

Starts – by John Ball

Unfortunately, for most skippers, most races are lost on the starting line! You may have good boat speed, but getting buried at the start, leaves you scrambling to avoid other boats to get clear air and fighting with them at every mark rounding, while two or three boats sail off into the horizon. A good start does not just happen, it requires planning.

What is a Good Start?

There are several possible answers. Many will say some combination of “Being on the line, at the favoured end, at the gun, with good boat speed”. But how about, going in the right direction, with clear air and with the ability to tack on the first shift? Or a start that gets me to the first mark in a good position? All have important elements of a good start, and sometimes one of those elements may be more important than the others. Basically then we need to understand the factors to choose where on the start line we want be at the gun, and then look at techniques that will help us with boat handling and finally, look at the rules and how they come into play at the starting line.

Big Picture factors

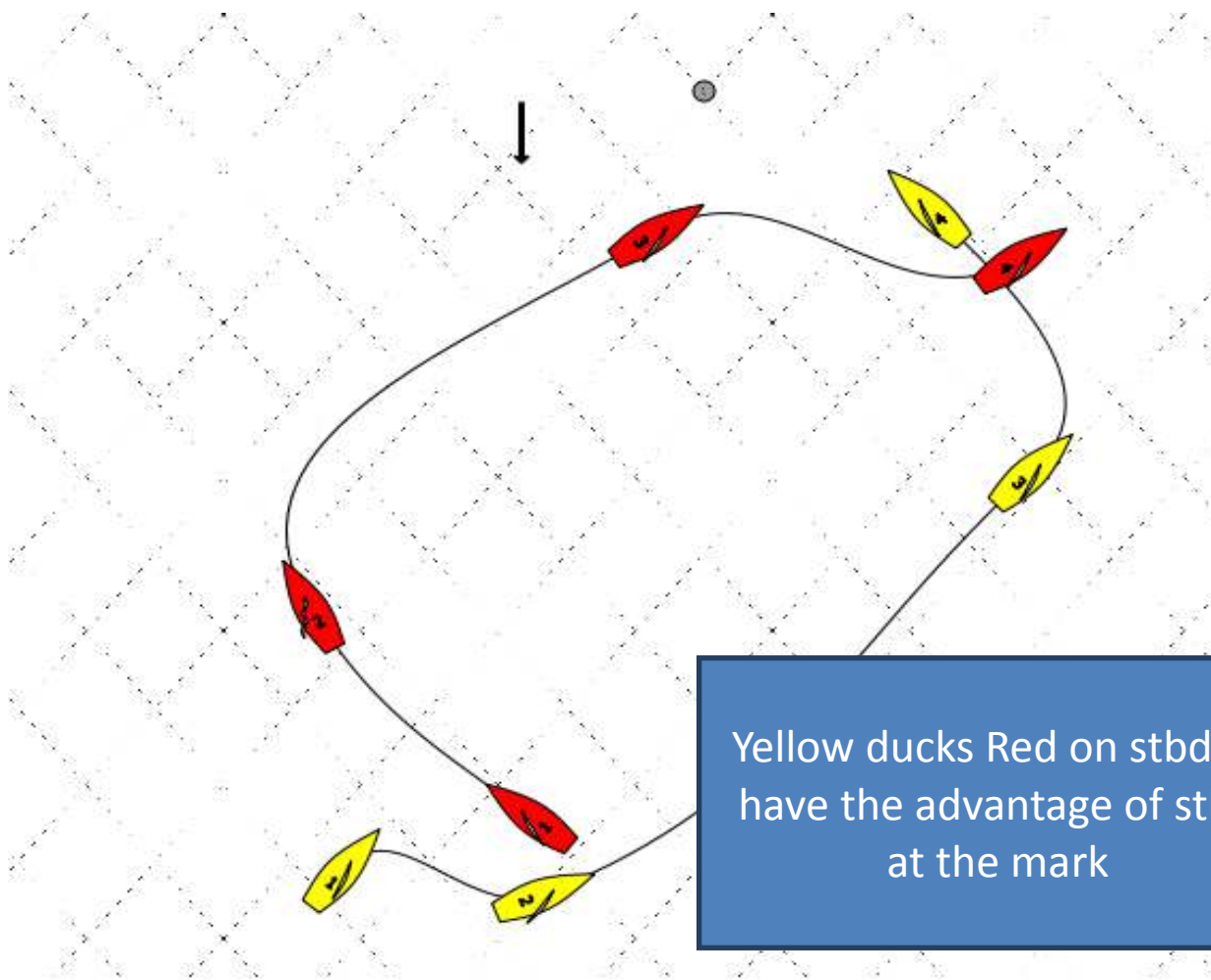
Strategy vs. Tactics?

What is the difference between Strategy and Tactics? These two terms are often used interchangeably, but that would be incorrect and if you mix them up, or apply one at the wrong moment, you may lose valuable places in a race. Strategy is how you would plan to sail the course in the shortest time, if no other boats were on the course. Tactics are how you use and apply the rules when you are close to another boat.

Strategy

Strategy is the ‘Big Picture’. For example if the current is stronger on one side of the course than the other, then you should plan to sail in the current when you are going in the same direction, and get out of the current when sailing against it. So your strategy for a race may be to sail out to the far side on the beat and sail the run on the near shore. The trick is to recognise that there is a current and where it is stronger and weaker. Or maybe there is more pressure further out on the course, so you want to favour that side in both directions. Or there are more waves further out that you want to avoid on the beat, but can exploit on the run as they help your boat to get on a plane. To check for current and wind pressure differences on the course, sail up the beat with a sailing buddy. Sail off on opposite tacks for a good distance, then tack back and cross – then carry on and tack back. Who gained and on which tack? Repeat occasionally during the day, or watch other boats during the races to see the big picture.

Tactics Tactics rely on using the rules to help you choose how to manoeuvre relative to another boat when you meet. For example, you are Yellow, approaching the top of the beat, duck the stbd boat so that the next time you come together on the lay line, you will be on stbd and he will be on port and has to duck you.



Or running downwind, make sure you get to the inside of another boat, to be inside boat at the next mark.

But tacking to avoid going behind another boat and that takes you to the wrong side of the course, part way up the beat would be a mistake. You have just let tactics overrule strategy. Better to duck, and let the other guy

go to the wrong side, while you go to the better side. And even more subtle, encourage him to cross you so that he does not tack and carries on to the less favoured side. Using tactics to get ahead of one boat, may lose you many positions in the fleet, if it takes you away from the strategy that you so carefully prepared before the race.

Choosing your spot on the line

Strategy – go left or right?

In establishing your strategy, you need to look for any special conditions affecting the race course such as the current, wind strength or waves, but there may be other factors too, such as a tree or building causing a wind shadow that indicates an area to avoid. Fleet size can also play a part in deciding strategy. In a big fleet after you all start on stbd and go off to the left side of the course, it becomes much harder to tack onto port and back get across the course. So in a big fleet, you need to be more conservative and be prepared to play the middle of the course, to keep your options open. Going out to one corner of the course and tacking on the lay line may win big, but if you choose the wrong side, you can lose big too!

So special conditions may determine a strategy and that may lead you to choose to start at one end of the line over the other, but if there are no special strategic issues, then we can consider other factors to help decide which end of the line to start.

Analysing the start line

You can consider a starting line as having three parts (facing up the course) – the right end, near the right hand pin, the left end, near the left pin, and the bit in the middle.

In choosing which part of the start line to start, we need to consider if one end of the line is favoured. A start line is almost never exactly at right angles to the wind and so we may want to choose the end that is closer to the wind – the favoured end. But so does everyone else. And that may make that end very crowded, with the possibility of fouling another boat, and making it harder to get clear air. Many top sailors will choose to start in the middle of the line, where it is less crowded. That way they are clear to accelerate to full speed at the gun, and have clear air.

If the wind is shifting frequently, and if the wind is in the right hand phase (stbd tack is lifted), you need to be at the right pin end so that you are clear to tack on the next shift which should be a header, when the wind goes back to the left. If the wind is in a left phase, the port end of the line may be quite favoured, and many skippers may not notice (most skippers are right end focused) – this may be a great chance to port tack the fleet! But that can be risky too. In a left end favoured situation, starting on stbd and heading for the left pin is much safer than a port tack approach, and usually allows you a couple of boat lengths to build speed, just before the gun. A real killer to a good start at the port end of the line is to come in on port, and be forced to tack by a converging stbd tack boat, as that will kill your speed and quickly bury you in the fleet.

Are you a Footer or a Pointer?

Your boat's performance envelope and your sailing style can affect your decision about where to be on the start line. If you sail a high line, or if your boat is set up to point high, then you may want to be at the right end or to weather of nearby boats. That way you can climb off the boats to leeward. If you like to foot for speed, or if your boat does not point as high as the others, then you need to be to the left end or to leeward of nearby boats. This way you can exploit your style right off the line. There is nothing worse for a footer, that to start immediately to weather of a pointer! He will climb up to you and force you to tack away. If your boat has a low and fast mode, then starting to leeward of a group of boats, with free space to leeward, will allow you to foot out from the group and maintain clear air, and should eventually allow you to tack and cross the group. At least, it should prevent you from being buried in bad air.

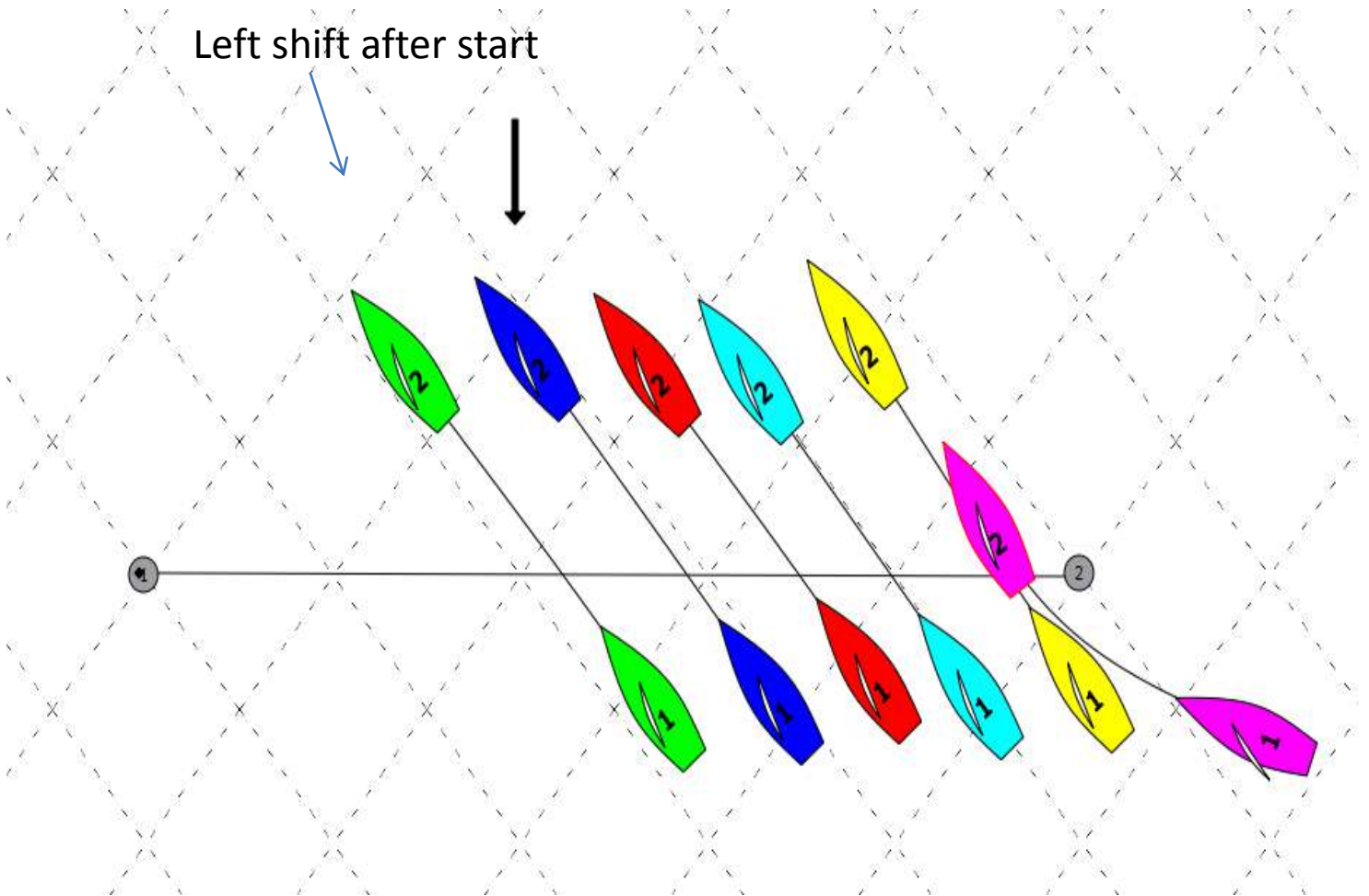
Short first leg

One special case to watch out for is if the first leg, from the start line to the first mark is short. In this case, you need to decide in advance, how you want to approach the mark. If the fleet is small, you may want to be inside boat at the mark (late port tack approach) so you may want to start at the port end, so that you are inside the fleet. But in a big fleet, it may be a much safer strategy to choose the stbd end of the line and play the right side of the course and be prepared to go around the outside of boats at the mark.



Big Fleet – short first leg - congestion at the first mark – plan to come in from the right and sail around the mess. (Picture by Jean Paul Faure – Cup of Spain 2013)

The Second Best Start



A plan that can work well if you want to get to the right hand side of the course, is the 'Second Best' start. Only one boat (Yellow) can get the 'best' start – at the pin, with speed, but if you can start right behind Yellow, with the fleet to leeward, then you have the freedom to tack over to the right and get clear air. In the diagram, Magenta gets second best start, right behind Yellow and is able to tack on the next header, whereas Green, Blue, Red, Turquoise are prevented from tacking by a windward boat. One benefit of planning for a 'second best' start, is that frequently, the other boats as a group will 'creep' along the line in the last two or three seconds, and that opens a nice hole right at the pin for you to accelerate into and get the 'best start'!

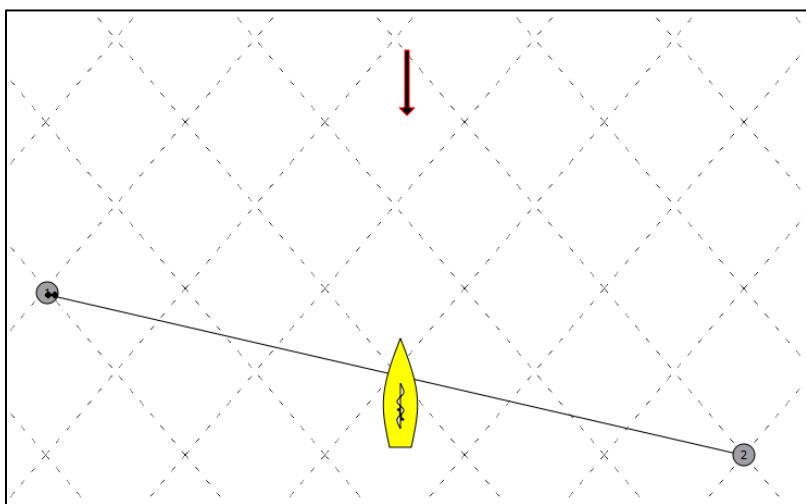
The following videos are from Malcolm Donald, taken at the 2011 IOM World Championship regatta, West Kirby, England.

Second best start. Crowded at the right end. World Champion-to-be Orange boat, #39 Peter Stollery starts just behind 'best start' #73

<https://www.youtube.com/watch?v=CwZA46SxgFM>

(Unfortunately, it looks like Peter may have touched the mark, as he tacks and takes a penalty just afterwards – but is still in a good position because of the freedom to manoeuvre)

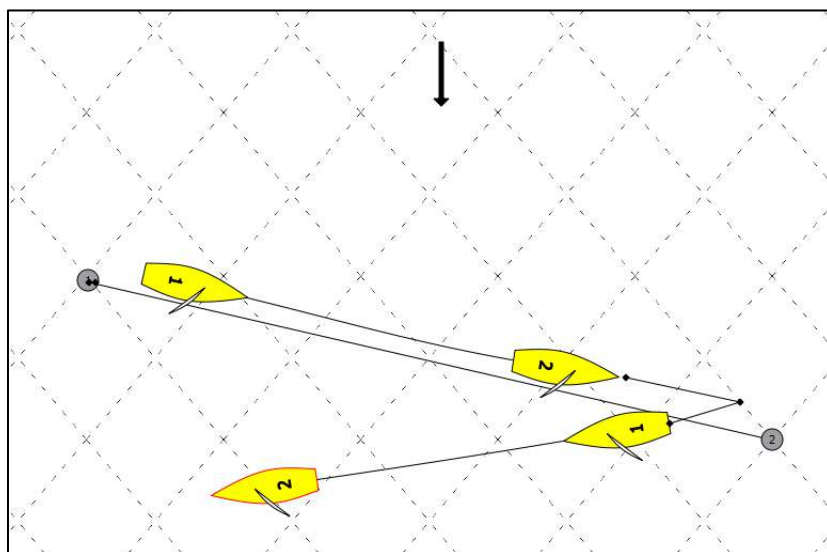
How to find the favoured end.



There are several ways to check the wind direction relative to the angle of the starting line to establish if one end is favoured (closer to the wind).

First and quickest, is to sail to the line and luff up, head to wind (jib boom fluttering on center line). Now look to see if the boat is slightly pointing towards one end of the line rather than the other – that is the favoured end.

A second technique is to reach along the line and then tack or gybe back – without altering the sail trim – and reach back towards the other pin. One of those reaches will cause you to sail further away from the line or your sails will luff – the other end is favoured. In this example, the port end is favoured.



Techniques

Approaching the line

We have a 2 minute countdown to the start, so use the time to help decide where you want to start. Sail near the line on close hauled on each tack to get a feel for any wind shift and confirm the favoured end. If you can cross the line easily on stbd, but it is harder on port, then you are in a right shift phase – plan to start at the right end. If it is easier to cross the line on port, and harder on stbd, then you are in a left shift, so plan to be at the left end.

Reach along the line to see how little time it takes – this will surprise you as it may take only a few seconds. This is important as it allows you to decide how long to delay and make a late decision if you want to bail out and go to the other end. Look at where the other boats are grouping, as that usually signals where they intend to start and therefore which part of the line may get very crowded. Many boats collect near the right end, so a good technique is to come in from the left on port with about 20 seconds to go, and tack over to pick your spot on the line.

Boat Handling Skills

In anything except light air, an IOM accelerates from stop to full speed in a blink! So using a timed run with speed to the line is not necessary as would be with a heavy displacement, slow accelerating boat. The most popular technique amongst top sailors is pick their spot and get into position with about 20 seconds remaining and sit stationary, just below the line, pointing just below close hauled, with their sails luffing. Then at about 2 seconds, they begin to sheet in and accelerate, and at one second start to come up to close hauled and hit the line with the gun, travelling at full speed. Practice this technique at every opportunity and in different wind/wave conditions. Use the rudder to head up and slow down – and create space to leeward to foot off for the burst of acceleration – trim the sails a touch if you need a bit of speed or control to move away from another boat, then luff up again to burn off the speed.

This video clip shows the technique in action. At the 1.00 minute time stamp, boats line up with about 20 seconds remaining - Watch World Champion Brad Gibson, Red boat #42 holding position and then sheets in and accelerates at the gun.

<https://www.youtube.com/watch?v=UzWSEa42RF0>

First minute of video – good example of holding position and accelerating just before the gun. Peter Stollery, Orange boat #39 and Brad Gibson, Red boat #42 right next to each other.

<https://www.youtube.com/watch?v=UIBMw4oL73I>

This next video shows an example of quick acceleration and maneuverability - Brad sees a group of boats coming up behind him, threatening to push him over early, so he bails out of position and moves further down the line and then luffs to slow down and regain position just below the line

<https://www.youtube.com/watch?v=YaIgJbsdaPk>

Rules and the Start

Where exactly is the Start Line?

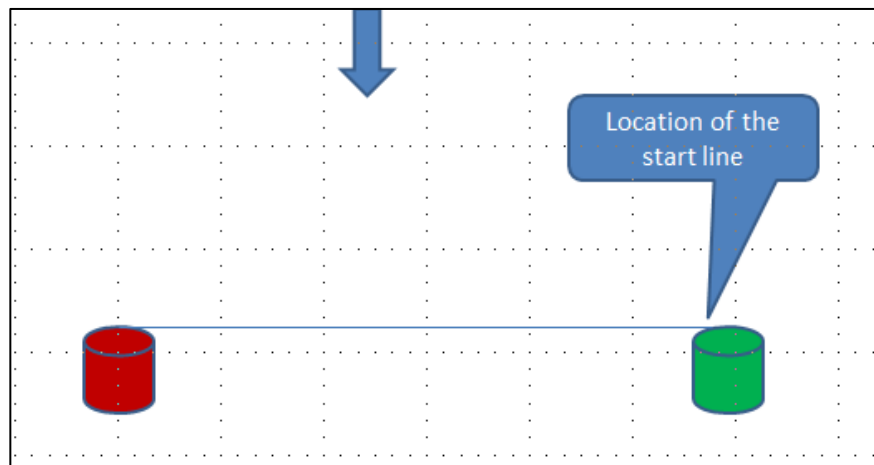
RRS Appendix E3.4b

(b) The starting and finishing lines shall be between the course sides of the starting and finishing marks.

The Sailing Instructions or the Skippers Meeting should describe the start marks. Unless they state something different like – “the start line is between the flagstuffs on the marks”, then the default is that the line is placed on the course side of the edges of the marks – not the centreline of the marks.

Starting Signals

One of the most important piece of information contained in the Sailing Instructions states which starting signals will apply. The new RRS Appendix E3.5 to E3.7 modify R29 starting signals, and R 30 Starting Penalties, and by default provides three starting options for the RC (Normal start, I flag, Black flag).



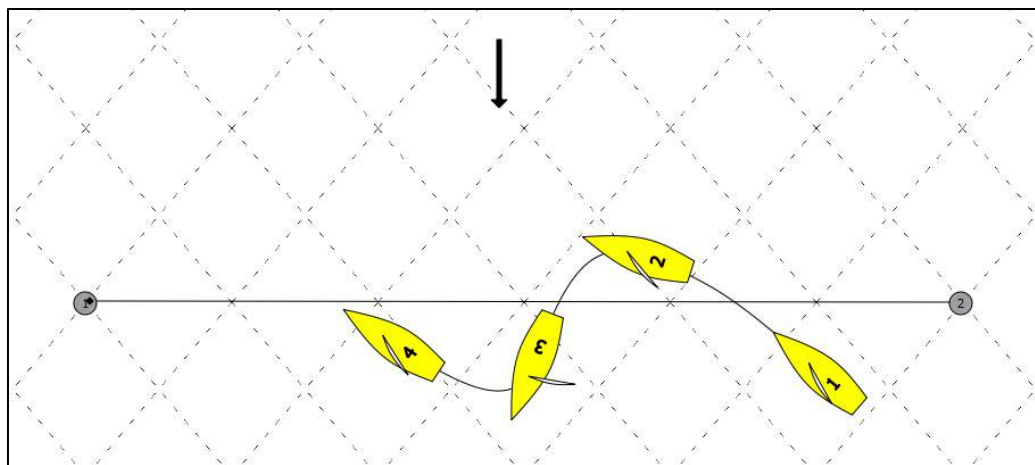
From the RRS Definitions.

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.

Quiz.

In this diagram, the boat is at position # 1 with 20 seconds to go. The start signal is made when the boat is in Position #4.

- Q1. Is this a legal start if no parts of R 30 are in effect?
 - Q2. Is this a legal start if R30.1 is in effect? What should happen next?
 - Q3. Is this a legal start if R30.3 is in effect? What should happen next?
- (See below for my answers)



Notice that RRS R30 is titled Starting Penalties. These penalties apply if the appropriate signal is invoked. But the absence of any of these signals means that none of these penalties are in effect. So the first option (absence of R 30 signals) is a normal start. In this case, the rule does not care where you are just prior to the start, so long as you cross from the prestart side of the line after the gun. So you can be above the line during the countdown, or dip, if forced over early and get back to the prestart side of the line, just so long as you cross the line in the right direction after the gun.

The second option is when the RC invokes R 30.1 (The I flag – Round the ends rule).

30 STARTING PENALTIES

30.1 I Flag Rule

If flag I has been displayed, and any part of a boat's hull, crew or equipment is on the course side of the starting line or one of its extensions during the last minute before her starting signal, she shall thereafter sail from the course side across an extension to the prestart side before starting

Watch this video and listen for the recall of #05. She did not appear to be over the line at the gun, so why was she recalled?

<https://www.youtube.com/watch?v=WsPSveCvQ-c>

Did you spot the Flags I flag flying (R 30.1 in effect) right at the beginning of the clip. Then look at time stamp 37 seconds, where 05 drifts across the line and dips back. She crossed the line during the last minute but failed to come around one of the ends of the line before starting. So she now has to go around the end to start correctly.

The third option is when the RC invokes 30.3 (The black flag rule). The rule says in part -

30.3 Black Flag Rule

If a black flag has been displayed, no part of a boat's hull, crew or equipment shall be in the triangle formed by the ends of the starting line and the first mark during the last minute before her starting signal. If a boat breaks this rule and is identified, she shall be disqualified without a hearing,

Now look at the previous video again – if the RC had been signaling the Black Flag, instead of the “I” flag, then #05 would have been DSQ and asked to leave the course immediately. There is more to R30.3 to do with restarts and abandoned races, but that is beyond the scope of this discussion.

The option under 30.2 (The Z flag, the forward triangle formed by the start marks and the first mark) is deleted in Appendix E by default – but check the SI in case the race committee has reinserted it or made any other changes to the starting procedure for example, sometimes the SI may say that 30.1 (the I flag), is automatically in effect for any restart following a General Recall.

These are my answers to the quiz.

In Q1, there was no indication of I flag or Black flag, so Yellow makes a normal start at the gun that fits the definition of *Start*. The fact that she went above the line and dipped back is immaterial.

Q2. R 30.1 (the I flag) is in effect. So Yellow by crossing the line during the last minute needs to sail around the end of the line and come back to the prestart side in order to start. If she does not go round the end, she will be subject to recall – just like #05 in the video.

Q3. R 30.3 (the Black flag) is in effect. Yellow crosses the line into the forward triangle, so she is DSQ and must leave the racing area immediately.

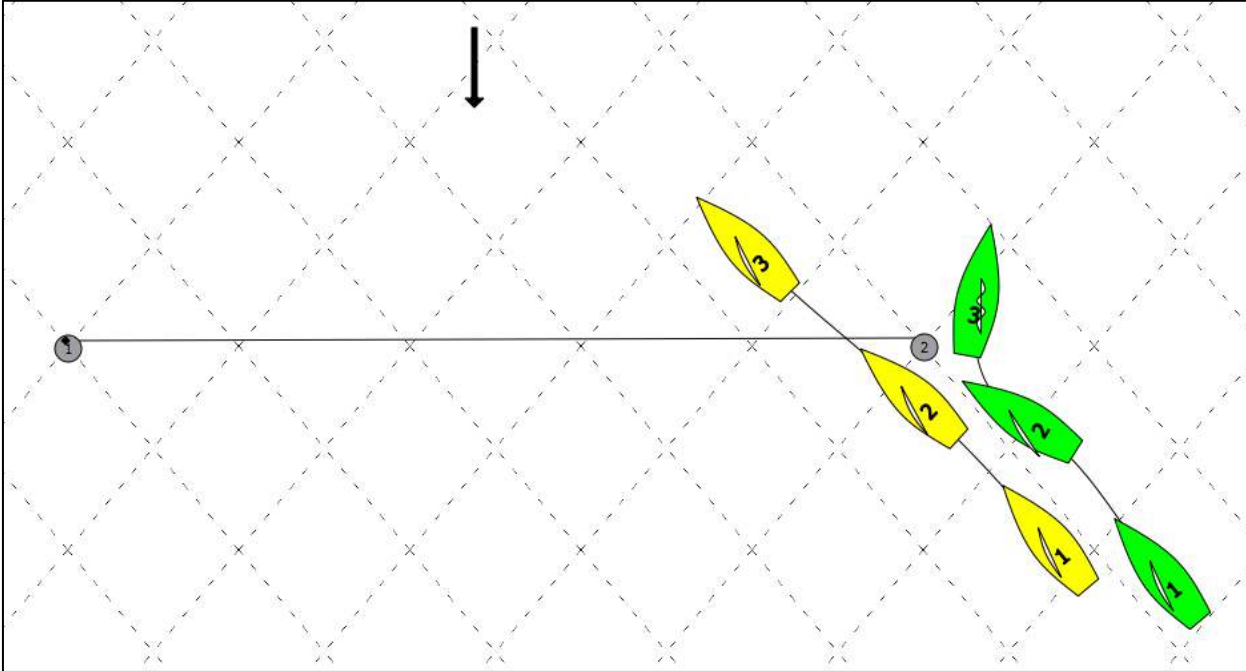
The Rules and Definitions at the start

The first item of major note is that the rules of Section C which includes R 18 Mark Room, R 19 Obstructions and R 20 do not apply to Start marks surrounded by navigable water. So normally, you cannot call for mark room at a start mark. The preamble to Section C says

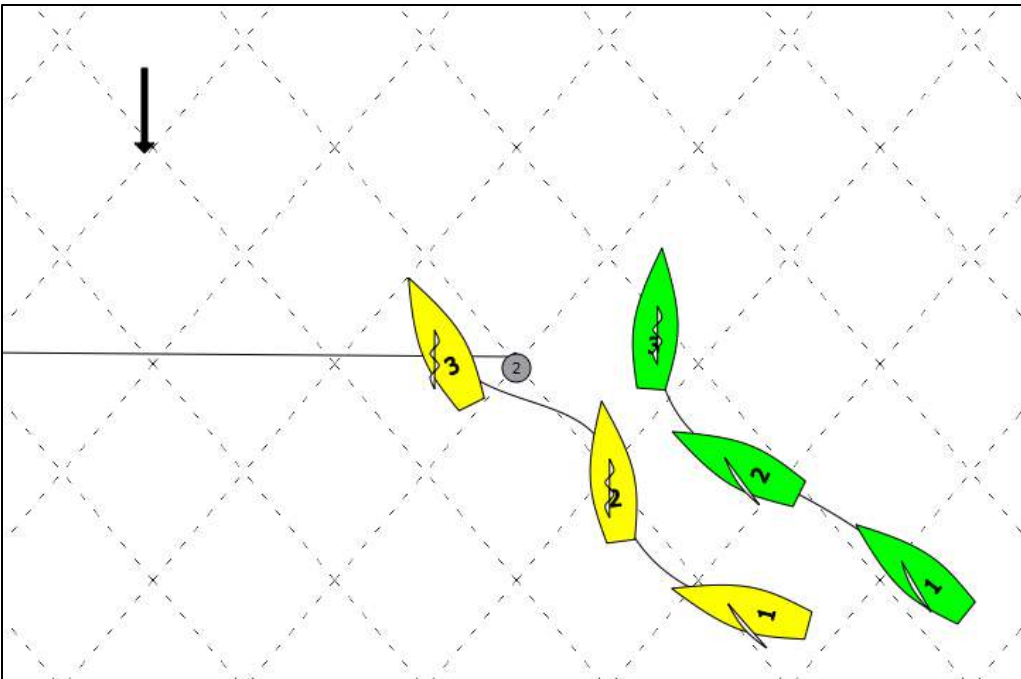
AT MARKS AND OBSTRUCTIONS

Section C rules do not apply at a starting mark surrounded by navigable water or at its anchor line from the time boats are approaching them to start until they have passed them.

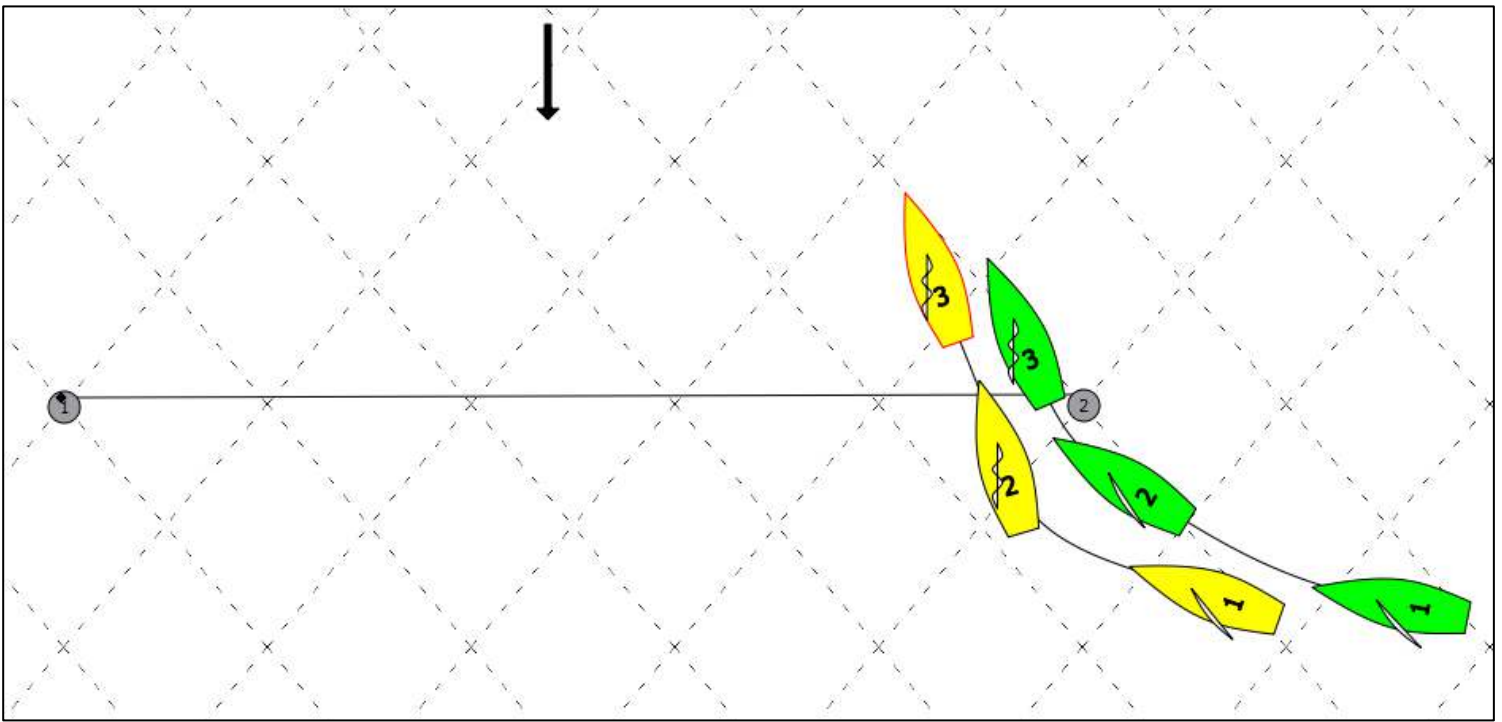
Even though R 18 mark room does not apply, all the Right Of Way (ROW) rules still apply between boats. So approaching a start line, an overlapped windward boat must keep clear of a leeward boat (R11 Windward/Leeward) and cannot ask for room to squeeze in at the start mark – we used to call it barging.



In the above diagram, Yellow does not alter course and Green must keep clear.



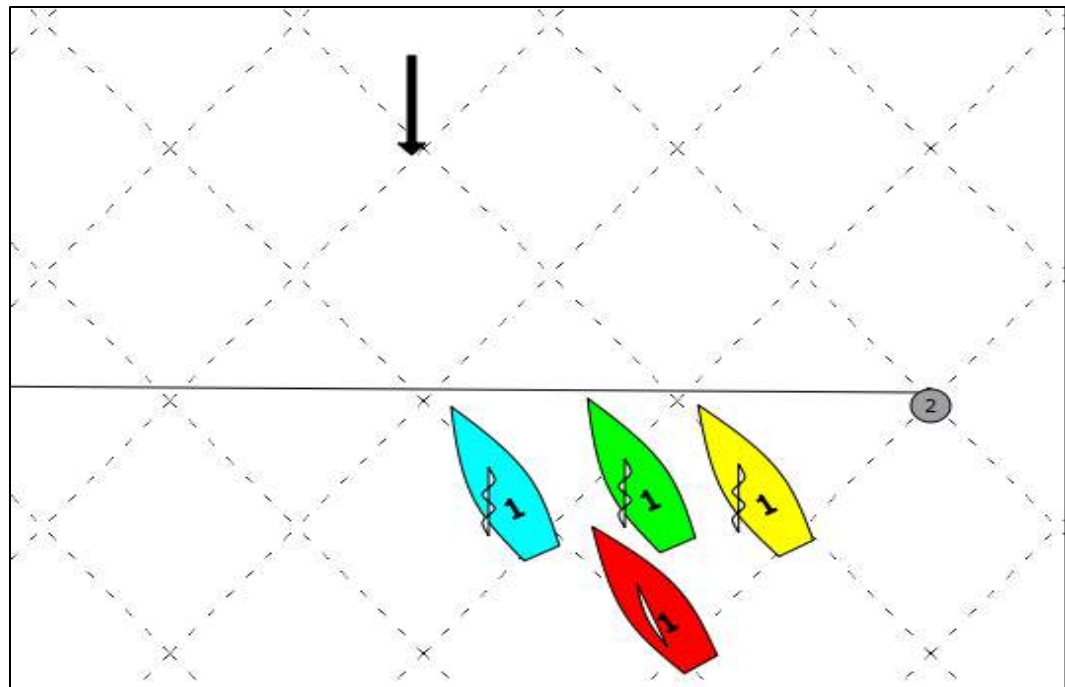
In this diagram, Yellow luffs and forces Green above the mark. This is allowed under the rules and Green has to keep clear under R 11 (Windward/Leeward). However if Yellow delays the luff until Green is alongside the mark, Yellow cannot luff Green into the mark. The windward boat (Green) has an obligation to stay clear of the Start mark (R31) and so she is protected under the definition of *room* and R 16.1 if the leeward boat, Yellow alters course such that Green is forced into the mark.



In this diagram, Yellow waits too long to close the door, as she is forcing Green into the mark. Yellow is at fault.

Is there room to squeeze in?

In this diagram, three boats are luffing just below the line with about 5 seconds to the start. Red tries to come in between Blue and Green. While Red is clear astern of Green, Green is ROW (definition of Clear ahead/Clear Astern/Overlap). As soon as Red overlaps Green, there is a change and Red becomes ROW over Green under R 11, so Green now has to begin to keep clear of Red, but Green has to be given room to keep clear (R 15) and that includes room for Yellow to



keep clear of Green as Green alters course (R 16.1). So if there is contact Red will be at fault. Note that R17 does not apply to this situation as there is no proper course before the start.

When are boats Racing?

From the Definitions

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.

From Appendix E

E3.4 Starting and Finishing

(a) Rule 26 is changed to: Heats shall be started using warning, preparatory and starting signals at one-minute intervals.

From these two items, we use a two minute start sequence, with the two minute signal being the Warning, and we are racing from the one minute Preparatory signal. So we become subject to the ROW rules from the one minute signal.

Penalty during the pre-start

E4.3 Taking a Penalty

Rule 44.1 is changed to: A boat may take a One-Turn Penalty when she may have broken one or more rules of Part 2, or rule 31, in an incident while racing.

If you foul another boat during the final minute before the start, then you must take a penalty as you are 'racing'. An older version of the rules used to require you to wait until after the start to take your penalty, but now you are allowed to take the penalty straight away (just get clear). As I understand the background, it was to make the penalty commensurate with the crime. So a foul before the start may not have much or any effect on the ROW boat, and so you may discharge your penalty straight away and also have minimum impact on you.

Rule – no more!

If you handle your boat after the one minute signal, then you must hold your boat and only release it after the starting signal. This rule has been deleted from Appendix E and no longer applies. But be sure to check the SI, in case this restriction has been reinserted.

Over Early

If you are not over early occasionally – you are not trying hard enough! It happens – you are trying your best to get a great start and you misjudge your acceleration to the line and get called over. If you are at one end of the line, it is easy to tack or bare away and come around the end and restart. But if you are in a group of boats, getting back to restart is more of a challenge. The usual technique is to ease your sails and begin to luff up to lose speed and allow the boats around you to go ahead – then you can turn back and restart correctly. The good news is that while you are easing sheets and heading up, you are still racing and have all the rights and obligations of any racing boat. Only after you bare away and are clearly returning to the prestart side of the line do you have to stay clear of boats still racing.

22 STARTING ERRORS; TAKING PENALTIES; MOVING ASTERN

22.1 A boat sailing towards the pre-start side of the starting line or one of its extensions after her starting signal to start or to comply with rule 30.1 shall keep clear of a boat not doing so until she is completely on the pre-start side.

Practice, Practice, Practice

At our weekly sailing, we usually practice starts. To speed things up we use a short version (from the one minute signal) and a short weather leg. Start, round the mark and return, then repeat. We may do 10 starts in short order. And most important – we critique each other – what was your plan? Where did you want to be

on the line? Were you close to the line with speed at the start signal? This analysis and feedback quickly tightens up the fleet and everyone's starts improve dramatically. Give it a try.