OCEAN RACING CLUB OF VICTORIA

BOWMAN ESSENTIALS

CONQUERING THE POINTY END

INSHORE - PART A

ORCV
OCEAN TRAINING

Bowman's Course

1

Welcome Back

2

Course Progress

- Lesson 1. An introduction to working the bow
- Lesson 2. Practical bow work on the racecourse
- Lesson 3. Practical bow work on the racecourse (continued)
- Lesson 4. Offshore Racing Session

3

Session No.2
Practical bow work on the racecourse

- Out on the racecourse
- The art of gybing a spinnaker
- Spinnaker drops
- Peeling Spinnakers
- Disaster recovery, with a focus on keeping going.

4

So why would anyone want to work on the bow?

5

You've done all the prep work so now you get to put it all to use out on the racecourse!

6

Out on the Racecourse: Before the gun

- Once the boat gets to the starting area all of the crew should "switch on" and be ready to race. No more "boat gazing" or being swept up in the occasion.
- Confirm that you have the correct/desired headsail sitting on deck and be ready to hoist when the afterguard makes the call.
- If the breeze is fluctuating in strength, you may want to leave two headsails on deck so you have the flexibility to go either way at late notice.
- Pre-arrange for another crew member to remove & stow the unused sail when the call comes so you can concentrate on getting the sail in the air.
- Remember to keep your eyes out of the boat, especially in big races where there is a lot of traffic in and around the start zone
- On the way out to the starting area talk to the helmsman to make sure he/she understands what your hand signals mean and if he wants you to communicate anything else, other than the distance to the line. I.e., speed up/slow down, boats close below etc.

7

In the starting area

- Get your transits as early as possible and try to check them at least twice before the start
- Try to pick something higher up
- If possible, get a second more conservative transit -23 boat lengths behind the line
- Get an accurate time on your Ronstan Clearstart watch
- Confirm the final plan
- Focus on the one job
- Clear signals to the afterguard

8

Inside the 5-minute sequence

- Leave the countdown to someone else
- Move to the bow for the final minute before the gun, or as required
- Try to stay low to avoid obscuring the helmsman's view
- Keep hand signals simple
- Signal the distance from five boat lengths
- If you are early - signal it early!
- Pick up your transits
- Ignore the noise and chaos that is going on around you
- Pull the trigger with about 10 seconds to go - give them the wind up signal

9

This is the time when it all gets very real!

10

At the gun

- The objective is to be as close as possible to the line & going at full speed when the gun goes.
- The difference between a brilliant start and a complete disaster is often just a matter of 1-2 seconds or 10-20 centimeters!
- This is where all that time & distance practice pays off
- You have the responsibility for making the call as to whether the boat has broken the start line or not. This can be difficult when the ends of the line are obscured by traffic
- Sometimes you need to trust your gut
- It is much easier to judge distance to the line when the boat is at one of the ends. Watch out for the mid-line sag
- Give the "clear start" or "we are over" call
- If you really couldn't tell let the afterguard know that it was too close to call but I think we were ok/over
- Whatever the call you need to be clear and firm. Uncertainly just adds to the confusion and fosters doubt in the minds of the afterguard.
- If they know that it was a "close call" they will be on the alert for radio calls or flags.

11

At the gun: Clear start or not!

- You are going to make the wrong call on occasions.
- If you don't break the line every now and then, you are being too conservative!
- Practice your time & distance whenever you get the opportunity
- Pick your race to be aggressive – Not the S2H start!
- After the gun, get off the bow and hit the windward rail
- Weight forward is slow
- Wind and wave calls
- Poor start, be ready for a quick clearing tack
- You may be needed on the bow to for clearance calls as the boat fights to find a clear lane

12

Tacking

The bowman's role in a tack is limited but there are still some fundamental things to watch for during every tack.

On the rail going upwind, make sure that the jib sheet is clear to run and does not have any twists or knots in it that might catch in a tack. Make sure that any slack in the jib sheet is taken up before the tack because it can get caught if it flicks around and will lead to a slow tack.

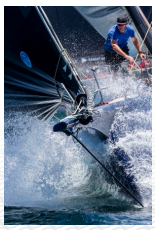
Before the tack, give a "flat water" or "bad wave" call. The afterguard will decide if they want to continue or delay the tack.

Always try to transfer the crew's weight at the moment that provides the best outcome for the boat's speed. I.e., in light winds, it is better to remain on the Leeward rail after the tack and move across the boat once it has begun to accelerate out of the tack.

The bowman will most often be first in line on the windward rail and usually has to cross the boat during a tack by stepping around the front of the mast.

13

Upwind preparations



- Confirm the spinnaker selection and the type of set
- Start your mental checklist
- Will there be a hitch/clearance mark or a gate at the top? Read the SI's or ask the Nav before the start
- If there is a clearance mark you will have time
- 5-6 minutes from the top mark - confirm final sail selection choice of set i.e Stb pole bear-away set, Gybe set
- Get the sail on deck and commence your set up routine

14

Approaching the top mark: the clip up!

- Is the gear on the correct side of the boat for a normal bear-away set?
- Assy or Symmetrical?
- Inside or the outside gybes?
- If in doubt - Light air = inside gybes, heavy air = outside gybes
- Why does it matter?
- Bag to mast – halyard on sail, sail dragged forward, bag clipped on
- Tack line clipped on, leeward sheet clipped on, windward sheet clipped on last (inside/outside considerations)

15

Final approach to the top mark

- The sail is now clipped up and ready to hoist – what next?
- Do not break the Velcro tabs or open the bag!
- How much traffic will the boat be in at the mark? – situational awareness
- Immediate or delayed hoist?
- Pole up or tack out depending on timing of hoist
- Break open the bag as the boat bears away onto the run
- Leave the spinnaker and go to the mast to help with the bounce
- Alternate bounces

16

Rounding the windward mark: Hoist!

- The helmsman will call the hoist when he/she is ready
- Do not start the hoist until you hear the "hoist" call
- Assist the mast man with the bounce
- Call out when the sail is reaches the top
- Watch for any wineglasses in the spinnaker
- Move back to the forestay for the headsail drop

17

This is what we are trying to achieve!

18

Downwind: foredeck activity on the runs

- Headsail down – get ready to gybe!
- On an asymmetric boat – dig out the windward spinnaker sheet from under the headsail
- The sheet always gets buried under the jib as it is lowered and can cause problems for the trimmers during the gybe.
- "Clear to gybe" call
- Get rid of the spinnaker bag
- Plug in the head of the jib
- Put your weight where it is most needed

19

Foredeck activity on the run: Symmetrical Spinnaker boats

- Check to see that the windward spinnaker sheet is sitting above the pole end.
- If the sheet is below the pole end, you need to sort it out before you can gybe. Why?
- Perfecting the lazy sheet flick
- Spin sheet over the pole end
- Lazy brace is run forward and has enough slack
- When to make "clear to gybe" call

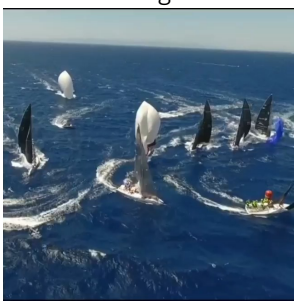
20

Foredeck activity on the run: Symmetrical Spinnaker Boats cont.

- To pack the jib or not to pack it?
- Sail change – likely or not?
- Plug the sail in so it is ready to hoist
- Set up as much as you can for the next drop – jib as ready as possible
- Headsail sheets off the sail and clipped together
- Talk to the afterguard - what are they thinking in terms of the bottom mark rounding?
- Spinnaker pole off early - allows for late changes of direction
- Jib hoisted as late as possible = 5-6 boat lengths from the mark
- Human pole when running square into the bottom mark
- Requires good coordination and communication amongst entire crew

21

Downwind legs: Bowman's tips



1. Sheets off sail and sitting in the neutral position on top of the pole/topping lift
2. Have a pole topping lift strop that can be disconnected quickly at the inboard end
3. Roll the jib up and position it forward of the spinnaker pole downhaul blocks on the foredeck
4. Put the new active sheet on the sail first
5. Know how long it takes to get the headsail in the air – time it under different conditions

22

The art of gybing a spinnaker

23

Gybing

The ability to deliver a well-executed gybe at a critical moment within a race is an essential skill for any successful sailing team. Too often boats screw up this important maneuver at a critical time and can ruin your day. It usually happens because the crew has not been properly drilled in their specific roles or have rushed into a gybe when they were not ready.

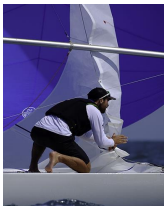
Small mistakes become big ones very quickly in a pressure situation.

Be ready to gybe at all times!	Watch what is unfolding around you. Pay attention to what other boats are doing and where they are positioned relative to the bottom mark.	You need strong situational and tactical awareness	Think three steps ahead

24

Boats with symmetrical spinnakers

End for end gybes



This is the most common type of gybe on small keel boats with conventional symmetrical spinnakers.

Used on everything from dinghies to medium-sized keelboats.

The techniques used in an end for end gybe vary depending on the style of boat you are sailing but the fundamental requirements remain the same.

To execute a successful end for end gybe the bowman must transfer the spinnaker pole from one side of the boat to the other as the boat steers through a gybe.

This maneuver is best performed with the boat gybing from square run to square run on the opposite gybe.

When done successfully, the spinnaker pole will have already transferred to the new windward side before the mainsail is flicked across the boat.

25

Tips for the bowman in an end for end gybe

01 Always trip the windward brace out of the pole end first.

02 Face forward when walking the pole through and have the new lazy brace within easy reach.

03 Be careful when you drop the new brace in the pole end because it is easy to get a twist in it.

04 Use the momentum of the pole.

05 Trigger pole ends make life a lot easier!

06 Do not forget to call "made" when the pole is safely back on the mast.

26

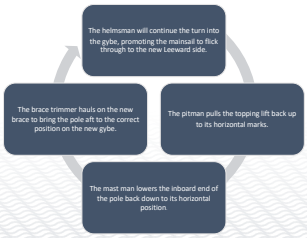
Dip pole gybe

- Preferred gybe for larger boats with symmetrical spinnakers - quick, safe, and simple maneuver
- Only the outboard end of the spinnaker pole is detached from the windward brace
- The inboard end of the pole stays on the mast
- Raise car up the track on the mast so that the pole has enough room to pass beneath the forestay.
- Helmsman calls the trip
- The bowman calls "made" when the new brace is secure in the pole end

27

Dip pole gybe: continued

- The "made call" is the signal for the other crew members involved in the gybe to commence/complete their specific roles
- If you forget to call "made" – you make it harder for the rest of the boat!



28

Dip pole gybe: continued

- Make the job easier by having the brace run forward and clipped to a short strop on the forestay. This way the brace is always within easy to reach when you roll into a quick gybe.
- Pull some extra brace length forward and plant your foot on top of it so the brace trimmer cannot be pulled out of your hands when they start hauling the pole back a moment too early.
- Always make sure that the lazy spinnaker sheet is over the top of the pole end, before and after every gybe. You need to perfect the lazy sheet flick!
- Take an extra second to ensure that the pin in the pole end has snapped closed again. They often don't and the brace can then flick out of the beak on the way back out the other side.

29

Bowman's tips - Dip pole gybes

- Practice the lazy spin sheet flick
- Use a two-handed vertical action when you drop the new brace into the beak
- If there is enough room, put yourself in front of the forestay – facing aft
- Alternatively, you can also kneel on the foredeck
- Remember to call "made"

30

Boats with Asymmetrical Spinnakers - Inside or outside gybes?

- The bowman's role during the gybe is limited to helping the old active spin sheet around the forestay and making sure that the take-down string doesn't get snagged
- Most of the work in an asymmetrical gybe is done by the crew in the middle of the boat.
- Be aware of the boat's distance from the bottom mark and have the headsail plugged into the pre-feeder & ready to hoist
- Lighter breezes = inside gybes as there may not be enough wind to keep the spinnaker flying when the boat dials down for the gybe
- In ultra light wind, the spinnaker will need to be physically helped around the forestay by the foredeck crew
- Stronger breezes = Outside gybes. The trimmer eases the spinnaker sheet radily allowing the sail to blow forward in front of the boat and rotates around the luff
- Once the boat is through the gybe, the trimmer grinds in the sheet as quickly as possible so the helmsman can bring the boat up to course.

31

Outside gybe with a twist!

32

MORNING TEA (15mins)

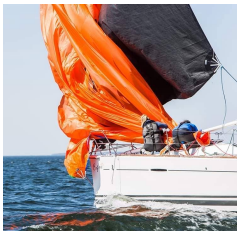
33

Spinnaker drops

34

Spinnaker Drops on Symmetrical boats

- There are two main spinnaker drops used by boats with symmetrical spinnakers.
- The two drops are the Leeward Drop (also known as a "smoked halyard drop) and the float drop or float off.
- Both drops are used extensively in modern around-the-buoys racing and done properly, they are usually safe and effective in getting the spinnaker out of the air.
- What determines which drop to use?
- How shy or pressured the boat is going to be at the time of the drop. The more pressured the boat, the faster the spinnaker must be depowered.
- After the initial halyard burn, the pitman should control the rate of decent of the spinnaker so that it matches the pace that the foredeck crew are able to retrieve it.
- The aim is not to let the spinnaker touch the water, but it requires a careful balance between releasing the pressure from the spinnaker and holding the halyard just long enough to allow the crew to gather in the sail.



35

Leeward drop: straight in approach

- The boat nears the bottom mark with the headsail in the air and the spinnaker flying
- The chute will be retrieved to leeward by pulling it in under the foot of the headsail (or around the leech of the jib) before rounding the mark.
- The pole remains in the air but is eased forward so that the spinnaker pole sits just off the forestay. It is held there until the spinnaker is dropped and has been recovered almost all the way into the boat.
- Helmsman calls for the drop & Pitman smokes the halyard to collapse the chute!
- The brace is then released by the windward trimmer and the pitman lowers the outboard end of the pole to the foredeck.
- The spinnaker will not (normally) fall straight into the water, but you only have seconds to react
- Keep retrieving until the chute is in the boat

36

Leeward drop: Key factors

- Collapse of the spinnaker is the signal to go hard!
- Dedicated spinnaker retriever down below
- Release of the active spinnaker sheet
- Stay on the deck
- Drop the pole on the correct side for the next hoist
- Only the Bow person makes the "clear to tack" call
- Weight on the rail as soon as possible
- Other variations – letterbox drop for bigger boats or in the ocean

37

Leeward drop – Symmetrical boats

38

Float Drop

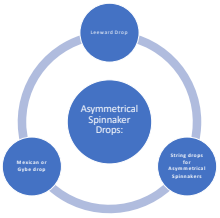
- Best option when running square into a mark and ends with the
- Spinnaker is recovered to leeward of the headsail.
- Boat approaches the mark with the spinnaker pole squared aft
- Brace that is eased to facilitate the collapse and depowering of the spinnaker.
- Windward trimmer ease the brace/pole forward to the forestay, checks it briefly so that the pole does not smash against the forestay, and then continues to ease the brace until the spinnaker collapses in behind the headsail.
- The spinnaker pole can rest against the forestay
- As the spinnaker collapses completely, the foredeck team to haul in on the lazy sheet and bring the clew to the hatch.
- The pitman then releases the halyard in a steady and controlled manner, matching the rate of retrieval of the spinnaker.
- A variation of this drop is often done where the bowman/woman fires the tack of the sail from the snap shackle on the brace. This means that the sail cannot accidentally reset because the that tack is now flying free to leeward.
- Always try to bring the spinnaker in under the foot of the headsail because if you bring it in over the headsail sheet, it can get sucked into the genoa car

39

Float Drop – Symmetrical spinnakers

40

Asymmetrical Spinnaker Drops:



41

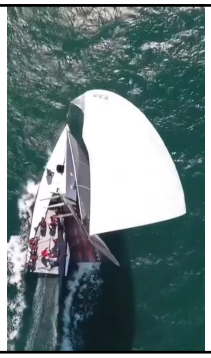
Leeward Drop – Asymmetrical Spinnakers

- The boat is approaching the mark with the spinnaker fully loaded and the intention is to drop the spinnaker to leeward.
- The best way to rapidly depower the spinnaker is to blow (smoke) the halyard so that the sail goes from fully filled to totally collapsed in a matter of seconds.
- The sail will flag to leeward, and then crew will be able to drag it into the boat
- The tack line **should not** be released until the sail is almost fully back on board the boat.
- The bowman stands near the clew on this drop so that he/she can pull in the leach of the sail and pass the cloth to the person in the hatch.
- This drop is reliable and reasonably safe as long as the crew understands the process/priorities.
- Leeward trimmer over-sheets the active sheet to strap the foot and bring the sail within reach of the foredeck crew.
- The helmsman steers the boat down during the drop to take a bit of pressure out of the sail. This may not always possible from a tactical standpoint so you should not make it a strict element of the drop.

42

String drops for Asymmetrical Spinnakers

43



String drops for Asymmetrical Spinnakers: continued

- Strings commit you to hoisting from one side
- String drops tend to be commonly used for Leeward drops but they also work well for windward drops.
- Take care that the strings do not catch on anything during the hoist or through a gybes
- To reach the string you will need to go out on the bow sprit or use a boat hook to grab the string
- Keep a boat hook clipped somewhere on the foredeck
- Strings mean extra time for the re-packing of the spinnaker
- Put a join in the string so you can disconnect it if necessary

44

Mexican or Gybe drop

- The Mexican drop is one of the quickest and easiest ways to douse an Assy
- The key to success is the timing of the halyard release
- This drop is one smooth maneuver with the spinnaker drop occurring during the gybe
- Helmsman needs to make room for a slightly slower dial down and gybe
- The drop is timed to coincide with the sail blowing back into the rig as the boat turns through the gybe.
- The trimmer straps the foot of the spinnaker as the boat dials down into the gybe
- Tack line should be released last and not before the foredeck team is ready

45

Mexican drop: key elements of a successful drop

- Speed of drop needs to match the turning rate of the boat and time the release of the halyard to drop the sail straight down onto the foredeck.
- Wait for the spinnaker to depower and start to back. This is the moment when the halyard should be fired
- Smoke half the halyard and then check the halyard so the foredeck crew can pull the halyard down to them at the pace that they handle
- Always have a spinnaker retriever down below
- The gear usually ends up on the correct side of the yacht for the next hoist = quick and easy clean-up
- Spinnaker should come down in a relatively orderly manner so it can be re-hoisted straight out if the hatch.
- Run the luff tape from head to tack just to be sure that there were no twists

46

Late calls at the bottom mark

47

Late calls at the bottom mark - it is just part of life!

- The job of the foredeck crew is to ensure that the boat can round the bottom mark and proceed upwind
- What will prevent the boat around the mark? Get rid of it early!
- Get the Spinnaker pole down and out of the way
- Focus on getting the headsail in the air
- it doesn't always look pretty but get it done!
- Recognise the point when you have run out of time and take control
- At this point, the bowman is calling shots and the foredeck team need to respond instinctively
- If it is going to be a very late gybe, having the headsail in the air before the gybe and don't complete the pole transfer
- Tactician or helmsman may be forced to make quick decisions to avoid contact with a "right of way" boat.

48

Spinnaker Peels

When should you peel?

- Change in wind strength or direction
- Significant course change imminent – fixed mark racing
- Damage to spinnaker

Peeling vs bare-headed change?

- Loss of boat speed
- Tactical situation
- Inshore vs offshore considerations
- It is always better to peel, rather than putting up with having the wrong sail in the air.

49

The differences between peeling symmetrical spins and Asymmetrical spinnakers

How to peel a symmetrical spinnaker

- Peeling strops & double clips
- Masthead to fractional – inside peels only – why?
- Halyard management – crossed halyards

Peeling Asymmetrical spinnakers

- Multiple tack lines
- Use of Martin breaker lines – pro's & cons
- Peeling furling sails – challenge for real estate
- Staggered tack positions for different types of sails
- Halyard management for Asymmetrical spins

50

Even the pro's get it wrong sometimes!

51

Damage control - what to do if

52

Disaster stikes

53

Strategies for dealing with a problem

Talk about potential scenarios and agree on a plan

Know how your boat reacts

Evaluate the problem quickly

The safety of the crew is the primary consideration

One person takes charge

Do not panic!

54

Some things are hard to plan for!

55

Strategies for dealing with a problem

- Depower the sail
- A spinnaker can only set if it being held at all three corners
- Never let both sheets go at once.
- Recover the kite and get back to racing
- Get the new sail clipped up!
- Conduct a debrief after the race

56

End of Session

57

Bowman's Course

58

Welcome Back

59

Course Progress

Lesson 1. An introduction to working the bow

Lesson 2. Practical bow work on the racecourse

Lesson 3. Practical bow work on the racecourse (continued)

Lesson 4. Offshore Racing Session

60

Session No.3
Practical bow work on the racecourse (continued)

- Headsail changes
- Furling Sails
- SYC marina
- self-assessment

61

Headsail changes while inshore racing

- Headsail changes are disruptive and can slow the boat dramatically
- You need to be well organized, and the crew all need to know their roles
- Do we just try to hump it to the top mark and swap jibs on the next downwind leg?
- Change the sail if the one you have up is clearly the wrong sail for the conditions – at risk of damage
- Preparation and training will reduce the adverse impact on the boat's performance
- Two common types of headsail changes - the inline change and the tack change
- Pros and cons of each one

62

The inline inside change

- This change is used when for tactical or strategic reasons, the boat needs to stay on the current tack. I.e., it is on course to the next mark or in close company with other boats.
- This change can be done either as an inside set (new sail goes up inside the old sail) or as an outside set (new sail goes up the outside of the old sail).
- The decision to hoist the new sail inside or outside of the current sail will be dictated by which side of the luff foil, the existing sail is in.
- The way that a tough luff is designed, the port side luff groove is positioned at the back of the foil, so this tends to be used as the primary foil, leaving the starboard side foil available for changes.
- The inside change has a relatively easy set up because the new sail is simply dragged forward and hoisted up the inside of the old sail. As it is being hoisted it usually lies quite placidly against the old sail.
- When the new sail is in the air, the trimmer trims on the change sheet on the new sail and releases the sheet on the old sail. The bowman then pulls the old sail down and in under the foot of the new sail. This can be challenging because often the sails are wet and can stick together, and it is often hard to get the old sail under the foot of the new sail.
- Once the old sail is on the deck, it is dragged back to be packed by the crew on the windward rail. The bowman then connects the primary jib sheets to the new sail and removes the change sheet.

63

The inline outside change

- The new sail goes up the outside of the old sail so you feed it under the foot of the existing headsail
- Attach the change sheet and leave the new sail's bag behind as you move forward
- The bowman feeds the head of the new sail under the foot of the old sail and into the outside luff groove
- Bowman stays forward and feeds the new sail out as the mast man bounces the halyard
- The good thing about this change is that the old sail comes down on the inside of the new sail, so it easy to control and drops straight into the open bag.
- It is slower initially but much quicker to clean up after the change
- Make sure that you take the bag for the old sail forward before the drop so you can run it out along the deck
- If the bag is not possible, use a sail tie and choke the luff
- After the drop, reconnect the primary jib sheets and give the "clear to tack" call to the afterguard

64

Bowman's tips for inline changes

01

Put sail ties around the luff of every headsail before you leave the dock.

02

Another crew member holds the end of the bag as you pull the sail forward.

Always run the zips!

03

Connect the halyards and sheets before you drag the sail forward.

04

Always roll up empty headsail bags and put them in the same location every time.

65

Tack Change

- A well executed tack change is a very satisfying thing
- Complete the entire sail change within the process of a normal tack.
- This is the quickest and most efficient type of headsail change
- Preparations are similar to the inline change but no change sheet is required
- You tack straight onto the existing windward jib sheet
- Leave the bag from the new sail and take the bag for the existing sail forward
- As soon as the new sail is at full hoist, the bowman gives the thumbs-up to the helmsman and the boat goes straight into the tack
- The pit man release the old sail as soon as the boat is through the eye of the wind
- The old sail drops straight into the bag and the jib sheet transferred to the new sail

66

Tack Change: continued

- As the boat tacks though the eye of the wind, the pitman releases the jib halyard on old sail and it should drop rapidly to the deck as the new sail is being trimmed up.
- The bowman places a sail tie across the foredeck just before the tack so when the old sail drops, it falls directly onto the sail tie. The sail tie is then secured around the luff bundle and the bowman unclips the tack of the sail in readiness to move it back off the bow.
- By this point, the mast man has usually removed the jib sheet from the old sail and clipped it onto the new sail.
- The old sail gets bagged on the windward rail and then the lightest crew member stows it down below.
- The jib change is finished so the bowman tells the afterguard that the boat is "clear to tack".

67

Furling Sails – the new normal in sail handling

68

Furling sails on modern racing yachts

- Development of furling downwind sails for modern race boats has been driven by the challenges of trying to manage the massive spinnakers and laminate downwind sails on the new era of super-Maxi's.
- These boats would simply not be able to function without the assistance of furling sails
- This technology has now become affordable and accessible to smaller keelboats
- Bottom up or top down?

69

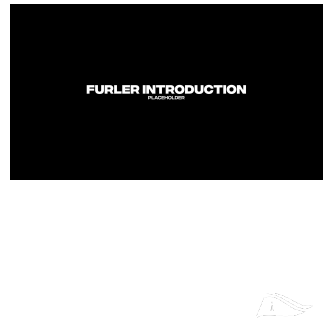
Bottom-up furling used for Code Zero Gennakers

- With these sails are just oversized genoas and usually have quite significant structure in the luff area and not as much volume in the upper sections.
- The drive to furl/roll the sail is coming from the bottom and working its way up the luff to the top of the sail.
- These sails usually have an Aramid cable built into the luff to help support the shape and structure of luff.
- Code Zeros usually require significant cable tension to support the sail shape so a 2:1 or 3:1 tack line arrangement is normally used.
- You will also often see 2:1 halyards employed for these sorts of sails just to try to get enough tension into the front of the sail.
- The latest generation of these sails employ a new structured luff technology that means that cable tensions and load transfer from the sail to the boat/rig have been reduced significantly. It also means that they furl better than the older style Code 0 sails but the downside is that they are harder to flake.

70

Top-down furling used for asymmetric spinnakers.

- Top-down furlers are used for spinnakers (soft poly and laminate) where there is significant size and shape in the shoulder area of the sail.
- Top-down furling is only possible when a proper torsion cable is used to drive the torque from the furler unit at the bottom, to the head of the sail at the top.
- The spinnaker is attached to a short flying strop that is connected to an independent swivel unit on the top of the furler. The torsion cable connects the furler drive unit to the top swivel at the top of the cable and the sail is connected directly to the top swivel.
- This way when the furler is turning, it is rotating the cable and by default the top swivel as well. With the head of the spinnaker attached to the top swivel, when the top swivels turns, the sail starts to wind around the cable in a downwards direction. Hence the name "top down" furling.
- By furling the sail from the top down, the excess area of the spinnaker's shoulder gets sucked into the furl quite early and as a result the sail furls a lot more tightly and neatly than a "bottom up" furl.



71

General handling tips for furling sails

- Always try to hoist furling sails to windward of the forestay. They are too stiff to manipulate under the foot of the headsail.
- I always try to lay the sail out on the deck in a way that allows me to see that the clew is clear of any tangles with the head.
- Get into the routine of connecting the tack first, the head second and the sheets last as this will help to avoid tangles.
- Remember to bring the leeward spinnaker sheet around the front of the forestay before connecting it to the clew.
- When you hoist a furled sail, you should pull some slack through in the spinnaker sheets so that they do not pull tight during the hoist and cause and early deployment of the sail.
- The bowman should also keep a firm grip on both sides if the continuous furler line to prevent the same thing happening at the bottom end.
- The halyard is hoisted all the way to the top and the tack line is used to tension the cable to a point where it firm enough to deploy the sail. Do not try to unfurl the sail until the cable if quite stiff because this can lead to a partial deployment of the sail and this can be a major problem.
- If pulling on the spinnaker sheets is causing the furled sail to deflect at all in the middle, then you need to put a lot more tension into the cable before you try to unroll it again.

72

General handling tips for furling sails: continued

- Once the sail has started to unfurl and the wind will get hold of it, there is not stopping it. The trimmer simply needs to sheet on to set the sail.
- The bowman needs to keep an eye on the continuous furling line when the sail is unfurling because if it doesn't get ejected properly from the furler jaws, it can often get caught in the momentum of the unfurl and wrap around the furler unit. This is a pain because the only way to clear the wrap is to unwind the furler line in the opposite direct. To do this the bowman usually has to go out to the end of the bow spit which is not something that you want to have to do if you can avoid it.
- Once the sail has been deployed you should run the furler line back along the windward side of the boat. This allows you to use the windward primary for the furl if the lines are designed to reach back that far. If you gybe, you need to remember to run the furler lines around to the windward side, so you are always ready to furl the sail at a moment's notice.
- If you boat has a powered winch, try to design a way to get the furler line to it because it will save you a lot of hard work if you can.
- Remember the continuous furler line rely on friction to drive the furler unit so the furler lines must be kept in tension while furling or they will not grip the drum and allow it to backwind. The way to solve this is to include a small turning block in the continuous furler line that is attached to a strong point with some shock cord. This keeps just enough tension in the system to keep the furler line engaged with the jaws in the furler drum but at any point you can pull it forward and release the pressure to unfurl the sail.

73

Bowman's post-race responsibilities

- Always try to fix any damage immediately after the race. If you leave it for tomorrow, you might get caught up in other activities and forget about the problem.
- Do a visual inspection of the rig, especially if it has been a rough or windy day. This will give you as much time as possible to correct any issues before the next race.
- If the sails are dry, make sure that they are race packed and ready for the next outing.
- If they are wet, spread them out to dry and make sure that you get to the boat early to pack them before the next race.
- Check every bit of equipment that you are responsible for, so you are confident that it is ready to go again for the next race.
- Tape up, spray, or lash any items that need to be given some love.
- Hose off your equipment with fresh water – water restrictions permitting.
- Thank your team for their efforts and assistance – they will work harder for you next time!
- Relax and enjoy a cold beer because you certainly earned it today!

74

BREAK (10mins)

75

Visit SYC marina to look at different foredeck set-ups

- Practical demonstration of Dip pole gybing techniques
- Spinnaker pole arrangements and systems
- Bow sprit set ups with multiple tack lines and Martin Breaker lines
- Furling sail set up and hoist
- Spinnaker bags and where to put them

76

Self-assessment

- Focus on personal fitness and clothing/equipment
- Focus on learning routines, staying disciplined

77

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