Nyack Boat Club

Established 1909

Standard Operating Procedures
For
Signal Boat

Race Committee

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Prepared by Nick Puccio - 2008

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Specifications

General

The Albin 27 Express is a displacement hull vessel. As such, it is limited in speed by its waterline length and related hull speed. Maximum hull speed is achieved at 1800 Engine RPM. Therefore, no additional speed can be obtained by increasing RPM.

The power plant is a Nissan 6-cylinder marine diesel engine requiring pre-heating of the cylinders prior to starting. This is accomplished with “glow-plugs” which are energized with the ignition switch.

A swim ladder is available should the need arise to execute a water rescue. All RC personnel should understand how to set up and use the ladder safely in the event of a crew overboard.. A “swim platform” is not available.

The safe passenger capacity is 6 persons, including the driver. A minimum of 1 PFD per person is required, plus 1 for throw. A minimum of two persons, including the driver, are required on the boat for all Race Committee functions. Weight should be distributed evenly to ensure safe operation in rougher sea states. Seating is not available so consideration must be given to passengers’ ability to secure themselves while running. Portable chairs may be utilized while at anchor, dock or mooring ONLY. These chairs are located in the cabin.

Fenders and docking lines are available and are located in the cockpit open area.

Mounting brackets are available on the cabin top for RC signs. A bracket is also available on the transom for course designation or other signage.

No guard rails are available for accessing the forward area, however, hand rails are available on the cabin top for securing purposes while walking forward. Care must be taken in choppy water as the Albin will pitch and roll. Always remember to keep one hand on the boat!

The anchor is a Danforth style, weighing 15 lbs., and contains 6 ft of chain followed by 100 ft of anchor 1/2 in. line. The anchor chain and line, connected to the anchor, slips through a deck opening for storage. Care must be taken when deploying to ensure sufficient line is clear of the locker prior to deploying the anchor. One method that can be used to determine the approximate length of line being deployed is to stretch the line between your outstretched arms as you prepare the line. There are approximately 5ft to 6ft between your outstretched arms.

ALCOHOL IS NOT PERMITTED ON THE SIGNAL BOAT AT ANY TIME.

Equipment Inventory

The Principal Race Officer (PRO) for the day's race is responsible for making sure that all necessary equipment is on board and available for use.
At a minimum, you should check that you have on board the following equipment:

- Shapes; flags; placards
- Ollie *
- Horn with extra canisters
- Loud hailer and extra batteries *
- Starting Mark (pin) and change of course mark(s)--depends on what RP takes on board
- Paper; pens, pencils
- Sailing instructions; Notice of Race
- RRS/Rules Book
- Class Regulations for single fleet regattas
- Scoring sheet/scratch sheet
- Hand bearing compass
- Handheld VHF radio *
- GPS* and Waypoint log
- Laser Range Finder *
- Wind instrument (for velocity and direction)
- Anchors; anchor line
- Life preservers for everyone
- If using the shot gun, an adequate supply of shells. Don't forget to unlock the trigger lock before taking the gun onto the boat *
- Food, drink (no alcohol), water
- First aid kit
- Foul weather gear
- Knife; tool kit
- Watch
- Sun screen, sun glasses

NOTE:
*** Return these asterisked items to RC locker at the end of the day. Plug in VHFs and Ollies for rechargin**

Operating Procedures

1. Pre-Start Checklist

- Open locked lockers and companionway and locate engine key in panel locker to the port of helm.
- Examine mooring pennants and appropriate tackle
  - No excessive wear
  - Tall boy can be secured to both pennants
  - Pennants can easily be removed from / placed onto horn
- Ensure docking lines are available and ready for docking should the need arise.
- Verify all flag halyards are clear and operational
- Hoist the RC Flag center mast.
- If boat is to be brought to the dock, ensure docking lines and fenders are located and installed accordingly. NOTE: You are strongly encouraged to take the launch out the Signal Boat. If it is necessary to bring the boat to the dock, you are encouraged to use the touch-and-go dock to pick up equipment and people. Do not leave the boat unattended on the touch-and-go.
- Ensure adequate life preservers are available (one for each passenger, driver, plus one).
- Set up table for GIZMO
- LEAVE FOLDING CHAIRS BELOW DECKS. DO NOT ALLOW FOLDING CHAIRS TO BE UTILIZED WHILE UNDERWAY.
- Turn on battery switch (red switch under steps to cabin) to 1 or 2, depending on whether it is an even or odd day. DO NOT USE THE "BOTH" POSITION.
- Verify that all switches are in the on position on the panel located under the helm. All switches should be to Starboard (ON) except Running Lights, as required.

- Ensure Wind Instrument display turns on and reads appropriately according to bow heading.
- Turn on VHF radio and switch to Channel 78 (or any alternate designated RC communication channel). Ensure display is operational. Make sure radio is set to LOW power.
- Turn on Hailer and test microphone.
- Prepare all RC flags for deployment by attaching to halyards and stuffing into flag holders on cabin top. Test all hoists and restow.
- Assign crew members or passengers to docking or mooring responsibilities.

- Assign lookout for stern for backing maneuvers.
- Assign lookout for bow.
- Ensure Throttle Lever and Transmission Gear Lever function smoothly
- Verify fuel valves are in correct position (Figure 2). All 4 yellow handles should point to starboard. These valves are located on the aft bulkhead of engine compartment, port side. NOTE: when handles are in line with hoses, the valve is open.

FIGURE 2

- Verify proper oil level (Figure 3a1, 3a2). Do Not be alarmed that the oil is black…this is normal in Diesel engines. The dipstick is located at port side of engine, rear. The dipstick may be hard to place back into hole…please guide it in slowly.

FIGURE 3a1

FIGURE 3a2

- Verify proper coolant level (Figure 3b) NEVER OPEN THE CAP IF ENGINE HAS BEEN RUNNING. DOING SO MAY ALLOW HOT LIQUID TO STREAM OUT UNCONTROLLABLY AND WILL BURN YOUR SKIN. For example, if you find the boat at the dock, the engine will most likely have been running. Do not rely on gauge only…carefully feel the coolant tank with the back of your hand.

FIGURE 3B

- Verify proper position for all through hull valves (Figure 3c). All through hull valves should be open (in-line with hose)

FIGURE 3C

- Verify fuel level is adequate by turning on battery and ignition switch and reading lower gauge (upper gauge does not work). When fuel gauge reads near ¼ full, notify RC Chair and Watercraft Chair.
- Inspect bilge for water…if water appears excessive, notify RC Chair and Watercraft Chair.. Make sure automatic bilge pump is functioning. If there is significant water in the bilge, pump bilge dry manually or automatically. Do not leave the dock or mooring if you cannot empty the bilge.
- Locate and check fire extinguisher(s) for good condition
- Verify running lights are in proper working order
- Verify anchor chain and line are free, properly stowed and ready for use
- Verify all crew and passengers are capable of swimming in open water.

2. Starting

(See Figure 4 for location of items below)

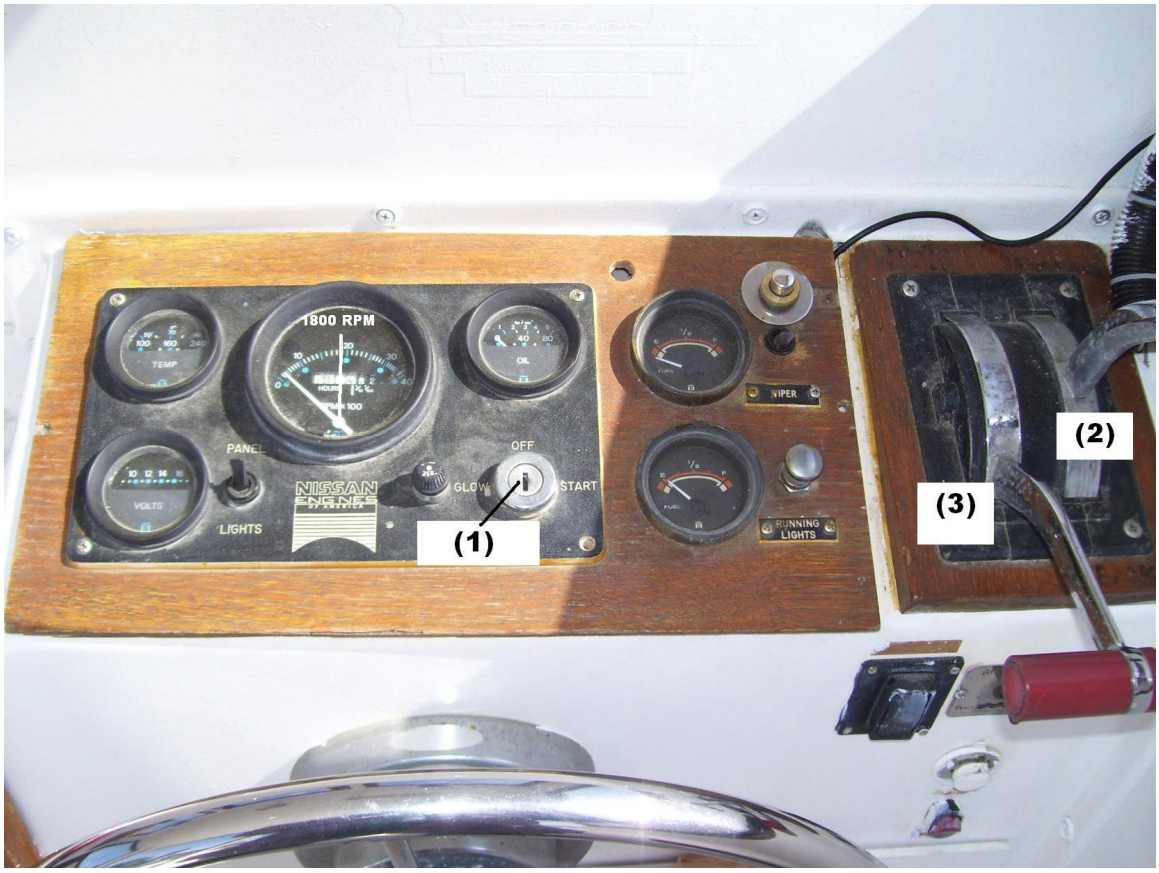

FIGURE 4

- Insert key into switch (1) located on operator panel, DO NOT TURN KEY AT THIS TIME.
- Ensure Transmission Gear Shift Lever (2) is in Neutral (Neutral is middle position)
- Ensure Throttle Lever (3) is at IDLE position (all the way towards the stern or down position)
- Turn key counterclockwise (towards Port side, marked “GLOW”)) and hold for 20 seconds. This will heat up the glow plugs for a proper start.
- Turn key fully clockwise (to Starboard, marked START)) to start engine. Engine may be slow to start until proper oil pressure is achieved…this is normal.
- IF ENGINE DOES NOT START IMMEDIATELY, TURN KEY TO PREHEAT POSITION AGAIN FOR ANOTHER 20 SECONDS PRIOR TO ATTEMPTING TO RESTART ENGINE. CONTINUING TO ATTEMPT STARTING FOR LONG PERIODS MAY DAMAGE ENGINE OR STARTER.

- Once engine starts, allow to run at fast idle (1000RPM) for proper warm-up. NEVER RACE ENGINE IN NEUTRAL OR DURING THIS PERIOD OR WARM-UP.
- Look over the stern and check exhaust to ensure cooling water discharge. IF NO WATER DISCHARGE IS EVIDENT, SHUT DOWN ENGINE IMMEDIATELY.

3. Running

- Put engine in gear. Move the Transmission Gear Shift Lever (Figure 4, #2) up. Up is forward, middle is neutral, down is reverse. Always pause at neutral when shifting from forward to reverse.
- **Max engine speed is 1800 RPM.** This cannot be exceeded or overheating will occur.

- It is highly recommended that all passengers must wear life preservers while on board. In rough weather all passengers must wear life preservers. These may be Coast Guard approved personal flotation devices, such as the automatic/harness style, or similarly approved “orange cheapies”.
- Proceeding to Start area:

- The Signal Boat will immediately proceed to the mooring field fairway. To reduce the risk of pickup up a mooring line in the prop, do not weave through the mooring field.
- Be aware of the effects of current and wind on the boat
- ONLY Minimum Control Speed may be used while in the mooring field
- Leaving a wake is not permitted in the mooring field, unless Minimum Control Speed requires it.

- **NO ANCHORING IS PERMITTED IN THE CABLE AREA DESIGNATED BY RED AND GREEN CHANNEL BUOYS SOUTH OF THE MOORING FIELD. THIS AREA EXTENDS EAST TO THE OPPOSITE SHORE. CARE MUST BE TAKEN TO BE OUTSIDE THIS CABLE AREA PRIOR TO DEPLOYING ANCHOR WHILE ESTABLISHING THE STARTING LINE.**
- Launch service should be used to transport passengers and crew while at mooring. Docking the Signal Boat is not permitted unless using the "touch and go" dock at the end of the pier. NO OTHER DOCKING IS PERMITTED.
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4. Anchoring

After selecting Signal Boat position for starting line;

- Approach the anchoring spot slowly, heading into the wind or current, whichever is greater
- Slowly stop forward speed by engaging reverse gear at an idle. Do not over-rev engine in Reverse while moving forward as this may cause personal injury to passengers unprepared for movement change.
- After the boat has stopped, assign a crew to go forward, to release the anchor, checking that the chain and shackle are cleared of anchor locker
- Order crew to drop anchor slowly, being careful not to get fingers or feet entangled in the line. Always wear gloves and closed-toe shoes when handling anchor, chain and line. Tie off the line to the horn in case you lose grip on anchor or chain, then slowly release line with drift or reversing. It is recommended that a turn be left on the horn to control speed of drop and to control stopping line payout when directed.
- Instruct the crew member to slowly releases the anchor at the same speed as wind or current drift.
- If the wind or current has too little effect, back the boat very slowly by shifting from Neutral to Reverse and back to Neutral, as often as required. This must be done **ONLY** at IDLE RPM as indicated by throttle lever being in most downward position..
- Avoid backing too fast as this could cause the anchor to bounce along the bottom or inability of crew to control stopping line payout. Should it become necessary to stop Reverse movement, slowly engage Forward gear but **ONLY** at IDLE RPM.

- When a scope of 5:1 has been achieved, wrap the line around the bow cleat (horn) and reverse slowly against it until the anchor sets. Shift into Neutral and the boat should have a slight forward motion or pulse indicating the anchor is set. As information, the chain ahead of the anchor will help to lay the anchor in the proper position for setting. It is extremely important that the scope be laid out prior to setting the anchor and that you do not attempt to set the anchor with a tight line and short scope.
- To gauge that no movement of the boat has occurred after anchoring, take a sighting on two landmarks far apart from each other so as to create "triangulation". Periodically check this sighting for change. If the angle between the two landmarks has changed, it is a strong indication that the anchor has dragged and resetting the anchor and location will be necessary. Other signs of dragging anchor may be "line bounce" that would be an indication of the anchor setting and releasing and setting and releasing (bottom bounce). Alternately, set the anchor alarm on a GPS or record the exact GPS waypoint after anchoring.

5. Mooring

- Approach mooring from downwind or against the current, whichever has the greater effect on pointing similarly to other boats in mooring field.
- Engine speed shall be set at Minimum Control Speed, typically no more than IDLE is required. Remember that Minimum Control Speed is that engine speed required to achieve proper control speed, meaning steerage.
- Assign a crew or passenger to go forward to secure mooring.
- Pay close attention to orders, verbal or hand signal, given by the bow person.
- When ordered to NEUTRAL by the bow person, leave engine running at IDLE and do not secure helm station until mooring is secured.
- Allow engine to achieve cool operating temperature by running at IDLE for 2 to 3 minutes.

6. Securing Signal Boat after Races

Before leaving anchor station -

- Remove all placards and flags and stow in appropriate locker.
- Secure all flag halyards
- Ensure all RC equipment is stowed for transport (GIZMO, binoculars, laser distance instrument, hand bearing compass, chairs, boards, portable radios, etc…) in proper location below decks or in preparation for return to RC locker..
- Ensure life preservers are worn by all passengers and crew
- Retrieve anchor, stow chain and line
- Advise Race Patrol, on VHF Channel that you are secured and switching to Channel 9
- Switch VHF radio to Channel 9 to communicate with launch, should it be necessary
- Prepare docking lines and fenders in case of emergency, inclement weather or other situation that would preclude mooring
- Advise crew and passengers that you are getting underway
- Proceed to mooring via mooring field fairway

At Mooring –

- Turn off all switches on main panel including VHF, hailer, lights
- Ensure bilge pump control switch is in Automatic (see Figure 4)
- Turn battery switch to OFF
- Close and lock all ports and hatches
- Flush head empty if it was used
- Put ignition key in storage bin
- Secure through hull valve for head to closed position
- Pack and prepare all trash for removal
- Close and lock main cabin hatch and small storage bin
- Store all fenders and docking lines
- Secure anchor and mooring pennant
- Make note of any faulty equipment or boat systems and report to Race Committee Chair

7. Refueling

- Notify RC Chair and Watercraft of fuel level if below ½ tank as indicated by bottom fuel gauge

Proceed to refuel only if requested by RC Chair

Running Operations

Boat handling requires an understanding of many variable and complex problems. You can only develop boat handling skills through hands-on-experience.

The information in this manual provides a basic description of boat handling principles and practices AND IS MEANT AS A GUIDE ONLY. PRACTICAL EXPERIENCE UNDER QUALIFIED SUPERVISION SHOULD BE OBTAINED PRIOR TO OPERATING THE SIGNAL BOAT. One may use his/her boat to gain this experience, but it takes confidence that can only be gained by knowing how to perform a variety of basic and complicated maneuvers. Two hands are needed to operate the steering wheel, shift control (with three positions, neutral, forward, and reverse), and throttle. Taking a boat out of the slip and bringing it back to its location safely can be extremely challenging.

It is necessary to learn through hands on repetition of the functions of the throttle, the gear shifter (actually called "clutch"), and steering wheel. The embarrassment of things going wrong when trying to dock can be greatly reduced by the knowledge gained from practice.

Some basic principles first…then on to the maneuvers…

HOW POWERBOATS BEHAVE

A **single engine power boat** has one engine, one propeller, one rudder with a right-handed (or left-handed) propeller that turns clockwise (or counter-clockwise) in forward gear when viewed from astern. A single engine power boat does not handle like a car that uses front wheels for steering. When you steer a single engine boat forward, the steering is accomplished by swinging the stern. This is because both the power and steering are in the stern. As a single engine powerboat moves forward a stream of water is forced aft by the propeller and is deflected by the rudder, which when used for turning results in the stern moving sideways. In a single engine power boat, when the steering wheel is turned to the right, the stern of the boat will swing to the left. This "side thrust" is one of the forces that must be dealt with when handling a single engine power boat.

As a **single engine power boat** moves forward, a stream of water is forced back to the stern by the propeller. (Figure 1) The boat is steered by deflecting this stream of water with a rudder. (Figure 2) If there is no flow across the rudder, there is no control, and is the reason a boat cannot be steered when it is drifting, hence the need for Minimum Control Speed. The ease with which a boat turns depends on engine speed. Rudder action increases with an increase in throttle.

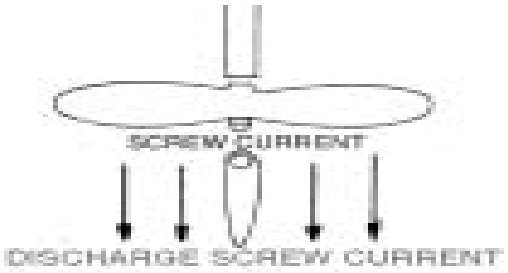
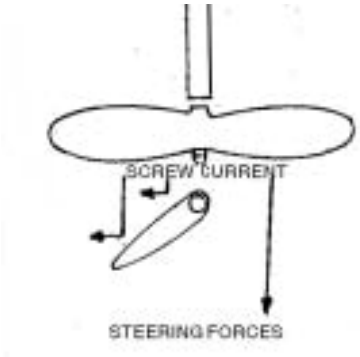
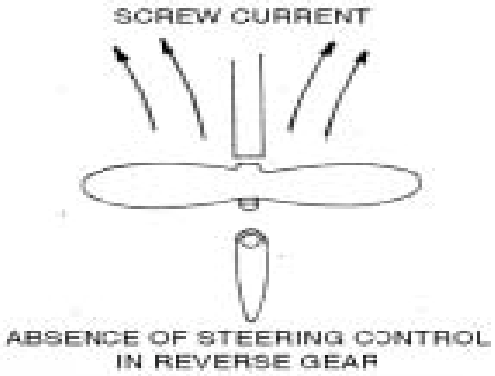


Figure 2



A **single engine power boat** going astern has no screw current passing over the rudder (Figure 3). Thus it is impossible to steer a single-screw boat in reverse.



A single engine power boat with a left-handed screw (counter-clockwise-rotation when viewed from the stern) will have a tendency to veer slightly to starboard.

Power boats have no brakes, and lowering the engine speed, or putting the gear in neutral, will not keep a boat from moving forward. In order to stop a powerboat it is necessary to put the engine in reverse. Side thrust in a single engine powerboat in reverse is strong and will most likely swing the stern of the boat to starboard as it comes to a stop after having been going straight ahead. To stop the boat the clutch is put in reverse.

More throttle is required for backing up than when going forward. When backing up turning the steering wheel to port will help keep the Signal Boat going straight.

DEALING WITH THE WIND

Powerboats are usually effected by wind more than current because of their relatively shallow drafts and high superstructures. Sailboats will swing with the current because of their deep keels, while powerboats will more often swing with the wind.

A powerboat having the wind dead ahead will slow the boat somewhat and magnify steering action. Throttle action will be increased for a given boat speed to overcome the wind. With every slight turn from your initial heading the bow gets an added push from the wind. Again, consideration needs to be given to Minimum Control Speed.

A wind dead astern has the least effect on steering, its main influence is to increase your speed.

Wind on the port side will move the boat to the right of its intended track and will require left rudder. Wind on the starboard side will move the boat to the left of its intended track and will require right rudder.

Powerboats generally like to back straight into the wind. No matter how your boat is powered, most of the time it will be easiest to back straight into the wind, and whenever the wind is nearly dead astern backing any other way but straight into it will be tough.

DEALING WITH THE CURRENT

Current can be a big factor in powerboat behavior in any situation, but because powerboats generally present less surface area to the water than the wind, wind is often the bigger factor. So, at times, we can forget about currents. If the current is strong enough and the wind gentle enough, current becomes the dominant force even with a powerboat of very shallow draft. Wind has its greatest effect on the bow because the boat's draft is less there, current usually does most of its work on the stern, where draft is greatest.

1. Docking

If you approach the landing with the side to which the stern will swing when you reverse the engine - starboard side for a left-handed screw -the swing you can't avoid will bring the stern in smartly as you come to a stop. Look at Figure 6 to determine the initial approach.

Wind and current are often present, and if it is behind you pushing you forward, throttle back sooner and apply reverse sooner than you would in an absence of wind. If the wind is from ahead, you need to stay under power longer to get to your desired berth, since the wind will be pushing you back. It is usually easier to dock heading into the wind and / or current.

ALL DOCKING WILL BE PERFORMED IN A BOW-IN POSITION. The only dock permitted for docking the RC Signal Boat is the TOUCH AND GO dock. Normally, docking will be approached at Minimum Control Speed by shifting in and out of Forward gear. This will achieve the slow speed required to dock safely.

- Prepare docking lines and crew assignments.
- Observe if there are other club members available for assistance at the dock.
- Slowly approach the dock into the wind and/or current, whichever is appropriate, in an "off the bow" direction.
- Once the bow has passed the closest end of the dock, slowly steer to align the boat with the edge of the dock.
- Briefly shift to reverse to bring the stern in as the boat stops, then shift into Neutral
- Allow crew members to go onto the dock and secure bow and stern lines, then the appropriate spring lines. No other crew is to leave the boat until secured.
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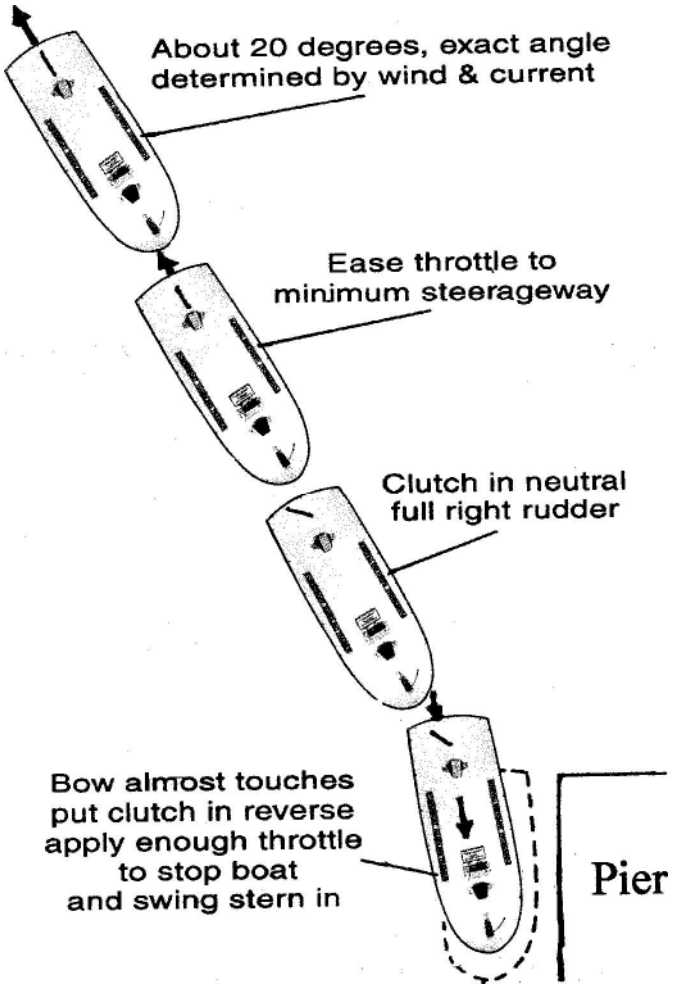

Figure 6
Basic approach of docking a single screw powerboat (Arrows indicate direction of thrust)

Wind blowing on the pier, is the easiest because you will end up against the pier even if nothing is done. It is difficult to make a gentle landing. The best way is to imagine that you are landing at a pier that is closer to you than the real one. Often you will move faster than you wish. Look at Figure 7 and think of using fenders to soften the landing.

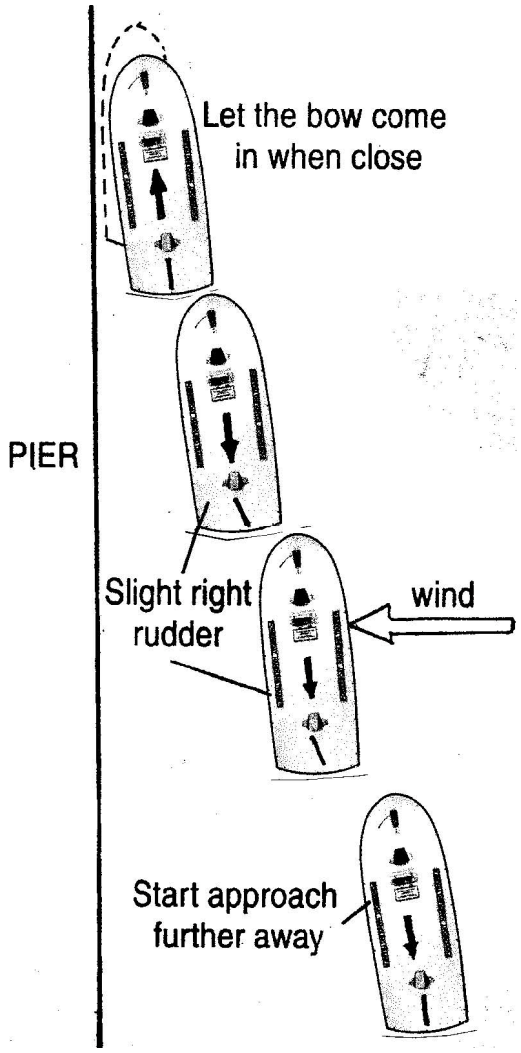

Figure 7
Docking with wind blowing onto the pier (Arrows indicate direction of thrust)

If the wind is really strong, you can come in with the wind dead astern as in Figure 8. Since the wind will aid in making the stern swing in, it is best not to use too much power astern to prevent coming along the pier with a bump or a bang.

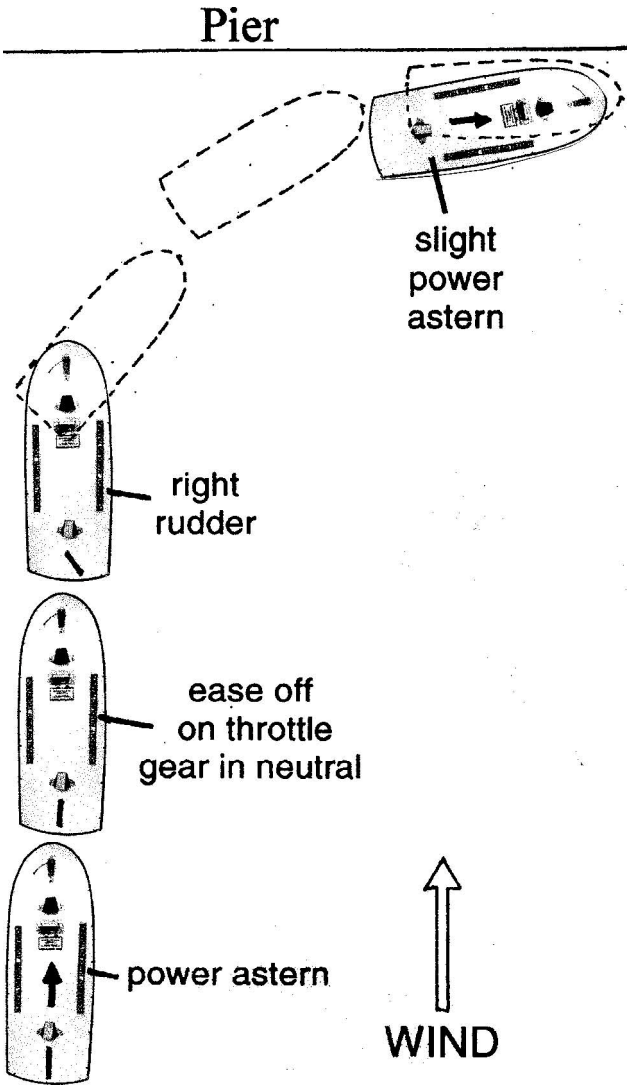

Figure 8

2. Leaving the Dock

Backing away from the dock usually offers the best maneuvering control. It also avoids a problem inherent to forward departures when the boat starts to turn and it's stern swings into the dock, preventing the boat from departing cleanly.

- Start by turning the wheel away from the dock, which rotates the rudder away from the dock
- Shift into reverse, the stern swings away from the dock as the boat backs away. To avoid scraping the bow against the dock, make your turning angle slight.
- When clear of the dock, turn the wheel in the opposite direction to bring the boat parallel to the dock. Center the wheel, pause briefly in neutral, then shift to forward.

3. Minimum Control Speed

On the Signal Boat, Minimum Control Speed is considered to be the speed under which proper steerage may be maintained. It is the slowest speed at which you can operate and still maintain steering control. The Minimum Control Speed will be dependent on wind speed, current, and whether in open water, mooring field, or approaching dock or mooring. General RPM range for Minimum Control Speed for docking should be under 1000RPM but typically IDLE (throttle all the way down).

Open water speed may be obtained by engine RPM of no greater than 1800. Speed through the mooring field shall be at Minimum Control Speed and, if possible, without leaving a wake.

If Minimum Control Speed while approaching a dock needs to be greater than at IDLE, Do Not Attempt to dock the boat.

4. Pivot Turn

This maneuver is generally required in limited spaces, for instance, in the mooring field. It can be useful, however, should you wish to change the heading of the boat without moving greater distance than desired.

- Starting at rest, turn the wheel hard over and shift into forward at Idle RPM to initiate the pivot turn.
- Shift into neutral and turn the wheel hard over in the opposite direction
- Shift into reverse at Idle RPM to continue the turn
- Repeat these steps until the boat has completed the turn or are headed in the direction desired.

5. Holding Position

Holding position may be obtained by shifting into forward or reverse gear, whichever is appropriate, and maintaining proper engine RPM to achieve the desired position. All shifts from Forward to Reverse, or vice versa, shall be at idle RPM. While maintaining holding position always position bow of Signal Boat into the wind. The bow will naturally catch the wind and attempt to swing the boat in one or the other direction. Should this occur, steer and operate engine RPM accordingly to maintain the desired position.

6. High Speed Stop

A high speed stop shall be performed by immediately throttling engine RPM to idle and shifting into Neutral. At no time shall the transmission be shifted from Forward to Reverse, or vice versa, at engine RPM higher than Idle. Should it be necessary to stop faster when moving in a Forward direction, throttle down to Idle RPM, shift into Neutral,

then Reverse, then throttle Engine RPM to desired speed. At all times, WARN THE PASSENGERS that the boat will stop suddenly.

7. Backing

ALL BACKING MANEUVERS SHALL BE PERFORMED AT IDLE RPM ONLY.

When backing up into the wind or downwind, use minimum control speed.
When backing towards the wind the combination of windage and pivot point will help you hold course.
It may be more difficult to maintain your course when backing downwind since the bow may fall off too much and you might loose steering control. If this happens;

- Shift to forward gear and bring the boat back on course.
- Then back up again with perhaps a slight steering correction to compensate for the wind's affect.

From Mooring – Assign a crew to release the mooring pennants and ensuring that both pennants are attached to the "tall boy". After the crew member has indicated "CLEAR", place the transmission in REVERSE and allow to idle away from mooring. Back away until the mooring is in full view and then proceed FORWARD at idle speed until clear of the mooring. Apply throttle until proper speed is achieved.

Open Water – Care shall be taken when backing in open water to ensure the sea condition will not permit water from entering the boat over the stern.

From Dock – Current and wind will play a significant part in this procedure. Generally, it is desirable to have the stern away from the dock to back away without rubbing. Ensure no other boat traffic is obstructing your path before proceeding. Assign a crew member as a lookout then blow the horn three long blasts and slowly back away from the dock.

To Dock – THIS MANEUVER IS NOT PERMITTED. ALL DOCKING WILL BE DONE IN BOW-IN POSITION.

Emergencies

IN CASE OF ANY OF THESE EMERGENCIES, ALL CREW AND PASSENGERS ARE TO DON LIFE PRESERVERS IMMEDIATELY.

COMMAND CONTROL IS CRITICAL IN ANY EMERGENCY. THE SIGNAL BOAT IS TO BE CONSIDERED COMMAND CONTROL IN ALL EMERGENCIES UNTIL PASSENGERS ARE REQUIRED TO ABANDON SHIP. IN ALL CASES, THE PRO WILL BE IN CHARGE OF ALL EMERGENCIES. THE CHAIN OF COMMAND IS DESCRIBED BELOW, IN ORDER OF COMMAND:

- PRO
- RACE PATROL
- LAUNCH OPERATOR

ANY OF THESE MAY DELEGATE TO ANOTHER INDIVIDUAL AS THEY SEE FIT.

The PRO will assume rescue command, specifically, as to instructions to other vessels. The PRO will delegate responsibility for driving the Signal Boat to another qualified individual and concentrate on the rescue operations. The PRO may delegate Command responsibility to any other individual, as desired.

IN CASE OF AN EMERGENCY, ALL VESSELS SHALL BE DIRECTED TO STAY CLEAR AT LEAST 100 FEET UNTIL DIRECTED TO APPROACH. THIS IS NECESSARY SHOULD THERE BE CREW OVERBOARD OR IF DIRECTED TO ABANDON SHIP. UNTIL ALL PERSONS ARE ACCOUNTED FOR, NO VESSEL IS ALLOWED TO APPROACH CLOSER THAN 100 FEET.

Since more than one person is typically available to handle communications and emergency response, some of the responsibilities described below must be performed by more than a single person. For example, where multiple agencies must be contacted in the case of a medical emergency, each person assigned will contact that agency to report and assist in response to the incident.

In general, the following is a starting recommendation:

- PRO will handle radio communications between responders (RP Boat, Launch, Sheriff, Rockland Police, Coast Guard, other vessels
- PRO will assume responsibility for Command Control, unless he/she desires to delegate to another individual, for example, if more qualified
- An assigned crew on Signal Boat will handle phone communications with responding agencies (911, NBC, RC Chair, etc…)

1. Emergency Contact Matrix

Emergency	Race Patrol	Launch	RC Chair	Watercraft Chair	Coast Guard	911
Disabled or Adrift	Primary Contact, unless not yet available	Secondary, unless RP is not available, then Primary	Secondary	Secondary	Only if drift creates imminent danger of harm to life or property.	
Sinking	Secondary	Secondary	Secondary	Secondary	Primary	
Disabled – tow required	Primary Contact, unless not yet available	Secondary, unless RP is not available, then Primary	Secondary	Secondary	Not Required	
Crew Overboard	Primary	Secondary	Secondary	Not Required	Secondary	
Fire	Secondary	Secondary	Secondary	Secondary	Primary	
Hypothermia	Primary Contact, unless not yet available	Secondary, unless RP is not available, then Primary	Secondary	Secondary	Only if additional assistance is required beyond all other local authorities	
Unconscious Victim	Secondary	Secondary	Secondary	Not Required	Primary	Primary
Minor First Aid	Primary	Secondary				
Other Medical – additional attention required	Secondary	Secondary			Primary	Primary

2. Emergency Communications

Once an emergency occurs and additional assistance is required, communications must be established. Procedures are available shore-side to contact Emergency Services, should that be for Police, Fire, or Medical.

Below is the Shoreside Safety Plan and Procedures for Medical Emergencies as distributed and maintained by NBC:

Safety Plan for Nyack Boat Club - 2008

Instructions for the Race Patrol and Race Committee

In case of any consequential medical emergency, you are asked to immediately call 911 and describe the type of injury or health problem you are facing; give your name, your cell phone number, your location and the boat club address - 59 Gedney Street, Nyack (North gate). After you have called 911, you should also contact the Race Committee to let them know of the situation.

If the problem occurs on the water, the RC or RP should advise next step. If warranted, RC might decide to call VHF Channel 9 or 16 for advice, since local agencies with rescue capabilities monitor this channel.

In general it is probably a good idea to, if possible, bring the injured party to the long pier at the Nyack Boat Club. However, depending on the injury (e.g., limb, head, neck, or back injury) moving the injured party is not always a good idea. Therefore, get advice from 911 operators before moving the person. You could should specify to the 911 operators to have the police/ambulance crew enter through the Club's North gate on Gedney Street. Be sure the North gate is open and have someone waiting on the street to guide them to the land end of the long pier. The number for the emergency rescue squad in Nyack is: (845) 358-4824.

You should then contact someone at the NBC clubhouse (845) 353 0395. If this is an invitational regatta with Junior sailors, you should advise the regatta registration desk of the situation, and an attempt should be made to reach the parents of the injured/sick person. Medical records for the Junior racers will be in a box at the registration desk.

Should Emergency Communications be required via VHF radio, the following are descriptions for announcements, depending on the nature of the emergency:

MAYDAY – A mayday call denotes an emergency involving imminent danger to a vessel and the people onboard. Examples of this would be Sinking, Imminent Collision with stationary object (bridge) where hull damage will be severe enough as to promote sinking in a rapid manner, and Fire spreading beyond the capability of crew, passengers or equipment.

PAN PAN
Pan Pan is an urgency message that indicates a vessel that is in trouble but not in immediate danger, for example:
"Pan Pan, Pan Pan, Pan Pan, this is Nyack Race Committee Boat, I am three miles North of the Tappan Zee Bridge and have been displaced by a wave and require a tow. There are four people onboard."

SECURITE
Securite messages generally prefix navigational safety messages such as weather reports or navigation hazard updates, for example:

> *"Securite, Securite, Securite all ships and concerned traffic. The Merry Marie approaching Tappan Zee Bridge, northbound, pushing heavy barge. All concerned traffic contact Merry Marie, Securite"*

3. Disabled or Adrift

Should the boat become disabled, for example, power train or engine failure, immediately contact Race Patrol on VHF Channel 78. Additionally, if launch is operational, contact Launch Operator on Channel 9 and notify them of your situation. Contact RC and Watercraft Chairs or instruct Launch or Race Patrol to do so. Await further instructions.

If the boat becomes disabled in open water, it is less of an emergency than in the mooring field. If in open water, prepare to deploy the anchor to stop the drifting.

In preparation for towing, make ready an appropriate length and strength tow line by attaching to the bow cleat, then when either Race Patrol or Launch Operator arrives heave the tow line to prevent further drifting. In foul weather, do not allow towing or barging but rather, deploy the anchor to stop the drifting.
DO NOT ALLOW PERSONALLY OWNED VESSELS TO TOW OR BARGE.

4. Sinking

- Switch VHF to Channel 16 and contact Coast Guard with a MAYDAY call "Mayday, Mayday, Mayday…this is Nyack Race Committee Boat

taking on water, OVER"…await response from Coast Guard and follow their instructions.

- Note boat location in Latitude and Longitude and nearest landmark or intersection of landmarks. Be prepared to provide information to Coast Guard
    i. Number of passengers on board
    ii. Number of passengers not wearing life preservers
    iii. Boat location and nature of emergency
    iv. Provide approximate rate of sinking or anticipated time to fully sunk
    v. Depth of water at boat location
    vi. Nature of damage
    vii. If additional assistance is/is not available (Race Patrol, launch, other vessel)
- Repeat Mayday call until response is received.
- If no response is received, dial 911 on any cell phone and be prepared to provide exact location. Be prepared to be explicit as 911 operators do not generally receive vessel distress calls…be calm, do not panic, be specific.
    i. On the Hudson River, in the water, approximately (x distance) from (East/West) shore, directly East of Nyack New York in Rockland County, approximately (x distance) North of Tappan Zee Bridge
    ii. Provide nature of emergency, that you have attempted to contact Coast Guard
    iii. Number of people on board, and if assistance is/is not available
    iv. If assistance is/is not available (Race Patrol, other vessel)
    v. Other information as might be reported to Coast Guard
- With a different radio, contact Race Patrol on Channel 78 and/or the launch on Channel 9 to assist in removing passengers and crew.
- Immediately ensure all passengers don life preservers
- Turn off engine
- Distribute passenger weight accordingly and to the high side of boat
- Make attempts to slow the leak, if it does not present any danger). If due to through hull damage, try to plug or slow leak.

5. Towing or being towed in barge position

The towing boat should be positioned so that it's propeller is far enough aft of the other boat's stern to turn the tow in either direction. This is typically accomplished by positioning the towed boat's stern about mid-ship of the pushing vessel.

- Fenders should be rigged between the boats to prevent damage.
- Tie the boats together tightly using bow, stern and spring lines, so there is no movement between them.

If a line is slack, it will reduce the maneuverability of the tow.

When coming alongside a dock, approach it at minimum control speed with the towed boat on the dockside.

6. Towing or being towed by line (pulled)

The towing boat must be capable of maneuvering in tight space should the disabled boat be in the mooring field.

In all cases, do not attempt to connect lines if the anchor is still deployed on the disabled vessel. Doing so will create the potential of fouling the towing vessel's propeller with the tow line.

This procedure is recommended in rough weather when towing in barge position is not feasible. Note that a vessel being towed cannot be brought alongside a dock or finger and may be just as difficult to tow to a mooring.

This procedure may be used to tow the disabled vessel to calmer waters where a barge position may be executed more safely.

TOWING SPEED SHALL NOT BE GREATER THAN 5 KNOTS ! ! ! ! !

7. Fire

IN CASE OF FIRE, ALL PASSENGERS ARE TO DON LIFE PRESERVERS AND PREPARE TO ABANDON SHIP.

If appropriate and the fire has started in an obvious place, crew may attempt to retard or extinquish the fire with the fire extinguisher. Crew shall first contact RP on VHF Channel 78 and the Launch on Channel 9 for assistance with passenger rescue. If attempts to extinguish fire fail, contact Coast Guard on VHF Channel 16 with a Mayday distress call and maintain communications until unable to continue. Sound 6 blasts of the horn to alert other vessels of an emergency and abandon ship. All passengers and crew shall swim away from the boat in the same direction. A count of heads must be known when rescue occurs. This is especially necessary if water is cold, as in the beginning of the season. Responding vessels shall approach the scene slowly to avoid hurting the swimming crew and passengers.

NO OTHER VESSELS ARE TO APPROACH A BURNING VESSEL AFTER FIRE EXTINGUISHMENT HAS FAILED. ANY CREW OR PASSENGERS THAT NEEDED TO ABANDON SHIP SHALL BE RESCUED IN THE WATER BY FIRST AVAILABE RESCUE CRAFT. ALL VESSELS ARE TO STAY CLEAR TO ALLOW RESCUE OPERATIONS UNLESS REQUESTED TO ASSIST.

8. Crew Overboard

First is a reality check on a **simplified procedure** getting back to a person in the water. Second is what to do if you cannot find them!

Crew OverBoard Signal

- The Crew-overboard flag is the OSCAR flag (see below) displayed where it can best be seen during daylight hours. In addition, the ship losing the person sounds six or more short blasts on the horn to notify other boats in the area that an emergency exists.

HURRY UP AND GET BACK TO THE PERSON IN THE WATER!!!!!

- The person who saw the incident shall yell "Man Overboard, port/starboard side!" The person should say which side the person fell from. That person should point at the Crew overboard **and never, ever stop staring and pointing** at the person in the water until the person at the helm says he/she can see the Crew overboard. The pointer should continue looking at the Crew overboard at all times. In lumpy seas, a bobbing head appears and disappears in a blink.
- Someone else in the cockpit should have thrown over a **cushion or life preserver or other floating device** – all, if possible. Not only does the person in the water have a chance at grabbing something with flotation, but this also marks the spot they went overboard.
- While this is happening, which should not have taken more than a few seconds, the helmsman should turn the boat toward the side the person fell from. If the Crew overboard fell off the starboard side, by turning to starboard, you turn your stern away from the Crew overboard. (See procedure below for getting back to overboard victim)
- If possible, hit the MOB button on your GPS. Marking the Lat/Long will help you come back to the Crew overboard. This is simply getting a waypoint, and giving you a course to return to the Crew overboard.
- Sound 6 short blasts on your horn. This will alert other boats in the area to the emergency.
- Call the Coast Guard immediately if you have lost sight of the Crew overboard.

- Contact the Race Patrol boat for assistance and follow the NBC Safety Plan procedures

Getting Back

- If you can see the person in the water clearly, a simple 180 degree turn is the quickest.
- If you lose sight of the casualty, due to poor visibility, or heavy weather and sea state, the 'Williamson turn' is a good way to get on to a reciprocal course which will take you back down your track.
- Put your helm hard over to the starboard, after clearing the person who fell overboard, and add 60 degrees to your present course. When the compass is reading course + 180 degrees, steer the reciprocal course and the casualty should be ahead of you.

-
- In heavy weather the reciprocal course may bring the sea astern, in which case a short approach head to sea may be more appropriate once the turn has been completed.
- Do not waste time while the boat is turning to approach the person in the water - prepare for the recovery as quickly as possible as it is more difficult when they are alongside. Consider the following
  - Which side will you approach?
  - Have a heaving line ready
  - Wear a lifejacket and lifeline; if you don't, you may get pulled on top of the person in the water.
- The initial approach to the person in the water will vary depending on weather/sea conditions and the type of boat. Let the weather help rather than hinder - stop upwind and drift down.
- If you are concerned about drifting onto the person in the water, bring your stern into the wind. If you're not confident with your boat handling skills, or if it looks likely that the boat could come down on top of the person in the water, throw them the heaving line and pull them alongside to a safe place for recovery.

Ensure the propeller is not turning when you are alongside the person in the water. Do this by putting the transmission in neutral or shutting off the engine.

Get the Person out of the Water

- If you have a life ring with line attached you can throw it out, have the Crew overboard grab it, and pull him/her back to the boat. Lower the swim ladder, and help them aboard. Keep your boat downwind/down current, whichever is stronger, of the Crew overboard! Once he/she has grabbed the life ring, TURN OFF THE ENGINE!
- If the crew overboard is unconscious another crew member, wearing a life jacket, may assist in holding the victim's head out of the water. Continue providing assistance until rescue operations are completed. If the water is too cold for the same individual, a different individual should assume responsibilities, relieving the first person. Continue this until rescue operations are completed. **EXTREME CAUTION MUST BE EXERCISED AS THE AWAKENING VICTIM WILL BE DISORIENTED AND WILL ATTEMPT TO GRAB AT THE PERSON ASSISTING, POTENTIALLY IN A STRONG CHOKE HOLD. THIS WILL CREATE AN EMERGENCY FOR BOTH.**
- Contact the Coast Guard or other appropriate Emergency Response Team and advise them of your situation. You may need to have the victim medicated and transported to a hospital. Follow NBC Safety Plan Procedures.
- Remember! You must take into account sea conditions, the ability of your crew to undertake the tasks at hand, and your ability to maneuver your vessel into position for the rescue! You will have to use your best judgment!

CREW OVERBOARD VICTIM TIPS. Know ahead of time how to use all of the equipment in/on your PFD (light, mirror, flares, laser, etc.

- Shout and try to attract attention as you are falling overboard.
- Don't swim after the boat. Swim to any floatation that is thrown over instead.
- Try to make yourself visible (Put hood up on foul weather gear, splash water around you, wave arms)
- Wait for the boat to circle you
- Keep clothing on, trapping air inside it if possible. Get rid of heavy non-buoyant items including boots that fill with water. Tighten your PFD straps, if they are loose.
- Let the retrieval/trailing line slide through your hands until you reach the knots and/or bowline loop, if available.
- If the boat starts to pull you through the water before it stops TURN AROUND so that you will be towed backwards keeping the wake out of your face. ***This can be the most dangerous part of the whole procedure and must be avoided***.
- Help the remaining crew get you aboard if you can but don't release the lifeline until you are on deck.
- If the boat misses you, or can't immediately find you, try to get to a MOB Pole, MOM or other floating object if you see one.
- Don't shout needlessly. Blowing a whistle is more likely to be heard aboard the rescue vessel.

- If you have to wait to be rescued assume the Heat Escape Lessening Posture (HELP) as much as possible. Keep a hood or hat on, your head out of the water, arms against your sides and across your chest and PFD, and your lower legs crossed, knees together and raised as the seas permit.
- At night activate a personal strobe, if you have one, and leave it on until the rescue boat makes its approach to pick you up. At that point turn the strobe off and an incandescent light on, if you have one, so that the flashes do not disorient the helmsman.

9. Hypothermia

Initial Cold Shock occurs in the first 3-5 minutes of immersion in cold water. Sudden immersion into cold water can cause immediate involuntary gasping, hyperventilation, panic, and vertigo – all of which can result in inhalation and drowning. Immersion in cold water can also cause sudden changes in blood pressure, heart rate, and heart rhythm, which can also result in death

Short Term Swim Failure occurs 3-30 minutes following immersion in cold water. The muscles and nerves in the arms and legs cool quickly. Manual dexterity, hand grip strength, and speed of movement call all drop by 60-80%. Even normally strong persons can lose the strength necessary to pull themselves out of the water or even keep their head above water. Death occurs by drowning.

Long Term Immersion Hypothermia sets in after 30 minutes, at a rate depending on water temperature, clothing, body type, and your behavior in the water. Cold water robs the body of heat 25 times faster than cold air. Hypothermia occurs when your body loses heat faster than it produces it, cooling the organs in the core of your body. Hypothermia eventually leads to loss of consciousness and death, with or without drowning.

Post Immersion Collapse occurs during or after rescue. Once rescued, if you have been immersed in cold water you are still in danger from collapse of arterial blood pressure leading to cardiac arrest. Also inhaled water can damage your lungs, and heart problems can develop as cold blood from arms and legs is released into the core of your body.

10. Sea sickness

Seasickness is not a virus and therefore you cannot “catch it”. Most people are affected by motion sickness to varying degrees. There are certain treatments that may help to prevent the onset or at least shield you from the very worst effects of seasickness.

There are three seasickness triggers **guaranteed** to cause uncomfortable symptoms. These triggers should be avoided whenever possible during the initial boarding:

- Going below deck for extended time periods. Not easy if the weather is poor and impossible on some boats. At least try to find a window or porthole and keep your eyes gazing at but not fixed on the horizon.
- Looking through binoculars for anything longer than a glance
- Reading a book, looking at a compass, doing detailed work or staring at one point. Try to keep your peripheral vision out on the horizon and not staring at objects your brain will interpret as stable.

Staying busy and keeping your mind occupied are the best ways to avoid seasickness. Try to stay on deck in the fresh air and focus on anything other than the movement of the boat. Take deep breaths and drink plenty of water. When on deck, facing forward (rather than to the side) seems to help most people. Remember that you need to let your brain adjust to this new unstable environment by allowing the horizon to act as the true point of reference. Try to stay out in the cockpit area rather than under the cabin top.

Although drinking plenty of water is important, you also need to keep something in your stomach (spicy or fatty food is not recommended). Sitting down in a deck chair in the fresh air often helps many people.

Seasickness is often easier to prevent than to cure. Most remedies need to be taken a couple of hours before boarding. Different remedies work better for different people, and you may need to try a few to determine which is best for you. Remember to check with your doctor to make sure that any remedy does not conflict with medication you are currently taking-prescription or over-the-counter.

Dramamine and Bonine are the most common seasickness drug remedies. These two drugs are available over-the-counter at most drug stores and pharmacies. They are essentially antihistamines, and make many people drowsy. Both Dramamine and Bonine come in non-drowsy formulas.

Scopolamine patches, worn behind the ear like a tiny band-aid, are the most common prescription drugs for seasickness. Scopolamine also comes in pill form. The patches last up to three days, provide time-release doses of the drug, and are usually very effective for preventing nausea.

Ginger is the most common herbal remedy for seasickness. Remember how your mom used to make you drink ginger ale when you were a sick child? Unfortunately, many ginger ales on the market today do not contain "real" ginger. Most people take ginger in capsules form, and they are available at health food stores. The side effects of ginger are less than those of drugs, but sometimes cause heartburn or an aftertaste. Although there is some evidence that ginger helps seasickness, it may not be as effective as a drug remedy.

Wrist bands provide a type of acupressure for the relief of seasickness. There is a point about an inch and a half above your wrist on the underside of the arm where the wrist band applies pressure. Many people swear by the wrist bands and they sell in large numbers.

Advise the PRO that you may suffer from seasickness. If it is more typical that you do than not, ask to be reassigned or, at least, be excused from the day's duties.

Signal Boat Responsibilities

Once it becomes apparent that a crew member or passenger will not get better, the best option is to have the person transported back to NBC before vomiting occurs. Drugs, bands, herbal medicines do not work as well once seasickness starts.

- Inasmuch as medicinal remedies for seasickness may conflict with other medicines the person may be taking, no medicines should be administered by Signal Boat crew.
- Contact RP boat on VHF Channel 78; have them come alongside
- Transfer the sufferer to the RP boat
- Take the sufferer back to NBC
- Have the RP boat operator ensure the sufferer is monitored by someone at NBC
- RP boat returns to station and contacts Signal Boat for instructions

11. First Aid

The First Aid Kit is located in the cabin, port side, in the bin just to the left of the companionway ladder.

The First Aid Kit is capable of satisfying minor cuts, abrasions, and finger or toe splinting. Major bleeding, fractures, or other mishaps requiring immediate attention shall be considered a Critical Emergency and the Signal Boat shall make arrangements for immediate transport to shore where the NBC Safety Plan shall be executed.

Emergencies requiring immediate transport, and that can be accomplished faster by the Signal Boat, shall cause the race to be halted and the Signal Boat shall immediately transport the individual to the NBC pier. Communications, as described earlier, shall have been conducted such that the appropriate emergency response team is waiting at the pier in accordance with the NBC Safety Plan.

12. Heat Exhaustion / Heat Stroke

Heat exhaustion is a milder form of heat-related illness that can develop after several hours of exposure to high temperatures and inadequate or unbalanced replacement of

fluids. Those most prone to heat exhaustion are elderly people, people with high blood pressure, and people working or exercising in a hot environment.

Warning signs of heat exhaustion include:

- heavy sweating
- paleness
- muscle cramps
- tiredness
- weakness
- dizziness
- headache
- nausea or vomiting
- fainting

The skin may be cool and moist. The victim's pulse rate will be fast and weak, and breathing will be fast and shallow. If heat exhaustion is untreated, it may progress to **heat stroke**, which is a medical emergency. Seek medical attention and call 911 immediately if:

- symptoms are severe, or

the victim has heart problems or high blood pressure.
Otherwise, help the victim to cool off, and seek medical attention if symptoms worsen or last longer than 1 hour.

Cooling measures that may be effective include:

- cool, non-alcoholic beverages
- rest
- cool shower, bath, or sponge bath
- an air-conditioned environment
- Lightweight clothing

Obviously, some of these remedies are not available on the Signal Boat, however, water may be available, rest certainly can be, and while a cool shower is not, using a towel wet with water or river water as a sponge bath may be sufficient to reduce the effects of heat exhaustion.

Signal Boat responsibilities include:

- Determine if the sufferer has been in the sun or lacking of fluids for longer than they have been on the Signal Boat that day
- Contact 911 and follow Safety Plan procedures outlined earlier if sufferer indicates they have a heart problem or high blood pressure
- Contact RP boat on VHF Channel 78; have them come alongside
- Transfer the sufferer to the RP boat
- Take the sufferer back to NBC
- Have the RP boat operator ensure the sufferer is monitored by someone at NBC
- RP boat returns to station and contacts Signal Boat for instructions

13. CPR

NBC offers Red Cross CPR classes several times a year. It is highly recommended that all RC and RP members become certified.