



Introduction

Sailboat racing is the heart of any sailing club. DSC maintains a yearly schedule of club races, special races such as long distance races, regattas, cruising activities, and special events. Our racing program provides a means for sailors to sharpen their sailing skills, enjoy a competitive environment while sailing and to build camaraderie between the club members. There is an overall Handicap Fleet based on the Portsmouth Yardstick as well as individual fleets currently consisting of Catalina 22, Flying Scot and MC Scow. The race committee (RC) serves an invaluable duty allowing members to compete on a regular basis. This document covers most aspects of setting up a race, running a race and scoring a race.

When to show up

We try to schedule enough people to ensure safety and quality of racing for DSC members. In colder temperatures and regattas, we schedule at least four (4) attendants. In warmer weather months, we will schedule three (3) participants. If less than the scheduled number of race committee show up, it's up to the Race Chairman to determine if races will be held. If safety and quality of racing cannot be guaranteed, racing should be cancelled, and all club members that showed up to race will be awarded one (1) first place position for that day. Those scheduled for race committee need to show for RC duty at least one (1) hour before scheduled race start time. It's important to get the course setup on time so that racing can start on time.

Required number of racers

At least three boats are required for a race to be run. If three or more boats are identical one-design they should be scored in fleet category as well as club. In the event that only two skippers show up to race they will each be credited with a 1st place finish on the scoring sheet, which should be mailed in per the instructions on the bottom of the form.

In the event that no races are held for whatever reason, all skippers present intending to race shall be given credit for one 1st place finish on the DSC Race Record Form.

Preparing to leave the dock

The Fuel - Both the chase boat and the committee boat have four-cycle engines, which use straight gas. DSC has an account at The Ridge Marina, and thus all other Russell marinas. If you charge gas, just remember to mail the receipt to the Treasurer.

The Motors - Four-cycle motors have nicer personalities than two-cycle motors. Four-cycle motors start easier, run quieter, and use less fuel.

Starting a cold motor - The fast idle lever can only be raised, if the motor is in Neutral. The fast idle lever is also the choke. As you raise the lever when it reaches the upper limit of travel, you will notice a soft resistance. This resistance is the choke position. The motor will have to be choked to start. As the motor starts, let the lever down just enough to keep the motor running for 15-30 seconds. Then the motor will be warm enough to run on a low idle.



If the motor doesn't start immediately, crank the motor in 5-second intervals. If the motor hasn't started after 6 tries, start deciding whether you really wanted to use the boat. Seriously, check everything you did and try again.

Sometimes the hose will be air-blocked. The bulb will pump up to resistance, just as if the hose were full of fuel. You can check this by unfastening the hose and carefully pushing on one of the round brass ball in the connector to release the air.

Within a minute, the idle lever should be pushed fully down to the off position, so the motor will idle normally. Allow the motor to idle for 5-10 minutes before leaving the dock. Thus, the motor will be properly warmed up, and any fuel delivery problems will occur at the dock, and not out in the lake.

The idle lever must be fully depressed, before shifting the motor into gear. If the shift lever is jammed into gear with the idle lever raised, the idle lever will be broken to the tune of \$100.

Starting a hot motor - The major difference in starting a hot motor is handling the fuel mixture. A hot motor does not need to be choked. Usually, this motor will start by simply turning the key. However, if the motor doesn't start after two tries, pull the fast idle lever all the way up, but not into the choke range. This makes the starting mixture as lean as possible. When the motor starts, quickly lower the idle lever.

Cooling water stream - Each outboard displays a stream of water that indicates cooling water is circulating in the motor. As soon as the motor is started, always look for this stream of water down from the starboard side of the motor. If you don't see this water shut the motor down immediately, or serious damage may occur. Frequently, the problem is simply a mud-dauber nest in the little black tube. Clear the tube, and try again. If there is no stream of water, do not operate the motor. Then, advise the Boat Committee Chairman.

Motor Tilt - This motor has a tilt trim feature that is operated by a thumb button on the shift handle. This feature just came with the motor and is meant for other types of boats, not our Race Committee Boat. The motor is trimmed just right when the motor is all the way down. Please leave it there.

Preparing the Chase Boat to Get Underway

Retrieve the Fuel Tank - The fuel tanks and hoses are stored on the shelf of the north section of the shack. The key to the shack is above the door to the south section. The key opens both door locks. If only partially full tanks are available, combine them using the funnel, so that you have a full tank.

Ignition Key - The boat ignition key is hanging to the right of the south section. Make sure you are picking the key marked "Chase Boat." Carry the tank hose and full tank to the Chase Boat.

Transom Drain Plugs - Leaving the gas tank on the dock, step on board the Chase Boat, and immediately go aft to set the two transom plugs in place. If you do not immediately set these plugs, water will continue to enter the boat. However, the weight of one person is adequate to flood the deck so it is uncomfortably wet. The plugs should not be tightened; the friction fit is fine and will not leak.



Motor Battery - If the battery was low, the previous operator may have left it on the charger in the shack. If necessary, unplug the charger, disconnect the battery, carry the battery to the boat and connect the battery observing the correct polarity (red-Positive, black-Negative). The thin wires operate the lights.

Connect the Fuel Tank - Bring the tank aboard, stow it on the port side and connect the hose. Make sure the arrow on the primer bulb is pointing from the tank to the motor. Pump the bulb until you feel resistance, which should be 4-6 times. This resistance indicates fuel is probably up to the carburetor float needle. Note carefully if there are any leaks from the connections at the motor and tank. If there is a leak the o-ring may be damaged, so trade hoses with another tank in the shack.

Visual Inspection - While the motor is warming up, walk around the boat. Note the gear that is aboard and more importantly, the gear that is not aboard, and needs to be retrieved from the shack. The important items include the life jackets and fire extinguisher. In addition, you will probably need to load the race marks, mark anchors and the tool bucket with line for the buoys. Don't forget to open the seat and ensure that the blankets and Flying Scot retrieval-towing bridle are on board.

Preparing the Committee Boat to Get Underway

Fuel Tanks - We leave the fuel tank on the Committee Boat. Before starting the motor, open the hatch and check the fuel quantity and pump the fuel line bulb. Immediately after starting the motor open the center hatch and observe the coolant water stream from the motor. If there is no water stream stop the engine immediately and check the orifice for a mud dauber nest. If the orifice is clear and there is no water stream, do not use the boat, as the motor may be seriously damaged.

Mooring the Chase Boat alongside the Committee Boat - During the Starting sequence the Chase Boat should be moored alongside on the side opposite the starting line. If there are any powerboat wakes, the Chase boat must be allowed to lay aft, so that the Chase Boat and Committee Boats are not damaged by powerboat wakes. Both boats have been significantly and pointlessly damaged in this manner.

Signal and Race Flags - Ensure the signal and race flags are on board as well as the poles used to raise and lower them. The warning/class flags and preparatory flag are affixed to poles which are raised at the appropriate moment and then place in a holder until it is time to lower them.

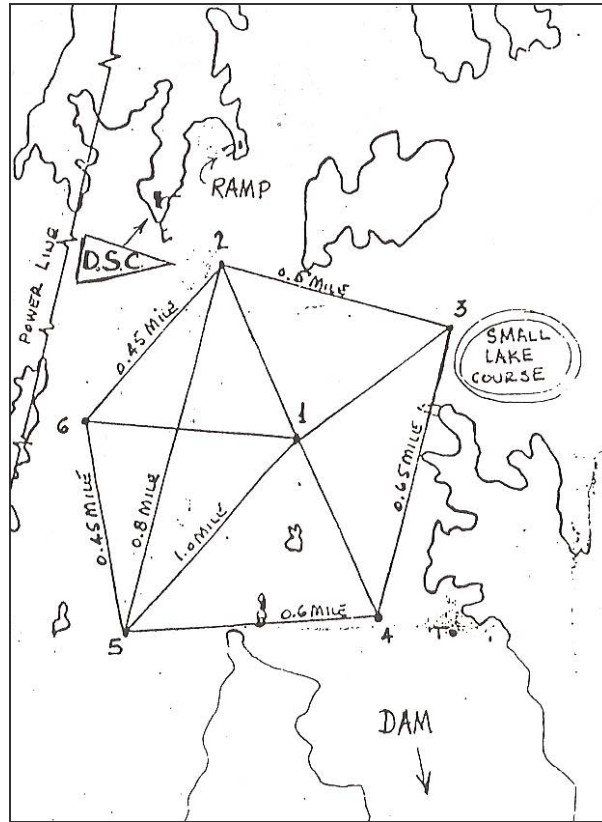
Race Mark Numbers and Frame - If they are not already on board, the Mark numbers should be secured before departure from the dock. After the Committee Chairman has designated the course, the number panels should be placed in the horizontal rack on the starboard side of the committee boat. The order of race marks should read from stern to bow.

How to set a course

The most basic, yet one of the most tactical courses, is the simple windward-leeward course. This consists of one "windward" mark and one "leeward" mark. At DSC, to make



course setup easier, we have 6 permanent moorings that should be used for setting this type of course.



The wind direction will determine which marks are used. For example if the wind is coming from the NW, you might set a flag at position #2 and set another at position #4 with the starting line at position #1. Because we use these permanent moorings, it may be difficult to make the course "square" to the wind. Just choose the one that is closest to the wind. Depending on the wind, you may need to run two (2) or three (3) laps for each race. When running this type of race, put the "W" and "L" placard in the rack on the starboard side of the boat along with a number (1, 2, or 3) to indicate how many laps. While other course formats could be used (example triangle), the best course for the boats raced at DSC is a windward-leeward. If running a triangle or other course, put the corresponding numbered placard in the rack on the starboard side to indicate the order in which the marks are to be rounded (example 2, 6, 4, 1), with the last number being the start/finish line location.

How to set the starting line

The perfect line is one which a boat can cross on either tack and be in equally favorable position with every other boat along the line. When setting a starting line there are two things need to be accomplished. The first is that the line is square to the wind, and the second is that the line is long enough for the boats present. All races should be Port Rounded, so the starting line flag should be on the port side of the committee boat. Normally, races will be started at the #1 mark, so you first want to put the flag at the mark,



then determine the distance and anchor the committee boat. The forward most roof support on the starting line side of the committee boat is the other end of the line.

Setting the starting line

The proper length of the starting line depends on several factors: the number and length of boats, velocity of wind, type of boats and experience of the competitors. As a rule of thumb in moderate air, set the line length at 1.25 times the aggregate length of the longest class of boats expected to start. For example, 16 boats, each 30 feet long, require about 600 feet; the same line will accommodate 32 boats, 15 feet long. In heavy air extend to as much as 1.5 times the aggregate length of the competing boats. In very light air, reduce it.

After line is set

1. Raise the on station flag. This is blue flag with the letters "RC" on it.
2. Sound the horn

Preparing for the race

1. Record race committee attendants
2. Write down all entrants' boat type, number and skipper info on the DSC Race Record Form.
3. Record the wind speed and direction
4. Get both stopwatches ready.

Starting the race

We use a five minute starting sequence to start all races

1. Warning - Five (5) minutes before the start, start both stopwatches, raise the warning signal (numerical/fleet flag) and sound the horn.
2. Preparatory - Four (4) minutes before the start, raise the preparatory signal ("P" flag - white square on a blue background) and sound the horn
3. One (1) minute before the start, lower the preparatory signal (white square on a blue background) and sound the horn
4. Start - Zero (0), lower warning signal (numerical/fleet flag) and sound the horn

Note: There are four (4) preparatory signals that could be used; the "P" flag, "I" flag, "Z" flag, "Z" flag with the "I" flag, or the black flag. Each signal or combination has a specific purpose. The DSC uses the "P" flag exclusively.

Races will be started using rule 30.1 Round-an-End Rule. If any part of the boat's hull, crew or equipment is on the course side of the starting line or its extensions during the minute before her starting signal, she shall thereafter sail from the course side across an extension to the pre-start side before starting. It is NOT necessary for the race committee to display the "I" flag associated with that rule, as it will be the standard way all races are run.

If any boat or boats are over the line early, the race committee must notify them by calling out "Over early, XXXX" where XXXX can be either the sail number for the boat, or the skippers name if it is known. If so many boats are over early that it is not possible to



specifically identify each boat, the race committee shall signal a General Recall (raise signal and sound the horn twice), and restart the 5 minute starting sequence. When any specific boat or boats have been identified, they must return behind the start line, by going around either end of the line, and then restarting. Failure to do this will result in the boat being scored as "disqualified" (DSQ) for that race. It is NOT the race committee's responsibility to ensure the racer hears his over-early call. The racer is responsible for listening for any and all announcements.

What to do during a race

Observe boats – Keep an eye on the competitors. If someone is in distress, you will need to get out to them in a hurry. On windier than normal days, the Chase Boat should be positioned out on the course, but clear of the racers, to respond quickly should the need arise.

Check wind – During the race, try to check the wind direction and speed a couple of times. There is a portable wind meter in the RC briefcase. Normally this is done, at the beginning, middle and end. You can record this on the worksheet. These numbers will be used to come up with an average wind speed for the race. Also, if the wind has changed direction, you will be ready to reset the starting line once all the competitors have finished.

Watch Time – If wind has died down and the race is going much slower than anticipated, it is acceptable to shorten the course. The committee chairman can shorten the course to a mark/finish line before the leading boat has rounded the mark preceding the "new" mark/finish line. You can only remove a leg if no other boat is on it. When shortening, have someone take the Chase Boat out and notify the competitors.

What to do when finishing a race

Record Time - Record the finishing time of each boat as it crosses the start/finish line. As each boat crosses the line, sound the horn so that they know they have finished. The average race should take between 30 – 45 minutes from the start to when the first boat finishes. If it is much shorter consider adding an additional lap or two to the next race. If it is much longer, then consider removing a lap.

Cancel Race – A race should be cancelled if the leading boat has not crossed the finish line within one and half hours. All other racers have to finish within two hours. Racers finishing after two hours will be scored as a DNF (Did Not Finish).

If slow boats are holding up the starting of the next race, the race committee can score them in their current position on the course, and use the Chase Boat to bring them back to the starting area.

How to score a race

DSC uses the Portsmouth Yardstick Handicap scoring method. Each boat has a handicap that is applied to its time to determine an adjusted time. These adjusted times are used to determine the final finishing order for the competitors. Each boat has a different handicap number depending on the wind speed.



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1. Make sure you recorded the time for the race. Remember to subtract 5 minutes if you didn't stop, reset, and restart the watches after the starting sequence.
2. Determine the average wind speed from the race, and then determine the Beaufort Number.

Beaufort Number (BN)	Wind Velocity (MPH)	Seaman's Term
0	0 - 1.7	Calm
1	1.8 - 4.0	Light Air
2	4.1 - 7.4	Light Breeze
3	7.5 - 12.0	Gentle Breeze
4	12.1 - 18.9	Moderate Breeze
5	19.0 - 24.7	Fresh Breeze
6	24.8 - 31.6	Strong Breeze
7	31.7 - 38.5	Moderate Gale
8	38.6 - 46.6	Fresh Gale
9	46.7 - 53.9	Strong Gale

3. Record this number on the scoring sheet.
4. Using the Beaufort Number, find the corresponding handicap (HDCP) number for each boat. All handicaps can be found in the Race Committee Notebook. Below are the most frequently used handicaps.

Boat Type	BN 0-1	BN 2-3	BN 4	BN 5-9
	HDCP	HDCP	HDCP	HDCP
Catalina 22 (CAT22) SK/WK no spi	98.4	96.3	95.3	95.1
Flying Scot (FSCT)	92.1	90.4	89.1	87.5
E Scow (E-SC)	77.6	75.3	70.8	69.3
MC Scow (MC-SC)	89.5	87.4	87.2	86.5
Windrider Rave Tri	77	77	77	77
Windrider 17 Tri (WR17)	81.4	82.2	81.5	81.4
Sunfish (SF)	103	100.4	97.8	95.8
Precision 23 (PRS23)	98.0	97.1	95.6	92.0
Force Five (F5)	98.1	96.6	95.3	93.4

5. Record the handicap number on the scoring sheet for each boat.
6. Calculate the adjusted time.
 - a. Subtract 5 minutes from elapsed time to account for stopwatch difference (if needed)
 - b. Convert Elapsed Time of Finish to Time in Seconds.
 - c. Convert Time in Seconds to Total Seconds.
 - d. Calculate Adjusted Time (Total Seconds / HDCP Factor) X 100



Field on Race Form	Sample Data
Elapsed Time of Finish	1 HR, 30 MIN, 30 SEC
Time in Seconds	3600 SEC, 1800 SEC, 30 SEC
Total Seconds	5430 SEC
BN	2 -3
HDCP (MC Scow)	87.4
Adjusted Time	6212.8

- e. Compare the adjusted times of all competitors to determine the HDCP finishing order. Record the order in the HDCP column of the FINISH PLACE portion of the sheet. If three or more boats are identical one-design participate, then they should be scored in fleet category as well. Scoring of one-design fleet racing does not require any time calculations; just record the order in which they finish.
7. Record each race results on the Race Results Summary sheet as well.
 8. Repeat for each race.

Protests and Penalties

The historical tradition at DSC for protest hearings is that, if requested by a racer, they will be held at midnight of the day the event occurred, and all racers on the water must attend – simply said – there will be no formal protest hearings at DSC for club racing, the racers are to enforce the rules on the water as it happens. While all penalty and remedies are discussed in detail in the USSA Rules of Racing, we will go over the few you are most likely to see at DSC.

1. Over Early
 - a. Remedy – racer goes around one of the end points of the start line and restarts. Racer is NOT allowed to just duck back behind the line and restart.
 - b. How to score if not remedied – DSQ (number of boats entered plus 1)
2. Hitting a Mark
 - a. Remedy - as soon as possible while clear of the fleet, do a 360 consisting of one tack and one jibe.
 - b. How to score if not remedied – DSQ (number of boats entered plus 1)
3. Right of Way
 - a. Remedy - as soon as possible do a 720 consisting of two tacks and two jibes, while away from the fleet.
 - b. How to score if not remedied – DSQ (number of boats entered plus 1)
4. Hitting the Finishing Mark
 - a. Remedy – most go back to course side of finishing line, do a 360 consisting of one tack and one jibe and then finish again as the first finish did not count due to hitting the mark.
 - b. How to score if not remedied – DSQ (number of boats entered plus 1)



Retire after finishing (RAF). If during the course of a race a sailor makes an error that either they recognize later after the day's racing, or someone points out to them that they made, and they understand, that racer in error will notify the race committee, who shall score him as RAF with a value equal to number of boats entered plus 1. (It is scored the same as a DSQ, but listed as an RAF so all can recognize the honesty of the skipper involved so said *Sailing World* where this was one of the featured articles a couple years ago!!).

NOTE: The two remedy items listed on a 360 and 720 – the very latest rule book update added the precise phrases “one tack and one jibe” and “two tacks and two jibes” – because technically it is possible to do both a tack and jibe in less than a total of 360 degrees – and so long as they do both the tack and jibe they have satisfied the requirement regardless of the precise number of degrees involved.

When you get back to the dock

1. Clean up/secure the committee and chase boats
2. Return equipment to storage building
3. Return VHF marine radios to their chargers in the storage building
4. Lock storage building
5. Give the DSC Race Record Form to the individual listed on the bottom of the form, if they are present, or mail it using self addressed stamped envelope found in the RC briefcase.
6. Post Race Results Summary sheet in clubhouse on bulletin board.
7. Take blue trash cans and dump garbage in dumpster at clubhouse.

Securing the Committee Boat

Mooring Lines - Tie the boat so that it will lie about a foot off the dock, never less. Deploy the fenders. The boat should be moored as close to the shore as possible, without grounding the boat.

Fuel Tanks - Check the fuel quantity. If the tank is less than a quarter full, fill tanks using gas cans in the shed. If there is no full tank in the shed, advise the Boat Committee Chairman and/or Rear Commodore.

Anchor Blocks - Make sure the anchor blocks are on the wood planks, and not on the carpet.

Winch Handle - The anchor winch handle should be on the deck inside the railings.

Race Mark Numbers and Frame - The Mark Number panels were expensive, so please handle and store them carefully.

Loose gear and trash - The flag box, RC attaché case and Race Mark Numbers box should all be returned to, and neatly stored in, the RC Shack.

Report Problems - Report any damaged or missing gear on the DSC Race Record Form. If the matter should definitely be resolved before the next weekend, please advise the Rear Commodore directly.

Securing the Chase Boat



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Mooring Lines - Tie the boat so that it will lie about a foot off the dock, never less. Deploy two fenders. Moor it close to the Committee Boat.

Race Marks - Inserting small stirrer straws into the inflation fitting to defeat the check valve easily deflates the orange tomatoes (if used). You can save some time, if you carry the stirrers out on the course and insert them as soon as you recover each mark. Then, the mark can be deflating as you recover the other marks and ride back. **Never sit on the marks to deflate them. They are thin vinyl and can be easily punctured.** If using flags, return flags to storage room. Report any damaged or missing flags on the Race Record Form. If the matter should definitely be resolved before the next weekend, please advise the Rear Commodore directly.

Storing Gear - Return the fuel tank, hose, marks, and ignition key to the shack.

Loose gear and trash - Stow any loose gear in the bench seat, or under the foredeck. Life jackets go in the seat. If anything is wet, it needs to be hung in the RC shack to dry.

Pull the Transom Plugs - The last thing to do is to pull the transom plugs. During the week when the boat is not being used, the transom drain holes are just high enough to drain rainwater from the boat. If the plugs are left in the boat, the hull will fill until the water reaches the transom cutout. When the water rises over the battery, it will be trashed. If the water continues to rise, the boat could become unstable. If someone attempts to board the boat in this unstable condition, they could be injured.

Please pull the plugs.

Report Problems - Report any damaged or missing gear on the Race Record Form. If the matter should definitely be resolved before the next weekend, please advise the Rear Commodore directly.