NORTH SAILS

Sailing Manual


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Sailing Manual

Teamwork makes all the difference in the IC37, and thus the inspiration for this corinthian focused class. The IC 37 class was designed for good amateur sailors to race on an equal playing field, and this manual is designed to help you build a solid team and properly prepare for racing.

Sailing is full of variables and complexity, which is what keeps us coming back for more. Yet concentrating on the basics is what makes us successful. To race a sailboat well, we must sail the cleanest, shortest distance with the fewest mistakes. The best teams prioritize communications about the boat's performance, not about how to execute maneuvers. This manual will help you set up a crew, sail the boat, and approach each day of racing in a way that will maximize your chances of success.

Crew Set-Up And Weight Combinations

The International Melges IC37 Class Association crew weight limit for sanctioned events is 688 kgs/1514 lbs. You must also comply with class rules C.2.2 and C.2.3, which state that the total number of crew permitted during IMIC37CA-sanctioned events shall include:

1. Eight (8) or more total crew, two (2) of which shall be adult women competitors
2. Seven (7) or fewer total crew, of which one (1) shall be an adult woman

No more than one crew classified as a World Sailing Group 3 competitor and meeting in full the definition of a "Boat Captain" may sail aboard an IC37 during an IC37-sanctioned event. In addition, the "Boat Captain" regardless of Group Status may sail aboard the IC37 yacht for which he/she is the designated "Boat Captain." A Group 3 "Boat Captain" when competing may not helm, trim sails, or act as tactician.

The crew weight shall be recorded to one decimal place of a kilogram.

The Owner may choose to weigh in. If Owners choose not to weigh in, they shall be allocated a weight of 89kgs (195.8lbs) for a male owner, 77kgs (169.4lbs) for a female owner. If an owner weighs in, that weight shall be his/her registered weight for all events that calendar year until he/she chooses to weigh in again.

(***See class rules for more details.)***

Prep for Success

Preparation is key to success on the racecourse. Assign responsibilities for what needs to happen every time before leaving the dock, and before and after each race. Also make sure the team knows your racing goals each day. When each team member knows their responsibilities and you know that everything will be taken care, you and the other team leaders can begin to focus on the bigger picture—or whatever you think will make the biggest difference on a given race day.

Pre Dock-Out Check List:

- Timing to leave the dock should be punctual to the time you've established. This sets you up for being able to sail against other boats and not being rushed to get sails up and ready to race.
- Make sure you have all racing documents, weather forecast, VHF, hand-bearing compass and any spares you need onboard.
- Check all instruments are switched on and working, with fresh batteries and spares for the Velocitek.
- Food and water for the day and conditions should be aboard.
- Sails and equipment are all onboard and ready to go.

Pre Race Check List:

- Sail upwind on both tacks. If possible, sail alongside another boat or two so you can get your settings, modes, and also a feel for the day's conditions. Determine which tack has the wind shear and needs twist, and on which tack it's easier to be to windward or leeward.
- Sail off the line and check headings and line feel so you can build your game plan.
- Run through starting line checks including transits, line bias, course bias and current.
- Pass out final food and drinks.

Post Race Check List:

- Prep spinnaker to go up again, making sure the string line is run and everything is tidy for the next hoist.
- Tidy the boat and make any adjustments you need.
- Pass food and water on deck.
- Debrief and make a plan for the next race. What worked the last start/race? For you and/or the winners?

- Put food away 5 minutes before warning signal.
- Get back into starting mode—line checks, transits, line bias, current.

Racing Goals:
Have a plan for how you want to approach the start, where you want to start, and for what reasons (line bias, courses bias). I like to make a plan A and a plan B, and have a third backup option in case the start doesn't work out well at all. Talk through your approach: Will you be aggressive about winning an end? Or conservative, starting away from an end with the ability to sail straight? The more you work on this and plan, the easier it will be to execute the same routine and get good starts. Remember, your setup will be a huge part of getting the start you want.

The Pre-Start & Start

Before the start, work on timed runs and starting drills; this gets the whole team dialed in and helps you appreciate the conditions. Practice crossing the line, getting up to speed, and locking in on the best mode; decide what your off-the-line target speed needs to be. This may need to be updated after the start, based on other boats. Gain a feel for your acceleration; are you getting to the line faster or slower than expected? Find your bottom boat speed number that you don't want to go below when killing speed and time. Drills help you understand not only the starting area but also the day's conditions.

Starting is a huge priority for me. I break it down into a bunch of parts, based on how much time left until the starting gun:

- 3:00 - Position the boat in area you want to start and set up so you can reach your spot.
- 1:30 - Be ready for final approach, allowing time to adjust for fleet positioning.
- 0:30 (and in rapid sequence until 60 seconds after the start) - Look for your acceleration spot and style of build, racing to an imaginary two boat-length distance behind the line. Once past this point, your goal is to be trimmed on the wind and racing, crew fully hiked and sails trimmed for the mode determined during your practice runs. The next minute is very important, and each team member should be focused on his/her own job—as well as communicating what's needed to optimize boat performance.

1. Helm
- Execute smooth steering throughout the start.
- Put the boat on angle, and focus on heel angle and getting the boat to target speed off the line.

2. Tactician
- Communicate clearly and precisely about where the boat needs to be and what's the next move.
- Position the boat for acceleration with focus on timing, pulling the trigger.
- Give starting targets for executing game plan.
- Talk to trimmers to get the boat going with Helm.
- Handle port runner or take starboard runner and wind on to load.

3. Main
- Make sure the mainsail is ready for the start. Are mast shims set per tuning guide for conditions?
- Listen to what's needed for boat speed.
- Communicate about speed build with Helm and Trimmer.
- Be ready to adapt and lead the moding if you are in a compromised position off the line.
- Watch the gauge and speed of leeward boats off the line; give feedback to Helm and Tactician.

4. Trimmer
- Grind sheet to leeward for maneuvers before taking tail from Trim #2.
- Release jib in tacks, grind new sheet.
- Talk about where jib trim is.
- Communicate about leeward boat's gauge and speed. If on layline or above the committee boat layline, talk with Helm and Tactician whether you could be shut out.

- When slow or getting close to bottom boat speed, encourage speed build and angle.
- Focus on getting the boat up to speed and move weight to windward ASAP once fully trimmed. • Control the crew-weight movement.

5. Trim #2

- Tail jib sheet in maneuvers and then hand off to Trimmer.
- Load and ready new winch.
- Adjust jib halyard and leads if needed.
- Possibly help wind in mainsheet on windward winch; if not, help the Trimmer.

6. Pit

- Call time and Velocitek distance from the line.
- Countdown start time for whole boat.

7. Bow

- Keep boat progressing with the fleet to the line.
- Communicate time-to-kill vs. build time; make calls on not letting the boat get slow vs. nearby boats.
- Try to keep boat moving level with the fleet, positioning for best build slot or trajectory to build in.
- Make good, clear calls on where the bow needs to be and if you can swing or not (without hitting an overlapped boat).
- Skirt jib when needed.

8. Floater

- Does runners with tactician.
- Make sure that you get the runner to the desired tension off the line. Be ready to adjust down if breeze drops.

Sailing Upwind

It's important to know your modes and develop clear wording for the mode you want to be in so the Trimmers can make it happen. First the Tactician or Helm describes what they are trying to achieve, and then the Main talks with the Trimmer about how to set up the boat. It's best to have the Trimmer call the breeze, but sometimes it's just too much; if so, assign breeze calling to the next person forward.

Set up your crew to maximize weight on the rail. The crew configurations shown below will give you a starting point; from there, move in/to leeward and forward, depending on the conditions.

Cross sheeting the headsail is prohibited. Except when using an outboard lead or during the process of changing sheets, the jib shall be trimmed using only the primary winch on the side on which the jib is set.

Tacking

1. Helm

- Execute smooth steering through the tack; adjust the rate of turn to the conditions.
- Land the boat on correct angle; focus on boat speed and heel angle for getting to target.

2. Tactician

- Communicate style of tack.
- Call countdown to tacking.
- Release old runner and load it again—or leave it off the winch (if a dip is expected, or on final tack to windward mark). Alternatively, bring on new runner if Floater releases old.

3. Main

- Trim main and adjust traveler to conditions.
- Communicate about speed build with Helm and Trimmer.

4. Trimmer

- Release jib sheet and go to leeward to set up for speed build/trim set up; trim on once at speed.
- Or: tail jib and do build/trim set up; trim on once at speed
- Call landing angle for speed build.
- Talk about bottom speed and how well speed is building.

5. Trim #2

- Tail jib sheet—unless Trimmer does this.
- Or release jib sheet and go straight to rail.
- If not involved with jib trim, cross to new side with vang tail in hand.

6. Pit

- Cross to the new side.

7. Bow

- Cross to new side and hike, carrying vang tail (unless Trim #2 has it).
- Clear halyard if needed, or get it ready for the hoist on final tack into mark.

8. Floater

- Bring on the new runner or release old runner (see Tactician).

Sailing Downwind

Downwind legs are when you'll have your biggest gains and losses. Working the boat hard always pays off, and it's the one time that the entire crew can contribute to boat speed and the way the boat is being sailed. Kinetics are always important, and moving as a group and keeping the boat on its toes is key. It's also important for team members to stay low and out of the line of sight for Helm and Trimmer. Get in tune with the way the boat likes to be sailed, so you can move when the Trimmer talks to the Helm rather than needing extra instruction. For example, when the Trimmer says "Come up a few degrees, the chute is getting light," crew movement will normally will be to leeward to heel the boat and help it head up. When you hear "Good pressure; start working this down," that's your cue to move bodies to windward. Sometimes I'll call for a "two-body squash," meaning two crew move to the rail.

Work the boat. Pump the sails within the Racing Rules of Sailing and the class rules. Someone trims the mainsheet aft in the cockpit and someone else winds on the primary winch to help work the boat down each wave. With good timing and technique, this is very fast in certain conditions.

Work out a "numbering system" for who will move aft first, second, and third after the set. If I call for three bodies aft, there should be no hesitation about who moves. See specific roles below for some suggestions.

When will you leave the jib up? It might be in 10 knots and above. Whatever you decide, know the number so there's no hesitation after the set. Also consider at what wind strength you'll drop the jib halfway to help the spinnaker fill out of a jibe. Trim the jib downwind to make sure the top is light and twisted, not over sheeted. When your mode changes, the jib may need to be retrimmed.

The spinnaker is always sheeted to the windward winch. You may need to trim differently for different wind speeds, depending on how much grinding power is needed for sheet movement. These are going to be "dealer's choice" decisions based on the style and preference of your crew. Once this is worked out, figure out the best person onboard to slot into this spot.

1. Helm

- Execute smooth steering and keep boat on mode.

2. Tactician

- Communicate about goals and tactical plays, modes, and what's next.
- Tactician is No.1 person to move aft.

3. Main

- Trim main and help with mode and speed communication, along with longer term wind info.
- There will be certain conditions when Main moves aft, but he/she will not be in the numbering system.

4. Trimmer

- Sit near primary winch.
- Talk with Helm about pressure in the spinnaker, ideal mode, and how to achieve it.

5. Trim #2

- Grind on primary winch for Trimmer.
- Call puffs and lulls.

6. Pit

- Work on kinetics with Bow and Floater in light air.
- Trim jib downwind.
- In the breeze, Pit is probably No. 3 to go back.

7. Bow
- Make sure spinnaker sheet is clear and ready for jibe.
- Work on kinetics with Pit and Floater in light air.
- In breeze, move aft and trim jib sheet and vang once Floater goes aft.

8. Floater
- Work on kinetics with Pit and Floater in light air.
- In breeze, Floater is probably No. 2 to go aft.

Hoists

There are plenty of little details that go into smooth spinnaker sets, which give you the chance to gain or remain strongly positioned in the fleet. First, always have a good game plan before you get to the top mark: What is the setting and exit goal? Is it a straight set or will there be a jibe? How do you want to exit—sailing in a high lane, normal VMG, or low out of the set? Knowing the game plan will help the whole crew do their jobs well—and could mean a delayed set or early sneak.

IC37s respond well to weight on the rail. Depending on the type of course (offset leg or not), the crew should stay on the rail as long as possible, hiking until the last possible moment and then getting into position to set up for the hoist. It's common to think that once you turn onto the offset leg you can come off the rail; I believe in working the boat hard on this leg, to get free of any possible overlap or gain that extra half boatlength you'd been working so hard for up the beat. This will give you some freedom to get into your best downwind mode, which will help you extend and remain strong on the boats around you.

Once the jib is eased onto the hobble, it will need a trim back in once the bow is down to help the spinnaker head and tack out around the sail and the bow pulpit. A quick ease will help the spinnaker fill; then trim the jib back to its downwind tension.

Don't get too focused on all your different options leaving the top mark; it's important to remember the processes and not to change these much. It is all too easy to rush things or hoist too early, which usually ends with a wrap and a bad set. Timing is important, and executing well every time is rewarding for the crew and for your performance.

Two tips:
- On your halyard jammer (clutch), put bright-colored tape on the underside so you will quickly notice if you have left it open!
- Decide who is the best person to trim the jib if Trim #2 is grinding the spinnaker sheet.

Bear-Away Set

1. Helm
- Execute smooth steering
- Keep the bow at the best angle for hoisting until the spinnaker is all the way up; then put the boat onto best angle to fill it.

2. Tactician
- Communicate type of set, style of exit, and plan out of the mark.
- Ease runner to firm hand tight.

3. Main
- Ease main to flatten boat and allow boat to bear away.
- Adjust for downwind settings; outhaul and cunningham off, vang to downwind mark, lock traveler in the middle.
- In many conditions, trimming off the leeward winch will help with weight placement.

4. Trimmer
- Make call on jib up or down
- Ease jib onto hobble as long as the jib foot is still inside the lifelines and load winch, ready for the quick snap of spin sheet.
- Move up to windward and start talking with Helm about feel and speed/angles to sail.

5. Trim #2

- Pull out tack and pole (if you can do both), or just tack.
- In more wind, move forward to help overhaul jib sheet. Jib needs to come back on to help tack of spinnaker around pulpit. Then trim until the Pit can take over.
- Load lazy spinnaker sheet onto winch and make sure it's clear for the jibe.
- Move to grinding if spinnaker sheet.

6. Pit

- Ease vang to mark and release cunningham.
- If Trim #2 can't do both pole and tack together, pull pole out.
- Tail spinnaker halyard up from weather side deck (out of cockpit). Make sure jammer is closed!
- Once going, ease outhaul and set up vang for downwind.
- Once settled, clean halyards and tack line.

7. Bow

- Make sure halyard is clear and pulled forward.
- Open hatch and make sure sheets are clean and set up.
- Dig tack out and pull forward to get it out from under jib foot and around pulpit. Keep hold of the spinnaker's head.
- Help feed head and tack during hoist, keeping head forward until hoist call.
- Check spinnaker on the way up and makes sure there are no twists or problems with string line.
- Pull jib down if that's called.
- Get lazy spinnaker sheet clear and ready for the jibe.
- Close hatch and get to the rail.

8. Floater

- In light winds, move forward to be ready to hoist the spinnaker and take jib down if necessary.
- Bounce spinnaker up from mast. Make call: "3, 2, 1, made!"
- Check halyard marks and move to rail, or help drop jib by pulling down on the leech.

Jibe-Set (Zambuca)

1. Helm

- Execute smooth steering.
- Delay the turn until the bulk of the spinnaker is around to the new side, then complete the jibe.
- Turn the boat through turn and put bow onto speed-build angle.

2. Tactician

- Communicate type of set and style of exit; this maneuver can be called late by design although it's pulled off better with more time. It's important to follow the important steps—the crew all need to be on same page.
- Releases old runner or take up new one. Or in light air, do both runners. *Do both runners!* Pull to firm hand tight.

3. Main

- Ease main to allow boat to bear away and flatten out.
- Jibe main across and set up to go downwind.
- Adjust for downwind settings—outhaul and cunningham off, vang to downwind mark and lock traveler in the middle.

4. Trimmer

- Make call on jib up or down
- Leave jib sheeted in and cleat; start to pull spinnaker clew around headstay. In this maneuver, it's important that the jib not be over-eased or is pulled back in tight.
- Keep pulling clew around ready to snap the spinnaker sheet in and get spin flying by over-sheeting at first.
- Move up to windward and start talking with Helm about feel and angles.

5. Trim #2

- Pull pole and tack out if you can do both. Otherwise pull tack out.
- Overhaul Jib sheet then let go once chute is around and clear of headstay.

- Move to grinding on winch.
- Load new spinnaker sheet onto winch for jibe.

6. Pit

- Reaches in and takes slack out of spin halyard.
- Ease vang to mark and cunningham off.
- Pull pole out if Trim #2 can't do both pole and tack together.
- Make sure spinnaker halyard jammer is closed.
- Tail spinnaker halyard up from cockpit.
- Once going, ease outhaul and sets up vang.
- Clean up halyards and tack line once settled.

7. Bow

- Make sure halyard is clear and pulled forward.
- Open the hatch and make sure sheets are clean and set up.
- Dig tack and clew out and pull forward and get out under jib foot and around pulpit. Keep hold of the head the chute if possible, keeping it forward; need to have the clew patch pulled (high) and around headstay so it's not caught anywhere. Having
- this free for the trimmer helps the rotation and becomes the key to the hoist. Help feed clew, head and tack during hoist; remember the clew needs to be moving the whole time!
- Check spinnaker on the way up and make sure there are no twists or problems with string line.
- Pulls jib down if that's been called.
- Get lazy spinnaker sheet clear; call "Clear to jibe."
- Close hatch and get to the rail.

8. Floater

- Move forward to be ready to hoist the spinnaker, then be ready to help take jib down if it's jib-down conditions.
- Bounce spinnaker up from mast. Make call: "3, 2, 1, made!" Checks halyard marks and move to rail.
- Pulls jib around and makes sure clew is out so chute can fill.

Bear-Away Set, Early Jibe

This maneuver is typically done when you have a nice lead, and you are thinking about jibing but don't want to split with the fleet. You wait and watch the next boat, and if they are committing to jibe-setting, you roll into your jibe. Priorities are the same for a normal bear-away, but you are looking to have the sheet cleared (call "clear to jibe") and the new sheet being loaded on the winch and slack taken out.

If the jib will be coming down, then you have to make the call over whether to leave the jib up and drop it at the end of the jibe, or wait until it's down and, only then, when Bow calls "clear to jibe," you can jibe. That's always the important part as you don't want the sheet under the foot of the jib or tangled in the sail to affect your jibe. Decide the priority of the jibe and getting the jib down early, and let the team know the plan.

1. Helm

- Execute smooth steering.
- Keep the bow at the right angle until the chute is at full hoist; then put the boat onto best angle to fill chute.
- Work hard on speed out of hoist, ready for the jibe.

2. Tactician

- Communicate type of set, style of exit, and plan out of the mark.
- Ease runner, reducing load to downwind tension, firm hand tight.

3. Main

- Ease main to flatten boat, allowing boat to bear away.
- Adjust for downwind settings—outhaul and cunningham off, vang to downwind mark and lock traveler in the middle.
- Have mainsheet setup, ready for the jibe.

4. Trimmer

- Make call on jib up or down.

- Ease jib onto hobble and loads winch ready for the quick snap of the spinnaker sheet.
- Move up to windward and start talking with helm about feel and speed/angles to sail.
- Be ready for the jibe and getting the boat on a good angle.

5. Trim #2

- Pull pole/tack out if you can do both. Otherwise pulls tack out.
- Load lazy spinnaker sheet onto winch and make sure it's clear for the jibe.
- Move to grinding on winch or get ready to jibe the chute.

6. Pit

- Eases vang to mark.
- Pull pole out if Trim #2 can't do both pole and tack together.
- Tail spinnaker halyard up from weather side deck (out of cockpit). Make sure jammer is closed!
- Once jibed, ease outhaul and set vang up for downwind.
- Clean halyards and tack line once settled.

7. Bow

- Makes sure halyard is clear and pulled forward.
- Open hatch and make sure sheets are clean and set up.
- Dig tack out and pull forward and gets out under jib foot and around pulpit. Keep hold of the head the chute.
- Help feed head and tack during hoist, keeping head forward until hoist call is made.
- Check spinnaker on the way up and makes sure there are no twists or problems with string line.
- Pulls jib down if that's called.
- Get lazy spinnaker sheet clear and ready for the jibe.
- Close hatch and gets to the rail or get ready to gybe the jib from on the bow.

8. Floater

- Move forward to be ready to hoist the spinnaker, then be ready to help take jib down if it's jib-down conditions.
- Bounce spinnaker up from mast. Make call: "3, 2, 1, made!" Checks halyard marks and move to rail.

Jibing

As on every asymmetric boat, you will find the IC37 has a style and technique associated with its performance and the operational side with its winches, etc. Once you figure out what the turn rate will be to time the rotation of the spinnaker, you will want to work very hard to jibe the same way all the time. Use the crew to work their weight placement and roll the boat down range with everyone that can move to the old windward side or even just a step in towards that side. Also have one or two crew along the rail to pull (bounce) the new sheet around. The goal of your steady turn rate is to allow the rotation of the chute to the new side so the boat hits its speed-build angle just as the sail pops and you flatten the boat with the crew. This will be often called by the trimmer, as it will be a "fast flatten" or a "slow squash" depending on the roll and turn rate vs. the angle you land on. As the breeze and waves build, you will find the balance of the turn rate vs. the spinnaker rotation will need to change. It will also be affected by how early or late you get the main across through the jibe. Your style and speed of rotation and turn will become part of what you develop to suit your team.

You will have several common styles of jibes:

- **"Normal"** (VMG) will use the best turn rate for spinnaker rotation and crew roll.
- **"No look"** will be used when you want to jibe first, without the trailing boat jibing also. This as we all know means the boat gets turned and everybody plays catch up… Usually people are ready and holding what they need without showing. I like to have this where you might have someone that doesn't normally do that role but is closest take it on so the movement and telegraphing is not so easy for the other boat to see. One thing about

this is the call of "they match" meaning they're jibing also—this automatically becomes tricker because the helm must turn the boat faster, landing at a higher angle than usual. The crew know to hit the rail and hike and the spinnaker is going to be over-sheeted, waiting for the call to work down a few degrees.

- **"Matching jibe" or "Symo"** will be used when all crew are ready to jibe as the boat in front begins to jibe. Now this isn't everyone as you still need the group responsible for speed working hard to have the boat at 100 percent so you can use that to jump them. This jibe will be at a faster turn rate and a higher landing angle…the rest is just like "No look" and "They match."
- **"Surfing"** might mean you have a two-phase jibe, as usually the wind is up and you are looking for the right wave. When you find it, you make the first part of the turn quickly to unload the sails. You then want to hold the surf while the rotation happens, then pop the bow up and get ripping or surfing on the new jibe. Not one jibe in these conditions is usually the same, and the Helm will have to adapt to every situation and make the subtle changes in steering needed to raise the level of success.

1. Helm
- Execute smooth steering.
- Work on turn rate vs. tactical situation or style of jibe.

2. Tactician
- Communicate type of jibe and countdown time into the jibe.
- Ease runner off or bring on new runner. In light air, do both.

3. Main
- Jibe main from the winch and then control the ease so the battens flip through.
- Set up winches if trimming off leeward winch.

4. Trimmer
- Control the ease of the spinnaker sheet to the headstay and then cut (release) the sheet.
- Turn around and help to bounce the new sheet around, then load new sheet on the winch.
- Call the angle out of the jibe and work on helping get to speed and angle again with Helm.

5. Trim #2
- Tail in new sheet, pull hard, and get ready, and with Trimmer do final bounce—sometimes together, sometimes leapfrogging the other person to keep the line speed up, then doing a joint bounce and onto the winch.
- Get winch handle, ready to grind for Trimmer
- Reload lazy sheet, ready for next jibe.

6. Pit
- Jibe the jib, pulling it in tight before the spinnaker is rotated around the headstay. Then ease sheet and trim jib in on new tack. Don't pull it too soon as it will need to remain loose until the spinnaker sheet is eased and the boat is up to speed.

7. Bow
- Check everything on the bow is clear.
- Bounces spin sheet on deck with Mast.

8. Floater
- Jibe runners with Tactician if in aft spot
- If forward, take care of the vang.

Drops

Planning your entry into the bottom mark takes place on the last third of the run as you figure out which mark you want and how you plan to get there. Remember, there is a big risk reward as it's not only about the approach and set-up for the mark but also leaving it and making a good exit.

I feel it's important to prioritize positioning the boat where you allow the crew to be able to execute their jobs. Getting the chute down, having a good turn into and exit from the mark with everyone on the rail is more important than pushing the drop to the last moment and then having a problem. (OK, yes, there are times when getting that overlap outweighs the last sentence.)

Communicate about which mark you're going to, when you want to drop, how you want to leave the mark, and which boats are problems or goals to be inside.

You have two gate marks on most windward-leeward courses, so it's going to be very simple, with three drop types that have slightly different time variations based on conditions or overlaps situations.*Remember the drop line is always set up on the left or port side of the boat! Set up of the string line has it running up the left spinnaker for purposes of inside gybing so it's lifting the foot up on a leeward drop. I break it down this way as my philosophy is that broken down and made as basic as possible only increases your execution rate.

1. **Windward Drops** are usually the safest and fastest.
2. **Leeward Drops** can be a little harder to get onboard as the lifelines come into play and you have to pull the spinnaker back forward over and around everything to get it into the hatch.
3. **Mexican/Kiwi Drops** are not as common as the speed of drops happens so fast these days, but calling for one lets the crew know you will be jibing to go around the mark. And sometimes your call for a leeward drop will be delayed and turn into a Mexican/Kiwi. Remember the string line is on the port side of the boat and on the port side of the spinnaker to help the windward drop out.

Leeward Drop

As it gets windier this drop can become risky, and a dial-down of the bow for the drop becomes important to help stand the boat up and limit the load and bow waves from grabbing the tack. Remember the tack becomes your life to get this safe. It's always good to have a really long tack line so if you have a trawl you can blow it all the way to release the water out. The countdown "5, 4, 3, 2, 1, drop!" becomes vital for the Helm, Trimmer and Pit. The Floater will be taking up tension on the takedown string line while standing facing forward, braced behind the companionway hatch (the string line will exit from a turning block at the base of the mast). On the "3," the bow comes down, on "2," the sheet is eased, then a combination of halyard (first) and tack (second) at the drop call. It is okay to have the tack and pole still out when the spinnaker is most of the way down to keep it out of the water. The tack and pole should be the last two pieces to come in. With the countdown at 1, start to open the jammer (clutch), ready for the drop call.

1. Helm

- Look around to know where mark is and which boats will have rights or give room.
- Bring bow down the required amount for the conditions.
- Look for the mark again and work out which boats to steer around.
- Execute a nice wide-and-tight turn, trying not to park the boat up but let it accelerate into and out of the turn.

2. Tactician

- Communicate type of drop exit and the plan out of the mark.
- Countdown the drop.
- If not going to left (port) turn, wind runner up before mark to be about 80-90 percent tension.
- If jibing, ease runner off or bring on new runner. In light air, do both runners.

3. Main

- Set up main for the beat.
- Have both mainsheet winches ready to be ground in.

4. Trimmer

- Ease spinnaker sheet at the count of 2, then stand by to overhaul sheets out of the water.
- Load jib onto winch and prepare to trim on or jibe the jib.
- Move up to windward side and load new sheet.
- Start talking with helm about feel and speed/ angles to sail.

5. Trim #2

- Pull pole in on Bow's call.
- Get tail of jib sheet to tail in for Trimmer while hitting the rail

6. Pit

- Set up outhaul and cunningham.
- Make sure jib halyard is at its mark for the beat.
- Blow the halyard (first) and tack jammer (second) on the drop call. It is okay to have the tack stay on until the spinnaker is most of the way in the boat.
- Follow the drop and be ready to check the halyard on the way down.
- If needed, go forward and lift clew over the life lines.
- Once clean and clear, hit the rail with vang in hand.

7. Bow

- Be on your feet and able to move around the hatch.
- Make sure string line is clear to go.
- Open hatch and make sure lazy sheet is over hatch and set up for the drop.
- Be ready to start pulling back on the leech of the sail to help to keep the spinnaker in the boat, then work tack inside and under the jib, then work the clew and head while going up the sail stuffing all parts down as it's pulled in.
- Clean up and close hatch; check to see if jib needs skirting.
- Hit the rail and start hiking. You need to wait until first tack to clear halyard and move it to the clip (which is at base of mast or chainplates).

8. Floater

- Stand in cockpit with feet on back of companionway, ready to pull chute down with string line. Pull out all slack as countdown happens. Once chute is all the way in, throw string line forward to front of cockpit.
- Move back to runners position.

Windward Drop

As it gets windier this drop becomes your safer drop, but a dial-down of the bow is still important to help stand the boat up and limit the load. The countdown "5, 4, 3, 2, 1, drop!" becomes vital for the Helm, Trimmer and Pit. The Floater will be taking up tension on the takedown string line to beat the whole drop process. On the "3," the bow comes down, on "2," the sheet is eased, then a combination of halyard (first)and tack (second) at the drop call. It is better to keep the tack and pole out until the drop is mostly completed to keep it out of the water. With the countdown at 1, start to open the jammer (clutch), ready for the drop call.

1. Helm

- Look around to know where mark is and which boats will have rights or give room.
- Bring bow down the required amount for the conditions.
- Look for the mark again and work out which boats to steer around.
- Execute a nice wide-and-tight turn, trying not to park the boat up but let it accelerate into and out of the turn.

2. Tactician

- Communicate type of drop exit and the plan out of the mark.
- Countdown the drop.
- If not going to left (port) turn, wind runner up before mark to be about 80-90 percent tension.
- If jibing, ease runner off or bring on new runner. In light air, do both runners.

3. Main

- Set up main for the beat.
- Have both mainsheet winches ready to be ground in.

4. Trimmer

- Ease spinnaker sheet at the count of 2, then stand by to overhaul sheets out of the water.
- Load jib onto winch and prepare to trim on or jibe the jib.

- Move up to windward side and load new sheet.
- Start talking with helm about feel and speed/ angles to sail.

5. Trim #2

- Pull pole in on Bow's call.
- Get tail of jib sheet to tail in for Trimmer while hitting the rail.

6. Pit

- Set up outhaul and cunningham.
- Make sure jib halyard is at its mark for the beat.
- Blow the halyard jammer (first) and tack jammer (second) on the drop call. Wait until the drop is mostly completed to blow the tack and pole lines.
- Follow the drop and be ready to check the halyard on the way down.
- Once clean and clear, hit the rail with vang in hand.

7. Bow

- Be on your feet and able to move around the hatch.
- Make sure string line is above headstay and pulling high.
- Open hatch and make sure lazy sheet is over hatch and set up for the drop.
- Be ready to start pulling on the leech of the spinnaker to help it around the forestay and keep it out of the water, , then work the clew and head while going up the sail stuffing all parts down as it's pulled in.
- Clean up and close hatch; check to see if jib needs skirting.
- Windward drop allows Bow to bring halyard aft with them and clip it to keeper as they hit the rail and start hiking.

8. Floater

- Stand in cockpit with feet on back of companionway, ready to pull chute down with string line. Pull out all slack as countdown happens. Once chute is all the way in, throw string line forward to front of cockpit.
- Move back to runners position.

Mexican / Kiwi Drop

As it gets windier, this drop becomes an early-leeward-drop-turning-into-a-Mexican. The dial-down of the bow remains important to help stand the boat up and limit the load and bow waves. The countdown "5, 4, 3, 2, 1, drop!" is vital for the Helm, Trimmer and Pit. The Floater will be taking up tension on the takedown string line to beat the whole drop process. On the "3," the bow comes down, on "2," the sheet is eased, then a combination of halyard (first) and tack (second) at the drop call. It is better to keep the tack and pole out until the drop is mostly completed to keep it out of the water. With the countdown at 1, start to open the jammer (clutch) ready for the drop call.

1. Helm

- Look around to know where mark is and which boats will have rights or give room.
- Bring bow down the required amount for the conditions.
- Look for the mark again and work out which boats to steer around.
- Execute a nice wide-and-tight turn, trying not to park the boat up but let it accelerate into and out of the turn.

2. Tactician

- Communicate type of drop exit and the plan out of the mark.
- Countdown the drop and then the turn for the jibe.
- Ease runner off or bring on new runner. In light air, do both runners.
- Bring runner up to tension.

3. Main

- Sets up main for the beat
- Jibe the main.
- Have both mainsheet winches ready to be ground in.

4. Trimmer

- Ease spinnaker sheet at the count of 2, then stand by to overhaul sheets out of the water.
- Load jib onto winch and prepare to jibe the jib and trim on around the mark.

- Move up to windward side and load new sheet.
- Start talking with helm about feel and speed/ angles to sail.

5. Trim #2

- Pull pole in on Bow's call.
- Get tail of jib sheet to tail in for Trimmer while hitting the rail.

6. Pit

- Set up outhaul and cunningham.
- Make sure jib halyard is at its mark for the beat.
- Blows the halyard (first) and tack (second) jammer on the drop call. Wait until the drop is mostly completed to blow the tack and pole lines.
- Follow the drop and be ready to check the halyard on the way down.
- If needed, go forward and lift clew over the life lines and around the shrouds.
- Once clean and clear, hit the rail with vang in hand.

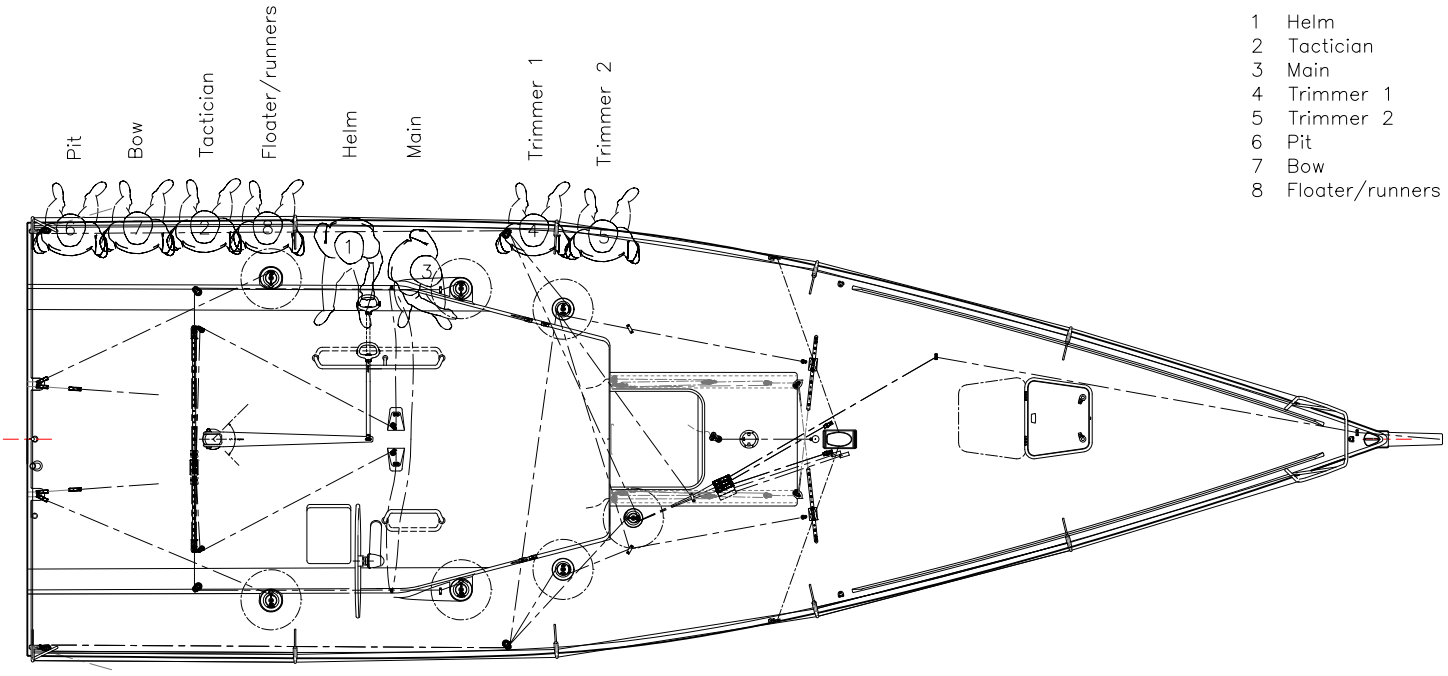
7. Bow

- Be on your feet and able to move around the hatch.
- Make sure string line is ready to go.
- Open hatch and make sure lazy sheet is over hatch and set up for the drop.
- Be ready to start pulling on string line until cloth of sail is reached, then work tack inside and under the jib, then work the clew and head while going up the sail stuffing all parts down as it's pulled in.
- Clean up and close hatch; check to see if jib needs skirting.
- Hits the rail and starts hiking. With leeward drop and this one you need to wait until first tack to clear halyard and move it to the clip.

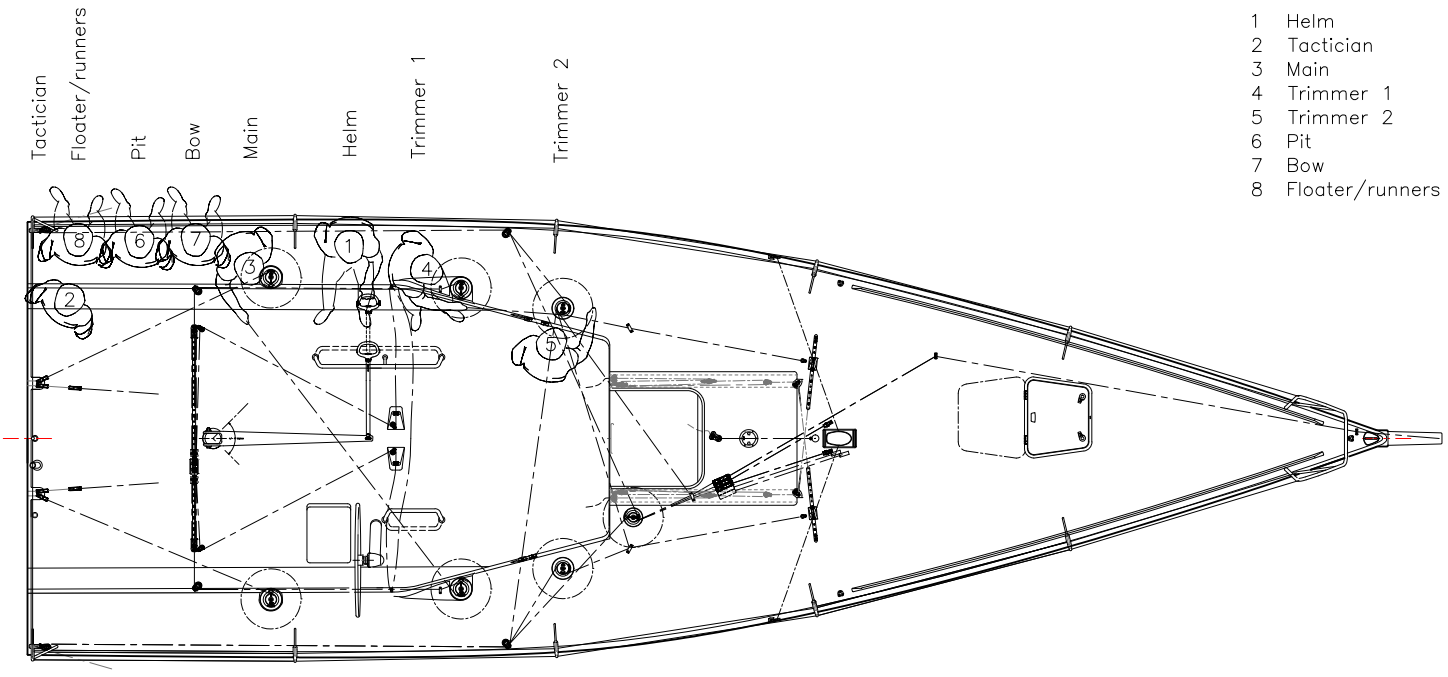
8. Floater

- Stand in cockpit with feet on back of companionway, ready to pull chute down with string line. Pull out all slack as countdown happens. Once chute is all the way in, throw string line forward to front of cockpit.
- Move back to runners position.

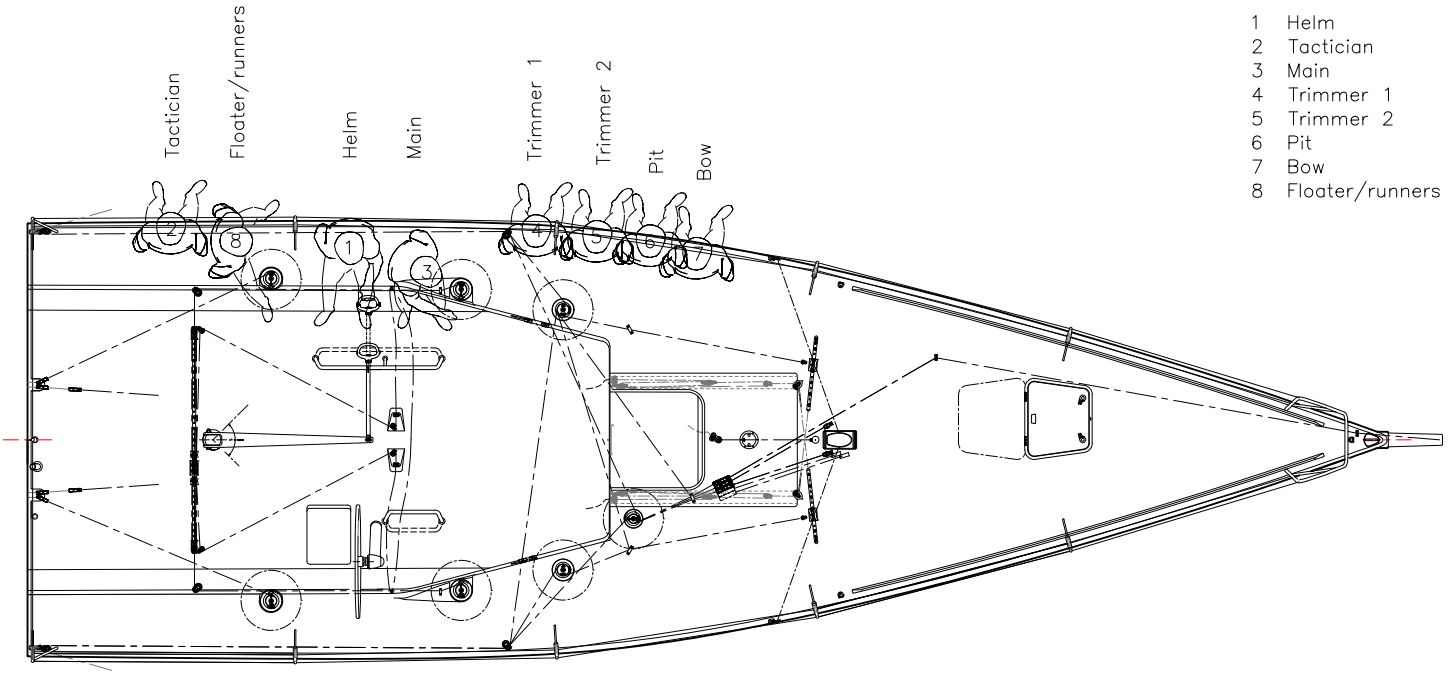
12+ Knot Upwind Configuration



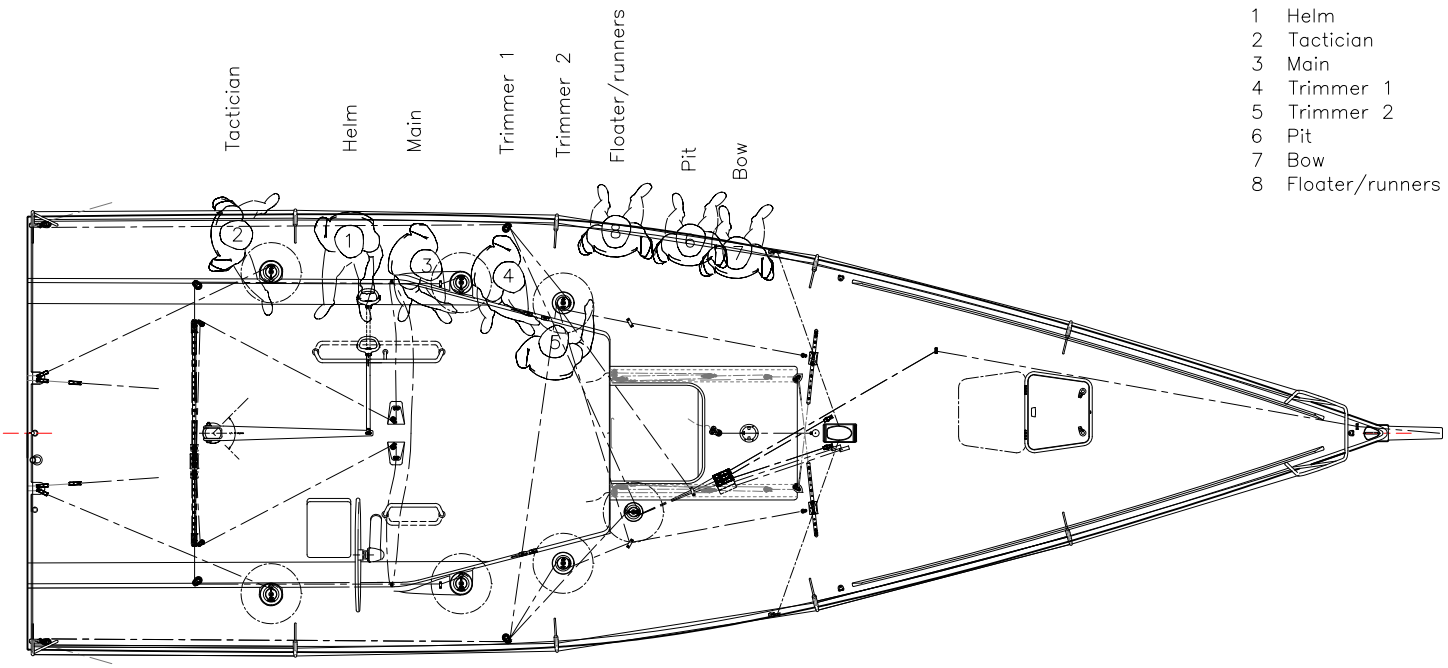
12+ Knot Downwind Configuration



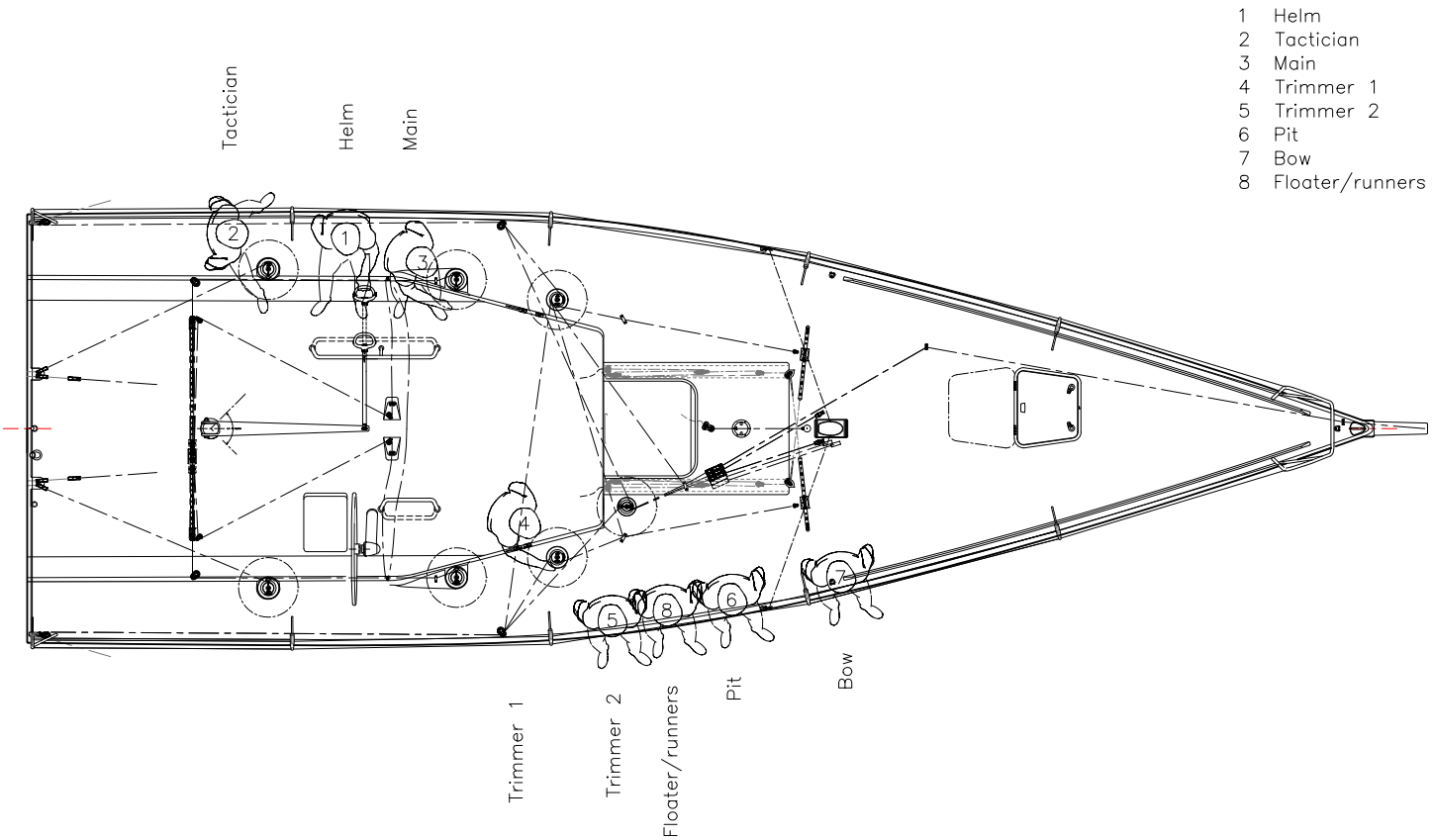
Light Air Upwind Configuration



Light Air Downwind Configuration



Drifting Configuration



POLAR BOAT SPEED

UPWIND			
TWS	VS	TWA	HEEL
6	6.06	44.6	11.5
8	6.44	38.9	16.0
10	6.71	36.9	18.6
12	6.91	35.9	20.4
14	7.05	35.5	21.3
16	7.14	35.4	23.0
18	7.21	35.6	24.4
20	7.30	36.3	25.0

DOWNWIND			
TWS	VS	TWA	HEEL
6	6.08	143	-2.1
8	7.21	147	-1.5
10	8.30	146	0.4
12	9.54	144	4.2
14	11.21	141	11.5
16	12.79	143	14.4
18	14.11	145	13.3
20	15.10	147	11.3

TUNE SHIMS

Wind Speed (knots)	Shim Height (mm)
18+	40
14-18	40
10-14	35
6-10	28
0-6	22

RIGGING TENSIONS *(On Full Shims)*

Designation	Loos RT11 Gauge	Loos RT10 Gauge
V1	39	–
D1	–	20
D2	–	15
V2 / D3	–	67
Headstay	20	–