

A BASIC RACE MANAGEMENT PROCEDURE REVIEW

All race officers use the same rulebook but each of us have little things that we do within the rules to make it easier to perform our function as race officers. A few of these are not acceptable for Level 1 events, but most are fine for the majority of work we do. Here are a few examples for your consideration.

EQUIPMENT

When asked to run an event, negotiate; insist on a minimum of three mark boats in addition to the signal boat. Try for a pin boat. If you get the three mark boats, you can convert one into a pin boat.

A pin boat adds minimum 20% value to your race committee procedure.

Make sure all of your equipment is ready the day before.. Go early, lay out the flags, horns, boards, documentation, marks, anchors, line, etc, etc.

PERSONNEL

Try for a minimum of five on the signal boat and two each for three mark boats. Have a dedicated scorer

RACE COMMITTEE MEETING

For larger events, try for a practice race the day before. Have a RC meeting the morning of this practice race. If there is no practice race, try for a RC meeting the eve before, make it an information/social meeting. If this is unfeasible have a RC meeting minimum 3 hours before the warning sign on the first day of racing.

At the RC meeting meet your volunteers, determine their assignments, go over the procedure and the schedule.

As to schedule, be in the course area 1 hour prior to the warning signal. This means leaving the dock early. It takes time for volunteers to get going so have them arrive early.

SKIPPERS MEETING

Send your weather mark boat out on the course to monitor conditions.

Start the meeting after introductions by calling the weather mark and asking him to give existing conditions in the center of the course. Wind velocity, direction, current strength and direction. I have several radios on full volume around the meeting area so that all can monitor live. This can be an entertaining situation and accomplishes several things:

- It gives them existing conditions

- It suggests to them that you are working hard in their interests.

- It creates a relationship with the race committee.

- It gives you an indication as to the probability of a scheduled start.

It also gives an indication of where the signal boat might be located. At the skippers meeting anything you say is not formal and does not change the SI. If asked specific questions about procedure, refer them to the SI. If the question regards something omitted in the SI but is valid, Shame on you.

PRE-START/SETTING THE COURSE

Use a reference point for setting the marks. This point is the location that you have directed the weather mark boat to ping on his GPS to determine direction/distance. Many suggest that the reference point for setting marks should be in the center of the starting line. The center of the finish line is better. The finish line is quite narrow actually about 8 boat lengths.

I prefer to make the reference point abeam of the port bow of the signal boat and out about two boat lengths.

What you are trying for is a direct windward/leeward alignment of the gates and weather mark with the finish line.

This suggests that the gates themselves will be more aligned with the center of the finish line than with the center of the starting line. As a result the starboard or right gate will be almost dead ahead of the signal boat.

Signal boat

For most events, arrive at the most probable starting line location one hour prior to scheduled start. If that is also around the time of the skippers meeting, have the DRO take the signal boat out to the leeward end of the proposed course area and have a fast mark boat standing by to transfer you to the signal boat.

Take wind readings and chart every 5 minutes for the first half hour. Using this data, at latest, anchor thirty minutes prior to the scheduled start. Send the weather mark out to the approximate location of the weather mark to take more wind readings.

For the next half hour, take readings and chart every 3 minutes

Also chart the time it requires for a wind shift at the weather mark location to arrive in the starting line location. Do this at least for the last 30 minutes if the conditions are shifty. This information will help determine the pin location in shifty conditions.

Pin Boat

When you anchor, have the pin boat anchor as well. There are several benefits to this, first, you can watch competitors practice starts which gives you a feel for the line, and next the pin boat can determine the depth and how much line will be required. Lastly the pin can measure current.

More often than not, the pin will be required to re-anchor prior to the actual start.

It is desirable to use the pin boat with a staff/flag as the pin rather than a mark. Have the pin use adequate scope to enable him to adjust 5 degrees to windward or leeward of his initial set position.

Use a tape recorder in the pin boat for starts and finishes as well as a recorder.

To set the pin, the wind direction compass heading is only a reference point.

Set it for the actual conditions you estimate you will have at the start.

First have the pin boat get the distance by GPS or a range finder. Have him proceed to weather from well below the estimated anchoring location. He can be watching the reciprocal compass heading as he approaches the proper location, however you will notify him when he is in the desired position. Because of his initial anchor He will be aware of the depth so will have an idea of how far to move to weather to allow the necessary scope.

If doing a W/L course he will also be the finish line. In this case, after the start, leave the anchor in place on a small white or blue bumper. It will look like a crab pot.

Set the finish line and also have a small white or blue bumper attached to this rode.

By this method, if there is a wind shift during the last leg or during the finish process, the gate boat can adjust the starting line while the pin boat is finishing boats. As the last boat finishes the pin can quickly move out to the adjusted starting mark, pick up and we can begin the next sequence.

Meanwhile, the small finish line buoy will move forward off the starting line due to the lack of drag. If there is concern, have the gate boat remove it while the pin boat is moving out to the start pin. This system considerably decreases the time between last finish and next start.

In setting the pin boat, take into consideration the current. In light air the current will override the wind. In this case have the pin boat set into the current to achieve the desired position.

Start Line

The start line is not always square to the wind. Make it square to the conditions. The classic example is English Bay in Vancouver. With a westerly the beach is always favored.

More and more we find that English Bay is full of anchored ships. This often pushes us inside by Kitsilano or to Jericho.

If Jericho, the beach is heavily favored. It would not be unusual to have the start line favor the signal boat by as much as 10 degrees

Weather Mark

After you have set the signal boat, have the weather mark ping the reference point then move to weather to the desired distance and monitor the wind. Give him the distance and direction in nautical miles and magnetic heading. Do not have him set the mark until the last few minutes prior to the start. Instead have him always place his boat directly upwind of the signal boat. This will give you a visual idea of the wind direction at his location. It is important for him to notify you of any significant wind variation and the time that it affected his position. You can then monitor how long it takes for that shift to arrive at your location.

If he is carrying a change mark, partially or fully inflated, have a blanket or tarp of a dark color for a cover of that mark..

Distance to the weather mark

The distance to the weather mark is the initial tool for determining the duration of the race. This is directly affected by which course you have chosen.

For this example let's assume windward/leeward two laps with a downwind finish and a target time of 50 minutes.

On a 50 minute race you want the lead boat to arrive at the gate in 25 minutes. The boats will come downwind faster than they went upwind unless it is very light air. So in our example you should be looking for about 14 minutes to the weather mark and 11 minutes back.

The variables are wind strength and boat speed potential.

If you have no idea where to start, try taking the wind velocity in knots and relate it to the distance in nautical miles. Then set .1NM shorter. Eg. If it is blowing 9 knots make the initial set .8 nautical miles, 10 knots, .9 nautical miles, etc.

If this does not result in a 14 minute windward leg, adjust the distance with a plus or minus signal at the gate. The information gained by doing this in the first race can be refined for subsequent races.

If the wind is considerably stronger, it might be best to add an additional lap rather than to increase the distance beyond several miles. This also keeps them in a smaller area which facilitates the safety plan.

Keep records and soon you will find that you have a good log of the various classes that you can use for future events.

Actually for all of the Olympic classes we have developed polar programs for our laptops that give us the exact distance to set for all classes, wind conditions.

Offset mark.

The offset mark is designed to reduce collisions with port tack boats still on the beat near the weather mark.. It is not designed to be a passing lane leg. Several things must be emphasized. First they need to be able to reach it without tacking. Next they should not be able to set a spinnaker on this leg.

The angle to the Offset Mark should be from 70 to 90 degrees. If the wind is oscillating to the left set it closer to 90 degrees. If it is oscillating more to the right set it closer to 70 degrees.

The distance from the weather mark to the offset mark should be around 40 meters.

The offset mark is often used for large fleets and in particular for high performance boats.

Gates/Leeward mark

Don't use a gate unless it can be effective, which means one that give them an opportunity regardless of which mark they round. Often this is impossible in very deep and or strong current conditions. When you write your SI, make the gate an option, not an absolute.

Given time, have the gates or leeward mark set after the start. Also given time, have them removed prior to the last leg. It is perfectly acceptable however to set them before the start and leave them in position for the entire race, but its not as clean.

If they are pre-set and left in position, they do not have a required side on the first and last leg.

In setting gate marks, have the mark anchor line the same length for each mark. With two boats, tow them from leeward to the desired position with only the anchor in the boat and all the line, chain dragging behind. Drop the anchors simultaneously when the marks are in the desired position.

In setting gate marks with one boat. Set the starboard gate as above then start from leeward of the desired location for the port gate again with only the anchor in the boat. As the boat moves forward he can judge the width. (8 boat lengths) As the mark boat comes abeam of the desired location, he can mark the spot by gunning his engine to create a swirl or drop some seaweed or a current measure device at that spot. Moving ahead, when the mark is about 5 feet short of that spot, drop the anchor. The mark will come to rest a few feet ahead and should come to rest in the desired position. Be very aware of the current. If there is a side current set somewhat into the current

If you wish to favor the port end, make that drop later. To favor the starboard end drop sooner. After the drop, position outside of one of the marks and monitor with a tell tale. Gate width should be 8 boat lengths (three boat length circle rule)

Current

Recommend a device to measure current. This can be as simple as a water bottle partially filled with seawater. A piece of seaweed works quite well as will a sponge, or a partially submerged weighted tube. Anything that will not be affected by the wind, but that is still visible.

Have current measured by the weather mark, the pin boat, and the gate boat near the signal boat. Coaches will often measure current at your signal boat, and this can be useful as well. Just ask them, they are always willing to assist.

DEEP WATER ANCHORING

Quick changes are often difficult in deep water. There are several methods of making this more efficient.

Lobster fisherman uses a ring/line/buoy system. The buoy, usually around 18 inches in diameter, is attached to a snap ring, by two feet of line. The procedure is to tie the mark and mark anchor line to a stern cleat, place the ring around the anchor line, throw the buoy overboard and motor to weather. The line passes through the ring, the buoy creates drag as the line passes through it and it plucks the anchor off the bottom and up to the surface to the buoy. It takes no effort and you can continue on to the next drop or retrieve the line/anchor. This system works well in up to 2 or 3 hundred feet of water.

This ring system can be created or purchased at most ships chandleries for a very minimal price.

In very deep water, with onshore winds, the possible weather mark locations can be pre-dropped utilizing temporary weights with small white, blue buoys or plastic containers as floats. These are dropped at 10 degree intervals in a semicircle in the area of the

prevailing wind. Weights are often cinder blocks or cement containers. Line is bio-degradable. Location of each buoy is charted on GPS. The mark is then attached to the buoy closest to the proper wind direction. At the conclusion of the event, the line is weighted, cut and dropped. Another option for the weather mark is an un-anchored mark boat. This is tricky but can be done, and should only be done as a last resort. It is key that this mark boat team assure fairness and safety if this system is used.

Anchoring the signal boat in deep water (1000 + ft) can be tricky. Not anchoring or optional starting procedures may be your only option. The rules do not prohibit not anchoring the starting line; however it should be avoided if possible. If one end of the line can be set it greatly increases the quality of the non anchored start line.

There are conditions associated with a non anchored line, and they deal primarily with OCS and the fairness of the line. If the start is not fair, you can always blow it off and try again. Also if the line is moving you must consider this when deciding OCS. Always have the fairness of the line foremost in your mind.

STARTING CONSIDERATIONS

Race officer

Communication is essential. The jury, coaches, measurers, etc are part of the team.

Just prior to the warning signal announce the following:

“Stand by for countdown of the warning signal for X class race 1;
Course 2; weather mark is 1.2 nautical at 180 degrees; wind is 14 knots. We have 25 starters in the starting area”.

“Preparatory signal will be PAPA” (I , Z, etc)

“O flag will be flown, (or not) Jury please acknowledge”.

Countdown the last 10 seconds to the warning signal.

Start broadcasting open mike at one minute to start. Eg,

“One minute, the line is clear, at 50 seconds, AUS is over, USA is over, at 40 seconds the line is clear”, etc,

There is nothing wrong with the world hearing this information, as it involves everyone in the process, including jury, spectators, coaches, media, etc.

Record all starts and finishes on a tape recorder.

In the case of several starts where one of the starts is postponed or abandoned, restart this fleet. Do not put them at the end of the line.

Timer

Most race officers turn the starting procedure over to the Timer. This is recommended, it permit the race officer to concentrate on the line, course, conditions.

The timer should require responses from the starting team, sounds, and flags, etc.(eg, “sounds ready”, response) It may sound simple, but it assures no errors in the starting sequence procedure.

Have the timer do several start scenarios during the first half hour on station. It builds unity and releases nervous energy.

Recorders

Record everything,: Time left the dock, time on station, time of each start, time first boat at weather mark, time of first finisher, time of last finisher, number of starters, finish positions, OCS, etc, etc.

COURSE MAINTENANCE

The RO never rests. He/she is continually focused on the course, conditions, and communications and is consistently playing a game called “what if” or “anticipation” No matter what happens he should always have a solution at hand, and in many cases be deploying his forces prior to the problem thereby omitting the problem.

Moving marks, anchor lines in props, storm cells, sinking boats, ill volunteers, capsizes, injury, no wind, too much wind, wind shifts, lost equipment, commercial traffic, strong currents, engine failures, no gas, helicopters and press boats, spectator boats, no cookies for the race committee are all examples of what could go wrong.

Wind shifts are usually the most common problem.

The key to good course maintenance is to recognize all of the above especially wind shifts as quickly as possible. Most shifts are recognized first at the weather mark. It is essential that the weather mark person continually monitor wind conditions and keep the RO advised.

If a shift is large enough to warrant a change you will need time to get your mark boat in position to signal the change.

The change must be signaled at the preceding mark before the first boat reaches that mark, however the actual change mark need not be in the water. The quicker it is in the water the better and it must always be set well before the lead boat reaches the lay line.

It is best once you have decided to drop a change mark, to do so as quickly as possible. It is perfectly acceptable to have the change mark and the original mark both in the water at the same time. It is advisable however to have had a few boats round the original mark prior to dropping the change mark and in this regard often it is best to have the mark boat move into position to deploy while boats are still rounding the original mark, particularly if it is a short course.

After the last boat rounds the original mark have it removed as soon as possible.

There is often a big spread of talent in a normal regatta, which could mean that the lead boat could possibly lap the last boat. This could result in boats rounding both the original and change mark at the same time, which is perfectly acceptable.

Incidentally if a situation warrants it, it is permissible to tie the change mark and the original mark together. For example:

‘Several fleets on the same course’ As the first fleet is rounding the original weather mark, there is a wind shift. Lets assume a second fleet is halfway to the weather mark and the third fleet has not started. A change mark can be dropped for a new weather mark for the first two fleets and an original mark attached to it for the third fleet.

FINISHING

Make your finish line short. Often shorter than the width of a gate. Tend to have the finish line around 5 boat lengths wide, sometimes less, but wider in heavy air.

Have your recorder determine if sail numbers can be reduced to 3 or 4 unique digits, If so use these for recording finishes, less to remember, easier to record finishes.

Use the "blank" system in scoring. Assign several persons on the signal boat as blank 1, blank 2, etc. If you call blank 1, the recorders leave a blank for that spot. Meanwhile blank 1 follows that boat until the sail number can be identified. During the next break the number is relayed to the recorder and the blank is filled in.

Be recording all of this into a tape recorder, you can also add additional information like the next set of boats are 1, 2, 3, etc. Have at least two persons recording the sail numbers as they are called.

Have the pin boat record finishes as back up. Often in downwind finishes it is difficult to read numbers from the signal boat. If difficult to read, have the pin boat announce sail numbers of boats approaching on port tack.

If the signal boat and pin boat have a long exposed anchor line, (shallow, windy venue) try to weigh them down with an additional weight. You might also put a buoy on the line where it meets the water.

Acceptable finish lines are Downwind finish, approximately 5 boat lengths wide, and Upwind finishes which require a wider line, at least 10 boat lengths. Do not do a reaching finish line.

We can go into a long discussion as to why not, but primarily it is not fair to boats coming from both sides since there is a turning mark (gate or leeward mark) which necessitates a gybe and is affected by Zone rules.

The reaching or "Hollywood" finish was created for television on Trapazoid Courses for the 1996 Olympics. Most International One Design Classes, Laser in particular have eliminated this Hollywood finish and have added an additional leeward mark after mark three of a Trapazoid to round and finish upwind at the original start line.

The advantage of a downwind finish is that it keeps all the boats in the start area for the next start. Downwind finish is by far the most used around the world. It is very popular in that it also provides more passing lanes on the last leg of the course.

Often we use the upwind finish on the last race of the day if the club venue is upwind.

When making your SI Courses you can add upwind finish courses or just finish them on an S flag at the third weather mark rounding of a three lap W/L

Shortened course (S flag) finish procedure

At a mark, the finish is between the S flag and the mark.

For the weather mark place the mark boat about 40 degrees above the mark

At a reaching mark place the mark boat abeam of the mark.

At the leeward mark place the mark boat to leeward of the mark

At a gate the finish is between the gates. It is essential that there is no gap between the boat signaling the finish and the gate.

Attach the starboard gate mark to the port bow of the committee boat that is doing the shorten course finish to keep them from trying to finish between the signal and the gate. Use a mark boat or drag the gate down to the signal boat and use your normal finishing team.

In round robin, boat supplied events where a quick turn around is desired, or in large fleets where the experience level is very diversified, and many races per day are desired, finish on course is an option.

Put this instruction in the SI. It can be written several ways, below is an example

"When it is in the best interest of the fleet and its competitors, the race committee may award finishing places to boats which are delaying the finish of a race (On Course Finish). The scoring abbreviation for an on course finish will be OCF. This changes rules 28.1, 35 and A4".

When the Jury chair reads it for the first time, his initial reaction is not unlike a heart attack..

Finishing stragglers on course is popular with the Organizing Authority, the sailors themselves and the race committee.

The procedure is simple, either finish at a mark of the course or on a leg. Finishing at a mark of the course is preferred.

As an example in a windward/leeward course, gates, downwind finish, three laps, large fleet, it would not be unusual to have the winner be on the finish lap, while a few boats are approaching the final gate having been lapped. Finish the few at the gate in their gate rounding position. These would be the last finishers on your scoring sheet.

VOLUNTEERS

This is the biggest trick of all. You may think you are the best race officer in the world, but try running a course by yourself.

It is essential to insert yourself into the team, and build team unity and pride

This starts at your first meeting, which often is the first time that you have ever met these people, particularly if you have been brought in to run the event. Somewhere in the crowd there is the local who you are replacing and who the other members of the team love and respect. Your goal is to have him become your strongest supporter.

We all make mistakes and we feel badly about them, rather than add to the guilt, use the beer tally.

I explain to them that I make a lot of mistakes during the course of the day, and that every time one of them catches me in a mistake, I owe him/her a beer, which the Recorder will record.

They like this, and after a pause I explain that the reverse is also true, if they make a mistake, they owe me a beer. At the end of the day after all jury issues are completed, we debrief at the bar, where the debts are paid. We call this team building rather than drinking, however there are others who may not agree.

It becomes a contest where we all try hard not to owe a beer and the real winners are the competitors.

Rather than berating the volunteer, its easier to say, "that will be a beer" and all have a chuckle.

Make sure you make an inconsequential mistake early on.

Courtesy is essential. "Thank you" , "well done", "outstanding", etc, any words suggesting praise or appreciation should be used. Eg.

When getting a report from a mark boat, “ Understood, thank you sir, much appreciated”
It goes a long way, shouting, berating does not.

Warm winds,
Paul Ulibarri, IRO