

The Ship's Company of Penetanguishene



Crew Training Manual
for achieving the rank of
SEAMAN
aboard
H.M.S. *Badger*

Introduction

Welcome to The Ship's Company of Penetanguishene! This Crew Training Manual is intended to assist you in developing your Seamanship skills aboard the replica historic vessel H.M.S. *Badger* to achieve the rank of **Seaman**.

We also plan to produce Crew Training Manuals to encourage continued study and development to achieve the progressive rank of **Able Seaman**, **Bos'n**, and for those who aspire to it, the eventual rank of **Coxswain**. Members will be advised when these training materials become available.

We encourage all Members to continue to learn and develop their historic sailing skills through study, lots of active sailing on H.M.S. *Badger*, and comradery with other crew. We are a learning organization and hope that this Manual will be of assistance in helping you become a skilled crew member beyond the initial status of Trainee, and facilitate further enjoyment while on board.

About The Ship's Company

The Ship's Company of Penetanguishene is a volunteer not-for-profit organization registered under the auspices of the Ontario Historical Society. We are dedicated to the presentation and preservation of 19th century Marine Heritage, with a focus on the British Navy and their historic activities on the Great Lakes. This is accomplished through the maintenance and operation of our three replica historic vessels H.M.S. *Badger*, H.M.S. *Lynx*, and H.M.S. *Revenge* (all built by The Ship's Company), historic sail training, educational outreach presentations, and participation in community and regional Special Events. The organization has been in existence since 2000 (incorporated in 2001) and is well known and respected in the local community for the quality of its vessels and presentations, and the enthusiasm and dedication of its Members.

We are Membership driven and managed by a 7 person Board of Directors, which is elected annually. For further information on our organization, please visit our website www.shipscompany.ca, or email shipscompany.ca@gmail.com

The Ship's Company of Penetanguishene
Crew Training Manual for H.M.S. *Badger*
For Achieving the Rank of SEAMAN

All new crew aboard H.M.S. *Badger* are first classified as "Trainees." After a few sailing outings (or a season) as a Trainee and some general familiarity with the vessel, we would like to encourage you to pursue the next logical progression in skills development, which is to achieve the rank of **Seaman**.

To help you achieve the rank of Seaman, this Manual is divided into 8 Training Modules. We suggest you work through them in sequence to complete your training. Along the way, we encourage you to participate in sail training opportunities to acquire and re-inforce your skills and knowledge, and to consult with experienced crew and officers for ongoing help and assistance with your training.

Assessment can be done of all Modules at once, or if you desire, one at a time, by any of our existing Coxswains. The Coxswain will initial the components of each section upon assessment. Upon successful assessment of all 7 Modules, you will have achieved the rank of Seaman.

Ahoy - let's get started!

In order to achieve the rank of Seaman aboard H.M.S. *Badger*, a crew member must show knowledge and demonstrate competency in the following areas:

Module 1: Basic Vessel Components of H.M.S. *Badger*: Sails and Spars

Be able to name and locate the following major components of H.M.S. *Badger*.

(See Appendix 1).

SAILS:

-Mainsail

-Staysail

-Jib

-Main Topsail

(*Note:* There are also 5 additional sails beyond the above, but these can be mastered at a later time and are not required for the purposes of achieving the rank of Seaman. H.M.S. *Badger* is a gaff-rigged Cutter that actually can fly up to 9 sails total i.e. Mainsail, Staysail, Jib, Main Topsail, Jib Topsail, Port Course, Starboard Course, Port Raffee, and Starboard Raffee.

SPARS:

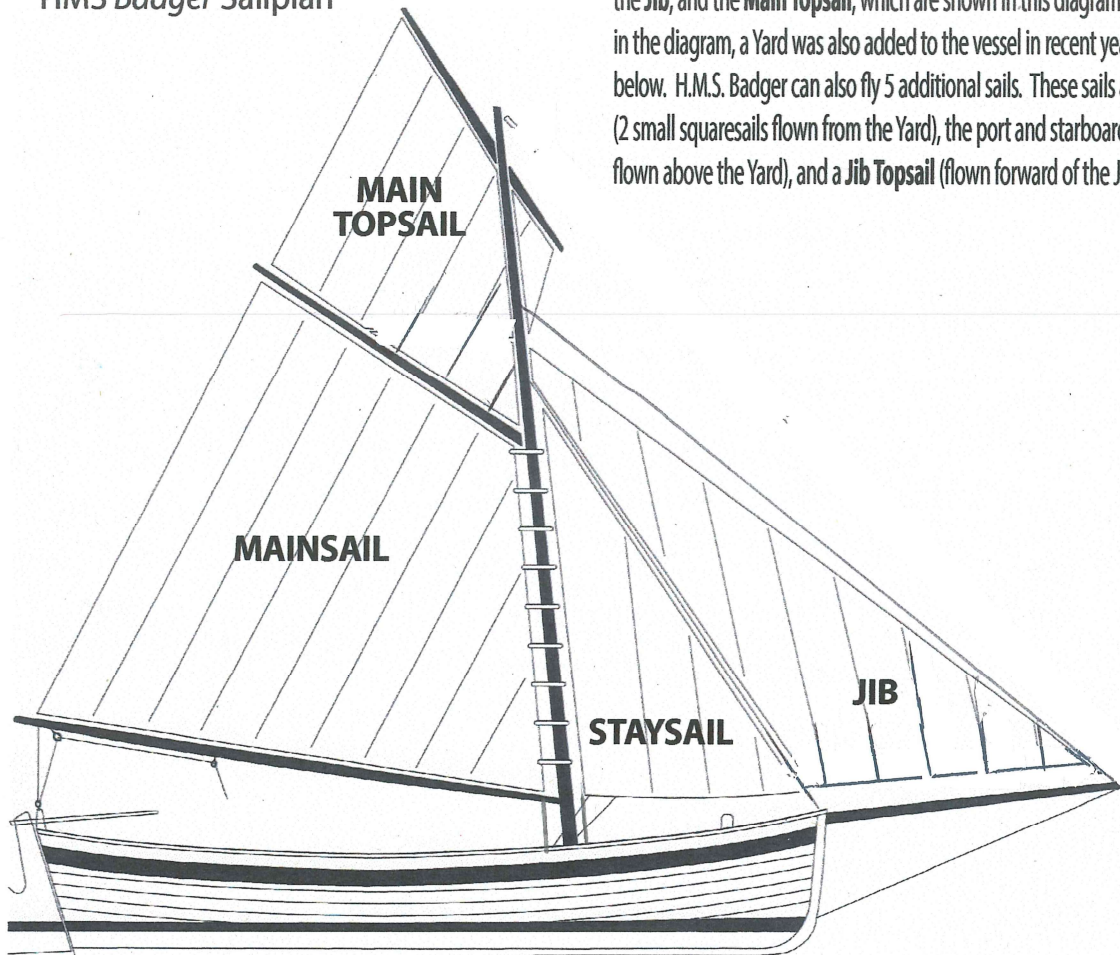
Spars is a general term that refers to the various “sticks” on a sailing vessel that are attached to sails for hauling, lowering, and control of the sails, and for support of various rigging components.

Be able to name and locate the key spars on H.M.S. *Badger* as follows: (**See Appendix 2**).

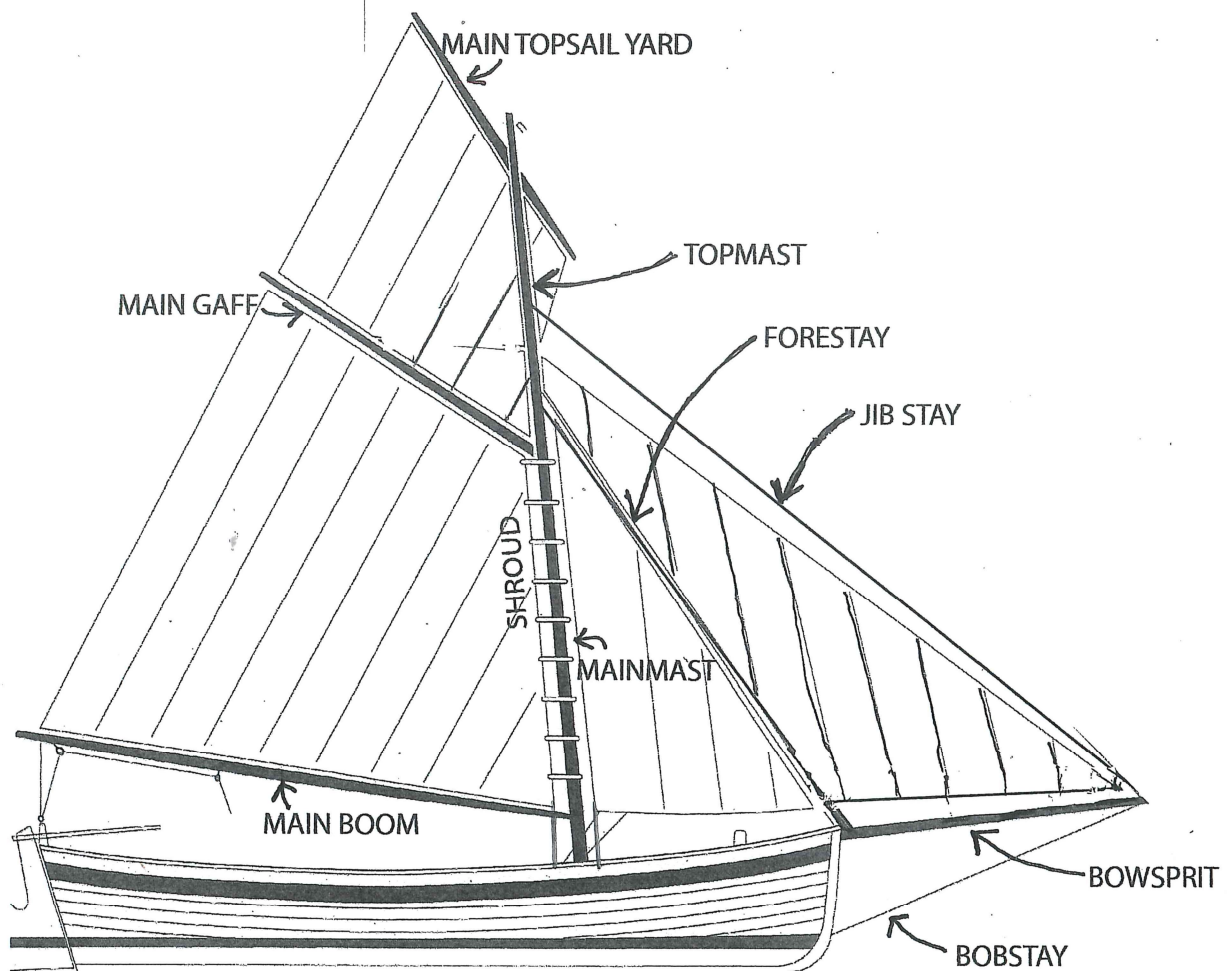
| | <i>Achieved?</i> |
|---|------------------|
| Main Boom This spar is attached to the bottom of the mainsail | |
| Main Gaff This spar is used to raise the Mainsail and is therefore attached to the top of the Mainsail. It is lifted or dropped with the use of hauling lines, called <i>halyards</i>) | |
| Mainmast The single large mast | |
| Topmast This mast extends from the Mainmast, at the top | |
| Main Yard This spar is positioned <i>across</i> the Mainmast, and is used to hold the square sails, also called Courses | |
| Bowsprit This spar extends from the bow of the vessel and supports the rigging | |
| Main Topsail Yard This spar is attached to the Main Topsail. When the sail is stored, the spar and sail rest on the Main Boom. When sailing, they are typically removed from the Main Boom and temporarily laid on top of the centerboard trunk before the Mainsail is raised, and also until it is decided to raise the Main Topsail) | |

Appendix 1 HMS Badger Sailplan

The four key sails flown on H.M.S. Badger are the **Mainsail**, the **Staysail**, the **Jib**, and the **Main Topsail**, which are shown in this diagram. Although not shown in the diagram, a **Yard** was also added to the vessel in recent years. It can be seen in the picture below. H.M.S. Badger can also fly 5 additional sails. These sails are the port and starboard **Courses** (2 small squaresails flown from the Yard), the port and starboard **Raffees** (2 small triangular sails flown above the Yard), and a **Jib Topsail** (flown forward of the Jib).



Appendix 2
H.M.S. *Badger*
Basic Spars and
some selected Standing Rigging



Basic Descriptions

Spars:

MAIN BOOM (the bottom of the Mainsail is attached to it)

MAIN GAFF (the top of the Mainsail is attached to it.)

MAIN TOPSAIL YARD (the Main Topsail is attached to it; it is hoisted aloft to set the Main Topsail.)

MAIN MAST (the Main Mast of the vessel)

TOPMAST (sits on top of the Mainmast)

BOWSPRIT (provides an extension to the hull and supports some standing rigging components)

MAIN YARD (Runs horizontally across the Main Mast. The port and starboard Courses (square sails) are flown from it. (Not pictured, but has been added to vessel in recent years.)

Standing Rigging:

SHROUDS (they run up the Main Mast on Port and Starboard, and provide rigid support for the Mainmast)

FORESTAY (the Staysail is attached to it; it also provides support for the total rig of the vessel)

JIB STAY (the Jib runs up it; it also provides support for the total rig of the vessel)

BOBSTAY (provides rigid support for the Bowsprit and for the total rig of the vessel)

Module 2: Additional Ship Components

Be able to locate and name the following additional general components of H.M.S. *Badger*. **All items listed below can easily be identified while at dockside.** Just ask a crew member.

| | |
|--|------------------|
| Helm This refers to the overall area where you steer from. The steering mechanism for H.M.S. <i>Badger</i> is composed of the Tiller and the Rudder | <i>Achieved?</i> |
| Rudder Flat piece of wood hinged vertically at the stern used for steering | |
| Tiller The handle of the rudder | |
| Cleats Various locations, used for securing lines | |
| Belaying Pins A vertical cleat, various locations, also used for securing lines | |
| Blocks Used to assist hauling tasks, they function like pulleys | |
| Deadeyes A rigid round component used to stabilize and tighten the rigging | |
| Centerboard A retractable “fin” that can be lowered below the hull. The Centreboard assists with sailing performance | |
| Gunwale The top edge of the side of the vessel, usually capped | |
| Foredeck The forward deck area | |
| Forepeak The storage area under the forward deck | |
| Knighthead Bits 2 strong vertical posts located on the foredeck, can be used to secure various dock lines | |
| Oars 4 oars for Pulling are kept on H.M.S. <i>Badger</i> , and are stored hanging off the port side of the vessel | |

Module 3: Basic Line Handling and Essential Knots

Basic Line Handling:

Demonstrated competency in **coiling of lines** and proper **securing of lines** to cleats and belaying pins. Ask an experienced crew member to teach you the proper techniques and then practice them until mastered.

| | |
|--|------------------|
| | <i>Achieved?</i> |
| Demonstrated competency in how to coil a line properly (coil line and secure to cleat or belaying pin) | |
| Demonstrated competency in how to secure a line properly (Figure of 8 to cleat or belaying pin) | |

Essential Knots:

Learn how to do the following essential knots with confidence. (See Appendix 3 which illustrates the majority of these knots.)

| | |
|---|------------------|
| a Half Hitch Insecure on its own, but is a valuable component of other combinations, such as noted in the item below. | <i>Achieved?</i> |
| a Round Turn and Two Half-Hitches | |
| a Slipped Hitch (or Slippery Hitch) Application: used to attach mooring covers to Mainsail and to the Staysail, and when using lanyards to attach furled Topsail with its Yard to the Main Boom | |
| a Reef Knot Application: used to tie two lines together | |
| a Figure of Eight Knot Application: used to stop a line from running all the way through a block | |
| a Bowline Application: used to attach halyards to various sails. Also can be used to attach flags to flag halyards (such as the Jack) | |
| a Clove Hitch Application: used to attach Bow and Bow Spring lines to Knighthead Bits on foredeck | |
| a Clove Hitch followed by two Half Hitches Application: used to attach the Main Topsail Halyard to the Main Topsail Yard | |
| a Chain Hitch. This is used to enclose the Staysail Cover, and also used to secure the Main Topsail to its yard for storage. The Chain Hitch is useful in that it can be easily and quickly undone when preparing to set sail. | |

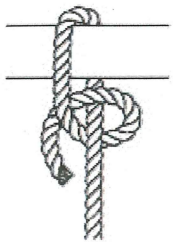
TIPS:

There are many ways to learn basic line handling and knots, and probably the best way to start is to ask an experienced crew member to first teach you how to **coil a line** properly, and then properly **secure it to a cleat or belaying pin**. From there, endeavor to learn the knots noted above one at a time, while on board or at dockside. Again, experienced crew can help you here. Practicing each knot repeatedly will assist you in mastering each one.

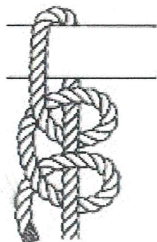
There are also good websites such as **www.animatedknots.com** which show many of the knots noted above, as well as numerous publications on knot tying and general seamanship.

Appendix 3 Essential Knots

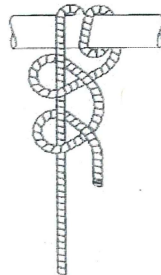
Half Hitch



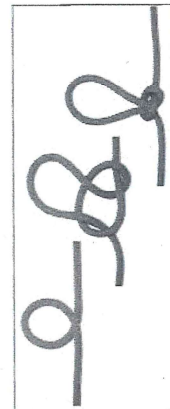
Two Half Hitches



Round Turn and
Two Half Hitches



Slipped (or Slippery) Hitch



Reef Knot

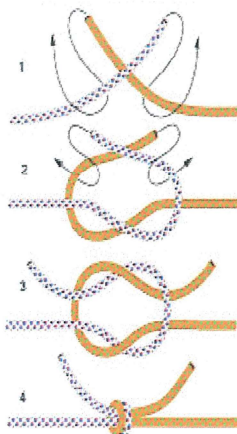
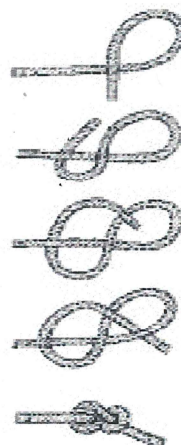
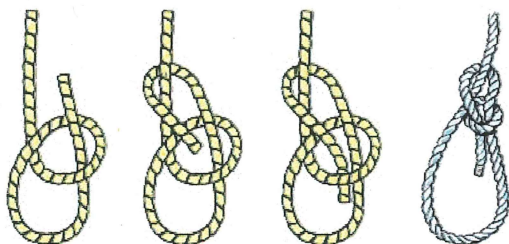


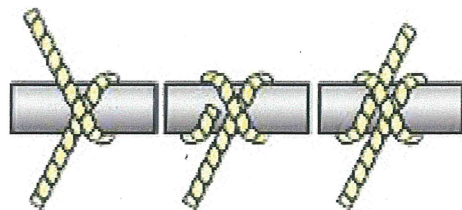
Figure of 8 Knot



Bowline



Clove Hitch



Note: On H.M.S. *Badger*, the Clove Hitch is followed by two Half Hitches to secure the Main Topsail Halyard to the Main Yard.

Chain Hitch: Ask an experienced Crew member.

Module 4: Understanding Bow, Stern, and Spring Lines

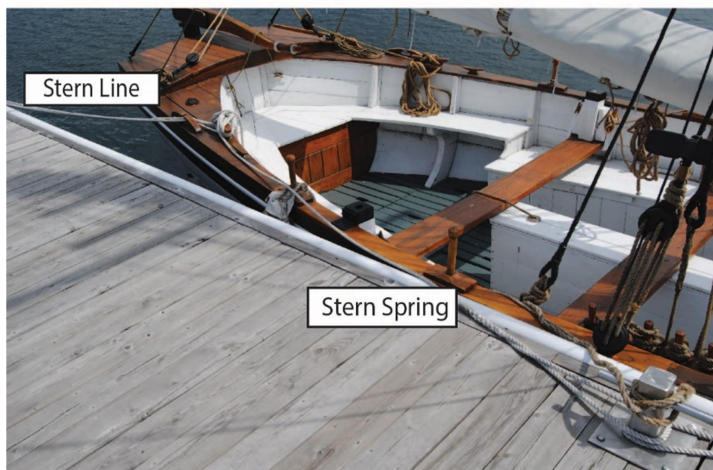
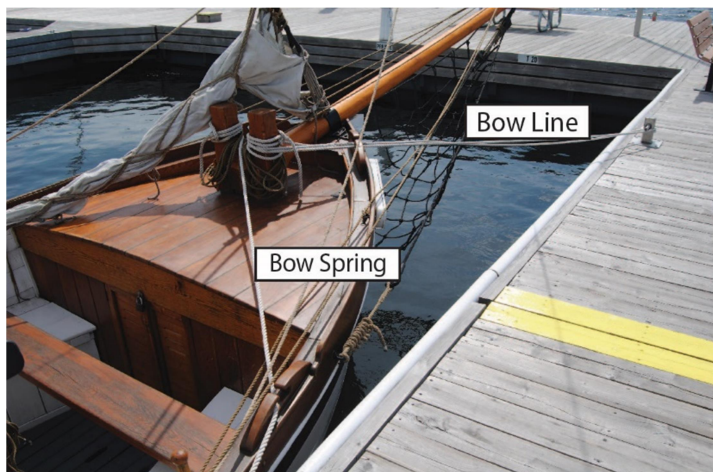
Understand the function of Bow, Stern, and Spring Lines (**see pictures below**), and also observe their application on H.M.S. *Badger* when the vessel is at dockside.

Bow Line: Runs from the Bow forward to the dock. Secures vessel to the dock.

Stern Line: Runs from the Stern aft to the dock. Secures vessel to the dock.

Spring Lines: Runs from the Bow aft and from the Stern forward. Spring lines help keep the vessel from moving forward or aft.

Bow, Stern, and Spring lines as set up for H.M.S. Badger at her home berth at the Penetanguishene Town Dock:



Module 5: Standing Rigging and Running Rigging

Understand the basic difference between **Standing Rigging** (refer again to Appendix 2 where some are pictured), and **Running Rigging**.

Generally, **Standing Rigging** (consisting of **Shrouds** and **Stays**) does not move but rather provides rigid support for the masts and bowsprit. **Running Rigging** (consisting of **Halyards** and **Sheets**) does move and typically controls the hauling and positioning of sails.

In most cases, crew members will be handling **Running Rigging** when sailing. This consists of **Halyards** which are used to raise and lower the sails, and **Sheets** which are used to control the movement of the bottom of the sails.

| | Achieved? |
|--|-----------|
| Understand the basic function of Standing Rigging (Shrouds and Stays) | |
| Understand the basic function of Running Rigging (Halyards and Sheets) | |
| With an experienced crew member, obtain a general overview of the key Standing Rigging components of H.M.S. <i>Badger</i> at dockside | |
| With an experienced crew member, obtain a general overview of the key Running Rigging components of H.M.S. <i>Badger</i> at dockside | |

Module 6: A Focus on Running Rigging

Be able to **name, locate and understand** the function of the following key “Running Rigging” lines aboard H.M.S. *Badger*: (NB: See Appendix 4, for various locations)

| | Achieved? |
|--|-----------|
| REGARDING THE MAINSAIL: | |
| Main Throat Halyard Raises or lowers the Throat of the Main Gaff (PIN 4, STARBOARD SIDE) | |
| Main Peak Halyard Raises or lowers the Peak of the Main Gaff (PIN 6, PORT SIDE) | |
| Main Sheet Attached to the Main Boom, and hence controls the lower movement of the Mainsail (ON PORT CLEAT NEAR STERN/HELM AREA) | |
| Topping Lift Raises or lowers the aft end of the Main Boom (ON CLEAT ON LOWER PORT PORTION OF MAINMAST, PORT SIDE) | |
| | |
| REGARDING THE STAYSAIL: | |
| Staysail Halyard Raises or lowers the Staysail (PIN 4, PORT SIDE). | |
| Staysail Sheet Controls the bottom of the Staysail. Attaches to forward cleat near bottom of Mainmast. | |

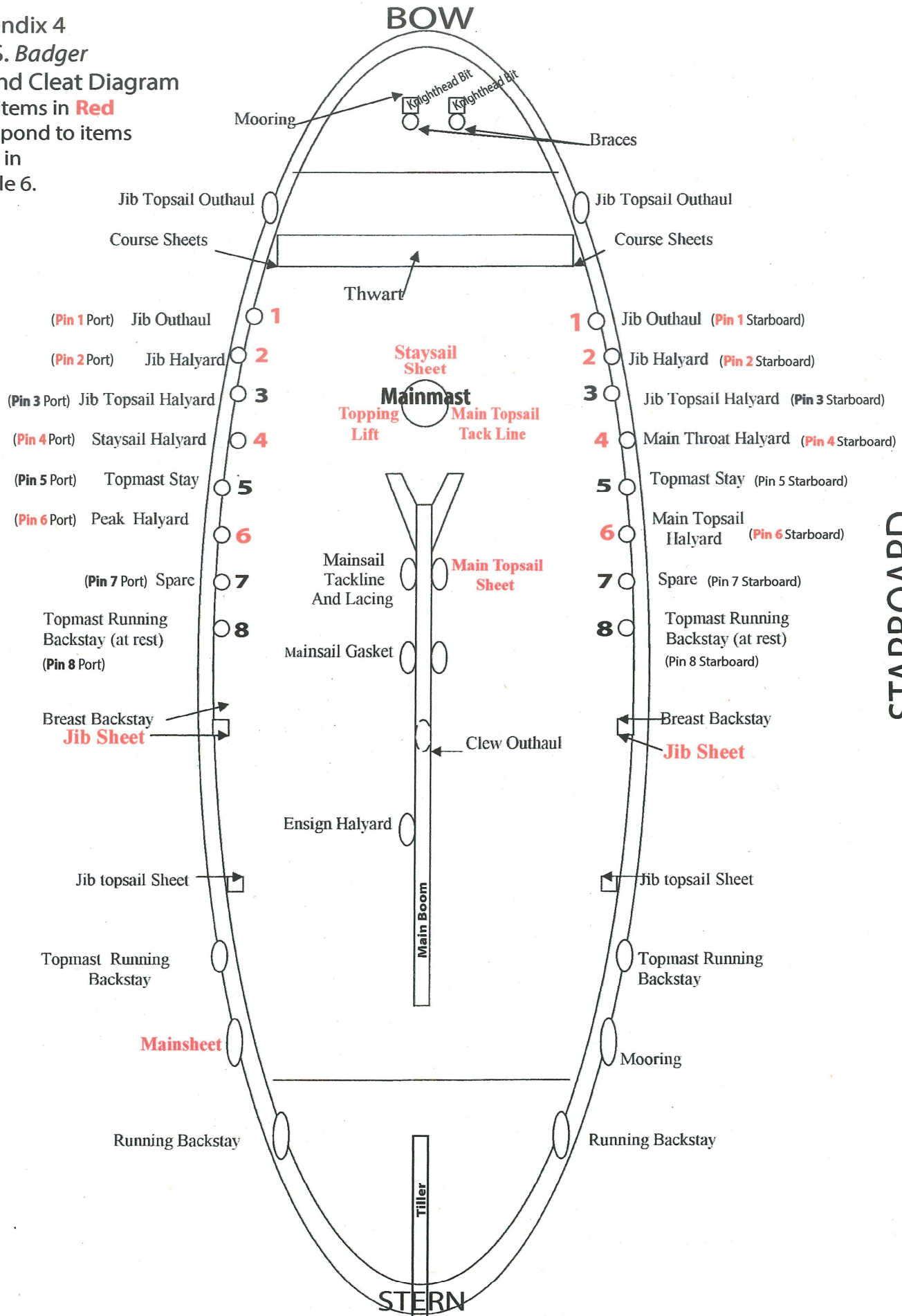
| | |
|---|--|
| | |
| REGARDING THE JIB: | |
| Jib Halyard Raises or lowers the Jib (PIN 2, STARBOARD SIDE for attaching to the Jib. PIN 2, PORT SIDE, for hauling up and lowering the Jib.) | |
| Jib Outhaul Hauls the outer portion of the jib forward to the end of the Bowsprit (PIN 1, STARBOARD SIDE for attaching to the Jib. PIN 1, PORT SIDE, for hauling out the Jib) | |
| Jib Sheets Control the bottom (i.e. trim) of the jib. Attach to port and starboard cleats just aft of the amidships area. | |
| | |
| REGARDING THE MAIN TOPSAIL: | |
| Main Topsail Halyard Raises or lowers the Main Topsail (PIN 6, STARBOARD SIDE) | |
| Main Topsail Sheet Controls the bottom aft portion of the Topsail (ATTACHES TO FORWARD CLEAT ON MAIN BOOM, STARBOARD SIDE) | |
| Main Topsail Tack Line Controls the forward lower portion of the Topsail (ATTACHES TO CLEAT ON LOWER PORTION OF MAINMAST, STARBOARD SIDE) | |

TIPS: Module 6 will take some work to master, but is definitely achievable with a concerted effort. **Study Appendix 4** to learn the names and locations of these various key “Running Rigging” lines indicated above. You may also want to take this Pin and Cleat Layout Diagram down to the vessel and identify the lines up close. Most locations are quite logical relative to their function and with some time and repetition you will gain this understanding. Also, you may also give a selected line a gentle “tug” to see what it controls and where it goes (but do not release it). If you don’t understand a specific line in this section or its function, ask an experienced crew member.

NB: When on regular sail training outings, pay close attention to the lines you are asked to manage, their locations, and their functions. A solid knowledge of H.M.S. *Badger*’s key Running Rigging components will be essential as you progress through your seamanship skill training at all levels, so try to invest some time in learning these items, one at a time.

Appendix 4
H.M.S. Badger
Pin and Cleat Diagram
Note: items in **Red**
correspond to items
noted in
Module 6.

PORT



Module 7: Responding to Basic Commands

As a Seaman, you must be able to competently respond to basic commands and execute basic tasks **under the supervision of and as ordered by the Coxswain**. The more sailing outings you take part in, the more these commands will become familiar. The commands are as follows:

| | <i>Understood/Achieved?</i> |
|---|-----------------------------|
| “Cast off” (the specified line) You must untie and release the (specified line) and respond in the affirmative when this action is complete i.e. <i>“(specified line) is clear”</i> | |
| “Make Fast” (the specified line) You must secure the specified line to its cleat or belaying pin, and respond in the affirmative when this action is complete i.e. <i>“(specified line) is secure”</i> | |
| “Way Enough” You must STOP your current action | |
| “Belay That Order” You must ignore the previous order (i.e. the order has been cancelled) and wait for further orders | |
| “Fenders In” You must respond by bringing in the Fenders to the inside of the vessel | |
| “Fenders Out” You must respond by ensuring Fenders are tied off and then are put out to the outside of the vessel. You must also make sure their height is adjusted correctly to properly protect the hull | |
| “Standby to...” A general alert to crew to be prepared to execute a specific task, such as “Stand By to raise the Mainsail”, or “Stand By to raise the Jib”, etc. | |
| “Ready on the Halyards” You must be ready (i.e. coil off, line in hand) on an assigned Halyard and respond in the affirmative when ready i.e. <i>“Aye, Ready on the Halyard”</i> . (A typical application would be to be assigned the Main Peak Halyard or the Main Throat Halyard, which control the raising and the lowering of the Mainsail.) | |
| “Ready on the Sheets” You must be ready on an assigned sheet and respond in the affirmative when ready i.e. <i>“Aye, Ready on the Sheet”</i> | |
| “Haul Away” You must haul away on an assigned line. Command is frequently used in relation to halyards. | |
| “Harden Up” You must snug up your hauling to ensure the sail is all the way up, or <i>“Harden Up Your Sheets”</i> – you must tighten up your assigned sheet to respond to certain wind conditions or maneuvers. | |
| “Ease Your Sheet” You must let out sheet in a controlled manner to respond to certain wind conditions. You must respond in the affirmative when completing the action i.e. <i>“Easing Sheet”</i> | |

| | |
|---|--|
| <p>“Let Fly and Haul” This command is used when tacking the vessel or wearing ship (changing the ship’s direction relative to wind direction), and instructs crew to release a specific sheet and also have crew on the opposite side of the vessel simultaneously haul in their side of a specific sheet.</p> | |
|---|--|

In addition, the word **“Aye”**, or **“Aye Aye”**, is your response to the Coxswain that an order has been heard and understood. Finally, when stepping on to the vessel you should say out loud **“Stepping On”** and when getting off the vessel you should say **“Stepping Off”**. This is done to alert other crew members of your actions, which could affect the stability of the vessel at dockside.

Module 8: Emergency Procedures

The overall response for every emergency situation is “listen to the commanding officer”, but there are some things that can be done without being prompted

FIRE: If you see a fire, shout “fire, fire, fire! Fire in the (wherever the fire is located)”. The extinguisher is close to the most likely cause of fire, the engine, but if the fire is somewhere else help pass the extinguisher along. The bucket can also be retrieved from the forepeak. If you are without a task, PUT ON A LIFEJACKET. If the fire cannot be contained we will need to abandon ship. Once your lifejacket is on, help those around you put on a lifejacket and ensure that it is tightened correctly.

MAN OVERBOARD (MOB): if you see someone fall overboard, shout “man overboard” and throw them something, preferably a life jacket. The MOB pole should also be thrown over the side. Then it’s hands to stations. It is up to the Coxswain to determine how to go about retrieving the man overboard, but it will most likely involve some form of sail handling and probably the engine. If you do not have a station, KEEP YOUR EYES ON THE MAN OVERBOARD. There should always be someone who’s sole job it is to watch the man overboard with your arm outstretched pointing at them, or the last place you saw them.

Keeping an eye on the man overboard **is the most important task** (after throwing a lifejacket). It is very easy to lose sight of someone in rough waters, pointing at them as you keep tabs is extremely important on three fronts: One, it shows the helmsman where they are. They are looking forward and need a rough idea where the man overboard is when they are able to turn around. Two, as other crew members become idle they can see where you are pointing and therefore help keep eyes on the man overboard in case you lose them. Three: it gives the man overboard hope. They know you see them, and they know you are coming back for them.

GROUNDING/COLLISION: Put on your lifejacket, check for any injuries, and get off the floorboards. One of the things the Coxswain will want to know is if the vessel is taking on water. To do that, some or all of the floorboards will need to come up.

| | <i>Achieved?</i> |
|--|------------------|
| Demonstrated knowledge regarding the Emergency Procedures as outlined above. | |