Racing 101 – Some sailing terms explained

Racing Definitions and the significance of those *Italics*

So you are just getting started in RC sailboat racing and someone suggests that maybe you should read the rules. They are referring to the Racing Rules of Sailing (the RRS). The RRS are published by sailing's governing body – World Sailing (formerly known as the ISAF). So you download the rules (for free) from the link below, to your computer and save them for later study.

http://www.sailing.org/tools/documents/ISAFRRS20132016Final-%5B13376%5D.pdf

When you start to read the rules, the first thing you want to master are the four Right of Way (ROW) rules so you know when to sail on and when to keep clear of another boat. You will find the ROW rules as R 10 through R 13. But right away, you have a problem with the jargon! – What is meant by Port Tack or Starboard Tack? What are Windward and Leeward? And what is Overlapped? These are sailing terms, but there is help. If you look carefully, you will note that some words in the RRS are written in ***italics***.

10 ON OPPOSITE TACKS
When boats are on opposite *tacks*, a *port-tack* boat shall *keep clear* of a *starboard-tack* boat.
11 ON THE SAME TACK, OVERLAPPED
When boats are on the same *tack* and *overlapped*, a *windward* boat shall *keep clear* of a *leeward* boat.
12 ON THE SAME TACK, NOT OVERLAPPED
When boats are on the same *tack* and not *overlapped*, a boat *clear astern* shall *keep clear* of a boat *clear ahead*.
13 WHILE TACKING
After a boat passes head to wind, she shall *keep clear* of other boats until she is on a close-hauled course. During that time rules 10, 11 and 12 do not apply. If two boats are subject to this rule at the same time, the one on the other's port side or the one astern shall *keep clear*.

When a word appears in ***italics***, it is a defined term and is explained in the **Definitions Section** near the beginning of the RRS. For example, look at the following line.

I'm going racing. I am *racing*.

The word 'racing' in the first sentence is a general use of the word and has no special meaning. However when it appears in ***italics,*** as in the second sentence, it has a special meaning that is very precise as it is a **Defined Term** when it used in the RRS.

The rules of the RRS and the Definitions are intertwined, and if you grasp the Definitions, you will find it easier to understand and apply the rules. In this article, I will cover the most common defined terms that come up frequently in the most common rule situations.

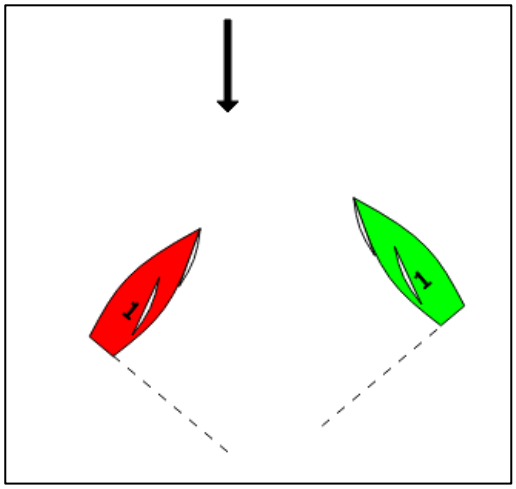
The Definitions section is right up front in the RRS, after the table of contents and before the actual rules sections. The Definitions are listed alphabetically, however for this article, I have grouped the Definitions into three sections for convenience.

1. Sailing terms – Port/Starboard, Windward/Leeward, Overlapped/Clear Ahead/Clear Astern
2. Room, Marks, Mark Room, Obstructions, Keeping Clear, Proper Course
3. Parts of a Race – Racing, Start, Finish.

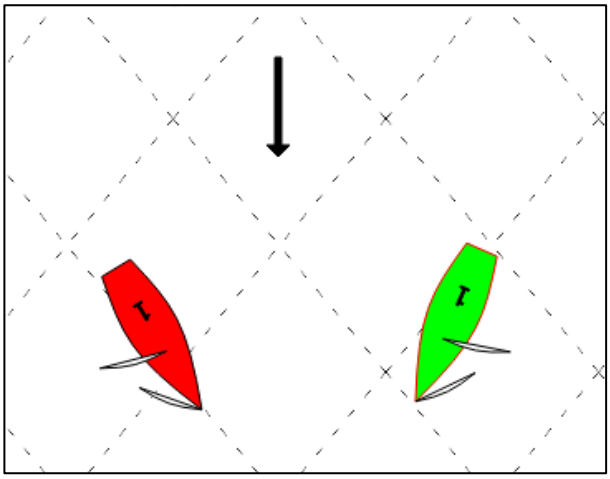
Sailing Terms

Tack, Starboard* or *Port A boat is on the *tack*, *starboard* or *port*, corresponding to her *windward* side

If you are standing in a boat facing the bow, the starboard side is to your right, and the port side is to your left. If you go to the bow, and face aft, left and right are reversed, but starboard and port do not change.



Looking at Green, the wind would strike her starboard side first, so the windward side for Green is her starboard side and so Green is on Starboard tack. Red is on Port tack, as the wind strikes her port or windward side first.



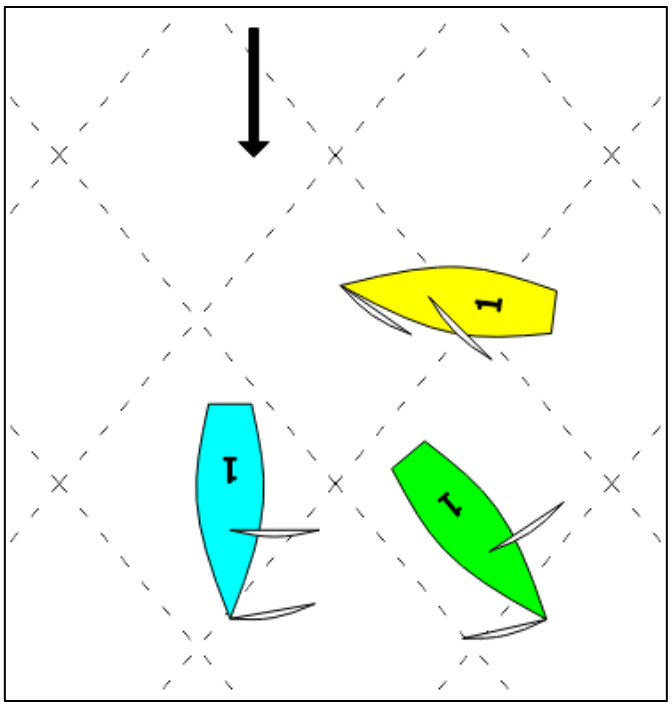
A simple Rule of Thumb (but not actually written in the rules) – whichever side your boom is on, your tack is the <u>opposite</u> so:

- boom on port side – you are on Starboard Tack
- boom on starboard side – you are on Port Tack.

When you combine these two definitions of Port and Starboard tack along with R 10, Red on Port tack keeps clear of Green on Starboard Tack.

Leeward* and *Windward A boat's *leeward* side is the side that is or, when she is head to wind, was away from the wind. However, when sailing by the lee or directly downwind, her *leeward* side is the side on which her mainsail lies. The other side is her *windward* side. When two boats on the same *tack overlap*, the one on the *leeward* side of the other is the *leeward* boat. The other is the *windward* boat.

Looking at Yellow sailing on a reach, the wind hits her starboard side first, so that is her windward side and her leeward side, away from the wind, is her port side.

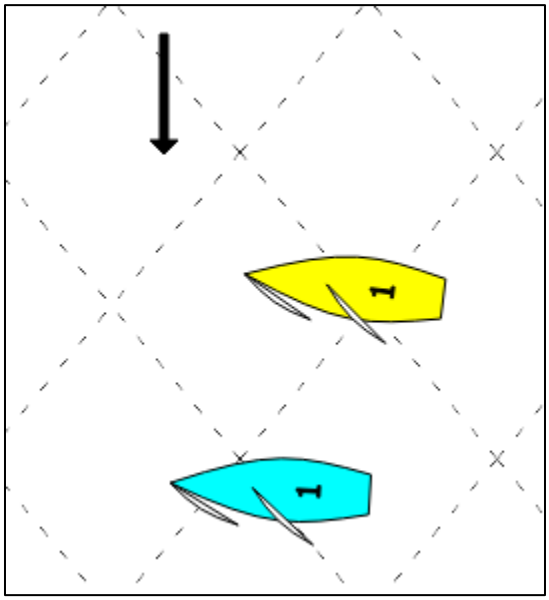


But when we look at Blue, the wind is coming over the transom, and so we need another way to determine windward and leeward sides – and the definition provides the answer – when sailing downwind, the leeward side is the side when the mainsail lies. Blue's mainsail is on the port side, so that is her leeward side, and her windward side is starboard.

Now look at Green, who is sailing 'by the lee'. Again we need to look at the definition for help. The definition covers 'by the lee' by again using the side where the mainsail lies. The fact that Green has her jib over to 'wing on wing' or that Green could gybe over, is not a factor.

So looking at Yellow, Blue and Green, they are all sailing on Starboard tack, and their windward side is their starboard side and their leeward side is the port side.

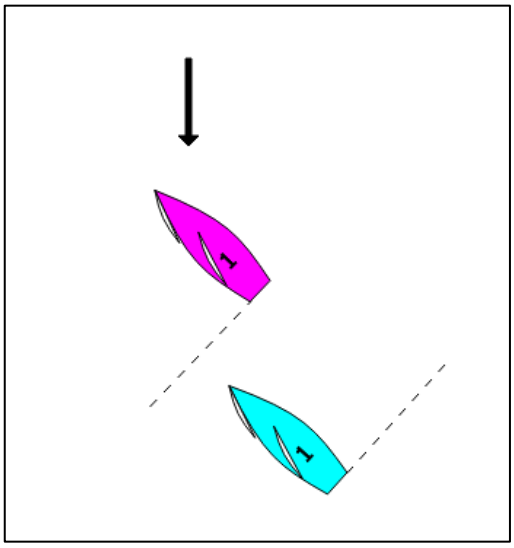
Now look at Yellow and Blue, both sailing on a beam reach on starboard tack. Blue is to leeward of Yellow, because she is on Yellow's leeward side. Yellow is to weather of Blue, because she is on Blue's weather side.

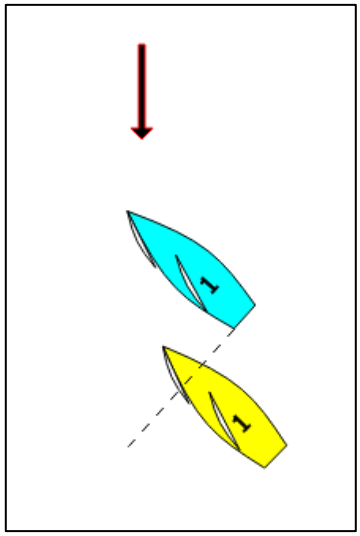


So the definition of Leeward and Windward, combined with R 11 requires Yellow as windward to keep clear of Blue to leeward.

Clear Astern* and *Clear Ahead*; *Overlap One boat is *clear astern* of another when her hull and equipment in normal position are behind a line abeam from the aftermost point of the other boat's hull and equipment in normal position. The other boat is *clear ahead*. They *overlap* when neither is *clear astern*. However, they also *overlap* when a boat between them *overlaps* both. These terms always apply to boats on the same *tack*. They do not apply to boats on opposite *tacks* unless rule 18 applies or both boats are sailing more than ninety degrees from the true wind.

These two boats are on the same tack. Blue is behind a line drawn square off the stern of Magenta. So Blue is Clear Astern and therefore Magenta is Clear Ahead. They are not overlapped. Blue must keep clear of Magenta under R 12 Ahead/Astern.

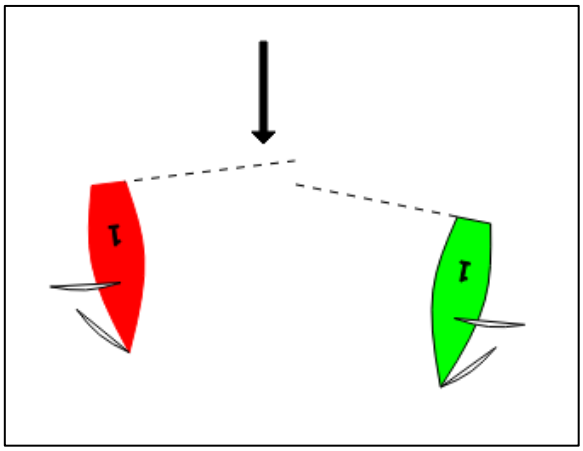


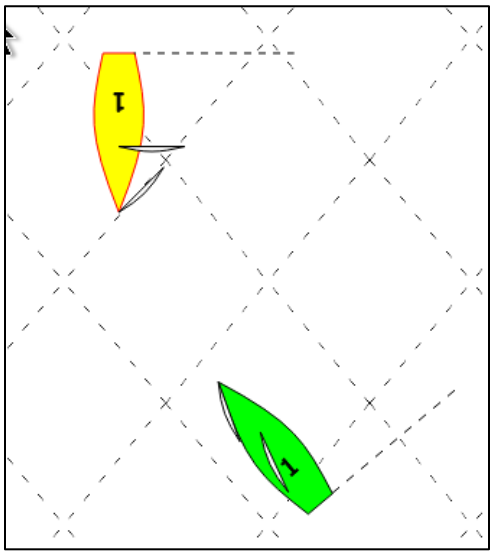


These two boats are on the same tack. Yellow is ahead of a line drawn square off Blue's transom, so these boats are overlapped. As they are overlapped, and Blue is to windward of Yellow (See the definition of Leeward and Windward (above), Blue must keep clear of Yellow under R 11 W/L.

Red and Green are on opposite tacks running downwind. Neither boat is astern of a line drawn square of the transom of the other, so they are overlapped. However Green on Starboard has ROW under R 10 P/S and Red on Port, must keep clear.

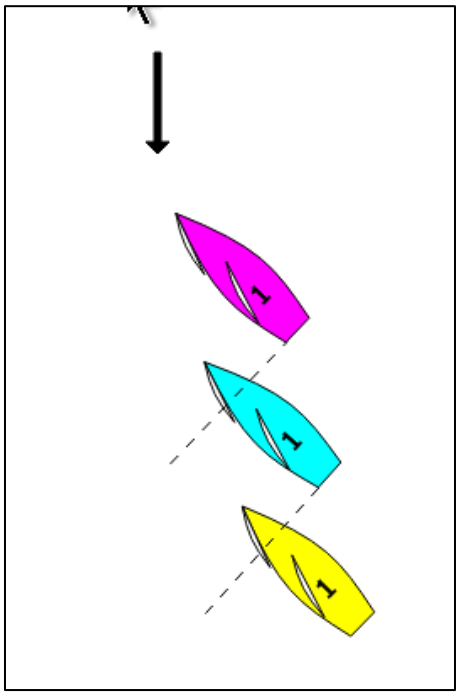
As they are sailing at about 170 degrees off the true wind (more that ninety degrees per the definition), and if they were in the zone of a downwind mark, they would be considered overlapped for the purpose of Mark Room R 18.2.



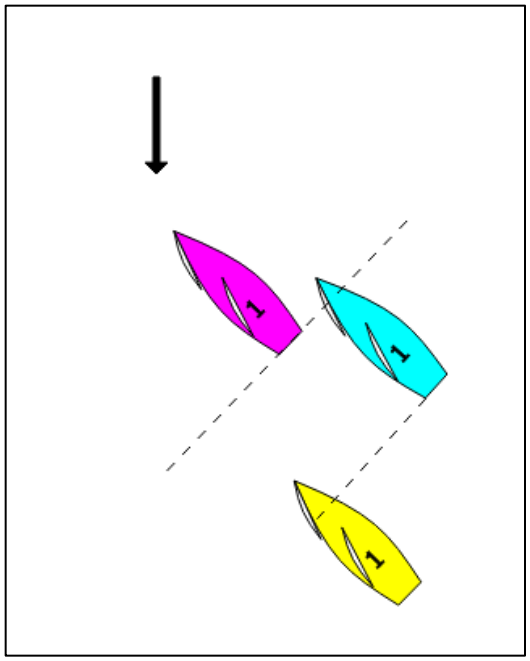


This one is harder to see – but believe it or not, these two boats, Yellow and Green, are also considered to be overlapped. They are both on the same tack – Starboard in this case. Now ask – "Is Green behind a line drawn square off the stern of Yellow?" – No! Then ask "Is Yellow behind a line drawn square off the stern of Green?" Again No! – So as neither is clear astern of the other, they MUST be overlapped. As they are overlapped and on the same tack, R 11 W/L applies and Yellow as windward boat, must stay clear of Green.

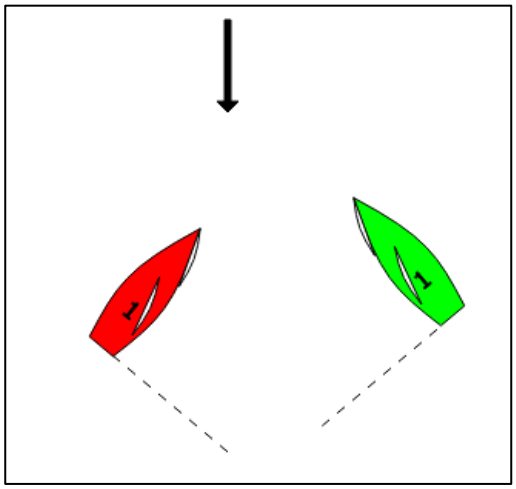
It appears that Yellow and Green are on different legs of the course, so see R 24.2 Interfering. Green as ROW under R 11 W/L may not go 'hunting' and obstruct Yellow while she tries to keep clear.



Now for a more complex diagram involving three boats. These three boats are all on the same tack, and Magenta is overlapped with Blue and Blue with Yellow. BUT under the definition, Magenta is also overlapped with Yellow because Blue – in between – overlaps both of them. This is especially important if the boats are approaching the zone of a mark as the outside boat has to give Mark Room to both inside overlapped boats, See R 18.2 Mark Room.



With a simple change, let's move Blue to the outside. Magenta is still overlapped with Blue, and Blue is still overlapped with Yellow, BUT Magenta is no longer overlapped with Yellow, because Blue is NOT between them.



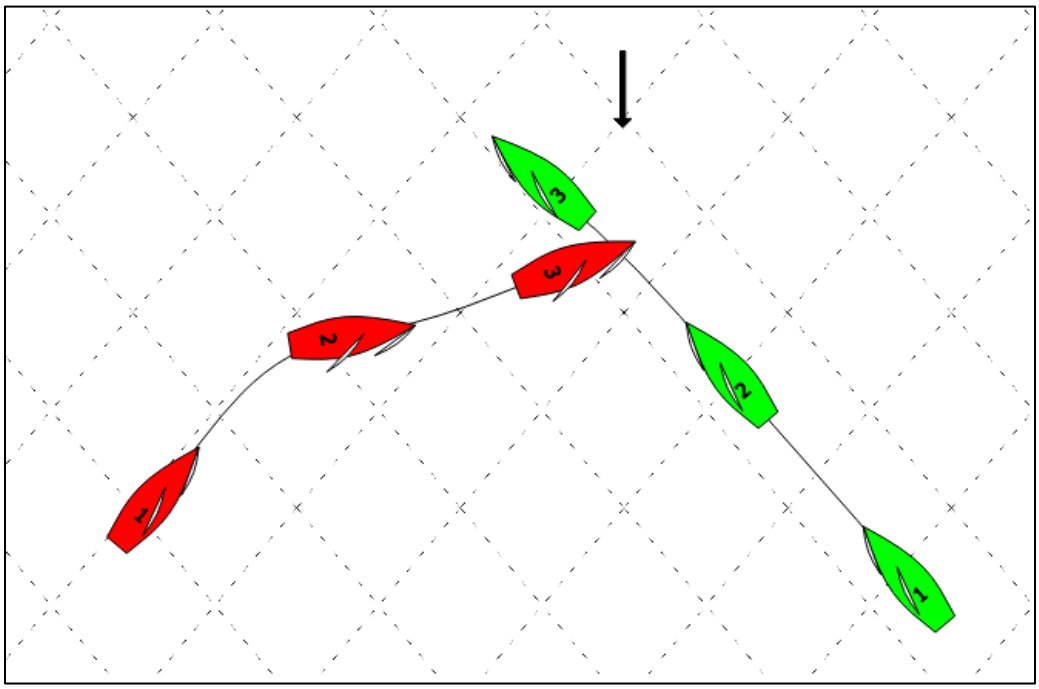
The exception to Overlapped.

Red and Green are on opposite tacks and are close hauled, and are sailing about 45 degrees to the true wind (which is less than the 90 degrees mentioned in the definition)– so they are NOT overlapped i.e., they do not meet the description of Overlapped in the definition, nor the description in R 18 Mark Room. Red is on Port tack and must keep clear of Green, on Starboard tack under R 10.

Keep Clear, Room, Marks, Mark Room, Obstructions, Proper Course

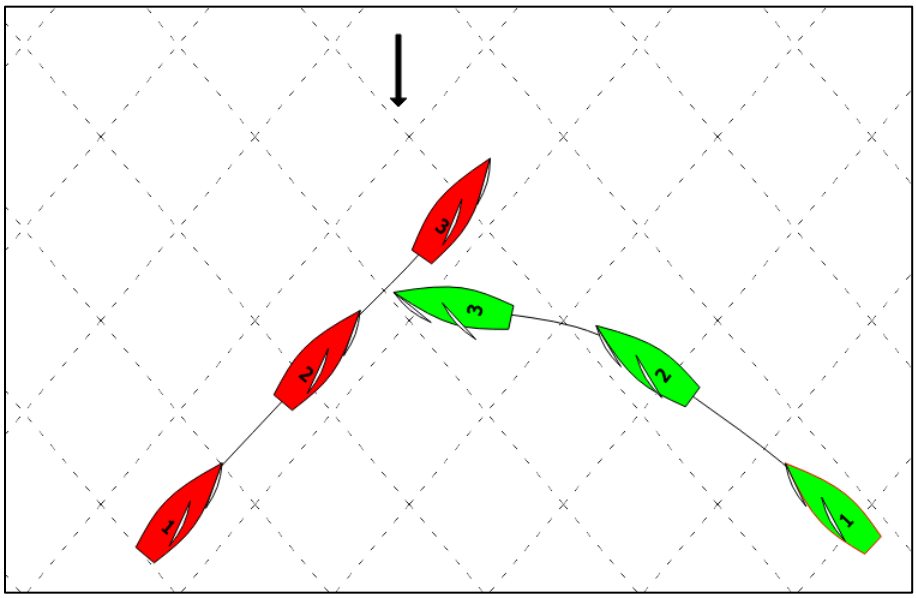
Keep Clear and Room are two very similar terms. Oversimplified, you keep clear if the other boat has Right of Way (ROW) and you give room to a boat at marks and obstructions. There are a couple of rules that use 'room to keep clear' if there is a change in the relative positions of the boats.

Keep Clear A boat *keeps clear* of a right-of-way boat
(a) if the right-of-way boat can sail her course with no need to take avoiding action and,
(b) when the boats are overlapped, if the right-of-way boat can also change course in both directions without immediately making contact.

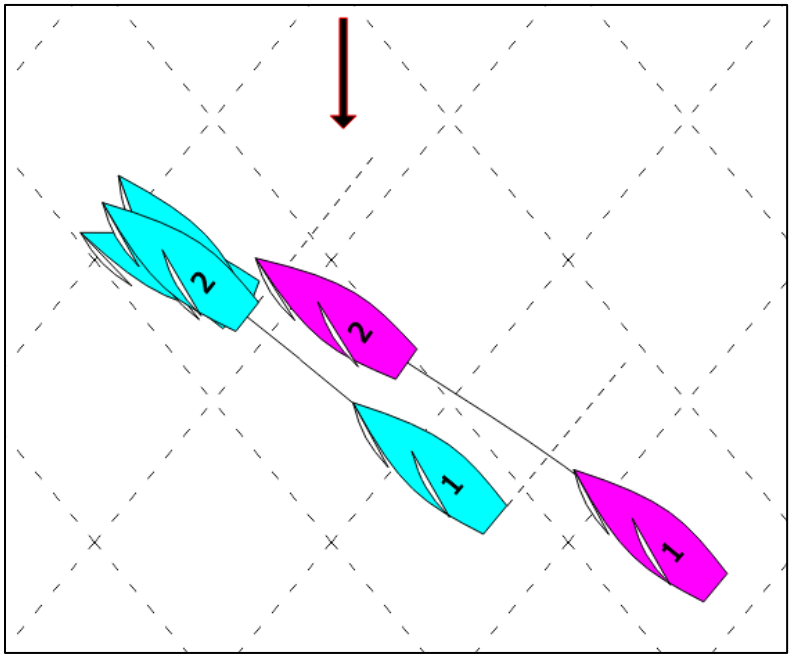


First, let's look at Keep Clear which has two parts (a) and (b).

Part (a) sounds straight forward. For example, two boats are converging, on opposite tacks – we know that Red on Port must keep clear of Green on Starboard (R10). So Port keeps clear, if Starboard can continue without having to avoid Port.



Red on Port, must keep clear of Green on Starboard R10 P/S. Red thinks she can cross, but if Green, has to alter course to avoid Red, then Red has failed to keep clear, and would break a rule – in this case R 10 P/S.



For the second part (b), let's look at Blue and Magenta. Blue is clear ahead at P1 and Magenta is sailing faster and overtaking to weather, so Magenta must keep clear under R 12 (Ahead/Astern) and then R 11 (W/L) once they become overlapped. So Magenta must keep clear of Blue.

At P2 Magenta becomes overlapped close to Blue. Now the definition of Keep Clear requires that Blue be able to alter course in either direction without immediately making contact. So if Blue can 'wiggle' her stern in either direction without hitting Magenta, then Magenta has stayed clear – but if there is the possibility that Blue could contact Magenta (even if there is no actual contact), then Magenta has failed to keep clear and breaks a rule – in this case R 11 W/L.

Room The space a boat needs in the existing conditions, including space to comply with her obligations under the rules of Part 2 and rule 31, while manoeuvring promptly in a seamanlike way.

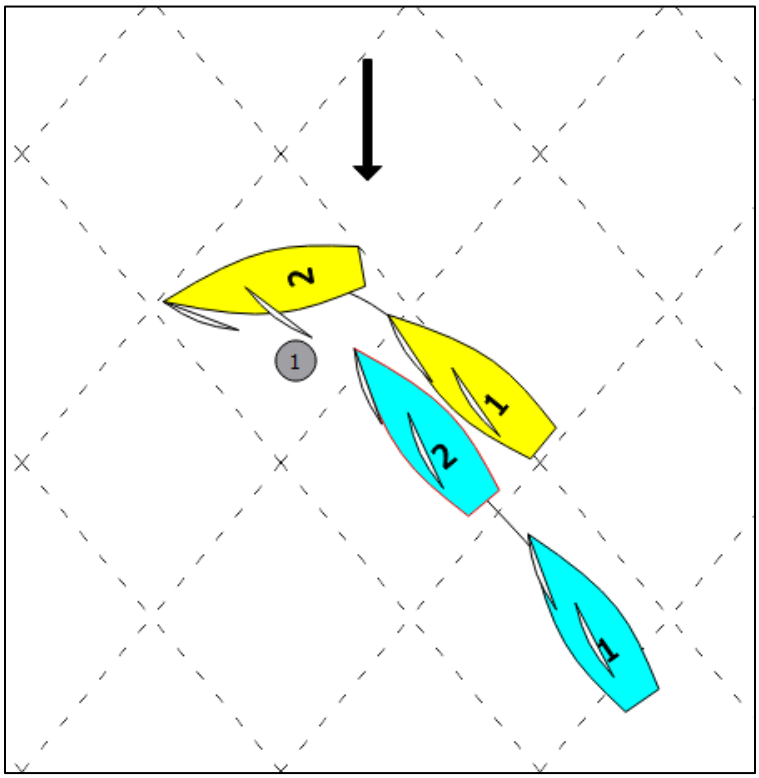
Before looking at some examples about Room, this definition requires a bit of background as it uses a couple of terms that need clarification. It refers to the rules of Part 2 and R 31. Part 2 of the RRS contain all the rules that relate to when yachts meet i.e. avoiding collisions, and R 31 says "Don't hit the mark".

But what about 'manoeuvering promptly in a seamanlike way'? What does that mean? None of these words are in italics, and so we may use a general meaning. Manoeuvering promptly should not need any explanation, but 'seamanlike way' needs a little help. This is a good time to introduce another helpful resource – The ISAF Case Book. The Case Book is a collection of Protest incidents that are examples of applying and interpreting the rules. The Case Book may be downloaded for free and saved on your computer for reference.
http://www.sailing.org/tools/documents/20132016ISAFCaseBookUpdatedJan2015-%5B18282%5D.pdf

If you do a keyword search on 'seamanlike' or look for the definition of *Room* you will find Case 103

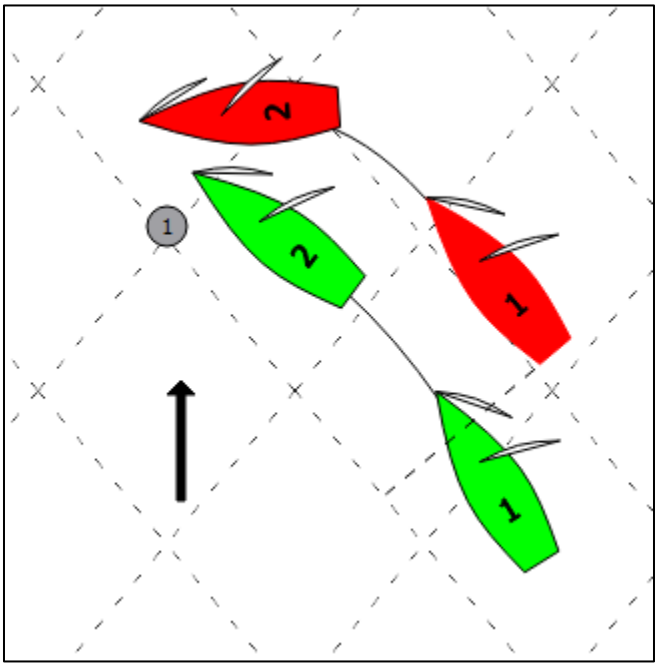
CASE 103
The phrase 'seamanlike way' in the definition Room refers to boat-handling that can reasonably be expected from a competent, but not expert, crew of the appropriate number for the boat.

So you have given sufficient room, if the other boat can avoid contact with you or the mark or obstruction if they manoeuver promptly, and with reasonable (but not expert) skill.

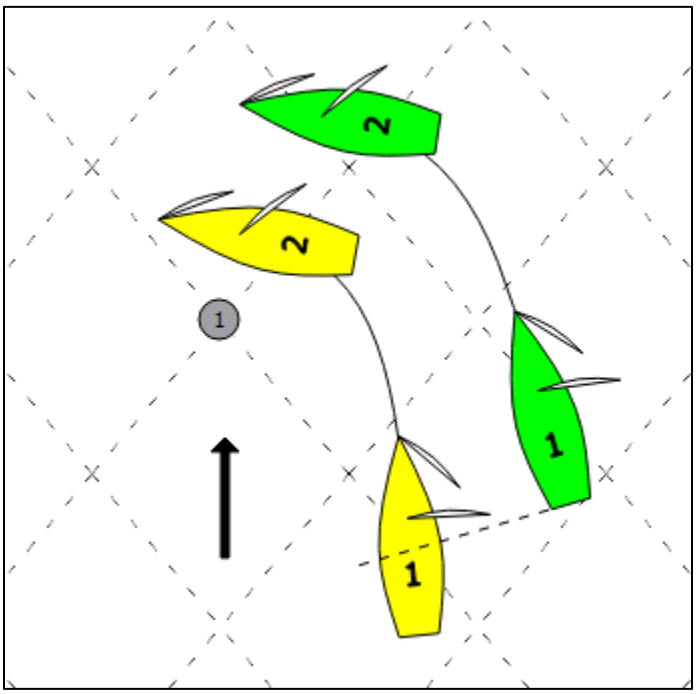


Here is example of *room*. In this case we have a windward mark rounding, and Yellow was clear ahead at the four boat length zone, and so Blue, clear astern at the zone has to give Yellow *mark room* under the Mark Room Rule, R 18.2.b.

Mark room includes *room* to round the mark and so Yellow is allowed to round the mark, and Blue must not interfere. If Blue hits the back end of Yellow, as she is rounding, just after P2, Blue would be at fault and would have to take a penalty.



Now look at a slightly different scenario at a downwind mark, Red and Green were overlapped at the zone, and even though Red has ROW under R 11 W/L, she has to give Mark Room to Green (R 18.2.b). Red starts to turn around the mark and squeezes Green into the mark. In this case, Red has failed to give a reasonable amount of room for Green to round and should take a penalty.

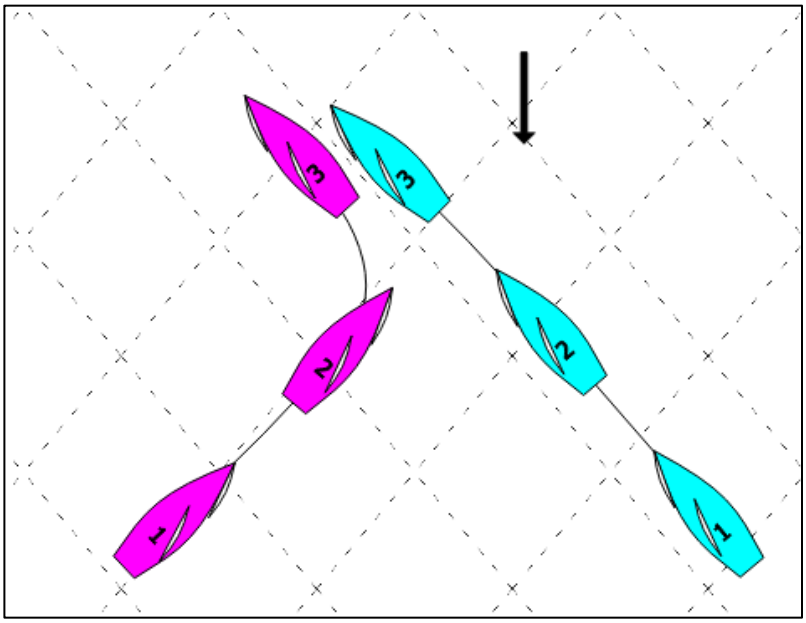


Here, Green and Yellow both get it right! Yellow turns promptly around the mark – very seamanlike, and Green gives her just enough room to do it.

Room to Keep Clear

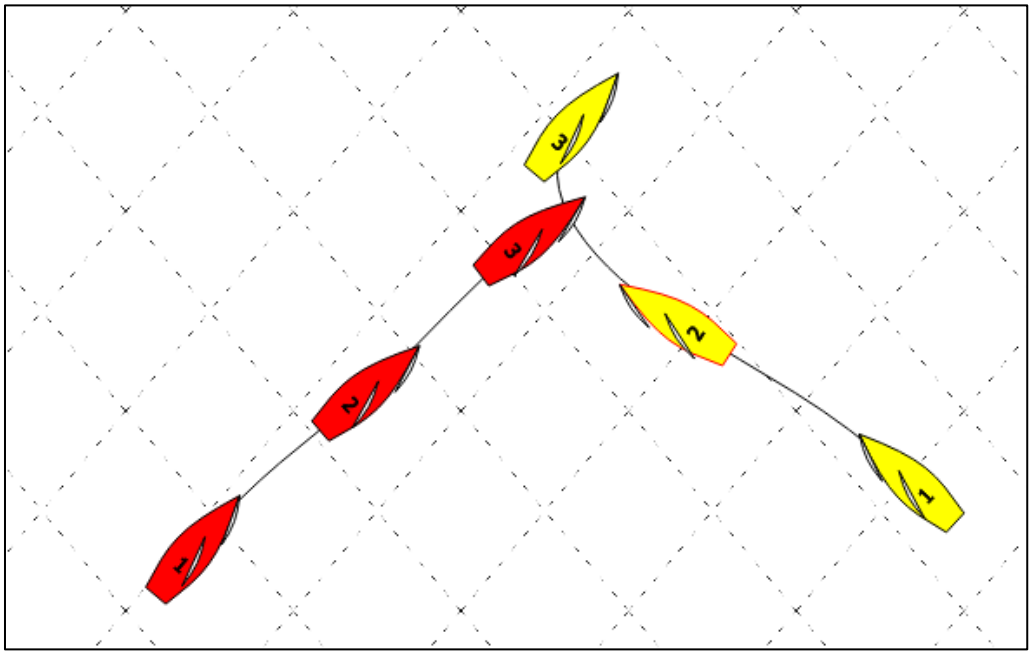
Just when we thought we understood the difference between giving room and keeping clear, along come a couple of rules that combine the concepts of both room and keep clear into a single sentence.

R 15 says in essence, that when ROW transfers from one boat to the other then the boat that gains ROW shall do so in a way that gives the other boat room to keep clear, unless the other boat caused the change.

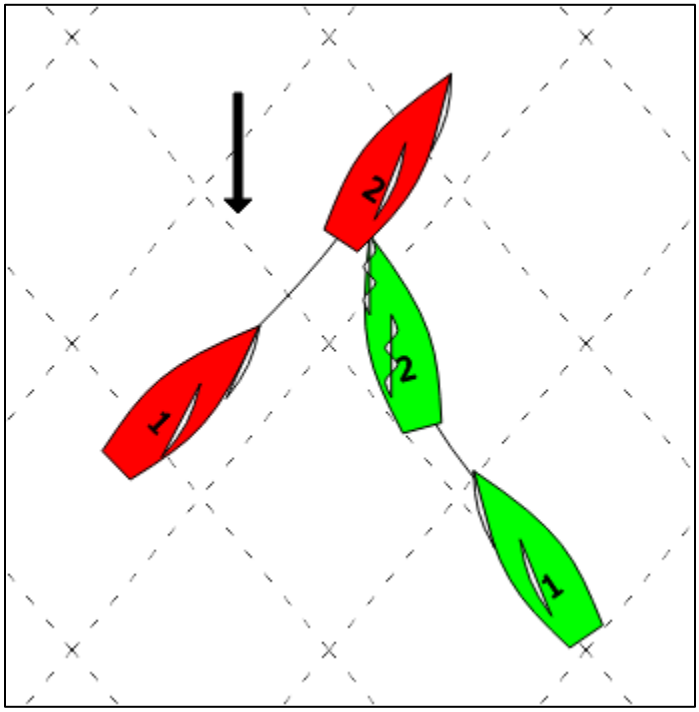


Look at Magenta sailing on Port. She must keep clear of Blue converging on Starboard with ROW, R10 P/S. So Magenta tacks to leeward of Blue and after the tack, she becomes ROW as leeward boat R 11 W/L. Under R 15, when ROW changes, Blue must be given *room to stay clear* when Magenta takes over as ROW. If Blue can 'wiggle' her bow or stern in both directions without hitting Magenta, then Magenta has given sufficient room for Blue to keep clear. But if there could be contact (even if there is not), then Magenta has not given sufficient room as required by the definition of Room, and breaks R 15.

Now look at this diagram. Yellow, on starboard with ROW R 10 P/S, tacks to weather and ahead of Red. So at P3, ROW transfers, from Yellow under R 10 P/S, to Red as leeward boat under R 11 W/L. In this example Red does not have to give any room for Yellow to keep clear, as Yellow chose to tack and created the position P3 and caused the change in ROW herself.



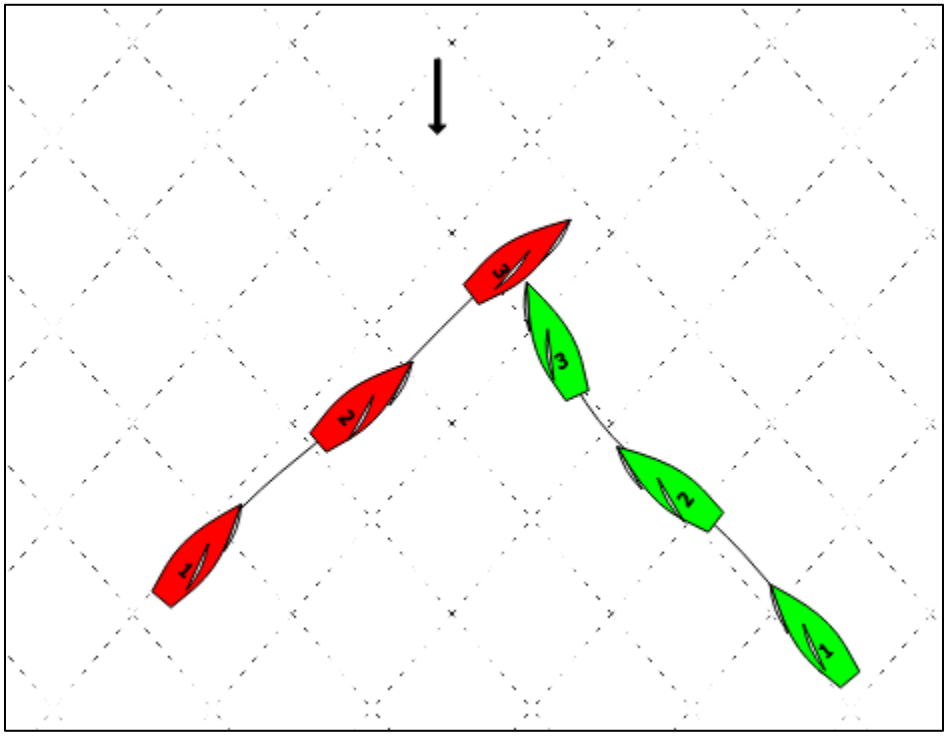
Another example of a rule combining *room* and *keep clear* is R 16 ROW Altering Course, which places a limitation on a ROW boat that alters course and requires that it give the other boat *room to keep clear.*



In this diagram, Red on port, is crossing ahead of Green, on starboard and with ROW under R 10 P/S. Green luffs up and taps Red. Even though Green is still on starboard with ROW when she luffs, Green is at fault, as she failed to give Red room to keep clear when Green altered course R 16.1.

A variation of this is when Green suddenly gets a lift from a wind shift or gust between P 2 and P3. Green can suddenly sail higher and if she takes advantage of that lift, Red is no longer able to pass clear ahead.

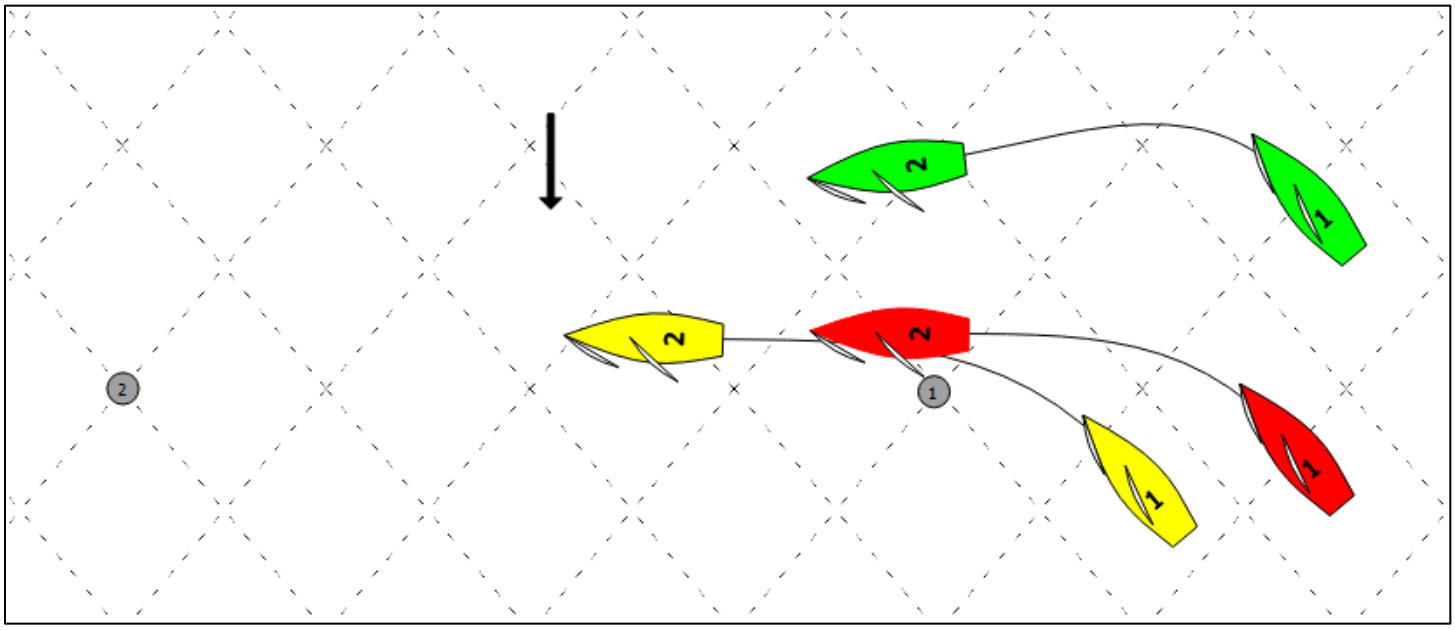
R 16.1 requires that if Green alters course, there has to be room for Red to keep clear. In this case, Green was so close when she turned up on the lift that Red is unable to keep clear, so Green breaks R 16.1.



Proper Course A course a boat would sail to *finish* as soon as possible in the absence of the other boats referred to in the rule using the term. A boat has no *proper course* before her starting signal.

The important item to note is that the concept of Proper Course ONLY applies if the rule relating to the current situation invokes the defined term Proper Course. Also note that there is no proper course before the starting signal.

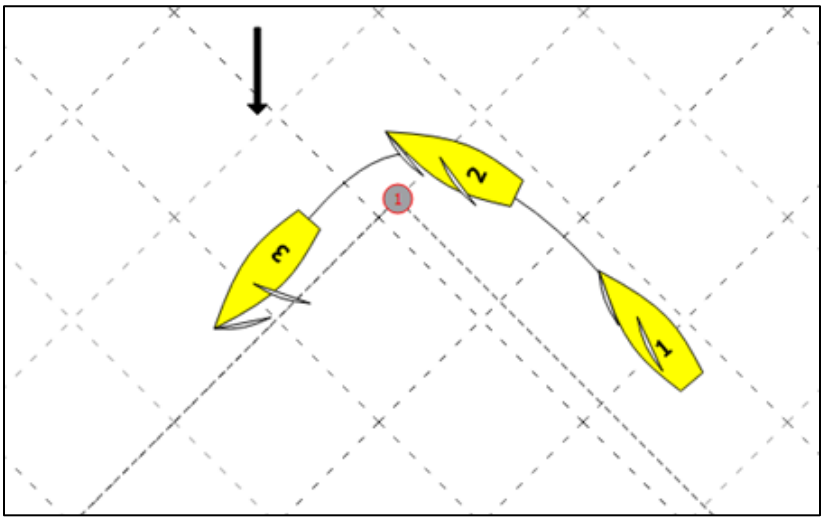
Here is an example of Proper Course. When rounding a mark, R 18 applies and R 18 invokes the defined term *proper course.*



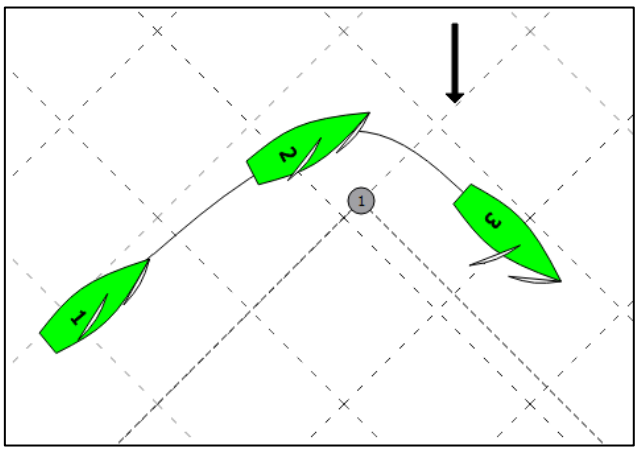
Look at each boat at P1 as if the other coloured boats were not there. Let's say that Yellow is clear ahead of any trailing boats at the zone, and so has Mark Room. From Position 1, her proper course would be to sail close to the mark to go to the next offset mark. Now look at Red – the same words may be used. Now look at Green. Green has sailed beyond the Weather Mark and her proper course would be to sail towards the Offset Mark, and not to sail close to the Weather Mark, which is well to leeward of her position. Proper Course shows up in several rules and so there are lots of possible examples. I covered the topic of Proper Course extensively in its own article that you may download from

http://crya.ca/wp-content/uploads/2013/06/Proper-Course-jgb4.pdf

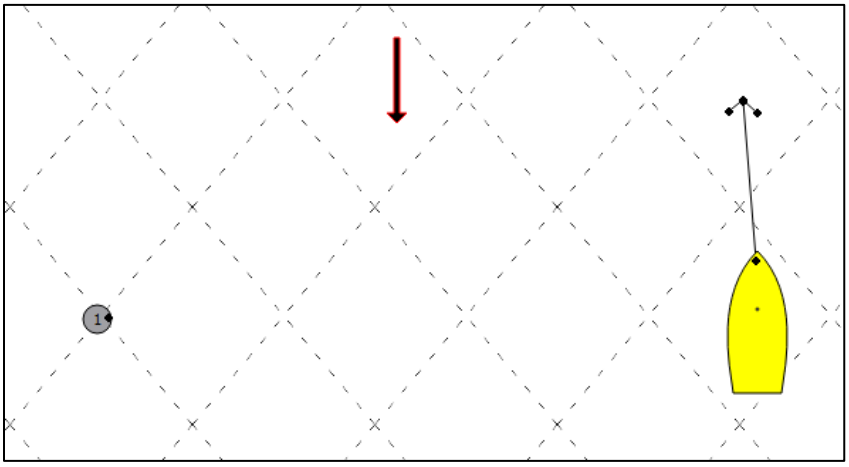
Mark An object the sailing instructions require a boat to leave on a specified side, and a race committee boat surrounded by navigable water from which the starting or finishing line extends. An anchor line or an object attached accidentally to a *mark* is not part of it.



Here we have a mark to be rounded to Port – i.e. the boat turns to port and the mark passes down the port side of the Yellow boat.



If the Race committee signaled that the mark is to be rounded to starboard, then Green turns to starboard and the mark passes down her starboard side.



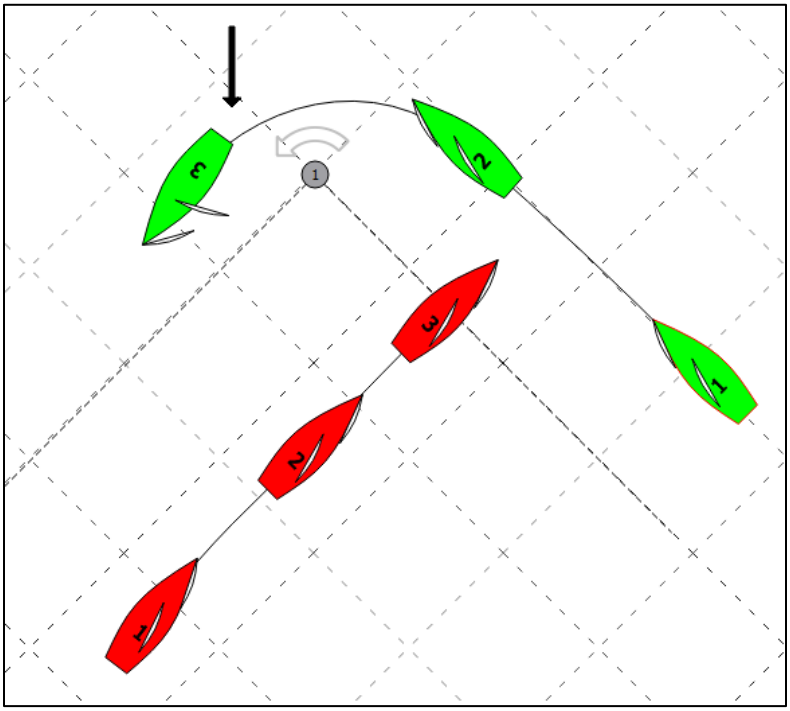
In RC sailing, we don't use a committee boat but let's look at it as some lessons apply even if we replace the committee boat with a mark.

There are two variations - you may not call for room at a Start Mark or its anchor line (that is surrounded by navigable water). This is written into the preamble to Part C of the rules which relates to Marks and Obstructions.

However at a regular rounding mark or a finish mark, the anchor line or something attached to a mark, such as some loops of extra mooring line that fall into the water are not part of the mark – so hitting them does not break R 31. But as they are there, they need a label – so I would call them 'obstructions'. So while you may not hail for 'Room to tack' to clear a mark, you may hail for 'room to tack' to avoid an obstruction.

There is more on hailing for room to tack in the Hailing article [Hailing]

Fetching A boat is *fetching* a *mark* when she is in a position to pass to windward of it and leave it on the required side without changing *tack*.



At P1, Green can sail around the mark without tacking, so she is fetching the mark, which in this case, is to be rounded to port.

Red will have to tack to round the mark, so Red is not fetching the mark.

Zone The area around a *mark* within a distance of three hull lengths of the boat nearer to it. A boat is in the *zone* when any part of her hull is in the *zone*.

Now is a good time to introduce another section of the RRS – The Appendix. The RRS are written for all kinds of boats, but certain types of boat have special needs and these are addressed by giving these boats their own unique Appendices to modify some of the standard rules. The Appendices are found at the back of the Rule Book. The one we are most interested in is **Appendix E** which changes some rules and definitions to better meet the special needs of RC sailing.

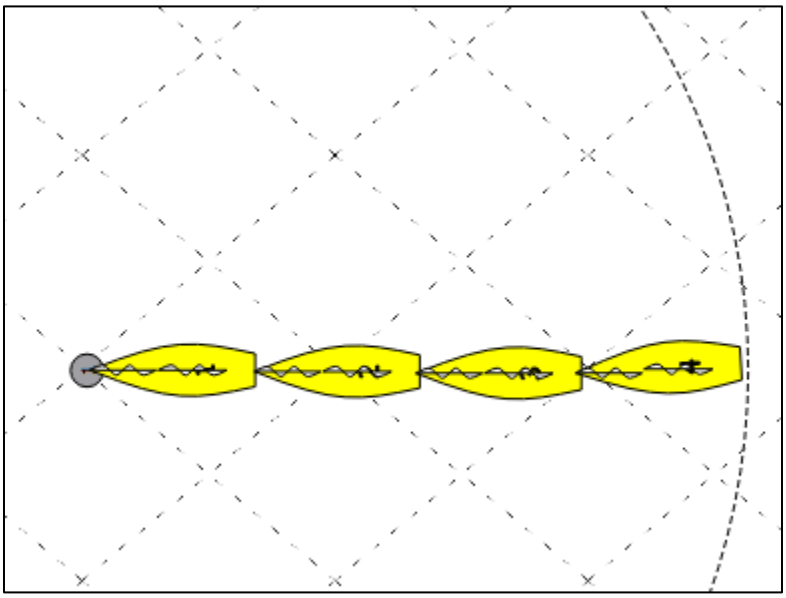
E1.1 Definitions.
In the definition *Zone* the distance is changed to four hull lengths.

Notice that the normal definition of Zone is three hull lengths, but Appendix E1.1 over-rides this for RC sailing to be four hull lengths. This change was made to allow more reaction time as things can happen very quickly in RC sailing – much faster than those 'big' boats.

Unfortunately for all sailors, there is no nice circle drawn in the water around each mark, showing the location of the zone. So we have to 'guestimate' it as best we are able. The challenge is increased for RC sailors if the mark is further away and depth perception becomes a bigger factor.

Given that the actual location of the zone is always a best guess; it is a good idea to hail other boats as you approach the location of the zone to help establish that you are clear ahead of the other boats or if you are inside and overlapping the other boats. This helps establish your Mark Room rights.

Hint – to help visualize just how large is a four boat length zone, put a mark, or some article on the ground and line up four boats, bow to stern from the object. The stern of the fourth boat shows the edge of the zone.



Mark-Room *Room* for a boat to leave a *mark* on the required side. Also,
(a) *room* to sail to the *mark* when her *proper course* is to sail close to it, and
(b) *room* to round the *mark* as necessary to sail the course.
However, *mark-room* for a boat does not include *room* to tack unless she is *overlapped* inside and to *windward* of the boat required to give *mark-room* and she would be *fetching* the *mark* after her tack.

Note that the definition of Mark Room uses the word Room in italics and so the definition of Room is imbedded inside the definition of Mark Room – so the concepts of manoeuvering promptly and seamanlike are involved. Mark Room also includes several other defined terms.

Mark Room starts when the first boat touches the zone. Mark Room requires that you be allowed to sail close to the mark if your proper course from your current location would be to sail close to the mark, and it requires that you be allowed to round the mark on the correct side. So good advice is “Don’t get between a mark and a boat that has Mark Room or you will suffer”!

Mark Room ceases to have any significance once a boat is no longer ROUNDING the mark – even if after rounding the mark, the boats are still in the zone.

Mark Room places a limit on a ROW boat that if she must give Mark Room to another boat, that she not use ROW to force the other boat to the wrong side of or into the mark.

Mark Room does not give you the right to tack to round the mark except as described in the However sentence – which is a quite rare situation.

Mark Room is one of the bigger definitions and combined with R 18 Mark Room, is probably the most complex and contentious of the rules. I have covered Mark Room with lots of examples in several articles which may be downloaded from the CRYA web site.

The Weather Mark

Rule 18 and the Downwind Gate

Tactical Roundings and Proper Course at a Downwind Mark

The Finish

Proper Course

Obstruction An object that a boat could not pass without changing course substantially, if she were sailing directly towards it and one of her hull lengths from it. An object that can be safely passed on only one side and an area so designated by the sailing instructions are also *obstructions*. However, a boat *racing* is not an *obstruction* to other boats unless they are required to *keep clear* of her or, if rule 23 applies, avoid her. A vessel under way, including a boat *racing*, is never a continuing *obstruction*.

From this definition, an obstruction may be any of several things – something big enough that you have to alter course substantially, like a fountain in the middle of the lake, or a patch of weeds floating on the surface, or a shoreline or pier that may only be passed on one side, or a shallow area that is declared 'out of bounds' by the Sailing Instructions. But it can also be a ROW boat on a converging course, a disabled boat or a boat out of radio control.

The rules that apply at an obstruction are R 19, R 20 and R 21. There is more information about these rules with diagrams in the article Hailing. Hailing

Parts of a Race.

Racing A boat is *racing* from her preparatory signal until she *finishes* and clears the finishing line and *marks* or retires, or until the race committee signals a general recall, *postponement* or *abandonment*.

This definition is important as it says when the rules of sailing apply and when they cease to apply. Normally, we use a two minute starting sequence starting with the Warning Signal at two minutes, and the Preparatory signal at one minute – so the rules are not in effect for the first minute of the two minute countdown. If you collide with another boat during that period, there is no penalty – but try to avoid collisions, because getting entangled or having something break is SLOW.

But note that you are still *racing* and subject to the rules until after you have finished and cleared the finish line. Once you have cleared the finish line, stay clear of all boats still racing or you may be penalized under R 24.1

Start A boat *starts* when, having been entirely on the pre-start side of the starting line at or after her starting signal, and having complied with rule 30.1 if it applies, any part of her hull, crew or equipment crosses the starting line in the direction of the first *mark*.

To start correctly, you have to be completely behind the start line and cross it from the pre-start side after the starting signal. If you are called 'over early' and have to return to re-start, then you must stay clear of other boats once you are clearly returning to restart R 22.1

If R 30.1 (Code Flag letter I - the round the end rule) is in effect, and you are on the course side of the line, or its extensions during the last minute, you are not allowed to 'dip' back. You must come around one of the extensions of the start line before starting correctly. If you are forced over the line before the start, you must come around one of the ends in order to start.

Finish A boat *finishes* when any part of her hull, or crew or equipment in normal position, crosses the finishing line from the course side. However, she has not *finished* if after crossing the finishing line she
(a) takes a penalty under rule 44.2,
(b) corrects an error under rule 28.2 made at the line, or
(c) continues to sail the course.

You finish when any part of your hull breaks the plane of the finish line – but you are still *racing* (and subject to the rules) until you have cleared the finish line. However, you are not yet finished if you have to correct an error or take a penalty. After correcting the error or taking the penalty, you have to finish again by crossing the finish line from the course side. While you are taking a penalty or returning to re-

finish, be careful not to interfere with boats that are still racing and boats that are finishing normally. There is more information with lots of example and diagrams in the Finish article. The Finish

The complete set of articles may be found on the CRYA Web site www.crya.ca under the INFORMATION link (left side panel) and then click on RACING RULES and TACTICS

The direct link to the page is http://crya.ca/information/rules-tactics/
And the direct link to each article is here.

Part 1: Starts
Part 2: The Weather Mark
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Part 5: The Finish
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Part 7: Proper Course