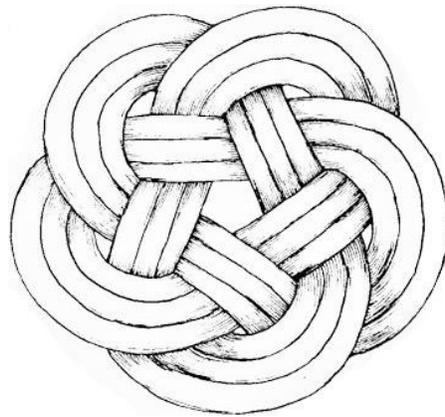


ABOARD THE SCHOONER

HARVEY GAMAGE



WITH

OCEAN PASSAGES

Welcome to Ocean Passages aboard the schooner *Harvey Gamage*. The crew hopes that you will have a powerful, impactful experience while learning about sailing and yourself!

You will face challenges as the voyage unfolds, and you will surely rise to them. One of the best ways to prepare for these challenges will be to begin your voyage now! Review this manual, read books about fishing schooners, and arrive at the vessel knowing you will work hard both physically and mentally. You should begin thinking of yourself as a crew member of *Harvey Gamage* immediately.

With this in mind, remember that the order of priority on any working ship is:

SHIP - SHIPMATE - SELF

If you take care of the *Harvey Gamage*, she will take care of you. If you think about your shipmates first, they will always be there for you.

So, fair winds and following seas. Your voyage begins!

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HISTORY OF SSV HARVEY GAMAGE

In 1973, the shipyard of Harvey F. Gamage, located on the Damariscotta River in South Bristol, Maine, sent the last of her sailing vessels down the ways. Harvey Gamage had lines reminiscent of a coasting schooner, but was to have a very different mission.

For twenty years, she was owned and operated by Captain Eben Whitcomb. She sailed the Northwest Atlantic and Caribbean Sea with high school and college students, as well as passengers. Some of the longest running sail training programs in the United States originated on *Gamage*.

In 1993, *Gamage* was purchased by Ocean Classroom Foundation and operated alongside SSV *Westward* and SSV *Spirit of Massachusetts* for over twenty years.

Harvey Gamage is U.S. Coast Guard classified as both a Sailing School Vessel (SSV) and a Small Passenger Vessel (SPV). She has been extensively rebuilt and continues to sail year-round with Ocean Passages, who began programming in 2015.

SHIP SPECIFICATIONS

Length Overall: 131 feet

Length at Waterline: 85 feet

Length on Deck: 94 feet

Draft: 10 feet

Rig Height above Waterline: 100 feet

Beam: 23 feet

Sail Area: 5,000 square feet

Gross Tons: 95

Main Engine: 220 hp John Deere

Keel: White Oak

Hull: Long Leaf Yellow Pine & White Oak

Frames: Oak

Spars: Spruce & Douglas Fir

Fresh Water Capacity: 750 gallons

Diesel Fuel Capacity: 350 gallons

Number of Students: 25

Number of Crew: 8-11

WHO WAS HARVEY GAMAGE?

In 1924, Harvey F. Gamage left his apprenticeship in East Boothbay boatyards to set up his own business. That same year, he built a boatshed on the marina property. From 1924 to 1976, Harvey Gamage oversaw the construction of more than 288 sailboats, powerboats, draggers, scallopers, and windjammers. Most of his early boats were sloops, as well as schooners designed by the well-known naval architect John Alden. Powerboats and small fishing and lobster boats became more common in the 1930s and 1940s. The construction of eight wooden military vessels occupied Gamage boatbuilding from 1940 to 1944. In 1944, the business turned to building rugged, able, and profitable wooden fishing boats. Averaging about four boats a year, a total of 93 boats were launched between 1944 and 1969. Heavily framed, diesel-powered boats ranging from 70 to 112 feet in length, these boats were the backbone of the Gloucester and New Bedford, Massachusetts, fishing fleets. Gamage also built a few yachts, pleasure powerboats, and lobster boats during this period.

In 1959, Captain Havilah Hawkins asked Gamage to build the first schooner designed specifically for the windjammer passenger trade. The result was the 83-foot *Mary Day*, launched in 1960. From that date until 1976, when Harvey died, the shipyard's output was 43 vessels - a mixture of

driggers, research vessels, yachts, and large schooners. In addition to the *Mary Day*, the famous schooners *Shenandoah*, *Harvey F. Gamage*, *Clearwater*, *Bill of Rights*, and *Appledore II* all slid down the ways here. At 152 feet, the *Shenandoah* was the longest vessel to come from the boatyard. The Antarctica research vessel *Hero* also dates from this period. In 1970, the yard's first steel-hulled boat, the fishing vessel *Elizabeth*, was launched. This concession to change was followed by nine more steel fishing boats. (Source: www.gamageshipyard.com)

HISTORY OF THE FISHING SCHOONER

In 1713, the first schooner rig hit the water in Gloucester. Based on a ketch, this new rig had gaffs instead of lateen yards, and her luffs attached to the masts with hoops. This new rig designed by Captain Andrew Robinson, reduced workload over the ketch rig, whose lateen yards had to be lowered and changed when tacking, while the schooner can sail equally well on either tack without lowering and raising sail. When designed and built, she had no name until an onlooker reported "Oh, how she scoons!" – to which Robinson declared her a "schooner." The ketch rigs of the 1800s rarely carried more than 40 tons of cargo, while during the peak of sail, powered shipping schooners were carrying burdens of 3,000 tons. By 1741, more than 70 schooners were in the Gloucester fleet, nearly all of them fishing the Grand Banks. Prior to the Revolutionary War, there were 542 fisheries vessels running out of Massachusetts and nearly all of these were schooners. The hull of the schooner remained almost identical to the ketch rigs of the time, and there were no bulwarks forward of the quarter deck, due to the belief that it was unsafe to impede the flow of water over the main deck. The hulls, with heavy square sterns and a short quarter deck, resembled an inverted shoe giving schooners the nickname "heel tappers." Originally, the schooner consisted of a high-steeved bowsprit, two short masts, the fore well forward, short main boom projecting just aft of the taffrail, sails with little angle to their peaks, and only three sails were carried: jib, foresail, and mainsail. Soon, supplementary sails were desired, adding a single square foretopsail, flying jib, maintopmast staysail, and gafftopsail. After the revolutionary war the large schooners had wasted away, and the advent of much smaller schooners called "dogbodys" and "pinkys" came into use for nearshore fishing. These smaller vessels had a narrow transom, foremast set far forward, and lacked a bowsprit and headsails. In the 1870s, Clippers became popular out of New London, and became the prominent design.

In the late 1800s, the Grampus was designed by Professor Baird, a radical departure from previous forms and a radical change in designing of the new fishing vessel. The after section increased draft by about two feet, was more "V" shaped with softer horizontal lines, had a narrower stern and much stronger rake, and the stem was nearly perpendicular above the waterline while curved strongly below. In addition, there were many new features to the rig itself: the foremast being shorter than the mainmast, the foretopmast being considerably shorter than the maintopmast, the addition of a forestaysail, and shrinking the jib, wire rigging came into use instead of hemp. This design ended up being much swifter than the Clipper design of the 1850s.

THE SHIP'S CREW

Captain: The captain is responsible for all of the actions of the ship and the safety of those on board. This is a very serious responsibility. When decisions need to be made in a timely manner, the captain carries the ultimate authority. They delegate aspects of this responsibility to the professional crew.

Chief Mate: The chief mate is the senior deck officer and second-in-command. They oversee the details of running the ship, from its operation to its maintenance, at the direction of the captain. They are also responsible for one of the watches.

Second and Third Mate: The second mate and third mate act as watch officers and are responsible to the captain for the safety of the ship and the ship's company during their watch. They may take on additional responsibilities, such as engineer, boatswain, safety officer, or medical officer.

Cook: The cook is responsible for provisioning and preparing all of the meals on board. This is a major responsibility and has a great impact on the ship's morale. Each crew member works with the cook to assist with all aspects of galley operations on a rotation throughout the voyage.

Program Coordinator: The program coordinator works with the crew to plan classroom time, content, and shore excursions. They will teach many of the classes aboard and ashore and are on board to ensure that your time is safe, fun, and educational. Always voice any interests that you have so the program coordinator can ensure you have the resources to learn about it.

Deckhands: Each watch officer is assisted by a deckhand. They work with participants to execute sail maneuvers and perform other watch responsibilities. Deckhands may also be the engineer, boatswain, safety officer, or medical officer.

Engineer: The engineer is responsible for all of the machinery, plumbing, and electrical systems. They know how to keep all the stuff you don't think about working, such as the heads, lights, and engines.

Boatswain: The boatswain is responsible for everything that is part of the rig and weather deck. They are in charge of the Boatswain's stores, including the laz, paint and bosun's lockers, where the tools, paints, chemicals, spare line and other items for the rig are kept.

Medical Officer: The medical officer is responsible for taking care of any and all medical issues on board - from injuries, illnesses, or existing conditions. This person will make sure everyone gets what they need, including all prescription and over-the-counter medications. If you get hurt, feel sick, or need anything medically-related, always let this person know. It is extremely important that you are honest and open with the medical officer about any condition that develops while on board.

OCEAN PASSAGES' POLICIES

DRUG AND ALCOHOL POLICY

Ocean Passages has a one-strike policy regarding illicit drugs and alcohol. This means that any participant found in possession of any non-prescribed medications, alcohol, illicit drugs, or any substances the captain deems to be unsafe for Ocean Passages will be dismissed from the program at the earliest prudent moment. If a student is in the knowing presence of an alcohol or tobacco violation, they are at fault, as well, and could be dismissed from the program. It is their responsibility to try to deter the offender from acting in a way that compromises the safety of the ship, and, if they're unable to do so, it is their responsibility to walk away.

HARASSMENT POLICY

Ocean Passages will not tolerate harassment of any kind, but particularly harassment forbidden by law and based on race, religion, gender identity and/or expression, sexual orientation, age, national origin, race, marital status, or physical or mental disability.

Ocean Passages is committed to providing a safe, positive environment for all professional crew, educational staff, and program participants. Ocean Passages' ships strive to be caring, supportive communities that encourage professional growth and personal development for every individual. Inappropriate behavior, either verbal or physical, that disregards the self-esteem and confidence of others is unacceptable and may lead to dismissal from the program or termination of employment. Any individual who believes that they have been subjected to harassment should report the incident to one or more of the following people: the captain, medical officer, the program coordinator, or the president. Any complaint will be promptly investigated within seven days and appropriate action will be taken depending upon the nature and severity of any incident.

The purpose of this policy is to ensure that each member of the community has an equal opportunity to work, learn, and develop to their fullest potential within Ocean Passages.

MISCONDUCT

No participant may, by their actions, put others at risk, deter from the learning and progression of others, or compromise the integrity of the Ocean Passages program or the ship. Examples of misconduct include but are not limited to: stealing, violation of safety or in-port policies, a negative or disruptive attitude, or disrespect to any members of the shipboard community or the people and laws of the places we visit. The crew reserves the right to judge when misconduct has reached the stage where it can no longer be dealt with aboard the ship.

Misconduct may result in dismissal from the program, immediate evacuation, and, if applicable, loss of academic credit.

RELATIONSHIPS

We discourage exclusive relationships because of our close community and the inevitability of making others feel uncomfortable. If there is a relationship situation that requires the crew's attention, it will be dealt with on a case-by-case basis. Participants may not have sex throughout the entirety of their gap program.

Having sex or other grossly inappropriate sexual conduct may result in dismissal from the program, immediate evacuation and, if applicable, loss of academic credit.

ACADEMIC DISHONESTY

No student may copy any work or ideas from any source without proper citation or rely on another source when individual work is required.

Dishonesty in any academic endeavor may result in dismissal from the program, immediate evacuation and loss of all academic credit, if applicable.

PHONES & ELECTRONICS

During our programs, we want our participants to disconnect from the electronic world to have the best experience on board. Once participants board the vessel, all phones will be collected and stored in a drybox for the duration of the trip. At various ports during the trip when there is adequate cell phone service and time, participants will be given the opportunity to use their phones for a set amount of time to reconnect with family and friends. As much of our time will be spent in remote areas along the U.S. coast where there is limited service or in foreign countries where service may be nonexistent (or very expensive), it is important that your families and friends know that communication will be sporadic.

The vessel is in contact with the main office via satellite phone or satellite-based email daily, and if your friends or family need to get in touch with you for an **EMERGENCY**, they can contact the Ocean Passages office via the following means:

1st.	Sydney Hebert	(207) 615-6802
2nd.	Phineas Sprague	(207) 653-1414
3rd.	Annette McKay	(207) 838-5853

Participants are encouraged to bring their own camera; however, it is important to note that the ship is damp and sometimes wet, and the activities we participate in may result in the damage or loss of any electronic equipment if not cared for properly.

We ask that students do not bring other personal entertainment electronics such as gaming devices, iPods or other music devices, etc.

SAFTEY

WHILE IN PORT

During our voyage, we make port visits based upon educational merit, provisioning and weather needs. The staff on board will coordinate all excursions ashore. Often, we will explore as a group, as we strive to meet the educational and provisioning goals of the trip ashore. If students demonstrate trustworthiness and responsibility, there may be time for students to explore in small groups, depending on the port. Touring as a large group can be a difficult adjustment for some students used to traveling on their own. We know that you will understand and respect the tremendous responsibility that the staff have for your safety, especially in a foreign country.

In many of the ports we visit, it is not unusual for the ship and her crew (you) to attract a lot of attention, and you may find yourselves in the public eye. It is especially important for all Ocean Passages sailors to show pride in their ship and in Ocean Passages by behaving well ashore and maintaining a presentable appearance. You will be required to uphold our standards of behavior and to dress appropriately. The crew will determine appropriate dress and appearance for the various activities ashore.

Some things to consider:

- Check in with one of the crew before leaving the ship, for any reason - however small. As a part of the ship's crew, your whereabouts have to be known at all times in case we need to get underway or in the event of an emergency.
- While in port, Ocean Passages policy requires you to be with one or more of your shipmates at all times for safety reasons.
- Only allow visitors aboard the ship with the permission of the captain or the mate on watch.
- Timeliness while in port is critical. Being just a few minutes late is unacceptable and treated as a very serious matter.

PORT VISITS

While on an extended program, family and friends are welcome to visit the ship, and we often have designated visiting days to facilitate this. Please be aware that any visit affects our ship community and that a visit may pull a student away from shipboard or academic responsibilities. We have a very intense agenda of things to experience and accomplish, and visits can be disruptive to the continuity of the program not just for the student but for the whole shipboard community. We ask that visits be pre-arranged with Ocean Passages because the itinerary is often changing, and the office is up-to-date on the ship's movements.

PHYSICAL SAFTEY

Safety is paramount. The captain and crew take the responsibility for all hands on board seriously. The ship's certification is updated annually by the U.S. Coast Guard and American Bureau of Shipping Safety. The program will change the itinerary immediately for any safety concerns. The ship has a medical officer who is trained at least to the level of Wilderness First Responder.

ON DECK SAFETY

- Constant exposure to the sun and wind make you more susceptible to sunburn and dehydration
- Apply sunblock regularly and drink lots of water
- Shoes must be worn on board and on excursions ashore
- Sitting on the rail puts you in danger of falling overboard
- Keep to the windward side of the ship while we are sailing
- While sailing at night, always notify the mate on watch when you come on deck and leave deck

BELOW DECK SAFETY

- Face ladders when going up or down
- Safely stow your gear before going to sea
- Electronics may prevent you from responding to an emergency or a call of all hands

WHILE ON WATCH

- Never leave your position without being properly relieved
- Obtain permission from the watch officer on duty to go aloft, on the bowsprit, or other potentially hazardous places
- Request permission to leave the deck or go below
- Sitting and lying down while on watch is not permitted

LINE HANDLING

- Coil lines clockwise and stow lines as directed by the watch officer
- Do not step on a line or stand in a coil
- Assume all lines are under strain
- Keep hands well away from blocks, pins, and cleats when handling a line
- Safe line handling will be demonstrated in detail on board the ship

ENGINE ROOM

- Be aware of hot engine parts and moving machinery
- Remove harnesses and loose clothing/tie back long hair before entering the engine room
- Wear ear protection while machinery is running

GALLEY

- Be aware of the stove and any hot liquids, especially while the ship is underway
- Properly stow sharp objects
- Follow directions from the cook for all galley routines

SWIMMING

- A crew member must be present during a swim call
- No one swims alone
- Do not jump from excessive heights (i.e. shrouds)
- Do not dive head first
- No free diving, hookah diving, scuba diving, or power snorkeling
 - Free diving: the competitive sport of holding one's breath in an attempt to reach great depths or stay immersed for a long period of time.

- Hookah diving: surface-supplied compressed air apparatus, for use in shallow diving. The air is delivered to one or more divers through a long hose from the surface.
- Scuba diving: using a self-contained underwater breathing apparatus (scuba) which is completely independent of surface supply, to breathe underwater.
- Power snorkeling: snorkeling with the aid of a battery-powered propeller device that carries you through the water.

GENERAL HEALTH

MEDICAL CONCERNS

The ship's medical officer (trained at least to the level of Wilderness First Responder) will hold all medications, prescriptions, and otherwise, and will hand out medicine as needed. The medical officer and captain maintain close communication with the Ocean Passages office for any and all medical concerns. Please send any special medical concerns/instructions with the medical forms. Report all injuries, however minor, to the medical officer. Lastly, please be sure to bring more than enough medication to last you for the entire voyage.

SEASICKNESS

There are few sailors who have not been seasick. Some people are more susceptible than others. Seasickness is not a reflection of athleticism or toughness. Almost everyone gets their sea legs after a few days at sea. Optional wristbands, homeopathic cures, and/or patches may be useful. Drinking plenty of water is critical to living on a ship and will often help with seasickness. The ship's medical locker stocks seasickness remedies. Consult your physician regarding the suitability of seasickness prevention drugs if you are taking other medications.

CONSERVATION OF RESOURCES

The ship is set up to be completely self-sufficient for several weeks at a time, provided we prudently conserve our limited resources.

- **Food:** We have a finite amount of food on board. It is the cook's responsibility to keep track of the ship's stores of food. Refrigerators, freezers, and other food storage areas are only to be accessed with the permission of the cook.
- **Water:** Fresh water is a precious resource. We have a fixed amount on board, but please drink as much water as you like from the water coolers. In the interest of water conservation, washing and bathing with fresh water is not permitted. In the interest of cleanliness and sanitation, use of the freshwater sink in the galley is limited to the cook.
- **Fuel and Electricity:** The ship uses electricity to run navigation equipment, lights, freezers, and tools. Conservative use of electricity reduces the need to charge batteries with the generator or main engine, which run on diesel fuel. We have a limited supply of diesel fuel.

THE WATCH SYSTEM

A watch consists of a group of Ocean Passages participants, a mate (who is the watch officer), and a deckhand. They work together to run the ship for set periods of time each day. Running the ship can mean anything from navigating and sail handling to cleaning and doing dishes. There are three watches that rotate over the course of a day. Below is an example of a typical watch schedule:

WATCH	24 HOUR TIME
A Watch	0000 to 0400
B Watch	0400 to 0800
C Watch	0800 to 1200
A Watch	1200 to 1600
B Watch	1600 to 1800
C Watch	1800 to 2000
A Watch	2000 to 0000

Most watches are four-hours long, with the exception of the watches from 1600-2000, which are each two-hours long and called dogwatches. The watch rotation continues and repeats itself every three days so that your watch is not on for the same time each day. It is your responsibility to know when you are on watch and to report early and fully prepared for the length of the watch.

ALL HANDS

Most of the normal ship operations can be managed by a single watch. Exceptions to this occur when the ship is setting or striking sail, getting underway, anchoring, coming alongside, and in emergencies. These situations are referred to as “all hands” maneuvers. If the call goes out for all hands and you are off watch, you must immediately stop what you are doing (even sleeping) and report on deck without delay.

STANDING WATCH

Standing watch aboard a ship is an important responsibility and should be approached in a serious manner. For the duration of your watch, all of the responsibilities of running the vessel will fall to your watch group. Watch duties include steering the ship, standing lookout, navigating, performing safety checks, and cleaning chores. Before and after watch, your entire watch group will muster (gather). It is necessary to arrive on time and fully prepared for watch.

RELIEVING THE HELM

Below is an example of how to relieve someone at the helm:

YOU (to helmsman)	Here to relieve the helm
CURRENT HELMSMAN	Ordered course is 1, 8, 0
YOU (to the watch officer)	Permission to relieve the helm at 1, 8, 0
WATCH OFFICER	Yes, permission to relieve the helm at 1, 8, 0
YOU (to helmsman)	Relieving helm at 1, 8, 0
CURRENT HELMSMAN	Helm relieved at 1, 8, 0

HELM COMMANDS

There are many occasions when the ship does not sail a set compass course, such as when the ship is coming alongside a dock, anchoring, transiting a canal, or experiencing wind shifts. The commands given to you should be repeated clearly so that the mate or captain knows that they have been heard. This means that if the captain or mate says, "Take up on the mainsail," you shout back, "Take up on the mainsail."

Some of the commands you might hear are:

COME UP	Steer closer to the direction of the wind
FALL OFF	Steer further away from the direction of the wind
STEER FULL AND BY	Steer as close to the wind as you can while keeping the sails full
TWO TURNS LEFT OR ONE TURN RIGHT	Turn the wheel the stated number of turns and hold it there
STEADY AS SHE GOES	Note compass heading and hold that course
HARD RIGHT RUDDER OR LEFT RUDDER	Turn the wheel all the way in the desired direction
SHIFT YOUR HELM	Turn the wheel the same amount in the opposite direction
LEFT (OR RIGHT) EASY	Turn the wheel just enough to cause the ship to turn slowly in the desired direction
MARK YOUR HEAD	Report the compass reading

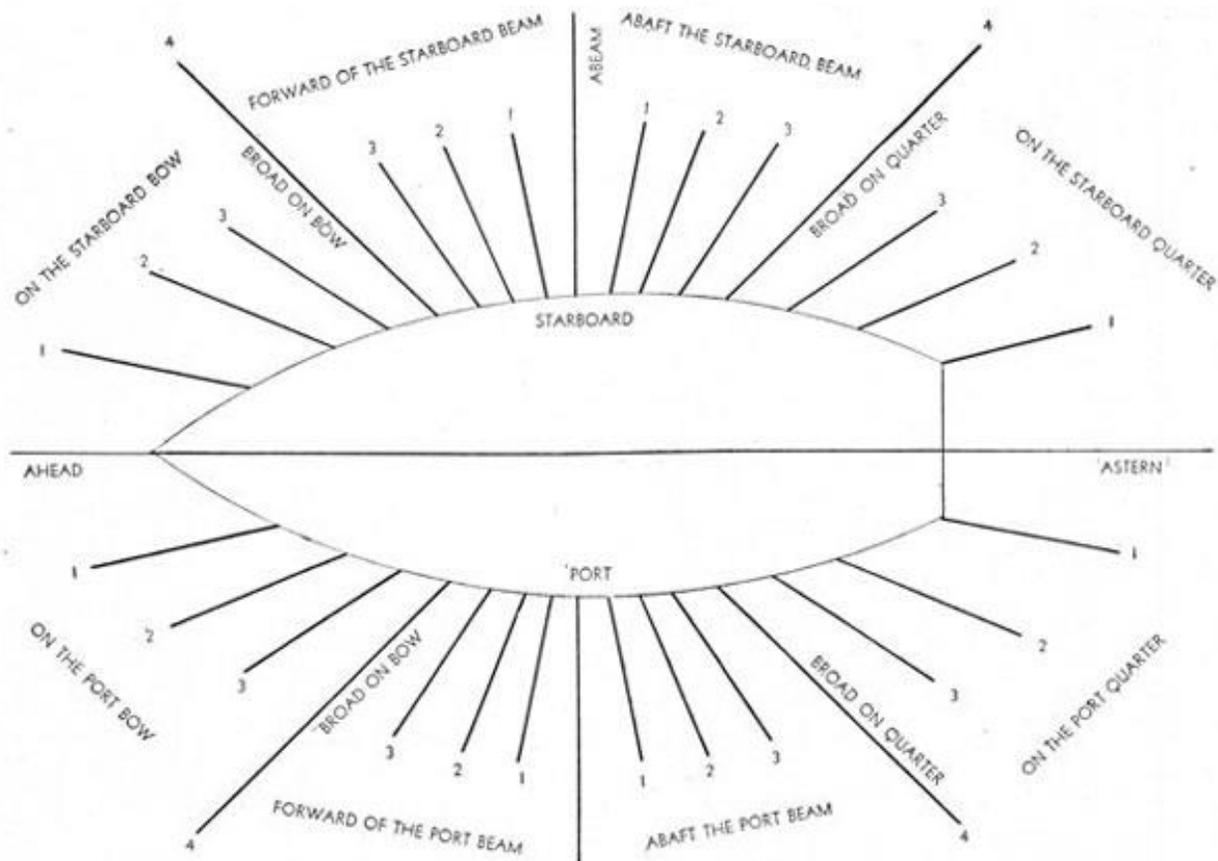
ANCHOR WATCH AND DOCK WATCH

Constant vigilance is the cost of safety at sea. Even if the vessel appears to be securely anchored, she still needs to be looked after. Anchors can drag and mooring lines can chafe through or require tending due to tidal fluctuations. The ship's systems and compartments need to be monitored and a fire watch must be maintained. There must be a watch awake and alert on deck at all times.

LOOKOUT

Posting a proper lookout is required by international law. The ocean can appear deceptively empty. The responsibility of the lookout is to stand near the bow of the ship and report all objects or lights they see - from all directions. The *Harvey Gamage* posts one lookout per watch, and it is a serious and important responsibility.

When you spot an object or light, you must immediately report it to the watch officer. Do not take the time to identify the object first. Clearly stating the direction is important to reporting objects/lights. Something more precise than “over there” is necessary. For consistency and clarity, the point system can be used. A single point is equivalent to $11\frac{1}{4}^{\circ}$ of the compass. Please refer to the point system diagram below.



BOAT CHECKS

- In each compartment, pump bilges as needed. Also make note of the condition of each compartment. Anything out of place? Any odd smells? Always look at safety equipment (fire extinguishers, smoke alarms, immersion suits, etc.) to see if they are ready to use and accessible.
- Take a walk around the deck. Check lines for fair leads and neat coils. Check condition of lines, and watch for chafe. Pay extra attention to running rigging – halyards and sheets – that have a heavy workload. Check to see no lines are overboard.
- How are the sails doing? Are they trimmed properly? Any signs of chafe or damage? Look up! Also look at the condition of lashings, bolt ropes, and hardware.
- Check for proper lighting: running, steaming, and anchor lights. Light bulbs can burn out. Check to see they are burning bright.
- Is our collection of small boats secure and dry? The inflatable should be ready to use at all times.
- Is everything sea-stowed? Is the deck neat and tidy?
- On deck, check all safety equipment is in good working order, accessible, and ready-to-use.
- Take a good look at our ground tackle: anchor lashings, snubber, chain, windless. Look overboard for any issues with the anchor chain.
- When at dock, check dock lines, fenders, and chafe gear.
- Be mindful of any machines operating: stove, main engine, and generator.
- Fill out the log books as needed: Engine Room Log, General Log Book, Anchor and Standing Order Log, Battery Log.

EMERGENCY PROCEDURES

Emergencies at sea require immediate action from all hands. Many times, there is not the luxury of calling for help. Everyone on board must be prepared to handle any emergency without outside assistance. Every person on board will have an assigned job to do in an emergency.

There will be regular drills for three types of emergencies: fire, man overboard, and abandon ship. The signals for these emergencies are as follows:

FIRE	Steady sounding of the ship's whistle for a period of less than 10 seconds
MAN OVERBOARD	The cry of "man overboard" and a series of 3 short whistles
ABANDON SHIP	6 short and one long whistle

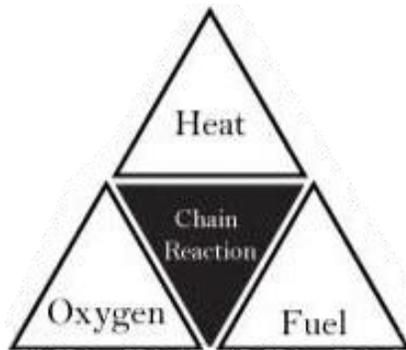
Upon hearing any of the above calls or alarms, you must immediately leave what you are doing and muster on deck. Do not hesitate. Your life, the life of a shipmate, or the ship itself may depend on you. You are required to know your duties for these three emergencies. It is important to familiarize yourself with the location of all fire extinguishers, how to properly don a personal flotation device and immersion suit, and how to launch a life raft.

FIRE DETECTION

Fire detection is the responsibility of everyone on board. If you detect a fire or think you detect a fire, shout "Fire!" and the location of the detection, i.e. "Fire in the galley!" Yell as loud as you can to ensure that as many people hear it as soon as possible. The fire alarms on board are sensitive for your protection. Never assume that an alarm is a false alarm. Always report to the fire station you have been assigned.

Fire Fighting

All fires need three things to ignite and burn. They can be summed up in the fire tetrahedron. By preventing the fire access to oxygen, heat, or fuel, the fire can be stopped.



There are four classes of fire to be aware of:

Class A fires deal with ordinary combustible solids, wood, rags, etc. They can be summed up as fires that leave ash.

Class B fires deal with combustible fluids, gasoline, cooking oil, linseed oil, etc. You can remember this because liquids boil.

Class C are fires that involve live electrical equipment. These fires also present the risk of shock. You can remember this because electricity has current.

Class D fires deal with combustible metals such as magnesium or sodium. These fires burn extremely hot and can be difficult to extinguish due to the fact that they produce their own oxygen. Combustible metals are dangerous!

Being aware of the type of fire will help to extinguish it faster. By knowing the type of fire, we can also use the correct type of firefighting method.

There are fire extinguishers located all over the ship, and you should make yourself familiar with where they are. All of the fire extinguishers are labeled A, B, and/or C. The label coordinates with the type of fire you may be fighting. *Garage* is also equipped with a sea water and fire hose system to combat fires. Make sure you know your duties in the event of the use of the fire hoses.

MAN OVERBOARD

No one ever wants to hear these words, but preparation can avert disaster. If you see someone go over the side of the ship or suspect that someone has gone over the side of the ship, shout “Man overboard!” as loud as you can and repeat it along with the side of the ship that the person went over, i.e. “Man overboard starboard.” This serves several purposes. First, it alerts the crew and other participants of the situation. Your goal when you shout “Man overboard” is to make sure that every single person on the ship hears you. Second, it signals the person on the helm to swing the stern away from the person in the water. It is important that this is done quickly, particularly if the engines are running.

If you are the person who calls out man overboard, it is vital that you never take your eyes off the person overboard, unless relieved by a watch officer. This may not happen until after the person is back on board. Never take your eyes off of them. It is also important to point at the person in the water. This helps the rest of the crew respond appropriately.

If you are on deck and hear the man overboard call go out, your first reaction should be to get the life rings, life jackets, and anything that floats into the water. The next action is laid out in your Station Bill. Report to your assigned station and ask your watch officer if any of your duties have changed. If they have not, begin performing your assigned duties. There will be a lot going on at once, and it will be a tense situation. The best way to ensure that the situation goes well is to be prepared and to know your duties ahead of time. Refer to the posted Station Bill for your specific duties, and be sure to ask your watch officers any questions you have.

ABANDON SHIP

This is another situation that we hope never comes up, but again, preparedness prevents disaster. The ship will always be operated in a way to avoid situations where abandoning ship is necessary; however, the sea can be unforgiving, and it is possible for these situations to arise despite the best planning.

There are four life rafts on the deck of the ship. These rafts have enough room for double the number of people on board. There are also life jackets and immersion suits. You will be familiarized with putting on both of these when you come aboard.

When the general alarm is sounded and you receive the abandon ship command at your assigned muster location (a specific life raft) you must begin your abandon ship duties. Again, refer to the Station Bill and your watch officer for your duties. It may just be donning your immersion suit and standing by, or it could be assisting with other duties, such as passing out life jackets. Once you have completed your duty and put on your immersion suit or life jacket, muster at your assigned life raft. This is a very important step; it will determine whether or not everyone is accounted for prior to going into the water.

If you are entering the water in your immersion suit, never dive head first. It may force the air in the suit toward the feet which will prevent the suit from floating correctly. If you have to jump into the water, it should be done facing the ship. This will prevent you from hitting the ship when you enter the water. If you are entering the water wearing a life jacket, be sure to secure one arm across your life jacket to hold it down, and one over your nose and mouth to keep from swallowing seawater.

EMERGENCY EVACUATION

Your trip on *Harvey Gamage* will be an adventure, and adventures do not come without risks. Because of this, Ocean Passages reserves the right to evacuate all participants and personnel aboard *Gamage* should the political/environmental/etc. situation wherever *Gamage* is sailing or docked become dangerous. This decision will be made by either the captain or the president of Ocean Passages.

REFERENCE MATERIALS

TYPICAL WATCH RESPONSIBILITIES

0000-0400

- 0330 wake-up oncoming watch

0400-0800

Watch on duty responsible for soles and bowls, setting up dish station, and assisting breakfast preparation. Navigation and running lights secured at sunrise

- 0715 Oncoming watch wake-ups
- 0730 Oncoming watch eats breakfast
- 0745 Breakfast wake-up for other watch

0800-1200

Watch on duty responsible for deck wash, setting up dish station for lunch, and assisting lunch preparation

- 0800 off going watch other hands eat breakfast
- 1000 students attend class when in program
- 1115 oncoming watch wake-up
- 1130 oncoming watch eats lunch
- 1145 wake-up for other watch

1200-1600

Watch on duty responsible for rig check, freshening the nip, and lunch clean-up

- 1200 off going watch and other watch eat lunch
- 1400 students attend class when in program
- 1530 wake up oncoming watch

1600-1800

Watch on duty responsible for setting up dish station for dinner, and assisting dinner preparation

- 1700 Daily Almanac held when in program
- 1715 oncoming watch wake-ups
- 1730 oncoming watch eats dinner
- 1745 other watch wake-up for dinner

1800-2000

Watch on duty responsible for dinner clean-up, nav/running lights on at sunset

- 1800 off going watch and other watch eat dinner
- 1930 oncoming watch wake-ups

2000-0000

- 2330 oncoming watch wake-ups

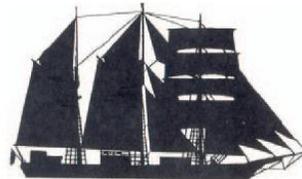
TYPES OF RIG



Full-rigged Ship



3 Masted Barque



Barquentine



Brig



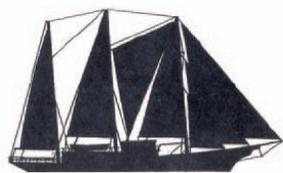
Brigantine



4 Masted Barque



3 Masted Schooner



3 Masted Staysail Schooner



2 Masted Topsail Schooner



4 Masted Schooner



Bermudian Ketch



Bermudian Yawl



Bermudian Schooner



Gaff Cutter



Gaff Ketch



Sloop

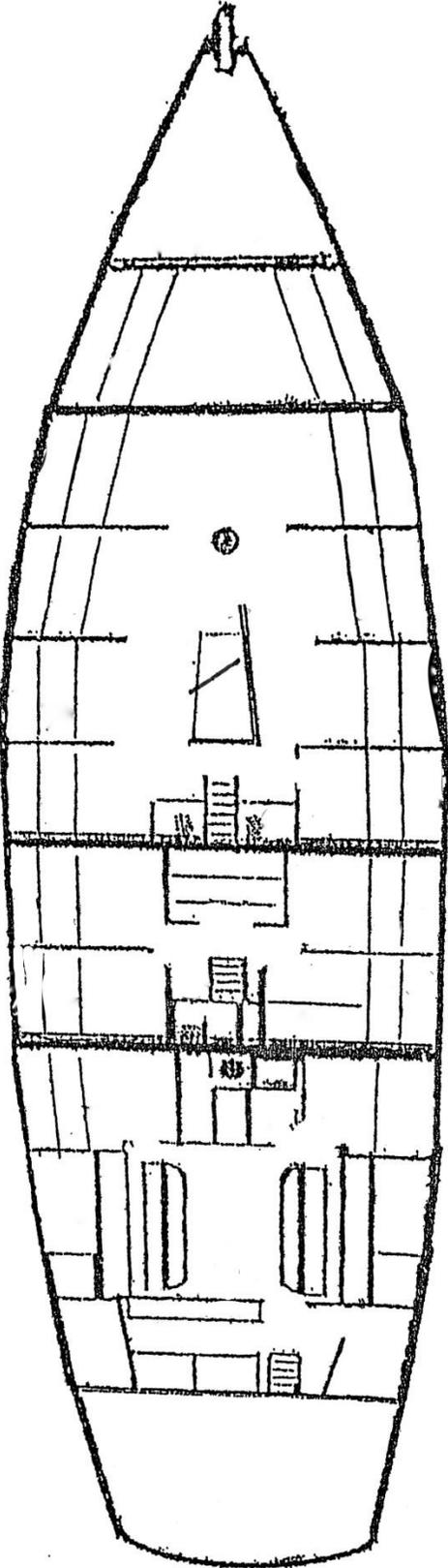


Freedom

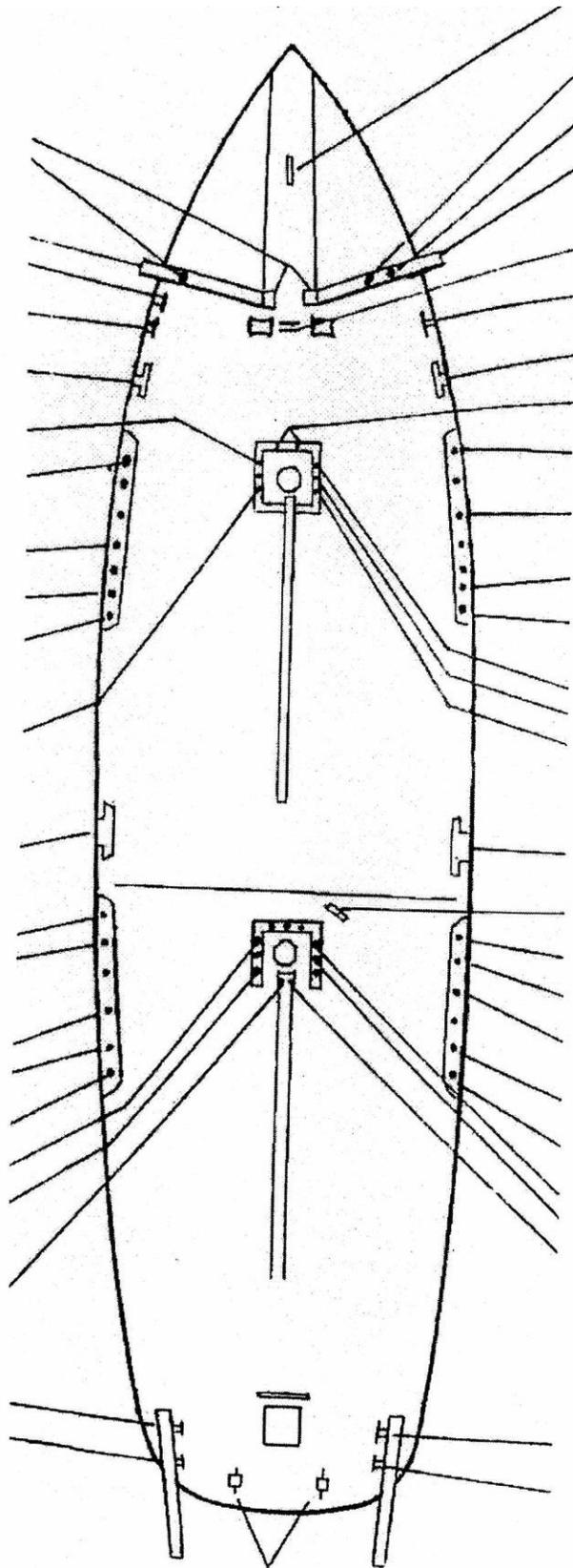


Caravelle

BUNK DIAGRAM

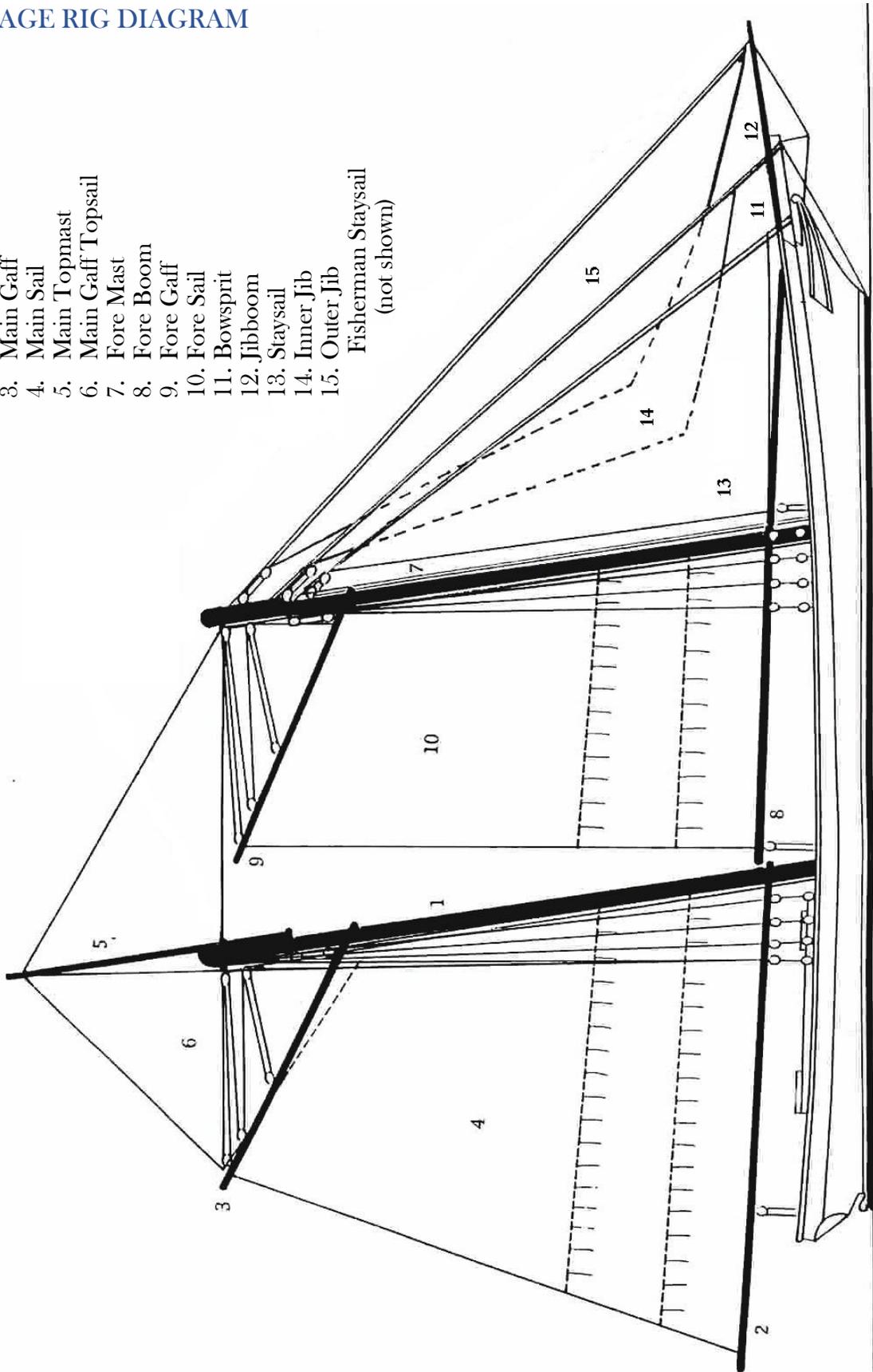


PIN DIAGRAM

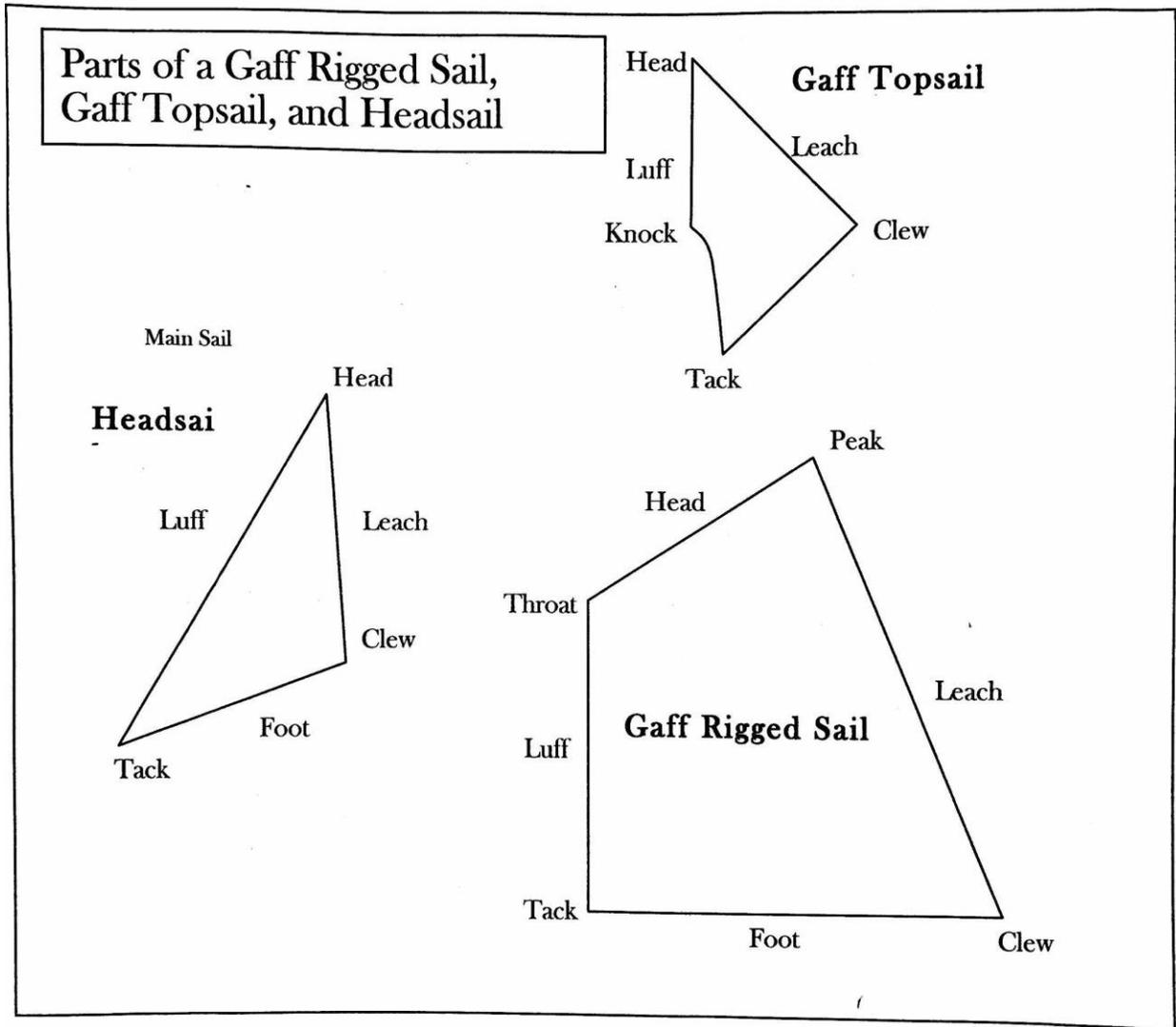


GAMAGE RIG DIAGRAM

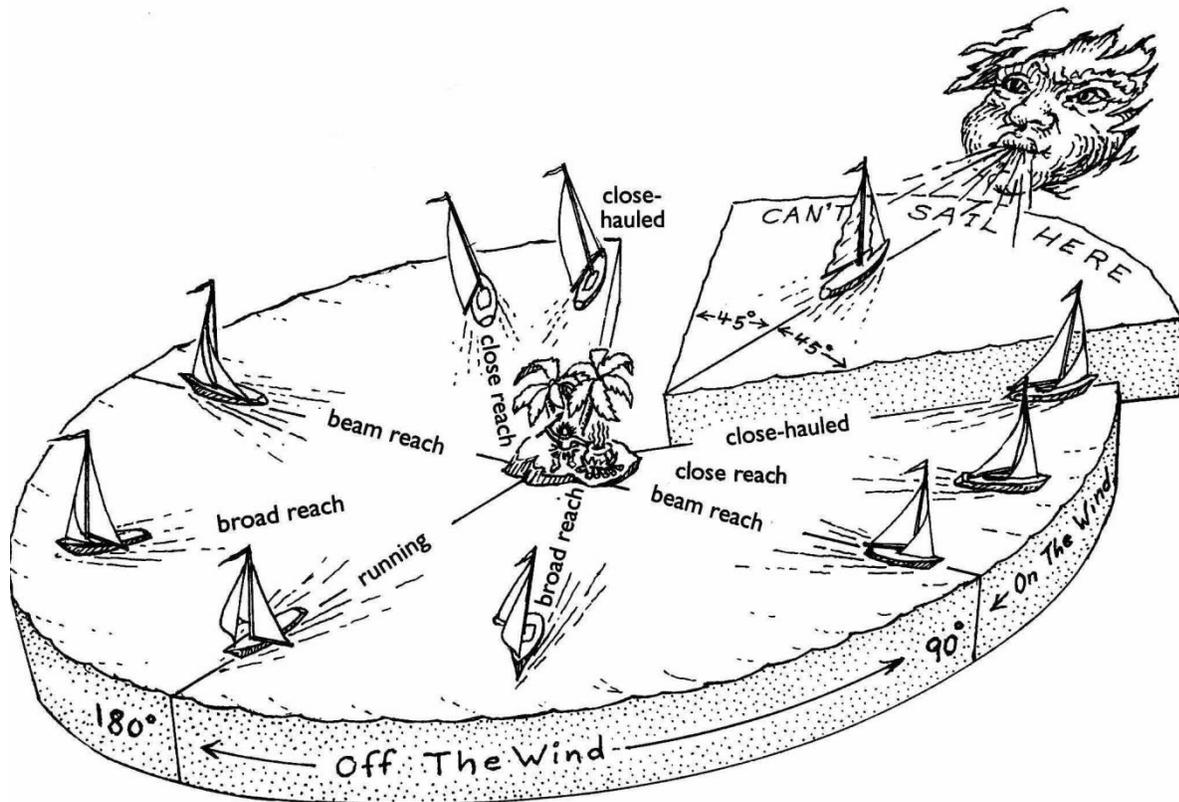
1. Main Mast
 2. Main Boom
 3. Main Gaff
 4. Main Sail
 5. Main Topmast
 6. Main Gaff Topsail
 7. Fore Mast
 8. Fore Boom
 9. Fore Gaff
 10. Fore Sail
 11. Bowsprit
 12. Jibboom
 13. Staysail
 14. Inner Jib
 15. Outer Jib
- Fisherman Staysail
(not shown)



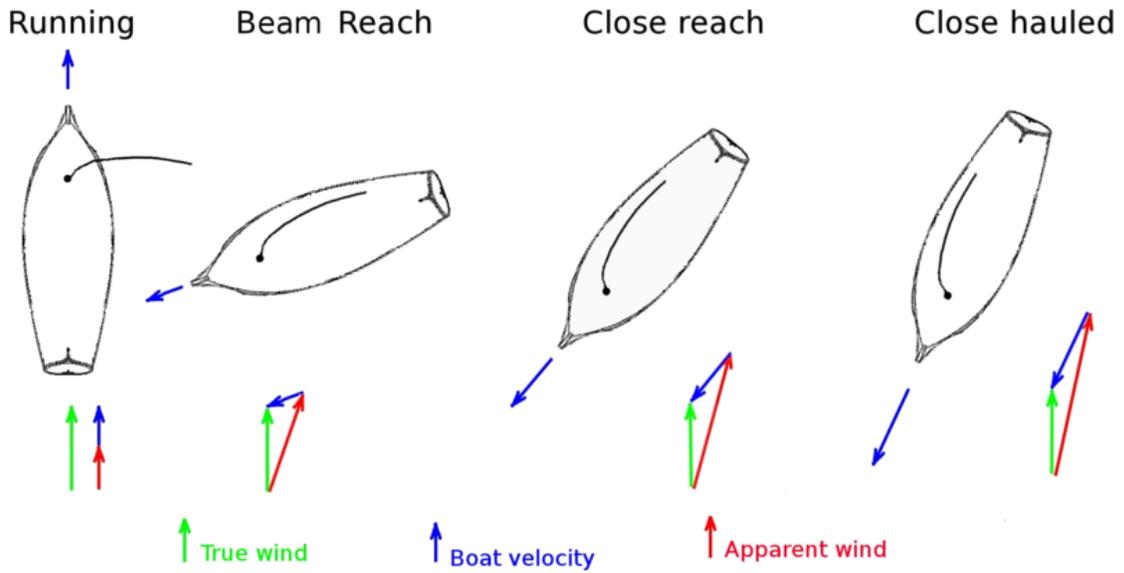
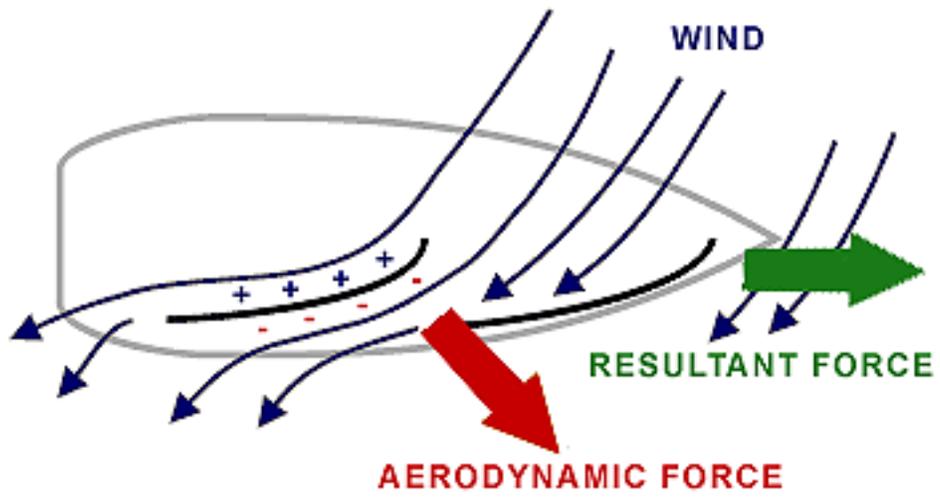
PARTS OF A SAIL



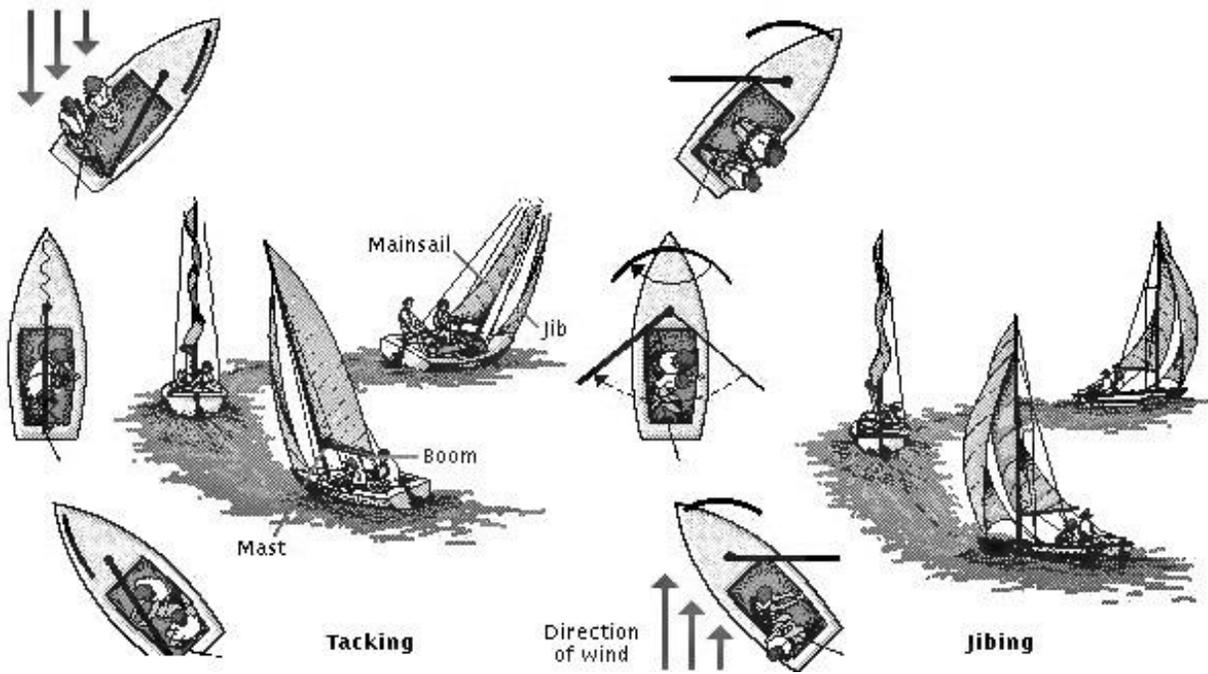
POINTS OF SAIL



PHYSICS OF SAILING

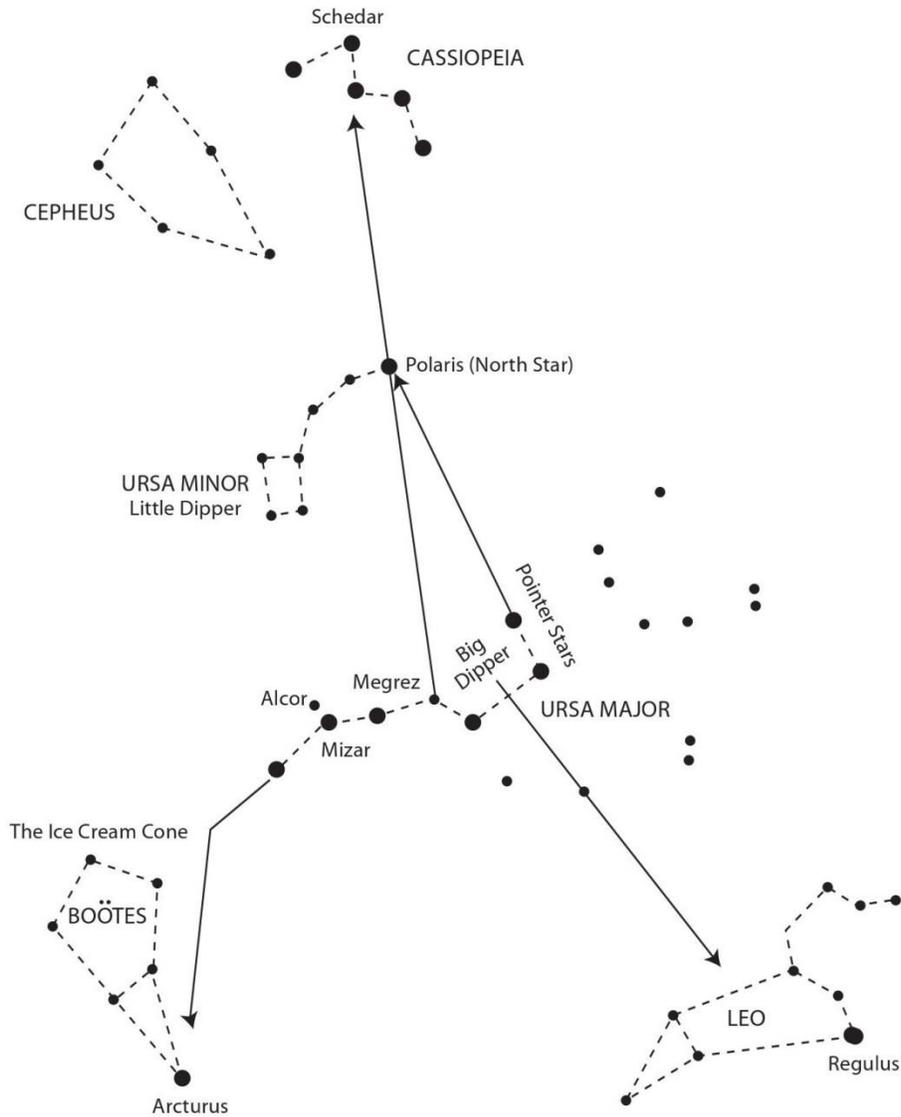


TACKING & GYBING



BIG DIPPER AS A SKY GUIDE

Using the Big Dipper as a Sky Guide



LOOKING TO THE NORTH FOR THE DIPPERS

- The pointer stars point to Polaris
- The arc of the handle leads to Arcturus
- A hole in the cup empties on LEO's back
- Megrez and Polaris point to CASSIOPEIA

AIDS TO NAVIGATION



U.S. AIDS TO NAVIGATION SYSTEM

on navigable waters except Western Rivers

LATERAL SYSTEM AS SEEN ENTERING FROM SEAWARD

<p>PORT SIDE ODD NUMBERED AIDS</p> <p>GREEN LIGHT ONLY</p> <p>FLASHING (2) </p> <p>FLASHING (3) </p> <p>OCCULTING </p> <p>QUICK FLASHING </p> <p>ISO </p> <p>1 LIGHT </p> <p>7' 10" PL 8' 6"</p> <p>3 LIGHTED BUOY </p> <p>12' 10" PL 12' 6"</p> <p>5 DAYBEACON </p> <p>12' 10" PL 12' 6"</p>	<p>PREFERRED CHANNEL NO NUMBERS - MAY BE LETTERED</p> <p>PREFERRED CHANNEL TO STARBOARD</p> <p>TO PORT</p> <p>GREEN</p> <p>GREEN LIGHT ONLY</p> <p>COMPOSITE GROUP FLASHING (2-1) </p> <p>A LIGHT </p> <p>12' 10" PL 12' 6"</p> <p>S LIGHTED BUOY </p> <p>12' 10" PL 12' 6"</p> <p>U DAYBEACON </p> <p>12' 10" PL 12' 6"</p>	<p>PREFERRED CHANNEL NO NUMBERS - MAY BE LETTERED</p> <p>PREFERRED CHANNEL TO PORT</p> <p>TRIMARK BAND</p> <p>RED</p> <p>RED LIGHT ONLY</p> <p>COMPOSITE GROUP FLASHING (2-1) </p> <p>B LIGHT </p> <p>12' 10" PL 12' 6"</p> <p>C LIGHTED BUOY </p> <p>12' 10" PL 12' 6"</p> <p>G DAYBEACON </p> <p>12' 10" PL 12' 6"</p>	<p>STARBOARD SIDE EVEN NUMBERED AIDS</p> <p>RED LIGHT ONLY</p> <p>FLASHING (2) </p> <p>FLASHING (3) </p> <p>OCCULTING </p> <p>QUICK FLASHING </p> <p>ISO </p> <p>2 LIGHT </p> <p>12' 10" PL 8' 6"</p> <p>4 LIGHTED BUOY </p> <p>12' 10" PL 12' 6"</p> <p>6 DAYBEACON </p> <p>12' 10" PL 12' 6"</p>
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AIDS TO NAVIGATION HAVING NO LATERAL SIGNIFICANCE

<p>ISOLATED DANGER NO NUMBERS - MAY BE LETTERED</p> <p>WHITE LIGHT ONLY</p> <p>A LIGHT </p> <p>12' 10" PL 12' 6"</p> <p>C LIGHTED BUOY </p> <p>12' 10" PL 12' 6"</p>	<p>SAFE WATER NO NUMBERS - MAY BE LETTERED</p> <p>WHITE LIGHT ONLY</p> <p>A LIGHT </p> <p>12' 10" PL 12' 6"</p> <p>B LIGHTED BUOY </p> <p>12' 10" PL 12' 6"</p>												
<p>RANGE DAYBOARDS/MAY BE LETTERED</p> <table style="margin: auto;"> <tr> <td></td> </tr> </table>													
<p>DAYBOARDS - MAY BE LETTERED</p> <p>WHITE LIGHT ONLY</p> <p>NR </p> <p>NG </p> <p>ND </p> <p>RW </p> <p>SW </p> <p>SW </p>	<p>SPECIAL MARKS - MAY BE LETTERED</p> <p>YELLOW LIGHT ONLY</p> <p>FIXED </p> <p>FLASHING </p> <p>A </p> <p>12' 10" PL 12' 6"</p> <p>B </p> <p>12' 10" PL 12' 6"</p>												

Aids to Navigation marking the Intracoastal Waterway (ICW) display unique yellow symbols to distinguish them from aids marking other waters. Yellow triangles indicate aids should be passed by keeping them on the starboard (right) hand of the vessel. Yellow squares indicate aids should be passed by keeping them on the port (left) hand of the vessel. A yellow horizontal band provides no lateral information, but simply identifies aids as marking the ICW.

<p>MOORING BUOY</p> <p>WHITE REFLECTOR OR LIGHT</p> <p></p>	<p>INFORMATION AND REGULATORY MARKS</p> <p>INFORMATION AND REGULATORY MARKERS</p> <p>WHEN LIGHTED, INFORMATION AND REGULATORY MARKS MAY DISPLAY ANY WHITE LIGHT SYSTEM EXCEPT OCCULT FLASHING, MODAL AND FLASHING (2)</p> <p>SWAY AREA </p> <p>NO ANCHORAGE MAY BE MADE OUTSIDE THE SWAY CHANNEL</p> <p>ROCK </p> <p>THE NATURE OF DANGER MUST BE INDICATED BY THE CHARTING SYMBOL, SIGN, SIGNAL, PITCH, SIGNAL, OR LIGHT</p> <p>SLOW </p> <p>TYPE OF DANGER IS INDICATED BY THE CHARTING SYMBOL, SIGN, SIGNAL, OR LIGHT</p> <p>NO MARKS </p> <p>NO MARKS</p> <p>BLACK LINE </p> <p>BLACK LINE</p> <p>WATERWAY SIGN SHALL BE SHOWN ABOVE THE BLACK LINE</p> <p>NO ANCHORAGE </p> <p>NO ANCHORAGE</p> <p>NO ANCHORAGE </p> <p>NO ANCHORAGE</p>
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PLATE 1

GLOSSARY

Abaft: behind

Abeam: to the side

Adrift: broken loose from its mooring, cleat, etc.

Ahead: in front of the ship

Aft: towards the stern

Amidships: the middle of the ship

Astern: behind the ship

Auxiliary: a sailing vessel that has an engine is said to have ‘auxiliary’ power

Backstay: lines fixed at the top of a mast and lead aft and down to the ship

Baggywrinkle: old cordage that is wrapped around the standing rigging to prevent chafing of the sails and spars

Beam: width of a vessel at the widest point

Beam reach: sailing with the wind from the side, perpendicular to the keel

Beat: to work windward by tacking

Before the wind: to sail with the wind from astern

Belay: to secure a line to a cleat or pin

Belaying pin: a wooden or iron pin to which lines are made fast

Below: beneath the decks

Bend: to tie two lines together

Bend on: to secure a sail to a boom or spar

Bilge: lowest, inner part of the hull where water collects

Binnacle: the housing that contains the compass

Bitter end: the non-working end of a line

Block: pulleys or sheaves, set in a casing, used to lead lines more advantageously

Boat: small open vessel

Bobstay: chain or stay that leads from the bowsprit toward the stern

Boltrope: rope sewn around the edges of a sail to give it strength

Boom: large spar to which the foot of a sail is secured

Bow: forward end of a ship or boat

Break: area where the raised quarterdeck begins and the main deck ends

Brightwork: woodwork that is kept varnished

Buffalo rail: a low solid rail up forward

Bulkhead: any partition or wall aboard a ship
Bulwarks: sides of a vessel that extend above the deck

Cast off: to let go, depart

Cap rail: rail above the stanchions that extends around the entire vessel

Cathead: a timber projecting outboard used for drawing up the anchor clear from the ship’s side

Chafe: wearing of the sail cloth or part of rigging due to rubbing and friction

Chafe gear: canvas or old cordage used as protective gear to minimize chafe

Chain locker box: on the foredeck where anchor chains are stowed

Chain plates: bands of iron bolted to the outside of the hull, to which the lower ends of the shrouds and stays are attached

Charley noble: the stack on the galley stove

Chart: a map like reference that shows details on water

Chock: a jaw like fitting attached to the cap rail to give lines a fair lead

Chronometer: a precision time piece set to Greenwich Mean Time (GMT)

Cleat: a horned metal or wooden piece to which lines are secured

Clew: lower, outboard or aft corner of a sail

Close-hauled: sailing as close to the wind as possible, with the sails sheeted in tight

Close reach: sailing with the wind forward of the beam and sails slightly eased

Coaster: schooner working in the coastal trade

Come about: to bring the vessel from one tack to another, with the bow crossing through the wind

Companionway: hallway or ladder passage aboard a ship

Compass: navigational device housed in a binnacle, indicates direction

Compass rose: used as a reference for true north and magnetic north on a chart

Cowl vents: vents designed to ventilate below deck areas

Cringle: a ring sewn into a sail through which a line may be passed

Danforth: an anchor that uses design instead of weight for holding power

Davits: a pair of heavy spars projected over the stern or sides of a vessel to raise a boat out of water

Dead ahead: directly in front of a vessel

Deckhouse: cabin that projects above the surface of the deck

Depth sounder: measures the depth of the water beneath the keel

Deviation: effects that magnetic materials aboard a vessel have on the ship's compass, calibrated at different headings

Displacement: weight of the water displaced by the hull

Ditty bag: a small canvas bag used to stow articles for sail repair or marlinespike seamanship

Dividers: navigational tool used to measure distance

Dolphin striker: a short downward spreader. The top is secured to the bowsprit, while the lower end is attached to the jibboom martingale stays.

Dorade box: a small box on the deck to which a cowl vent is attached, it prevents water from going down below the deck

Down East: from New York to Canada, along the coast, sailing coasters have always been bound "down east" when headed toward Maine and Nova Scotia. The most common explanation of the term is that the winds are generally more favorable for a ship headed in that direction going downwind.

Downhaul: a line used to pull a sail down

Draft: the depth the hull extends below the water's surface

Ease away: to slack a line slowly, under control

Ensign: the national flag

E.P.I.R.B.: Emergency Position Indicating Radio Beacon: this beacon can be activated manually or is automatically activated if the vessel should sink. It broadcasts over the frequencies used by commercial airlines and rescue agencies.

Fake: one circle of a coil or line

Fall off: steering the ship so that the wind comes from more astern

Fathom: a measurement of six feet

Fid: a cone-shaped tool used to separate strands of line for splicing

Fife rail: a pin rail that encircles a mast

Fisherman: the sail traditionally set aloft on fishing schooners between the fore and main mast

Fish hook: a large iron hook used to raise the anchor to the cat head

Flake a line: to coil down a line or chain on the deck so that each flake overlaps the other underneath, the line is then clear for use

Following sea: swells, or seas, that approach a vessel from the stern

Foot block: blocks attached to the deck

Fore and aft: parallel to the ship's keel

Foredeck: forward part of the deck, where the crew works with the headsails and windlass

Foresail: the sail attached to the forward mast

Forestaysail: The head sail attached to the forward mast

Fore peak: the compartment below deck at the bow

Forward: toward the bow

Foul: when something is jammed or not running free

Foot: bottom edge of a gaff rigged sail

Freeboard: the distance from the waterline to the deck or gunwale

Furl: to gather up and secure the sail after it has been taken in

Gaff: the spar to which the head of a gaff-headed sail is bent

Galley: ship's kitchen

Gasket: a line to secure a sail to the boom after it has been furled

Gripes: the line used to secure a ship's boat

Ground tackle: catch-all term for anchors, chain, etc.

Gunwale: the upper edge of a small vessel's side
Gybing: to bring the wind to the other side of a ship by bringing the stern through the wind
Halyard: a line used to raise sails
Haul: to pull on a line such as a halyard
Hawser: a line used for towing
Hawse pipe: a steel encircled hole in the bow planking through which the anchor chains pass
Head: a ship's toilet and bathroom. Also, the top corner of a Marconi rigged or gaff rigged sail.
Head sea: when the sea approaches a vessel head on
Heave-to: to stop a vessel's way by arranging the sails so that she will lie nearly head to wind and not have any forward movement, and to be hove to
Heel: when the wind pressure causes a vessel to lean to one side
Helm: steering apparatus of a ship, such as a tiller or wheel
Helmsman: the person who is steering a vessel
Hull: the body of a ship
Hull down: said of a vessel when, due to its distance, only the masts or superstructure are visible on the horizon
In a vessel: among seamen, no one ever sails "on" a vessel, or even "aboard" a vessel, they are in a vessel
Inboard: toward the fore and aft center line of a ship
In company: when two or more vessels are sailing within sight of each other, they are said to be in company
In irons: when a vessel is stuck between tacks and the sails are luffing
Irish pennant: an untidy loose end of a line
Jaws: the forward end of the gaff or boom that forms a semi-circle around the mast to keep it in place
Jib: triangular headsail

Jibboom: the spar which extends forward atop the bowsprit to which the tack of a jib is attached
Jumbo: on a fishing schooner, the headsail forward of the foremast attached to the forestay
Keel: the principle longitudinal timber or backbone of a vessel
Ketch: a sailing vessel in which the main mast is tallest and foremost. The second mast, called the mizzen, is shorter and forward of the rudder post.
Kingspoke: the upper spoke of a ship's wheel when the rudder is amidships
Knighthead: timbers projecting upwards though the deck on either side of the bowsprit
Knock: the part of a gaff topsail that is attached just above the lower mast cap
Latitude: parallel lines running horizontal on a chart
Lay: the direction of the spiral in a multi-stranded line
Lazarette: crawl space located beneath the quarter deck
Lazy jacks: lines that run vertically from the boom to the quarter lifts to keep the sail on the boom while its being lowered
Leach: the after edge of a sail
Lead line: a line used for sounding water depth
Lee help: tendency of a vessel to fall off the wind
Leeward: the direction opposite from which the wind blows
Leeway: drift to leeward
Line: a rope that has a function
L.O.A.: length overall
Longitude: parallel lines running vertical on a chart, converging at the poles
Lubber line: mark on the forward part of the compass, to show the helmsman how the ship is heading
Luff: when the sails flutter because the ship is sailing too close to the wind. Also, the leading edge of a sail.
L.W.L.: length at water line

Mainsail: the largest after most sail on a two masted schooner

Main sheet: line which controls the later motion of the main sail

Make fast: the act of belaying or securing a line to a cleat or pin

Marline spike: long, metal spike of hardened steel to aid in splicing and seizing rope or wire

Mast hoops: hoops that are bent onto the luff of a sail to secure it to a mast

Mayday: international distress signal that is reserved for instances of grave and imminent danger

Monkeys fist: a ball made of cordage used to weight the bitter end of a heaving line

Nautical mile: equal to 6076 feet, 1.15 statue miles or one minute of latitude

Oil skins: foul weather gear

Oily: referring to bad weather and seas

Outboard: toward the side of a vessel, away from the center

Outhaul: a line attached to haul a sail out, as on a staysail and jumbo, or reefing gear

Painter: a bow line on a small boat

Parallel rules: navigational tool used to transfer parallel lines

Peak: the upper, after end of a gaff rigged sail

Pinch: to sail closer to the wind that is most efficient

Pin rail: a rail where belaying pins are found

Pitch: vessel motion about the fore and aft or longitudinal plane

Point: eleven and one quarter degrees on the compass

Port: the left side of the vessel when you are facing forward

Preventer: a line or block and tackle which prevent a boom from swinging free

Quarter: the aft corners of a vessel between abeam and astern

Quarter lifts: support lifts on each side of the sail running from the mast head to the main boom

Quarterdeck: the raised afterdeck of a vessel, reserved for official ship's business

Rake: the inclination of a ship's masts, either forward or aft from a perpendicular line

Ratlines: foot line on the shrouds

Reach: sailing with the wind abeam

Reef: to shorten or reduce the size of a sail, usually done because of heavy winds

Reef points: short pieces of line attached to the sail used for reefing

Rode: any anchor line or chain attaching the anchor to the ship

Roll: vessels motion side to side pivoting on a point amidships on a vertical plane

Running: sailing with the wind astern

Running rigging: movable rigging, such as sheets, halyards, downhauls

Samson post: a large timber on the foredeck for securing lines

Scope: length of anchor rode, from the hawse pipe to the anchor in relation to the depth of water, expressed as a ratio

Scandalize: to lower the peak of a gaff rigged sail in order to disrupt its lift

Scud: to run before the wind, as in a gale

Scupper: openings in the bulwarks to drain water from the decks and waterways

Scuttle: a hatch that opens on the deck to allow access below

Seize: to attach something by lashing it with line or wire

Sheet: the line that controls the later movement of the sail

Ship: seagoing vessel of considerable size, sometimes defined by its ability to hold a boat

Short stay: when the anchor is nearly off the bottom

Shrouds: standing rigging that support the masts laterally

Sloop: sailing vessel with one mast

Slush: to grease the masts or wire rigging

Spar: wooden poles which the sails are secured to

Spring line: line used when securing alongside that leads forward from the stern or aft from the bow

Spring stay: fore and aft stay connecting the mastheads

Standing rigging: any rope, wire or chain that does not move and whose function is to support the masts and other fixed spars

Starboard: the right side of a vessel, when you are facing forward

Stays: standing rigging that support the masts fore and aft

Stem: a piece of timber that rises from the fore part of the keel to form the bow

Step: to set a mast in place

Stern: the after end of a vessel

Sternway: to move in reverse

Stopper: a length of line used to secure a line under strain, most commonly a halyard

Strike: the process of taking down a sail

Sweat: When hauling a line, one crew pulls sideways (or sways) so the line can be hauled easier

Swinging room: the radius from anchor to stern of a ship

Tack: to bring the wind to the other side of the ship by bringing the bow through the wind. Also the lower corner of a sail.

Tackle: (pronounced “tay-kle”) a line through blocks to gain mechanical advantage

Taff rail: rail around the quarter deck

Tail: to take in the slack while another person sways on a line

Tender: a service skiff, or ships small boat

Throat: forward end of the gaff and the related corner of the sail

Thwart: seat in a skiff or dory

Tonnage (gross tons and net tons): a volume measurement based on an arbitrary formula, intended originally to be a rough measure of a ship’s cargo capacity. Not the true mass of a ship, which is its displacement.

Topmast: a smaller spar extending aloft from the head to the lower mast, used for supporting a topsail

Topping lift: a line running from the masthead to the end of the boom to raise and lower the boom

Topsail: a sail set from a topmast, also called a gaff topsail

Topsides: part of the hull that is above the waterline

Transom: the flat part of the stern

Trick: the period of time or act of being at the helm

Two blocked: when the two of a tackle are hauled up tight to each other

Unbend: to untie

Underway: a term used to describe moving a vessel

Vang: a line rigged to control the motion of a gaff

Variation: the angle between the magnetic north pole and the geographic (true) north

Voyage: no coasting schooner makes a coastal voyage. She makes a trip or a passage. She may make a voyage to the West Indies and back, but many would still refer to it as a trip.

Waterway: areas around the perimeter of the deck to help drain it

Weather helm: the tendency for a vessel to head into the wind

Weigh anchor: to raise the anchor from the bottom and secure it on board

Whipping: a method of sewing sail twin on the end of a line to prevent it from unraveling

Windlass: a device for heaving in the anchor and chain

Windward: the direction from which the wind is coming

Weather side: the windward side of a vessel

Yaw: vessel motion side to side, pivoting about a point amidships on a horizontal plane

Yawl boat: a small boat used to push or tow a larger vessel

SAILING SKILLS CHECK

Use this to keep track of the sailing skills you have mastered. You can have your watch officer (one of the mates) sign off on the skills you have learned.

WATCH ORIENTATION

- Demonstrate knowledge of watch procedures and an ability to follow them
- Demonstrate an ability to execute the duties of roving patrol or 'boat check' person on your watch
- Demonstrate an ability to steer vessel by compass, sail, or to a designated visual mark
- Explain procedure for relieving the helm, including compass bearing to be steered
- Demonstrate ability to execute helm orders
- Stand forward lookout and demonstrate ability to report hazards or any approaching vessels to the watch officer

SAFETY DRILLS

- Locate and explain the Station Bill
- Identify and explain your position during any drill
- Locate and explain fire control, man overboard, and abandon ship
- Identify the different alarms and what they mean
- Locate and explain:
 - Abandon ship supply location
 - Life rafts
 - Fire stations
 - Man overboard station
- Demonstrate donning life jackets and an immersion suit
- Describe cold water survival techniques

VOCABULARY

- Verbally and visually define all words in the Glossary

BASIC SKILLS

- Demonstrate how to utilize a belaying pin to properly make off, coil, and hang a line
- Demonstrate how to properly slack, haul, and sweat a line
- Demonstrate proper techniques for climbing aloft, laying out, coiling, and furling

SPARS AND ANATOMY OF A SAIL

- Visually identify and explain the parts of a sail and the lines that control it
- Visually identify all masts, hold, and on deck structures
- Explain how to set and strike a sail
- Explain commands for setting and dousing of gaff rigged, staysail, and headsails. Do a walk-through of all lines used during the setting and striking of a sail. Explain each line's use.

KNOTS

- Demonstrate how to tie each of the following and describe its use(s):
 - Belaying a line
 - Figure eight
 - Square (reef) knot
 - Bowline
 - Clove hitch
 - Rolling hitch
 - Sheet bend
 - Round turn and two half hitches
 - Slippery hitch
 - Wagoneer's hitch

ADVANCED SAILING

- Define and describe the following terms:
 - Port tack/starboard tack
 - Heading up
 - Falling off
- Explain how the ship sails into the wind, i.e. how the airfoil effect works
- Describe the different points of sail verbally:
 - Close hauled
 - Beam reach
 - Broad reach
 - Running
 - In irons
- Explain what it means to gybe and tack, how each is accomplished, and why we might choose to do one or the other

BASIC NAVIGATION

- Explain latitude and longitude
- Plot a fix from a given latitude and longitude
- Explain variation and deviation
- Plot a compass course from the fix

*I must go down to the seas again, to the lonely sea and the sky,
And all I ask is a tall ship and a star to steer her by;
And the wheel's kick and the wind's song and the white sail's shaking,
And a grey mist on the sea's face, and a grey dawn breaking.*

*I must go down to the seas again, for the call of the running tide
Is a wild call and a clear call that may not be denied;
And all I ask is a windy day with the white clouds flying,
And the flung spray and the blown spume, and the sea-gulls crying.*

*I must go down to the seas again, to the vagrant gypsy life,
To the gull's way and the whale's way where the wind's like a whetted knife;
And all I ask is a merry yarn from a laughing fellow-rover,
And quiet sleep and a sweet dream when the long trick's over.*

-John Mansfield

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