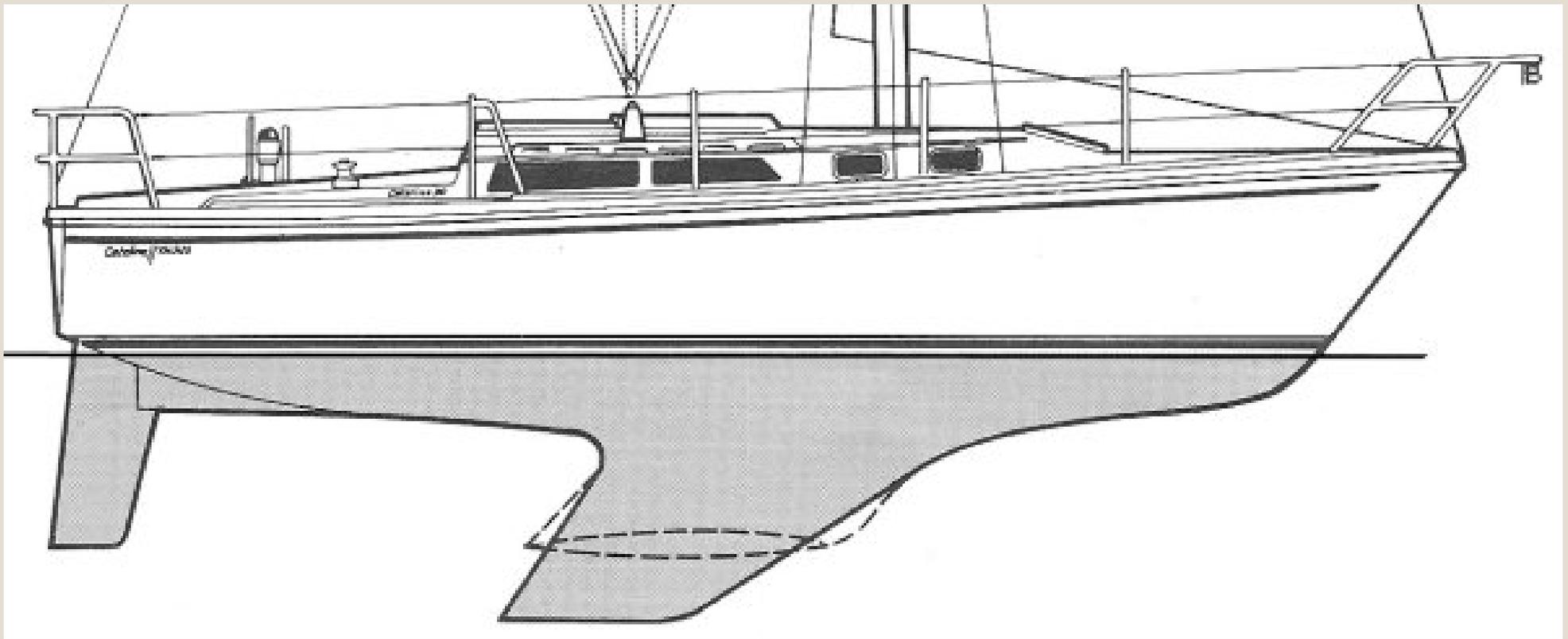
Faster
Windward performance
Protected rudder



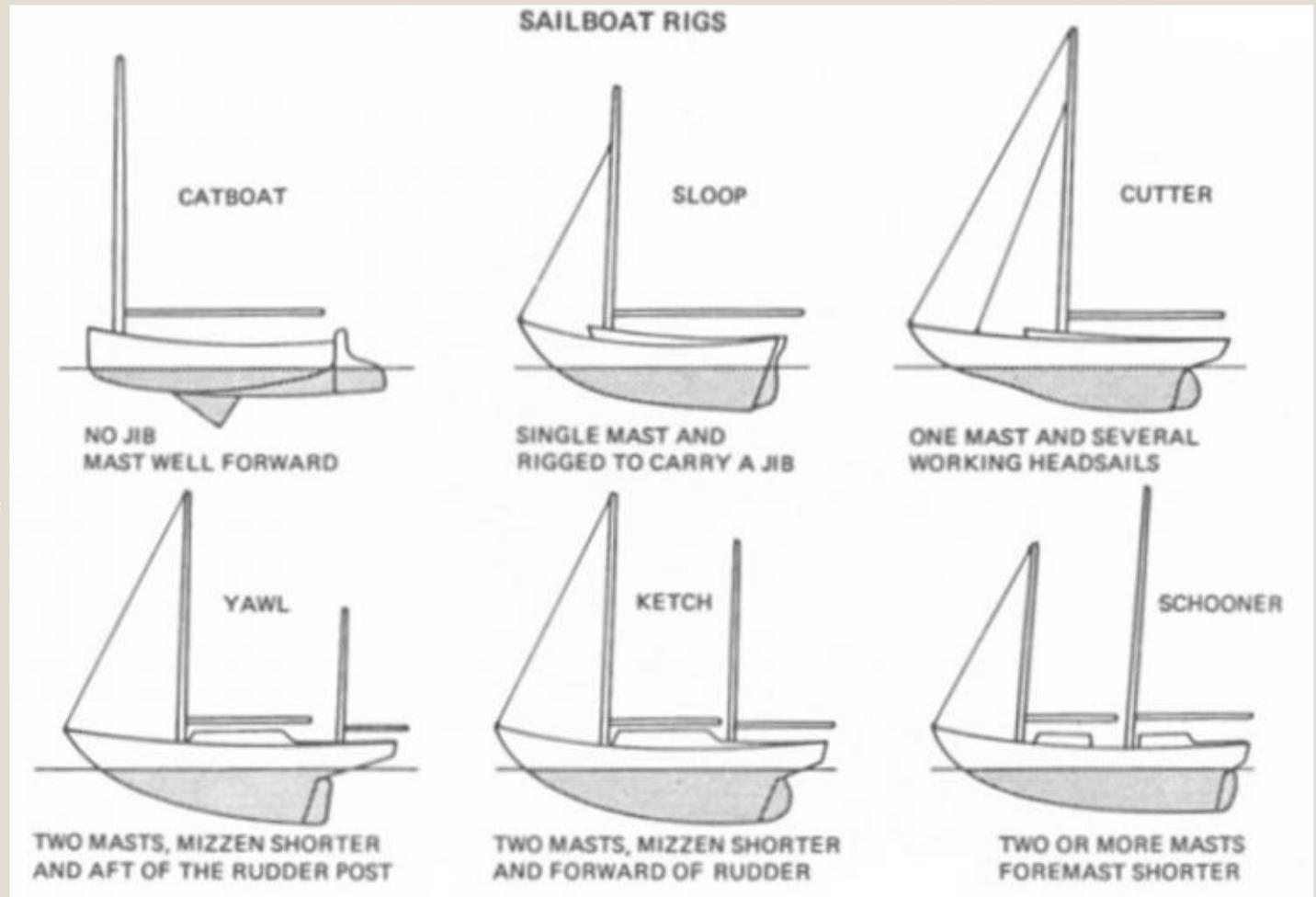
Fin with spade rudder

Fastest
Windward performance
Vulnerable

A Catalina 30 Hull



Common Sailboat Configurations /Rig Types





Some of Our Neighbors:

Cutter

A sloop with its mast set further aft allowing two foresails to be set.

This allows more sail combinations (to balance the center of effort).



Some of Our
Neighbors:

Ketch

A two masted sailboat.
The smaller (mizzen)
mast is in front of the
rudder post.



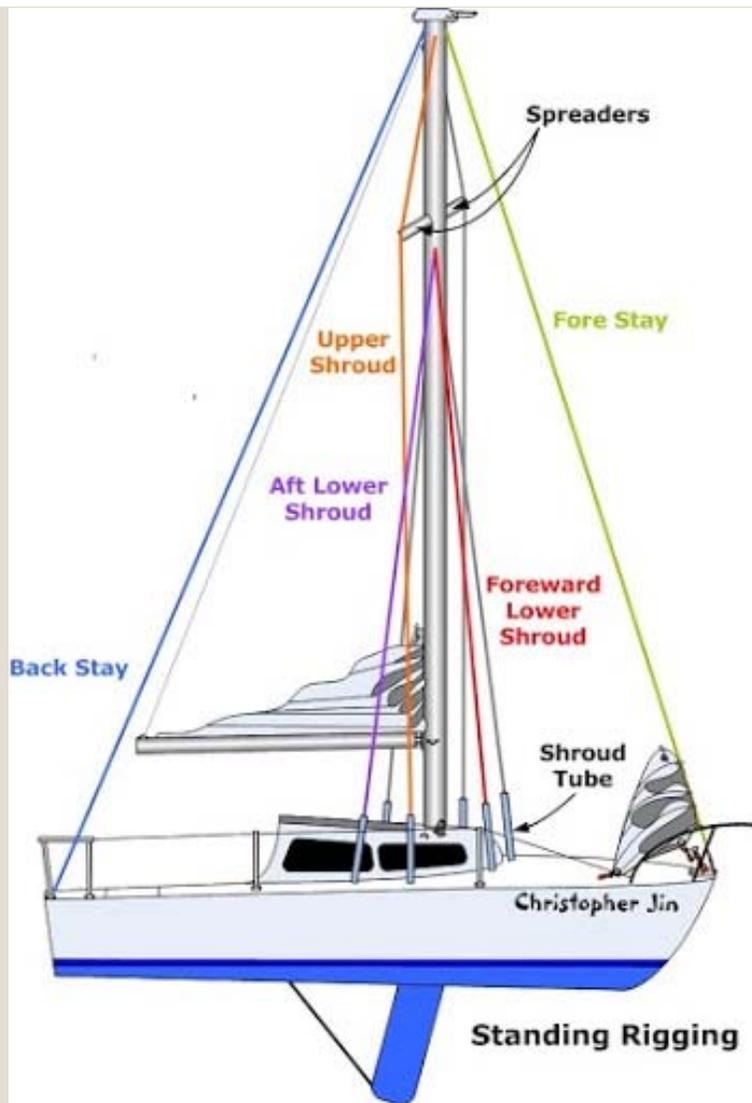
Some of Our
Neighbors:

Schooner

A sailboat with two
or more masts, with
the tallest usually in
back.

Types of Rigging

- Standing:
supports the mast
- Running:
hoists sails and controls their movement



Standing Rigging

- What provides fore and aft support to the mast?

Forestay and Backstay

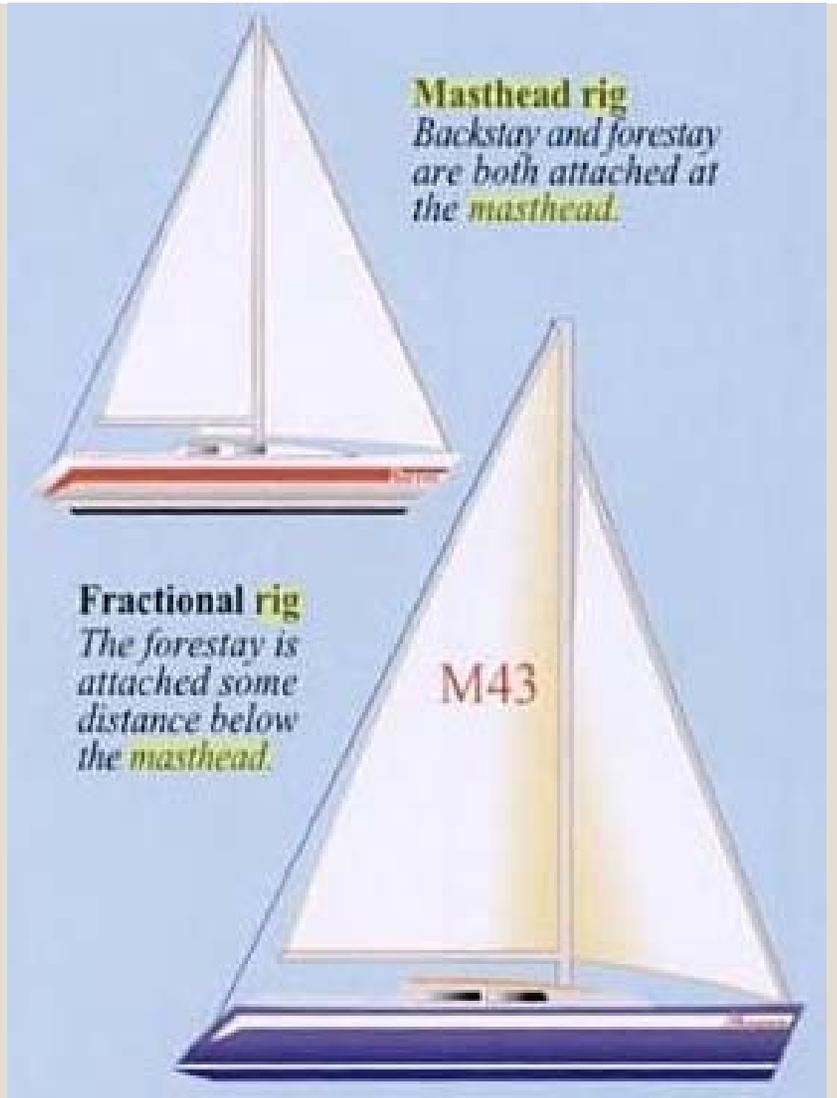
- What provides side support to the mast?

Shrouds (and spreaders)

Types of Rigs

(Determined by the Forestay)

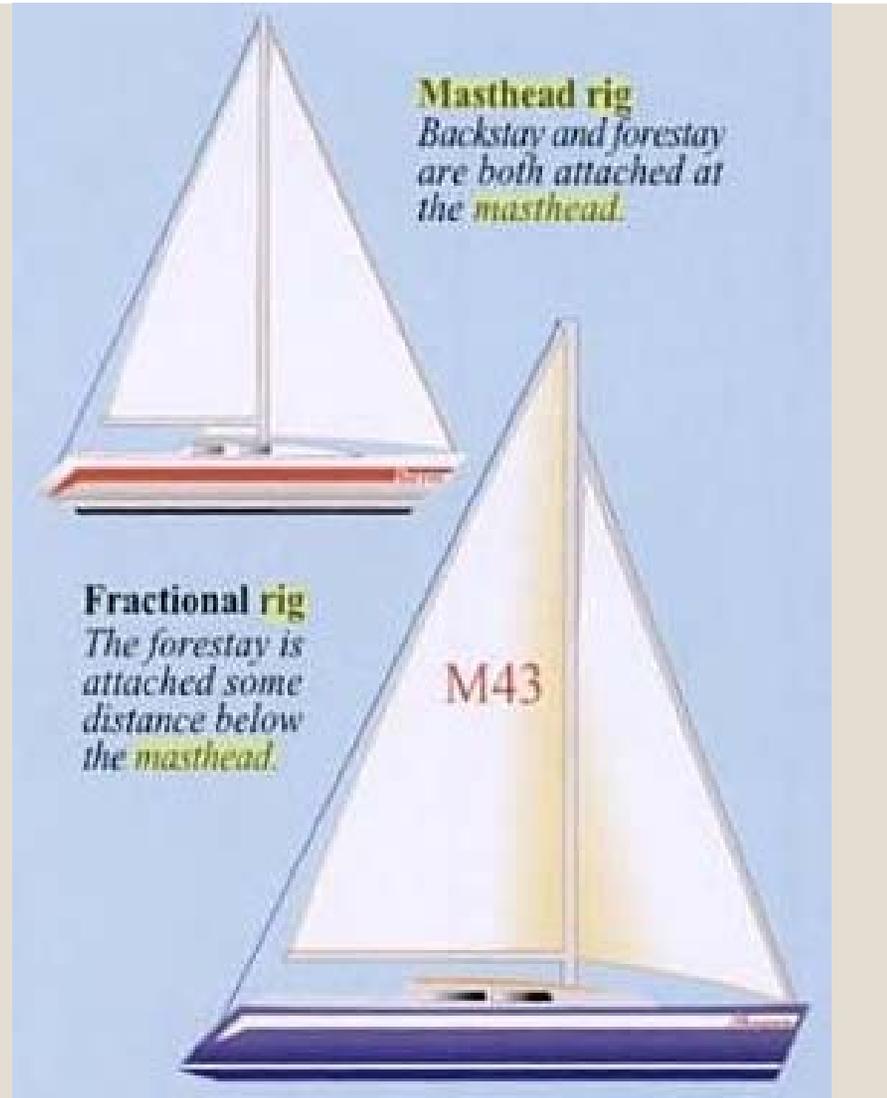
- Masthead
- Fractional



Types of Rigs

Where is the forestay attached on a **Masthead** rig?

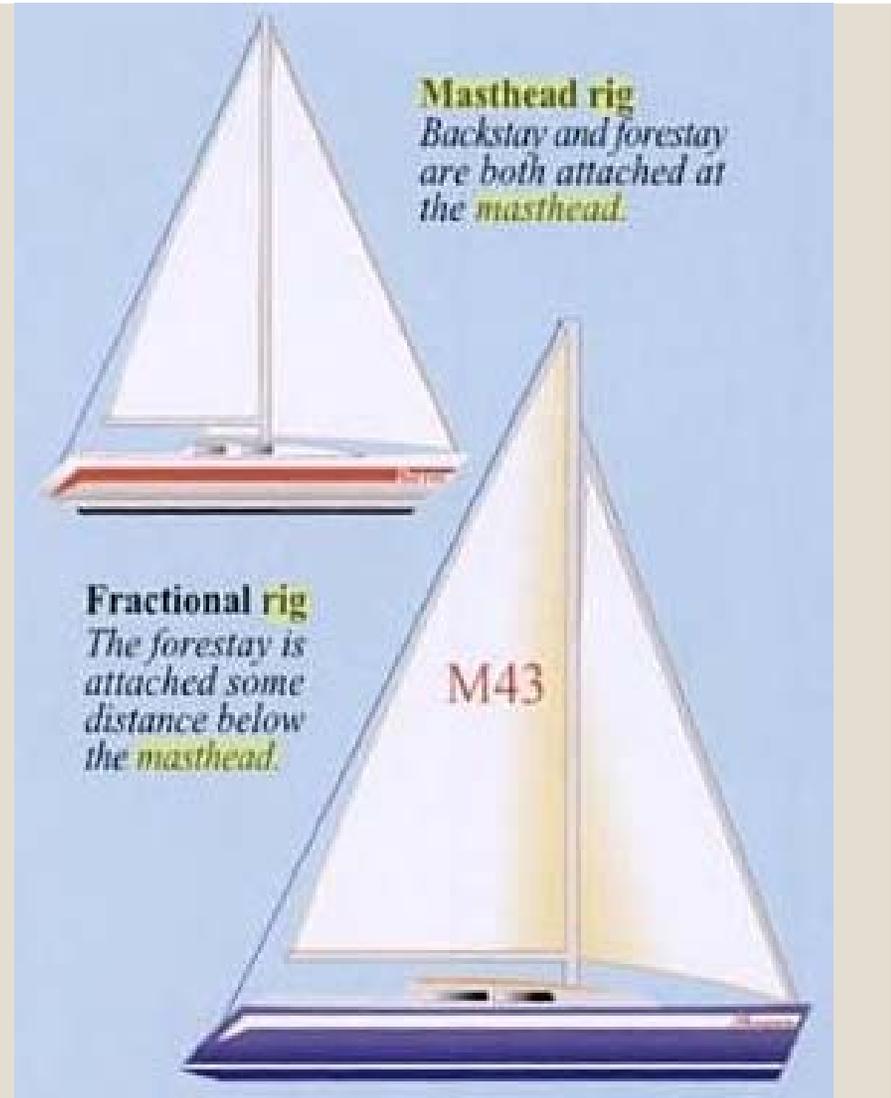
Top/head of mast
(larger boats, cruisers)



Types of Rigs

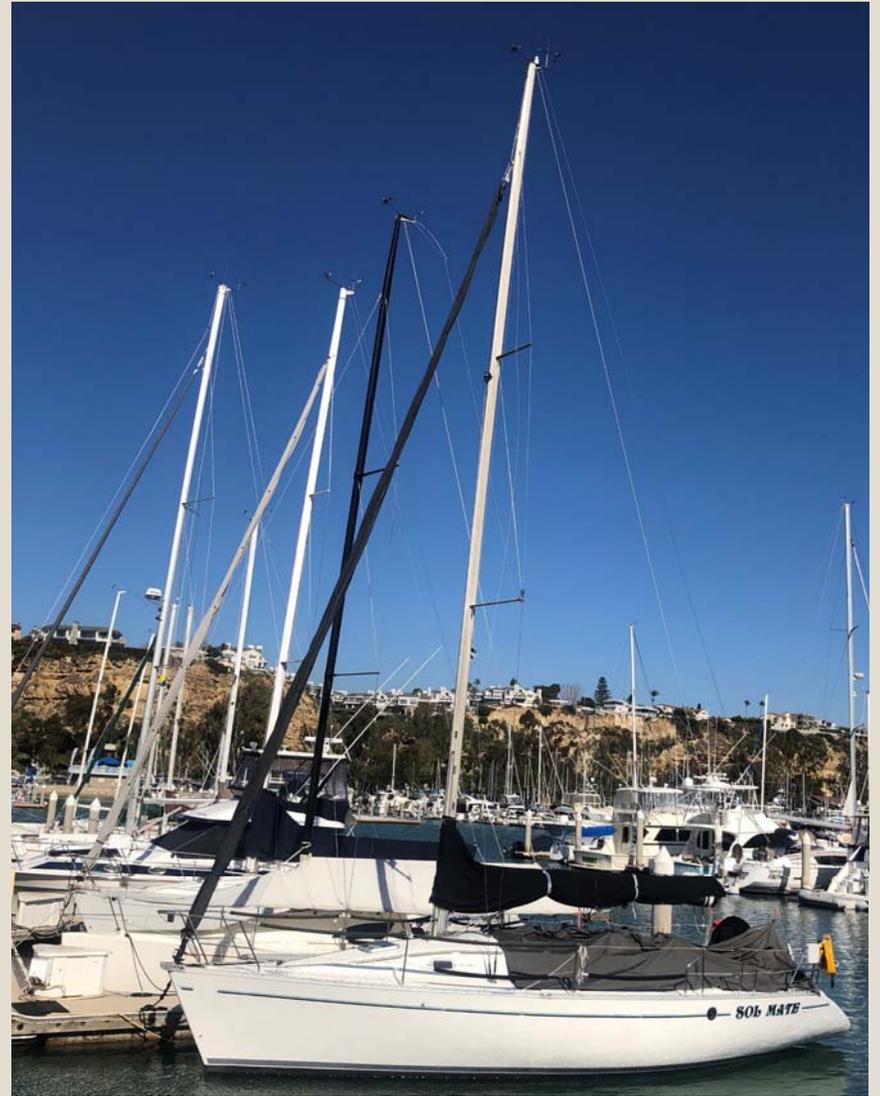
Where is the forestay attached on a **Fractional** rig?

Partway up the mast.
(smaller boats, racers – more control over mast bend)



Fractional Rigs

Some of our neighbors

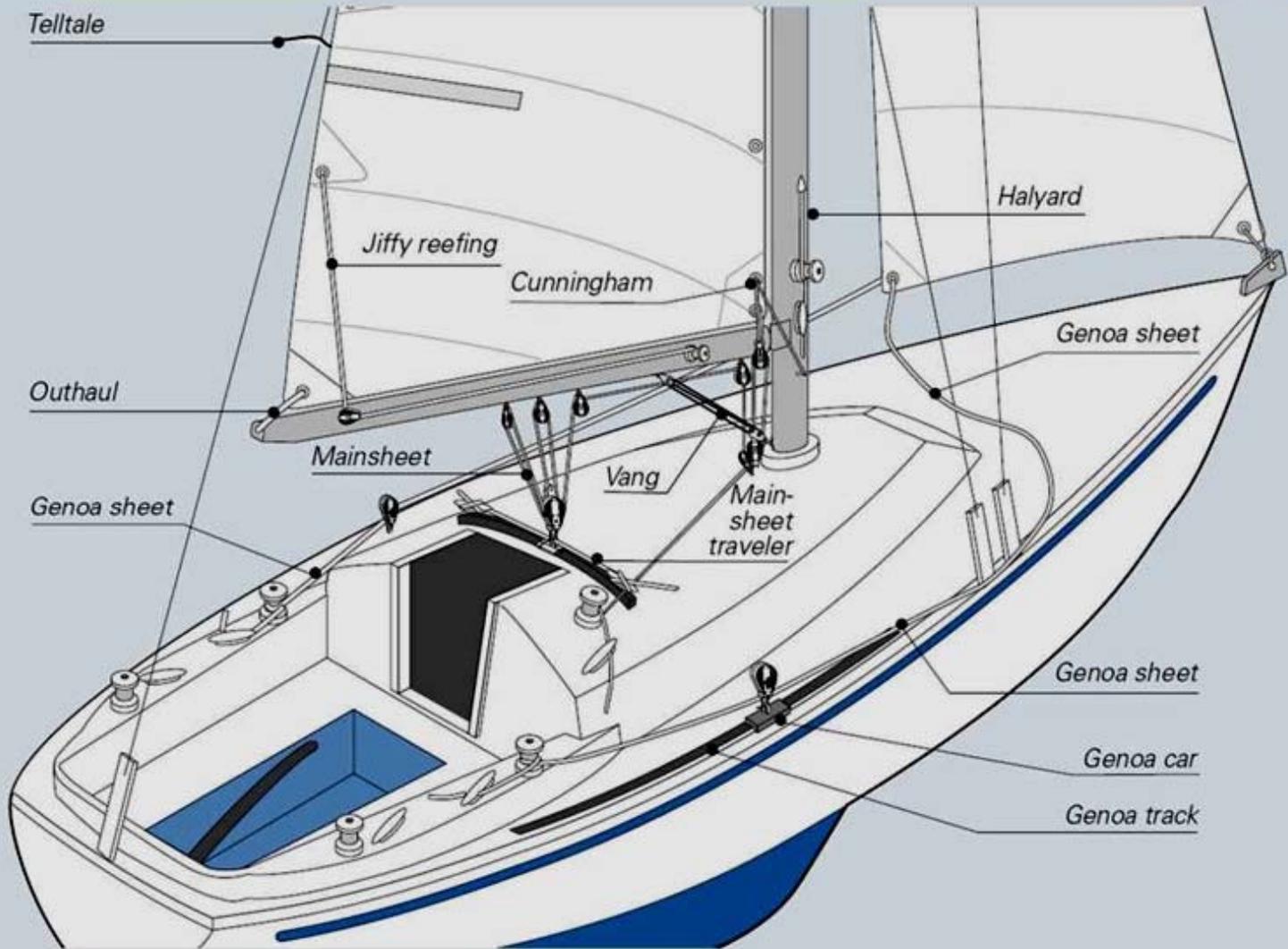


Is Hiatus a fractional
or masthead rig?

Masthead



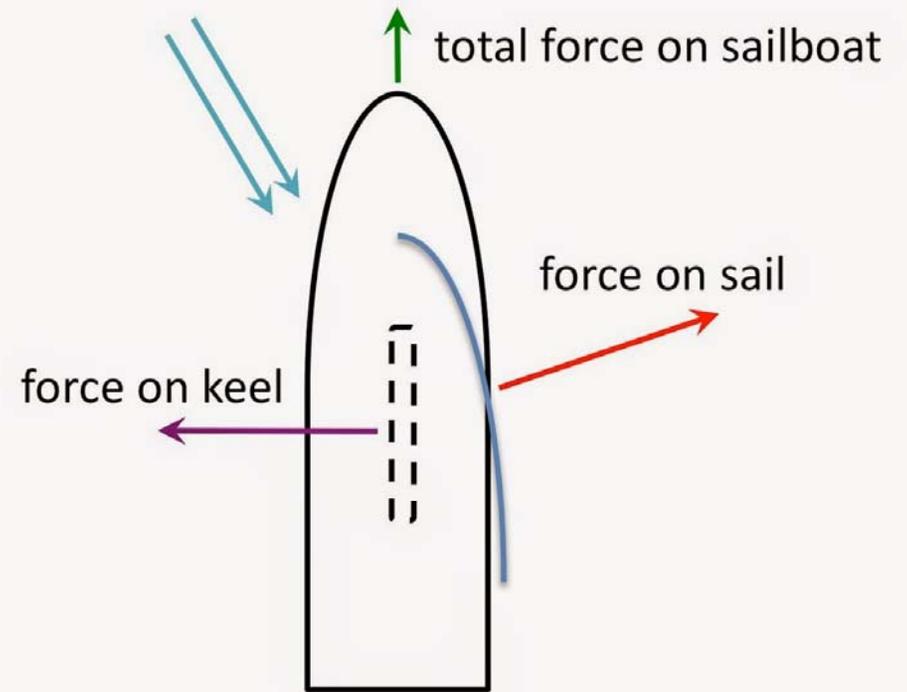
Running Rigging



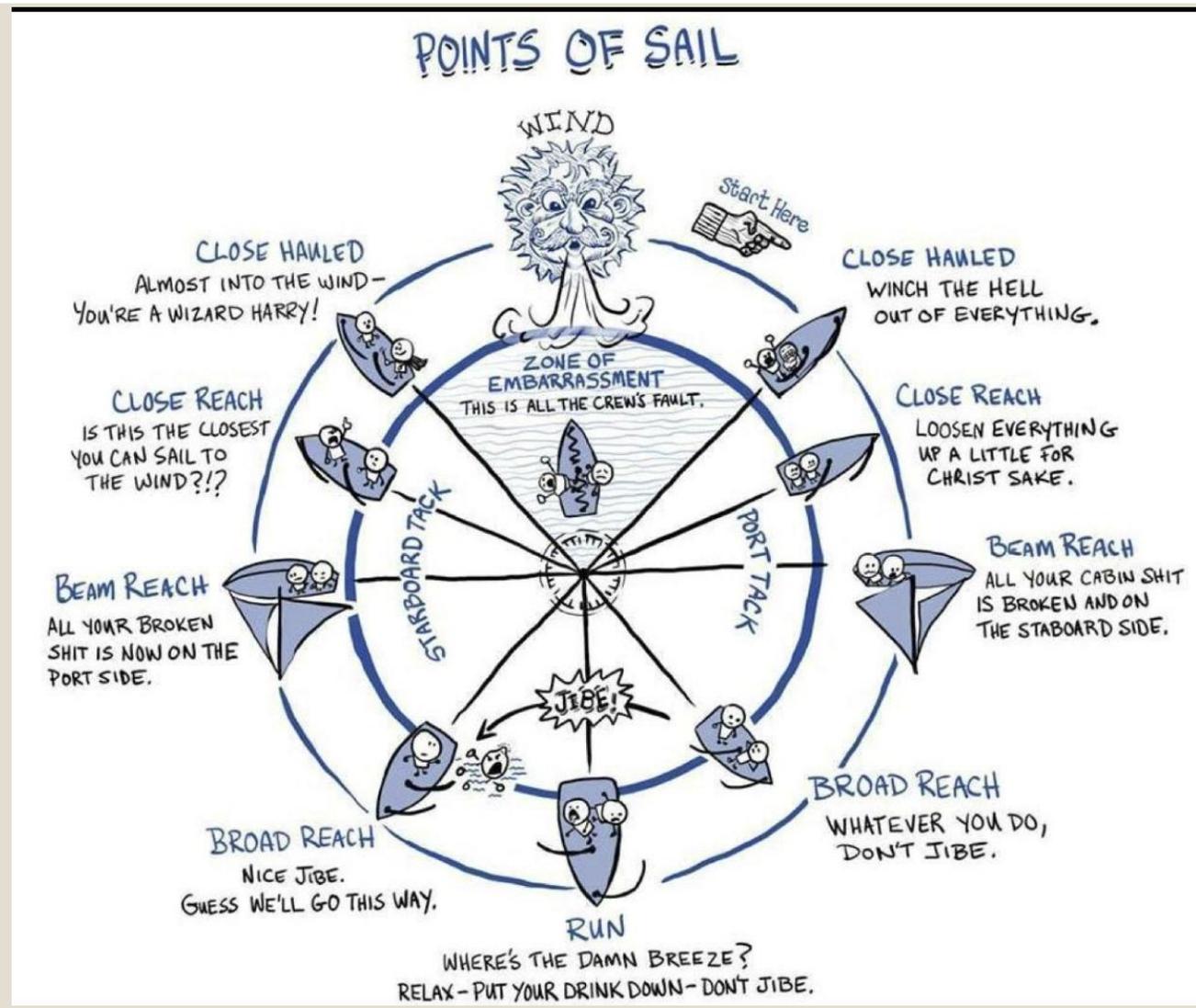
How Wind Makes the Boat Go

- Fan demo
- Ice cube demo

How Wind Makes the Boat Go

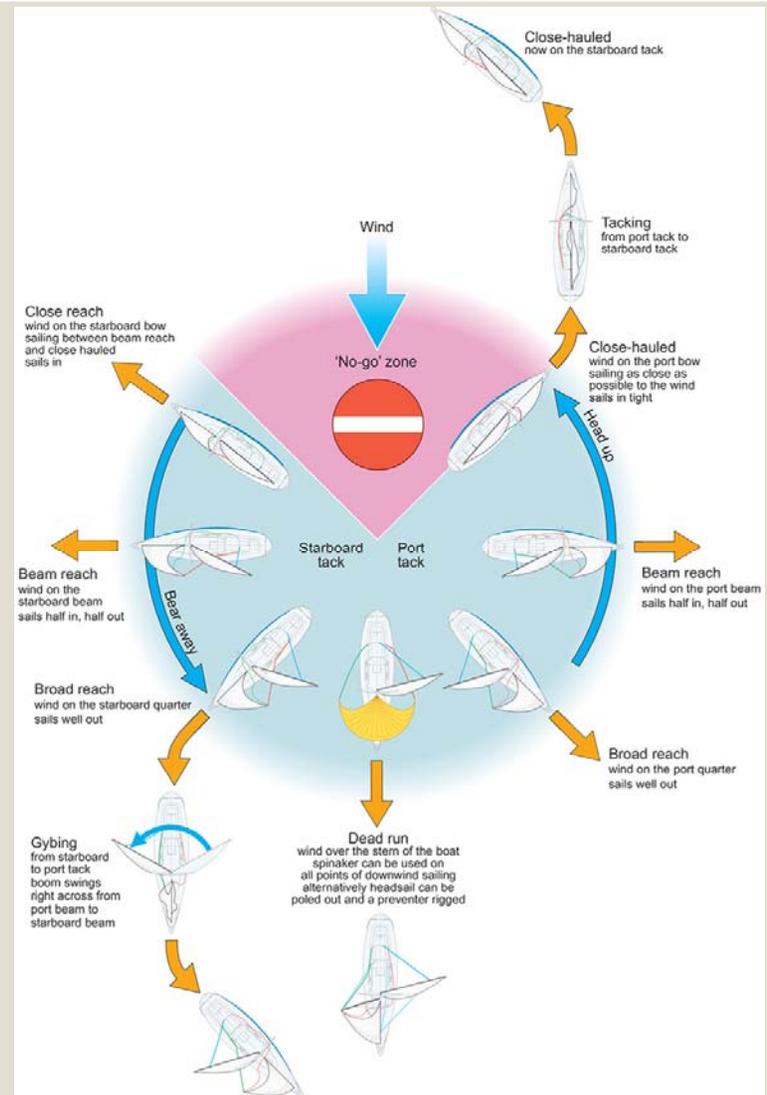


"Colorful" Points of Sail



Points of Sail

- **Beating/Close hauled:**
sails in tight
- **Reaching:**
Close reach: sails in
Beam reach: sails ½ in, ½ out
Broad reach: sails well out
- **Running:**
sails all the way out



Break

Sail Trim Basics

- Let out the sail until it luffs, and then sheet it in until it stops luffing (lift mode).
- If you let it out and it doesn't luff, you are sailing downwind (very broad reach or run). Set the sail perpendicular to the wind (push mode).

Sail Trim Basics

- When in doubt, let it out.

An under-trimmed sail is obvious – it luffs.

An over-trimmed sail can look fine
(unless you know how to use telltales).

Sail Trim Basics – Telltales Genoa

- Adjust the genoa until both the inner and outer telltales are streaming straight back (this doesn't work downwind).

Sail Trim Basics – Telltales

Genoa

- If the genoa is too loose, the **inside** telltale will flutter. Trim in or fall off.
- If the genoa is too tight, the **outside** telltale will flutter. Ease or head up.

Sail Trim Basics – Telltales Genoa

- Basically, you **move the sail toward** the fluttering telltale, or you **turn the boat away** from the fluttering telltale.

Sail Trim Basics – Telltales

Mainsail

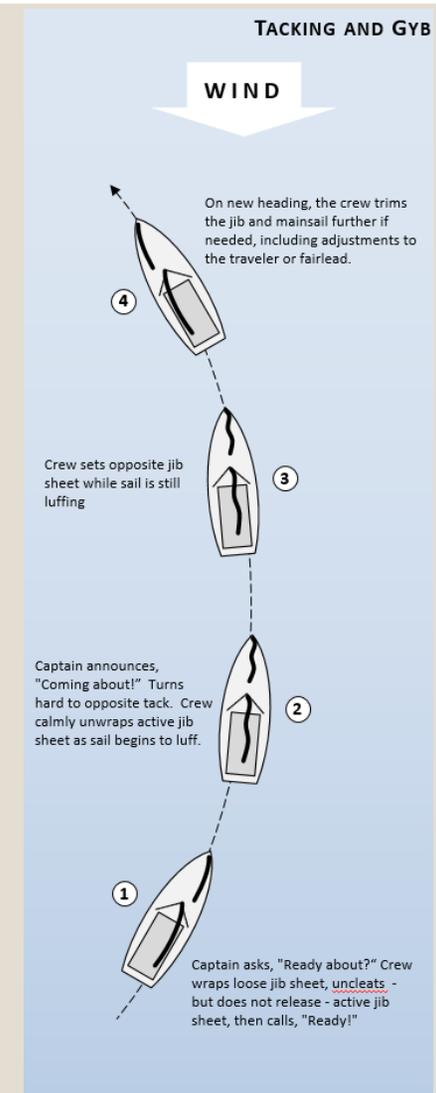
- Adjust the mainsail until the telltales are streaming straight back.
 - If they are wrapped to the leeward side of the sail, ease.
 - If they are bending toward the windward side, sheet in (or travel up).

Sail Trim Basics

- Check that the slot between the genoa and mainsail is open, so that air can move smoothly through.
- The genoa and mainsail should be working as a pair with their leeches parallel.

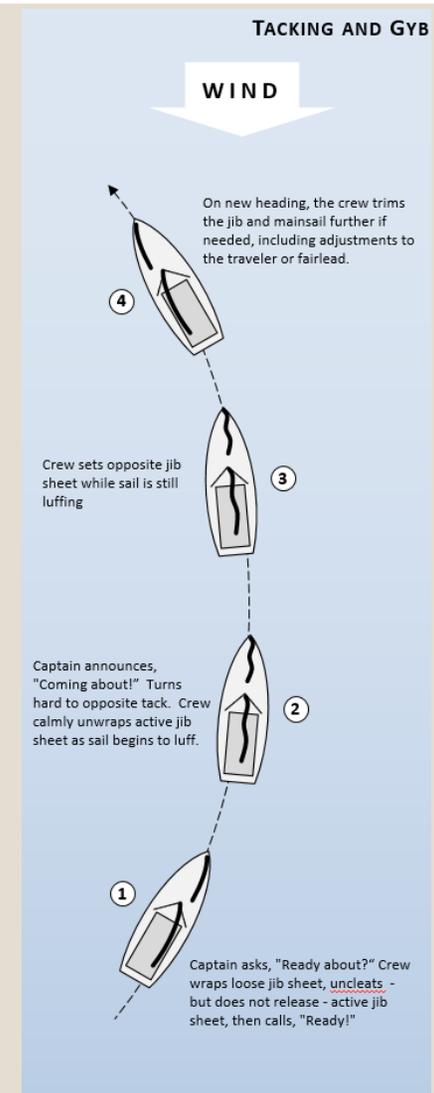
Tacking

- **Helmsperson** checks that area abeam is clear for a tack, picks a landmark or compass course (+/- 100) and calls, "Ready about."
- **Crew** prepares working (uncleats, but holds) and lazy (2 wraps, takes out slack) genoa sheets, and replies, "Ready."



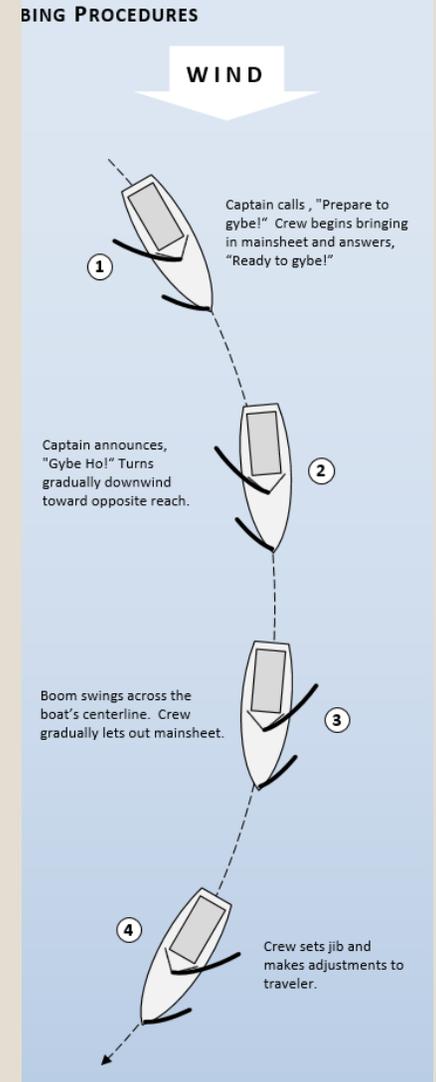
Tacking

- **Helmsperson** calls, "Hard a-lee or tacking" and turns the wheel to tack. When the mainsail starts to fill on the new tack, the **helmsperson** starts to unwrap the wheel, timing it so the rudder is straight when the mainsail is full.
- **Crew** releases the working genoa sheet when the genoa luffs, and sheets in the genoa on the new tack as it crosses. If the traveler was not in the center position, **crew** adjusts the traveler.



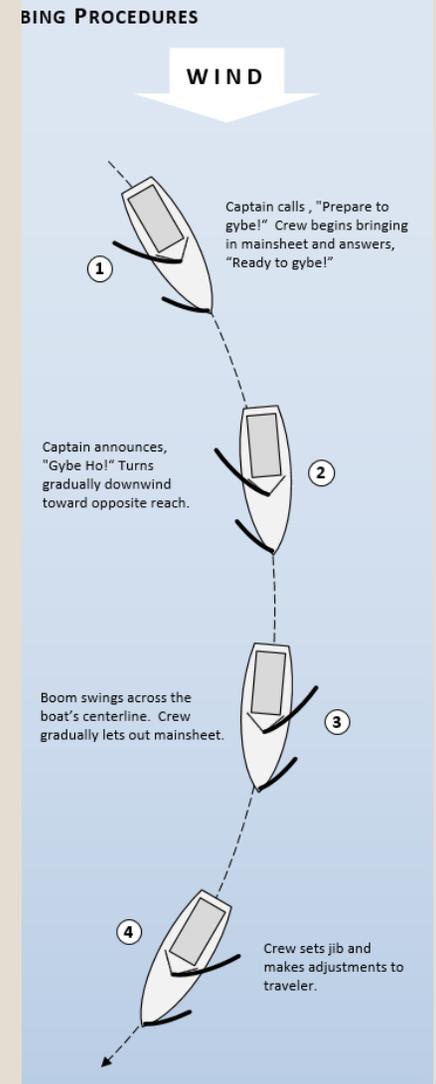
Jibing

- **Helmsperson** checks wind direction, makes sure the area is clear for a jibe, selects a reference to steer for, and calls, "Prepare to jibe."
- **Crew** centers traveler if it's not centered, and prepares to haul in the mainsheet. **Crew** also prepares the working (uncleats, but holds) and lazy (2 wraps, takes out slack) genoa sheets, and replies, "Ready."



Jibing

- **Helmsperson** calls, "Jibe ho or jibing" and turns *gradually* downwind to jibe to the new course.
- **Crew** quickly sheets in the mainsail and then eases it once the boom has crossed to the new side. **Crew** also eases the working genoa sheet and then releases it as the genoa tries to cross. **Crew** sheets in the genoa on the new side, and then adjusts the sails and traveler for the new course.



Topics We Reinforced:

- Common Hull Configurations
- Common Sailboat Configurations/Rig Types
- Types of Rigging
- How the Wind Makes the Boat Go

Topics We Reinforced:

- Points of Sail
- Sail Trim
- Tacking
- Jibing

Terminology with Wayne

Knots with Bill