

Wabamun Sailing Club

WABAMUN SAILING CLUB OD TRAINING / SAFETY MANUAL

This manual is intended as a comprehensive guide for Officers of the Day (OD) at the Wabamun Sailing Club. It describes everything necessary to run the Saturday and Sunday races, and covers suggested methods on how to perform each task, and reasons why these methods are recommended.

Every necessary aspect of WSC Saturday/Sunday series race management is described step by step. All of the necessary equipment for effective race management is covered, and instructions on how to use them properly. The responsibilities of the ODs are outlined, and each aspect of race management is included. The barge duties; including starts, finishes, recording of results, VHF radio use, and flag and timing procedures are outlined in detail. Other responsibilities such as course setting, rescues and safety, the return of equipment and items to be noted on the notice board are discussed in this program. This course shows how two people can be organized to effectively run races through procedures such as watch synchronization.

If you have any questions regarding this document please contact the WSC Fleet Captain.

Revised 2010-May-9

OD Responsibilities:

The Officer of the Day is responsible for all of the racing and all of the boats on the water for his/her specific day. They are responsible for all of the equipment used during the day, and it is their responsibility to put it all away properly at the end of the day. The OD is also responsible for any rescues that need to be done during the day, and after racing, should watch the water, and know who is still out on the water. It is the OD's responsibility to be prepared for all conditions, and make decisions on the welfare of all of the sailors on a specific day.

The OD is responsible for posting information on the message board at the beginning of each day's racing. The start time for the races is to be posted by the OD, and it is their responsibility to start the race on time. Each morning the OD is responsible for raising the yardarm flags, which are found in the boathouse, and putting them away at the end of the day. The course diagram should be posted on the board; a Triangle-Sausage with the signal boat below the course is used for Saturday/Sunday races. The wind speed and current weather conditions (of the race course) are also posted on the board prior to races.

It is the OD's responsibility to provide a day of safe racing, recreational sailing, and an enjoyable experience for all involved.

Equipment:

All of the necessary equipment is available in the boathouse, in the whalers, or on the barge. From the boathouse the following equipment is necessary:

- The OD Box (which contains a barge key, the VHF radio which is hooked up to the lead behind the window in the front left corner of the barge, pens and pencils, whiteboard pen, air horn, paper, compass, wind stick, GPS 12XL and recording sheets)
- VHF Radios – must have one per whaler that is in use. When using a VHF radio, make sure it is turned on at adequate volume that you can hear calls from the barge, or other boats, and the radio should be on channel 65. Do NOT operate on channel 16, this is an international calling frequency and must be kept clear for calling traffic. Up to date weather forecasts can be found on Weather Channel three (WX3).
- Batteries for each of the small whalers are necessary for operation. The barge always has a battery on board as does the large whaler. When using the batteries, make sure the wing nuts are fastened tightly.
- Keys for each whaler used.
- Minimum of one full tank of gas per boat and one tank for the barge are necessary for racing. On days with heavy wind two tanks are recommended.

- Green Safety bags. These are a must, as they contain the items that make the boat compliant with Transport Canada Regulations. Each powerboat in use should have this safety bag on board (There is a safety box that is left permanently on the barge). These bags contain a buoyant heaving line, flashlight, an extra towline, a whistle and the boat's registration.
- Extra anchors (one or two per boat in use) in case the need to anchor a boat presents itself (i.e. for rescue).

Equipment on the barge includes the following:

- Wind Indicator – must be turned on by connecting the two pairs of leads underneath the shelf. This is used to measure the wind speed, it is necessary to set it to read knots.
- Anchors can be found in the back right corner of the barge in the box
- Marks are chained up inside the barge, and the start/finish pins are on the barge as well.
- Necessary flags for racing are in the box at the front left of the barge. It is a good idea to get the flags out, and make sure that all of the necessary ones are present when setting the course first thing in the day. If any flags are missing they can be found in the boathouse.
- An extra weight on the barge is to be used when wind conditions are 10 knots or greater. The weight is used as a kellet and should be hooked half way down the length of the chain.

Powerboat Use:

WSC has 3 rescue boats and the barge. The engines are oil injection engines, and only require straight gasoline for fuel.

Preparation of Rescue Boats:

The OD is responsible for readying two whalers and the barge for each day. Although only one boat need be used, two should be made ready in case of emergency. The rigging of the boats should be completed as follows:

For the 15 ft whalers:

- Connect battery cables to the battery (red to the positive terminal, black to the negative terminal).
- Connect the gas tank to the gas line. Orient it so the pin on the gas tank with the hole in it is inserted into the yellow ball on the fuel line. Squeeze primer bulb until firm.

For the 17 ft whaler with the mid station:

- Battery and gas are already on board. Check the fuel level of the on board tank.

For all whalers:

- Check the oil level in the oil reservoirs.
- Ensure the drainage plug is placed in drain hole.
- Ensure radio operation occurs on channel 65. Do not use channel 16 – this is a calling channel and must be kept clear unless calling other vessels is necessary, or in case of emergency.
- Place safety bag in boat.
- Place key in throttle box.
- Unlock boat hoist.

The next step is to lower the boat into the water. The hoist(s) require turning the winch wheel in a specific direction. Follow the instructions printed on the hoist. Lower the boat slowly, and hold on to the painter. Once the boat is in the water, use the painter to pull the boat to the leeward side of the pier.

For the barge:

- Connect the gas can to the fuel line. Note: the fuel tank must be brought from shore.
- Connect the wind meter cables (see under the counter on the port side of the barge)
- Connect the radio using the correct power cables found on the port side of the barge.

No battery is necessary, as it is permanently stored on the barge. All flags, marks, safety bags, and anchors are also stored on the barge, and do not need to be brought from shore.

Cold Engine Starting (for all WSC boats):

- Ensure fuel line is connected correctly and the primer bulb is firm.
- Place key in ignition. The key acts as the fuel injector. Press and release the key 3-4 times, and raise fast-idle lever. On the midstation whaler, fast idle is set by pressing the button on the left side of the throttle lever and moving the throttle forward. Turn the key and allow engine to turn over. Do not hold the key for more than 10 seconds. Excessive engine turn over time can lead to wear of the starter motor.
- If engine fails to start, press and release key again and repeat. DO NOT flood the engine. This will require waiting for the engine to sit for an extended period of time before you are able to start it.
- After the engine has warmed sufficiently, the fast idle lever must be lowered before the boat can be put in gear. On the midstation whaler the fast idle is disengaged when the throttle is returned to the neutral position.

To start a warm engine, simply turn the key.

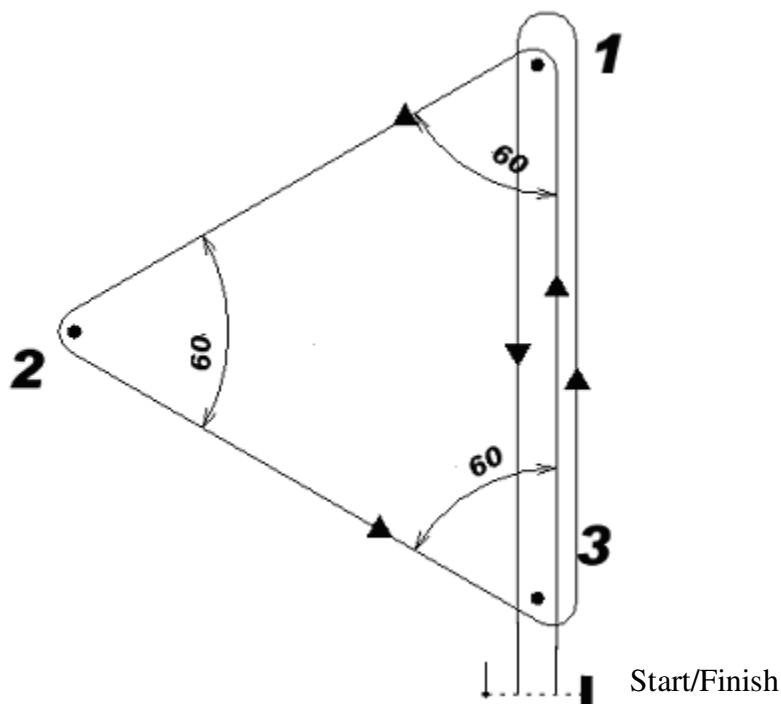
All the WSC powerboats are equipped with power tilt. In the shallow waters on Lake Wabamun, it is important to tilt the engine up when near shore.

However, when away from shore, tilt the engine down. Do NOT operate the powerboats at full speed with the engine tilted up.

Notice Board:

Prior to racing all information communicated to sailors must be done through the notice board. This information should be posted at least thirty minutes prior to the start of the race and should include:

- Time of class flag (beginning of sequence). Note that the race should always start on time.
- Course configuration and the order the marks are to be rounded. The course should be an equilateral triangle with the start and finish line below the course as shown below.



Start-1-2-3-1-Finish

- Indication of number of races planned to be sailed, including when (if applicable) the lunch break will occur.
- Current weather conditions at the course as well as the most recent weather forecast (found on the weather channel on the VHF radio).
- Names of the OD team


GPS Operation

Operate the GPS outside, ie not under the barge roof or connect it to the external aerial. After the GPS is turned on, the satellite page is the first page displayed. Allow time for enough satellites to be acquired to give an accurate signal. This

may take several minutes. After enough satellites are acquired, the display will switch to the position page. The receiver has now calculated a position fix and you are ready to proceed. Pressing the **page** button takes you through the various pages available.

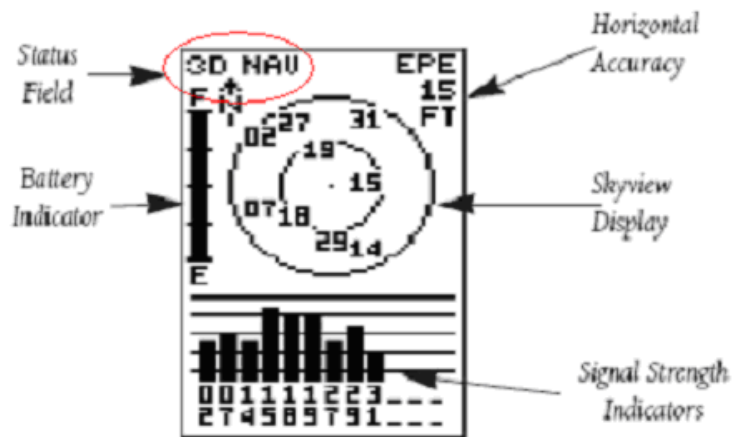
The club has two Garmin 12XL GPS units. This documentation is based on the 12XL GPS. If you are using your own GPS make sure that you can duplicate the steps.

Turning the Garmin 12XL GPS on:

1. Press  until the receiver turns on.

The welcome page will appear while the unit conducts a self test. Once testing is complete, the Satellite Page will appear. When sufficient satellite signals have been acquired, the Satellite Page will be replaced by the Position Page.

Satellite page



The GPS 12XL's Satellite Page displays the status of various receiver functions. The status information will help you understand what the GPS 12XL is doing at any given time, and will tell you whether or not the receiver has calculated a position fix.

Position page

830 345 N 015 0	
TRACK	SPEED
356°	2.3%
TRIP	ALT
0.0%	97%
POSITION	
N 38°51.346'	
W 094°47.941'	
TIME	
08:06:22	

Man Overboard Function

The GPS 12XL's man overboard function (MOB) lets you simultaneously mark and set a course to a position for quick response to passing positions.

To activate the MOB mode:

1. Press **GOTO** twice. The GOTO waypoint page will appear with 'MOB' selected.
- 2 Press **ENTER** to begin MOB navigation.

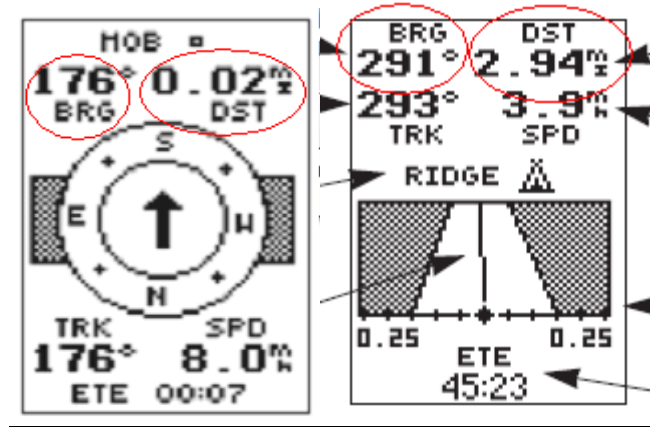
The GPS 12XL will now guide you to the MOB waypoint until the MOB GOTO is cancelled. If you want to save the MOB waypoint, be sure to rename it because it will be overwritten the next time a MOB is activated.

To turn the Garmin 12XL GPS off press and hold the power key for 3 seconds

The navigation page on the GPS can display in Compass or Highway mode. Both settings will work and you only need to be concerned with the bearing field (BRG) and the Distance field (DST). The other fields and displays are meaningless due to the way we are using the GPS. The Man Overboard waypoint (MOB) is created by pressing the **goto** button twice. Used as intended, you would go towards a waypoint but in our case we drive away from the waypoint and the distance field increases.

The two pictures below show the two options you can use. The red circles show the two important fields.

Navigation Page



Follow these instructions to anchor the barge at the correct location:

Use the compass and the wind meter mounted on the barge to determine the wind direction and strength. If the wind direction is from the North you will have to motor towards the Sundance power plant to get good wind readings.

The barge must be anchored at a location that allows room to set the course and to allow for course corrections. The table below places the barge in the right location based on the wind conditions. The GPS latitude is displayed in degrees & minutes on the position page. This is the page that will be displayed when you first turn on the GPS and after it has calculated a position fix.

You can choose either of two methods to determine the barge location:

1. Motor the barge towards the Sundance Power Plant and anchor it based on the latitude (Northing) readout of the GPS. The latitude, which is displayed on the position page, is prefixed with an "N". The table below displays the latitude for the given wind directions and strengths. The number on the GPS position page readout should match or be lower than the number in the table. Picture yourself on a line between the Sundance Power plant and WSC where your latitude is the same as, or lower than the latitude you have determined from following table based on the wind strength and direction.
2. There are several waypoints preprogrammed into the GPS. Their names are listed in the table below. Press **goto** once, select the desired waypoint and press **enter** to start navigating to the desired waypoint using one of the navigation pages (see figure above). You can follow the arrow or follow the highway, whichever you find easier to use.

Barge Location Table

Wind direction		Wind strength in Knots	Barge location		
Degrees	Compass direction		Longitude	Latitude	Waypoint name
0-45	N-NE	3-10	W114 32.000	N53 32.100	32100
0-45	N-NE	10 & greater	W114 31.717	N53 32.400	32400
45-90	NE-E	3-10	W114 32.000	N53 32.100	32100
45-90	NE-E	10 & greater	W114 31.717	N53 32.400	32400
90-135	E-SE	All	W114 31.760	N53 32.350	32350
135-180	SE-S	All	W114 31.760	N53 32.350	32350
180-225	S-SW	All	W114 31.760	N53 32.350	32350
225-270	SW-W	All	W114 32.000	N53 32.100	32100
270-315	W-NW	3-10	W114 31.717	N53 32.400	32400
270-315	W-NW	10 & greater	W114 32.000	N53 32.000	32000
315-360	NW-N	3-10	W114 32.000	N53 32.000	32000
315-360	NW-N	10 & greater	W114 31.717	N53 32.400	32400

- When you have determined the correct location, anchor the barge by turning into the wind and lowering the anchor off the bow. Do not simply throw the anchor and chain into the water. Hook a full loop of chain into the hook on the bow. The hook should not go inside the chain loop as this could make it very difficult to remove. If the wind is over 10 Knots, it is necessary to attach the 50lb weight, as a kelleet, to the anchor chain. Place this about half way down the chain. This prevents the barge from dragging in heavy winds.
- Once the barge is anchored create a MOB waypoint. MOB (man overboard) is a function used to mark a location that you can then refer back to. This waypoint is used as a distance and direction reference for Mark 1, Mark 2 and the pin. Press the **goto** button twice. Then press **enter** to start navigating from the MOB waypoint.

Reading the wind direction by using a compass and string:

- Stand at the front of the barge. If it is not too windy standing on top of one of the benches is even better.
- Facing the wind, hold the pencil with the string as high as possible. The string will now flow from the direction of the wind.
- Hold the hand bearing compass under the flowing string and line up the red line of the compass with the string. The red line of the compass will now be in front of the number of the wind angle direction.
- The process and the wind strength reading should be repeated every 2 minutes for 20 minutes. The average of the reading should be the basis for laying the course.

Setting the Course:

The goal is to provide consistent course configuration and length for all series races. The best type of course for handicapped racing is an equilateral triangle. The course length is set to achieve a 45 minute race for a Laser and should be set based on the following distance table:

Distance Table

Wind strength in Knots	Distance from barge to windward Mark in nautical miles
0-2.9 (don't even think about running a race)	
3-4	0.23
4-5	0.29
5-6	0.35
6-7	0.41
7-8	0.47
8-9	0.52
9-10	0.57
10-11	0.62
11-12	0.68
12-13	0.73
13-14	0.77
14-15	0.82
15-16	0.86
16-17	0.92
17-18	0.95
18-19	1.01
19-20	1.04
20-21	1.08
21-22	1.13
22-23	1.16
23-24	1.22
24 and over	1.25

Once the MOB waypoint (the location of the barge) is set in the GPS you use the distance table above and the following wind direction table to set Mark 1, and Mark 2. The BRG abbreviation stands for bearing. All bearings are based on magnetic north.

- Set the Leeward Mark (3) 20 metres directly to windward of the barge.
- Set the Windward Mark (1) directly to windward of the barge using the GPS and the distance table above.

Bearing Table

Wind Direction	Bearing to Barge from			Barge to Pin	Wind Direction	Bearing to Barge from			Barge to Pin
	Mark 1	Mark 2	Pin			Mark 1	Mark 2	Pin	
0	180	120	90	270	180	0	300	270	90
5	185	125	95	275	185	5	305	275	95
10	190	130	100	280	190	10	310	280	100
15	195	135	105	285	195	15	315	285	105
20	200	140	110	290	200	20	320	290	110
25	205	145	115	295	205	25	325	295	115
30	210	150	120	300	210	30	330	300	120
35	215	155	125	305	215	35	335	305	125
40	220	160	130	310	220	40	340	310	130
45	225	165	135	315	225	45	345	315	135
50	230	170	140	320	230	50	350	320	140
55	235	175	145	325	235	55	355	325	145
60	240	180	150	330	240	60	0	330	150
65	245	185	155	335	245	65	5	335	155
70	250	190	160	340	250	70	10	340	160
75	255	195	165	345	255	75	15	345	165
80	260	200	170	350	260	80	20	350	170
85	265	205	175	355	265	85	25	355	175
90	270	210	180	0	270	90	30	0	180
95	275	215	185	5	275	95	35	5	185
100	280	220	190	10	280	100	40	10	190
105	285	225	195	15	285	105	45	15	195
110	290	230	200	20	290	110	50	20	200
115	295	235	205	25	295	115	55	25	205
120	300	240	210	30	300	120	60	30	210
125	305	245	215	35	305	125	65	35	215
130	310	250	220	40	310	130	70	40	220
135	315	255	225	45	315	135	75	45	225
140	320	260	230	50	320	140	80	50	230
145	325	265	235	55	325	145	85	55	235
150	330	270	240	60	330	150	90	60	240
155	335	275	245	65	335	155	95	65	245
160	340	280	250	70	340	160	100	70	250
165	345	285	255	75	345	165	105	75	255
170	350	290	260	80	350	170	110	80	260
175	355	295	265	85	355	175	115	85	265

- Set the Gybe mark (2) based on the distance and angle tables.
- The start pin is set on the port side of the barge at a 90 degree angle to the wind using the GPS. The GPS bearing from the barge to the pin can be determined from the Bearing Table above. The length of the start/finish line should be as per the following table.
- The start pin angle should be verified from the barge using the hand compass and the Barge to Pin bearing from the Bearing Table.

Start/Finish Length Table

Number of boats	Start line length in Metres	Start line length in Nautical Miles	Number of boats	Start line length in Metres	Start line length in Nautical Miles	Number of boats	Start line length in Metres	Start line length in Nautical Miles
2	15	0.008	11	83	0.045	20	150	0.081
3	23	0.012	12	90	0.049	21	158	0.085
4	30	0.016	13	98	0.053	22	165	0.089
5	38	0.020	14	105	0.057	23	173	0.093
6	45	0.024	15	113	0.061	24	180	0.097
7	53	0.028	16	120	0.065	25	188	0.101
8	60	0.032	17	128	0.069	26	195	0.105
9	68	0.036	18	135	0.073	27	203	0.109
10	75	0.041	19	143	0.077	28	210	0.113

The following example places marks and a pin for a wind direction of 320, 18 knots and 16 boats:

1. While on the barge and after the GPS has acquired enough satellites and calculated a position fix signal press the **goto** button twice.
2. Press **enter** to start navigating from the MOB waypoint
3. To place Mark 1:
 - Drive away from the barge.
 - Turn until the BRG field is around 140. and keep the BRG field at 140. Note that turning to the right will increase the bearing.
 - Keep driving with the BRG field on 140, stop once the DST field is 0.95 and drop the anchor. Don't worry if the BRG and DST numbers change a little. It is impossible to find the exact location.
4. To place Mark 2:
 - If you drive away from the barge turn until the BRG field is around 80 and keep the BRG field at 80

- Keep driving with the BRG field on 80, stop once the distance field is 0.95 and drop the anchor to place the mark.
 - If you do not start at the barge, drive until you reach the location where BRG is 80 and the distance is .95.
5. To place the pin:
- Drive away from the barge.
 - Turn until the BRG field is around 50 and keep the BRG field at 50
 - Keep driving with the BRG around 50 and stop once the DST field is 120 metres or 0.065 nautical miles. This is the location the pin has to end up. You must consider the distance the pin will drift back from the anchor.
 - Motor to windward and drop the anchor once you feel that the pin is in the correct location.
 - You can validate the starting line angle with the hand bearing compass.

Using The Marks:

At WSC, there are 3 large can buoys on the barge that are used for rounding marks. Here is a summary on how to use the marks.

- Load the marks into the whalers. All three marks can fit in the boats relatively easily.
- Each mark needs a concrete weight, and an anchor. Take this equipment from the barge and place them in the whaler. Be sure **NOT TO DROP** the anchors or the weights into the boats, as they can cause damage.
- Before setting the marks, attach the concrete weight to the ring on the marks using the sister clips. This weight ensures the mark will stand upright in the water. Uncoil an anchor line from an anchor and attach the anchor to the same ring. Keep the mark on board and drop the anchor into the water. Once the anchor is in, throw the mark over the side.
- When leaving the mark, do not tangle the anchor line in the engine propeller.
- When picking up the mark, approach it from leeward. Follow the above steps in reverse.
- The start mark is a pin buoy. **THESE DO NOT REQUIRE A CONCRETE WEIGHT (if you put one on they will sink!).** Otherwise they are set the same as the can buoys. You can use one of the lighter anchors

If the wind shifts, it may be necessary to adjust the course to compensate. It is up to the OD to determine when the wind has shifted enough to re-set the course. Remember, as the wind shifts, the course is less fair to all sailors. A wind shift of over 20 degrees is the maximum shift that should be allowed.

Synchronizing Watches:

- Each person should have a digital watch and these watches should be synchronized with the GPS time. Watches should be as close as possible. The flag person should use his/her own watch to keep track of the time. A digital watch is available in the Race Management box. PLEASE REMEMBER to return it at the end of racing.

Synchronizing allows more efficient race management. Stopwatches are no longer required, and the possibility of human error is reduced. When using 'real time', stopwatches do not need to be transported if everyone has a watch and all are synchronized

Timing:

The easiest way to have effective timing, and the only way for a two-man OD Team to work accurately together is to synchronize watches (see synchronize watches section above). In case of a shortened course, no stopwatches need to be transported to the finish boat. At the start, with only two people, it is very difficult to start two stopwatches, raise the proper flags, and watch the boats at the same time. If the watches do get started, making them exactly the same is almost impossible. When starting a race, start the sequence at the whole minute, and follow the start sequence procedure. The time of the start must be recorded because that time will be used to determine the total length of the race. For finishing, record the actual time, and from there, determination of the actual length of the race is straightforward (this is handled by the scoring system).

Start Sequence:

The beginning of the start sequence should occur on time, on the whole minute (e.g. 10:00.00). It is important to start on time to be fair. All flags when raised should start in front of the flag officer, and move upwards, making a quarter circle, and the flag stopping at the peak of the arc. The flags should be raised as fast as possible, and the horn signal should be short, occurring just as the flag is being raised. As mentioned earlier, the flag officer should use their own watch to keep track of the time. If it is windy, it is much easier to tape the watch to the bracket on the barge at eye level, so that the flag officer is able to look at it directly while having both hands free. The flag officer is also responsible for horn signals when the flag goes up.

Note: The flag is the official signal, and is thus more important than the sound signal.

Flags used for the Start Sequence:

- Class Flag / WSC burgee – Warning flag, displayed 5 minutes before the start and lowered at the start with one horn signal each.
- P Flag – Preparatory flag displayed four minutes before the start with one horn signal and removed one minute before the start with one long horn signal.
- X Flag & First Sub – used for over-early starts. X is displayed with one horn, first sub with two. The X flag can be replaced with the first sub if necessary, but not the other way around. This is explained in detail later in this section.

The times should be noted on paper for easy reference. For example writing down the time the start sequence began (eg. 10:00) then note what times each flag is displayed or removed. A pencil can be used to write directly on the aluminum where the flags are displayed.

The actual start sequence begins with the class flag being displayed with one horn at the time posted on the board (eg 10:00.00) with one horn signal. At 10:01.00 the preparatory flag (P flag) is displayed with one horn signal. At 10:04 the preparatory flag is removed with one long horn. The race starts as the class flag is removed with one horn signal one minute later (at 10:05). The following table is posted on the window of the barge:

Signal	Signal	Time before start
Warning	Class flag / WSC burgee displayed with 1 horn signal	5 minutes
Preparatory	P flag displayed with 1 horn	4 minutes
One minute left	P flag removed with one long horn	1 minute
Start	Class flag / WSC burgee removed with 1 horn signal	0

Note: For the WSC races the class flag will be the WSC burgee with a yellow background.

The other race officer must be watching the start line, and if any boat crosses the start line prior to the class flag dropping, and any part of her is on the course side of the start line at the start, he/she must blow the horn. The signal is given after the class flag is dropped, and must not be given prior to the start. If the boat or boats that were over early are easily identifiable, one horn signal is sounded (individual recall); if the person watching the line is unable to decipher **all** of the premature starters, they must use two horn signals (general recall).

The flag officer should have the X flag and the First Substitute where they can grab it quickly, (e.g. at their feet), and if they hear one horn signal, the X flag is raised as quickly as possible, and if they hear two horn signals the First Substitute is raised. If the X flag is raised, and a general recall is needed, the first sub can be displayed with two horn signals subsequent to the X flag being displayed. If a general recall is signaled, it **cannot** be changed into an individual recall, and the race must be restarted. When the X flag is displayed the other race officer watches the line, and when all the boats that crossed early have restarted correctly, the X flag is lowered. If a boat fails to cross the line again (i.e. restart correctly), it is given an OCS (on course side) on the score sheet, and the boat is disqualified from the race. If the First Substitute is displayed, the boats must all return and the start sequence must be restarted. The First Substitute is removed with one sound, and the warning signal is displayed one minute later, restarting the sequence. Continue with the start sequence, and be sure to record the general or individual recall.

The WSC has a policy of allowing inexperienced sailors to start prematurely to ease the tension of racing, and to keep the start line safer for other sailors. If a boat would like to start in this manner, they must meet the following requirements:

- Be inexperienced in either racing or sailing
- Tell the race committee prior to racing that they would like to start early

If a boat meets these requirements, they may start as the preparatory flag is removed. This allows the boat to be out of the way during a regular start, and when many boats are on the water, allows them to not worry about collisions. If a boat chooses to start early, and has met the requirements, they are not penalized, and are recorded as if they started with the rest of the fleet.

The start line is closed when four minutes have elapsed after the class flag was removed. Any boats that cross the line after the line has closed should be scored DNC (did not compete) because they were not present during the start.

Other Signal Flags:

- AP Pennant – used to postpone the start of a race. Raised with two horn signals, prior to the start of the race (before the class flag is dropped). It is used when there is a need for a course change or more time to watch the course and in the event of a timing error. The AP pennant is lowered with one sound signal and the class flag is raised one minute later.
- N Flag – used to abandon a race. Raised with three horn signals during a race, and ends the race. It is used when the race needs to be ended due to wind conditions, or other problems involving the race.

- H Flag – when the AP or N are displayed over the H flag the race is abandoned (N) or postponed (AP), and all boats should return to shore for further instructions.
- S Flag – used to shorten course. Used at a rounding mark, where a shortened course is necessary. See shortened course section.

Finish Flag:

- Blue Flag – Displayed at the finish line.

Monitoring the race:

Throughout the race, the course and the sailors should be watched at all times. Wind and weather conditions must always be considered, and so must the time limit. If it appears as though the race will not be completed in the appropriate time, a shortened course is necessary.

Reasons for a shortened course:

- Dying wind conditions. If it appears the race will not be finished in the appropriate time limit (2 hours for the first boat, thirty minutes for remaining boats)
- Too much wind. If it appears that the wind conditions will become unsafe, and a shortened course can be effectively carried out safely. If a shortened course cannot be completed, an abandon race may be necessary. The safety of the sailors is the first priority.
- Incoming storms. If the race cannot be completed – with all sailors returning home – prior to a storm it is necessary a shorten course or abandon the race. The clouds should be watched for thunderheads, especially to the west. If an impending storm is moving towards the racecourse, the race must be abandoned or shortened, allowing the sailors to return to shore safely.
- Excessive time. If the race is taking too long to finish, caused by any reason, e.g. too long a course, a shortened course is necessary. If the first boat does not finish during the time limit, the race must be abandoned, and this would lead to unhappy sailors.
- Large wind-shifts. If there are tremendous wind-shifts (20 degrees or more), and the race cannot be completed properly, shorten the course at the next mark, and after the boats have finished, reset the course.

Shortened Course:

When you have determined there is a need for a shortened course, the process should be carried out quickly and properly to avoid any confusion for the sailors. The procedure is:

1. Take a whaler to the mark you have decided to shorten at. Make sure that the 'S' flag, an air horn, and an anchor are in the whaler. Anchor the whaler on the starboard side of the mark from the sailors' viewpoint and at 90 degrees from the last mark for downwind finishes and square to the wind for upwind finishes. The boats must pass between the whaler and the mark.
2. The Shortened course flag and the whaler should be in place as soon as possible. The S flag is displayed with two sound signals, when the first boat is within hearing distance.
3. When finishing the boats, the invisible line between staff of the S flag and the rounding mark will be the finishing line.
4. As the boats cross the finish line, their times must be recorded on the score sheet provided in the OD box. A sound signal is a courtesy and is not required to finish the boats.

Finishing & Recording:

A boat finishes a race when any part of the boat or crew, sailing in a normal position, crosses the line between the orange pin on the barge, and the buoyant pin off the port side of the barge. A sound signal is not necessary for a finish, but can be used if desired. When the first boat is on the last leg towards the finish line the blue flag should be displayed, and this flag remains up until the last boat has finished. After all boats are finished, the flag is removed and the next race can begin.

At the beginning of the race some information must be completed on the score sheet. The OD name and date must be recorded as well as the average wind strength in knots for each race.

When the boats finish, it can be helpful to write the sail numbers and times on a separate sheet of paper, then transpose onto the score sheet. If multiple boats are finishing at the same time, the seconds portion of the time is most important, the minutes and hours can be recorded after the boats have finished. This saves time, and allows results to be recorded effectively.

Due to the handicapping system, the time of the finishes must be recorded on the score sheets. The 'real time' system is used, with the start time (drop of class flag) being placed in the "Time to Subtract" column. After the start time is recorded, the actual time (recorded to the second) is recorded next to each person who participated in the race. Boats who did not compete receive a DNC (Did not come to the starting area) next to their name. If the boat was in the vicinity of the starting area but did not actually start the race, that boat is given a DNS (Did not start). Any boat that was over early and did not restart receives an OCS (On course side) and will be disqualified. Boats who retired after the race receive RAF (Retired after finishing) on the score sheet. Those boats that did not finish the race receive a DNF (Did Not Finish).

Prior to racing, the boats must be signed up. Boats are identified by the sail number/skipper combination. The OD should check this on the water. E.g. when a skipper sails a different boat he must be scored separately from when he is on his regular boat. Conversely, when a skipper and crew switch on the same boat, they are scored separately. Watch for skipper and crew switches between races. If this happens, add another line for the new combination. Check for double-handed boats that are sailed single-handed and vice versa. Note this on the score sheet, as these boats are assessed a 5% penalty. Crew names must be included on the score sheet for calculation of the individual performance award.

VHF Radio Use:

VHF radios are used for communication while running races or conducting rescues. We use hand held radios and they are stored, charged or charging, in the large white box mounted on the west wall of the boathouse. Please ensure that you recharge them at the end of the day if necessary. The barge radio can be found in the race box.

When operating the radios, they must be switched to channel 65 for normal operation. Never use channel 16 unless calling non-WSC boats or the clubhouse. The sailing club will monitor channel 16 during the day in case of emergency. If it is necessary to contact the shore: one calls them on channel 16 and asks them to switch over to channel 65. Channel 16 is monitored in case of an emergency on the lake, and the club is able to respond and help out anyone in need. Channel 16 is an emergency and calling channel. The radios should be set on low power (abbreviated LO on the radio), as this is all that is necessary for the proximity of our boats during regular races. The following are the basics of radio protocol:

- When calling another vessel, repeat the vessels name, followed by your vessels name and the word "over".
i.e.: *"Barge, Barge, Barge, this is the whaler, over"*
- When answering a call respond by saying your boats name
i.e.: *"This is the Barge, over"*
- The correct response for an affirmative answer is *"ROGER"*.
- When completing a statement for which you require a reply from the other station, use the term *"OVER"*.
- When completing a statement for which you do not require a reply from the other station, use the term *"OUT"*.

Note: When speaking into the mic, be sure to use a clear voice, holding the mic away from your mouth about 2-3 inches. Do NOT yell into the mic.

Safety & Rescue:

Safety is perhaps the most important task of the Officer of the Day and their crew. **The OD is responsible for the persons on the water, not just those involved in the race.** The OD must be on the lookout for changing weather conditions (i.e.: thunderstorms, high winds etc). In the months of July and August, thunderstorms can develop very quickly and without warning. If a thunderstorm is imminent, abandon the race and make sure everyone gets to shore.

If the need to rescue a boat arises, ensure the people in the boat are okay. If they are okay, allow them to attempt to right the boat. However, if the people appear disoriented or tired, anchor the boat and take the people to shore. Use your best judgment. Do not hesitate to tell the people that they must go to shore. If the weather is bad, anchor the boat, then take all persons to shore immediately.

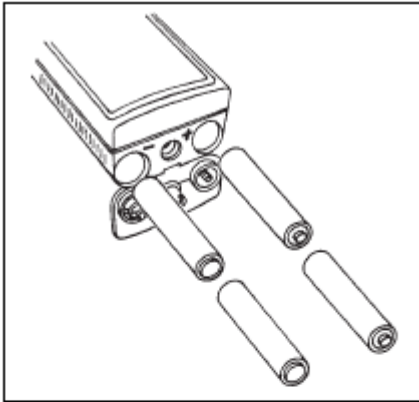
When rescuing people, be cautious. Rescue boats are very powerful pieces of equipment, and are very dangerous. Always approach persons in the water from leeward. Also remember, rescue boats have no brakes; they take time to stop. Thus, approach people slowly. When people are boarding the boat, make sure that the engine is shut off. Also be cautious of the propeller on the engine. Never allow contact between the engine and any part of the boat being rescued. Also, each safety bag has a buoyant heaving line. Throw the line to people in trouble and pull them to the boat. Then help them board the boat.

If the need to tow a boat to shore arises (i.e.: no wind, equipment failure) follow the next few steps:

- Have the crew drop the mainsail before approaching the boat.
- Attach a towline to the bow of the boat being towed, and attach the other end to the rear of the rescue boat.
- Have the crew move to the center of the boat, and balance the boat as it is being towed.
- Have the skipper of the boat steer the boat into shore.
- When towing a boat ashore, be careful not to go too fast. Operate the boat at approximately ¼ throttle. When approaching shore, be sure not to go too shallow. Raise the engine when near shore, and ask the crew of the boat to walk the boat to shore
- If the boat is not damaged, another option is to anchor the sailboat where it is and either wait until more favourable weather to retrieve it or get some help from shore to sail it in.

Remember, the OD is responsible for the safety of all boats on the water.

Garmin 12XL Battery installation



The GPS 12XL operates on 4 AA batteries (included), which are installed at the base of the unit. These batteries provide up to 12 hours of use.

To install the batteries:

1. Remove the battery cover by turning the thumb loop at the bottom of the unit 1/4 turn counter-clockwise.
2. Insert the batteries into position. The battery pole you can still see should match the symbol (+ or -) marked on the case.
3. Replace and secure the battery cover by turning the thumb loop 1/4 turn clockwise.

Battery life varies due to a variety of factors, including temperature and backlighting. You may find that lithium batteries provide longer life in colder conditions.