

CYC Regatta Marks and Ground Tackle

Charlottetown Yacht Club

Jim Thompson and Nathan Fredrickson
Oct 31, 2022

CYC's Principal Race Office Nathan Fredrickson designed and oversaw making the ground tackle for marks used by CYC in its regattas. This document is a guide to the system.

PLEASE, NEVER:

- Disassemble the ground tackle components or remove lines from any of the marks or anchors: leave them as is.
- Tow the inflatable marks: they will tear.
- Lose the plugs for the inflatable marks: they are very hard to replace.
- Store the marks and ground tackle wet: rinse with fresh water and dry.
- Store the inflatable marks so they might be damaged: they are expensive.
- Store ground tackle in the crates without ensuring the correct ground tackle components (one complete set per crate): set them up so they are ready to go for the next race.
- Store lines without coiling them neatly in their crates: tangled lines are dangerous and a sign of bad line discipline. Makes it easier for the next crew too.

Typical Setups

For large inflatable marks:

- Large anchor with a 10-foot leash and a long weight at the end of the leash (Figure 4).
- 40-foot blue anchor line (Figure 6).
- 10-foot leash with two inline weights attached to the mark (Figure 8).
- And put a spare 20-foot green anchor line (Figure 7) in the crate.

For pins:

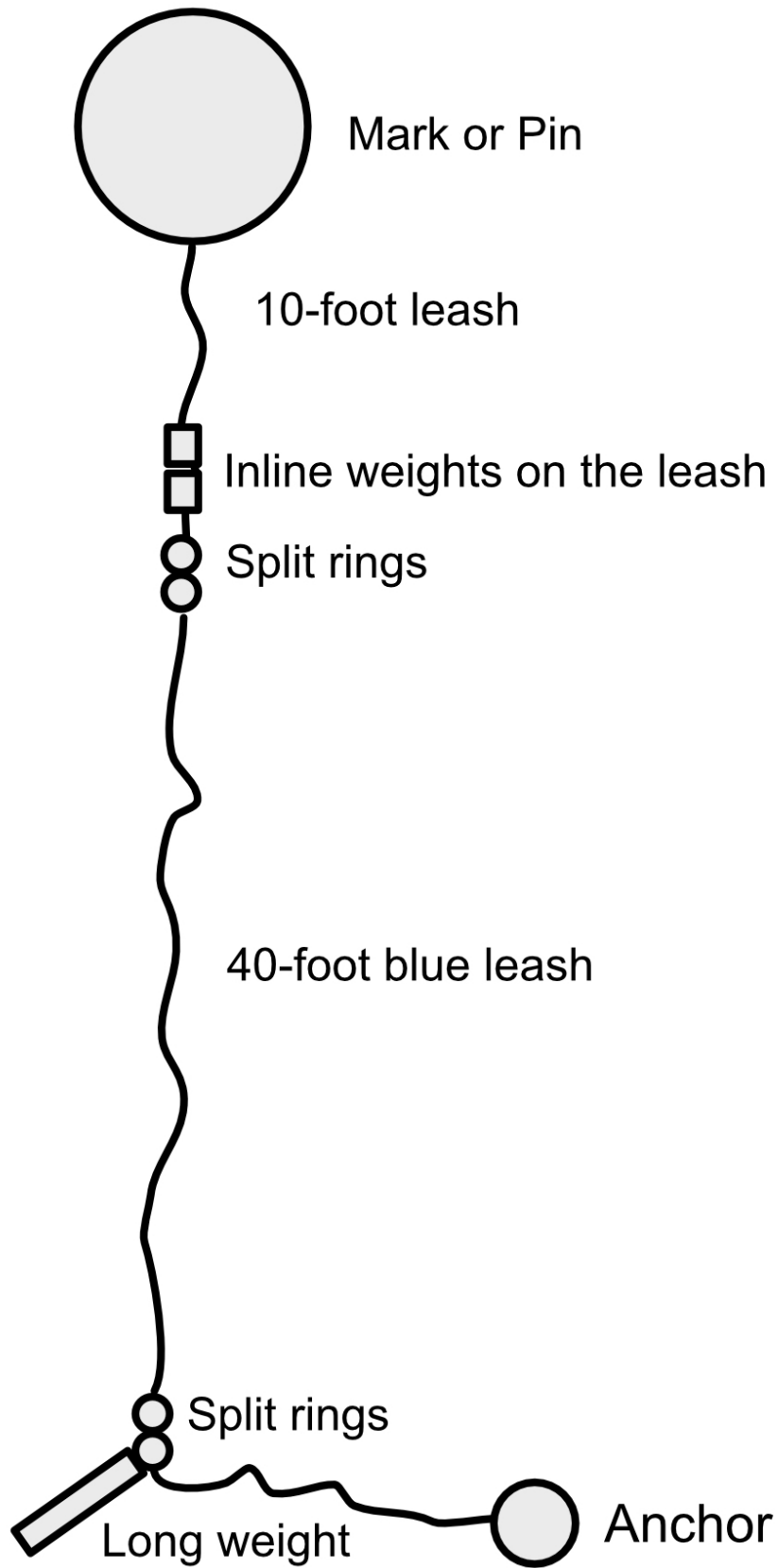
- Small anchor with a 10-foot leash and a long weight at the end of the leash (Figure 4).
- 40-foot blue anchor line (Figure 6).
- 10-foot leash with two inline weights attached to the pin (Figure 8).
- And put a spare 20-foot green anchor line (Figure 7) in the crate.

Spares:

- One complete setup for each of an inflatable mark and a pin.
- 40-foot blue anchor lines.
- 20-foot green anchor lines.

Note:

- Wrap each of the split links with a couple of turns of black electrical tape. Every year one of the split pin pairs manages somehow to separate and we lose gear.



Ground Tackle Components

Split link – a chain link that is split so that it can be connected easily to another split link (Figure 1).

Thimble – a galvanized hardware piece inside an eye splice that strengthens the eye. A split ring is put inside every thimble when the eyes are made (Figure 2).

Pin marks – (Figure 3) The marks used for start and finish lines. They are wooden poles with a Styrofoam float attached in the middle.

Inflatable marks – Large plastic pyramid floats used as turning points on the racecourses. There generally are two sizes and different colours.

Lines – All the lines are polypropylene.

Leash – (Figures 3 and 8) a 10-foot line attached to the bottom of each inflatable mark and anchor. Never remove those leashes from their marks. The pins do not have leashes.

Anchor line (rode) – (Figures 6 and 8) a 20-foot (green) or 40-foot (blue) line that runs from the leash on the mark to the leash on the anchor. Every line has an eye and split ring on each end. They can be linked together to make a rode appropriate for the water depth and current strength.

Anchor leash weights – Cylindrical weights attached at the end of each anchor leash to keep the leash down on the bottom to improve the anchor's holding efficiency.

Pin weights – (Figure 5) Attach a basket-shaped pin weight to the bottom of each pin. Weight is about right to keep them upright without sinking them.

Inflatable mark leashes – (Figure 4) The inflatable mark leashes have small round weights locked onto them by the splices at each end of the leash. They keep the leashes down so the boats don't tangle them.

Anchors – There are ~15 lb anchors for the pin marks and ~25 lb anchors for the inflatable marks.

Plastic Crates – All the ground tackle is stowed in plastic crates. One crate per mark, containing one 40' and two 20' anchor lines, one anchor with its leash attached, and a leash weight. Yellow-flagged crates have the specialized ground tackle for the pins.



Figure 1. Split link.



Figure 2. Eye splice reinforced with a thimble.

Operating Guidelines

Inflating marks

- Inflate marks onshore well before race day, to check for leaks.
- Use appropriate materials and methods to repair leaks.
- On race day, inflate marks so they are not tight. They will expand more in the hot sun.
- Be careful not to damage the marks while carrying them and never tow marks in the water.

Anchor line (rode) length

- We generally use a ratio of 1.5-2.0 rode length to water depth. So, in 20 feet of water, we would use one 40' line.
- Water depth will increase as the tide rises, so plan anchor line length based on highest water level expected during the day; Use a longer anchor line length (higher ratio) in fast tidal current.

- Rule of thumb:

<i>Depth</i>	<i>Anchor lines (rode)</i>
10'	One 20' (2:1)
15'	One 20' but lean toward one 40', especially in a strong current (1.3:1 which would only work well in calm water)
20'	One 40' (2:1)
25'	One 40' (1.6:1)
30'	One 20' and one 40' (2:1)
35'	One 20' and one 40' (1.7:1)
40'	One 20' and one 40' (1.5:1) but lean toward two 20' and one 40' especially in current
50'	Two 20' and one 40' (1.6:1)
60'	Two 20' and one 40' not enough. But should not be setting anyway in the main navigation channel in Charlottetown harbour and approaches.

Preparing to set

1. Remove the anchor with its leash and the anchor lines from the crate.
2. Set the anchor on the deck ready to drop first, then its leash with the weight on the end.
3. Connect the components using the split links. Wrap some black electrical tape over the split link opening to prevent them from coming undone. Happens to one mark every year.
4. Lay out the anchor line so that it will not tangle as it goes out after the anchor with its leash and weight.
5. Keep feet out of the bight, meaning the line lying on the deck. Don't get between the anchor line and the side of the boat/ocean. Make sure nothing else will tangle as the anchor drops and the line goes out.
6. The skipper will run the boat upwind into the waves toward the drop point.
7. On hearing "drop-drop-drop" from the skipper or PRO, toss the anchor and its leash weight clear, then quickly get the mark and the rest of the lines over the side so that the line does not tangle.

Recovering a mark

- The skipper will run the boat upwind into the waves toward the drop point.
- Grab the mark and bring it aboard. Use a boat hook if necessary.
- Then grab the leash and haul the anchor line and anchor aboard.
- Avoid damaging the boat as the gear comes aboard.



Figure 3. Pin mark.



Figure 4. Anchor with 10-foot leash and an anchor leash weight.



Figure 5. Pin weight.



Figure 6. 40-foot blue anchor line.



Figure 7. 20-foot green anchor line.



Figure 8. 10-foot mark leash with two inline weights.