

Stadium racing 49er style makes it difficult to get consistent umpire decisions. This paper is aimed at analyzing common rule situations.

In situations involving two boats and if the umpires are able to be in the correct position there should be a very high success rate at making the right call. In multi-boat situations or if not in the optimum position it gets more difficult to have all the facts to make the decision. If the umpires are not sure who should be penalized they will display the green and white flag.

Understanding the 49er in rule situations:

When boats meet we have five typical scenarios.

- A right-of-way boat and a *keep clear* boat.
- A boat that has just become right-of-way. (RRS 15)
- A right-of-way boat changing course. (RRS 16)
- An inside right-of-way boat entitled to *room* or *mark-room*.
- An inside *keep clear* boat entitled to *room* or *mark-room*.

In the last four of these scenarios we can't apply the rules if we don't understand what *room* means for the 49er in a given wind or sea condition.

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

The interpretation of 'seamanlike manner' is based on the boat handling that can reasonably be expected from a competent but not expert crew.

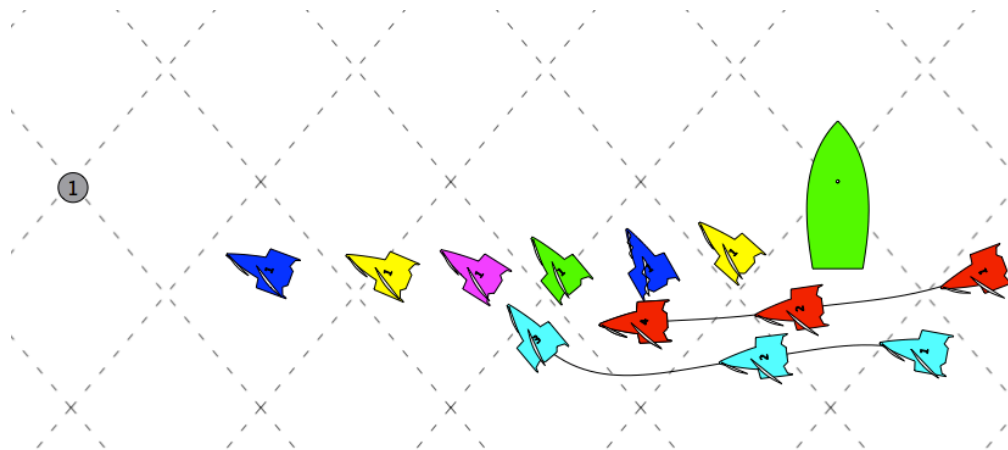
Characteristics of the 49er:

- **Start**- Very slow to turn using the rudder
- **Upwind**- When tacking the sails fill at about 25 degrees to the wind but the tack is not complete until they reach a close hauled course which is closer to 45 degrees. The 49er can tack as quick as any double handed mono-hull.
- **Top mark rounding**- Bearing off is one of the most dangerous maneuvers for the 49er and in strong winds and waves the boats are more stable when they reach their downwind angle and have their spinnaker filled.
- **Downwind**- In strong gusty winds the 49ers bear off when hit by gusts. If they can't they risk broaching or capsizing.
- **Passing obstructions**- Above 16 knots (depending on sea state) it is not seamanlike to sail directly downwind and the 49er needs to complete her gybe and fill her spinnaker. and therefore needs more *room* than normal mono-hulls.
- **Gate mark rounding**- as with passing obstructions in strong winds an inside *keep clear* boat cannot sail directly downwind in a seamanlike manner as the boat becomes very unstable.
- **Taking a penalty downwind**- In strong wind it takes time from deciding to take a penalty to begin the manoeuvre. The gennaker will always be fully dropped and stowed. If the boat tacks first it may take sometime before she can fully bear off into the gybe.

Pre Start and Start:

There is no *proper course* before the start signal and no room at the starting marks when approaching to start. Below is a typical start scenario about 90 seconds before the start. In position 1 the Light Blue must give room to Red because she is an outside boat passing an obstruction and they are not approaching to start (RRS 19.2(b)). In position 2 the Light Blue has the same obligation to Red because Yellow is a clear ahead right of way boat and therefore an obstruction. In Position 3 Light Blue no longer has an obligation to give Red room, as she is overlapped to leeward of Green who is a windward keep clear boat and no longer an obstruction.

Light Blue can luff up to head to wind and Green must keep clear. If the overlap still exists at the start signal Light Blue must bear off to her proper course because the overlap was established from clear astern (RRS 17).

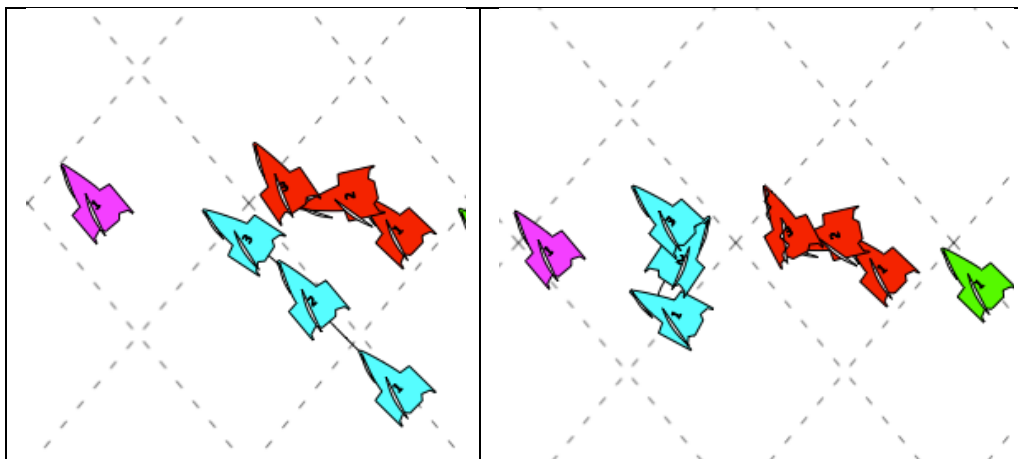


The next two examples show the windward boat defending her space to leeward. In the first example Red is clear ahead on the starting line and see's Light Blue sailing into the space beneath her. In position 2 Red bears off and becomes the windward keep clear boat. Light Blue holds her course but has to bear away in position 3 to avoid a collision. Red would get a penalty, as she became a give way boat through her own actions and did not keep clear as a windward boat (RRS 11).

In the second example Light Blue tacks into the space to leeward of Red. Red the right-of-way boat bears off to force Light Blue to tack back but has to luff to give her room to do so (RRS 16). No Penalty

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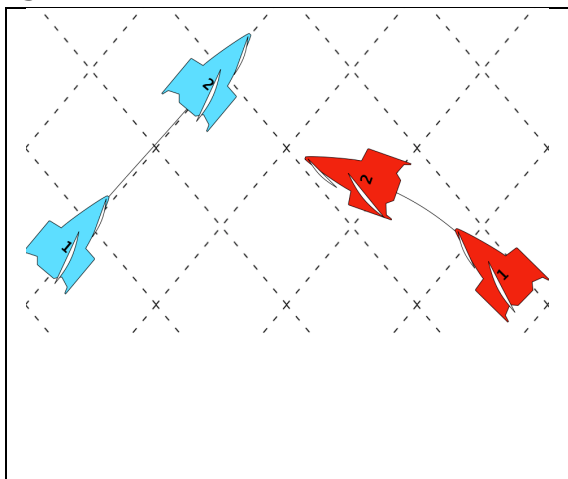


Upwind:

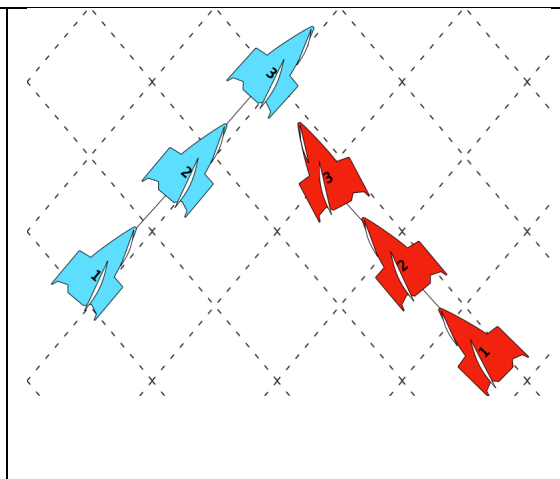
If a port tack boat is crossing a starboard boat and the starboard boat changes course and protests the umpires have to decide if the change of course was required (Case 50). The further apart the boats are when the starboard boat alters course the more likelihood of a green flag from the umpires. In example 3 the umpires would probably signal a green unless they were sure that Light Blue was not keeping clear.

If the port tack boat is crossing and the starboard boat alters course by luffing and makes it more difficult to cross she must give starboard room to keep clear. The umpires expect the port boat to do all she can to keep clear but sometimes her best option is to hold her course.

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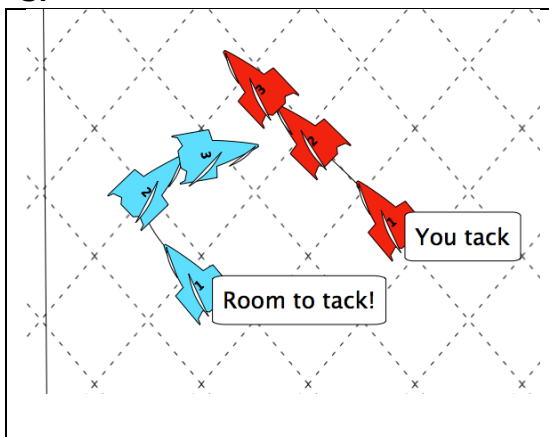


Approaching the course limits upwind:

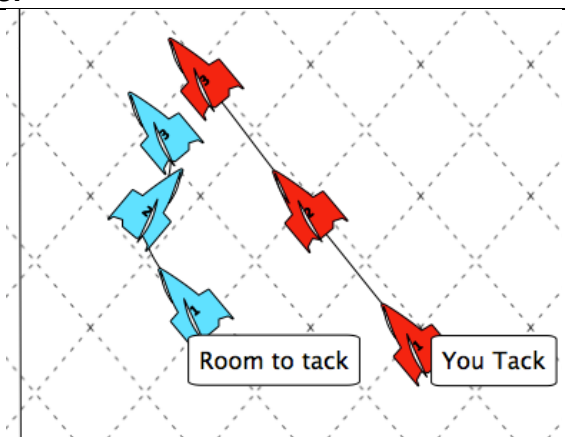
Approaching the right side course boundary on port does not cause many issues. The leeward boat can ask for room to tack (RRS 20) and when she completes she is the starboard right-of-way boat.

The problem arises when approaching the left side course boundary. The leeward boat can ask for room to tack and avoid a boat on the same tack but once she has completed the manoeuvre she is on port and a keep clear boat.

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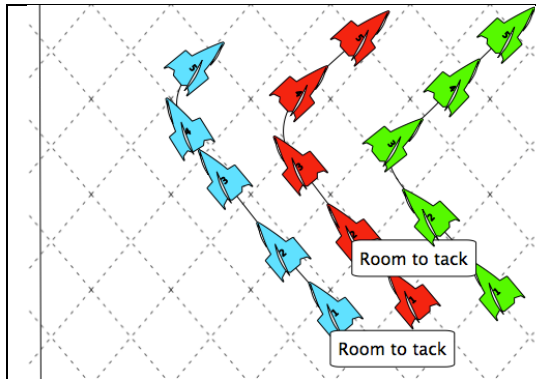
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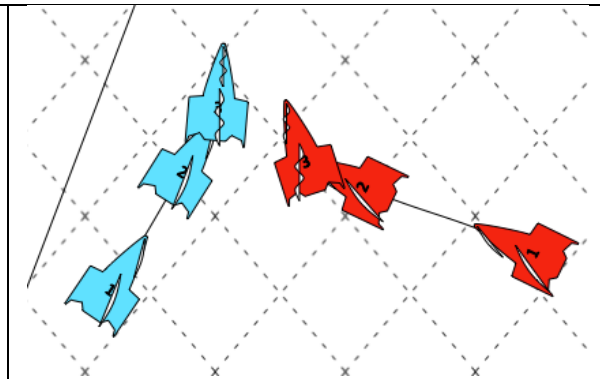
In multiple boat situations the hailing boat has to give the hailed boat time to respond this may take sometime if she herself needs room to tack. The umpires will only penalize a leeward boat for calling too early when it's clear the obstruction was not in play.

If the wind shifts to the left and the port boat is sailing parallel to the boundary line she still has to keep clear.

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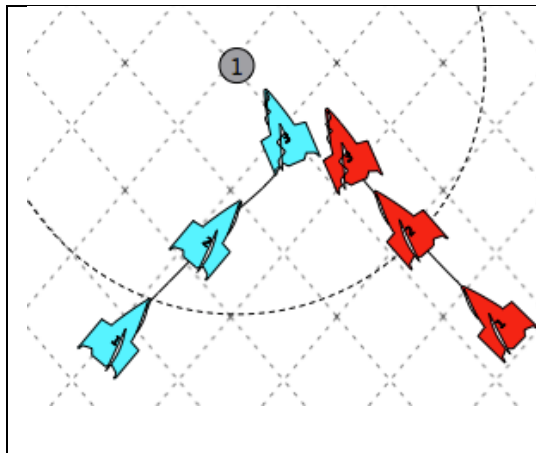


NB: Any hail without hand signals is treated the same as if the hail has not been made. The hailed boat must respond to any hail with hand signals.

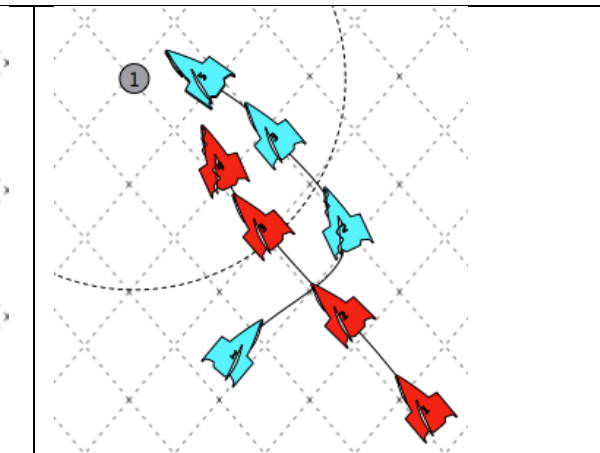
Windward Gate

At the first windward gate umpire positioning is very difficult as all the boats are close together and either arriving or leaving the marks. Most penalties are given for incomplete tacks (RRS 13) and boats tacking inside the zone and not fulfilling their obligations (RRS 18.3). In example 10 below RRS 18.3 does not apply as Light Blue passes head to wind outside the zone. Light Blue is clear ahead at the zone and Red luffs to give Light Blue the mark room she is entitled to.

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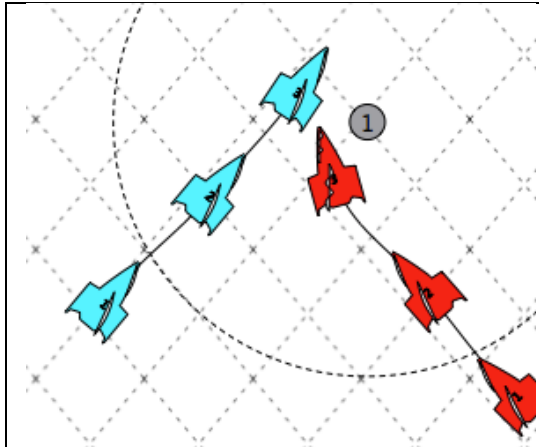
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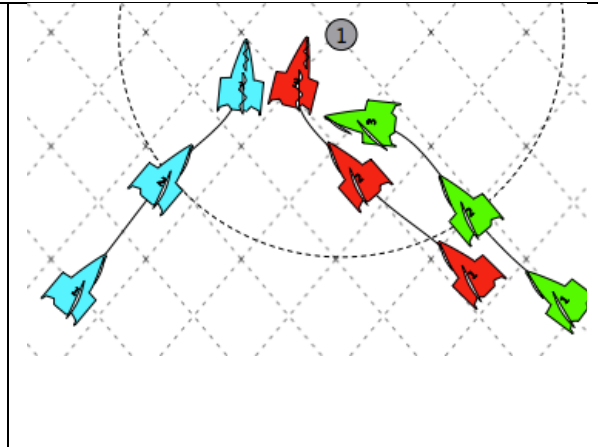
At the starboard gate mark the starboard boat is right-of-way but can't luff to round the mark if it means the port tack boat can't keep clear (RRS 16).

In example 12 below Red on starboard the right-of-way boat enters the zone clear ahead of Green but loses her mark room when she passes head to wind and as a tacking boat she should keep clear of both Light Blue and Green (RRS 13).

11.



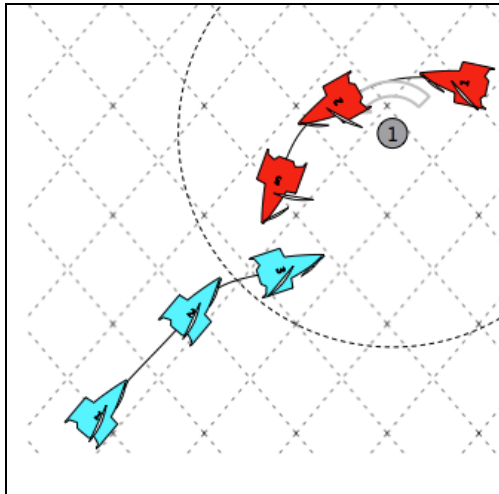
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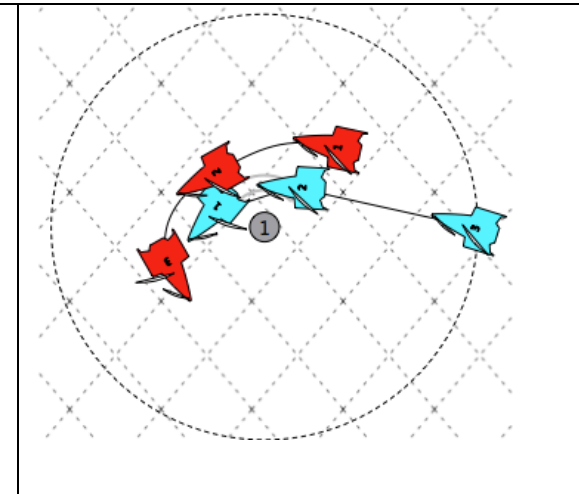
In example 13 when bearing off around the port gate to sail her proper course Red is still obligated as right-of-way boat to give Light Blue room to keep clear.(RRS16)

In example 14 Red has mark-room but that does not include room to gybe at the mark unless her proper course is to sail close to it. The umpires interpret close to it as 'as close as you can without danger of hitting it' which in most conditions in a 49er will be less than a meter. In the example shown Red breaks RRS 10 and would get a penalty unless Light Blue altered course after she became right-of-way and didn't give Red room to keep clear (RRS 16).

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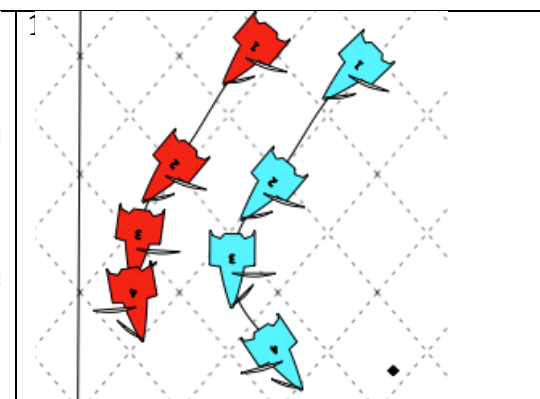
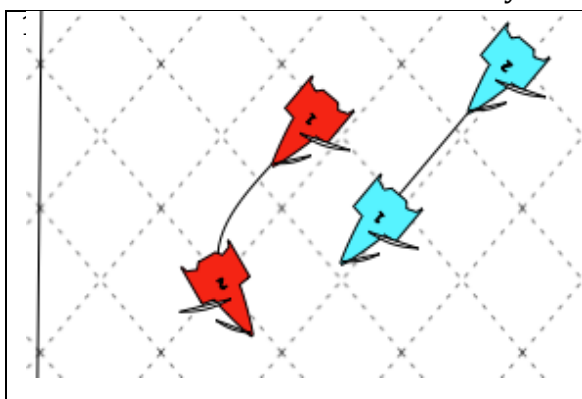


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Approaching the course limits downwind

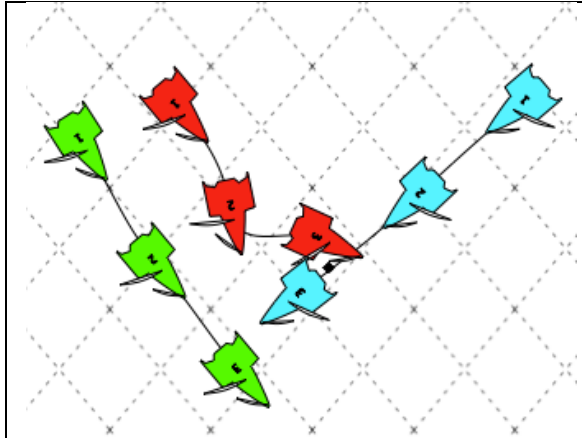
As with approaching the upwind course limits the problem arises when you have to change tack onto port. In example 15 Red a clear ahead boat will get a penalty as she is on port and the continuing obstruction (course limit) is not in play. In example 16 Light blue as an outside boat must give Red room between her and the obstruction but that is room to pass not gybe unless wind and sea conditions make it unseamanlike to sail directly downwind.



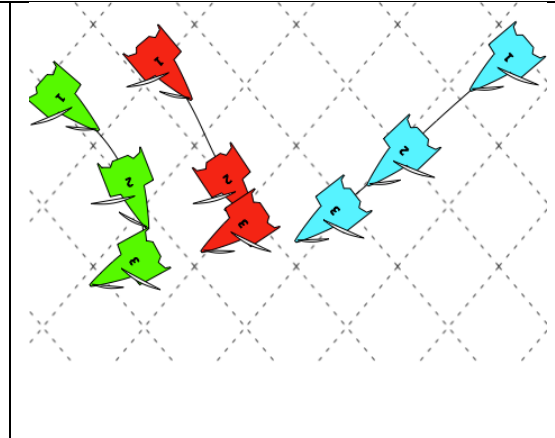
Downwind crosses

In example 17 and 18 Light Blue is a starboard right-of-way boat. Green as right-of-way boat can decide what side to pass the obstruction but if she passes in front like example 17 she must give Red room. If Green gybes away as in example 18 to give room she must do it in time to allow Red room to keep clear

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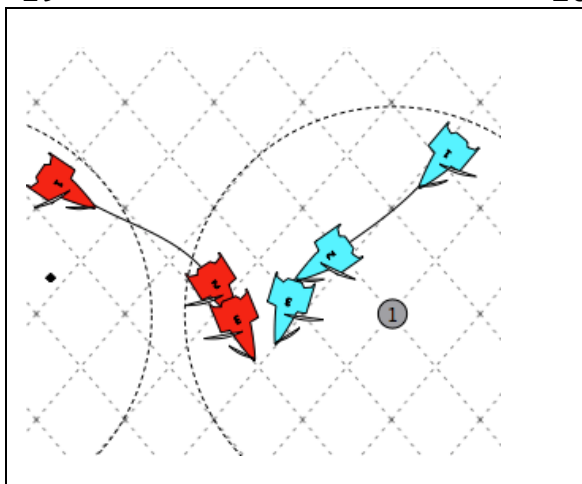


Leeward Gate port rounding

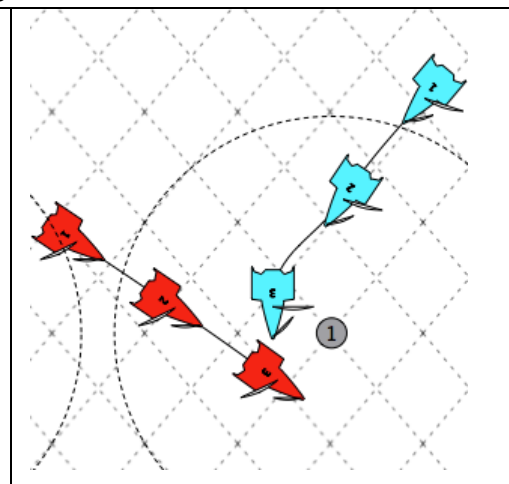
In example 19 Red has given *mark-room* but does not *keep clear* as a *port tack* boat and breaks RRS 10. There is no obligation on the inside right of way boat to round the *mark*. RRS 18.4 does not apply at a gate.

In example 20 Red is giving Light Blue *mark-room* and keeping clear. Light Blue bears off to sail to the *mark* and Yellow can no longer *keep clear*. Red breaks RRS 10. Light Blue breaks RRS 16.1. but is exonerated for breaking RRS 16 because her change of course is within the *mark-room* she is entitled to.

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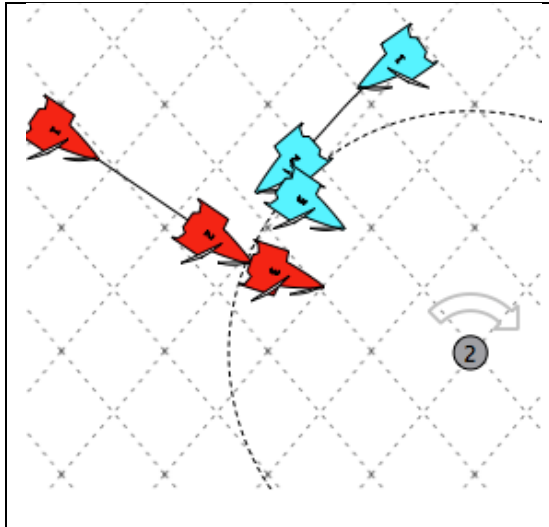
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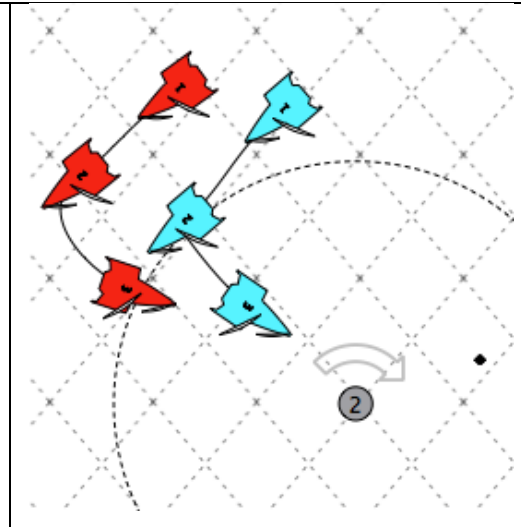
Leeward gate starboard rounding

In example 21 Red is an inside port keep clear boat. The moment either Red or Light Blue enter the zone Light Blue must give her mark room. In example 22 Light Blue enters the zone with Red overlapped to windward. Light Blue clear ahead at position 3 must give Red mark room.

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Summary

There are numerous other examples we could illustrate and never cover them all. Please feel free to ask the umpire team any questions you have or give us suggestions on how to do a better job. This is a draft document that we will finalize once we have had some feedback from the fleet.

Please email any feedback to billohara@aol.com