

MODULE 7: SETTING THE COURSE

1. OBJECTIVE

At the conclusion of this module, you will have a good understanding of what is required to set a good course, and how you can assess whether the course is set correctly.

2. REFERENCES

For this module, you will need access to the current versions of the following references:

- a. Racing Rules of Sailing 2017 – 2020 (RRS);
- b. ARYA Race Management Manual (ARYA RMM);
- c. ARYA Standard Notice of Race (ARYA SNOR);
- d. ARYA Standard Sailing Instruction (ARYA SSI); and
- e. Heat Management System 16 (HMS 16).

3. SUGGESTED READING

Have a read of the following (most of the answers can be found here):

- a. Racing Rules of Sailing:
 - E3.3 Course Board
- b. ARYA Race Management Manual:
 - Page 9 10. Courses/Course Board
 - Page 10 11. Setting the Course to a New Wind Speed or Direction
 - Page 12 13. Finishing Line/Finishing Procedures
 - Page 22 2.1 Set the Course
 - Page 22 2.2 Complete the course board
- c. ARYA Standard Sailing Instruction:
 - Para 5 The Courses
 - Para 1.3 E3.3 Amendment to RRS
E3.8(c) Amendment to RRS
- d. ARYA Standard Notice of Race
 - Para 11 Courses

4. WHAT SHOULD YOU AIM FOR WHEN SETTING A COURSE?

4.1 The goals for the Race Officer setting the course are:

- to ensure that boats are evenly spread:
 - along the start line
 - on each side of the beats
 - on each side of the runs
 - at the gate
- to set an upwind start
- to make the first upwind leg as long as reasonably practical
- to set the length of the course so that the first boats take between 10 and 15 minutes to complete the course
- to set the marks so that they are reasonably visible from the control area.



Setting a good course can be challenging!

5. THE COURSE

The following course features are currently recommended by ARYA and are also used in World and Continental Championships:

- an upwind start
- The windward mark as far as reasonably practical from the start
- an offset mark positioned at least 5 boat lengths from the windward mark

- a downwind run to the gate marks – two marks positioned approximately 8 boat lengths apart and set square to the wind
- a beat back to the windward mark followed by the offset mark
- A downwind run back to the gate
- A windward beat to a finish line, set square to the rhumb line from the gate.

If this course is able to be completed in less than 10 minutes, consider whether another lap should be added.

6. LET'S LOOK AT THE COURSE IN MORE DETAIL

The Start and Finish lines will be covered in detail in other modules, so we will focus on the other parts of the course.

7. WINDWARD MARK AND OFFSET MARK

If a boat is able to sail from the start line to the windward mark on one tack, the windward mark by definition is actually not to windward of the start line. The boat has fetched the windward mark from the start line so the mark is positioned below close-hauled. This situation is undesirable, as all boats will have sailed on the same side of the beat.

The offset mark is there to separate boats approaching the windward mark from those leaving it. The position of the offset mark should be a minimum of 5 boat lengths from the windward mark, and preferably more. If the offset mark is 4 boat lengths or less from the windward mark, you create big problems for skippers when they have to make judgements regarding the 4 boat length zone for establishing mark room at the offset mark.

The offset mark should be set sufficiently downwind so that boats are not required to tack between the windward mark and the offset mark.

It is helpful to place numbers on these marks which are the same size as the number on the sails of the boats competing. If you cannot read the numbers from the control area, then Observers won't be able to read sail numbers as they round the windward mark. Consider bringing the marks closer to the control area.

The Race Officer may decide to round the windward mark to port or starboard. Typically, port mark rounding is preferred, but make sure the direction of rounding is consistent.

8. LEEWARD GATE

At the leeward end of the course, the use of two marks comprising a gate makes for more interesting racing as well as reducing the congestion at a single leeward mark. Providing the opportunity for skippers to make a choice is the key to an effective gate. In turn, the position of the two marks is what makes that choice possible. If the two marks are positioned so that one of them is clearly closer to the windward mark, then all boats will round that one, and the gate will be ineffective.

The two marks should be set square to the wind and approximately 8 to 10 boat lengths apart. If they are any closer, the 4 boat length zones will overlap and problems will be created for skippers deciding about mark room for either side of the gate.

If you see the majority of boats taking one side of the gate, you should move the other mark further upwind, to encourage boats to select the two sides more equally.

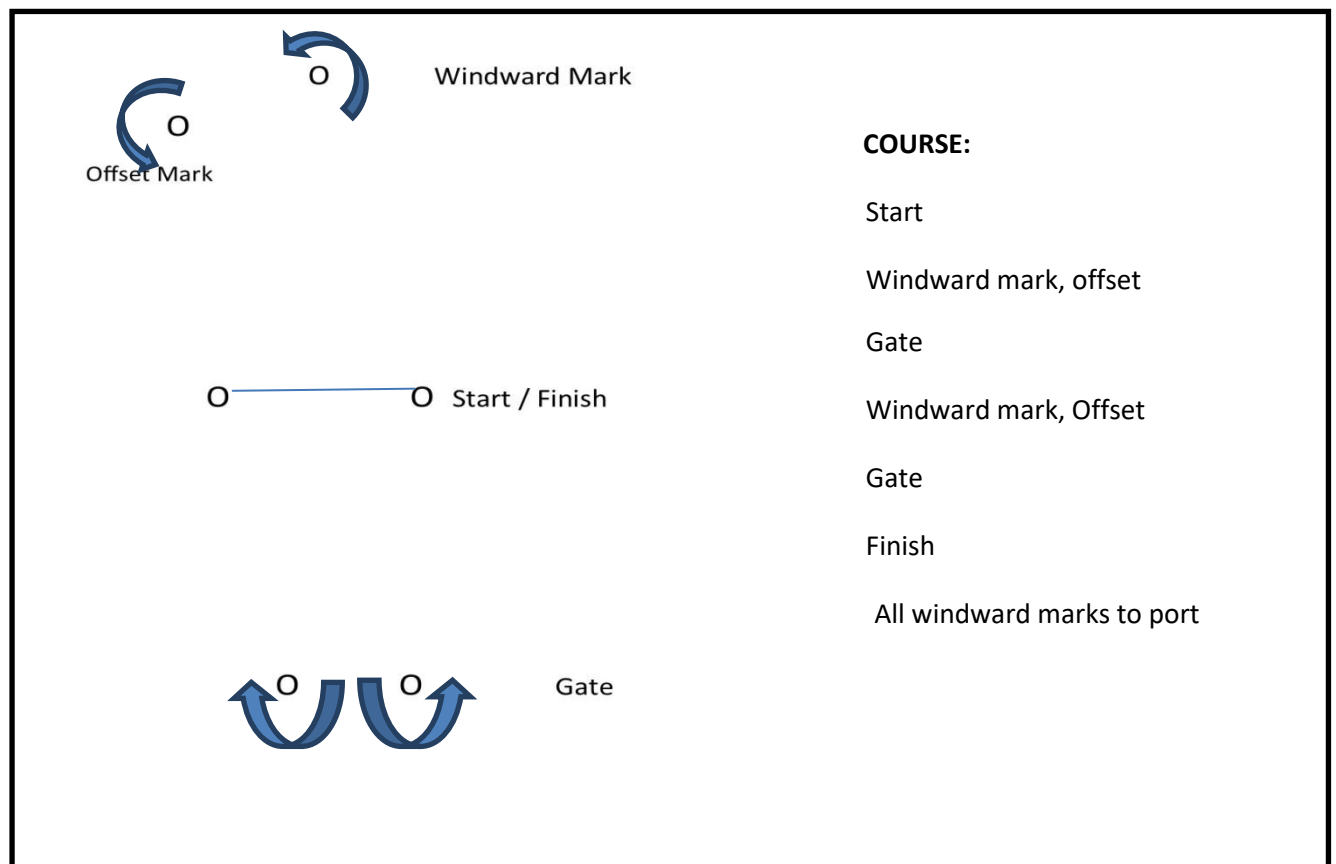
9. THE COURSE BOARD

The course must be shown on the course board. Experience has shown that the course should not be “explained” by the Race Officer. The course board must speak for itself. If competitors remain puzzled or confused after consulting the course board, it needs to be improved or corrected.

Experience has also shown that the course to be sailed should not be illustrated on the course board with drawings or lines connecting marks or by showing the rhumb lines. Instead, the board should simply state the course as a list of lines and marks, and, for each mark, whether they should be passed on port or starboard.

The course board must be positioned so that it is visible to competitors while they are racing (RRS E3.3). This can be an onerous requirement, and considerable care might need to be given to satisfying it.

ARYA Sailing Instructions alter RRS E3.8 (c) allowing shortened courses. If a shortened course is to be used, a single shortened course option should be posted on the course board.



10. SETTING THE COURSE TO A NEW WIND DIRECTION

10.1 The Race Committee will consider re-setting the course following a change in wind direction. Changes in the course are generally not required if the wind shifts between 5 and 15 degrees. If the change in direction is about 20 to 25 degrees, then you should be looking to make adjustments. However, the course will definitely be re-set if:

- after starting, boats can fetch the windward mark on one tack; or
- boats cannot cross the starting line on both tacks.

10.22 The Race Committee will endeavor to set a new course so that the new course meets the goals that determine what constitutes a good course.

10.3 Also, if the wind strength changes significantly, the Race Officer will re-set the length of the course so that the new course still takes between 10 and 15 minutes for the leading boat to complete, if possible.

10.4 If the course, and hence the course board, is changed, the Sailing Instructions require the Race Officer to make a sound signal to alert all competitors to the change, and not just those who happen to be nearby when the change is made!



11. SETTING A COURSE IN SHIFTING WINDS.

In shifting winds, it is advisable to set two different sets of windward/offset marks. This allows the Race Officer to announce prior to the race which set of marks the boats will round.

Having a choice of windward marks allows racing to continue promptly because the course does not have to be moved frequently. Marks used for a change of course (i.e. alternate rounding marks) should be of a different colour to the original course marks. You could utilise two flags – one with each colour of the top marks, and display the flag in the colour of whichever marks were announced.

12. WHAT ABOUT TRIANGULAR COURSES?

Why not use triangle courses? The 'Olympic' course consisting of a triangle, windward and return, triangle and a beat to the finish has not been used at an Olympic Games since the 2000 Olympics in Sydney. All Olympics since then have utilised the windward/leeward concept. There are a number of reasons for this:

- Reaching legs do not require skippers to consider subtle windshifts and are generally processions.
- The windward mark and leeward mark become 'pinch points' on the course, where all boats want the same position, leading to more infringements and subsequent protests.
- A single leeward mark often results in a procession of boats leaving it on port tack.
- There are fewer possibilities for passing on a triangular course.
- In many situations, a triangular course will result in at least one mark being positioned at a great distance from the control area. Windward/leeward courses have the possibility of being set close to the control area if the breeze is parallel to the shore, and still be a long course.
- ARYA wishes to remain in step with current practices at international events.

13. POSITIONING MARKS

All marks should be set at a safe distance from obstructions for boats to round at least five boats abreast.

Marks should not be set at a distance beyond which sail numbers can be identified from the control area. It is better to set a smaller course and have more legs.

14. FINISH LINES

Recently, at major championship events, the course has included a dedicated, stand-alone finish line, which is separate from any other part of the course. The finish line needs to be positioned so that the finish line judges are able to see it easily and read the sail numbers.

Some options for a stand-alone finish line include placing a finish line further to windward of the windward and offset mark; placing a finish line to windward of the start line, but half way towards the windward mark; or setting the finish line to one side of the windward mark.

15. CHECKLIST FOR A GOOD COURSE

Start line: Are boats spread evenly along the start line? If boats crowd towards one end, consider altering the angle of the start line to encourage skippers to select the other end resulting in an even spread.

First windward leg: Is there a heavily favoured side of the beat? Boats should theoretically be able to sail either side of the windward beat. If the vast majority of boats sail on one side of the leg, consider moving the windward mark away from that side, to encourage skippers to sail the opposite side of the course.

First windward mark: Are a large number of boats approaching the mark on port tack? If there are a significant number of boats approaching the first mark on port, consider moving the windward mark further to the left. This provides a longer starboard tack approach.

Offset mark: Are all boats able to round the offset mark without pinching, or tacking? If boats are slowing down as they approach the offset mark, by pinching or tacking, move the offset mark further to leeward. The offset leg should not be close-hauled. Make it a shy reaching leg.

Gate: Are the majority of the fleet using one side of the gate? Watch the fleet round the gate and get an impression of how many boats use each side. You should aim for an approximately equal number of boats using each side. If there is a significant mismatch, consider moving the less popular mark further to windward.

Finish line: Two competing factors are at play. There is the need for the finishing judges to be able to view the boats accurately as they cross the finish line. At the same time, you don't want there to be a heavily favoured end of the line. This will result in heavy congestion at one end of the finish line.

END OF MODULE 7