



Race Course Options

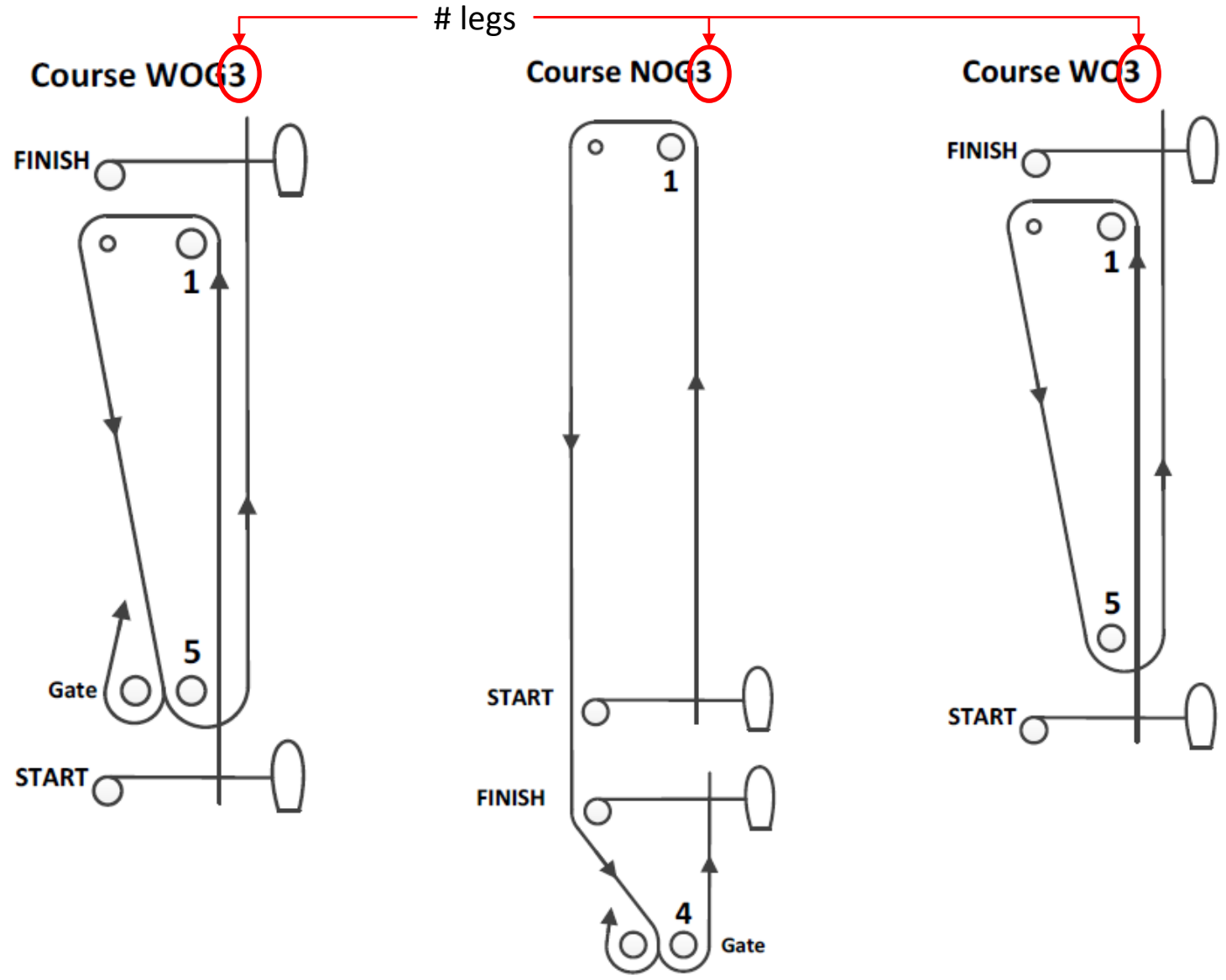
The JSA requires that the Host Club for any JSA sanctioned event have the resources to run one of the courses in the following pages. For our Junior Sailors, consistency is key. Travel regattas are exciting opportunities for our young sailors to show what they have learned through our Junior Sailing Programs, and predictability is important to allow them to excel.

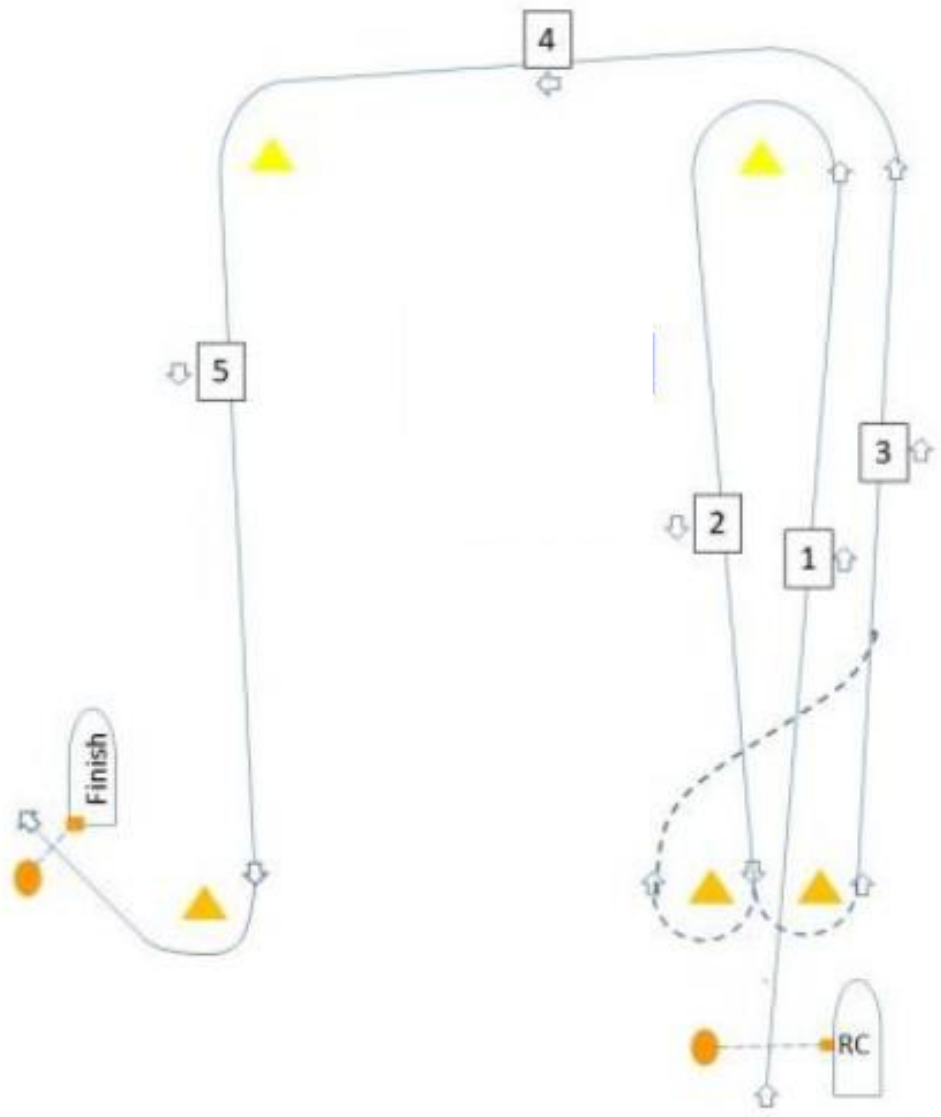
We have found from experience which courses work best based on boat class and regatta size. Please contact us if you have questions or would like advice in incorporating these courses into your regatta plans.

Questions?

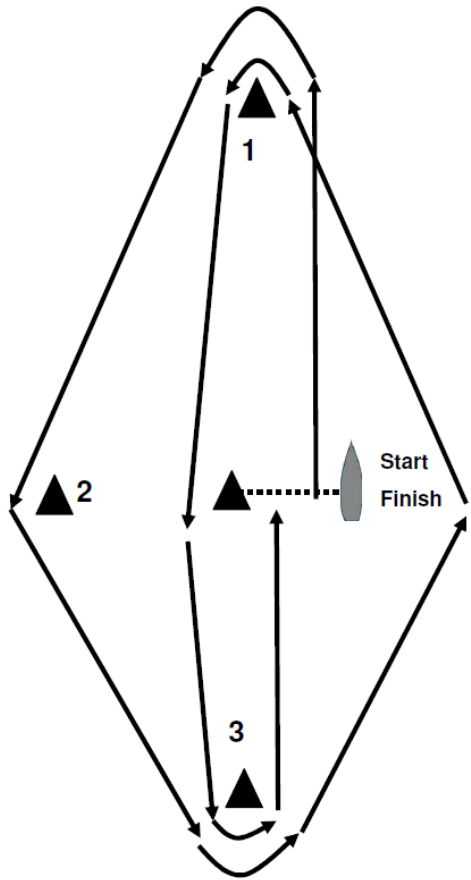
914-834-4202

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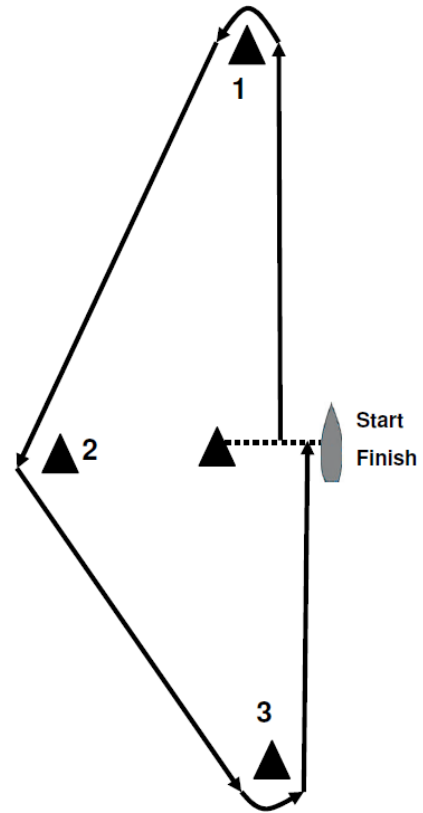


Course M



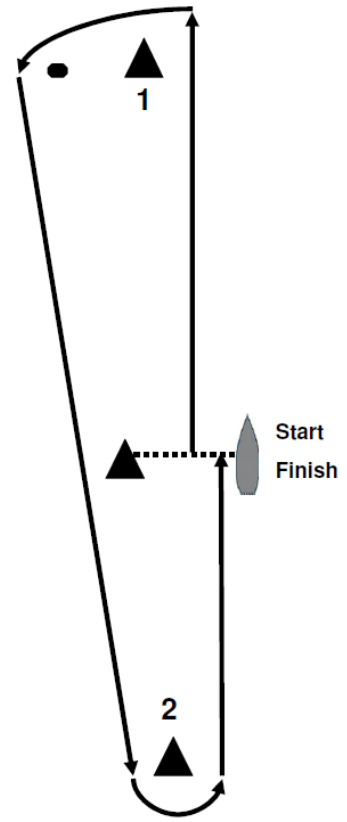
Modified Olympic

Course T

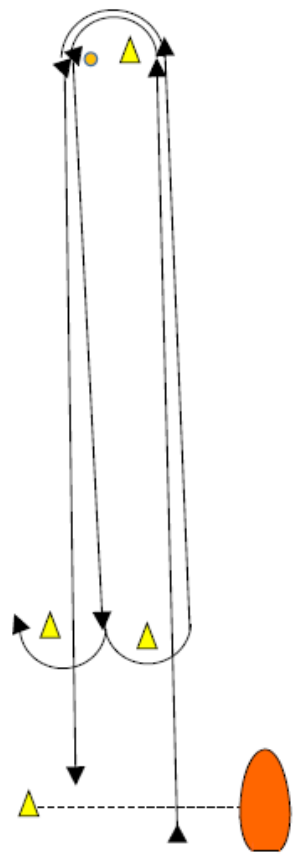
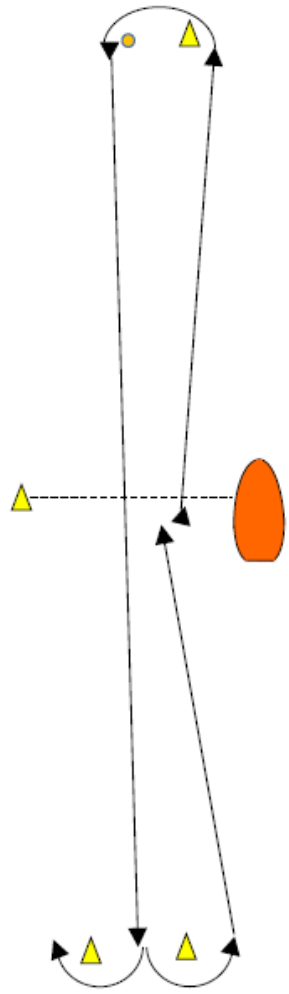


Triangle

Course W



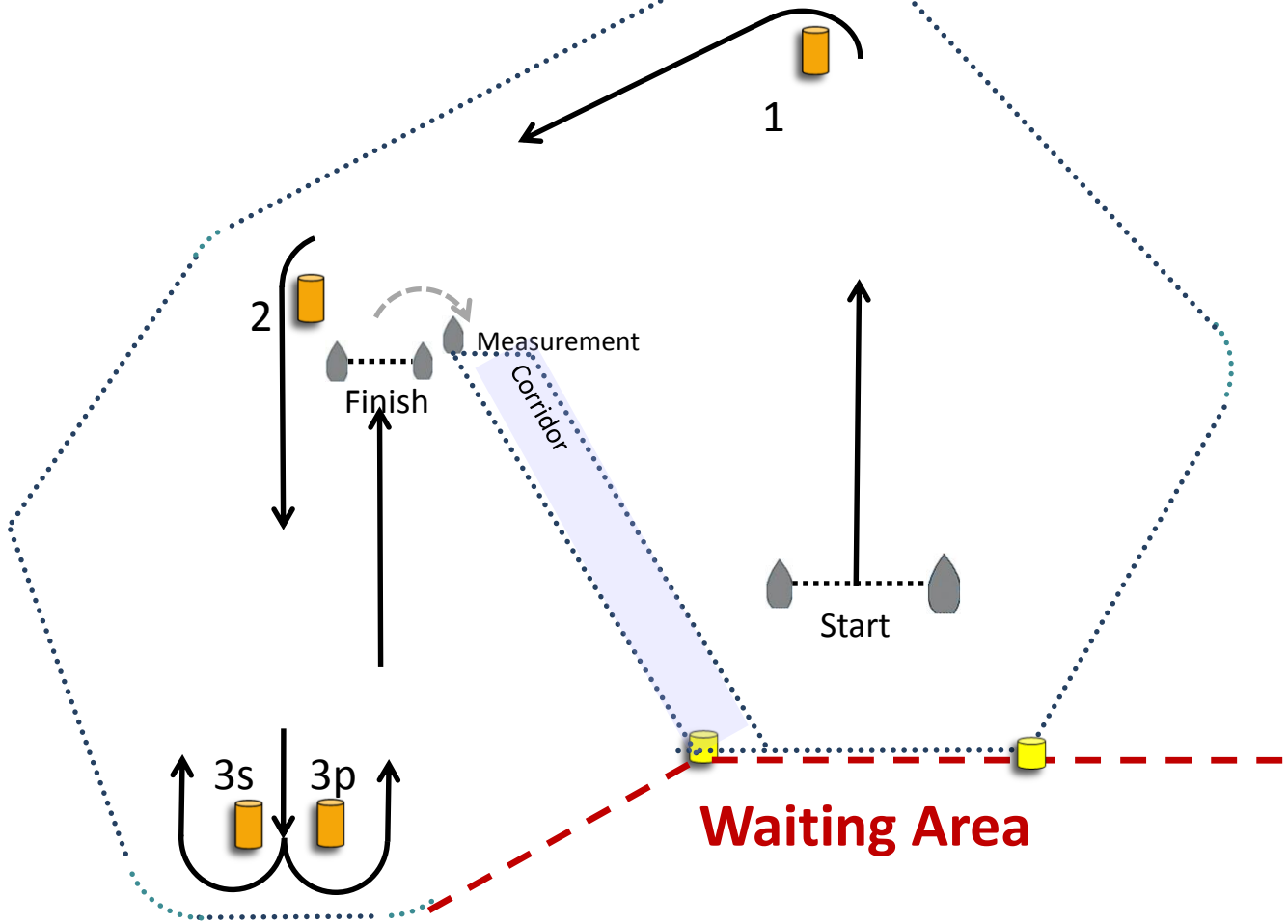
Windward-Leeward-Windward



Notes:

1. Either course may be modified by the RC to be sailed once or multiple times.
2. Race course location needs to allow for Feva jibing angles.

Race Course Options – Opti Champs

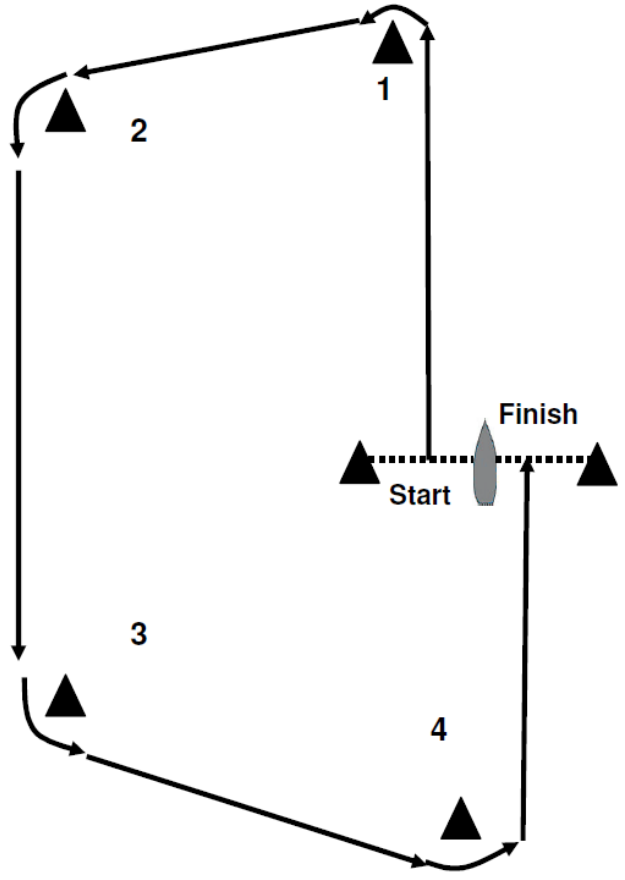


Course: Start, 1, 2, 3s/3p, Finish.

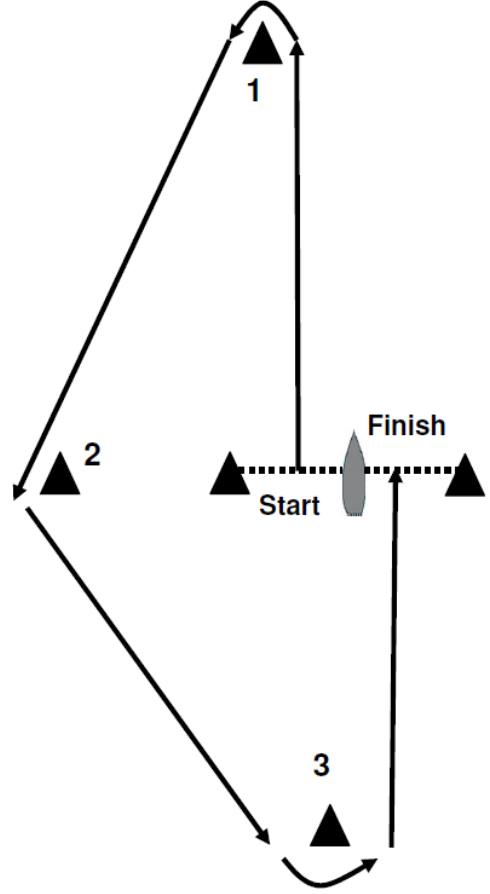
Racing area is marked in dots

Waiting Area windward edge marked by red dashes

OPTIMIST
TRAPEZOID



OPTIMIST
TRIANGLE



Setting and Managing Courses for USODA Regattas by Bill Stump and Anderson Reggio, March 2017

The standard race course for USODA events has some definitive parameters which provide consistent racing for our young sailors and mirrors what they will see at international regattas. Let's take this leg-by-leg around the course.

Optimist

Here is some helpful guidance from the USODA on setting Optimist Courses

1. **First, start at the end with Time Limits.** The overall time limit is 90 minutes for the first boat to finish. The finishing window is 20 minutes after the first boat finishes. The longer the race, the more likely the back of the fleet will be shut out of that finishing window. Combined with the need to run at least three (3) sets of races per day (depending on how many divisions), this means the target time for the first boat to finish should be 40 – 45 minutes.
2. **Starting Line Length:** A good rule of thumb for starting line length is 10 feet per boat. So, an 80-boat division gets an 800-foot line. Plenty long enough, but Optimists tend to bunch at the ends and skill differences cause many boats to start in the second and third rows, so the line may look too long. Don't go below 8 feet (one boat length) per boat.
3. **Starting Line Angle:** Work on squareness (fairness) to discourage boats from crowding at one end. The uncrowded end may have to be favored (pushed upwind) more than normal to entice boats to start near there. Certainly depends on the fleet and venue, and will require some experimentation.
4. **Leg 1 – First Weather Leg:** Depending on conditions – wind strength, wave height and current effect (if any) – a weather leg length of 0.4 to 0.55 nm will work well. In lighter winds, 0.35 nm would be the minimum length. This is because an 800' starting line is 0.15 nm long and a weather leg shorter than 0.35 nm would cause a parallax problem coming off the starting line. Remember to not attempt a start if the average wind speed is less than 4.0 knots. Target time for Leg 1: 14 – 16 minutes.

5. Leg 2 – Reach from Mark 1 to Mark 2: Because the finishing line is inside (the course) now, this reaching leg needs to be slightly longer than with the old (outside) finishing line configuration. Use 0.3 to 0.4 nm, depending on conditions and the length of the first weather leg. The interior angle should start at 70 degrees, meaning if the course axis (corresponding to the wind direction) is 360 degrees, then the bearing from Mark 1 to Mark 2 would be 250 degrees. Adjust this angle slightly (5-10 degrees) according wind strength and current direction to achieve an average beam reach. If the reach is too close or too broad, an unfavorable wind shift would make this leg not a reach. Target time for Leg 2: 6 – 8 minutes.
6. Leg 3 – Run from Mark 2 to Mark 3 (Leeward Gate): This should be the reciprocal bearing of Leg 1 (for our example, 180 degrees) and nominally the same length as Leg 1. It is important to have a square run, as Optis sail downwind at fairly deep angles. If there's a significant shift on the first weather leg, adjust Leg 3, if you have time, to about half the variation, meaning for a 20 degree shift make a 10 degree change. That will keep that leg in play if the shift goes back. Target time for Leg 3: 10 – 12 minutes.

Leeward Gate Length: 8 – 10 boat lengths apart, set square to the wind direction. Do not exceed that maximum; otherwise, boats will crowd to the port gate (3P) since the finishing line is on that side of the downwind rhumb line.

Warning: It takes more than twice as long to move a leeward gate as an individual mark because the marks have to be aligned after they're reset. If the first boats are rounding Mark 1, there's not enough time – they'll be at Mark 2 and headed to Mark 3 before the gate can be reset. Also, if Mark 3 is moved, it is likely the finishing line will have to be repositioned.

General (stay out of trouble) Rule: Do not attempt to change the course (move marks) while races are in progress. If the course needs to be reset, pause the upcoming start and reposition the marks after the division on the course has rounded them.

7. Leg 4 – Beat from Mark 3 to Finishing Line: Direction of this leg has to be slightly (5-10 degrees) to the right (looking upwind) of the course axis (reciprocal of run angle) so that boats running to Mark 3 don't interfere with boats finishing upwind. Length is about 75-80 percent of the length of Leg 3. If Leg 3 were 0.4 nm, then Leg 4 would be about 0.3 nm. Target time for Leg 4: 10 – 12 minutes.

Finishing Line length: 8 – 10 boat lengths should work. Make it a bit longer if there are RC boats at both ends of the finishing line to allow for upwind lay lines.

Good Luck!

8. Other considerations:
 - a. Target times above result in a range of 40 – 48 minutes for the first boats to finish. To adjust the length (time) of the race, it is preferable to move Mark 2, upwind or downwind (within the parameters of section # 5, above) or lengthen Leg 2 slightly (which might require shifting Mark 3 and/or the finishing line). Less preferable is to move Mark 3, upwind or downwind. See “Warning”, above, and never move marks when boats are on that leg. No matter what, we don't want races shorter than 40 minutes or longer than 60 minutes for the first boats to finish.
 - b. A caution on the finishing line. Boats are supposed to finish, round the corridor mark (or Measurement Boat) to starboard and proceed directly to the Waiting Area, staying well to the right (looking downwind) of the port end of the starting line on their way back. This is to prevent interference with boats in another division coming off the starting line.
 - c. For setting up the finishing line use this rule of thumb, subtract 60 degrees from the course axis and that is where the finish boat should be anchored when sighted from the RC signal boat. In our example above, with a course axis of 360 degrees, the finish boat should be sighted at about 300 degrees from the RC signal boat. But, observe the boats returning from their finish to get this right. They should be broad reaching on port tack.
 - d. If the finishing line is too high (too far to windward), boats returning will be sailing through the division headed upwind from their start. If it's set too low (too close to Mark 3), boats returning will interfere with boats in the same division still headed upwind to their finish.
 - e. Remember, the distances and angles above assume no current and the math is always approximate. Also, a course set for a 12kt day in flat water would take 30% longer in serious chop with the same wind speed and course distances.
 - f. Overall, this course configuration remains challenging because there is not a lot of wiggle room before the port tack lay line for Leg 1 is in the finishing area. The shiftier the conditions, the longer Leg 2 needs to be (up to 0.5 nm) to give some extra space for necessary adjustments.
 - g. See attached course diagrams for examples with 0.50, 0.45 and 0.40 nm weather legs.