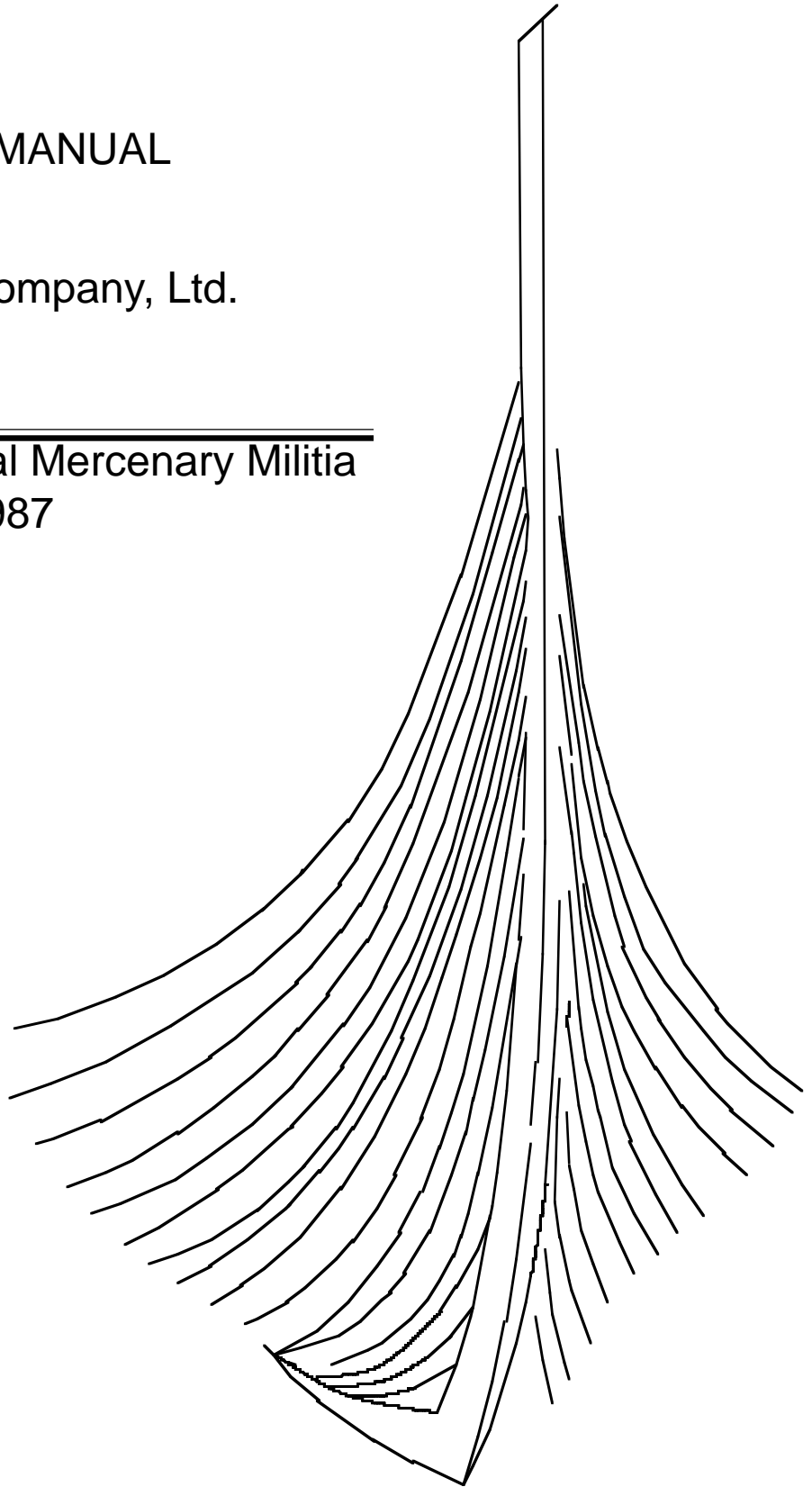


SHIP'S MANUAL

Longship Company, Ltd.

Markland Medieval Mercenary Militia
1987



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Some of you grew up with and on sailing and power boats. Others have never set foot on a water-craft before. Yet others have learned all your seamanship aboard Viking vessels. No matter how much experience you have, or where you obtained it, we all need more practice, experience and education.

Owing to the relative scarcity of Viking vessels at this point in history, the opportunity to hone your skills on one presents itself far too infrequently. For that reason (among others), this manual has been written in an attempt to distill down the wisdom obtained — sometimes painfully — from our experience over the course of 15 years and three vessels.

We hope that we have made it comprehensive enough that a first-time member, through diligent study, can tell one pointy end from the other. (end of the ship, that is) We also hope that even our most experienced members will find that the manual will refresh their techniques or provide further useful information.

This manual is also intended to document the organizational structure of the crew, and the responsibilities of individual crewmembers.

Lastly, we have tried not to take ourselves too seriously, because we must not lose sight of the fact that we're here to have fun, as well as to teach others and learn for ourselves. On the whole, we feel that this manual reflects the spirit of the Longship Company:

We're all in the same boat together, so take care of each other, take care of the ships, and they will take care of you.

Acknowledgements

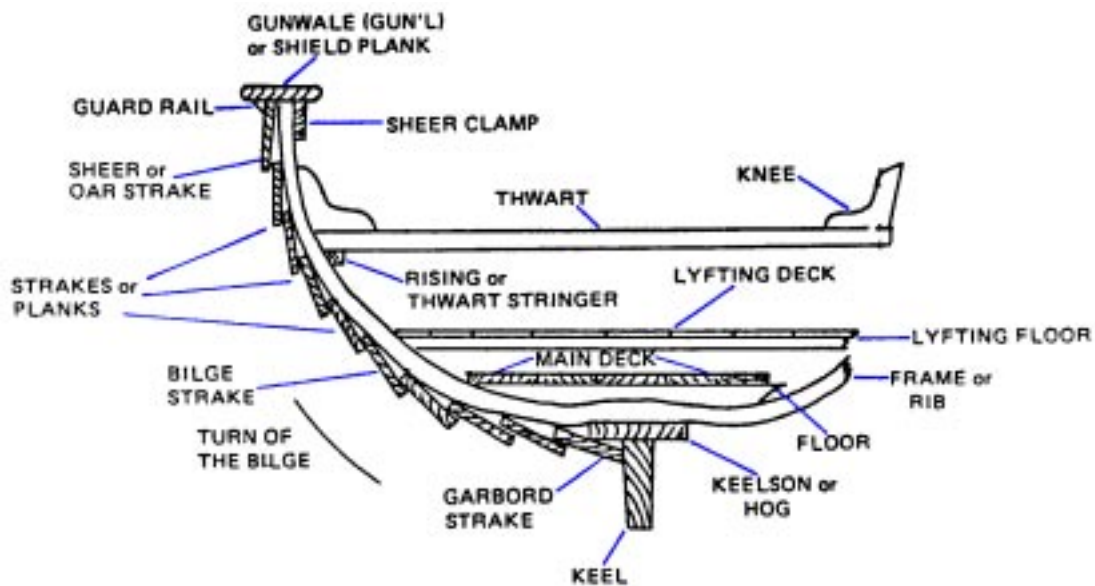
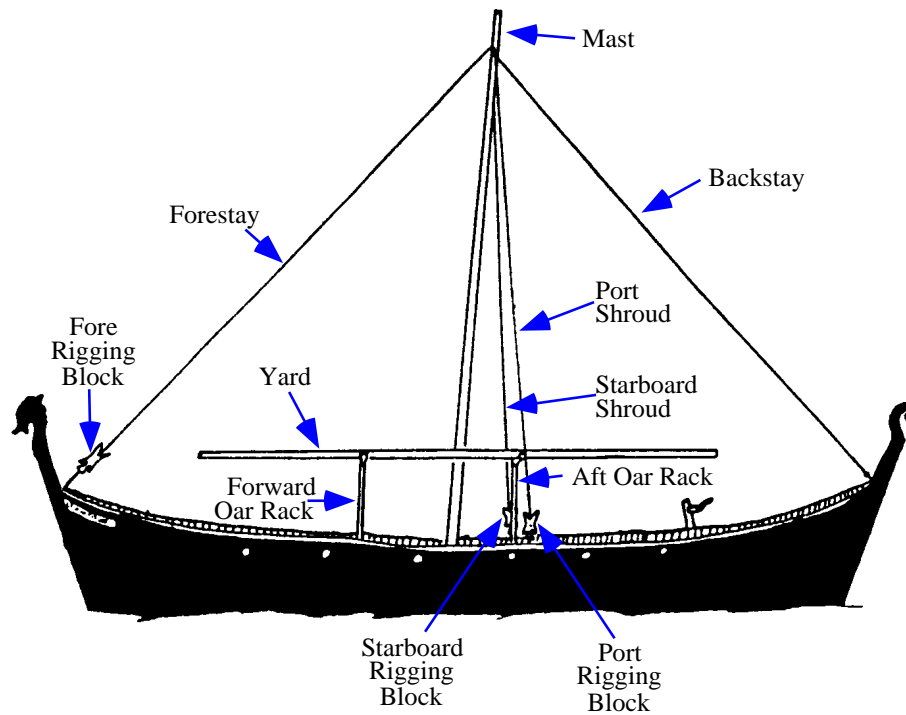
This is the third version of the *Longship Company Ship's Manual* to be published. It is based — in part — on the second edition, but also includes much new material. Particular thanks go to Bruce Blackistone for most of the procedural material, Ceecy Nucker for the section on ratings, Bruce Becker for the checklists and Curt Harpold for the section on knots. The section on safety includes Material from the Coast Guard Auxiliary publication: *Sailing and Seamanship* (third edition) which has been used by permission, and material from the publication: *Family Guide Emergency Health Care* (1970 printing), of the U. S. Department of Health, Education, and Welfare, which has been used without permission. Numerous other people — most of whom I can't name anyway — have provided valuable comments and caught errors.

Fred Blonder (Editor),
September, 921 A.H.

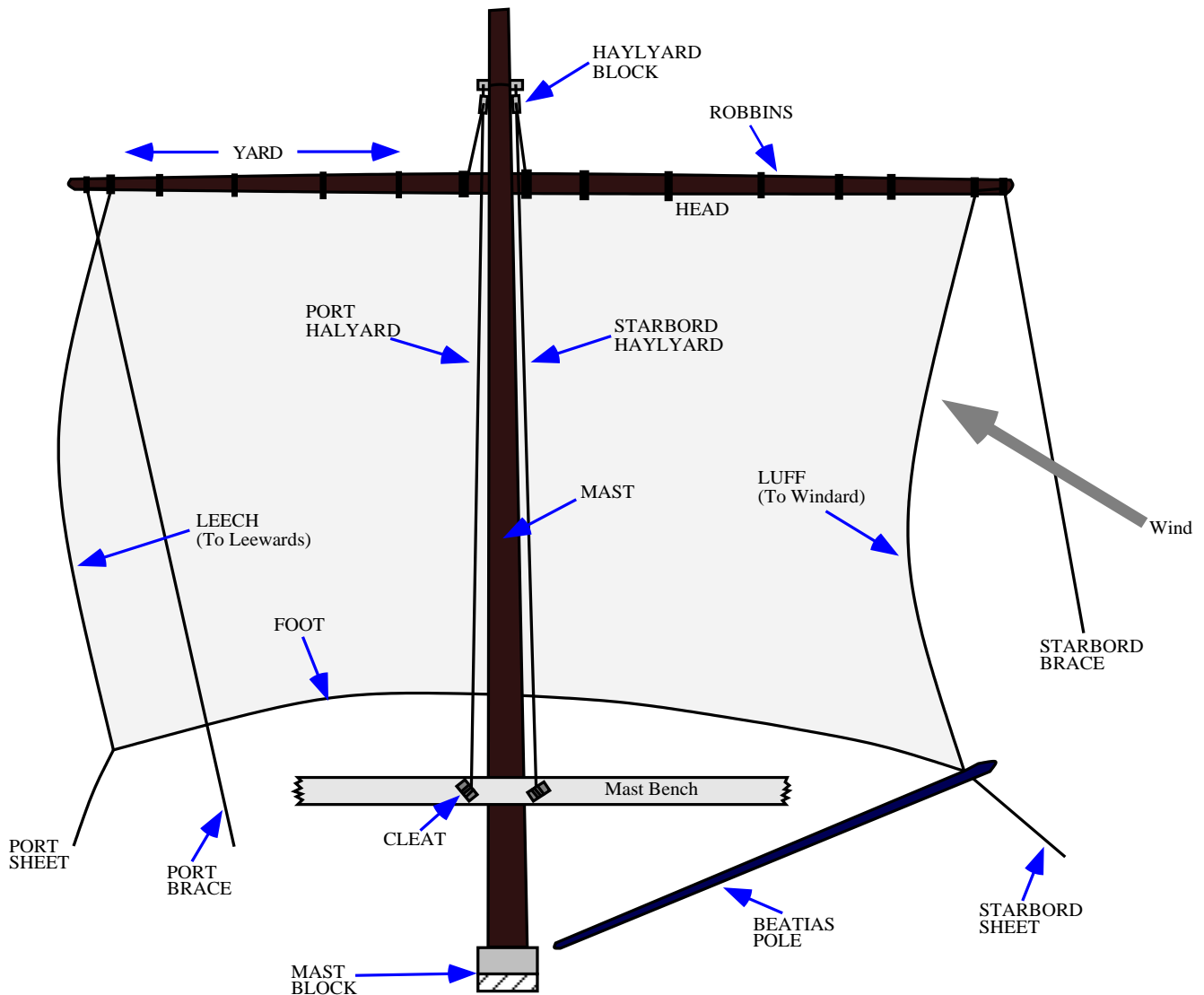
1.

Parts of the Ships

1.1 Rigging



1.2 Mast and sail



1.3 Stepping and unstepping the mast

Because of its length, stepping and unstepping the Fydraca's mast is a ticklish operation, usually involving five people. Person #1 holds the forestay with a 20' extension for control as the mast eases up or back. It helps if person #1 is on a dock or the land, for maximum control and leverage. Persons #2 and #3 are stationed one each side of the mast, to lift or lower, and maintain the mast in a vertical position relative to the beam. It is considered uncouth for them to allow the mast to topple overboard sideways. Person #4 is stationed on the next thwart aft and helps to control the mast while it is within his reach. Person #5 is as aft and as high as is practical and safe; this person helps align the mast at the beginning of the operation, and starts by lifting the mast and moving forward as the end moves out-of-reach.

If more people are available, add persons #6 and #7 to handle the

port and starboard shrouds, and #8 to assist #2 and #3 and brace the butt of the mast as needed. The more the merrier.

The mast weighs 70 lbs. and its center of gravity is several feet above your head when the mast is upright. It is important that you respect the forces conspiring to bring it down on top of you, and the damage it can cause. No one should attempt to move the mast without announcing their intentions first, and being sure that everyone heard them. Spectators should be kept at a safe distance.

By custom, a silver coin is placed beneath the mast. It makes an interesting conversation piece after it has been ground flat from a season of sailing.

All standing rigging should be cast off *last*, before lowering the mast, and set up as soon as possible after raising it.

Stepping and unstepping the Gyrfalcon's mast is trivial by comparison. It requires only one person. The only thing to remember is that the square tab is the *bottom*, and is to be inserted into the matching hole in the mast fish.

1.4 Knots

There are three categories of knots. Those used to tie the ends of two ropes together are called *bends*. They are generally sound even when the ropes are of different sizes. *Hitches* are used to tie a rope to any other object. Knots tied in the length of a single rope without direct application of or to anything else are the only class which are properly termed *knots*.

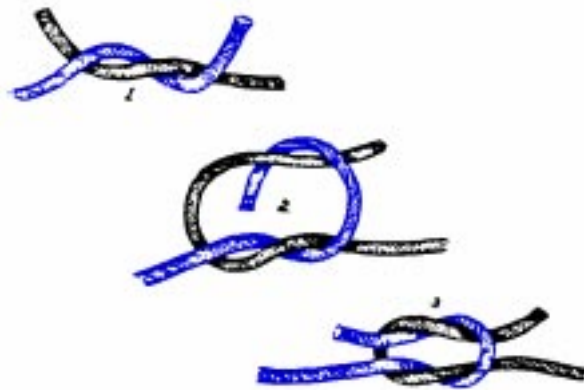
1.4.1 Figure of Eight Knot

This knot is useful as a stopper knot to prevent a line from running through a hole. It is better than an overhand knot because it is easier to unite. The figure of eight is used to make the steerboard fast to the wart of the **Gyrfalcon**.



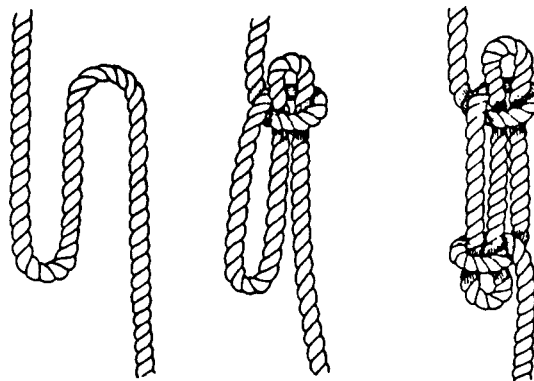
1.4.2 Reef Knot

The reef knot should be used only to contain an outward pushing load, such as the rolled portion at the foot of a reefed sail (oddly enough). This knot must **never** be used as a bend, since it may easily be 'spilled' and slip off. This knot consists simply of two overhand knots in opposite directions. With a third overhand, this knot is used to attach a sail to a yard.



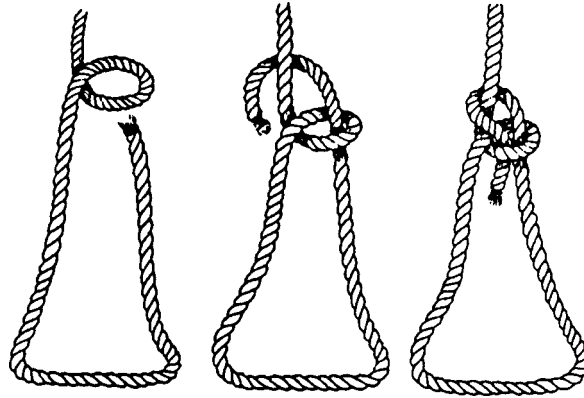
1.4.3 Sheepshank

A useful and reliable way to take up unwanted slack in a line without having to disturb the ends.



1.4.4 Bowline

This is probably the single most useful knot to know. Anywhere a temporary loop is needed in a line, a bowline will do the job. The bowline is easy to tie, and will not jam.



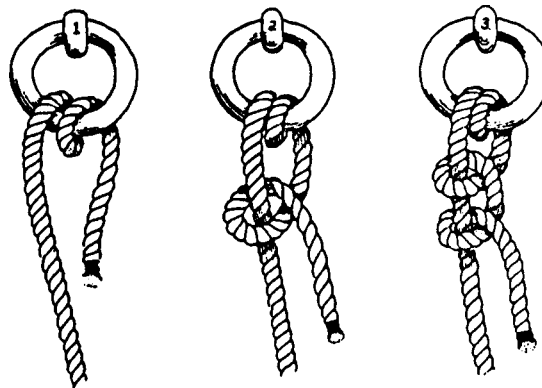
1.4.5 Strangle Knot

A good general-purpose binding knot. It is frequently used in the end of a coiled line to bind the coil. When tied in small line or thread and hauled tight, it is very difficult to untie and may have to be cut off.



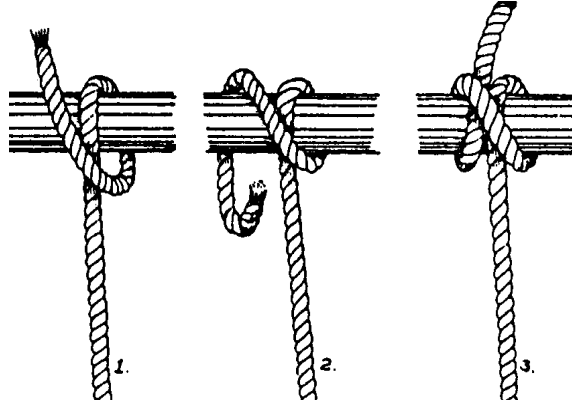
1.4.6 Round Turn and Two Half Hitches

An excellent general purpose hitch, frequently used to hitch a mooring line to a thwart, or for making the **Gyrfalcon** fast to her trailer. The round turn is important, as it keeps the half hitches from being drawn up hard against the post.



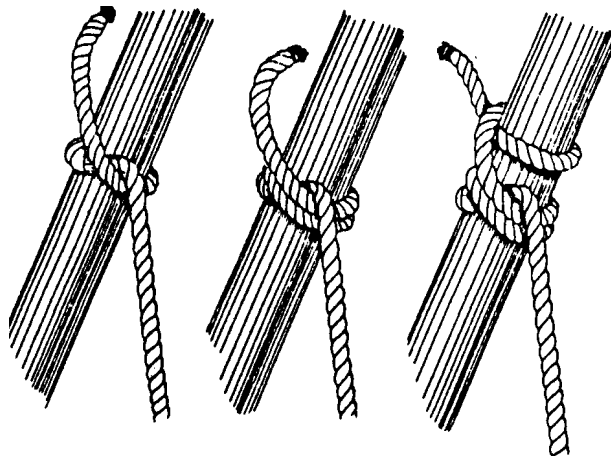
1.4.7 Clove Hitch

An easily made and practical hitch, useful when the direction of the pull is fairly constant. It is excellent for hanging things from a bar. Used with two half hitches to hitch the halyards to the yard.



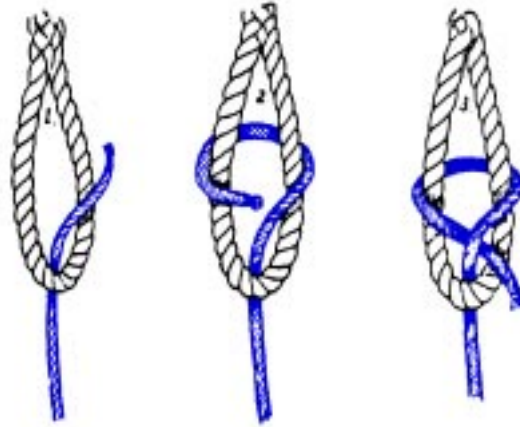
1.4.8 Rolling Hitch (or Magnus Hitch)

Like a Clove Hitch with an overriding turn, this hitch is the only one which may be used on a smooth surface of something which might roll. Used to hitch the braces to the yard.



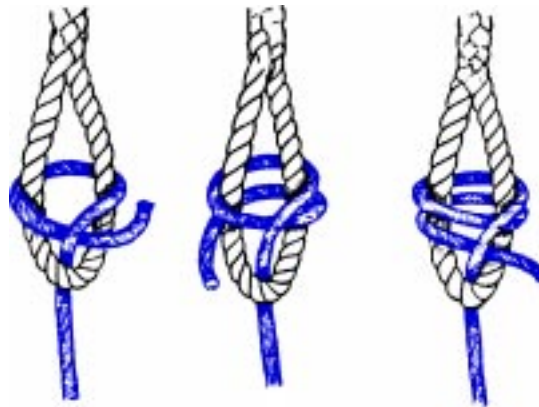
1.4.9 Sheet Bend

If you only learn one bend, this should be the one. Holds fast even when the lines to be joined are of different sizes and types. Generally used on shipboard to attach a heaving line to a mooring line.



1.4.10 Double Sheet Bend

Doubling the Sheet Bend will prevent it from slipping. If the bend is to remain tied for a long time, this is better than a single Sheet Bend.



Voyages will be undertaken only with a proper crew aboard. For the Fydraca, this will consist of a captain, a mate or someone rated able, and at least three others. For the Gyrfalcon, this will consist of a captain and one to four others.

2.1 Officers

A qualified captain and mate must be aboard for all voyages. They may appoint the coxswain, steersman, boatswain, yeoman and lookouts as required, from those crew members rated able or higher.

2.1.1 Captain

Has the ultimate responsibility for the safety and welfare of the vessel and crew. The captain has absolute authority while the craft is under way. If you see something he doesn't, tell him, but if you question a command, carry out the order while asking your question.

2.1.2 Mate

The mate's authority is equal to the captain's, with the exception that the captain may countermand an order from the mate. The mate holds command upon notice from the captain, and will assist the captain at all other times.

2.1.3 Boatswain (bos'n)

Supervises the secure stowage of all gear, which affects not only the ship's appearance, but the safety of the craft as well. If something is needed quickly, the boatswain must know where to get it. Also in charge of line-handling and rigging.

2.1.4 Yeoman

Keeps the log, recording navigational points, time, general notes, and a roster of the crew and officers. The yeoman will also act as purser, collecting and paying any dockage fees or fuel bills, and recording them in the log.

2.1.5 Steersman (also Helmsman)

Handles the tiller in the absence of the captain or mate. Must be capable of maintaining course. Maintains a general lookout. May give rowing commands when required to maneuver the ship in situations where the steerboard is insufficient.

2.1.6 Lookout

Reports anything which may affect the ship or the voyage. Usually stationed at the bow. This position is especially important while the sail is up, since it may obscure the view from the helm. Additionally, all crew members are expected to report anything of possible consequence. Never assume someone in command sees a possible danger.

2.1.7 Coxswain (cox'n)

Establishes the rowing rhythm to be followed by the rest of the crew while rowing, by chanting or singing. The coxswain is the aftmost rower on the port side, unless otherwise appointed by the captain.

2.1.8 Bilgemaster

Generally responsible for the condition of the bilge. Bails, or appoints and supervises other crew members to bail the ship as needed. Inspects and maintains bilge pumps, and removes foreign objects (i.e. potato chips) from the bilge before they can clog the pumps.

2.2 Orders

Orders are given by the captain or the mate, with the captain having final authority. In addition, orders may be given by other Crewmembers supervising particular tasks, such as the steersman issuing rowing commands, or the lookout issuing emergency commands to avoid an obstruction.

Orders will always be clearly indicated as orders. Any sentence beginning with *"I think we should . . ."* or *"I wonder what would happen if . . ."* is not an order.

Orders may be preceded by a qualification such as "port side" or , to indicate that the order applies to only certain Crewmembers. For this reason it is important to always know where you are within the ship. This may sound silly, but when things get chaotic, it's easy to lose track.

2.3 Duties and rights of the Crew

Everyone is expected to row if physically possible, however no one will be asked to exert themselves beyond their capabilities. It is the responsibility of the captain to be aware of the limitations of the crew, and not risk a situation where he must depend on abilities which the crew doesn't have. The captain and mate are expected to row occasionally as well. Guests may be excused from this requirement.

While under way, the crew will obey any order by a ship's officer, instantly.

The crew has a voice in the conduct of the voyage. The captain should consider their opinions in his overall plans, and if the consensus is to return to port, or discontinue a voyage after adverse conditions, he should follow that opinion. The ability of the crew is more important than the ability of the captain.

All crew members are responsible for the proper stowage of their gear, and the maintenance of any ship's equipment they are using.

Crew members who are not rowing, are encouraged to take a turn at the tiller, under the supervision of an officer, or to serve as lookout.

The use of alcohol during a voyage will be controlled. The boat gets a lot more cramped when somebody's drunk, and the captain has one fewer effective crew members to rely on. Cigarettes burn holes in nylon sails; cigarette smoking is strongly discouraged. The use of drugs not prescribed by your doctor is forbidden.

Crew and officers will treat each other with due respect, as equals with assigned responsibilities. It does no good to bully the crew or give the captain a bad time, when next voyage the situation may be reversed.

2.4 Ratings

In order that captains may better know the abilities of their crew, the following classification has been established:

2.4.1 Non-Rated

People who haven't been on the ship, or whose qualifications are otherwise unknown Ordinary Two day trips or one overnigher; follows rowing commands in proper terminology. Approved by one captain.

2.4.2 Able

Three voyages per year; shows fair knowledge of sail handling, knots, ground tackle, etc. in a practical exam, and be capable of

giving or translating commands. Needs approval of two captains.

2.4.3 Mate

Rating of able plus an emergency first aid course and the capability to independently operate the Gyrfalcon and to operate the Fyrdraca enough to get to port in case of a captain's incapacitation. Needs approval of two captains.

2.4.4 Captain

Rating of mate plus a current (taken within the last three years) first-aid course; the Coast Guard or USPS course; captaincy voyage; passage of a written exam; dues not more than one year in arrears. Three captains must approve this rating after a notice that this person is pending approval, has been posted.

Bosun, Cox'n, Lookout and Yeoman will be appointed from able or higher rated crewmen by the captain in charge of the voyage.

2.5 Demotions

- 1 If a person is one year behind in dues, and has been inactive for one year, his rating will be dropped to ordinary.
- 2 Persons can be demoted for malfeasance by three-captain courts martial after posted notice. A person so accused has the option of accepting a published notice of the demotion in lieu of the court martial. (equivalent to entering a "guilty" plea)

Ratings lost through a category (1) demotion may be restored by complying with the standards for that rating. Ratings lost through a category (2) demotion may be restored by the captains.

3. Equipment to Bring

3.1 Basic Necessities

- + Life Vest (PFD) - Required by the Coast Guard. If you don't own one, the captain must make sure there are enough company-owned vests for all Crewmembers who don't have one of their own. (Classy folks own their own, giving them another surface to decorate.)
- + Rowing Gloves - Cotton Painter's gloves or gardening gloves. The type with plastic dots on them are particularly good.
- + Water - A canteen if you have one, or plastic two-liter soft-drink bottles. (since we have bags designed to hold them) Figure on drinking a gallon on a full-day trip in hot weather. It's better to have more water along than you plan to drink, since it has other uses as well.
- + Sunscreen Lotion, hat, sunglasses - Only you are familiar with how you react to sunlight, so it's up to you to decide what precautions to take. Remember: we may get stuck out longer than planned, and there is no shelter on the ship, no trees to provide shade, and water on all sides to reflect even more sunlight onto you.
- + Food (on voyages longer than an hour or so) - Things which won't spoil without refrigeration: fruit, hard cheeses, hard salami, bread, etc.
- + Towel - A towel is the most massively useful object a Viking can carry. You can wrap it around an oar loom for additional padding. You can fold it into a pad and sit on it. You can hide from the sun underneath it. You can soak it with water and hide from the sun underneath it, and — if it still seems clean enough — you can dry yourself off with it. A Viking should always know where his towel is.
- + Knapsack or duffel bag (waterproof if possible) - To keep everything together. A popular way to stow knapsacks is to fasten the shoulder straps around a thwart, suspending the bag beneath the thwart.
- + Knife - Generally useful for a lot of things. Choose one for its practicality, not just because it's flashy.

3.2 Necessities for extended voyages

In addition to the above, the following are needed for overnight voyages:

- + Rain Poncho - Better safe than sorry.
- + Complete change of clothes - For when you get wet anyway.
- + Heavy Sweater - It gets cold at night.
- + Toothbrush, washcloth, toilet paper, etc. - For the sake of your fellow crewmen.
- + Quilt and/or Blanket - These dry more quickly than sleeping bags.
- + \$10 - \$15 - For incidental expenses and dock fees.
- + Insect Repellent
- + Flashlight - Preferably with a red filter and waterproof.
- + Extra rowing gloves - For when you drop the first pair in the bilge. Also, there's usually someone who needs to borrow a pair.

3.3 Options

- + Trash bag - You'd be surprised how much trash we can produce during a voyage.
- + Camera
- + Pad to sit on - The rowing benches are hard.
- + Bathing suit - In case you feel like swimming, or if you find yourself swimming whether you want to or not.

3.4 Food/Provisions

3.4.1 Edibles

- + Extra Water
- + Soft Drinks in cans or plastic (not glass) bottles
- + Bread (Rolls or homemade is better than sliced loaf.)
- + Crackers & snacks
- + Canned meat or corned beef
- + Hard cheese
- + Instant tea or coffee
- + Thermos jugs with hot tea & honey, hot chocolate, soup or stew
- + Summer sausage or hard salami

3.4.2 Utensils

- + Can opener
- + Eating utensils
- + Bota (wineskin)
- + Waterproof matches
- + Soup pot (1 per 2 - 3 bodies, if overnight shore stops are planned)

3.5 Clothing

The boat is open, so you won't be protected from the weather, and there are usually no convenient trees or hills to break the wind. Assume that whatever the weather is, it's going to be more so on the boat. Be prepared for out-of-season weather. It can be hot in November or bone-chilling in August.

3.5.1 Cold Weather

Layer your clothing so you can remove outer layers while rowing, and replace them while resting. Remember: wool will keep you warm even when it's wet.

3.5.2 Hot weather

Long loose clothing is usually preferable, for protection from the sun. Hats, visors or other headgear are also useful. A sweater, sweatshirt or light jacket is useful for evening cool.

3.6 What not to bring

Paper bags, cardboard or glass containers, potato chips (These get wet or break, and can clog the bilge pumps.) heirlooms, expensive watches, any book you respect (Bring a disreputable book, such as this one.)

Expect everything to get wet. It may not, but assume that it will.

4.

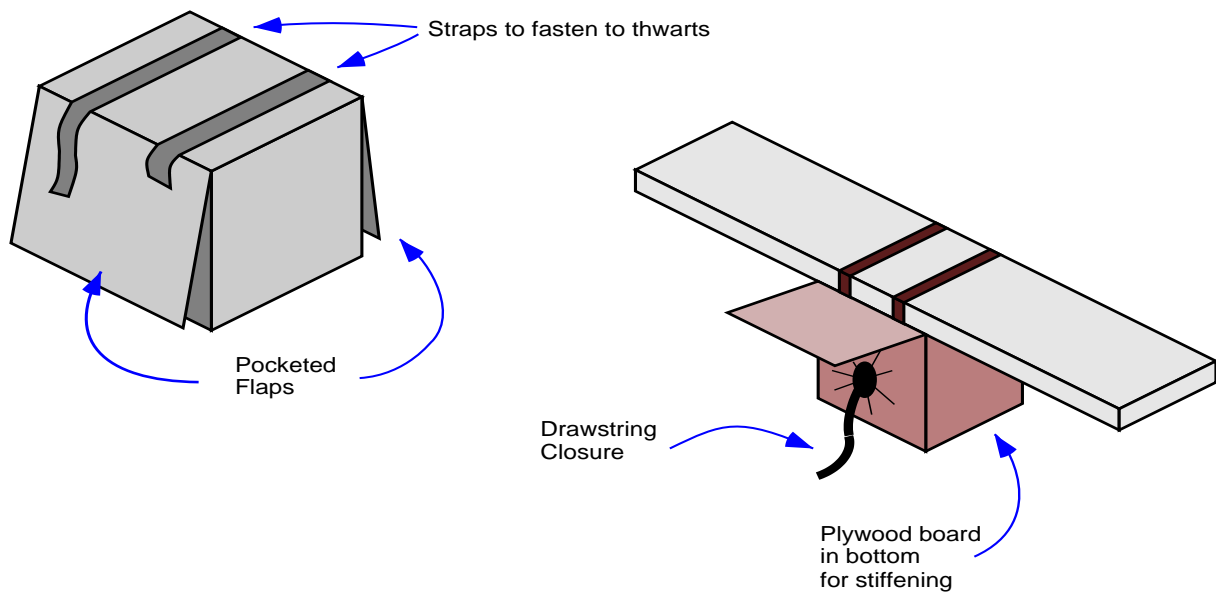
Stowage

The Bos'n supervises stowage aboard our vessels, however it is everyone's responsibility as well. When a piece of equipment is needed, it is usually needed immediately; we don't always have time for a leisurely search. When it is not needed, it may find itself in the way of something else. If you are not using something, put it away. It may not seem urgent, but if you are suddenly needed to perform some task, you may not have time to go back and stow something correctly.

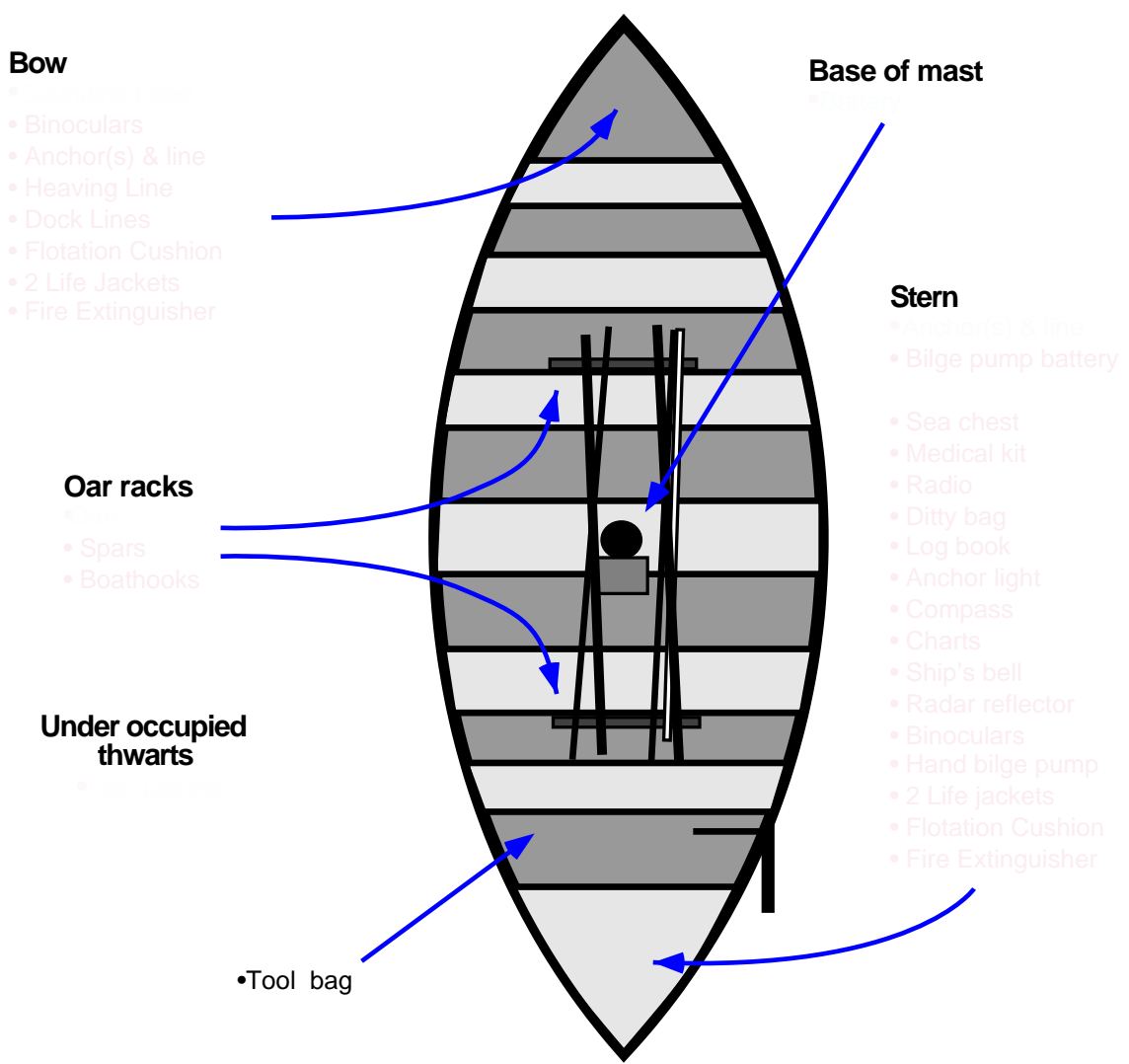
4.1 Personal Gear

For normal day trips a small knapsack or other small simple seabag will suffice to hold all of your personal gear and provisions. If it has shoulder straps, they can be used to suspend it beneath a thwart: out-of-the-way and out-of-the-bilge.

On more extensive voyages (overnighters or multi-day events) the



use of Bork-bags is recommended. These were developed by James Lande (Bork) to facilitate stowage aboard the Fyrdraca. A Bork-bag is an 11" x 11" x 11" cubical bag with straps attached to the top, allowing it to be slung beneath a thwart. Pocketed flaps covering openings at front and rear help keep the contents dry while allowing easy access, and provide convenient storage for small items. They should be made from a durable water-resistant material such as tent-canvas. Typically, one will suffice to carry clothing and provisions for an overnighter, while 1Ω to 2 will hold enough for an extended voyage. Bork-bags are also a good place to store your sailing gear at home, so you can find it all in one place when you plan to go out on the ship. (Remember to remove any perishable items from the bag before you throw it in your closet, though.)



4.2 Ship's gear

The Bos'n is in charge of insuring that the ship's gear is well stowed and accessible. (This is not a contradiction.) Woe betide the Crewmember who leaves something loose so that it goes overboard, or buries a critical piece of gear under their blanket roll.

4.3 Stowing everything away when done sailing

When all is said and done, and the voyage at an end, it still isn't done. Get your gear to the car, then help strip the ship. You are not using it, so put it away. Do not sneak off and leave the hard work for the faithful few. The captain can't leave until everything is squared away so the next captain and crew can find it. If everyone pitches in, the job goes quickly. If you short people on this phase, you may just end up on the short end yourself when you next want to go out. Do it right each time and it will be right when you need it.

5.1 Ready the ship for a voyage

Before any voyage, the captain must insure that each of these items has been performed:

- Give intro to ship — point out bow, stern, port, starboard, mast, head (the one at the front) and other salient features of the ship.
- Assign watches
- Check equipment (see below)
- Review rowing commands (§ 5.5)
- Explain safety procedures

The captain must insure that each of these pieces of equipment has been fetched, checked, or tested, as appropriate:

- Longship — one (1) Viking longship, 12-Oar class, floating
- Oars — one per anticipated rower, plus a couple spares
- Water — a gallon per crew member per day in hot weather
- Sail, sheets & braces — sail bent to the yard
- Anchor & Line
- Boat Hook
- Bilge Pump or Bucket
- Two Dock Lines — an absolute minimum
- Safety Equipment:
 - + PFDs (Life Jackets) — One/Person + 2 throwing cushions. Make locations known to the crew.
 - + 3 Flares (NOT expired)
 - + Weather Radio & Battery (test it)
 - + Anchor & Masthead Lights (test them)
 - + 2 Fire Extinguishers — Mounted in brackets, examine gauges to be sure they're in operable condition.
- Navigational Equipment:
 - + Charts
 - + Compass
 - + Log Book, Writing implement & Timepiece

5.2 Launching

The Fyrdraca requires a travel-lift or crane to launch her. The lifting straps should be run so that they pass across the points reinforced by the 1st and 5th thwarts (indicated by an arrow marked on the knees).

Make sure that the weep holes in the garboard strakes are properly plugged. After the winter, the ship will take about 24 hours to swell tight, so you'll need to make some provision for leaving her in the slings or having her pumped out.

5.3 Docking

When bringing a Viking vessel into dock, there are three main points to remember:

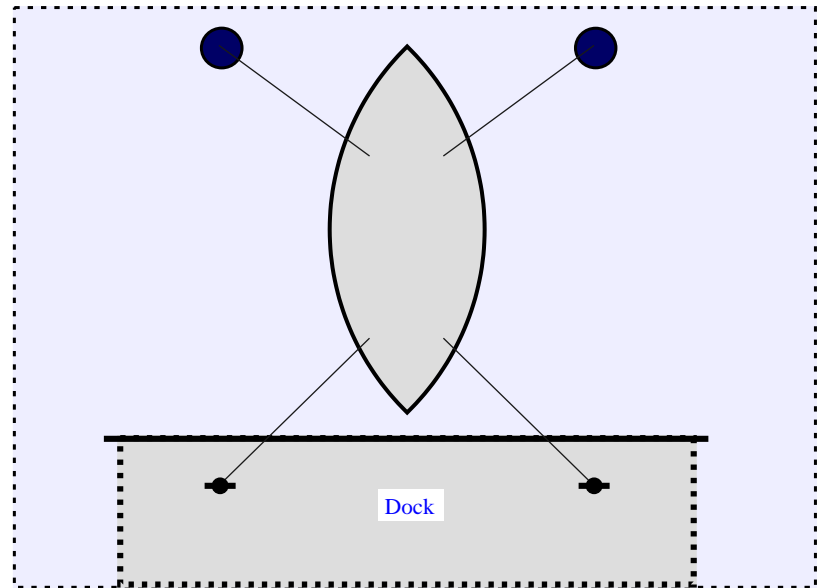
1. When possible put the port side to the pier. This avoids fouling the steerboard on pilings or planks. (It's also why it's called the port side, remember?)
2. It is almost impossible to dock under sail. Even large merchant vessels had oar ports, and we have brought the Fyrdraca in, in calm conditions rowed by two men and a boy. Oars are sure and forgiving.
3. When you're at the oars, pay attention. Commands come quickly in crowded harbors. When the order to ship oars is given, do it fast and do it right. Captains have a tendency to shave things close.

Once the bowmen have a hold on the pier, pilings, or such, it is time to set the docklines. **Docklines are never attached to the ship's cleats.** The cleats are for running rigging and the steerboard. Instead, take two round turns over an appropriate thwart and then two half-hitches (§1.4.6). Run the line over the gunwale to the piling or cleat on the pier. Alternatively: throw the eye over the piling and adjust the line from inboard.

When docking, you must take the tide into account. Boats have been mashed into pilings, trapped and sunk under docks, or left hanging high and dry by their lines for neglect of this.

Proper tying-off of the ship is a matter of experience and judgment, but the following procedures will give you something to go on.

5.3.1 Four point system



Four Point System

5.3.1.1 Low tide

Make sure the tide is, in fact, at low. Leave no more than a foot of slack in each line, and make sure the ship doesn't come near pier or pilings.

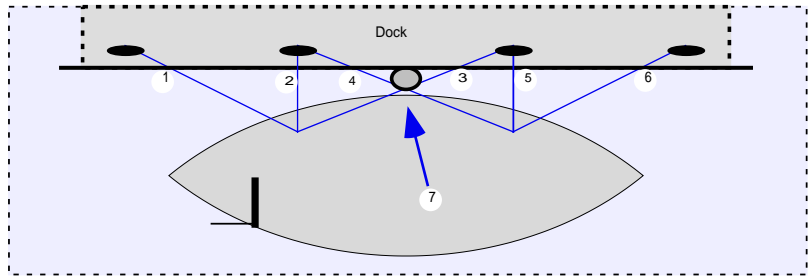
5.3.1.2 High tide

Make sure it's high. Leave plenty of slack. Then perform the shove test: shove the vessel towards all four pilings — and any other fixed objects — and make sure it doesn't come closer than one foot to them.

5.3.1.3 In between

Use your judgment, based on this information. Good luck.

5.3.2 When docked alongside



Please note: Not all of these lines are required in every situation.

- | | |
|----------------------|--------------------|
| 1) Stern line | 5) Bow breast line |
| 2) Stern breast line | 6) Bow line |
| 3) Stern spring line | 7) Fender |
| 4) Bow spring line | |

A Vessel Tied Six Ways

As the occasion demands, run out bow lines, stern lines, spring lines, breast lines, and fenders. Unless conditions allow two anchors to be set for a four-point system, a watch will have to be kept for the tide.

5.4 Operational stations

Operating under oars in normal circumstances we should have a captain or officer at the con, a lookout at the bow (or the best location for visibility), a steersman at the helm, a yeoman at the log, and a cox'n cheerily calling the stroke. The normal watch under oars is divided into 3 watches: 40 minutes rowing and 20 minutes resting. There is constant rotation of the watches: if you're on the first watch on the starboard oars you will be relieved by the third watch after 40 minutes. After a generous 20 minute rest period (during which you might serve as lookout or steersman) you get to relieve the second watch at the port oars. Repeat ad infinitum or until arrival. The duration of the watches may be varied to suit the situation, but 40 min. on and 20 min. off seems about optimal, and is easier to remember since it puts everything on an hourly cycle.

starboard	A	A	B	B	C	C	A	A	B	B	C	C
port	B	C	C	A	A	B	B	C	C	A	A	B
	1 hr.			2 hr.			3 hr.					

5.4.1 Lookout

We are required to maintain a proper lookout whenever the ship is not moored. The lookout is stationed at the bow, and reports to the captain anything which may affect the conduct of the voyage — in particular dangers such as submerged objects, or approaching vessels. In unusually tight situations, the lookout may be permitted to issue rowing commands in order to maneuver the ship precisely. The lookout should be aware of the full 360° around the ship. Vessels astern can be just as dangerous as vessels ahead.

The lookout is particularly important when the sail is up — since it usually obscures the view from the helm — or when the rest of the crew is distracted by something such as un-fouling the sail. When you are lookout, pay attention to where the ship is headed, no matter how exciting things get on board. It's no fun to be so distracted by one disaster that we blindly sail straight into the next one. Most serious accidents are caused by something minor which is allowed to get out of hand.

5.4.2 Helm

The helmsman maintains the course specified by the captain, and also keeps a general lookout. The ship is steered — as much as possible — with the tiller, but this may be supplemented by rowing commands when the tiller is insufficient to maintain course, or when it is not set at all.

5.5 Rowing and rowing commands

The regular stroke is relatively light and done mostly from the upper chest and arms. It is a light, quick, short, almost choppy stroke. The ship relies on the cumulative, coordinated power of the rowers, rather than the sheer strength of any individual rower. You are neither playing Ben Hur nor digging for oysters on the bottom. Your oar should dip only to its natural buoyancy point, the blade just immersed. Keep your eye on the cox'n and don't go wandering off on your own beat.

Unless the captain specifies otherwise, the cox'n is the sternmost rower on the port side. If no one on the port side is rowing, the cox'n is simply the sternmost rower. When the situation changes — due perhaps to an entire side of the ship holding oars, or the current cox'n pausing to be relieved — the appropriate person assumes the role of cox'n without an explicit order being given. Everyone is assumed to know this rule, and expected to follow the correct rower.

To lose control of your oar in the water (Catching a Crab) can result in a broken oar and a broken strake. The oar is caught by the stream of water flowing past the ship, and drawn down and back, levering against the oar-port with bone-crunching force. This is usually caused by inattention on the part of rowers who have

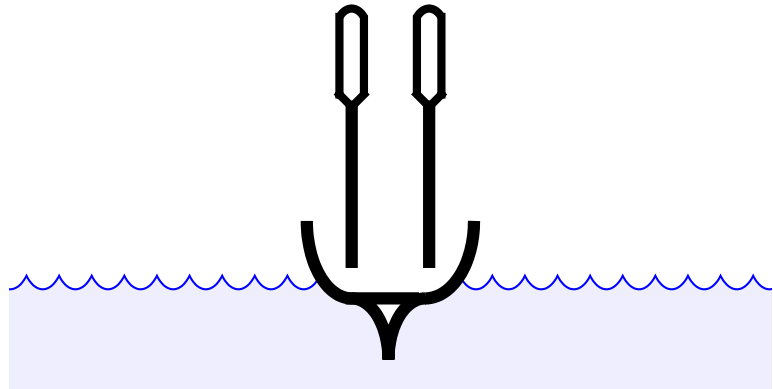
allowed their oar to drift into a position allowing it to be caught this way, but it can sometimes be caused by a warped oar. If you catch a crab you should immediately yell '*Crab*' and throw your body over the loom of the oar to force the blade up out of the water. When the other rowers hear the cry '*Crab*', they should immediately hold oars and await further commands.

The best way to avoid catching a crab is to hold your oar slightly tilted so that the upper edge is slightly forward of the lower edge. This causes the flow of water to have a tendency to lift the oar out of the water rather than draw it down. If your hands get tired while rowing, don't hesitate to change your grip on the oar as frequently as you feel necessary, if that helps. If you find yourself out of sync with the other rowers, do not attempt to catch up with them, you will probably only foul yourself up worse; instead: skip a stroke and join in again when everyone else has caught up to you. If you notice that you suddenly are having much greater difficulty staying synchronized with everyone else, it is probably the first sign that you are getting tired. Don't hesitate to ask for relief if you become exhausted. There is usually someone else willing to row, and if there's not, it's probably time for the entire crew to take a rest.

5.5.1 Commands

5.5.1.1 Raise oars

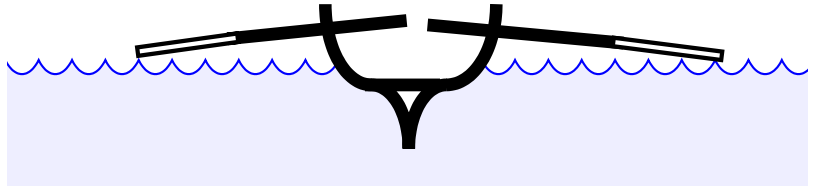
Take the oars down from the oar-rack, and raise them to a vertical position with the blade at the top, the rowers standing.



5.5.1.2 Set oars

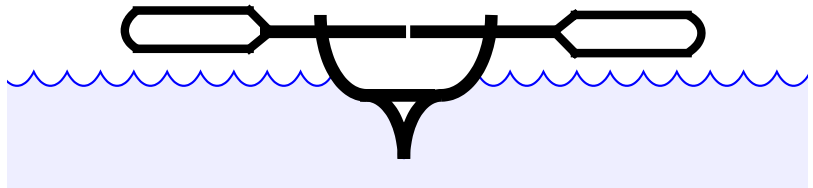
Place the blades of the oars in the water, holding the handle securely and keeping the blade feathered. Push the oar away from

the ship so the handle is beyond the gunwale, pass the handle through the oarport, and draw the oar inwards to rowing position.



5.5.1.3 Hold oars

Press down on the loom to raise the oar out of the water, and hold it there.



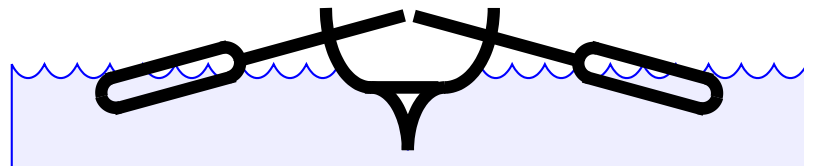
5.5.1.4 Give way

Row forward. This command is properly given in three parts:

Captain to crew: 'Stand by to Give Way'

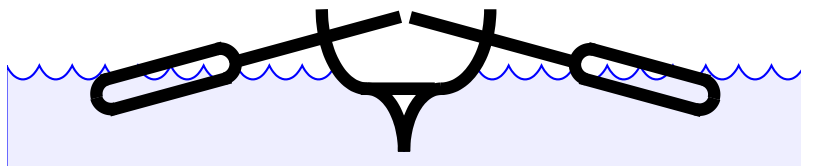
Captain to coxswain: 'Give Way'

Coxswain to crew: 'Ready, Stroke, Stroke, Stroke . . .'



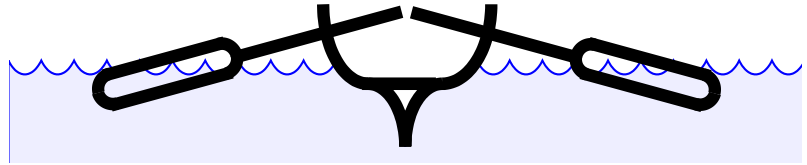
5.5.1.5 Hold water

Raise the loom of the oar, dipping the blade in the water — leading edge up — and hold it still. This command is used to slow or stop the ship, or to keep it from drifting when stopped. If the order is given when the ship is stationary, you should immediately drop the blade all the way into the water, but if the ship is moving, dip only the tip of the blade in the water, and gradually lower it the rest of the way in only as far as you feel you can while still maintaining control of the oar. If you drop it in too fast, the momentum of the ship may overpower your grip, resulting in damage to the oar, the ship, yourself, or fellow Crewmembers.



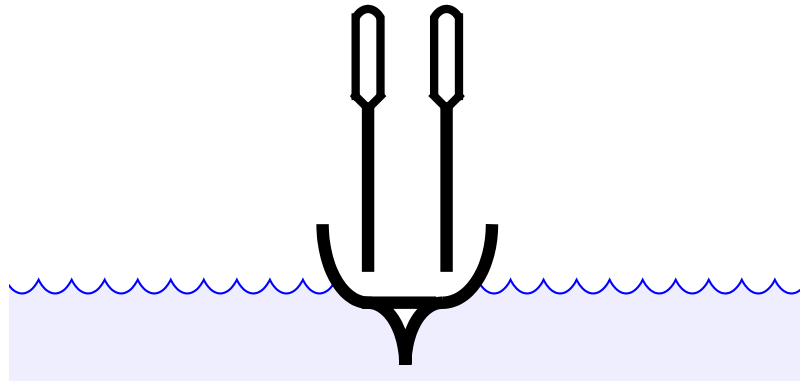
5.5.1.6 Back water

Row backwards, pushing the oar away from you instead of pulling it towards you. To turn the ship in place, one side may row forward while the other backwaters.



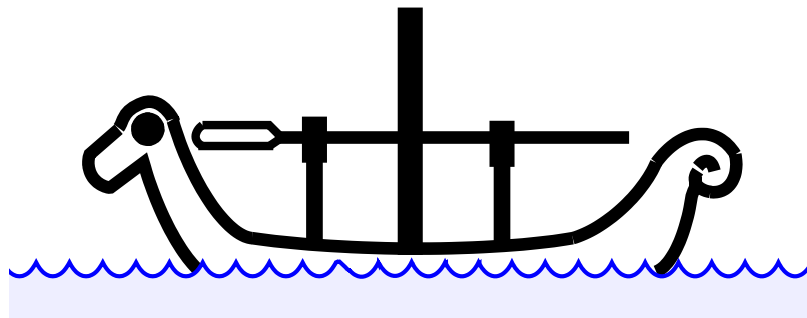
5.5.1.7 Ship oars

Bring the oars inside the boat. This is the opposite of Set Oars. The end result is that the oars will be in the same position as after Raise Oars.



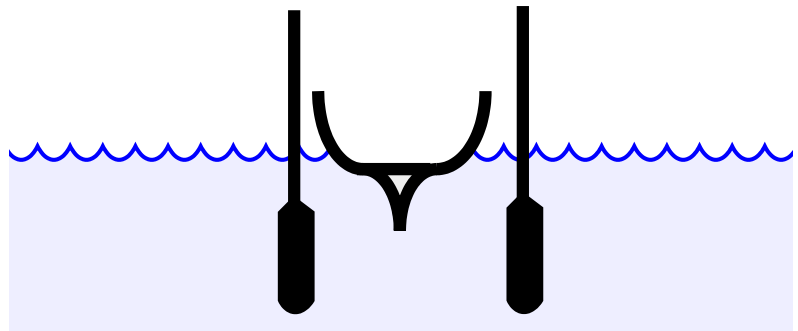
5.5.1.8 Rack oars

Lay the oars on the Oar-racks, blades toward the bow.



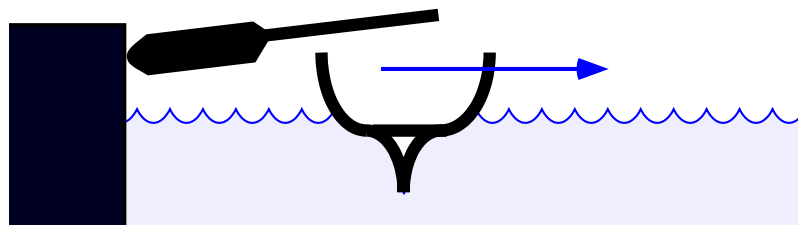
5.5.1.9 Point oars

The crew stands and handles the oars like canoe paddles. This is useful for maneuvering in tight places.



5.5.1.10 Shove off

Push the boat sideways away from the dock or shore until clear of obstructions, using boathooks or oars as poles.

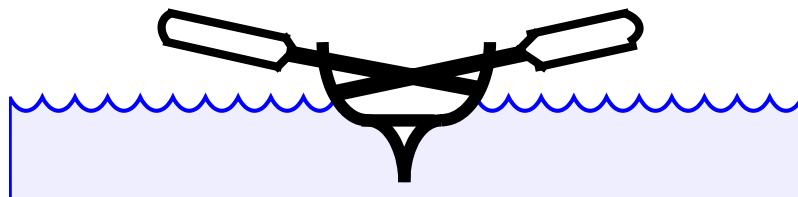


5.5.1.11 In bows

The two rowers nearest the bow ship their oars and prepare to dock the boat. This usually means getting one or more boathooks off the Oar-rack, preparing a dock line, or untangling the anchor line.

5.5.1.12 Frog oars (or) Fudge oars

Draw the oar inwards until the handle reaches the inside of the opposite gunwhale. Brace the handle there, as low as it can conveniently reach.



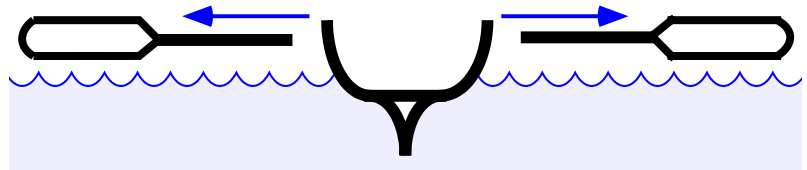
5.5.1.13 Cramp oars

Draw the oar partway in but continue rowing. This is used to row through narrow channels. If in doubt as to whether the ship can fit through anyplace with cramped oars, point the oars instead.

5.5.1.14 Throw oars

Shove the oar outwards with enough force that it will continue until

it is clear of the ship. Do not attempt to hang onto the oar. This is used in emergencies where the ship is coming up against a fixed object or another boat is coming up alongside us, with enough force to endanger our ship or crew. Since this order is used in critical situations, it must be performed quickly. The oars are made of wood; they will float. We can go back and pick them up later. (What's that? You wonder how we can go back if we've thrown our oars overboard? That's why we brought along spares, remember?) Under no circumstances is this to be done unless you are so ordered by the captain.



5.6 Sailing stations and commands

When under sail the entire configuration of the crew changes. The captain or an appointed sailing master has the con. The lookout must make sure that the sail does not obscure their view. The port and starboard sheets are each handled by individual Crewmembers. The braces are handled by an additional (or sometimes two additional) Crewmembers. Two people attempting to adjust the yard simultaneously can lead to a tug-o-war, so one person handling both braces usually works out better. A pair of crew handle the halyards when hoisting or furling the sail. Steersman and yeoman are the same as under oar.

The overall trim of the ship is critical while under sail. If everyone crowds to the bow for a good view, or to 'look heroic' she'll mush down and lose steerage. If everyone is in the stern, she won't reach well. With 1,500 lbs. or more of ballast (crew) she can be sailed flat, with minimal heel. This — under normal conditions — generates maximum power in the sail and minimum leeway at the keel. Under sail, they also serve who only sit, or even sleep, as long as they do it in the right place.

5.6.1 Sailing theory

The propulsion of a vehicle with one solid wing and several variously-shaped semi-rigid wings at the interface of two turbulent fluids of different densities is enough to cause vast numbers of folks to expend many millions of dollars to gain 1/10th of a knot, so let's skip that approach.

A keel is like an ice skate: it goes a lot more easily forward or backward than it does sideways. When the keel does slip sideways, that's called leeway, and all keels do it. At any point of sail other than a dead run, you're going to slip down a little to the leeward.

A sail is like a kite or an airplane wing. On a dead run it just catches

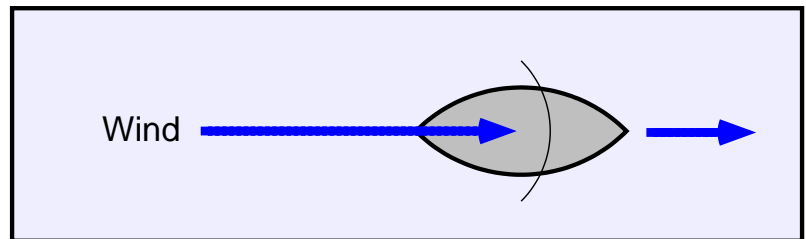
the wind and uses the energy to push itself along. When running on a reach the air flows across the sail instead of pushing it, which develops lift as in an airplane's wing. This milks more energy out of the wind, enabling the vessel to sail faster than on a dead run. (This is one case where a straight-line is not the shortest distance between two points; it is theoretically faster to take a longer zigzag course — called jibing — to avoid running.)

5.6.2 Points of sail

The various orientations of the wind direction relative to the bearing of the ship are called points of sail. The major ones are:

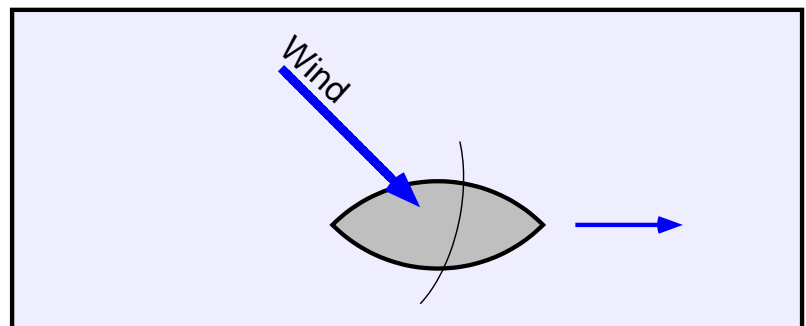
5.6.2.1 Dead run:

The wind is coming from directly astern. The sail is held at a right angle to the wind.



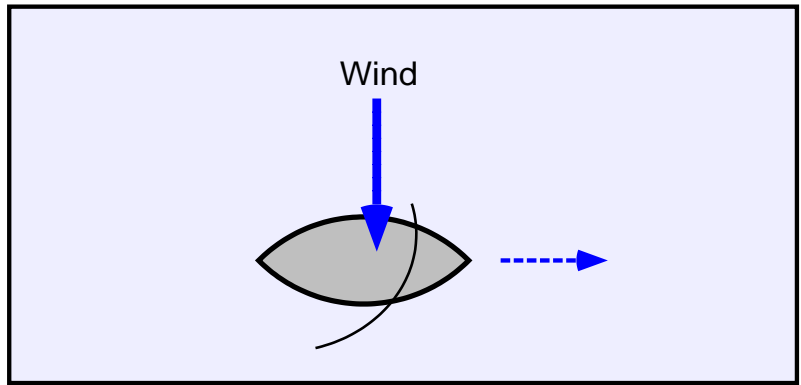
5.6.2.2 Broad reach:

The wind is coming from about four points off of dead astern. Some lift is generated by the flow of the wind across the sail, as opposed to directly into it.



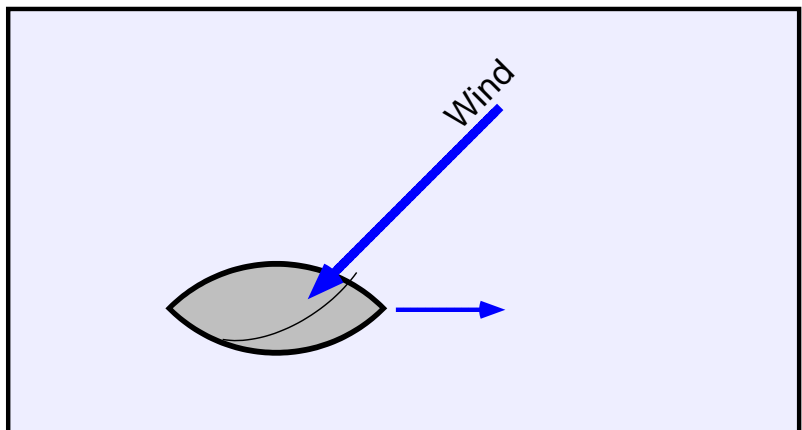
5.6.2.3 Beam reach:

The wind is coming from the side of the ship. The sail is held oblique to the wind. The shape of the sail becomes important since most of the thrust is being generated by lift.



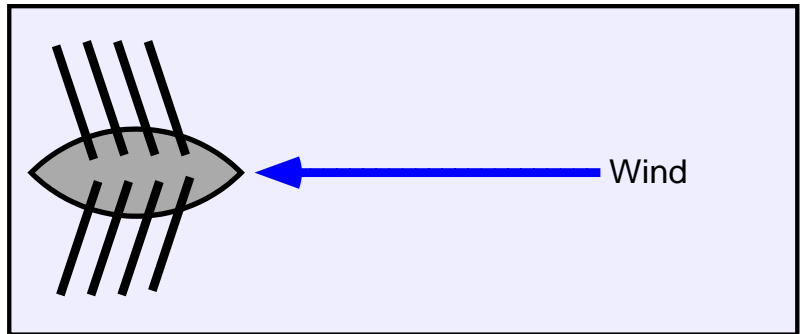
5.6.2.4 Close reach or Close hauled:

The wind is coming from ahead of the beam. The shape of the sail becomes critical since we're trying to eke out every last ounce of thrust from the wind. The Fydraca does not sail well with the wind ahead of the beam. The use of a betias pole to keep the leading edge of the sail taut is advised.



5.6.2.5 Under oars:

This is our usual 'sailing' configuration. Hoisting sail is a sure means of getting the wind to change direction to be from directly ahead.



5.6.3 Beaufort scale

Among sailors, the Beaufort Scale has long been the conventional standard for judging the force of the wind. It correlates wind velocity with the behavior you may expect from the sea, ships, and — for the sake of completeness — various objects on land (not that they are of major concern to us).

A copy of the ultimate, complete more-information-than-you-can-possibly-use Beaufort Scale may be found at the end of this manual.

5.6.4 Emergency commands

When things go wrong under sail, they go wrong fast. Seconds count.

- | | |
|------------------------------|---|
| <i>Uncleat your sheet(s)</i> | Release your sheet from the cleat and keep the sheet in hand or with a single round turn for control. |
| <i>Let go your sheet(s)</i> | Let the sheets go, keeping only the bitter end of the line. This lets the sail fly and takes the pressure off the mast. |
| <i>Let your sheet(s) fly</i> | Let go the bitter end. |
| <i>Cut the sheet</i> | With a knife, fast, because it's jammed up and you are in peril. |

This same series is applicable — in extreme circumstances — to the halyards. Eg.: *Uncleat the halyards*, *Let go the halyards*, *Cut the halyards*. These command are rarities, but all of them have been used in our experience.

5.7 Point system

Bearings are indicated by the point system: 32 points to a full circle, 4 points to a 45° sector. Please study the diagram below, and learn the principles behind these names.

We use this system because: First: until the mid-20th century, all

compasses were marked into 32 points. A fragment of what may well have been an actual Viking navigational instrument was notched in one-point increments. Second: in the crowded conditions in which we usually operate, exact bearings are a matter of necessity and safety. There's an important difference between the general description 'Two boats coming from starboard.' and 'One boat closing broad on the starboard bow and one boat closing on the starboard quarter.' In a tight situation this difference becomes more than just a matter of being able to use a bunch of neat-sounding nautical jargon.

5.8 Rights of way

The 'Rules of the Road' apply at any time the danger of collision with another vessel exists. This means any time two vessels are on courses which will bring them close enough that it is not certain that they will pass safely. They do not apply to vessels whose courses are carrying them away from one another, or are so far apart that actions by either or both of them cannot produce imminent danger of collision. One rule of thumb for determining the danger of collision is to observe the bearing of an approaching vessel. If its bearing does not change, you are on a collision course, and must be prepared to take evasive action if the situation doesn't change before you get close to it.

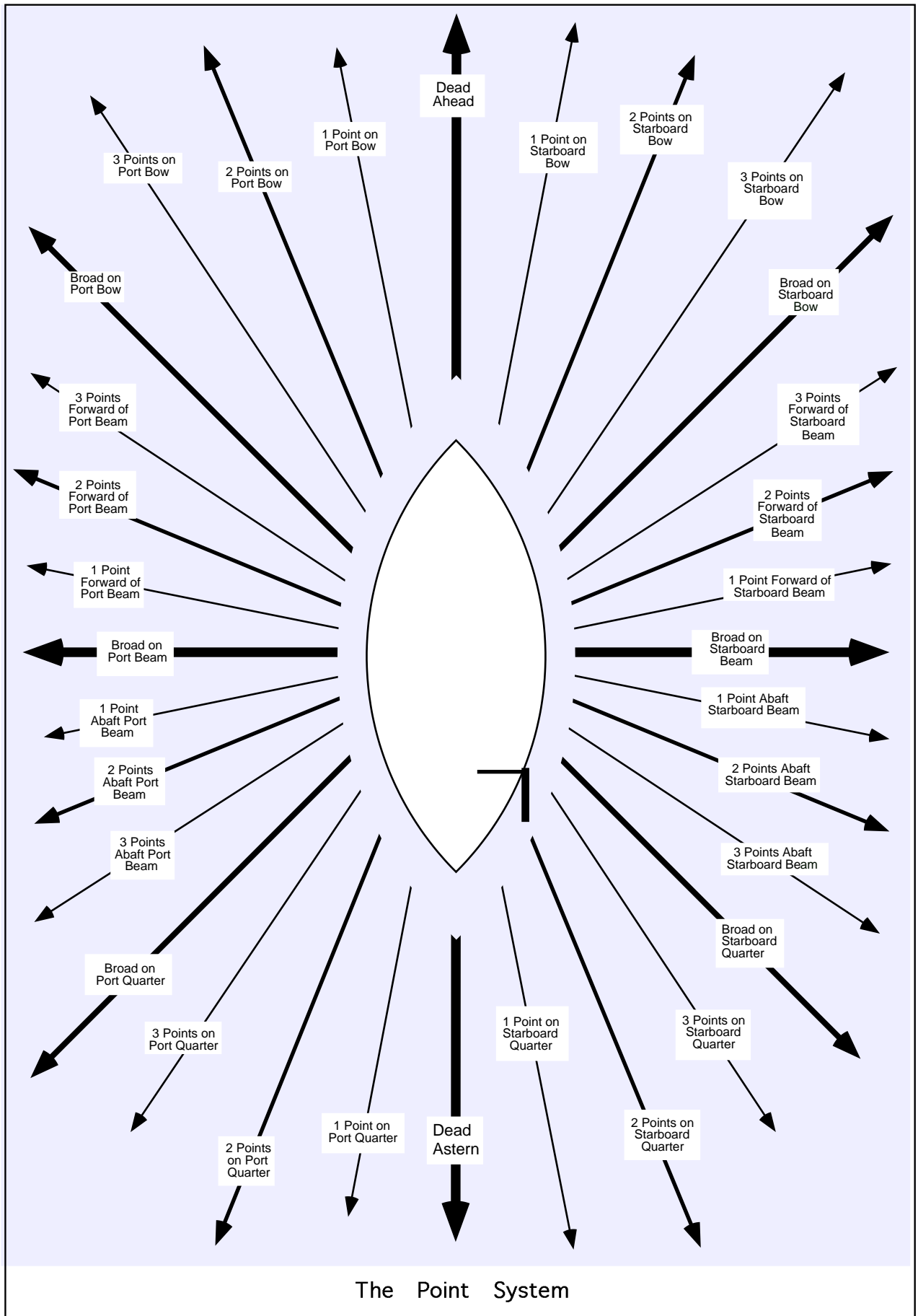
5.8.1 Approaching a power-driven vessel

Sailing vessels have right-of-way over power driven vessels except: when overtaking a power-driven vessel from behind, or when the power-driven vessel is restricted in its ability to maneuver because it is in a narrow channel, or has fishing nets deployed. You are approaching a vessel from behind if you are approaching from within six points of dead astern. If approach from directly abeam the other ship, or even up to two points abaft the beam, this is a crossing, not an overtaking situation. At night, you are approaching a vessel from behind if you can see its white sternlight, and in a crossing situation if you can see its colored sidelights.

5.8.2 Approaching a sailing vessel

When two sailing vessels approach one another, if they have the wind on opposite sides, the one with the wind from the port side yields to the other. If they have the wind on the same side, the vessel to windward must yield to the leeward vessel.

This — of course — is how things are supposed to work. In actual practice, any vessel over 65' has, and will take the right of way from smaller vessels. Steer clear! De Big Boat have de Right-o-way.



The Point System

5.9 Use of Mast and Anchor Lights and legal requirements

For night operation, the Fydraca is equipped with a 12-volt three-way masthead running light, and a self-contained anchor/under-oars light. When the ship is moving under oar power at night, the white anchor light must be set on high-intensity, and hoisted high enough up the forestay that it is not obscured by the figurehead. The three-way masthead light is required when the ship is under sail at night, or may be used in place of the white light when under oars. At anchor at night, the white light is to be set on low intensity, and displayed in the same manner as for rowing.

The Gyrfalcon (being under 7 meters long) is required to carry a 'white electric torch or lantern displayed in time to prevent collision' when operating at night.

5.10 Use of the Faering

The Gyrfalcon is used in two modes: either as an afterboat (dinghy) in consort with the Fydraca, or independently.

5.10.1 As an Afterboat

In the role as an afterboat the faering is the responsibility of the captain. He will supervise the use of the faering and its crewing, and exercise judgment regarding weather conditions and suitability to the task assigned. The ship and faering are a joint responsibility in this case, and the faering does not require a captain onboard.

5.10.2 Towing

The primary painter when under tow should be led low through the lower hole in the stem. A secondary (slacked) painter may be led higher up to serve as a backup. The painter should be about 50 feet long, but the actual towing length will vary according to conditions. The shorter the painter, the less yawing you are likely to get, but the chance of the afterboat running into your stern increases. When under tow it should be constantly checked and adjusted as conditions change.

A stern-down trim, effected by loading backup water containers (full) and other material into the stern of the boat is advantageous to prevent yawing, as is a neutral-buoyancy low-drag sea anchor (a 2-liter plastic soft-drink bottle filled with water) dragged from the stern painter.

Oars and extra gear should be tied down or kept on the ship.

At anchor, the faering will normally hang aft of the ship, to leeward. Conditions of wind and current may, however, conspire to bring the two vessels together, to the mutual detriment of each. This usually occurs at 03:00 in the rain. If conditions are mild the two may be rafted together, with a goodly quantity of well-placed fenders

between. If things are a little rougher it may be fastened to one or two projecting spars to hold it out away from the hull.

5.10.3 Shore runs

When used as a dinghy to ferry people ashore, given good conditions, the faering can leave with five crew and be rowed back by one. In this manner a crew of fifteen (leaving two on watch on the ship) may be ferried ashore in two and a half round trips. Once ashore, the faering must be secured against all natural or human harm, or an additional watch set for it. Setting a faering watch has the advantage of providing the ship's watch with transportation if needed.

5.10.4 Independent operation

A captain is required for all independent voyages of the faering. Since she is transported on a 'dry' cradle and trailer, the faering requires at least four people to launch her from the trailer. Therefore a crew of four or five will probably be the norm for independent operation.

All weight should be removed when lifting the faering onto or off of the trailer. Get help if a launch is difficult, and hand carry the faering to the water's edge.

Caution Never get the trailer in the water; it is not made for it.

5.10.5 Boarding and safety

The gyrfalcon has very low initial stability ('to the wrong side of a canoe') which means that if you board it wrong, or make a wrong move, you (and probably everyone already on board) will be going for an unexpected swim. She does, however, grow stiffer as more crew board her. When boarding, step to the center (on the keel, not the thwart) keeping your weight low and balanced. Move carefully to your assigned position and sit down.

Do not overload the boat. A five-person maximum (with no heavy equipment) is all she will take in good to moderate conditions. If the weather picks up, four is more sensible. Three is the standard crew for rowing, and the minimum for sailing. When used as a dinghy, one can row it back to the ship.

With all crew seated and weight stowed low, any change of position should be announced beforehand and carried out slowly and deliberately. Do not stand up!

A life vest will accompany each Crewmember, and will be worn except in special situations, such as invasions and exhibitions. The faering must also carry at least one throwable flotation cushion, three flares, and — at night — a functioning flashlight or lantern.

5.11 Trailering the faering

5.11.1 Packing

Do not overload the rig. Keep any heavy objects in your car (on the floor, where you have no passengers) or in the stern of the faering. The tongue weight is about 170 pounds. Stern loading will help to keep it reasonable.

The motion and vibration of towing causes chafing, so oars, spars and other items must be tied down and cushioned. Light objects such as life jackets and fenders must be either tied down or stowed in the car to prevent them from blowing away.

Before attempting to tow the faering, be sure to check each of these items:

- + Trailer Tongue attached?
- + Safety Chains attached?
- + Electrical System Connected: Test running lights, brake lights and turn signals.
- + Mast Lowered?
- + Boat tied down?
- + Red Towing Flag attached to stern?
- + Trailer registration in your possession?
- + Lock Trailer Hitch and don't lose the key.

5.11.2 Overheating

Since your engine is working harder pulling the rig, it's also running hotter. Before you leave, be sure your radiator is full and the cap secure. (It would also be wise to check your oil, battery, transmission fluid, tire pressure, etc. while you're at it.)

If you have time for it, you should make a mid-trip stop to let things cool down, check under the hood, and give yourself a break. Inspect the rig while you're at it, and check the trailer hubs to see if they're running hot from any bearing trouble.

If you suspect that your engine is in danger of overheating, you should run the car's heater. Since it works by drawing heat from the engine coolant, it will assist the radiator in keeping the engine temperature down.

5.11.3 Potholes, bumps and railroad tracks

Because of the trailer's small-diameter wheels and its light cargo, the whole rig tends to fall into depressions in the road, then launch itself into the air. Keeping your speed down on unfamiliar back roads or potholed highways gives you a chance to steer around an obstacle or slow down to minimize the impact, preventing damage to the trailer or the faering.

Railroad tracks are the worst. If you must cross a badly-graded railroad, put on your emergency blinkers, come to a complete stop, look both ways and — if it's clear — ease the rig across the tracks

6.1 Hypothermia

Crews get cold. Crews get wet. Crews get hungry. When they get cold, wet and hungry, they become potential victims of hypothermia, which in its earlier stages dulls one's judgment, leading to mistakes which makes the crew colder, wetter, hungrier and exhausted. Eventually it can kill you outright, or cause you to make a mistake that can kill you.

It is perhaps as big a danger as drowning, but a far less obvious menace. The great danger of hypothermia is that the victim is usually unaware that anything is happening to him. As one becomes more affected by cold, simple tasks take longer to accomplish or even understand.

The onset of hypothermia varies widely with individuals. Generally speaking, somewhat overweight people are less quickly affected than thin, wiry ones, but there are enough exceptions in either direction to make broad statements risky. Only by keeping warm and observing the actions of fellow Crewmembers can one spot the first slowing down of reactions. If one's boat is spilled, unless it can be righted quickly, it's best to conserve one's body heat by not struggling without reason. Clothing that is not actually dragging one down will serve to retain some heat even when soaked - and it may well hold air and thus buoyancy as well.

6.2 Heat stroke and salt loss

Normally when the body is overheated, excess heat is eliminated through the cooling of the body surface by evaporation of sweat. In profuse sweating, however, large quantities of salt are lost and the essential salt balance of the body may be upset. Under conditions of high humidity and when tight or heavy clothing is worn, the cooling of the body by evaporation may be interfered with, resulting in heat exhaustion, heat cramps, or heat stroke.

Treatment for heat cramps should include giving the victim saltwater solution. Relief of cramps may also be obtained by massage of the cramping muscles, using firm pressure rather than vigorous kneading, and by applying warm, wet towels to the painful muscles.

In mild cases of heat exhaustion the patient usually feels tired and

may experience headache and nausea. In severe cases perspiration is profuse, weakness extreme, and the skin is pale and clammy. The patient's temperature is usually normal or subnormal. Vomiting may occur. Unconsciousness is rare, but often the patient will be unable to stand. Painful cramps in leg or arm muscles may begin suddenly and continue for as long as 24 hours.

Until proper medical help can be obtained, allow the victim to rest in a cool location. Give him cool salted water to drink (one teaspoon salt per quart of water).

In contrast to heat cramps and heat exhaustion, a person with heat stroke usually has a high fever (105° F. or higher), and no evident perspiration. His skin is hot and dry. Symptoms include headache, dizziness, irritability and seeing objects through a reddish or purplish haze. The patient may suddenly become unconscious, the pulse is full and strong, breathing is noisy like snoring, and there may be convulsions. This is a life-threatening situation.

The first efforts in treatment of heat stroke should be to reduce the fever rapidly. Undress the patient and put him to bed in the coolest available area, possibly in the water if this is feasible. Sponge his body freely with water or alcohol to reduce his temperature to 102° F. or less. Vigorous efforts to reduce fever should be stopped when the body temperature reaches this point (102° F.), and the patient should be observed for 10 minutes. The temperature may continue to decline or it may rise again. If it starts to rise, renew sponging cautiously. Damp sheets or blankets may be placed over the victim to maintain the temperature at or below 102° F.

Give no stimulants such as coffee or tea. Administer salt solution, as soon as it can be tolerated, provided the patient is fully conscious. (One half teaspoon of salt in a glassful of water every 15 minutes for 3 hours.) Arrange transportation to a hospital as soon as possible.

Caution: Do not attempt to force an unconscious person to drink anything.

6.3 Sudden unexpected bad weather

There are two kinds of heavy weather to consider - heavy weather that you expect - and can avoid being caught out in - and the sudden unexpected squall. Sooner or later you're going to find yourself caught out when the wind is stronger than you'd like it to be.

Squalls can be unnerving simply because they give you little time to prepare. Even the fastest moving squall line will nevertheless allow you the few minutes you need to get your boat in shape to handle it. Remember too, that a fast-moving squall has one great virtue - it's over in a hurry. Often a squall will last only a few minutes, seldom more than half an hour.

The first step when it becomes obvious that you're likely to be caught in a squall, is to have all hands put on their lifejackets. Not

only should every Crewmember have a lifesaving device of proper size, but everyone should wear it whenever there's any threat of bad weather. A good lifejacket will give the Crewmember confidence, conserve body heat, and absorb some of the bumps that happen in rough weather.

The second step is to drop and furl the sail securely, until you know the strength of the advancing storm. A serious squall can pack winds up to 60 miles per hour or stronger.

Secure all loose equipment, have a bailer or pump ready, and have the crew keep their weight low in the boat. If you're upwind from a beach or shore, it would be well to put your anchor out and set it, to avoid being blown ashore.

6.4 Man overboard

When you have lost someone overboard you have a possible life/death situation on your hands. As soon as you become aware that someone has fallen overboard, call "Man Overboard". Someone should throw a flotation device (lifejacket or flotation cushion) as close to the victim as possible without hitting him with it. One of a bright color is desirable, to mark the victim's location if he has sunk. Keep the victim in sight continually.

Get the boat under control. All too often someone goes overboard because the boat is out of control. It is a mistake to attempt a rescue before getting matters in hand. Typically this will mean dropping the sail and setting some oars if they have been shipped. (This is probably a good argument for keeping the oars fudged while sailing.)

Before attempting to recover the victim, secure him. At the moment of rescue many people have ceased trying to keep afloat and have sunk before the eyes of their rescuers. Get a line under the victim's arms and secure it. Unless the person is injured, no other person should go over the side to help - you can almost always help better from within the boat. The victim will be exhausted, scared, and probably so weighted down by clothing that he will be virtually helpless. In cold water the danger of hypothermia makes it important to get the person aboard as quickly as possible. Ease the victim gently over the gunwale, face down. People bend more readily in that direction, so it will avoid causing them back injury. Usually the best way is to get the torso up over the side and secured, then to grab a leg and heave it up into the ship.

6.5 Emergency signaling devices

We are required by law to carry three day/night emergency signaling devices. We may pack a few extra, depending on the operation contemplated. These are to be used only when lives or property are

threatened. Common sense dictates that they not be used until there is another vessel in sight and close enough to see them. These devices do not carry great weight in the duration and brilliance department, and the range of visibility listed in the advertisements are for a clear, still night, not when blowing half a gale in the murk.

Familiarize yourself with the launching procedures and characteristics of those carried aboard, and where they are stowed. (Usually, in the sea-chest at the stern.)

Additionally, distress signals may consist of: arm waving, flags, whistles, lights, and voice radio. In a bona-fide emergency anything that gets attention is legitimate.

6.6 Knockdown, capsize, or collision

If, through the natural hazards of the sea, or the intervention of an outside klutz, the vessel is capsized or holed, the cardinal rule is stay with the ship. Because of their peculiar unballasted construction, and the innovative use of wood for the hull and spars, Viking vessels will actually float without excessive coercion. If the hull is undamaged, or the hole can be fothered (temporarily patched) there is an excellent chance that she can be bailed out and restored to sailing trim. If the damage is too extensive to repair on the spot, (6" mortar shell, 18' ski boat, Wrath of God, &c) stay with the largest part.

Your first priority should be: secure yourself and your fellow crew into lifejackets and onto the vessel. Make sure everyone is accounted for. Second priority is to secure all safety equipment such as flares and extra flotation devices. Third priority is to secure all ship's gear, such as oars and rigging, either for salvage or to return the ship to operable condition.

Stay with the ship, listen to the officers, and work together.

6.7 Fire

The only type of fire at all likely on board our vessels is a class-A fire, that is wood, paper, cloth &c, as opposed to class-B: flammable liquids, or class-C: electrical. The sovereign remedy for most class-A fires on a vessel of our size is a bucket of water. It is cheap, available, and effective. On the Fyrdraca we also carry two hand-held dry-chemical fire extinguishers: one in the bow and one in the stern. These should be used if you can beat the bucket, if we have a fire in our 12-volt electrical system, or on a fire in a powered tow boat or tender. Furthermore: under the requirement that we assist any vessel in distress — short of imperiling our vessel and crew — our equipment is on hand if needed to suppress a fire on another vessel.

The important points are: be quick, be thorough, and aim at the base of the fire.

adventure	A disaster that you survive, enabling you to brag about it.
anchor	Large heavy sharp metal object intended to get stuck on anything it comes in contact with. Useful to keep the ship from drifting.
beam	The direction straight out to the side of the ship. Since the ship has two sides this isn't a very useful concept unless you specify port beam or starboard beam. §.
belay	To cleat off a line. Also, to cancel an order.
bend	A method of fastening two lines together. §.
betias pole	A movable spar used to pull the lower corner of the sail taut when it would otherwise not be possible to do so because you'd have to be standing outside the ship to be at the right angle. This is most useful when we're trying to sail into the wind. Some sources spell this: Beti-ass.
bilge	The area underneath the deck. Also the substances which accumulate therein.
bilgemaster	Crew member responsible for maintaining the condition of the bilge, specifically the level of water there. §.
bitter end	The end of a line which is beyond the bitt.
boatswain	Crewmember responsible for stowage and rigging.
bow	The pointy end of the ship, usually identified by a dragon's head. Located behind the rowers' backs. The front of the boat.
chart	A map.
con	Immediate second-by-second command of the ship. This position is usually held by the captain, but it may be relinquished for various reasons. This does not mean the captain is relinquishing ultimate authority.
coxswain	Crewmember who calls the stroke when we're under oars. §.
crab	In addition to being a popular seafood, a crab is the condition where an oar is trapped and pulled down by the flow of water. §.
dinghy	A small vessel used to ferry people and equipment around, frequently to a larger vessel.
faering	A four-oared boat. This usually refers to the Gyrfalcon.
head	The marine toilet. Has nothing to do with the dragon's head unless you're a seagull.
helmsman	Crewmember who is steering. Also: Steersman.
hitch	A method for fastening a line to a fixed object. §.
keel	The main spine of a ship. Also the part of the hull extending deep into the water, usually to increase stability or to reduce leeway.
knot	An intentional tangle in a line. Useful for attaching things together. §. Also a unit of speed measurement: one nautical mile per hour. (1.15 land miles per hour)
leeward	(loor'd) The direction the wind is blowing to. Opposite of Windward.
leeway	The distance the ship slips sideways in the water as a result of pressure from the sail. Generally considered undesirable.
line	What you use rope for. Every use of rope on board ship has a name, which is usually the something-or-other-line.

log	The continuous written record of the voyage, noting — in particular — landmarks passed, times, distance covered, contacts with other vessels and crew activity (or lack thereof).
lookout	Crewmember responsible for watching for, and warning of impending disaster.
make-fast	Fasten, attach-to, etc. Another example of nautical jargon.
oar	If you really have to look this one up you're reading the wrong book.
painter	Towline for dinghy or faering.
PFD	'Personal Flotation device'. This is Coast-Guard jargon for what everyone else calls a 'Life Preserver'.
point	Unit of angle. There are 32 points in a full circle. These are usually used with reference to some known direction as in: 'Four points abaft the starboard beam' which means 'behind and to the right of the ship'.
port	Where we hope to reach at the conclusion of a voyage. Also: the left side of the ship, so named because we always bring it up against a dock instead of the starboard side, to avoid damage to the steerboard.
stern	The other pointy end (see bow), identified by a dragon's tail and numerous officers lounging about. To the front of the rowers. The back of the boat.
sheepshank	Method of shortening a length of rope without detaching its ends. §.
starboard	The right side of the ship, so-called because that's where the steerboard is mounted.
steerboard	The large wooden contraption hanging over the side of the ship, always used for steering when under sail, and usually used to steer when under oars.
steersman	same as Helmsman.
step	The large wooden block on which the mast rests. Also the act of mounting the mast into this block. §.
thwart	The rowing benches. If you want to know why they're called thwarts, try running from one end of the ship to the other.
tide	Laundry detergent, useful for cleaning everything you wore on the voyage. Also sometimes refers to the level of the water in those bodies in which it varies.
windward	The direction from which the wind is coming. Usually the bow of the ship.
yaw	The axis of rotation running through the mast. Turning motion of the ship.
yeoman	Crewmember who maintains the log.

B.

Bibliography

B.1 Books

Bengtsson, F. G. (various). *The Long Ships*, various paperback and hardcover publishers. — Has little to do with the movie, but a saga-style novel written by a Swedish historian. Good stuff.*

Brøgger A. W. and Sketelig, H. 1971. *The Viking Ships*. New York: Twayne Publishers. — A comprehensive description of the Oseberg, Gokstad and Tune Ships (once you get past their hang-up on skin boats).*

Brøndsted, J. revised 1965. *The Vikings*. London and Baltimore: Penguin. — A basic overview of Viking culture. *

Cagner, E. 1972. *The Viking*. New York: The Tryckare and Crescent Books. — The infamous Big Red (or White) Book. Lots of pictures and drawings of artifacts, but untrustworthy text and interpretations

Graham-Campbell, J. 1980. *The Viking World*. New Haven, New York: Tichnor & Fields. — Art, Artifacts, and Life-styles

Howarth, D. 1977. *1066 The Year of the Conquest*. New York: Viking Press. — Well written, with a good view of Anglo-Saxon England. *

La Faz, H. 1972. *The Vikings*. Washington, D.C.: National Geographic Society. — A view of the age and the affected lands today.

Magnusson, M. 1980. *Vikings!* New York: E. P. Dutton. — Companion piece to the BBC TV series

B.2 Motion Pictures

The Vikings. 1956. Kirk Douglas, Tony Curtiss, Ernest Borgnine. - A good B-: Ragner's Saga fudged into a sort of 11th century Norman style England. Three Longships.

The Longships. Richard Widmark. - A C: Has little to do with the book, but is undoubtedly one of the great Viking comedies of all time.

The Norseman. Lee Majors. D-: Don't waste your time except for lessons on how not to make a Viking movie.

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