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# **James Craig Crew Handbook Documentation**

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**Jan 04, 2020**





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Crew Handbook Home

### MODULE 1.

## 1.1 Meet the Fleet

#### **Aim:**

Introduce new crew to the Sydney Heritage Fleet and James Craig.

#### **Overview:**

The Sydney Heritage Fleet

Brief description of James Craig

Requirements to become a crew member in James Craig

Outline of crew training programme

Training syllabus

Crew obligation to participate in maintenance

Crew ranking system

Ship's layout

Ship's facts and figures

#### **Outcome:**

Crew will gain an appreciation of the Sydney Heritage Fleet's operation and a foundation for becoming a crew member in James Craig.

### 1.1.1 Sydney Heritage Fleet

The Lady Hopetoun and Port Jackson Marine Steam Museum, the forerunner of the Sydney Heritage Fleet, was founded in 1965 by a group of public-spirited individuals to preserve Sydney's 1902 VIP steam launch *Lady Hopetoun*. The organisation later became known as the Sydney Maritime Museum Limited. In 1998 the museum adopted the trading name Sydney Heritage Fleet and later, Australian Heritage Fleet. In 2004 the Museum reverted to Sydney Heritage Fleet. The Fleet now comprises 8 operating historical vessels, which is amongst the largest such collection in Australia.

A community-based non-profit organisation, the Fleet's mission is to *build and maintain an internationally recognised centre of excellence in maritime heritage for the benefit of all Australians by presenting through research, acquisition, conservation, restoration, education and operation, our continuing maritime history*. The Fleet is funded through donations, membership subscriptions, income from vessel charters and tours and the proceeds of Art Unions.

The Fleet's 1000+ membership, including over 650 dedicated volunteer workers, restore, operate and maintain the fleet of vintage vessels. In the process they preserve traditional technical methods and skills.

The Fleet's oldest vessel, the 1874 iron barque James Craig, has been fully restored and regularly puts to sea under full sail. The Fleet also operates three of the most historically significant vessels on Sydney Harbour: the 1902 steam tug Waratah, the 1902 VIP steam launch Lady Hopetoun and the 1903 schooner Boomerang.

Other operational vessels include: Protex, the 1908 inner-harbour motor launch; Harman, the 1947 ex-RAN harbour workboat/passenger motor boat; Berrima, the 1954

Botany Bay general workboat/passenger motor boat; Kookaburra II, the 1954 wooden speed boat.

Under restoration are the 1912 ferry Kanangra, and the 1927 coastal steam tender John Oxley.

The Fleet also has 55 small heritage boats and one of the largest collections of marine engines in Australia, which are being restored and conserved. The Fleet's collection includes more than fifty model ships, including models of some of the Fleet's own vessels.

The Fleet maintains a comprehensive research library/archive, which includes photographs, ships' plans, diaries, logs and journals.

The Sydney Heritage Fleet made significant contributions towards the establishment of the Australian National Maritime Museum, which opened at Darling Harbour in 1991. Whilst the two organisations differ, they do play complementary roles, the Sydney Heritage Fleet placing an emphasis on preservation, restoration and operation of heritage vessels.

### 1.1.2 Description Of James Craig

James Craig is a three masted Barque of approximately 1500 tonnes displacement with an overall length of 70 metres.

The ship and others of the era were designed to carry cargo quickly and safely around the world. They are principally 'down wind' ships with limited ability to point high into the wind.

During your training you will gain an understanding and appreciation of how the ships were operated and handled to achieve the operators' goals.

Refer to page 5 for the ship's layout.

Refer to page 6 for some of the ship's facts and figures.

### 1.1.3 Requirements To Join The Crew

Join the Sydney Heritage fleet. Membership entitles crew to access all the numerous activities and benefits of the fleet.

Attend a Fleet Discovery Day to gain a broad appreciation of the Fleets activities.

Minimum age 16

Complete the James Craig crew application form.

Have your Doctor complete the Sydney Heritage Fleet Medical Assessment form. If you are the holder of a current Australian Maritime Safety Authority (AMSA) medical, this is acceptable.

Complete the training kit order form. The Kit you purchase covers a hard copy of this Handbook, A Diary of Service and Experience Log Book, Access to online units, Day Sail, materials and administration of the course.

Complete Online introduction units then;

Attend alongside practical training course aboard James Craig followed by a mentored day at sea as a crew member.

Participate in ship maintenance.

On satisfactorily completing all introduction modules (1 to 11) and a day sail, new crew will be placed on the ship's crew list. They will then be able to put their name down for crew duties as a 'Deck Trainee' on sailing days, harbour sails etc.

If you have an e-mail address, and you wish, you will be forwarded communications on coming sailings and events. The alternative is to contact the ship's Crew Coordinator via [jccrew@shf.org.au](mailto:jccrew@shf.org.au) ..

You can undertake further crew training and have your efforts signed off in your 'Diary of Service and Experience Log' book to progress through the ranks.

The James Craig is a commercial vessel. Therefore, you are required to eventually complete the NSW Maritime General Purpose Hand course.

This course is conducted by TAFE or OTEN. When there is a sufficient number of members' wishing to do the course the Fleet may be able to arrange for OTEN to conduct the course in-house. The alternative is to approach these organizations direct.

### **1.1.4 Training Programme**

Sailing the James Craig is a practical skill developed by participation. The contents of this manual are designed to provide support to assist crew understand and improve their skill.

To encourage and acknowledge skill levels reached in the crew, a system of ranks has been developed. Refer to diagram on page 4.

To become eligible for progression in rank to Deck Hand, Efficient Deck Hand, tasks set out in the 'Diary of Service and Experience Log' book must be completed and signed off by an appropriate crew member or officer.

Copies of the 'Diary of Service and Experience Log' book are available from the Training Coordinator.

### **1.1.5 Training Syllabus**

Modules 1 to 11 plus a day at sea are designed to introduce new crew to the James Craig.

These, plus additional modules containing more specialised information on a variety of topics relating to the ship, can be used by all to improve their knowledge.

The modules are continually being reviewed to comply with changes in procedures, therefore they have been dated. To enable you to check for changes, a copy of current Modules can be referred to in the ship's copy of the James Craig Crew Handbook, which is kept on board the ship.

### MAINTENANCE

The James Craig is a working ship and therefore requires constant routine maintenance.

All crew members are expected to participate.

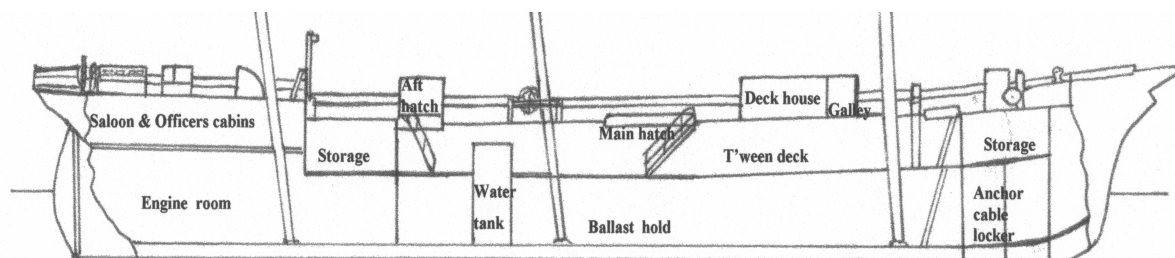
Maintenance groups meet mainly at weekends with others doing work during the week. The ship's manager, with volunteer co-ordinators, organise the roster and tasks.

Participation is also a good opportunity to learn more about your ship and meet other members of the crew.

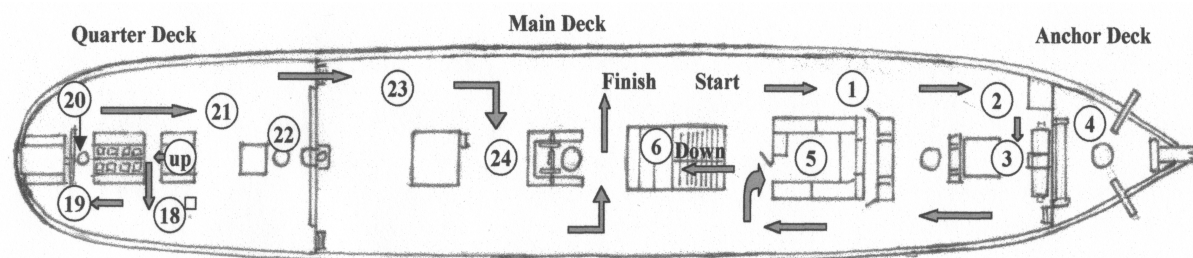
### JAMES CRAIG TRAINING PROCESS AND RANKS

#### JAMES CRAIG LAYOUT

This map will assist you find your way around the ship.

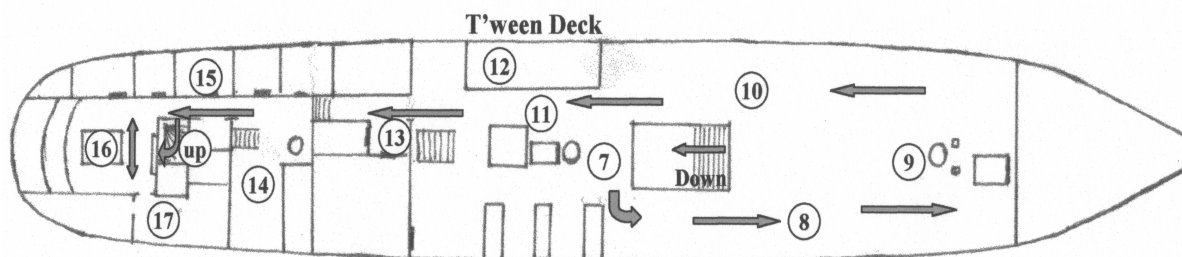


#### Main and Anchor Decks



Stations; 1. Galley 2. Head 3. Windlass and Bell 4. Capstan 5. Deckhouse 6. Proceed down stairs to t'ween deck.

#### 'Tween Deck (Holds and Officers quarters)



Stations; 7. Main hold 8. Main hold 9. Awards 10. Audio visual display 11. View into lower hold and water tank.

12. Berths 13. Toilets, "galley" and engine room access. 14. Bosun's locker. 15. Officers cabins 16. Saloon 17. Captains cabin

Stairs up to the quarter deck.

### 1.1.6 Quarter Deck and Main Deck (Follow arrows on first map)

Stations; 18. Engine controls 19. Helm 20. Compass binnacle 21. Cabinet work 22. Bell 23. Main deck 24. Fife rail & bilge pump.

#### JAMES CRAIG FACTS AND FIGURES

Former Names Clan Macleod

Launched 18th February, 1874 by Bartram Haswell & Co. Sunderland England

History Thomas Dunlop (Scotland) 1874 to 1887 (Clan Macleod)

Sir Roderick Cameron (Scotland) 1887 to 1900 (Clan Macleod)

JJ Craig, Auckland 1900 to 1911. Renamed 'James Craig' 14/12/1905.

British New Guinea Development Company 1911-1918

Henry Jones IXL 1918-1925.

Catamaran Coal Mining Co (Recherché Bay, Tasmania) 1925-1930's.

Scuttled Recherché Bay early 1930's-1972.

Re-floated 5 am, 24th October, 1972.

Towed to Hobart 7 am, 26th May, 1973 by tug "Sirius Cove".

Powder Wharf, Hobart (sank once) 1973-1981.

Towed into Sydney Harbour, January 1981

Official Number 68086

Signal Letters VJMR

Propulsion *Original* 3-masted Barque rig

*Restored* 3-masted Barque rig plus 2 x 400hp MTU diesel marine engines and ZF Marine model IRM 350 gearboxes with reduction ratio 6:1

Tonnage Approx 1.500 tonnes loaded displacement – registered tonnage 646 tonnes.

Length 54.7 metres

Length Overall 70 metres from flying jib boom to mizzen boom

Beam 9.5 metres

Draught 3.7 metres

Depth of Hold 5.5 metres

Masthead Height 33.0 metres above deck. 35.0 metres above waterline (higher than the deck of the Anzac Bridge @ 27 metres)

Fore lower mast (iron) 19.4 metres stepped on keel

Main lower mast (iron) 20 metres stepped on keel

Lower yards (iron) 19.2 metres (weight 1.4 tonnes)

Original Crew Master, his wife, 16 crew including 3 apprentices

Number of frames 92

Number of plates 424

Number of rivets 50,000 (approx.)

Metres of planking 1000 (approx.)

First Landfall in Australia 5th voyage, Brisbane, 1879

Trans Tasman run 35 round voyages

Typical Cargo Coal, kerosene, general cargo, timber, wool

Length of standing rigging 5000 metres

Total number of sail 21

Total sail area 1100 square metres when fully rigged

Cape Horn Roundings 23

Original Cost Eleven Thousand, Three hundred and Seventy Five Pounds

Funds raised/spent to date A total of AU\$6,000,000 since 1973 in dollars of the day, including an estimated AU\$800,000 worth of gifts

in kind. Plus countless hours of voluntary assistance

### **MODULE 2.**

## **1.2 Work Health and Safety**

### **Aim:**

To have all crew aware of their obligations to make the James Craig a safe place to be.

### **Overview:**

The new Work Health and Safety (WHS) laws became effective from 1<sup>st</sup> January 2012.

The Sydney Heritage Fleet, although a not for profit volunteer based organisation, because it has paid employees is now classed as “person conducting a business or undertaking” (PCBU). As such ‘employees’ and ‘volunteers’ are ‘workers’ under the act.

Your Obligations (Extract from Work Cover New South Wales fact sheet – Volunteers).

“As a PCBU, you must ensure the health and safety of workers – including volunteers who you engage – consult with them on WHS matters, and provide them with the necessary information, training and supervision.

If you are an officer who is a volunteer, you must comply with health and safety duties, but you cannot be prosecuted for an offence as an officer. You may be held liable, however, if you do not comply with your duties as a ‘worker’ or ‘other’.

As a volunteer, you must take reasonable care for your own – and other people’ – health and safety. If you are engaged by a PCBU, you are a worker and must comply with any reasonable instructions, policies and procedures relevant to health and safety given by the PCBU.”

All Sydney Heritage Fleet personnel must attend adequate site-specific induction and site-specific work activity safety training.

This Module has three parts;

1. Study the following safety rules & safety tips.
2. Watch the James Craig OH & S DVD or complete the online unit and submit.
3. Complete the James Craig written safety induction quiz.



**Assessment:**

Satisfactorily complete James Craig safety quiz, UNIT 2 in the online training. Completion will be recorded in crew members 'Diary of Service and Experience Log' book.

**Outcome:**

Crew to be fully aware of their responsibilities to themselves, the passengers and to other members of the crew.

### 1.2.1 Safety Rules

1. **Report any hazard that is beyond your control;**

such as repairs that are required; other people putting us at risk; change to the original job that has introduced new unexpected danger; weather or other work conditions such as poor lighting that cause risk

**Note:** Put a “Danger ” tag on unsafe equipment. The tag is only removed by the person who put the tag on, when the fault is rectified



TYPICAL FRONT VIEW



STANDARD REAR VIEW

2. **Use the correct equipment for the job you are doing;**

get the right size, type, rating, model, etc.

3. **Keep your work area and equipment clean, tidy and in good repair;**

a place for everything and everything in its place; all unnecessary items removed; and frequently review all items in the work area. It may be necessary to quarantine/isolate the work area.

4. **Use the correct safety equipment and protective clothing for the job you are doing;**

depending on the job make sure that the proper protection is used (e.g. welding screens, breathing protection, eye protection, hearing protection, foot protection, tags, flashing lights, guards, electrical earth leakage devices, up-to-date inspection tags, fire equipment, etc).

5. **Obey rules, signs and instructions and only work with equipment you have been assessed as competent to use;**

obey signposts and warning notices; obtain work permits for jobs with special risks; comply with special rules developed for specific work areas; follow standard operating procedures; read the instructions before use and use the work method statements provided for the task, remember - “one hand for you and one hand for the ship.” Locate the stop button before starting equipment.

**6. Use safe lifting tactics to move heavy loads, and get help or mechanical assistance for heavy loads;**

use fork lift trucks, cranes and hoists rather than manual handling; use trolleys, wheels, levers, skids, handy billy, capstan, windlass and conveyors, to move loads; remember to bend your knees when lifting and plan any manual handling to avoid injuries.

**7. Know your emergency procedures;**

get first aid trained; find out what to do in the event of a substance leak, fire or other possible emergency, explosion; learn where the first aid kit is; learn where the evacuation control point is; know how to raise the emergency alarm and how to telephone for help; know how to treat injuries and how to avoid blood contamination.

**8. Ask if you are in doubt about any safety procedure;**

you should never be embarrassed to report any safety concerns. Sydney Heritage Fleet supervisors have the legal responsibility to ensure health and safety and **YOU** must do everything you can to help them fulfil their obligations. Sydney Heritage Fleet supervisors have to provide training, information, instruction and supervision so that work is done safely.

**9. Get first aid for all injuries you suffer;**

it is a legal requirement for the Sydney Heritage Fleet to keep a register of all injuries that happen at work. The Government inspector from the Work Cover Authority can ask to see the records. If we do not report and treat all injuries we can be prosecuted by the Government. More importantly, quick first aid can stop minor injuries becoming more serious.

**10. Report all mishaps;**

It is a legal duty for the Sydney Heritage Fleet to report to the Work Cover Authority all accidents involving serious injuries as well as all dangerous occurrences. We must make sure that all accidents are reported and analysed in order to prevent future mishaps.

**11. Help maintain site security;**

Challenge any unfamiliar people on site to find out whether they are authorised to be on site; remind visitors of the visitor safety rules; inform the Site Duty Officer of anything untoward.

**12. Work Statements and Risk Analysis;**

Work Statements and Risk Analysis will be completed for ALL major tasks. These combined with pre start briefing are to be read and signed by ALL participating crew.

## 1.2.2 Some Safety Tips

We all want a healthy life, free from danger for ourselves and our crew mates. However, many of the simplest things we do from crossing the road to having a shower are fraught with danger.

As we live with these hazards every day, we have learned techniques to see the chance of an accident. For example, we look both ways before crossing the road, don't leave the soap on the floor of the shower, check yard braces before climbing, just to mention three.

### Attitude.

Safety is an attitude of mind. We all love a joke but must never skylark or play practical jokes on the job.

### **Work environment.**

Ensure that your work area is properly lit and ventilated and is kept as clean and pleasant as is possible.

Unpleasant working conditions can cause fatigue, which can lead to lack of concentration. Work with a mate or at least make sure someone knows where you are.

### **Be alert to your surroundings.**

Be on the lookout for hazards, look after yourself and your crewmates and concentrate on what you are doing. If you see a hazard, fix it and report it.

### **Do not distract others.**

From simple courtesy, if you approach someone who is concentrating on a task, take care to wait until they acknowledge you before talking to them. If you distract them it could cause them to make a mistake or, worse, cause an accident.

### **Clothing and personal items.**

When carrying out maintenance etc, a correct sized boiler suit with sleeves buttoned and a sturdy pair of safety boots, are ideal. Loose flapping clothing can be caught in machinery, blocks or equipment. People who wear their hair long must tie it back or cover it.

When sailing, appropriate uniform etc should be worn.

When handling metal or in a hazardous environment, wear gloves to keep your hands clean and free from cuts.

Appropriate sailing groves may be worn for handling lines etc.

Watches, rings and other jewellery can be caught on machinery and cause injury.

### **Safety equipment.**

Wear the correct protective equipment for your environment and obey all safety signs such as hardhat areas, eye and hearing protection etc.

### **Walkways. (Deck and companion ways)**

In some areas there are lines marked on the floor or deck. These outline safe walkways, so when walking through the area keep within the lines. Do not place any item on, or protruding into, the walkway as it may be snagged by a vehicle or person and cause an accident.

On board companion ways and stairs can be particularly hazardous, especially at sea. Always descend companion ways and ladders by facing the companion way or ladder

and maintaining a firm hand hold.

### **Unsteady or slippery surfaces.**

Try not to walk or climb on surfaces that may move or are slippery such as piles of rope, painted surfaces, cargo, round metal bars, pipes etc.

Clean up any spills as soon as you can or at least throw down something to soak up the spill. Handrails are there to maintain your balance, not to support your weight. Remember the old saying - “One hand for you and one hand for the ship”

### **Power Tools.**

Ensure your power tools and extension cords are in good condition and have the proper inspection tags.

Unless you are properly qualified, do not attempt to examine, adjust or repair power tools.

### **Eye protection.**

Protect your eyes at all times and wear safety glasses where there are flying particles or sparks. Never look at welding with unprotected eyes as this can cause serious and permanent damage, so turn your head away or shield your eyes with a hand. Ideally, welding should be done behind screens, but this is not always possible.

### **Hearing protection.**

In a noisy environment wear hearing protection. Noise can damage hearing and can also cause fatigue and loss of concentration.

### **Hand tools.**

Your tools should be the correct size and type for the job and in good condition. The wrong tool can slip and cause injury and a chisel with a burred over end can cut your hand.

### **Cranes, Windlass, Capstan and lifting gear.**

Only authorised people may use cranes etc. Slings and other items used for lifting must be in good order and suitable for the task. Do not walk or stand under a suspended load.

### **Machinery.**

Persons operating machinery should ensure that guards are in position; the machine is safe and so does not harm them or others. Before STARTING any machine make sure you know how to STOP IT.

### **Working at heights.**

Learn how to place ladders and other equipment and wear the proper safety harness and gear appropriate to the height you are working. All tools and equipment taken aloft are to be secured to you with a lanyard.

### **Confined spaces.**

Crew are not to enter a closed or confined space until it is declared safe, i.e. ventilated, access is clear, air circulation has been established, are tested, appropriate protection equipment is to be worn, recovery gear is at hand.

### **Painting.**

All thinners and paint must be sealed and stored in the paint store when not in use.

### **Chemicals.**

A number of chemicals such as strippers, paint and boiler feed water additives etc., are used. If they are hazardous treat them with care and keep them sealed and stored properly.

### **Waste.**

Make sure ALL waste (Old rags, Paints, chemicals etc) has been removed to a safe storage/disposal after a task has been completed.

### **1.2.3 Finally, do not be afraid to ask.**

Nobody can know it all: Most people are flattered if you ask their advice, so you will make a new friend as well as increasing your knowledge. Our Fleet has many highly skilled volunteers who are only too happy to pass on their expertise.

**Remember - "If you can't do it safely, don't do it!"**

### **MODULE 3.**

## **1.3 Ship Inspection & Operation**

### **Aim:**

Tour the ship and inspect all areas.

Acquaint crew member with location of all emergency equipment as displayed on the ship's emergency plan.

### **Overview:**

Inspect all decks and compartments in the ship.

Explain - Safety equipment including rafts and life jackets

- Alarm systems
- Marking time with the Ship's bell
- General crew information for day sails
- James Craig crew structure for day sails
- Ship's plan
- Direction, relative to the ship.
- General crew organisation information for voyaging.

### **Assessment:**

Oral examination by a Watchleader, who will, when satisfied, sign off the relevant part in the crew member's 'Diary of Service and Experience Log' book.

### **Outcome:**

Crew to become familiar with layout of the ship and equipment carried.

### 1.3.1 Safety Equipment

The ship's safety plan is displayed in two locations, at the engine room door and amidships on the port side of the 'tween deck. The schematic diagrams show the location of emergency equipment, and escape routes, get to know them.

The James Craig carries a full range of safety and emergency equipment that includes;

- Life jackets.
- Fire extinguishers, fire hoses and galley fire blankets.
- Fire pumps, bilge pumps and auxiliary fire/bilge pump.
- Life rings, carley float and three self inflating life rafts.
- Engine room fire smothering system.
- Escape hatches.
- Flares, EPIRBs, line throwers.
- MOB Dan Buoy and markers.
- Radios.
- Rescue from aloft gear and stretchers
- Safety harnesses.
- Axes, crowbars etc.
- Emergency steering gear.

### Alarms

In addition to raising an alarm by voice the James Craig has three alarm systems;-

#### 1. Manual Alarm

The Manual Alarm is activated by the breaking of the glass panel and pressing the button at the Fire Alarm Panel .

Call out.

#### 2. Automatic Alarm

The **Automatic Alarm is activated whenever one of the vessel's smoke or thermal** detectors is triggered. The Alarm sets off the sirens located throughout the vessel and a light is displayed on the Alarm Panel indicating the location of the triggered sensor(s). The Alarm is continuous until cancelled at the Alarm Panel.

#### 3. General Alarm

The General Alarm is manually activated by the Deck Officer Of the Watch (OOW) from the Quarter Deck. The Alarm is the ringing of the alarm bells located throughout the vessel and the sounding of the ship's whistle as follows:

General Emergency: Seven (7) short blasts (4 seconds each) on the ships whistle followed by one (1) long blast (at least 10 seconds) and repeated on the ship's alarm bells.

Man Overboard: Three long (at least 10 seconds each) blasts on the ship's whistle and alarm bells.

Stand Down: (Following a prior alarm signal) Continuous ringing of the ship's alarm bells for 15 seconds.

Prepare to Abandon Ship: One short blast followed by one long blast on the ship's whistle and alarm bells, repeated three times.

Abandon Ship: The signal to Abandon Ship will be given verbally by the Master and repeated throughout the accessible compartments of the ship by crew specifically directed by the Master to do so. In addition, if time and circumstances permit the signal will be the continuous sounding of the whistle/or alarm bells for at least 30 seconds.

NOTE: In sounding any Alarm involving the use of the ship's whistle, the Deck OOW must first ensure that any crew working aloft in the vicinity of the whistle are forewarned.

#### 4. Exercises

As an ongoing practice to maintain professional performance by our crew, frequent exercises for Fire, General Alarm, Abandon Ship, and Man Overboard alarms are conducted using the ship's bell, whistle & P.A. system. All such alarm signals will be preceded by the statement "For exercise – for exercise – for exercise" on the P.A. System.

### 1.3.2 Marking Time With The Ship's Bells

This extract may be of interest to all regarding time keeping on board. Extracted from "Admiralty Manual of Seamanship" Vol.1.1964. Be aware that local or recent changes may supersede some of this. Particularly regarding alarm signals.

#### Time and Watches

The seaman uses the 24-hour clock and his day is divided into seven periods called watches. The day starts at midnight and the time is recorded in four figures, of which the first two denote the hour and the last two the minutes.

The following table shows the difference in the recording of time by civil and naval methods.

| Name of Watch | Civil time         | Naval time   |
|---------------|--------------------|--------------|
| Middle        | Midnight to 4 a.m. | 0000 to 0400 |
| Morning       | 4 a.m. to 8 a.m.   | 0400 to 0800 |
| Forenoon      | 8 a.m. to 12 p.m.  | 0800 to 1200 |
| Afternoon     | 12 p.m. to 4 p.m.  | 1200 to 1600 |
| First Dog     | 4 p.m. to 6 p.m.   | 1600 to 1800 |
| Last Dog      | 6 p.m. to 8 p.m.   | 1800 to 2000 |
| First         | 8 p.m. to Midnight | 2000 to 2400 |

The purpose of dividing the period between 1600 and 2000 into the two Dog Watches is to provide an odd number of watches in the 24-hour day so that the port and starboard watches will keep a different watch each day.

The seaman, unlike the civilian, does not speak of the morning, afternoon and evening, but of the morning, forenoon, afternoon, dog watches, first and middle watches.

### Striking the ship's bell

The time is indicated by striking the hours and half-hours on the ship's bell throughout each watch, except in silent hours and during church services, in accordance with the table below; the time thus indicated is called "one bell, two bells, etc. according to the number of times the bell has been struck;

first half-hour 1 bell second hour and a half 5 bells

first hour 2 bells third hour 6 bells

first hour and a half 3 bells third hour and a half 7 bells

second hour 4 bells fourth hour 8 bells

This sequence is repeated in each watch, with the exception of the last dog watch: seven bells, for example, can therefore indicate 0330,0730,1130,1530 or 2330, and so, when quoting the time by this method, the name of the watch is added; 1130 for example, is described as "seven bells in the forenoon". Time in the last dog watch is marked as follows:1830 by one bell,1900 by two bells,1930 by three bells and 2000 by eight bells.

Except for marking the time the ship's bell is struck only when the ship is at anchor in a fog or bad visibility, or in some ships, to sound the general alarm in the event of fire or other emergency. The fog signal is the rapid ringing of the bell for about five seconds every minute. For a general alarm the bell is rung rapidly for considerably longer than five seconds, and this is usually followed by a bugle call or a "pipe" indicating the nature of the emergency and giving orders for dealing with it. The general alarm is only sounded by order of the Commanding Officer.

### Silent hours.

This term denotes the period of the night watches, between the time of "pipe down" and calling the hands, when it is customary not to mark the time by the ship's bell in order to avoid unnecessarily disturbing the watch below and the day-men. During the silent hours at sea the watch next on deck is sometimes called by the words "all the (named) watch", the call being made much less loudly than in daytime. At five or ten minutes to the hour for relieving the watches the bell may be struck once, softly, as a signal for the relieving watch to muster, this strike being called "little-one-bell".

## 1.3.3 General Information For Day Sails

The following notes are for the guidance of crew joining the ship for day sails.

Tips for voyages are in Module 20.

If at any stage you are not sure what to do, do not do it, ask first.

### Personal Equipment

Personal items should be stored on board, below in a suitable secure bag.

Beware of sunburn & windburn. Sunscreen is available on board, but those with special requirements should bring their own protection.

### Drugs and Sea Sickness Pills

Personal medications and sea sickness remedies may be brought on board. However if these are likely to effect your performance, especially in duties requiring climbing, inform your Watch Leader. Remember if you feel sick during a voyage it is generally too late to take medication, and for it to be immediately effective.



## Food & Drink

No alcohol is to be brought on board or consumed by crew in the ship.

Basic lunch, Tea and Coffee are provided for crew on sailing days. Those crew with special needs, i.e. large appetites, special diets etc, should bring appropriate extras with them.

Beware of dehydration – drink plenty of water throughout a day.

## Uniform

(Refer to Sydney Heritage Fleet – James Craig – Uniform Policy for detail)

Basic crew uniform is made up as follows;

- . Navy blue “King Gee” style work pants. Available from Lowes etc. Yes these do come in a cut for the ladies. Approx. \$40.00
- . Crew shirt, with Logo, available from Sydney Heritage Fleet. Refer to the Office.
- . Jumper, Navy Blue. Long sleeve field jumpers that are available from surplus stores. Cost around \$70.
- . Sailing gloves. Your choice to use. However there are inheritant dangers/risks in their use. Refer Module 5, Safe line handling.
- . Shoes. Your choice, however would suggest with heel. Many crew use elastic sided work boots such as those produced by “Oliver” Approx cost \$60.00. Crew involved in the engine room will have to wear safety toe caps.

Bare feet ARE NOT an option.

- . Headgear. Fleets merchandise carries appropriate Hats, Caps and Beanies.
- . Foul weather gear. Your choice at this time. Warm and dry style recommended.
- . Sheath knife and spike. Group purchase of this item runs at around \$65.00.
  - . In keeping with the ship’s age, the wearing of period costume (1874 seamen) is encouraged on day sails.

## Safety

- . The ship carries an adequate number of Life Jackets for all Crew and Passengers.
- . Climbing harnesses are provided for all crew involved in climbing aloft. Harnesses should be looked after and not exposed to unnecessary risk of damage.
- . First Aid equipment is carried.
- . If you observe any situation that could endanger yourself or others, bring it to the attention of your Watchleader or the Officer Of the Watch.
- . Secure loose items to your person with a lanyard. Especially if taken aloft. Preferably leave them on deck.
- . Due to potential danger when handling lines, it is advisable to remove rings and jewellery.
- . Long hair and beards pose a hazard when working with lines and near blocks. Retain with a net or suitable hat etc.

## Punctuality.

If you are listed as crew for a sail, be on board and sign in by turn to time. For a last minute cancellation phone the ship on 0425~240~032.

### 1.3.4 General Duties For Day Sails

Deck crew are divided into two Watches known as the Fore Watch who look after the forward section of the ship under instructions from the Fore Watch Leader, and the Main Watch who look after the aft section of the ship under instructions from the Main Watch Leader. On some occasions both watches work together to work the ship.

A Watch and Station Bill is prepared for every day sail. This sets out all the positions and duties for all crew members.

Individual duties from the Watch and Station Bill are shown on each crew member's Crew Card. Duties, special duties, emergency station and muster station instructions are listed on your crew cards. These cards are handed out by the Watchleaders, after the Mate's muster.

#### An example of a typical crew card:

Crew member number 16 in the main watch.

**FRONT OF THE CARD** Back of card

| Crew No.                     | Position              |       |                   | Muster Station |           |
|------------------------------|-----------------------|-------|-------------------|----------------|-----------|
| ** **                        | ** **                 | ** ** | ** **             | On deck        | Life Raft |
| M16                          | Main Deck             | ** ** |                   | Fore mast      | 1         |
| Special Sea Duties;          |                       |       | Watch duties;     | Hour of duty;  |           |
| Depart/ Enter Harbour        | Main mast             |       |                   |                |           |
| Sea Boat                     |                       |       | ** **             | ** **          |           |
| ** **                        |                       |       | ** **             | ** **          |           |
| Emergency Station            | Main mast             |       | Forward Lookout   |                |           |
| ** **                        |                       |       | ** **             | ** **          |           |
| ** **                        |                       |       | Stern Lookout     | 3              |           |
| Emergency Duties;            |                       |       |                   |                |           |
| Abandon ship                 | Release Gig gripes    | Helm  |                   |                |           |
| Fire                         | Party - Radio/ Assist | ** ** | ** **             |                |           |
| MOB                          |                       |       | Captain 's Runner | 8              |           |
| Damage Control               | Party - Radio         |       | ** **             | ** **          |           |
| **Medical /First Aid/Str.* * |                       |       | **Patrol**        | 2 & 5          |           |
| Stretch er                   |                       |       |                   |                |           |
| Spill                        | Party - Radio         |       | ** **             | ** **          |           |
| Ship Security/ Search        | Assist                |       | Climb             | NO             |           |

A list of Special Sea Duties, Emergency Station and Emergency Duties are shown on the **front** of your Crew Cards;

- Depart/Enter Harbour
- Sea Boat (Coxswain and crew plus launch/recovery party)
- Abandon ship
- Fire Party (Leader plus crew)

- Man Overboard (MOB)
- Damage Control
- Medical/First Aid/Str. (Stretcher party)
- Spill
- Ship Security/Search
- Passenger climbing

In the column, alongside each item, information will tell if you have a roll and what it is. If it is blank, you are not involved.

#### Front of card BACK OF THE CARD

| Crew No.                     | Position              |       |                   | Muster Station |           |
|------------------------------|-----------------------|-------|-------------------|----------------|-----------|
| ** **                        | ** **                 | ** ** | ** **             | On deck        | Life Raft |
| M16                          | Main Deck             | ** ** |                   | Fore mast      | 1         |
| Special Sea Duties;          |                       |       | Watch duties;     | Hour of duty;  |           |
| Depart/ Enter Harbour        | Main mast             |       |                   |                |           |
| Sea Boat                     |                       |       | ** **             | ** **          |           |
| ** **                        |                       |       | ** **             | ** **          |           |
| Emergency Station            | Main mast             |       | Forward Lookout   |                |           |
| ** **                        |                       |       | ** **             | ** **          |           |
| ** **                        |                       |       | Stern Lookout     | 3              |           |
| Emergency Duties;            |                       |       |                   |                |           |
| Abandon ship                 | Release Gig grips     | Helm  |                   |                |           |
| Fire                         | Party - Radio/ Assist | ** ** | ** **             |                |           |
| MOB                          |                       |       | Captain 's Runner | 8              |           |
| Damage Control               | Party - Radio         |       | ** **             | ** **          |           |
| **Medical /First Aid/Str.* * |                       |       | **Patrol**        | 2 & 5          |           |
| Stretcher                    |                       |       |                   |                |           |
| Spill                        | Party - Radio         |       | ** **             | ** **          |           |
| Ship Security/ Search        | Assist                |       | Climb             | NO             |           |
| **Passenger Climbing* *      | Assist                |       | Passenger Climb   | PM             |           |

On the **back** of the card you will find;

- Muster station that tells you where to go and what life raft you are attached to.

**Watch duties** and the **Hour of duty** you are required for those duties.

- Forward lookout - Stern Lookout
- Helmsman ( Quartermaster) - Captain's Runner
- Patrol
- Climb. Some emergency duties involve crew remaining on deck at all times. This is indicated on the card

The "Hour of duty" rotation starts from when the ship slips the wharf.

Detailed information is provided for each of the duties in relevant Modules and Special Sea Duties Module.

### “Hour of Duty” explanation;

On a Day Sail - The ship slips lines at 1000 therefore hour 1 is from 1000 to 1100, hour 2 is from 110 to 1200 and so on.

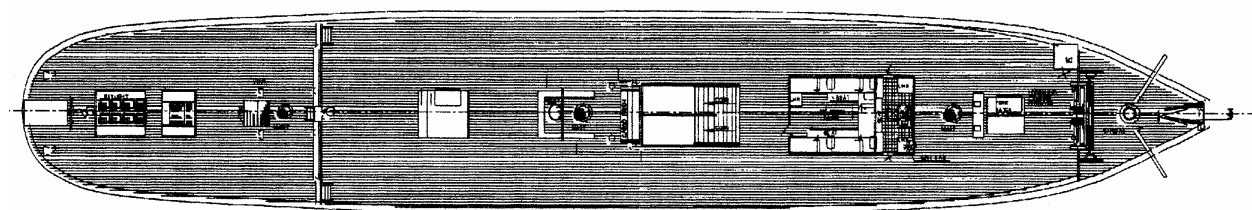
On a voyage – The ship may slip lines at 0800 therefore hour 1 is from 088 to 0900, hour 2 is from 0900 to 1000 and so on until hour 8, then the cycle is repeated.

## 1.3.5 James Craig Crew Structure (day Sails)

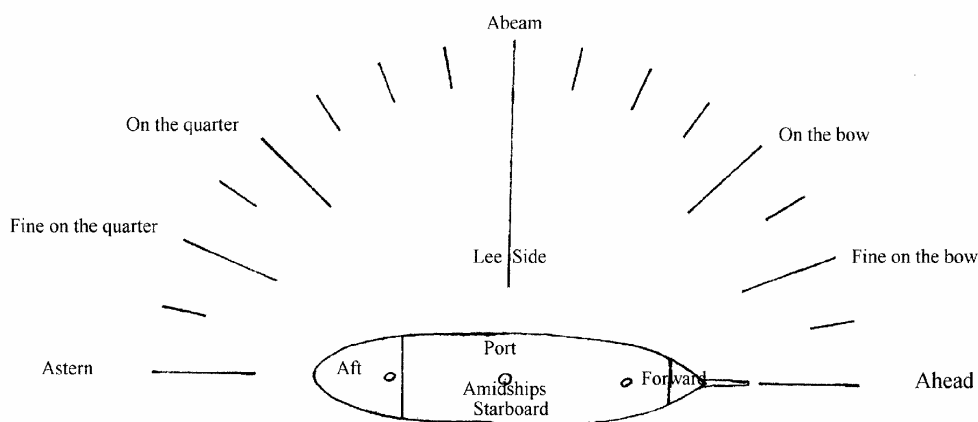
On voyages, a three watch system is run using either fixer or rotating watches.

## 1.3.6 Ship's Deck Plan

*(Relative bearings are in italics)*

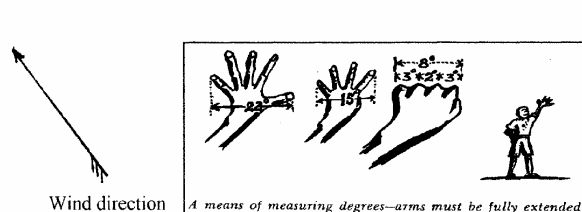


### Shipboard Directions – relative to the ship



Angle Divisions equal 1 point

1 point =  $11 \frac{1}{4}$  degrees.



### 1.3.7 General Crew Organisation Information For Voyaging

James Craig undertakes three types of sailing operations; Harbour Charters, Day Sails off shore and Voyages overnight at sea or to other ports.

Each operation has a different crew routine.

Previously you looked at Day Sails Refer to pages 4, 5, & 6. Now we will consider voyaging i.e. passages and operations of extended duration from the home port that involves a 24 hour continuous operation for a number of days.

#### Command structure

Similar to a day sail however with three deck watches.

#### Watches

For normal operation the total crew is divided into 3 groups called Watches.

- Fore Watch
- Main Watch
- Mizzen Watch

A Watch and Station Bill, refer to page 12, is created. This sets out the duties, emergency stations etc for the whole ship.

Each crew member will be issued with a Crew Card, refer page 11 for an example. This will give your Crew Number, Muster Station and Life Raft Number and any Special Duties as set out in the Watch Bill.

As the ship operates 24 hours a day a system to rotate the watches has to be implemented.

Many watch systems have been developed over the years some of these are;

- Fixed watches
- Swedish watches
- Rotating watches
- Miscellaneous systems to cater for other voyage requirements.

They all have advantages and disadvantages depending on a crew member's expectations.

In the James Craig trials have lead the vessel to adopt two;

- Officers and Engineers use the Fixed Watch system.
- Deck crew use the rotating watch system.

#### Fixed Watches

A day is divided into four hour blocks;

- Middle Watch 2400 to 0400
- Morning Watch 0400 to 0800
- Forenoon Watch 0800 to 1200
- Afternoon Watch 1200 to 1600

- Dog Watch 1600 to 2000
- First Watch 2000 to 2400

The James Craig runs a three watch routine for the whole ship. Therefore the Officers/Engineers stand four hours on watch and eight off watch.

Like all crew members this routine can be upset at any time.

Under this system the Officers stand watch at the same times each day.

### Rotating Watches

The day is divided into four hour blocks and two, two hour blocks;

- Middle Watch 2400 to 0400
- Morning Watch 0400 to 0800
- Forenoon Watch 0800 to 1200
- Afternoon Watch 1200 to 1600
- First Dog Watch 1600 to 1800
- Second Dog Watch 1800 to 2000
- First Watch 2000 to 2400

Note this system has split the Dog Watch into First Dog Watch and Second Dog Watch.

Crew rotating through this system can experience different parts of the day each time they come on watch. Complete rotation in three days.

### Going on watch

While your Watch is on duty it will be responsible for the smooth running and safety of the ship under the command of the Officer of the Watch.

The on going watch assemble 10 minutes before the start of the watch on the Starboard side at the break of the quarter deck.

Bring your harness and appropriate clothing with you.

This allows time for the Watch Leader to conduct a roll call and briefing and for you to familiarise yourself with the current situation before you take over special duties etc from the watch coming off duty.

### Going on watch

At the end of a watch, assemble on the Port side at the break of the quarter deck.

When all of the watch has assembled the Watch Leader conducts a roll call and debriefing before dismissing the watch.

#### NOTE.

- The off going watch cannot leave until ALL of the oncoming watch is accounted for and has taken over all special duties.
- When not on watch make sleep a priority as you may be called on deck at any time.
- Do not disturb crew members who are off watch and wish to sleep.
- Place harness on the rack and stow wet gear in the “wet” area in the t’ween deck.

- Keep your gear together and the t'ween deck tidy. Secure you gear to the ship.

### Marking time

At sea the passage of time is marked by striking the ship's bell. Refer to page 3 of the Module for a description of the system used.

### Voyage tips

Refer to Module 20 and/or the Voyaging Handbook before going on a voyage.

### Example of a Crew card and Watch and Station Bill

#### Crew card

| Crew No.               | **Position* *                          |       | Muster Station |           |
|------------------------|----------------------------------------|-------|----------------|-----------|
|                        |                                        |       | On deck        | Life Raft |
| 8                      | Fore WL                                |       | Fore deck      | 1         |
| Special Sea Duties;    | Special Duties you carry out;          |       | ** **          |           |
| Depart/En ter Harbour  | Fore mast/HDCT/ I/C Anchor (Stockless) |       |                |           |
| Sea Boat               | 0                                      | ** ** | ** **          |           |
| ** **                  |                                        | ** ** | ** **          |           |
| All Hands              | Fore mast/HDCT/ I/C Anchor (Stockless) | ** ** | ** **          |           |
| ** **                  |                                        |       | ** **          |           |
| ** **                  |                                        | ** ** | ** **          |           |
| Emergency Duties;      |                                        |       |                |           |
| Abandon ship           | I/C LR 1 Prep./ HDCT                   | ** ** | ** **          |           |
| Fire                   | HDCT                                   | ** ** | ** **          |           |
| MOB                    | HDCT                                   | ** ** | ** **          |           |
| **Damage Control/ES* * | HDCT                                   | ** ** | ** **          |           |
| Medical/F irst Aid     | 0                                      | ** ** | ** **          |           |
| **Stretcher **         | 0                                      |       |                |           |
| Recovery from Aloft    | 0                                      |       |                |           |
| Spill                  | 0                                      | ** ** | ** **          |           |
| Ship Security/Se arch  | HDCT                                   | ** ** | ** **          |           |

Front of card Back of card



| BARQUE JAMES CRAIG - WATCH AND STATION BILL - SYDNEY TO HOBBART 2011 |          |            |         |       |                |              |            |            |            |            |            |                |                   |                   |
|----------------------------------------------------------------------|----------|------------|---------|-------|----------------|--------------|------------|------------|------------|------------|------------|----------------|-------------------|-------------------|
| Crew                                                                 |          |            |         |       |                |              |            |            |            |            |            |                |                   |                   |
| Crew No.                                                             | Position | First Name | Surname | Accom | Master Station | SEA DUTIES   | SEA DUTIES | SEA DUTIES | SEA DUTIES | SEA DUTIES | SEA DUTIES | SEA DUTIES     | SEA DUTIES        | SEA DUTIES        |
|                                                                      |          |            |         |       |                | All hands    | Department | Harbour    | Seaboard   | Abandon    | Fire       | MOB            | Damage Control    | Medical Emergency |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                | Depart/Enter | Harbour    | Seaboard   | Abandon    | Fire       | MOB        | Damage Control | Medical Emergency | Oil Spill         |
|                                                                      |          |            |         |       |                |              |            |            |            |            |            |                |                   |                   |



- ship's spars
- parts of the standing rigging
- ship's sails
- sail parts
- the lines that control the sails & spars (running rigging) and

where they are located pin rails.( Refer Module 5 – pages 22 to 24).

Although the above may seem formidable, a structured and systematic approach to learning will facilitate the process.

This will involve:-

- identify spars
- identifying the rigging as standing, running and other (flag

halyards, gantlines), on fore, main and mizzen masts and jibboom.

- observing the principles and patterns that govern where lines fall utilising 'tools' such as these notes, rigging and pin diagrams.

**Assessment:**

Oral examination by a Watchleader who will, when satisfied, sign off task in crew members 'Diary of Service and Experience Log' book.

**Outcome:**

Be able to identify and name the parts of the ship's rig and able to locate a required line or pin without hesitation.

### 1.4.1 Spars

Spars – This is a general term for all wood and metal supports used in rigging of a ship, it embraces all masts, yards, booms, gaffs etc.

Spars have standing rigging to keep them in place and support them. Running rigging, on some, is used to control their position relative to the ship and weather.

NOTE: Square rig ships were designed to work down wind, so you will note that the majority of standing rigging and some running rigging is set to support the masts etc from forward movement. The relatively few and lighter fore stays act in the opposite direction. Therefore it is of the utmost importance that the ship is not caught aback, i.e. head to wind.

|                                |                                                                                                           |                                                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Spars<br/>(Page 9)</b><br>9 | <b>Standing Rigging</b> (Pages 10 to 12)                                                                  | <b>Running Rigging</b> (Page 5)                                                                                               |
| Masts                          | Athwart ship;<br>Shrouds<br>Guys<br>Fore support;<br>Fore stays<br>Jib stays<br>Aft support;<br>Backstays | Nil                                                                                                                           |
| Yards                          | Lifts (Page 3)                                                                                            | Braces (Page 4)<br>Halyards (Hoisting yards only)<br>Downhauls (Upper topsail yard only)                                      |
| Booms                          | Topping lift                                                                                              | Preventers (Page 5)<br>Note- Spanker is loose footed therefore spanker sheet is attached to the end of the boom not the sail, |
| Gaff                           | Span                                                                                                      | Vangs (Page 5)                                                                                                                |
| Bow sprit                      | Bob stay<br>Bow sprit guys                                                                                |                                                                                                                               |
| Jibboom                        | Martingale stays<br>Jib stays<br>Guys                                                                     |                                                                                                                               |
| Davits/<br>other               |                                                                                                           | Guys<br>Falls                                                                                                                 |

The following diagrams show;

- Spars and the names they receive when they are in position.
- Standing rigging – shrouds and backstays to provide thwart ship and

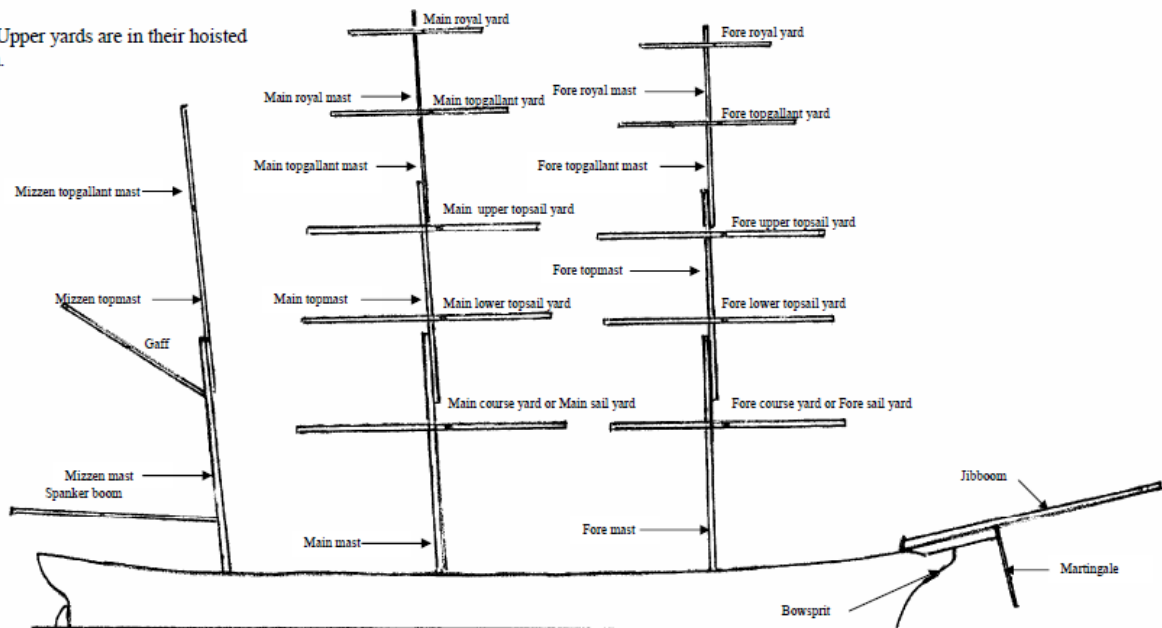
forward

and aft stability for the masts..

- Standing rigging viewed from ahead
- Standing rigging – fore stays to prevent aft movement of the masts.
- Standing rigging for the bowsprit and jibboom.
- Running rigging for yards, boom and gaff
- Hoisting yards.
- Trimming yards.

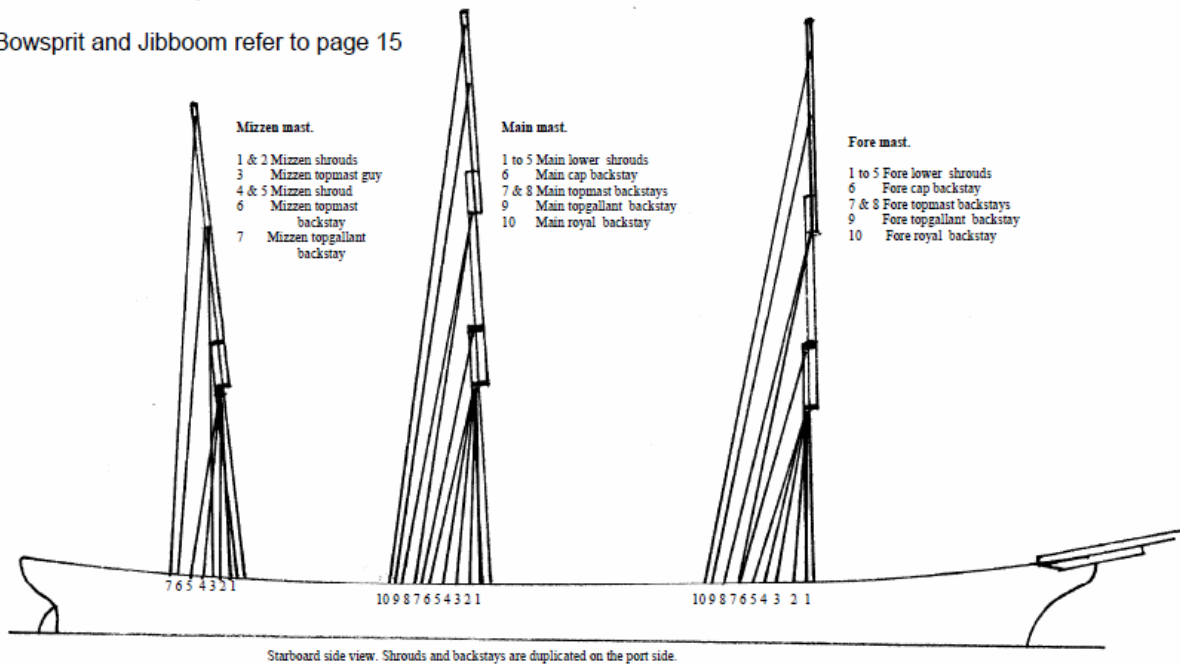
## James Craig – Spars

Note: Upper yards are in their hoisted position.



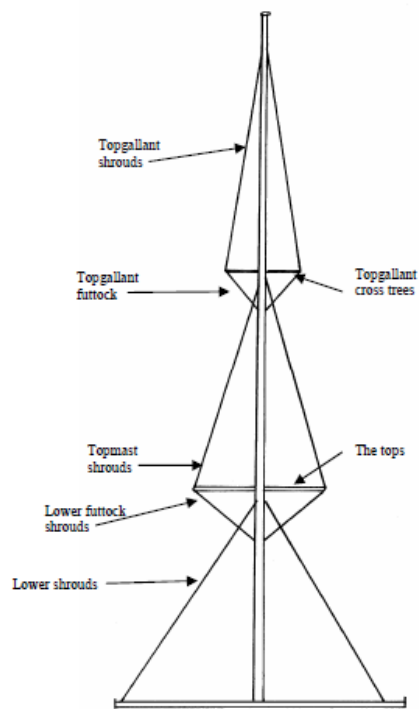
## James Craig – Standing Rigging – Shrouds and Backstays

For Bowsprit and Jibboom refer to page 15

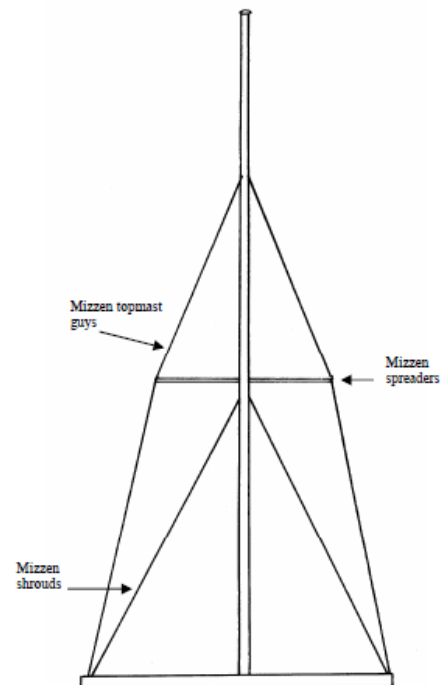


Starboard side view. Shrouds and backstays are duplicated on the port side.

James Craig – Standing Rigging – Fore, Main and Mizzen Mast shrouds viewed from ahead

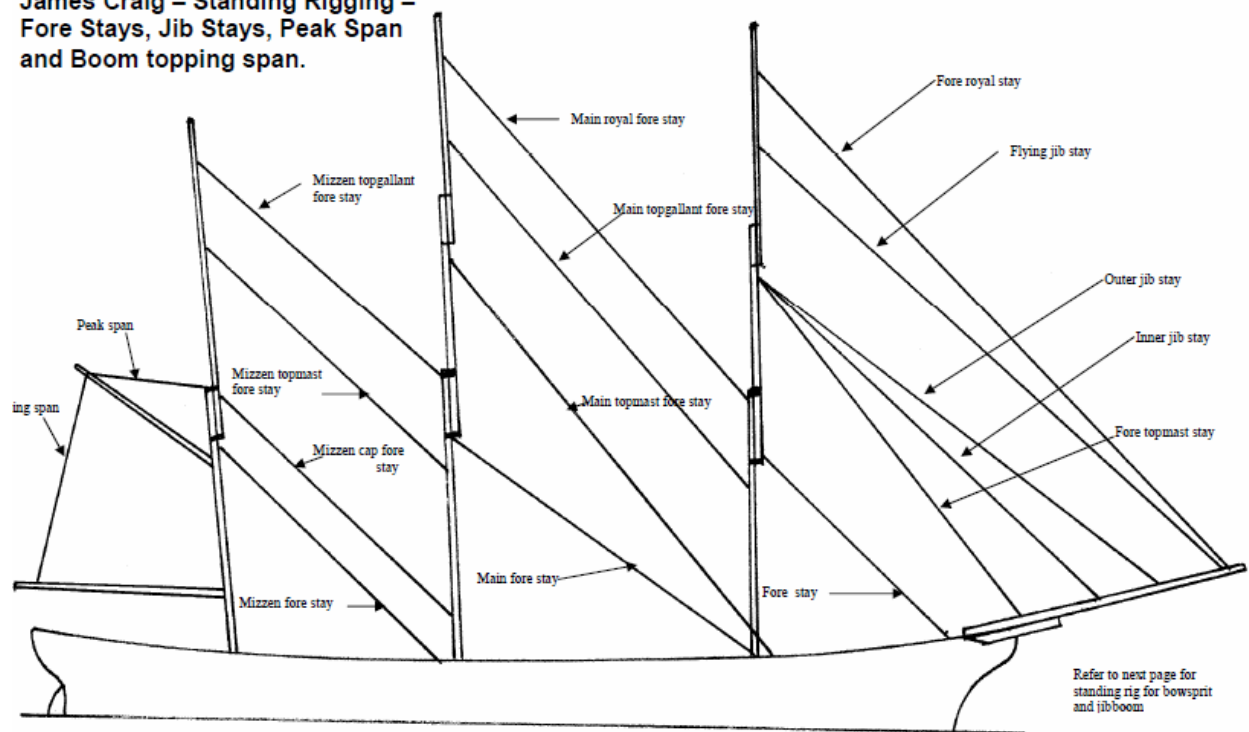


Fore & Main Masts

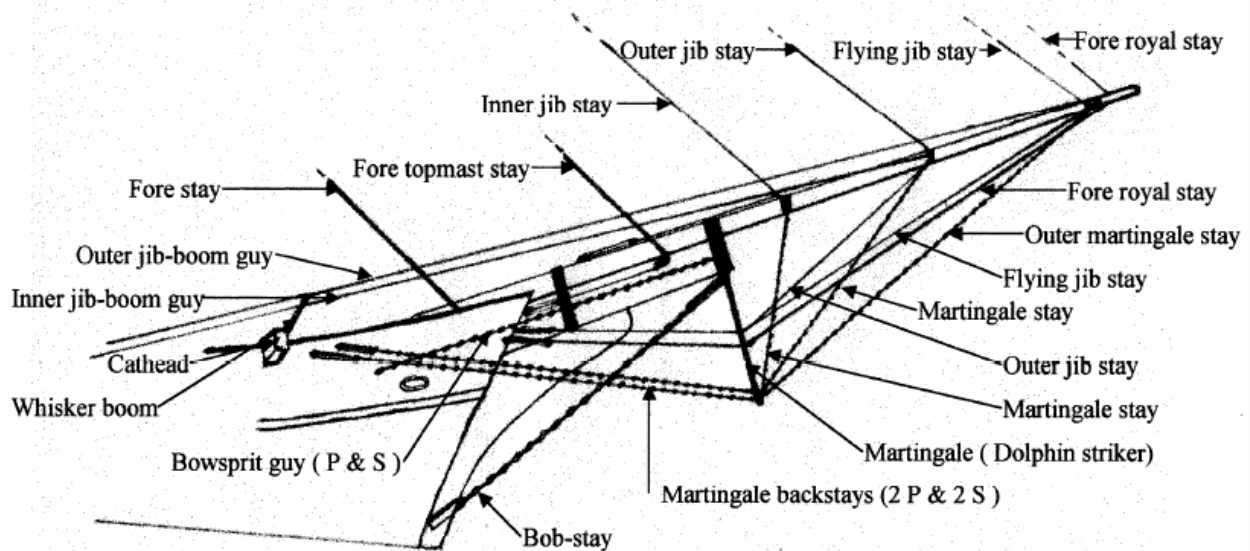


Mizzen Mast

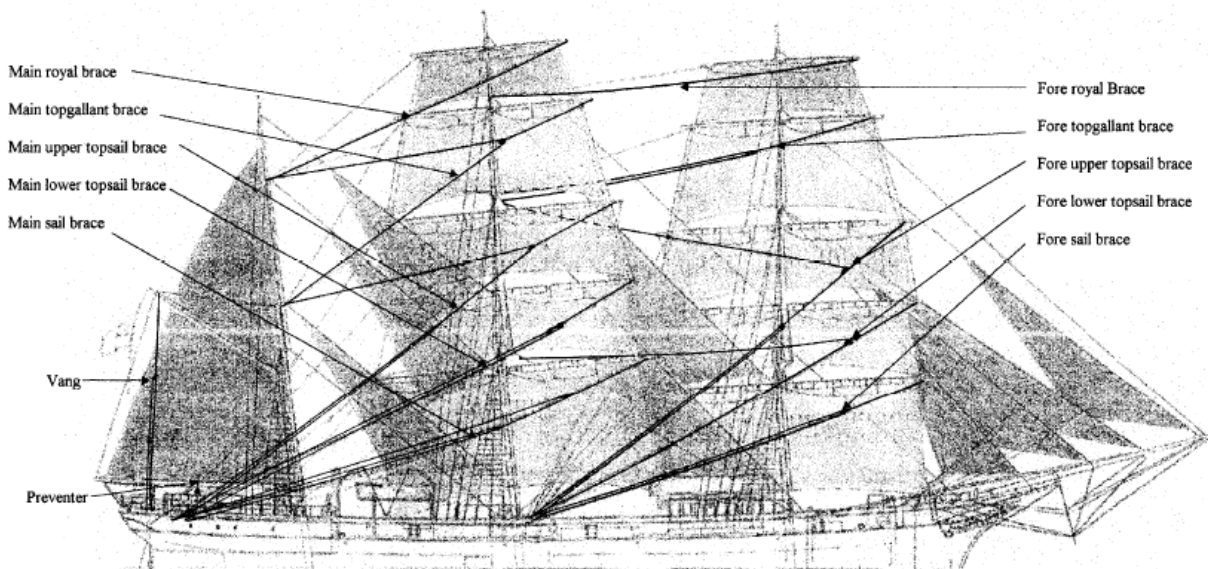
James Craig – Standing Rigging – Fore Stays, Jib Stays, Peak Span and Boom topping span.



## James Craig – Standing Rigging for Bowsprit and Jibboom.



## RUNNING RIGGING (BRACES) FOR YARDS, BOOM AND GAFF – viewed from the Starboard side.



SPARS – RUNNING RIGGING – STARBOARD SIDE  
(Port Side is the same)  
Yard Braces, Spanker boom preventer & Gaff vang.

## 1.4.2 Yards – Braces

The angle of the yards to the ship is controlled by the braces (running rigging) attached to the end of each yard. Refer to the diagram on the previous page.

To locate the pins to which the running end of the braces are attached on deck, refer to the pin diagrams in Module 5, pages 10,11 and 12.

### 1.4.3 Yard – Halyards

Arrangement of yards on both masts.

NOTE. Lower two yards are fixed to the mast, upper three yards are “hoisting yards”.

Acknowledgement – Mastng & Rigging – Harold A. Underhill.

The upper topsail, topgallant and royal yards are supported, when lowered, by their lifts (standing rigging).

Each yard is hoisted by a halyard (running rigging). The yard is attached to the mast by a parral that slides on the mast.

### 1.4.4 Sails

To set or take in sails some lines are eased while others are hauled. The following tables illustrate these, in general terms. Sail Handling Module 7 will cover sail handling in more detail.

Refer to page 13 for the sail plan.

#### Square sails running rigging

The head of a sail is lashed with robands to the jackstay on the yard.

| To Set, haul on; | To take in, haul on;  |
|------------------|-----------------------|
| Tack             | Clew lines            |
| Sheets           | Leech lines           |
| Yard halyards    | Bunts                 |
|                  | Clew garnet           |
|                  | Yard halyards (eased) |
|                  | Yard downhauls        |

#### Fore and aft sails running rigging

Sails are made fast at the tack, the luff lashed to hanks, hoops or a jackstay, the clew is controlled by the sheets or outhaul, the head by a halyard or outhaul and downhaul or inhaul.

| To set, use; | To take in, use; |
|--------------|------------------|
| Halyards     | Downhauls        |
| Sheets       | Clew line        |
| Outhauls     | Inhaul           |
|              | Brails           |

#### Other running rigging & lines

Some examples;

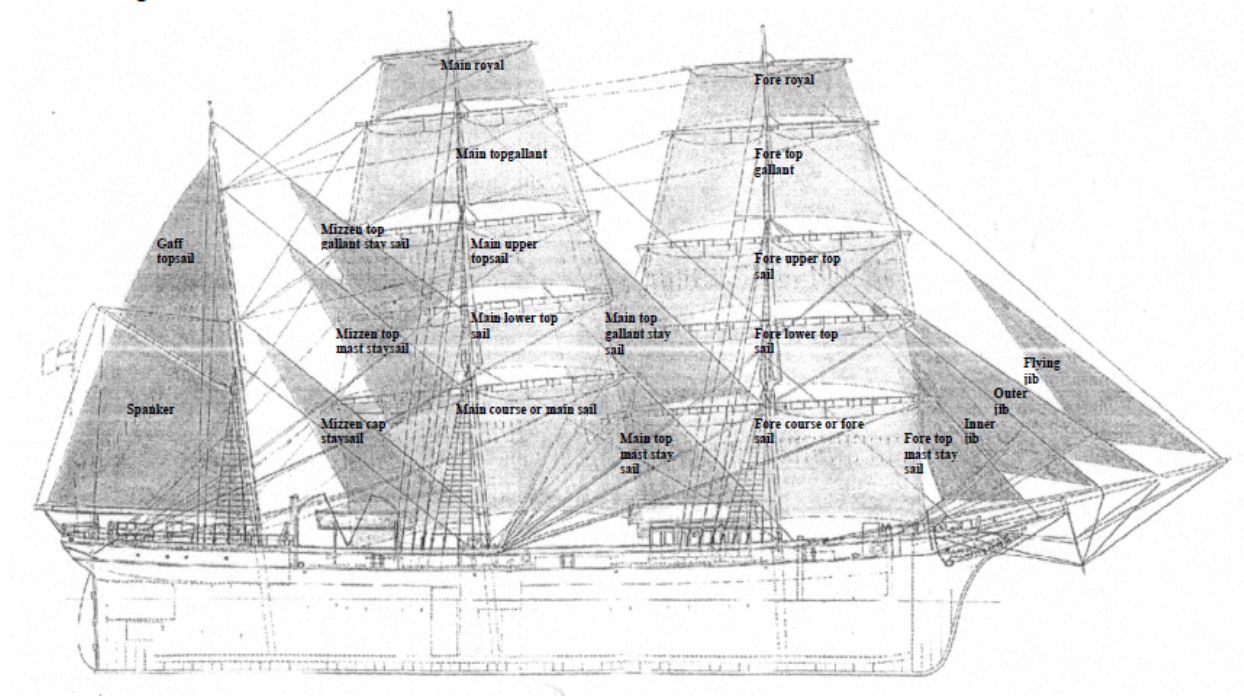
Painter Man rope Freeing line

Painter pendant Gantline Heaving line

Bowsing line Flag/ signal halyard Etc.



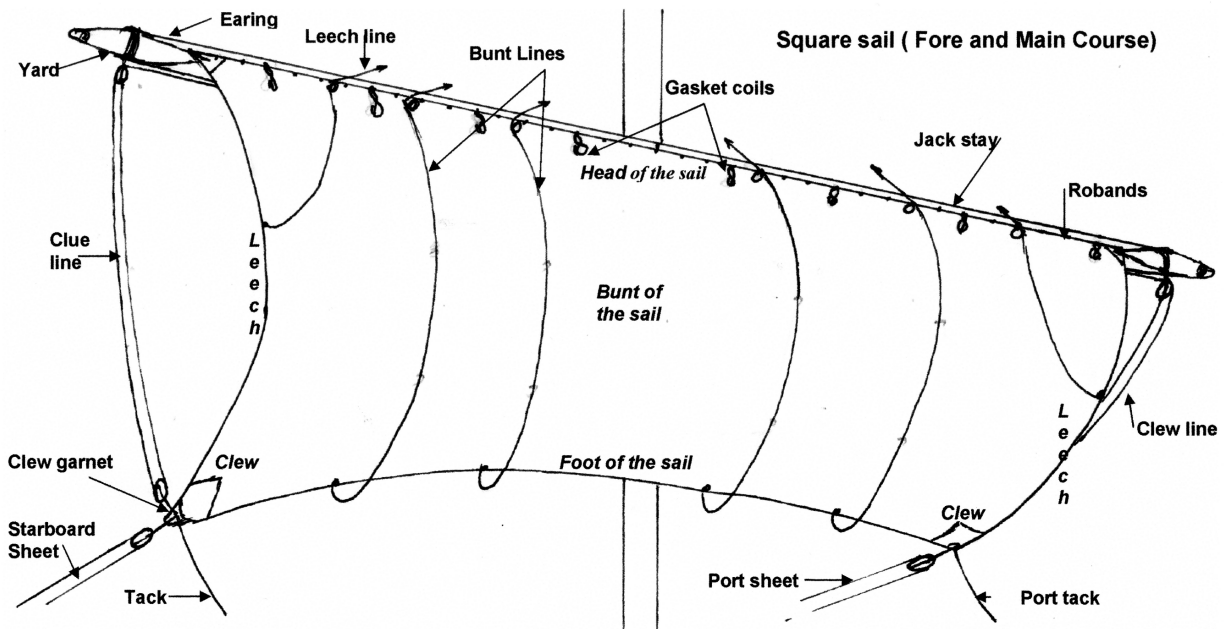
## James Craig – Sail Plan



## 1.4.5 Parts Of Typical Sails And Handling Lines

Refer to diagram “Anatomy of a sail and spars” illustrated by James Parbery,

More detail on running rigging for James Craig sails will be covered in Module 7.











### 1.4.6 Rig Conventions

Here are some of the internationally accepted conventions that govern the positioning of lines and their belaying pins.

1. **The higher the sail, the further aft its lines belay.**

This provides the fairest lead for lines and avoids chafe, the sailing ship's greatest enemy.

2. **Sheets for the square sails belay around the mast.**

In accordance with convention 1, the lower topsail sheets will be on the forward side of the mast, followed by topgallant sheets and royal sheets being aftermost<sup>1</sup>. The reasoning is that a ship on its beam ends (knocked down) in a squall will need to let go sheets to reduce the pressure of wind on the sails. In such a situation, if the sheets were belayed to the main rails, the lee ones may be underwater.

3. **Clew garnets, clewlines, leechlines, buntlines and upper topsail downhauls (the "gear") are belayed at the main rail amongst the shrouds.**

Lines controlling the course are grouped together, next aft is the group of lines controlling the lower topsail, then the upper topsail and so on. Aloft, the further inboard the source of the line, the further aft in the group on deck it will be found. This is why the leechlines and buntlines belay aft of the clew garnets, clewlines and downhauls.

4. **Halyards belay at the main rail.**

Convention 1 still applies. In addition, the square sail halyards belay on opposite sides when you compare fore and main masts. This is a custom that almost certainly comes from the days of fighting sailing ships

---

<sup>1</sup> James Craig royal sheets belay at the main rail rather than at the base of each mast. This was due to the mainstay crowding the fore mast spider band, making it virtually impossible to belay the fore royal sheet. It was decided to belay this line at the main rail forward of the royal clewline. In order to preserve consistency, the main royal sheet was also\* belayed at the main rail.

with large crews. The same sails on each mast could be hoisted at the same time, by large numbers of crew running along the deck working space. The reasoning still holds good.

**5. The headsail halyards also alternate from port to starboard.**

These halyards compete with the square sails for space at the main rail. The lowest headsail is the fore topmast staysail. The halyard belays at the starboard main rail just abaft of the fore royal lines. The inner jib is next, being on the port main rail, and so on.

**6. Main topgallant sheets belay at the main fife rail.**

Although the main lower topsail sheets belay at the base of the mast to the spider band, the topgallant sheets belay at the main fife rail. This provides easier working access.

**7. Staysails and Jib downhauls belay close to the ship's centre line**

and so will be found on the anchor deck fife rail, fore mast spider band and the main mast fife rail. They belay on the same side as their sail's halyard.

Despite these conventions, in nearly every ship you will find a few lines belayed in non conforming places. This may be because the lead is such that the line chafes in its conventional place, or the way the pin rails were constructed, is not strictly traditional.

**MODULE 5**

## **1.5 Pins & Ropework**

**Aim:**

To explain:

- Rig conventions for the arrangement of lines in the ship.
- The dangers associated with lines on deck.
- Safe line handling.
- Belaying lines to pins and controlling lines.
- Coiling lines.
- Stoppers and Stoppering.
- "Marrying" lines.
- Handy billy.
- Belaying to stag horn bits.
- Working a hawser on deck bitts.
- Layout of the Fore Deck with Capstan and Windlass.
- Working with the capstan.
- Working the warping drum on the windlass.
- Basic knots and splices used in the ship.
- Pin diagrams.

**Overview:**

This is a very practical module and will require continual practical application for proficiency to be developed.

**Assessment:**

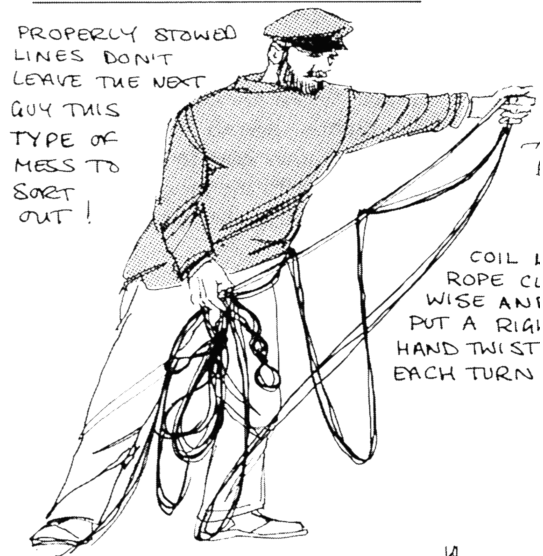
Oral and practical examination by a Watchleader, who will, when satisfied, sign off the tasks in crew members 'Diary of Service and Experience Log' book.

Successful completion and submission of rope work exercise in Annexure "A".

### Outcome:

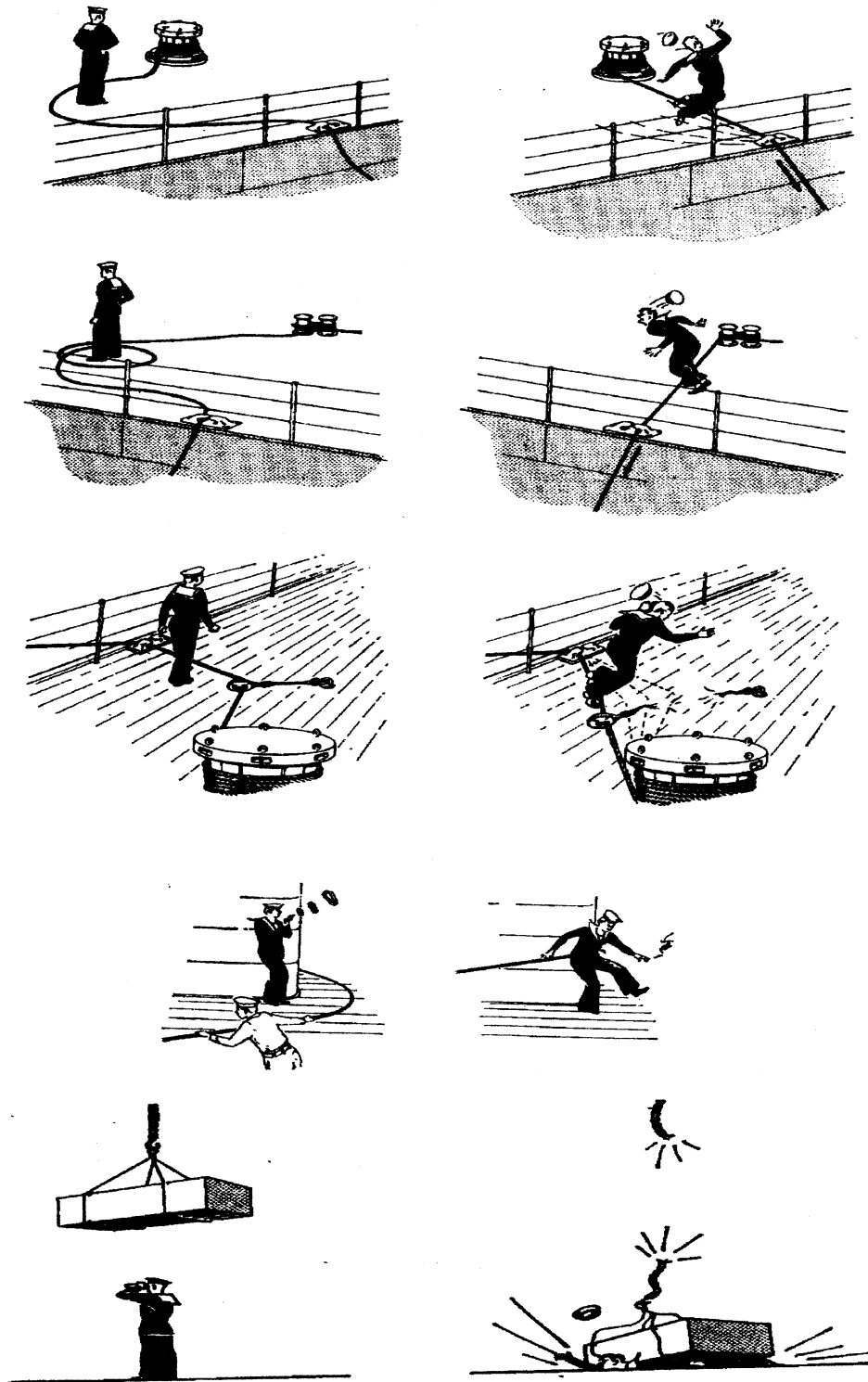
A crew member will be able to identify lines, secure and handle lines efficiently and

DON'T GET IN A TANGLE!



safely.

DANGERS. DO NOT STAND IN BIGHTS, LOOPS ETC FOR THE REASONS SHOWN BELOW –



**Do not stand on lines on the deck.** To do so leads to unnecessary line wear and tangles and could result in you sustaining a twisted ankle or being entangled in the lines.

### 1.5.1 Safe Line Handling

Injuries can easily happen while working lines. These include;

- Rope burn
- Being flicked in the face with rope ends
- Bruises
- Broken bones
- Crushed fingers and limbs.
- Trapped long hair and beards.

Key rules to avoid injury-

- Be aware of others around you when handling lines
- Good line preparation
- Keeping the work area ordered
- Staying clear of danger zones where lines lead -
  - Into sheaves.
  - Through fairleads
  - Onto pins and bitts
  - Where bights of lines lie along the deck.
  - Lines under or about to come under extreme load.
- Check line tension before removing turns from pins or bitts to assess potential load.
- If not sure what is required, ask for further clarification of order.
- Few lines can be worked by one person, seek assistance from other crew.
- Grip a line with fingers, do not wrap thumb around a line.
- When a hand is near a pin, grip the line so that the little finger is closest to the pin.
- Always keep the hands a safe distance from the pin when hauling or easing a line.



- **DO NOT allow a line to slip or run freely through your hands.** To do so may result in loss of control and severe burns.
- When assisting to haul on a line, **do not let go** until the person controlling the line at the pin calls “Turns On”. The person controlling the line at the pin may use the following orders:
  - “Ease to the Pin” – Crew assisting will move the line slowly towards the pin.

- “Come up” – Crew assisting will let go the line.
- “Take the load” – Crew nearby will take hold of the line ahead of the pin to assist hold the load on the line until the line is belayed.

- **DO NOT stand on lines that are lying on the deck.**

**CAUTION NOTE,** The wearing of gloves is optional when handling lines. Beware of overconfidence as the gloves may become entangled and draw hands into pins etc.

### 1.5.2 Palming Down



This is the safest way to reduce turns on a pin as it assists the friction as you reduce the turns. It should become standard practice whether there is weight on the line or not.

The order “Palm down to one turn” is given by the watchleader.

1. Once the coil has been removed from the pin and placed on the deck, take off the belaying hitch.
2. Place the bottom of one palm over the turns and keep the fingers stretched and clear of the line.
3. Slowly take the turns off the pin with the other hand and immediately replace the palm on the remaining turns to maintain the friction.
4. Depending on the wind strength and tension on the line beware that the line may start to slip as you reduce the turns. If this starts to occur, do not remove any more turns and lay back on the free end. Inform your watch leader and call for back-up.
5. In normal circumstances you should be able to reduce to one turn and then lay back on the free end and await further orders.
6. When there is weight on the line, you should be able to safely serge the line with one turn around the pin by easing the weight you are holding but be ready to slam the palm back on the turn as you replace turns on the pin.

When placing turns on a pin after hoisting a sail or hauling in a sheet, palming can assist the friction on the pin as you turn up.

Experience has shown that the left palm is preferred if you are right-handed and so on.

### 1.5.3 Belaying Lines To A Pin

After an order to stop hauling – “Well” (well enough) or “Avast Hauling” (stop hauling) the next order given to secure the line to a belaying pin, spider band pin or post etc. will be: “belay” or “make fast”.



### To belay to a pin in the main rail or fife rails

Lines from **ABOVE** – e.g. Clew lines, bunt lines, etc.

- If the line leads vertically down to its pin, then take it to the left side. Diagram (a)
- If the line leads down at an angle to the pin, take it to that side from which it approaches. Diagram (b) and (c)

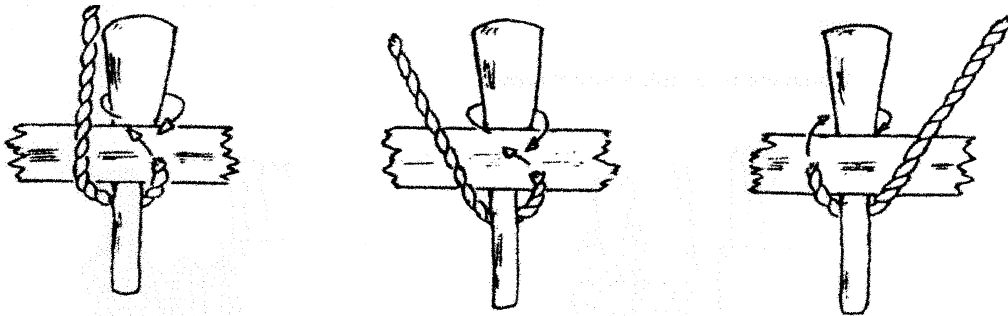


Diagram (a) Diagram (b) Diagram (c) Vertical lead, Lead from the left Lead from the right come round from come round from come round from left side. left side. right side.

Now take the line from left to right around the upper part of the pin.

Continue making figure 8 turns to a total three turns and finish with belaying hitch as shown on page 6 below.

Note the strategy: that, so far as possible, all turns on pins is taken from left to right.

Lines from **BELOW** – e.g. Upper topsail halyards, etc.

- If the line lead is vertically up to its pin, then take it to the left side. Diagram (d)
- If the line leads up at an angle to its pin take it to that side from which it approaches. Diagram (e) and (f)

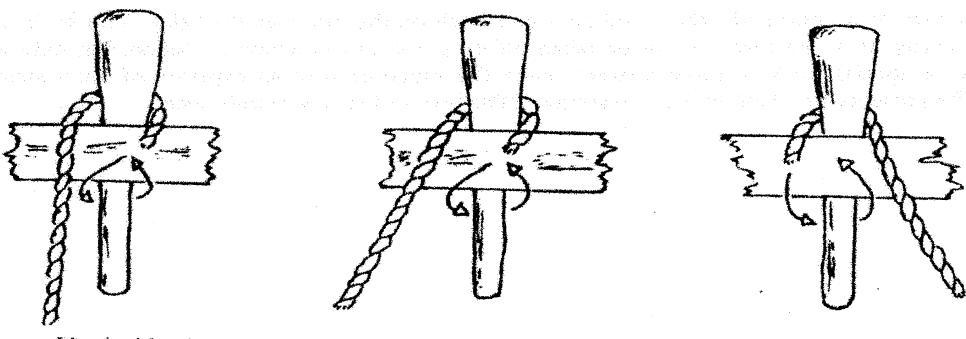


Diagram (d) Diagram (e) Diagram (f) Vertical lead, come Lead from the left, Lead from the right, Round from left side come round from left side. Come round from the right.

Now take the line from left to right around the bottom of the pin.

Continue making figure 8 turns to a total three turns and finish with belaying hitch as shown below.

### To belay to a pin on the spider band

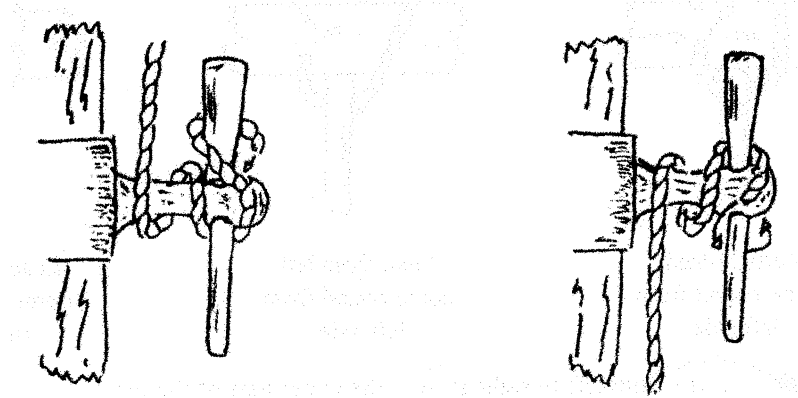
All lines; from **ABOVE OR BELOW**

- Lead lines around the boss from the left side.



- Make a full turn on the boss, then commence figure 8 turns left to right around the pin.

Complete three full figure 8 turns.



A line from above. A line from below.

Note that spider band belays provide considerably less friction grip than belays to pins on the rails.

Take appropriate care with lines under heavy load.

As each turn is made around the upper part of a pin, give it a tug with your body weight to remove all slack.

### Method of securing a belayed line to a pin (Belaying Hitch)

This prevents the line from being accidentally released if a coil is knocked or washed off the pin.



1. Begin the belay in the usual way with regard to the lead of the line to the pin or cleat.
2. Lay on at least two full figure-of-eight turns clockwise around the top of the pin. On the third or subsequent last turn, half hitch to secure the belay.
3. There are just two ways of forming the half hitch. The right way – where two parts of the line will lay neatly side-by-side with one part across them, refer to above photograph, and the wrong way, which will appear as a messy jumble.
4. This belay is seamanlike, will not jam, is neat and, most importantly, SECURE. It will not wash off the pin (big seas) or accidentally get knocked off and let go.

5. It should be used on all lines under tension; that is, all halyards, sheets, braces, etc. If in doubt, use it.

**A – Left lead. B – Right Lead C – Completing a belaying hitch**

### 1.5.4 Coiling Lines

Due to the size and length of the ship's lines, making up the coils is best performed on the deck.

1. Stand astride the line, across the deck. Lean over the centre of the coil and feed the line down and around the coil.
2. Start coiling from the standing end.
3. Coil in a clockwise direction.
4. Make coils 4 deck boards in diameter.
5. Remove any twists by rolling the line with the fingers.
6. Take care; remember that a messy coil may foul when placed on the deck to run.
7. If line has developed a bad twist, run it down the deck to work out the twist as it is coiled.
8. Pick up the completed coil and hold so the line from the pin leads to the face of the coil. Take the first loop from the face of the coil and place it over the pin (Diagram A). This provides a loop to pull through the centre of the coil pass over the top and over the pin to secure the coil to the pin and rail (Diagram B).

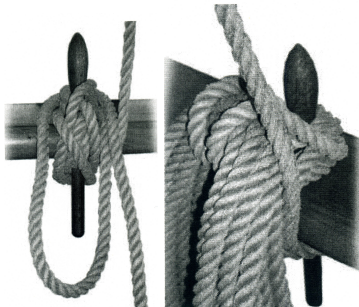


Diagram A Diagram B

9. When the coil has been secured on a pin, the bottom of the coil should be 4" (10cm) clear of the deck.
10. When the coil is finished the line's end whippings should be visible inboard.

Also page 22 for the 10 commandments for the perfect coil.

### 1.5.5 Belaying Pin Diagrams

### 1.5.6 Stoppers And Stoppering

To belay a rope which is under strain, the strain must be taken temporarily with a stopper.

The type of stopper used depends on whether it is to hold a fibre or wire rope, chain/cable and on the strain it is required to take.

In these notes we refer to rope to rope stoppers. For the other types and methods refer to Module 16.17.

Stopper, is the name given to a short length of line secured at one end to a belaying pin, stanchion etc to hold temporarily ("stop") parts of the running rigging, a larger line or cable. The rolling hitch below is ideal to secure the running end to the line being stopped.

A stopper may also be passed to secured "married" lines while the running end is being belayed.

Uses in the James Craig include;

- Holding the upper topsail halyard while it is being belayed.
- Securing the anchor hauling out line in association with the windlass.
- Setting up braces for tacking using by the wind hitches.
- Situation requiring the transfer of lines under load to from bits or pins to other points.

There are many types of stopper and stoppering arrangements.

In the James Craig the following stopping lines are fitted -

- There are fixed stopper lines attached to the Upper topsail halyard

blocks.

- A stopper line is part of the windlass kit for hauling out the

stockless anchor.

- Portable stopper lines are stowed on the forward shroud of each mast

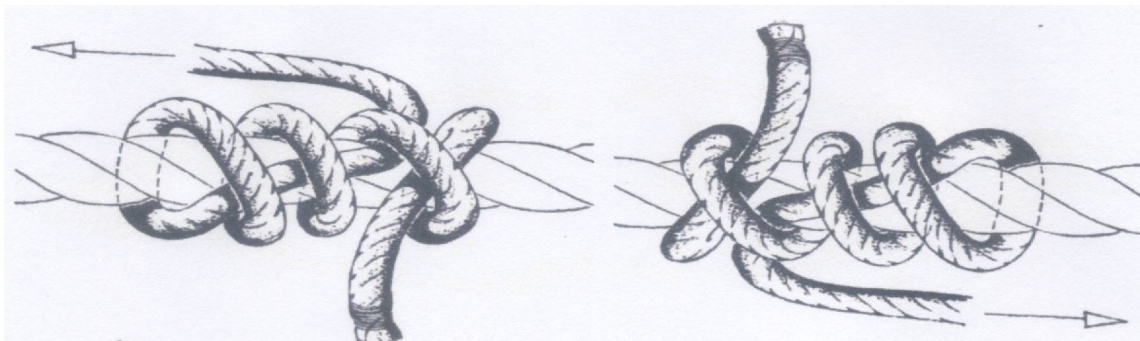
(port and starboard).

The portable stopper lines are 3 meter lengths of 12mm roblin line with an eye in one end, to assist secure to a pin or other strong point. The other end is used to make the following rolling hitch around the line to be held.

A rolling hitch shown is to be used to secure the stopper line or handy billy tail (refer later) to the line to be stopped or hauled.

Similar to a clove hitch however the second and third turns override the first turn. A half hitch is to be used to secure the running end.

**DO NOT HOLD THE RUNNING END BY HAND.**





*A rolling hitch being passed on the running end of a stopper line to hold a head sail sheet prior to working the pin. The eye of the stopper line is on the bottom of the pin behind the sheet being worked on.*



*A fixed stopper is secured with a rolling hitch to hold the upper topsail halyard until the running end is belayed to its pin.*

It is possible to hold the running end of the rolling hitch however in the ship this must not be used.

Dangers of holding the tail by hand include;

- the load exceeding the holders ability to contain
- loss of grip should the ship roll and holder loose balance
- flogging sails leading to hand/wrist injury
- burn injury to the holder and the crew on the running end should the stopper let go.

Benefits of this hitch include;

- the rolling hitch can be formed without load then slid up the line to take the load.
- after hauling the hitch can be again slid up the line being hauled ready for hauling again.
- easy to tie and release after load.

### 1.5.7 Marrying Lines

This involves twisting together two or more lines in a fall or two sheets, so that the friction created between the bundled lines stops the lines moving while the running end is being belayed.

Although, again, this can be hand held under light loads, a stopper should be passed if high load is estimated or in any doubt in ability to contain.



*The Main Lower Topsail sheets, in turn, are gathered together **left**, twisted to create friction between the parts thus assisting hold the load **right** until the sheet is belayed to the pin on the spider band.*

### 1.5.8 Handy Billy

When using a handy billy to assist hauling on a line such as a head sail or staysail sheet the rolling hitch shown above should be used to attach the tail of the handy billy to the loaded line.

Examples;

- Hauling out the spanker outhaul when setting the sail.
- Securing the handy billy to lines when additional hauling power is required.
- The tail rope on a handybilly is secured using the rolling hitch.

Also refer to the Purchases and Tackles Module 16.4.



Fig. 1: Handy billy rigged to assist set the main sail tack - Note it is rigged to disadvantage.  
When rigged, this set up enables crew to haul down the main sail weather clew when setting and trimming the sail.



*Handy billy rigged to assist haul in a stern line.*

#### **SAFETY NOTE**

When working a hawser on bitts, machinery such as the Capstan or Windlass, where possible, **DO NOT** wear a climbing harness to avoid accidental entanglement of the harness and or its lanyards.

When surging or snubbing a synthetic fibre line around bitts, post or warping drum us extreme care and backup. Synthetic line tends to heat up and melt under loanand friction thus causing it to lose its grip.

### **1.5.9 Belaying To Stag Horn Bitts**

A versatile bitt that can be used to work and secure a line from any direction.

#### **Line across the deck**

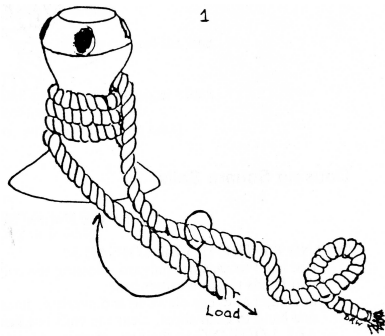
#### **Line from above**

#### **WORKING A HAWSER ON DECK BITTS**

|                                                                                                                                                                                                                                                                                |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <ol style="list-style-type: none"><li>1. Lead the line outside the bitts</li><li>2. Take the line around the end bitt</li><li>3. Make figure of 8 turns</li><li>4. Make as many turns as necessary</li></ol>                                                                   |  |
| <ol style="list-style-type: none"><li>1. Stand back when working berthing lines</li><li>2. Surging, easing, adding turns or taking turns off can all be done while remaining several feet away from the bitts</li><li>3. Always ensure hands and feet are kept clear</li></ol> |  |

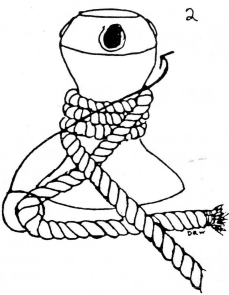
#### **The Tugboat, Lighterman's Hitch.**

The hitch is a means of belaying the end of a line (Tack, Berthing Line etc) to a bollard, post, bit or capstan so that it can be left unattended. It can be used in any situation where it can be easily and quickly cast off without danger of being foul of the Post etc.



For example the Fore Course (Foresail) Tack to the Capstan.

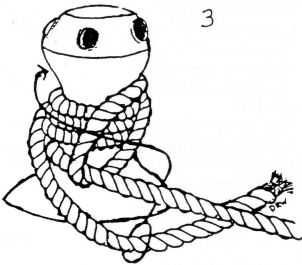
Tack leads to the capstan and three turns are passed clockwise.



Form a loop under the standing part.

The loop is then picked up from under the standing part and passed over the capstan.

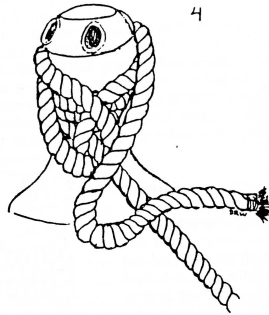
Make sure the segment of the line being passed around the capstan lies close on top of the turns already around the capstan.



Another loop of line is then picked up from under the standing part and brought back around the capstan in the opposite direction.

Make sure the segment of the line being passed around the capstan lies close on top of the turns already around the capstan.



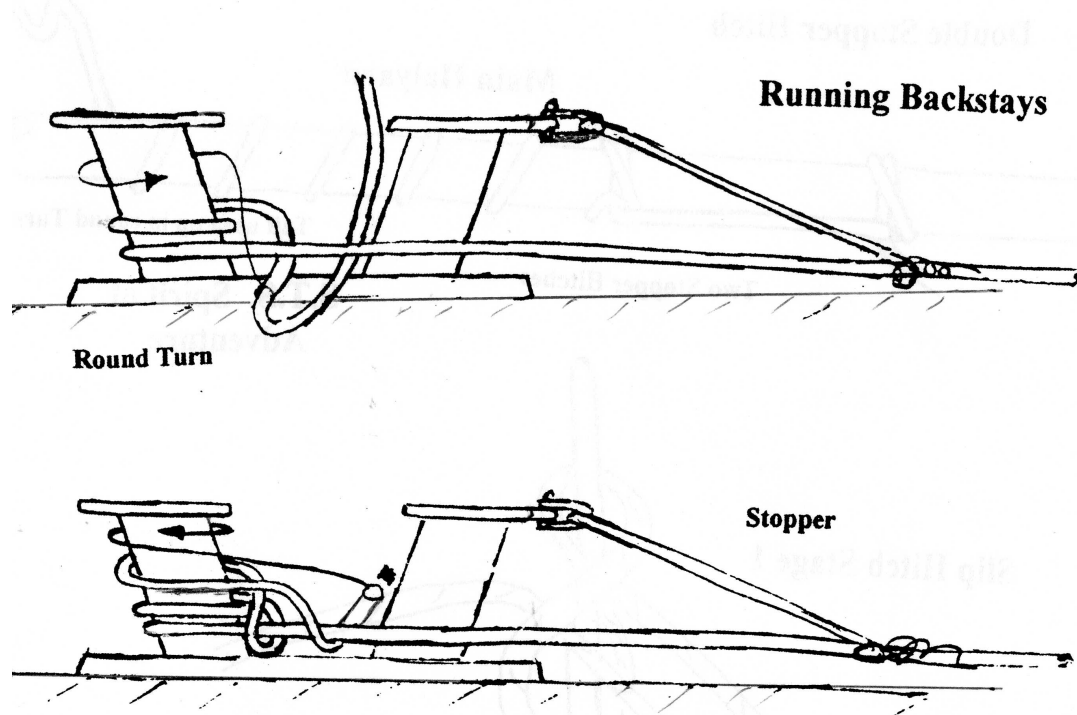


The final turn around the capstan is tightened down and draped over as shown.

If the line starts to slip, the series of bights will tighten down and pull on the standing part of the line in the opposite direction. Also, since the topmost three turns around the capstan run in opposite directions, they would rub against each other, thus providing additional security against slippage

The tugboat hitch can be easily cast off under control.

### Bollard Hitch



LAYOUT OF FORE DECK WITH CAPSTAN AND WINDLASS. Also refer Module 13 – Anchors



### 1.5.10 Working With The Capstan

Also refer to Module 16.2 for operation details.



**NOTE;** Always maintain a firm grip on the tailing line, at ALL times. **DO NOT ALLOW THE LINE TO RUN FREELY THROUGH YOUR HANDS.**

Surge or take in the line hand over hand and have the line backed up in need.

**Make the running end of any line being worked on the capstan fast by passing figure of “8” turns around the bar passing through one of the cat heads.** This make the line easy to control and keeps hands clear of turns on the capstan.

### 1.5.11 Working With The Warping Drum

Also refer to Module 16.1 for operation details.



**NOTE;** Always maintain a firm grip on the tailing line at ALL times. **DO NOT ALLOW THE LINE TO RUN FREELY THROUGH YOUR HANDS.** Veer or take in line hand over hand.

To reduce the risk of the line accidentally running off the end of the warping drum a flange has been welded to the outside end of the Port warping drum only.

### 1.5.12 Basic Knots, Bends & Hitches

“Knots” fall into three main categories – knots, bends and hitches, and also in a sense whipping, seizing and lashing.

Knots - The rope is tied to itself.

Bends - Used to join the ends of two ropes together.

Hitches - Are used to tie a rope to something else e.g. a spar, another rope, ring, post etc.

Whipping consists of binding a light line around the end of a rope to prevent it from fraying.

Seizing consist of binding a light line around two ropes to join them or to form a loop.

Lashings consist of using rope to join two or more spars.

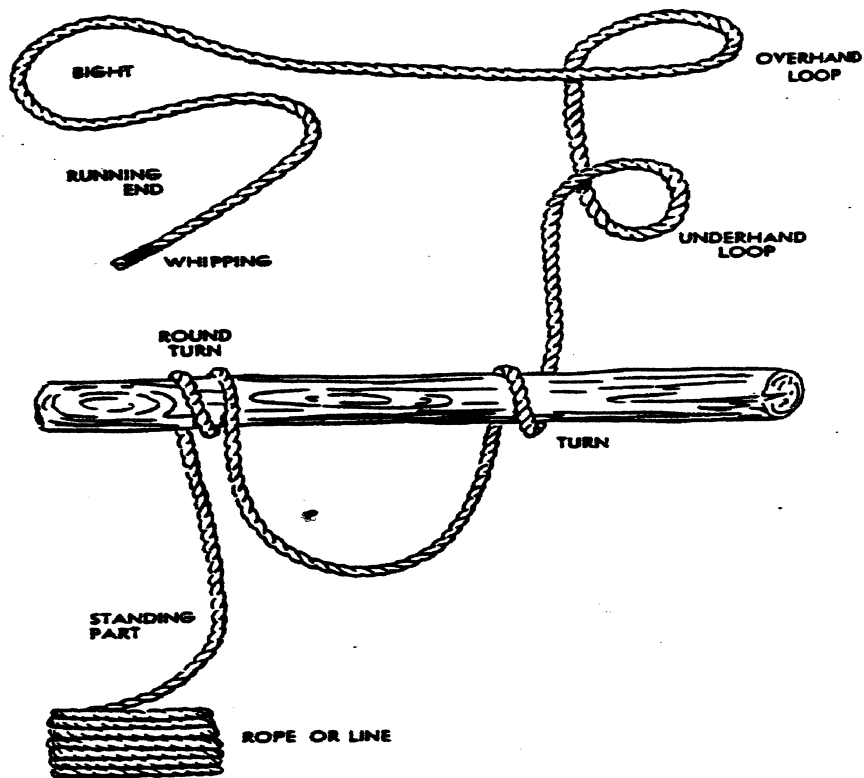
Although these definitions are generally correct, the word “knot” is also used in a generic sense. Sometimes the name in common use does not follow the rules, the Fisherman’s Bend is really a hitch, as it is used to tie a rope to a spar or ring, and the Fisherman’s Knot is a bend as it is used to join two ropes.

The following are knots, bends, hitches, whippings etc used in the ship.

For additional rope work, refer to the Sydney Heritage Fleet Rope and Rigging Handbook.

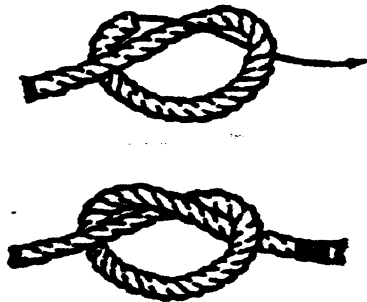
### 1.5.13 Basic Knots, Bends & Hitches

## Terms



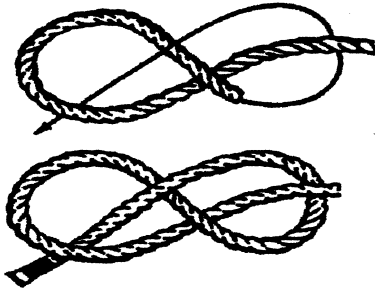
## Overhand knot

To make a stop on a rope, prevent end fraying, prevent line slipping through a block.



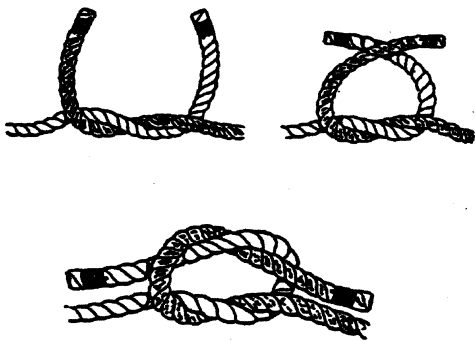
## Figure of eight

as for an Overhand knot, but easier to untie.



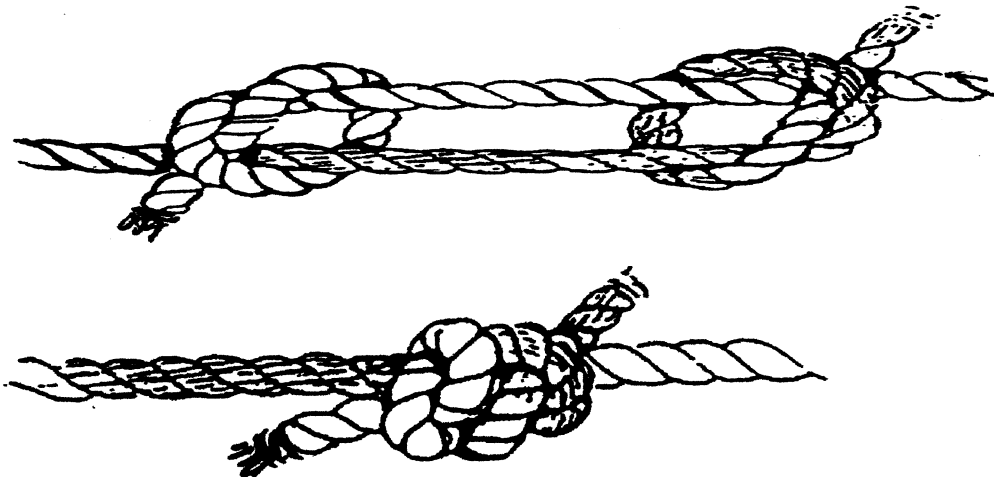
### Reef knot

Joining two ends – CAUTION can easily undo. Not suitable for lines of different diameter.

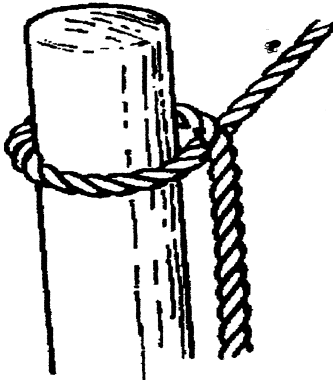


### Fisherman's knot

Joining two ends.

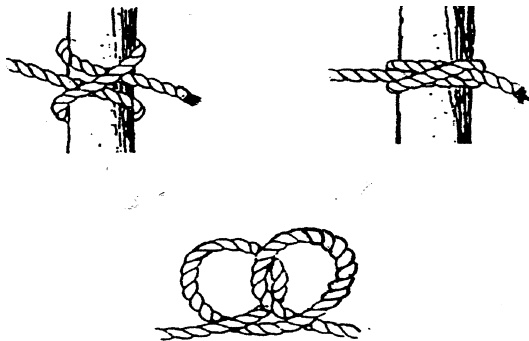


### Round turn



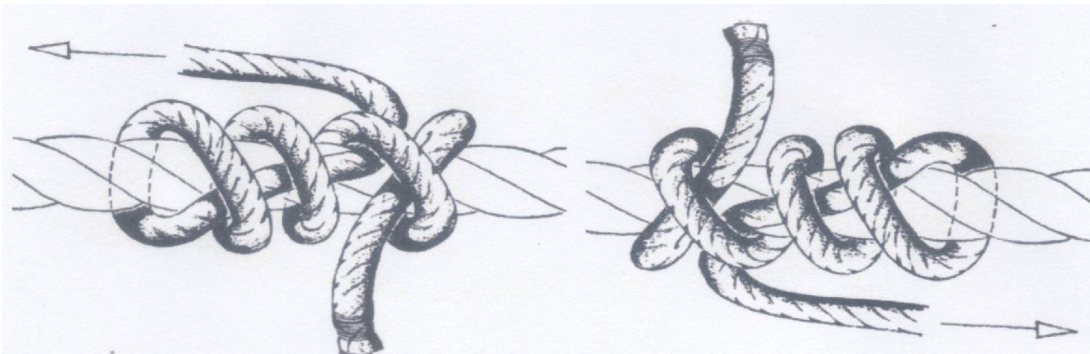
### Clove hitch

Hitch the end of a line to a rail or post etc. NOT SAFE unless running end is secured with an additional half hitches.



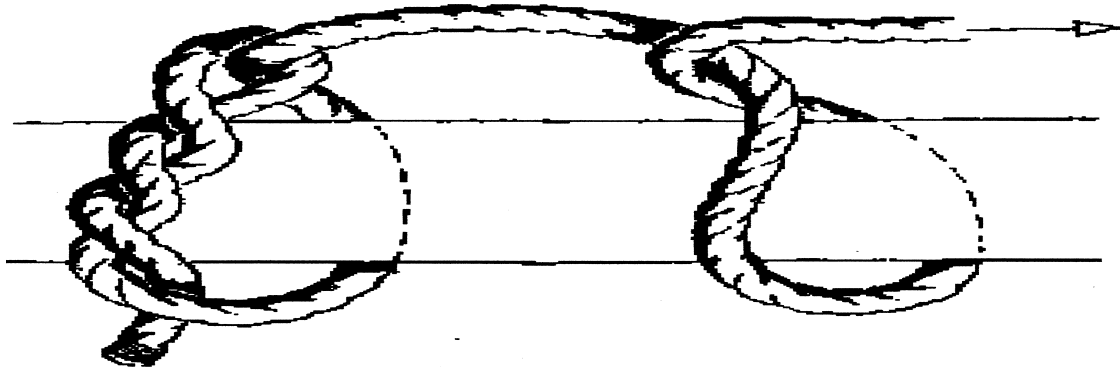
### Rolling hitch

To secure a stopper, or two ropes pulling in opposite directions.

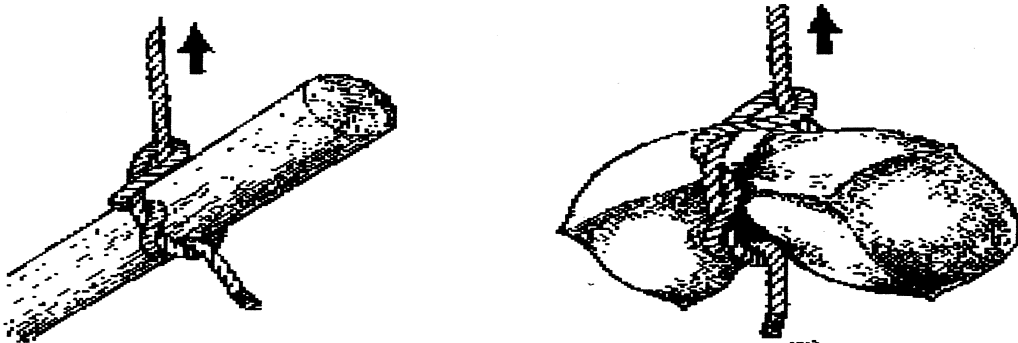


### Timber hitch and half hitch\*

Securing a line to an object. Safe while under constant load.

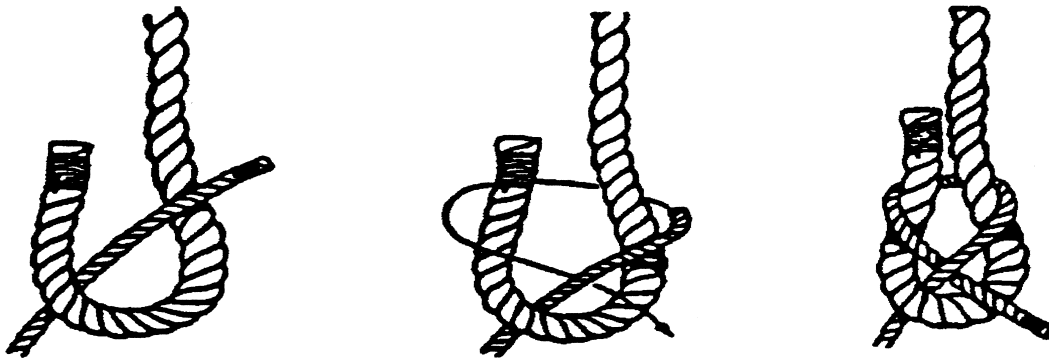


### Timber Hitch



### Sheet bend

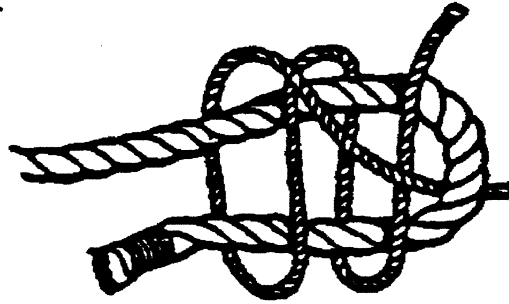
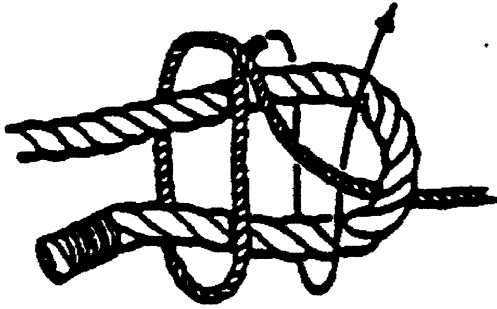
To join the ends of two lines of equal or different diameters. Bend is secure while under constant load. If used where load fluctuates, seize the running ends to respective standing parts.



### Double sheet bend

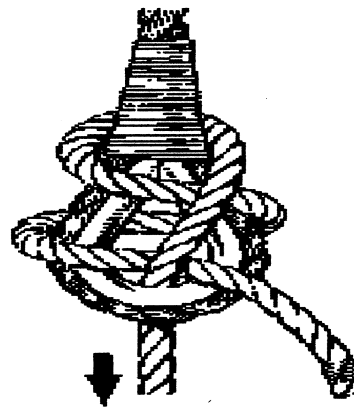
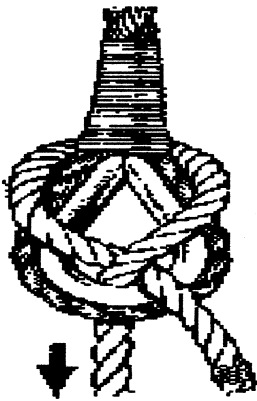
More secure than single sheet bend, especially if line diameters very considerably.





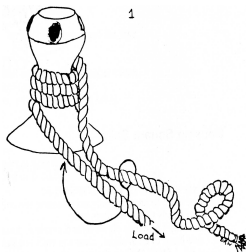
### Double sheet bend on a hard eye

With fluctuating loads, seize running end.

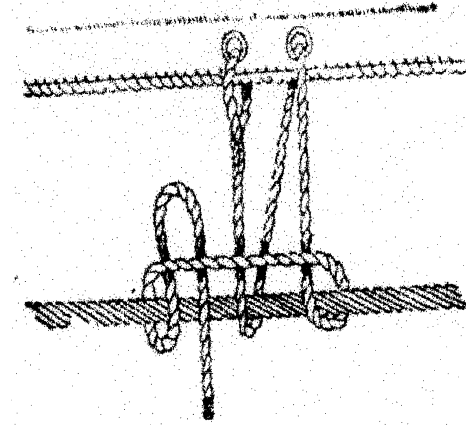


### Bollard hitch / Tugman's hitch / Lighterman's hitch

Excellent to secure a line.

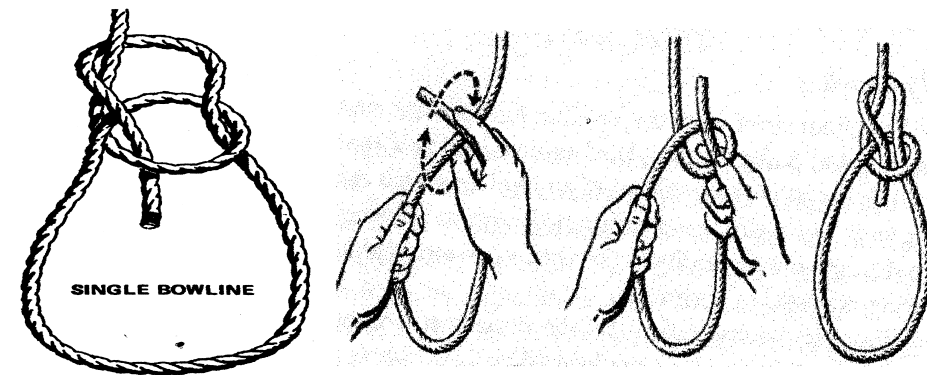


### Awning hitch

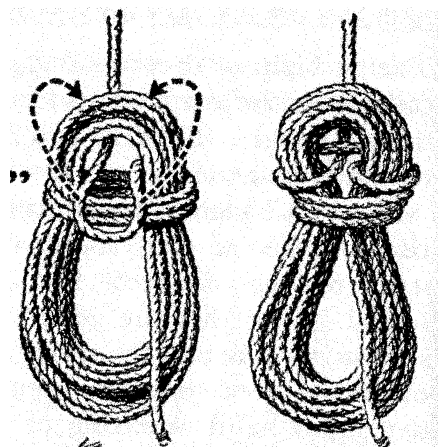


### Bowline\*

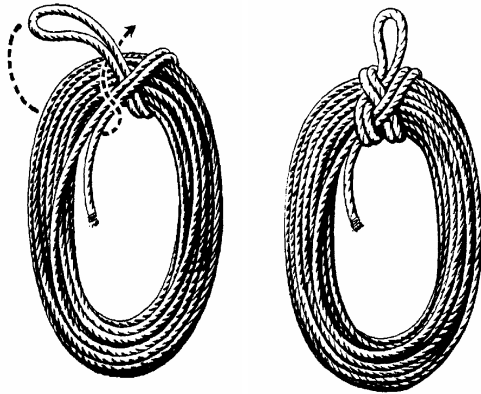
Use to make a temporary eye in the end of a rope.



### Secure a coil with a gasket hitch

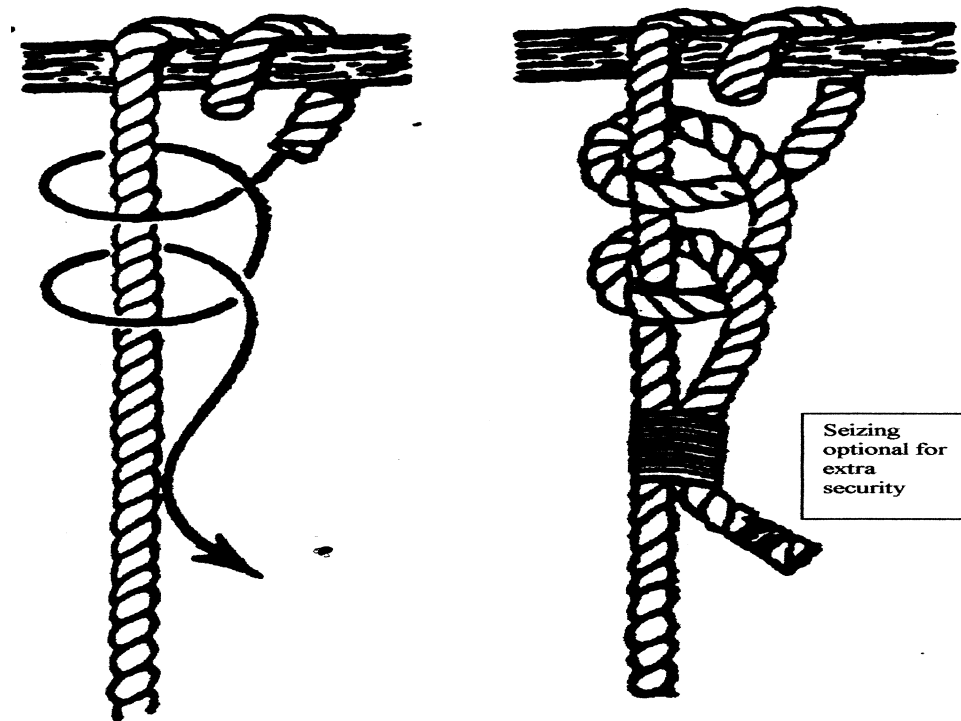


### Line stowing hitch



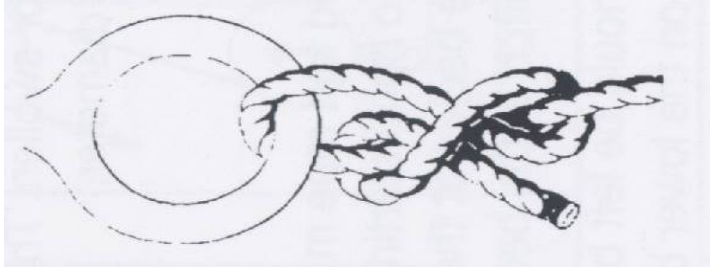
### A round turn and two half hitches

Used to secure the running end of a line. The more turns made before the hitches are made the more control that is possible.



### Buntline Hitch

To secure the end of a line to an eye, e.g. securing the end of a buntline to the foot of a sail. Very secure.



### **A round turn and two half hitches using a bight**

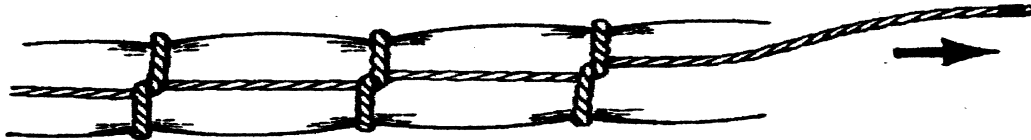
Use a bight to complete the round turns and two half hitches.

image59|

## **1.5.14 Shown here are three way to secure a sail to a spar**

### **Marling hitching**

Used similar to half hitching however more secure. A series of overhand knots.



### **Half hitching**

Method of lashing a number of objects together or a sail to a spar, consisting of a series of half hitches.

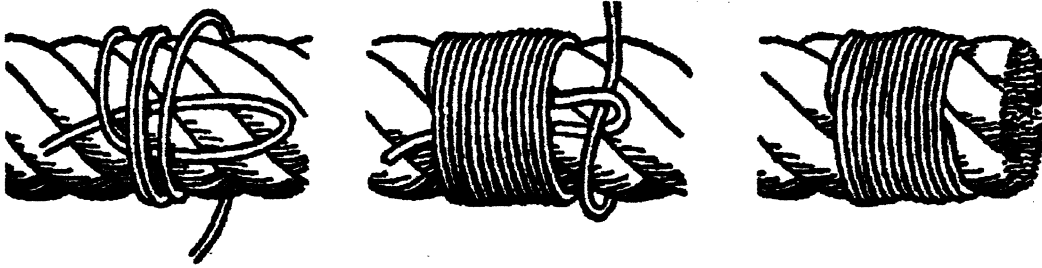
### **Swedish furl**

A chain of loops. Easy to undo, simply release the end and pull. Uses more line than the other methods above.

## **1.5.15 Whipping is applied to the end of a line to prevent it from coming apart**

### **Common whipping**

Good temporary whipping

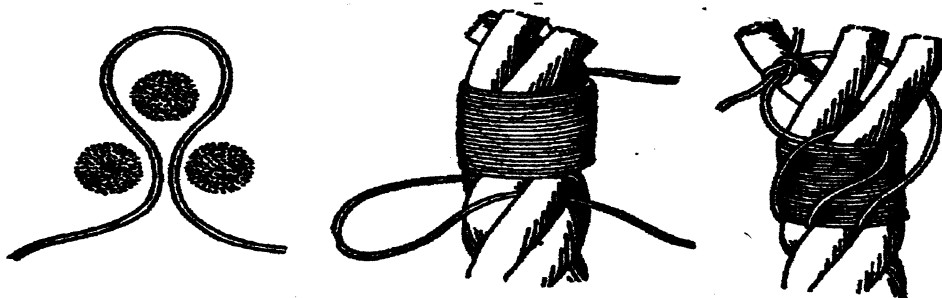


### Needle and palm whipping\*\*\*

Very secure whipping

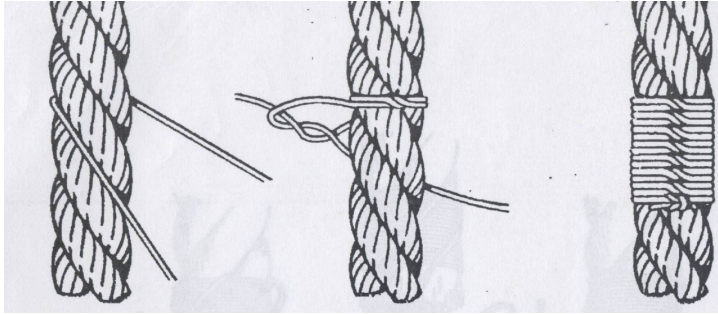


### Sail makers whipping



### West Country Whipping

This “whipping” is also used when binding together the strands of a roband, when securing the head of a square sail to its jackstay.



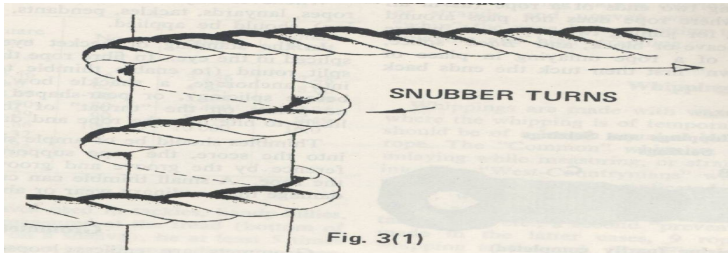
Short splice and long splice refer to Annexure “A”

### 1.5.16 Fake down a line ready to run

|                                                                        |                                                                               |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Figure of eight faking.<br>Good for lines leading up or along the deck | Clover leaf faking.<br>Good for lines leading up or where space is restricted |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------|

### Snubbing turns

Used for holding and easing a heavy loads. Two or more turns are taken around a post or bit to control the line. USE WITH CAUTION IF HEAVY LOADS ARE INVOLVED.



### Pearce purchase hitch

A method of applying tension to a line such as awningside wires.

### 1.5.17 Coiling Clues - The 10 commandments for the perfect coil

1. The line's lead.

**Thou shalt not lead the line across the face of a pin.**

*(To do so makes it difficult to lay on turns and secure the coil to the pin)*

2. Turns on a pin.

**Thou shalt always pass the line clockwise around the TOP of a pin.**

*(Lines have a right hand lay therefore favour being laid in a clockwise direction)*

3. Belay to a pin.

**Thou shalt lay, at least, two FULL turns around a pin and then apply a belay hitch. Heave taut each turn BEFORE placing on the next turn.**

*(This will ensure the line is secure and will reduce the chances of “creep” under load.)*

4. Start Coiling.

**Thou shalt always start coiling a line from the STANDING (fixed) end.**

*(This enables any twists in the line to be progressively worked out towards the free end as the line is coiled.)*

5. Coil construction.

**Thou shalt ALWAYS coil in a CLOCKWISE direction with the coil approximately four deck boards in diameter (not oval of in determent length).**

*( Lines are made with a right hand lay, therefore have a natural tendency to go that way, why force them to do the opposite? Speed should not take priority over neatness. A well made coil will always run without tangling. If the line tries to do a figure 8, you’re probably coiling anti-clockwise”.)*

6. Picking up the coil.

**Pick up the coil from the deck at a point on the coil so that the tail will not drop out.**

*( If you pick up the coil at the wrong spot the end will drop out. If it does redo the coil, DO NOT just tuck it in.)*

7. Coil addresses the pin.

**The coil should face the pin i.e. the line from the pin leads directly to the face of the coil.**

*( By so doing the coil, when removed from the pin and placed on deck- NOT DROPPED- will run freely from the face.)*

8. Coil securing loop.

**The loop should pass through the coil, over the pin and down the back of the pin to the rail. NOT sit on top of the pin.**

*( Thus the coil will be secure.)*

9. Finished and secured coil.

**You should be able to see the line’s end whippings on the final turn outside the coil. The coil should be at least 100mm clear of the deck.**

*(Visible whippings indicate a good coil and deck clearance will ensure there will be no chafing of the line on the deck.)*

10. Taking down coils.

**When taking a coil off a pin thou shalt NOT DROP the coil. You will place it on the deck with the lead from the coil on top, for easing, or lead the line along the deck ready for hauling.**

*(Dropping coils or placing them upside down on the deck will lead to tangles and delays in what may be an urgent response to an order and may even put the ship and crew mates at risk.)*

**If you HAVE NOT achieved ALL 10 commandments take the coil down and re do.**



## Smart Coils = Smart Ship

**Above all be diligent about your task lest you risk incurring the wrath of the Watch Leader or Coil Police.**

## MODULE 6.

# 1.6 Working Aloft

### Aim:

To introduce crew to climbing and working aloft on board the ship.

### Overview:

Working at height is potentially dangerous but risks can be reduced.

The Ship's Executive insists that work aloft be carried out safely.

There is an obligation on crew to look out for themselves and their shipmates.

A Doctors certificate is required before any climbing can be undertaken.

Doctor's Certificate and Climb Approval have a currency of two years.

Crew members are required to disqualify themselves from climbing as soon as they are aware of a personal impediment that could affect their ability to climb and work aloft safely.

**At all times, while climbing and working in the ship's rigging crew are to be clipped on with at least one hook. Thus the two hooks are in use all the time from the deck up, alternating hooks as you move about.**

**NOTE; The equipment mentioned in this Module is for \*Safety purposes only\*. It is NOT to be used to hold, support or suspend a wearer when working aloft. A special harness is to be used for this purpose.**

For information on recovering crew from aloft, refer to Module 21.

### Contents:

- . Working aloft rules.
- . Check list.
- . Climbing Equipment.
  - Safety harness
  - Checking and fitting harness
  - Use
  - Care & maintenance
  - Static line equipment
- . Climbing hints.
- . Certification.
  - Pass written (open book) test on the contents of this Module.
    - Complete a pre climb (closed book) check list before undertaking the practical test.
    - To gain basic certification it will be necessary to complete the

practical

“3 times over the tops and around the jibboom” exercise.

- Full certification will be given after check climb at sea.
- Read and sign approval and acknowledgment form.

Assessment:

**Open book written assessment** on the contents of this module.

**A closed book pre climb check list** is to be completed prior to practical assessment.

**Physical and practical assessment.**

Crew will satisfactorily carry out a climbing exercise. i.e. (Climb the shrouds, futtock shrouds to the tops. Cross over and descend on the other side, 3 times. Then climb along the jib boom and return on the other side.)

**Climbing assessment at sea.**

Successful completion of module is recorded in ‘Diary of Service and Experience Log’ book.

**Climber grading**

*Topman (TM)* – A crew member totally competent and capable at all levels of climbing and tasks in the rig.

*Climber (C)* – Crew competent at all routine activities on all spars aloft and the jibboom.

*Climber Deck (CD)* – Competent at low level climbing such as the topgallant rail, shrouds below the tops, jibboom, anchor deck and mizzen shrouds for stern lookout.

*Harness (H)* – Minimum qualification to be held by all crew. Capable of fitting a safety harness. Essentially a non climber.

**Outcomes:**

For crew to competently inspect and fit climbing harness and lanyards.

To competently and safely climb in the rigging of the James Craig.

## 1.6.1 Working Aloft Rules

It is **not** compulsory for all crew to climb, however **all** crew will complete the training and be aware of the rules, especially those who volunteer and wish to be sent and go aloft on the masts and out on the jibboom. Crew are going to spend a lot of time aloft in all types of weather and the sooner they get used to it the easier it will be.

You will be shown how to put on your safety harness, (refer to next section) and told what to do and what not to do based on the following.

### Climbing

- **No crewmember is to climb into the rig of the ship without approval of their watchleader who will clear with the officer of the watch.**
- Always use the weather rigging.
  - a. The wind is keeping it more rigid than the lee rigging.
  - b. If the ship is heeling it is at a better angle.
  - c. The yards and sails will be clear of the rigging.

- Use the shrouds as handholds, NOT the ratlines that can break or someone may step on your hands. Also, our hand-grip is to stop us from swinging out, so something firm and something we can slide our hand up and down should be used: that's the shrouds.
- It is important to "walk" up and over with legs rather than pulling up using arms/upper body.
- Do not use knees to climb onto the tops.
- Clip on to static safety lines where fitted.
- When climbing aloft never let go with one hand until you have a good grip with the other. Always remember one hand for yourself and one hand for the ship. You have four available points of contact when you are going aloft, two feet and two hands. Always have three in contact with the rig. Do not overreach.
- Use both hands when climbing. Do not carrying anything aloft in your hands while climbing. Haul tools etc aloft later.
- Never use running rigging as a grip as someone on deck may let it go without warning.
- Never clip onto any running rigging or to a vertical part of the standing rigging which will merely give you a rapid guided descent to the deck. Best advice is, do not fall from aloft.
- Using clips. Reach up and clip on. Climb until the clip is level with your waist then reach up with the other clip and clip on. Un-clip the first clip and climb. Repeat the process.
- Straddle a shroud with your feet, do not have both feet on the one ratline.
- When working aloft clip your safety harness to the safety line that runs along the back of the yards or to a part of the rig that will not move, such as the jackstay on a yard, or a fitting on the mast where you are working.
- When waiting behind another crewmember, clip on and maintain a safe distance below the other climber.
- At all times, while climbing and working in the ship's rigging crew are to be clipped on with at least one hook. Thus the two hooks are in use all the time from the deck up, alternating hooks as you move about.
- When stepping onto braced yards, use both hooks. One on the shrouds while clipping the other onto yard safety wire.
- Do not drop your hooks as there may be someone below you.
- Call when clear of the tops on the way up or down.

### Moving onto and along yards

- Get on and off footropes carefully or you may bounce a shipmate off a yard.
- When laying out onto or leaving a yard, call to others "Stepping out starboard (or port)" or "Stepping off starboard (or port)". Get an acknowledgement from the climbers on the yard, do not just talk to the mast in front of you.
- Only go onto hoisted yards with the Watch Leader's approval (the Watch Leader will have or will get approval from the Officer of the Watch).

#### Precautions

- Halyards have been made fast.
- Braces are taut

#### Dangers

- Halyards parting
- Un-announced use of halyards.

- When going out on a hoisting yard make certain it is in its lifts and the braces are set up taut. Yards can get stuck, and your extra weight will bring it down with a jerk that can easily throw you off. If the braces are slack the yard will jerk as the ship rolls and again this can throw you off.
- When laying out on a yard, hold on to the jackstay, which is on top of the yard.

**Caution; with the sail furled on top of the yard, extreme care should be used when selecting a handhold.**

- Never use the following as handholds:
  - A gasket, as it may be loose and give way.
  - The bight of a sail, as the wind may suddenly get into it.
  - The bunt-lines may not be made fast down on deck.
  - The safety line, as you can push others off the yard.
- Never stand on a yard or straddle it unless ordered to for some special task and, when you do, use great care. Think what you will do if the sail suddenly fills with wind, so always have a good grip of a part of the standing rigging.
- Climb directly up or down between the lower and upper topsail yards should only be undertaken by crew who are comfortable with the procedure. **DO NOT USE THE SAFETY WIRES AS FOOT ROPES.**
- Use the stirrups as a good point for ascending or descending.

### Working sails on the yards

- When loosing or furling sails, remember, loose from lee, furl from windward.
- When casting off gaskets, make sure it is clear below before releasing gasket or gasket coil, call warning “Rope below” before dropping the gasket.
- Do not cast off gaskets until the timber hitches of ALL the gaskets on the yard are undone.
- When pushing a sail off a yard make certain that all the gaskets are off. If one is missed it will either carry away or more probably tear the sail.
- When loosing topsails, loose the lower topsail first then the upper topsail. The reverse applies when furling i.e. Furl the upper then the lower.
- When loosing an upper topsail make certain there is no one on the lower topsail yard before pushing it off into its gear.
- When the sail is in its gear always remember to coil the gasket and place it onto the fore side of the sail. A loose gasket can foul a clew line or buntline block and jam it. If this happens someone will have to go aloft and clear it whilst a thrashing sail tries to knock the person off.
- When calling instructions to the deck, be clear and concise. Attract attention with call “Ahoy on deck”.

### Tools

- When you take tools aloft always put them on lanyards and secure one end to your wrist or belt. You will also be working on gear aloft that cannot be attached to you such as shackles and pins, which are easily dropped with cold hands. If there is a potential danger of you dropping something shout loud and clear “**Stand from under**” so that anyone on deck has a chance to get out of the way.

### General

- At first you will be very careful working aloft but it is easy to relax and become over confident. Do not get casual or sooner or later you will come to grief so always obey these rules and never fool around aloft. It is a long way to the deck and few people survive the journey.
- The safety harness is a piece of equipment to protect you from hitting the deck if you slip when aloft.
- Always come on deck wearing it because you may be sent aloft without warning.
- No crewmember is to be aloft during departure from, or arrival at, a wharf.
- Do not change the position of another crewmember's hook. Only with their permission and **they** must check.

**. Remember, at all times you must be attached to the rig from the deck up.**

### 1.6.2 Working Aloft Check List

Personal Check;

- Health, are you fit?
- No drugs or alcohol.
- Clothing, warm with head cover.
- Use sunscreen and keep hydrated.
- Loose objects. Leave on deck or secure with a lanyard.
- Harness. In good order and free of damage. Correctly fitted and comfortable.
- Carry out buddy check (refer below).

On Deck;

- Listen to orders.
- Check that hoisting yards are in their lifts.
- Check that braces are taut.

Buddy Check;

- Look for twisted harness straps.
- Harness buckles that are not secure.
- Harness appears to fit correctly.
- 2 lanyards have been fitted.
- Crewmember looks OK.
- If there are any concerns refer to watch leader or officer of the watch.
- When aloft keep an eye on your ship mates.

Climbing;

- Use windward shrouds to climb.
- Maintain 3 points of contact while climbing.
- Do not carry anything aloft in your hands, they are for climbing.
- Be clipped onto the rig or safety lines where provided, at all times.

- Ratlines are for feet only. Use shrouds for handhold.
- Do not use running rigging for handhold.

Working on Yards;

- Clip onto safety lines.
- Call when stepping onto and off a yard footrope.e.g. “Stepping on port”.
- Call when loosing gaskets or gasket coils e.g. “Rope below”.
- Work as a team and keep watch for your crewmates.
- No standing on or astride yards.
- When stepping down or up between topsail yards use caution.

Returning to deck;

- Do not jump from the pin rail to the deck.
- Report to your Watch leader.
- Report any damage you may have noticed in the rig.
- Have a drink of water.

**ABOVE ALL DO NOT BECOME COMPLACENT!**

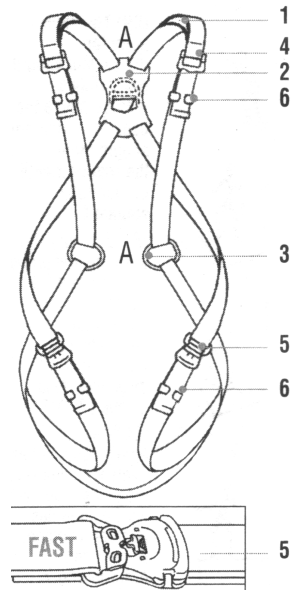
### 1.6.3 Climbing Equipment

**NOTE. This equipment is for safety purposes only. It is not to be used as a working harness to support the wearer while working aloft.**

The equipment has three components;

1. Harness
2. Automatic locking fall arrest karabiner
3. Two lanyards, each with energy absorber, karabiner and 1 hook.

## Harness

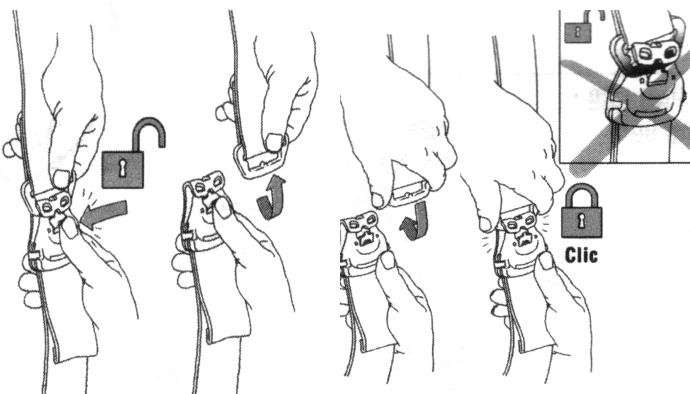


## Checking and Fitting harness

1. Check the condition of the webbing and safety stitching. Look for cuts in the webbing, wear and damage due to use, to heat, and to contact with chemical products etc. If you are unsure of the harness's condition, remove the harness assembly from service and present the harness to the first mate at sea or the "James Craig" operations manager alongside, for inspection by the rigger.

If in doubt do not use the harness

2. Ensure that the leg strap buckles are not obstructed and operate smoothly.
3. Check for correct locking of rapid action fast buckles. Point 5 in diagram above.

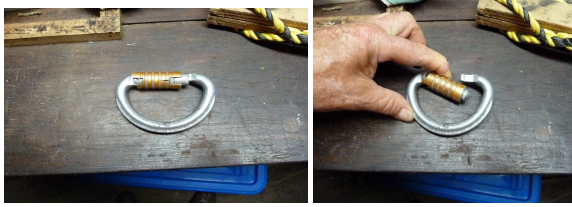


4. Check sternal fall arrest loops for chafe or damage. Arrest point A3 in diagram above.
5. Check rear fall attachment point for damage. Arrest point A2 in diagram above.



### Sternal Fall Arrest Karabiner

6. The sternal fall arrest karabiner has a triple-action opening system with automatic locking. Slide the sleeve along the gate and turn it to unlock. The gate should open smoothly in one continuous motion.



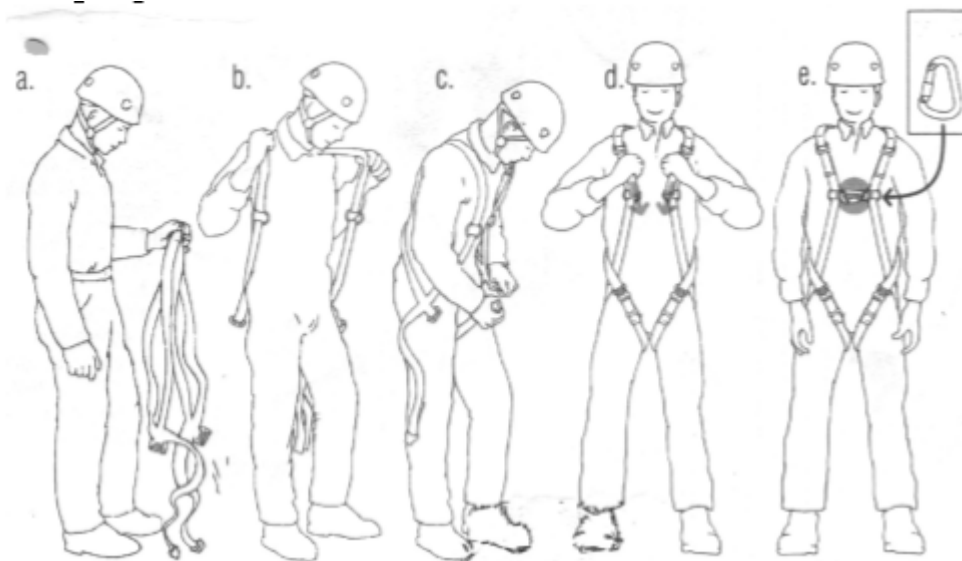
7. Check for damage and distortion. Do not use a damaged karabiner.
8. Fit to join the two harness loops as shown in diagram (e) below.

### Fall arrest lanyard (with screw lock karabiner & hook)

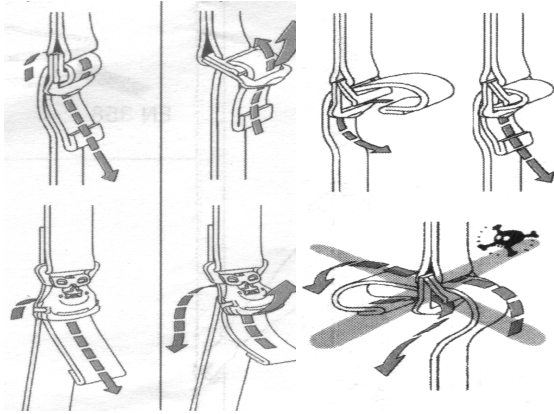
9. Check fall arrest lanyards, energy absorbers and hooks for damage and distortion.
10. Ensure that hooks are not damaged or bent and operate smoothly.
11. On each lanyard check that karabiner connecting lanyard and scaffold hook is closed and secure. You must not be able to open the nut by hand.
12. Report any defects/ damage. If in doubt do not use suspect lanyard, remove from service and present the assembly to the first mate at sea or the “James Craig” operations manager alongside for inspection by the rigger.

### Fitting harness

Fitting diagrams.



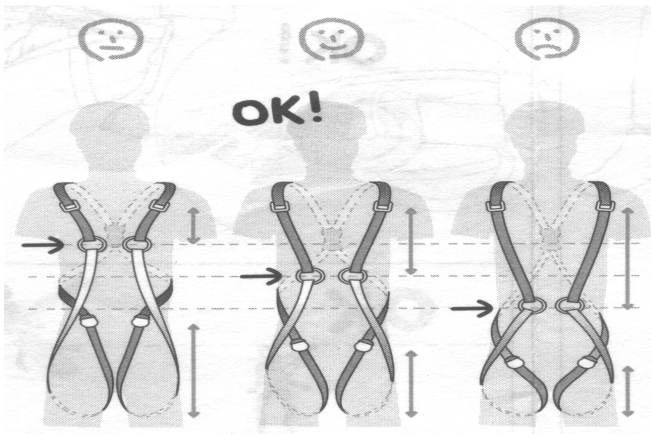
13. Diagram b – Put body on.
14. Diagram c – First adjust leg loops.
15. Diagram d - Adjust shoulder loops.



16. Place fall arrest lanyards (2) onto fall arrest karabiner.



17. Diagram e - Close the harness by clipping the sternal fall arrest karabiner through the sternal (front) fall arrest attachment loops.
18. Adjust harness to achieve the correct fitted position.

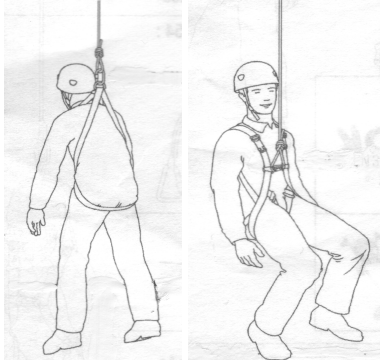


19. Double check that karabiner is operating correctly and has closed correctly.
20. Carry out “buddy” check. (Refer to working aloft check list above.)
21. Test the harness prior to use, and before climbing aloft, by moving and hanging in it (but not from the fall arrest lanyard), from all attachment points to ensure harness is the correct size and fit and comfortable for use.

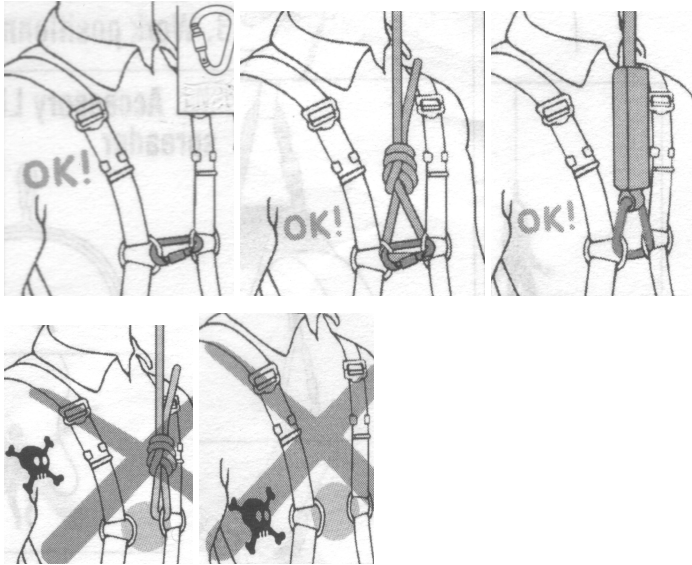
**Fall arrest lanyards should not be hung in as it can damage the fall arrest mechanism.**

### Fall arrest points in use

Back fall arrest point. Front fall arrest point



Alternate hitching methods, good and bad.



### Care and maintenance of equipment

1. Do not drag harness or lanyards on the deck or ground.
2. Do not expose to high temperatures.
3. Do not expose to solvents, paints or strong cleaning compounds.
4. Avoid impacts, or rubbing against abrasive surfaces or sharp edges.
5. Wash off salt and dirt etc with soap and fresh water. Do not use solvents. Dry thoroughly before storing.
6. Lubricate hook and carabiner.
7. Store on rack.
8. Do not use a harness, lanyard or karabiner after a major fall or a major impact. Report the incident and present the equipment to the first mate at sea and the “James Craig” operations manager alongside for inspection by the rigger.
9. Do not carry out modifications to the harness or lanyards.
10. When stowing place scaffold hooks in the rear fall arrest attachment point and hang the harness on the rack pin using the fall arrest attachment point.

### 1.6.4 Static line climbing

Fixed static lines have been installed on both sides of the fore and main masts.

These are for ASAP travellers and are purely supplementary climbing safety aid to expedite rig climbers ascending and descending the Main and Fore Masts.

#### Setup

Permanent black double braided static lines have been added to the rig.

The fore and main masts have 4 lines;

2 on port side and 2 on the starboard side.

In each case, one line runs from the pin rail to a point on the topmast shrouds.

The second aft line runs from the pin rail to a point on the Royal Mast.

Each Static Line runs through a “Gate” just below the tops. The gates hold the static lines close to the mast.

Climbers using the ASAPs will negotiate the gates with the ASAP as they climb.

Refer to diagrams below for details of the ASAP and assembly.

#### Use

In use the ASAP links a climber to the Static Lines by a short lanyard fitted with a shock absorber thus allowing the climber to ascend or descent a mast unhindered. If a slip occurs the ASAP will lock to the Static Line securing the climber.

1. Static lines and ASAPs’ are to be used as **safety device only**.
2. Fall system **is not** to be used to secure a climber while carrying out work aloft.
3. Number of crew on a static line at any one time – 3

Routine;

1. Static lines to be inspected before each sailing event.
  - Check top anchor point.
  - Check the full length of the static line. (Chafe, signs of inner core damage, case damage)
  - Check for chafe where the lines cross the tops platform and at gate stations.
  - Check deck level security – Damp/Rot etc.
2. Checks are to be carried out by a Watchleader/Bosun/Rigger.
3. Installation of arrestors is to be carried out by the Watchleader/Bosun.
3. At least 1 unit is to be located on the lee side static line (royal line) for emergency purposes.

#### Use by a climber

1. **Normal climbing requirements apply.**
2. The number of ASAP’s is limited so allocation of use is controlled by the Watchleader. Other climber use the established 2 hook system, especially for the lower yards such as the course.

- When on the rail the ASAP is attached to the climber using its **short ASAP lanyard** to the sternal loop on the climbers harness.

**DO NOT USE EITHER OF THE TWO HARNESS HOOKS TO ATTACH TO THE ASAP OR ASAP LANYARD.**

- Climber can then ascent using the ASAP only.
- Below the tops negotiate the “Gates”.
- Proceed.
- At desired yard transfer to the 2 line system.
- Once disconnected from the ASAP clip the karabiner to a rat line to prevent the ASAP descending to the deck.
- As the ASAP are attached to the static line any following climber, using the same line, wishing to go higher will have to transfer to the ASAP, leaving their ASAP, and proceeding.

The reverse applies when descending.

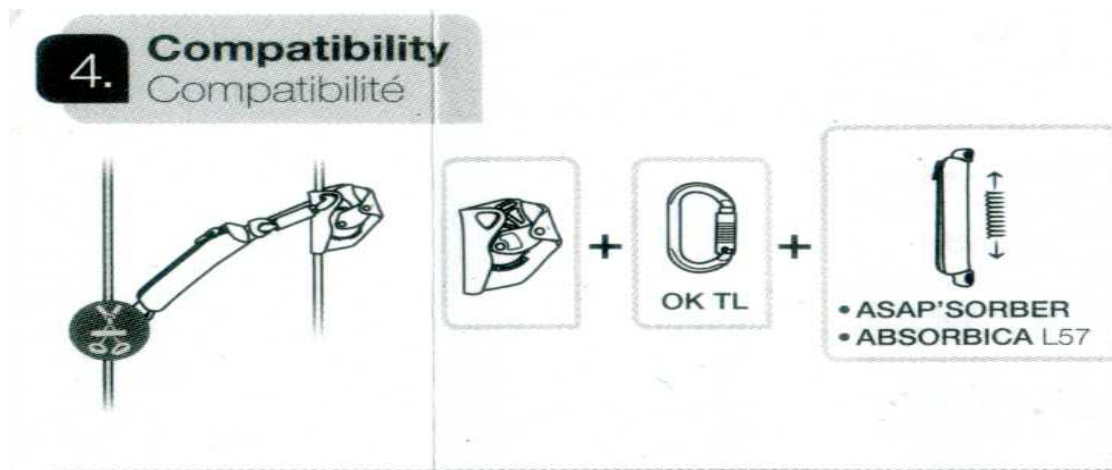
- When a climber returns to the deck the ASAP remains on the static line.
- ALL SLIPS OR FALLS INVOLVING AN ASAP LOCK ARE TO BE REPORTED SO STATIC LINE CAN BE CHECKED FOR DAMAGE.\*\*

### Stowage and maintenance

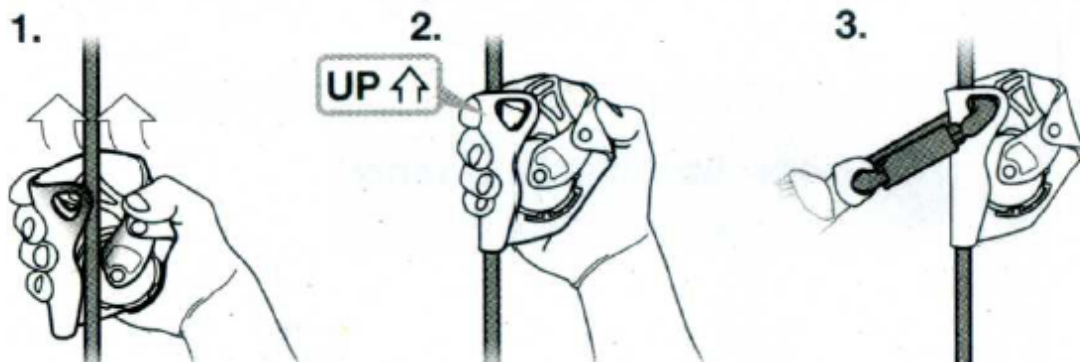
- Stowed in the bosun’s store (hung with free ventilation)
- Washed and lubricated
- Units to be inspected prior to each installation by Watchleader.
- Register to be set up with inspection regime.
- Units are removed from the static lines after an event, inspected and stowed.

### Operation of equipment

- Connecting ASAP to the Static Line.



- Fitting ASAP to the static line.

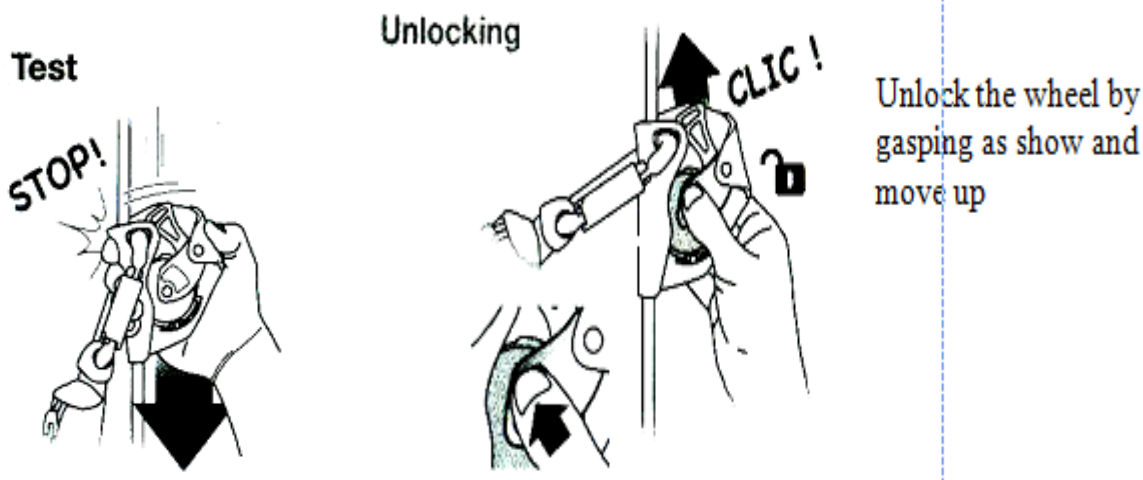


3. How it locks in the event of a fall

See point 4 for method to be used to release the lock.

4. Testing locking action.\*\*

Use a piece of test rope for this. To practice on a static line will lead to unnecessary wear on the Static Lines.



REMEMBER, ACTIVITIES AT HEIGHTS ARE DANGEROUS AND MAY LEAD TO SEVERE INJURY OR EVEN DEATH. GAINING AN ADEQUATE APPRECIATION IN APPROPRIATE TECHNIQUES AND METHODS OF PROTECTION IS YOUR OWN RESPONSIBILITY.

TAKE CARE OF THE EQUIPMENT AND ACT WITH CARE AT ALL TIMES.

ALSO REMEMBER, THE HARNESS YOU ARE PUTTING ON THIS TIME WILL HAVE BEEN USED BY SOMEBODY ELSE – DID THEY LOOK AFTER IT???????

### 1.6.5 Climbing Hints

1. Hook on at or above your position when climbing or working.
2. Keep hook close to your position to reduce the adverse results of “pendulum effect” in the event of a fall.
3. Avoid situations where hook could receive side loading in the event of a fall.



4. When working only use 1 lanyard. If 2 lanyards are use and a fall occurs, the shock absorbers may not function resulting in a sudden stop.
5. When hook is attached ensure jaw is completely closed and not fouled.
6. Do not drop your hook, when climbing, as you may hit the crew following.

### 1.6.6 Report Incidents

Report all falls or near misses to a Watch Leader or Officer.

Information gained may assist in providing information for other crew to use and prevent a repeat.

Report any gear failure or anything else that does not appear to be in order.

Record in the "Incident Book" located in the chart room.

### 1.6.7 Sydney Heritage Fleet - Approval To Go Aloft

NAME: .....

I acknowledge that working aloft in the James Craig is potentially dangerous and could result in serious injury or death.

I acknowledge that I have received training in the use of safety harnesses and the safety requirements for working aloft in James Craig.

I agree to follow the James Craig climbing aloft policies and protocols at all times

I have undertaken training and testing in this role \*and I confirm that I have complete confidence in my ability to undertake tasks in the rigging of the ship.

I am totally aware of the importance of safe working practices and the need to be aware, at all times, of my own safety, the safety of my crewmates working aloft and safety of passengers and crew below.

I am aware of the requirement that anything taken aloft is to be firmly attached to a lanyard, which in turn, is affixed to my person.

I also affirm that I have a current Doctor's Certificate \* clearing me to work aloft and agree that I will disclose to the James Craig Office and my Watch Leader or Officer of the watch immediately if my health rating were to preclude me working aloft in the future.

I acknowledge that the Doctor's Certificate and this approval, are to be renewed every two years.

\* Delete and initial if not appropriate.

SIGNED: .....

DATE: .....

WORKING ALOFT –APPROVED AT LEVEL BELOW (Completed by assessor) Mark appropriate box/s

\*Harness only: \*Climber Deck (low level and jibboom): \*Climber :

\*Topman : \* Use of Ascender equipment: \* Passenger climb:

\* Refer definitions in Assessment Section of the Handbook.

|                                 |                                 |
|---------------------------------|---------------------------------|
| Recorded; By;<br>Date / / ..... | Recorded; By;<br>Date / / ..... |
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## 1.7 Setting The Sails

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### MODULE 8.

## 1.8 Man Overboard (MOB) And Sea Boat Launch And Recovery

### Aim:

To cover - Initial response by any person in the event of a Man Overboard situation.

- Duties of a crew member carrying out MOB and Aft Lookout watch.
- Sea boat and layout.
  - Launch and recovery of sea boat.
  - Sea boat launch and recovery orders and action.
  - Painter, painter pennant and boat rope layout.
  - Sea Boat launch in a seaway – some factors to be consider.

### Overview:

The sea boat is a very important piece of ship's equipment. In addition to its possible role in MOB situations it can be used in many other tasks i.e. mooring lines, transfer of personnel etc. Therefore crew must be capable of safely and efficiently launching and recovering the boat. Practice through drills, and information in this module will assist crew members to gain proficiency.

### Assessment:

Oral and practical examination by a Mate and/or Watchleader who will, when satisfied, sign off the relevant parts in crew member's 'Diary of Service and Experience Log' book.

### Outcome:

For crew to be able to carry out MOB and Aft Lookout watch and assemble to safely launch the sea boat with the James Craig underway at up to 8 knots.

### 1.8.1 Initial Response To Man Overboard (mob)

Any member of the ship's company, on seeing a person fall overboard, calls out "Man Overboard" indicating side e.g. Port or Starboard, and throws overboard any object that can float, life ring, life jacket etc. Maintain visual contact and point at the person in the water until relieved.

The Ship's Master will decide to order the launch of the Sea Boat. Page 14 deals with some of the factors he will have to contend with.

### 1.8.2 Crew On Stern Lookout Watch (mob Watch)

Duties:

- Man position adjacent to Dan Buoy on the port side of the quarter deck.
- Wear a safety harness.



- Inspect Dan Buoy, Life Ring and Marker Buoy to ensure they are not damaged or tangled, and are connected together, and free to launch quickly.
- Report any problems to the Watch Officer or Quarter Deck Watchleader.
- Carry out duties listed below.
- Maintain a lookout in **ALL** directions vis. Fore, Aft, Port, Starboard as well as monitoring activity on board. Report to the Officer of the Watch any unusual observations.
- On hearing the alarm or observing a person falling overboard, launch the Dan Buoy, life ring and smoke/light marker.
- Point at the person in the water until relieved.
- When relieved, climb the Mizzen Shrouds and re-establish visual contact with the person in the water and point.
- Signal the direction to the person in the water to the sea boat crew. Be aware that the Dan Buoy may not be near the person in the water.
- Remain in the shrouds until the sea boat has returned and is safely stowed on the ship or when relieved.

### 1.8.3 Sea Boat

The Sea Boat is a semi rigid inflatable boat manned by a Coxswain and one Crew. The Coxswain is in command of the Sea Boat and with Crew member must be conversant with the contents of this Module and Module 12 for Small Boat Handling - Sea Boat.

Launch and recovery is carried out by a team consisting of a crew of 8. Each team member's duties are listed on their crew card. The remainder of the ship's crew act as ordered. They may be also required to assist in recovery.

#### Sea Boat layout

Preparation and operation of the Sea Boat – refer Module 12. For the position of Boat Rope, Painter and Painter Pendant refer to separate diagrams on pages 8, 9 and 10.

View of Ship's Port side. (Boat stowed)

View from the Port side.

Plan View. (Boat Stowed)

NOTE. (Also refer attached diagram.)

**Painter** ( This is the main line used to tow the Sea Boat when it is working alongside the ship) leads forward and is secured to a metal pin forward of the foremast shrouds.

The painter has two positions marked;

1. Long mark (Ladder mark – long canvas strip on the painter), when used this will position the sea boat under the boarding ladder.

It also allows the sea boat to be hoisted and stowed in its cradle.

2. Short mark (Davit mark – short canvas strip on the painter), this will position the sea boat under the davit fall.

For launch, the painter must be on the long mark and moved to the short mark as soon as the boat is swung out. The reverse applies when recovering the sea boat.

The marks on the painter are set at the pin.

On the aft end of the painter is a steel ring into which the Sea Boat's painter is clipped.

**Painter pendent** is spliced into the painter. The painter pendent is controlled from a position forward of the main shrouds. This line is used to control the movement of the sea boat when it is being launched, alongside the ship and being recovered.

The bow of the sea boat is controlled at all times by the painter pendent either from the deck or on the rail. A chafe patch on the shroud/sheer pole can be used to take strain.

**Bowsing lines.** To control the stern of the sea boat during launch and recovery two bowsing lines are used. One leads aft and the other forward. They are spliced together at a hook that in turn is attached by Snap Hook to the stern sling ring on the starboard side of the sea boat transom.

**Aft Bowsing** line is coiled and stowed on the aft side of the boat skid.

**Fore Bowsing** line is coiled and stowed on the ladder leading to the boat skids.

Both lines are worked together to control the stern of the Sea Boat, refer to the next section.

### 1.8.4 Launch And Recovery Of The Sea Boat

#### Launch/Recovery Team and Duties

Refer to next section for associated orders & action.

#### Launch

1. Officer/Watchleader.

- Control of the launch and recovery operations.

- Ensure all crew are at their stations before commencing launch.

- Release Pelican clips that retain gripes.

- Attach Sea Boat painter, using the snap shackle, to the painter ring. (Ensure line is outboard of course sheets).

- Release bowsing lines from the Sea Boat, after crew are aboard.

- Attach the bowsing lines to the Sea Boat on recovery (before crew disembark).

- Supervise lowering and recovery.

2. Davit After Guy Hand.

- Use guy to control the movement of the davit.

- Guy has a set mark to maximum travel for launch. Approx 45 degrees.

- Control rate of swing particularly when the ship is rolling in a seaway.

- When Davit is in position and Guy secure, assist on the fall.

- Use guy to swing davit inboard during boat recovery.

- Tension and secure on completion of operation.

3. Aft Bowsing Line Hand. (Wear climbing harness)

Attach climbing harness to strong point if it becomes necessary to go up to the Sea Boat platform.

Clear gripes from sea boat.

Return to the deck and lead the aft bowsing line outboard of the aft davit onto the quarter deck to control the stern of the sea boat. It may be necessary to take a turn around the davit.

Use bowsing line to swing boat and control its movement outboard when launching.

Be alert for excessive swing if the ship is rolling and keep the line taut.

When recovering the sea boat take the bowsing line off the davit and lead inboard to control the sea boat swing during recovery. Work with the forward bowsing line hand to control and position the sea boat over its cradle.

Pass gripes over the sea boat to secure it in the cradle.

4. Forward Bowsing Line Hand. Refer to Davit Fall Team.

During launch make sure the forward bowsing line is clear to run.

During recovery, work with the Aft Bowsing Line hand to swing the sea boat around and guide it over the cradle by hauling forward.

5. Painter Pendent Hand. (Wear climbing harness)

Painter Pendent is spliced to the Painter and used to control Painter end, during the launch and recovery to control the sea boat's swing.

On launch keep tension on painter pennant to assist swing-out of davit.

Ease as boat is lowered and prevent bow dropping.

Have painter ready for return of the sea boat and once attached control position of the sea boat while it is alongside the ship.

6. Davit Fore Guy and Painter Hand.

Davit Fore Guy.

Haul davit outboard on launch (amount of travel is controlled by aft guy). Make fast and proceed to adjust painter.

When boat is being recovered adjust painter, return to fore davit guy and ease to allow davit to swing inboard.

Painter. (Also refer to notes following for layout diagram)

This line leads from forward of the fore mast shroud and has Painter Pennant spliced into it.

Painter has two fixed positions.

1. Maximum length, long mark (Ladder mark) for swing out and in, and, if required, to allow emergency boat to fall back to boarding ladder.
2. Shorten to short mark (Davit mark) for fixing the position of the boat under the davit, when it is being lowered into the water and recovered.

7. Davit Fall Team.

Made up of two hands during lowering and recovery. Other spare hands can assist with recovery.

Launch;

Secure the freeing port.

One hand gathers in main course sheet and secures to davit cleat using strop.

Alternatively -

Depending on the ship's course and the position of the main sail and yard it may be necessary to use the block and line seized to the port mizzen topmast guy to brail up the main sail port sheet and yard brace clear of the davit.

Second hand takes fall from pin and leads it down the deck.

Two hands heave boat from cradle and take a turn around the pin.

Once outboard, the boat is lowered to top rail.

When crew are on board, the boat is lowered to the water with plenty of slack in the fall. This will prevent the boat from being "plucked" unexpectedly from the water as the ship rolls and help crew to cast off the fall from the boat sling.

After boat is away haul in the fall and secure to topgallant rail.

When the boat is successfully launched assist rigging the boarding ladder.

Recovery:

When the sea boat returns the painter pendent hand lowers the painter ring to the sea boat. They connect using the snap hook.

When boat is in position under the davit lower fall. The crew attach it to the boat sling.

With fall off the pin, call crew to assist haul in fall to bring boat to the topgallant rail.

At the topgallant rail attach the bowsing lines.

After crew have disembarked, painter on the long or ladder mark, haul the sea boat to the cradle height. Pass fall around the pin.

Aft Bowsing line hand moves inboard and works with the Fore Bowsing line hand to control the swing of the sea boat and guide it over the cradle.

With davit inboard, lower the boat to rest in the cradle. Guide by using the sea boat's painter and the forward bowsing line.

Secure gripes.

Lookout leaves the mizzen shrouds when all is secure.

Coil and stow fall.

Recover and stow boarding ladder.

Check that sea boat is ready for next launch.

### Order And *action*

#### Launch

Order & Action required.

**"Stations for Launching the Sea boat"** Launch and boat crew assemble at their stations

**"Away the Sea Boat"** Brail Mainsail sheet to davit cleat. It may be necessary to take in the mainsail &/or brace the main yards prior to turning out the Sea Boat.

Painter to be on the long mark

Connect the painter/painter pendent ring to sea boat bridle snap shackle- Watchleader..

Man davit forward guy – 1 crew

Man painter pendent – 1 crew

Man davit after guy - 1 crew

Man the aft bowsing line - 1 crew

Man the fore bowsing line – one of the crew from the falls team. Loose to run.

Man the falls – Palm Down turns for hauling – 2 crew

Off gripes – Watchleader

Fore bowsing line cleared to run.

Coxswain dressed and engine cleared away

Crewman dressed and radio checked

Check boat rope rigged just above plimsol line

**“Hoist to the Davit”** Haul away on fall.

Haul taut painter pendent to control the swing of the sea boat

Haul taut the sea boat aft bowsing linea

Let the fore bowsing line run

Haul taut after davit guy

**“Well”** Avast hauling on fall.

One turn on the fall pin.

Haul taut painter pendent

Haul taut the aft bowsing line

**“Turn out the Davit”** Haul away davit forward guy

Ease davit after guy let it run (under control) to the stopper

Haul painter pendent to control sea boat’s bow and assist in the turnout

Haul aft bowsing line to prevent swing and assist in turnout.

Be prepared to work (ease and haul) the aft bowsing line as required.

**“Well”** Make fast davit forward guy

Haul painter - Make fast on pin at “Short” mark

Turn up davit after guy

**“Lower to the Rail”** Painter on the short mark

Ease away fall on the pin

Boat lowered to the topgallant rail

**“Well”** Avast easing on fall

Turns on the fall

Coxswain and Crew embark

Coxswain tilts the engine down so that it is ready to start

Release boat bowsing lines

Coxswain and crew take hold of the manrope.

**Check with officer of the watch that it is clear to continue, and lower the boat.**

**If clear continue.**

**“Lower Away”** Sea Boat Coxswain may release the Safety chain snap hook.

Sea boat crew hold onto the manrope

Ease away fall (on the pin)

Use painter pennant to control sea boat bow

Boat lands in water

Weight taken by painter/painter pendent

Cast off fall from pin - no weight

Overhaul fall to provide slack to unhook

Coxswain release lifting hook (Snap shackle)

Haul back fall

Start Engine - go ahead slow if ship has headway

Boat now towed by ship on painter.

**“Slip”** Coxswain has command of the sea boat

Crew releases snap shackle by slip line

Coxswain drives boat ahead and out from ship

Crew watches MOB Lookout on ship

Crew checks radio contact

Coxswain drives boat under crew direction to MOB or head off on task.

**“Clear Away for Boat Recovery”** Deploy pilot ladder

Clear away lines

Prepare falls

Lower painter and towing ring just clear of water for the sea boat

Have falls ready to be lowered to sea boat when called for by coxswain

Check boat rope rigged just above plimsol line

## Recovery

Order & Action required.

**“Stations for Recovering the Sea boat”** Recovery crew assemble at their stations

Ensure mainsail sheet still brailed to davit cleat

Check painter & painter pendent are outboard of Mainsail sheet

Lower fall to the water

Turn up painter at the short mark

Ensure davit turned out to the stopper on the aft davit guy

Check the pilot ladder

**“Stand by to receive the Sea boat”** Man the fall - take in hand Fall Team and general crew

Man painter pendent

Man both bowsing Lines - take in hand

Man davit forward guy - remains on pin

Man after davit guy - remains secured

If required, man the painter. It should be on the short mark.

**“Sea boat “Come In”” (Arm Signal + Voice)** Coxswain drives to painter/painter pendent

Crew connects Sea Boat painter by snap hook to the ship’s painter ring.

Coxswain drops speed - painter takes tow

**“Ease Painter to the Ladder” (If requested)** Painter eased away on pin to ‘Long’ mark

Additional control provided by painter pendent

Hold painter on pin to ‘Long’ mark with three turns

**“Well”** Confirm boat is alongside ladder

Unload heavy items by heaving line or davit hoist

Boat Crew may disembark via the pilot ladder

**“Standby to Hoist”** Painter hauled in to “Short” mark. Coxswain uses engine to assist.

Painter pennant assists and stands by to control sea boat when it leaves the water.

Coxswain calls for lifting hook (falls) to be lowered

Coxswain connects lifting hook. Use both snap shackle and snap hook.

Coxswain stops & stows engine, crew holds lifting hook tail

**Do not** haul out the slack on the fall until instructed by the Coxswain.

**“Hoist to the Topgallant Rail”** Fall hauled/run in by Fall Crew assisted by general crew

**“Well”** Avast hauling on fall (sea boat at ships rail)

Hold fall - in hand

Coxswain connect boat bowsing lines

Coxswain and crew disembark

\***“Hoist to the Davit”**

Painter set on the “Long” mark

Falls walked in slow for Sea Boat to clear cradle

Use painter pendent and fore and aft bowsing lines to steady Sea Boat\*

**“Well, Turn in the Davit”** Avast hauling on fall

Haul on davit after guy

Ease away davit fore guy

Ease away painter pendent

Haul in the fore bowsing line while easing the aft bowsing line.

Swing boat in by hand - to boat cradle

**“Lower to the Cradle”** Ease away handsomely on fall

Guide boat to the cradle using the aft bowsing line and boat bridle

Land Sea boat into the cradle

**“Secure the Sea boat”** On gripes

Haul taut and make fast davit after guy

Haul taut and make fast davit forward guy

Release the painter and hang it on davit cleat

Release the mainsail sheet

Haul taut on the fall and make fast

Tidy lines and return all gear

Return painter to the long mark & set painter pendent.

Secure fore and aft bowsing lines

**Advise officer of the watch that sea boat is secure.**

**MOB Lookout returns to the deck.**

### Painter, Painter pendent and Boat rope

Controlling Sea Boat Pennant during launch, recovery & manoeuvring. Ref. Main notes.

Sea Boat – Stowed and rigged ready to launch. Painter on “Long Mark” with aft end secured to davit pin.

### Launch

Sea Boat – Ready to be turned out. Painter is on “Long Mark” to give enough slack for connection to sea boat bridle.

Sea Boat – Turned out & lowered to the rail, ready to be lowered to the water. Painter is now hauled to “Short Mark”.

Sea Boat – In the water with Painter on the “Short Mark”.

Sea Boat – Returns for recovery – Painter on the “Short Mark” & held out by Painter Pendent Hand for pickup by boat crew.

### Recovery

Pennant control is the reverse of launch. Once Sea Boat is at the rail & crew disembarked, Painter is returned to “Long Mark”.

### Boarding Ladder

To allow the sea boat to fall back to the Boarding Ladder, ease the Painter to the “Long Mark”.



### 1.8.5 Sea Boat Launch In A Seaway – Some Factors To Be Considered

Crew need to have a perspective on some of factors to be considered by the Master before committing to launch the sea boat, thus gain an understand of what could be a complex operation.

First Mate and Watchleader must be fully briefed on action to be taken.

In sheltered waters the following also applies however more so in the open sea.

1. Course being steered;
  - Is the ship running free, on a broad reach, close reach, beam reach, close hauled?
  - Starboard tack or port tack?
2. Sea state – swell direction and size.
3. Strength of the wind and trend.
4. Launch on the lee side or weather side.
5. Sails set and action;
  - Rapid sail reduction
  - Reduce sails
  - Box yards to heave too.
  - Reduce sails and heave too
  - Rapid sail reduction and go to power
6. Position of rigging that may affect smooth launch. i.e. braces and sheets of the mainsail.
7. Recover under power only
8. Time of the day/night
9. Experience of the boat crew and launch crew.

The Master is faced with many decisions prior to committing the sea boat and at worst in a MOB situation from having one crew in the water to placing a further two in jeopardy.

Each of the points above have sub considerations with decisions to be made. Some are those following. Can you think of others and more importantly solutions.

1. Course being steered. –
  - a. To launch on the weather side exposes the sea boat to the direct force of the weather and sea. It will be driven against the ship's hull.
  - b. To launch on the lee side offers protection of the ship to the sea boat during launch and later recovery.
  - c. If the ship is on a Starboard tack the sea boat will be in a lee
2. Sea state. –
  - a. Size and frequency of the swell.
  - b. Wave height.

Special care will be required by the launch and recovery team to compensate for these factors. Sea Boat Coxswain will have to be particularly careful when slipping from and reattaching the fall.
3. Strength of the wind and trend.
  - a. Has it been building in strength

- b. Is it dropping off?
4. To launch on the weather or lee side.
  - a. If the ship is on a starboard tack it may be safe to launch as the sea boat is on the lee side as the ships hull provides some protection.
  - b. If on a port tack the launch is exposed to the weather so it may be wise to defer the launch until the ship has come about. Critical recovery time will be lost.
5. Sail set and action.
  - a. Stop the ship by boxing the yards?

Starboard tack – box the main yards. This will require port mainsail braces and sheets to be brailled up clear of the davit.

Port tack – box by bracing the main yards. Again main sail braces and sheets will need to be cleared.

Raise tack and sheets on the mainsail will reduce the problem.
  - b. Reduce sails to trim for boxing or heaving too.
  - c. Rapid sail reduction to take in all sails and proceed under power.
  - d. The taking in of all sails in a seaway will remove their stabilising effect and the ship will roll more thus further complicating the sea boat launch.
6. Position of rigging that may affect smooth launch. i.e. braces and sheets of the mainsail.

Special block and lanyard has been mounted on the port mizzen stay to brail up main sail's port brace.
7. Recovery under power.
  - a. Once all sails are secure proceed with Williamson turn or enter search patters.
  - b. Manoeuvre to safer position to launch the sea boat.
8. Time of the day/night and visibility. Is there sufficient daylight to complete the operation?
9. Experience of the boat crew and the suitability of the sea boat to handle the prevailing conditions.

For additional factors to be taken into account by the Sea Boat Coxswain and crew when leaving and returning to the ship at sea when the ship is moving under the influence of the prevailing wind, swell and general sea state. Refer to Module 12.

MODULE 9.

## 1.9 Slipping, Berthing & Mooring

### Aim:

To examine:

- Berthing hawsers.
- Berthing.
- Un-berthing
- Tug.
- Catching a turn on twin bollards.
- Backing up.

- Catching a turn on a single bollard.
- Two or more hawsers over a single bollard.
- Preparing and throwing a heaving line.
- Securing a line to a hawser
- Technique for coiling hawsers.
- Berthing party and check list.
- Safety.
- Berthing Part Check List. Departure and Arrival

#### Overview:

In the port of Sydney the ship can use its own crew to handle lines during un-berthing and berthing operations at the wharf. Therefore crew must be capable of carrying out these duties in a competent and safe manner.

Note;

A ship **anchors** when the ship's anchor is used.

A ship **moors** when secured to a buoy.

A ship **berths** when made fast alongside a wharf.

Anchoring and mooring will be covered in later modules.

#### Assessment:

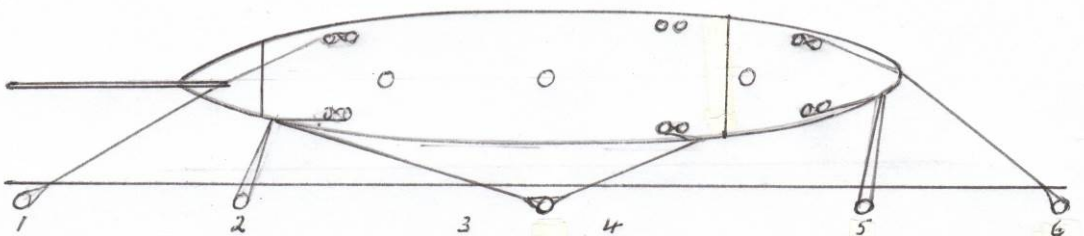
Oral and practical examination by a Watchleader, who will, when satisfied, sign off the relevant parts in the crew member's 'Diary of Service and Experience Log' book.

#### Outcome:

Crew to competently and safely carry out the tasks covered in the module.

### 1.9.1 Berthing Hawsers

Diagram shows how berthing hawsers are used to secure a ship alongside a wharf or a jetty. In this case Port Side to.



#### Springs

The hawser marked 3 is known as the fore spring and the hawser marked 4 as the after spring. When a ship is secured alongside, the springs prevent her from surging ahead or astern at her berth, and together they assist the breast ropes marked 2 and 5 to keep her close alongside.

### Head and stern Ropes

The hawsers marked 1 & 6 are known as the head rope and the stern rope. They assist the springs in preventing the ship from surging, and they are also used to adjust the position of the ship along the wharf or jetty, especially when she is going alongside.

### Breast ropes

The ship has two breast ropes, marked 2 & 5, which are known respectively as the fore and after breast ropes. They are used to breast the ship bodily towards the jetty when coming alongside, and when belayed they limit her distance from the jetty.

## 1.9.2 Berthing

### Aboard

When a ship is going alongside, the berthing hawsers required for working the ship to her berth will usually be a head rope, a stern rope, one forward and one after spring, and perhaps two breast ropes. The order in which they will go out depends upon the circumstances and will be called by the Officer of the Watch.

Clear the area around the bitts and install safety barriers.

Each berthing hawser required for working the ship should be ready and faked down for running, with its bollard eye led out through the correct fairlead and stopped outboard to the top guardrail, where it will be ready for a heaving line to be bent on by the time the ship is within heaving distance of the jetty.

If the capstan is to be used, it will probably be for breasting the ship in with the breast ropes, or for adjusting her distance along the jetty with the head and stern ropes.

When a ship is secured alongside where there is a large tide range, particular attention must always be paid to her berthing hawsers as she rises and falls with the tide, and, whenever possible, the hawsers should be so belayed that each can be tended without disturbing another.

Make sure the electrical cable is supported i.e. not carry its own weight or become another berthing line.

A berthing hawser may be *doubled up* by a second hawser between ship and shore; such hawsers are usually *singled up* well before the ship is due to slip so as not to delay the final stage of slipping. Doubling up may be used if adverse weather conditions are expected.

A berthing hawser may also be *rove doubled* when there is no shore party to cast it off when the ship slips, both ends of the hawser are made fast inboard.

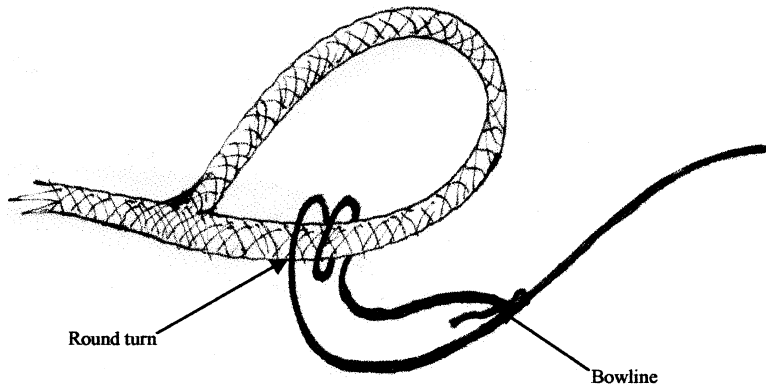
### On the wharf

Berthing party members stand by to receive heaving lines which will be used to haul the attached hawser ashore. Place the hawser eye on the bollard required.

## 1.9.3 Securing A Line To A Hawser

Securing a heaving line to an eye in a hawser.

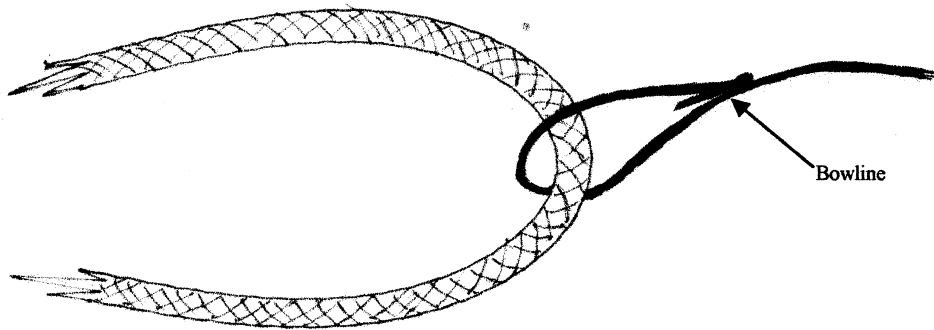
A round turn around the hawser, away from the eye, prevents the heaving line from slipping to the end of the eye thus binding on the bollard and hindering removal of heaving line when load goes on the hawser. E.g. Springs, head line etc.



Securing a heaving line to a bight in a hawser.

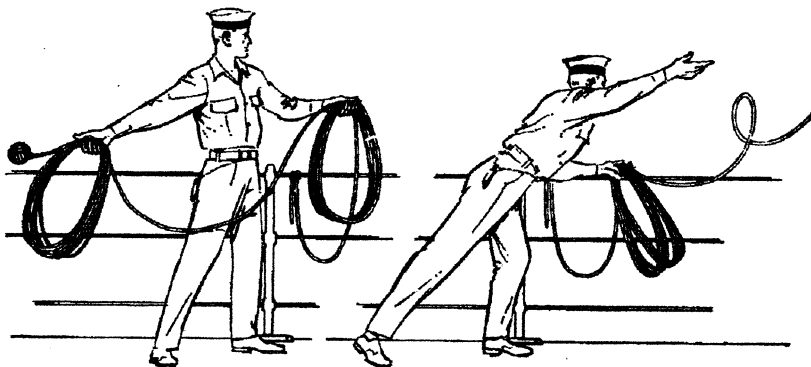
Loop in heaving line allows the hawser to slide through to adjust length.

e.g. Breast lines.



### 1.9.4 Throwing A Heaving Line

A heaving line is a light flexible line, weighted at one end that can be thrown. It is used as a messenger to pass a hawser from ship to shore, or vice versa.



To prepare a line for throwing;

1. Make the standing end fast.
2. The line should be coiled carefully in the left hand. The last third of the coils can be of smaller diameter. Make sure the head will not pass back through the coils during the throw.

3. One third of the line (smaller coils) is taken in the right or throwing hand. Line must be allowed to run free from the left hand.

There is more than one method of heaving a line and most good throwers have their own variations.

Acknowledgement- Admiralty Manual of Seamanship Vol. 1

### 1.9.5 To Catch A Turn Round Twin Bollards Or Bitt

Diagram shows how to catch turns with line under strain round twin bollard. Note that the lead is first to the bollard furthest from the source of strain, and from outboard to inboard. Belaying turns of a hawser leading forward are taken right-handed on the starboard side of a ship, and left-handed on the port side.

Also refer to pictures in Module 5, pages 9 & 10.

To handle a hawser, which is alternatively slack and under strain.

If space permits, it is best to keep one turn on the bollard and man the hawser before all when hauling in the slack. As the slack comes in, one man (or two with a very large hawser) can fleet it round the bollards, and at the same time be ready to back it up and take more turns when the strain comes on.

### 1.9.6 Backing Up

When a seaman finds that the strain on a hawser is becoming more than he can hold he instinctively takes a turn round the nearest bollard, cleat or other fixture, and then backs up the additional grip thus obtained with his own weight. If he expects a still heavier strain he takes as many additional turns round the fixture as are required to take the strain.

### 1.9.7 Un-berthing

#### On board

Clear the area around the bitts and install safety barriers around the area.

Prepare lines.

When a ship leaves a jetty the number of berthing hawsers required will depend upon the circumstances, but normally the head and stern ropes and one forward and one after spring should suffice. The head and stern ropes may have to be brought to the capstans and the springs may have to be surged.

The order in which the hawsers are to be taken aboard will be called by the Officer of the Watch.

Any doubled lines will be hauled on board on the order Single up.

Stand clear of any lines that may come under load.

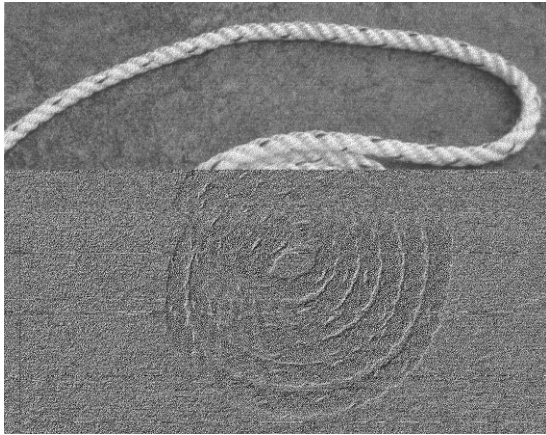
Haul hawsers onboard smartly on command. Coil and stow securely.

#### On the wharf

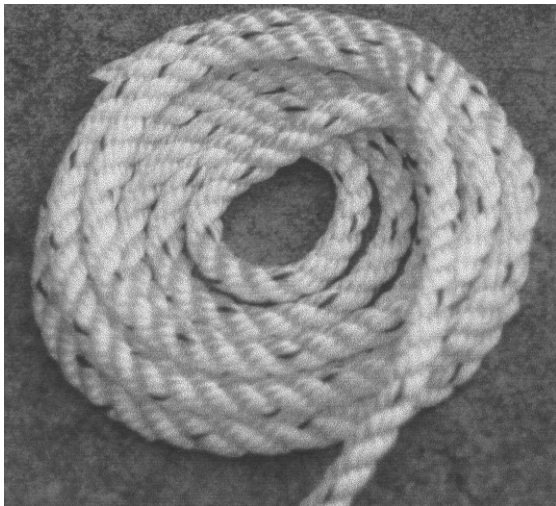
Berthing party will cast off hawsers as instructed by the Officer of the Watch. Walk the hawsers along the wharf and avoid casting them into the water.

### 1.9.8 Coiling Down A Hawser Or Large Diameter Line

Coiling down in the manner shown will enable the hawser to be run out quickly without upsetting the whole coil.



Step 1; Coil clockwise from outside in. Once in the centre lead the hawser to the outside and repeat.



Step 2; Continue with layers. Stagger the leads to the outside on each layer.

### 1.9.9 Waring The Ship

If it is necessary to reposition the ship while alongside without using the engines or tug it can be carried by using the berthing hawsers.

When a ship is being warped by her berthing hawsers each hawser should be tended, and the hands tending them should be prepared to back up, sur'e, take down the slack, bring to the capstan, or belay them, as required. Close attention to the berthing instructions and smartness in handling hawsers is essential.

### 1.9.10 Tug

A tug may be used when slipping and berthing. Make sure the ship's rig will not foul the tug's superstructure. Crew on board will receive the tug's towing line through the appropriate fairlead.

Use a boat hook to take the line\* Pass the eye over the appropriate bitts.

Crew are to stand well clear of the line.

Line is slipped after manoeuvre has been completed.

### 1.9.11 Lightermans Hitch, Tugmans Hitgh (also Refer Module 5 Pages 17,18)

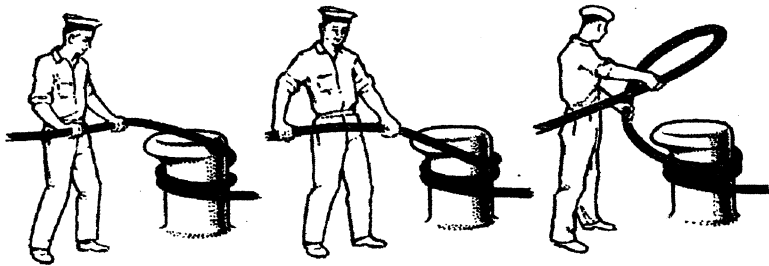
To secure a berthing line to a single post or bitt.

This is an 'excellent method of securing a line as it can be readily applied and released under control. '



### 1.9.12 To Catch Turn On A Single Bollard Or Bitt

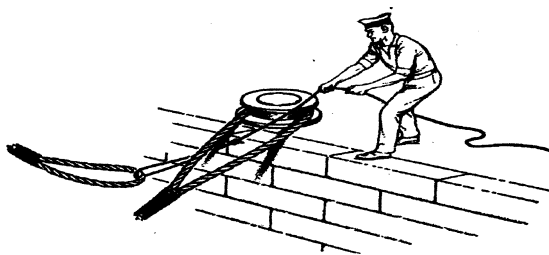
When a rope is under strain, catching a turn round a single bollard is difficult unless done correctly.



Careful attention should be paid to the position of the hands and fingers to prevent them being nipped, especially if the hawser should render.

### 1.9.13 Two Or Bollard Or More Berthing Hawasers Over A Single Bitt (dipping An Eye)

When two or more berthing hawsers have to be secured to the same bollard the eye of the second hawser must be passed up through the eye of the first before it is placed over the bollard, the eye of a third hawser must be passed up through the eyes of the first two, then over the bollard. The hawsers can then be cast off the bollard in any order.





### 1.9.14 Berthing Party Check List

Berthing party is made up a Leader and 3 crew.

The party attends to the tasks below.(Once the ship is safely away and the wharf area is secure, they return to the ship via the tug. The reverse occurs for arrival.

Automatic inflating life jackets are worn by all members of the party at all times. Refer to Module 11, Page 8.

Berthing party members are also the Ship's Stretcher Party.

#### Slipping

1. Remove locked security chain from bollards.
2. Invert wheels on gangway.
3. Rig line for removing shore power lead.
4. Ensure shore power cable is removed before slipping lines.
5. Disconnect water/ waste-water hoses.
6. Single up lines as ordered by Watchleader/Officer of the watch.
7. Remove gangway safety net and stow onboard.
8. Remove gangway safely and store safely clear of the public way.
9. Let go lines as requested by OOW.

#### Berthing

1. Bollards clear, in good condition and ready to receive lines.
2. Place the ship's lines on bollards, dipping the eye when appropriate.
3. Have gangway ready to secure to the ship
4. Secure the ship's safety net to the shore.
5. Invert wheels on gangway.
6. Lock berthing lines to bollards.
7. Have lines ready to bring power cable/ water hose ashore.
8. Ensure power cable is not taking any ship load.(i.e. not acting as a berthing line).
9. Return equipment (heaving lines, spanners, chain key) to the ship.
10. Stow life jackets.

### 1.9.15 Safety

**Refer to Module 5 for Safe Line Handling.**

1. Life jackets are to be worn by berthing party, at all Times.
2. **DO NOT** stand in line or close to hawsers that are under or about to come under high loads. If it parts it may come straight back at you.

3. When removing or placing hawsers on the bollards or bits keep hands and fingers clear of dangers areas e.g. Where they may be placed between ” the hawser and the bollard and squashed.
4. Synthetic hawsers under high load may part without warning. A danger

Sign is a marked decrease in hawsers diameter. Move well clear

### 1.9.16 Mooring

In harbours and confined waterways where there is no room for a vessel to drop anchor or berth at a wharf, mooring buoys are sometimes available.

The ship is brought up to the Buoy, preferably up wind or up tide whichever is the stronger, and temporarily hauled to the buoy with the Picking-up rope. In need a tug may be used to aid the ship.

The Mooring Bridle, with one end secured to the ship, the other end rove through the ring at the buoy and secured back on board. The Pick-up rope is then slipped from the buoy and recovered on board.

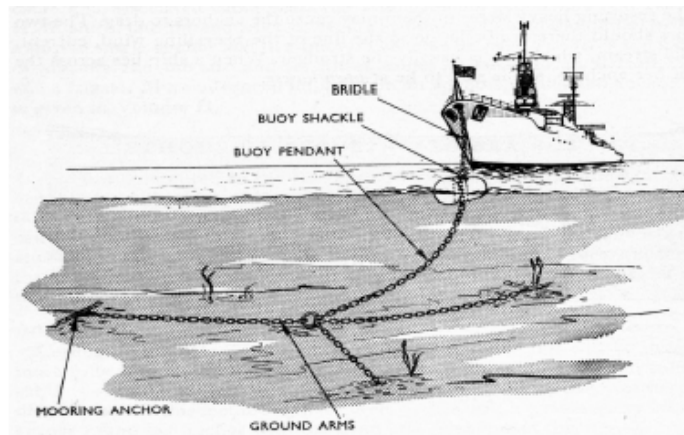
The weight of the ship is taken on the Mooring Bridle. One end is slipped when leaving the buoy.

In conditions of wind and tide are satisfactory the Pick-up rope may be dispensed with and the Mooring Bridle passed down directly to the buoy to be rove directly through the buoy eye and passed back to the ship by heaving line.

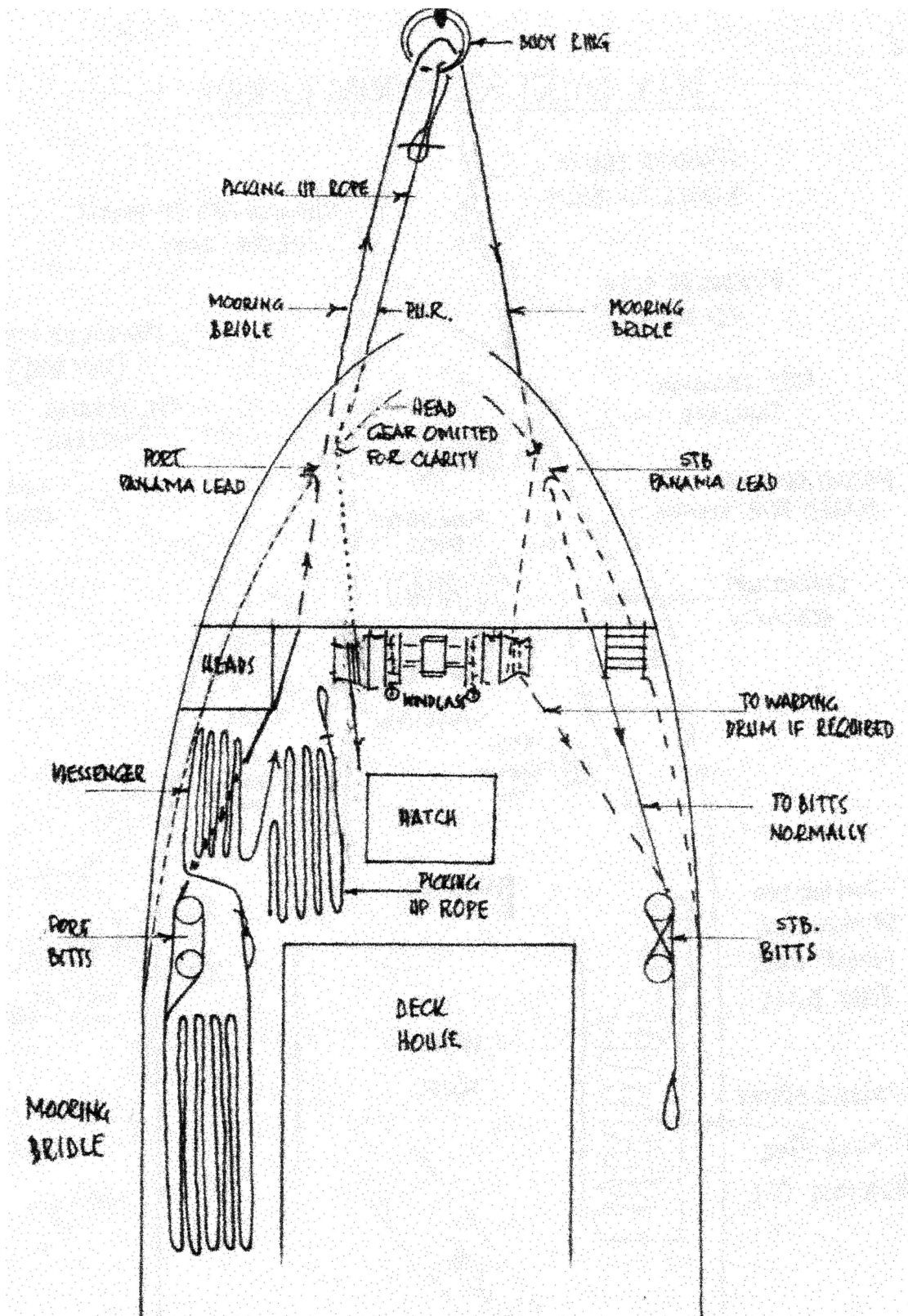
If a ship is to remain secured to a mooring buoy for an extended time it is practice to cut the anchor, break the cable at the first half shackle (of cable) and use a buoy shackle (Hartford shackle) to secure the ship to the buoy by the ship's anchor cable.

The Ship's sea boat or a tug is used to carry the lines between the ship and the buoy. The crew carrying out this task is called the "Buoy Jumper".

A typical mooring set-up.



Sketch of line set-up on the ship



## **Steps**

### **Securing to the buoy;**

1. Lines are set out on deck as in previous sketch.
2. The sea boat takes a pickup rope to the buoy. If required the ship's windlass is used to haul the ship up to the buoy.
3. Attach a heaving line to the bridle, Pass the heaving line through the eye of the buoy and back to the ship.
4. Use the heaving line to haul the Moring Bridle through the eye and back on board and secure.
4. Recover the pickup rope\*

### **Departure;**

Release one end of the Moring Bridle and haul through the buoy eye and back to the ship.

## **1.9.17 Berthing Party – Check Lists**

### **Departure**

- Don life jackets (stored in Chart Room).
- Report 'ready' to 1<sup>st</sup> Mate
- Assist engineers with disconnecting & flaking shore power cable.
- Unlock chains from berthing lines (key is in key cupboard in chart room)
- Reposition gangway wheels to 'down' position.
- Report to 1<sup>st</sup> Mate that wheels are in the 'down' position and the gangway is ready to be taken off the ship.
- The Taking in of net, rigging and disconnecting the handy billy is to be done by the deck crew (not the berthing party) when ordered to do so by 1<sup>st</sup> Mate – the net is stored under stairs at Main Hatch companionway.
- Take down gangway upon orders from 1<sup>st</sup> Mate – make sure gangway is pulled far enough OFF the ship to prevent it from scraping ship's side when lowered – but not too far so as to prevent straining the gantry and potentially 'tipping' the stairs.
- Ensure gangway is 'counter weighted' when connecting and disconnecting the Handy Billy.
- Position yourselves at the various bollards with berthing lines on them. Memorize those bollards and their positions for later arrival. Do NOT store gangway until vessel has left wharf.
- Place gangway alongside Wharf 7 building or as directed and lock with chain and padlock. Key is in chart room.
- Let go berthing lines as ordered by Officer of the Watch (OOW)
- Ensure Wharf 7 kitchen door and Rigger's workshop doors are closed and locked
- Stand By to be picked up by tug. Do not embark tug until instructed to do so by tug Master.
- For safety reasons remain seated while on the tug.
- Re-embark James Craig when alongside. Do not enter Pilot Ladder until instructed to do so by tug Master.
- Return life jackets and padlock key to Chart Room.
- Report back to Watch Leader for other jobs – including stretcher party drill.

- Stretcher Party to report to ship's doctor for stretcher party drill

## Arrival

- Don life jackets BEFORE James Craig arrives at Harbour Bridge
- Take along key for padlock
- Report 'ready' to 1<sup>st</sup> Mate and stand by to board tug
- Embark tug via pilot ladder when instructed to do so by OOW / Watch Leader / Tug Master
- For safety reasons remain seated while on tug
- Disembark tug at wharf when instructed to do so by tug Master
- Unlock gangway – leave chain pad-locked at gangway's shore position
- Position yourselves along the different mooring points / bollards – generally (but not always) expect the Fore Spring to be paid out first.
- Position berthing lines on respective bollards with an extra turn – dip berthing lines when two on same bollard.
- Undo heaving lines from berthing lines – coil - ready to be returned to Fore Deck Head.
- Position gangway – square to ship - ready to be taken onto the James Craig
- Once JC safely fast alongside and Handy Billy is mounted (by deck crew) to take gangway – counter balance until Handy Billy is secured to Gangway (by deck crew).
- Push gangway towards ship while being positioned onto Rail.
- Once in place deck crew disconnects Handy Billy from Gangway.
- Reposition Wheels to 'up' position
- Lock spring berthing lines with chains and padlocks
- Assist engineers re-connecting shore power as directed.
- Ensure that the weight of the shore power cable is held by the line holding it (secured to the wharf) – and NOT by the cable itself / the ship
- Secure gangway net to wharf
- Return padlock key to key cupboard in chart room
- Return all heaving lines to Fore Deck Head.
- Return life jackets to Chart Room and report job done to WL
- Report 'job done' to Watch Leader.

## MODULE 10.

### 1.10 Fire Fighting

#### Aim:

To ensure crew are aware of the dangers of fire in the ship and facilities and equipment on board to fight a fire.

#### Overview:

This module does not cover all aspects of fire fighting. However it deals with those aspects relevant to the ship.

The following points will be covered in association with practical application:

- Fire prevention.
- Basic principle of fire.
- Equipment in the ship.
- Crew response to a fire emergency.
- Basic fire fighting strategies.
- Fire extinguishers.
- Hose reels.
- Fire patrol.
- Guide for Fire Party leader.
- Fire incident procedures.
- Chart of Fire Extinguishers.

**Assessment:**

Oral and practical examination by Mate/ Watchleader, who will, when satisfied, sign off the appropriate tasks in crew member's 'Diary of Service and Experience Log' book.

**Outcome:**

Crew to understand the dangers associated with a fire on board and become competent in alarm procedures and handling fire fighting equipment in the ship.

### 1.10.1 Fire Prevention

It is the responsibility of all crew to practice fire prevention by being vigilant to any situation that could lead to fire.

Action should be taken immediately to correct any hazardous situation.

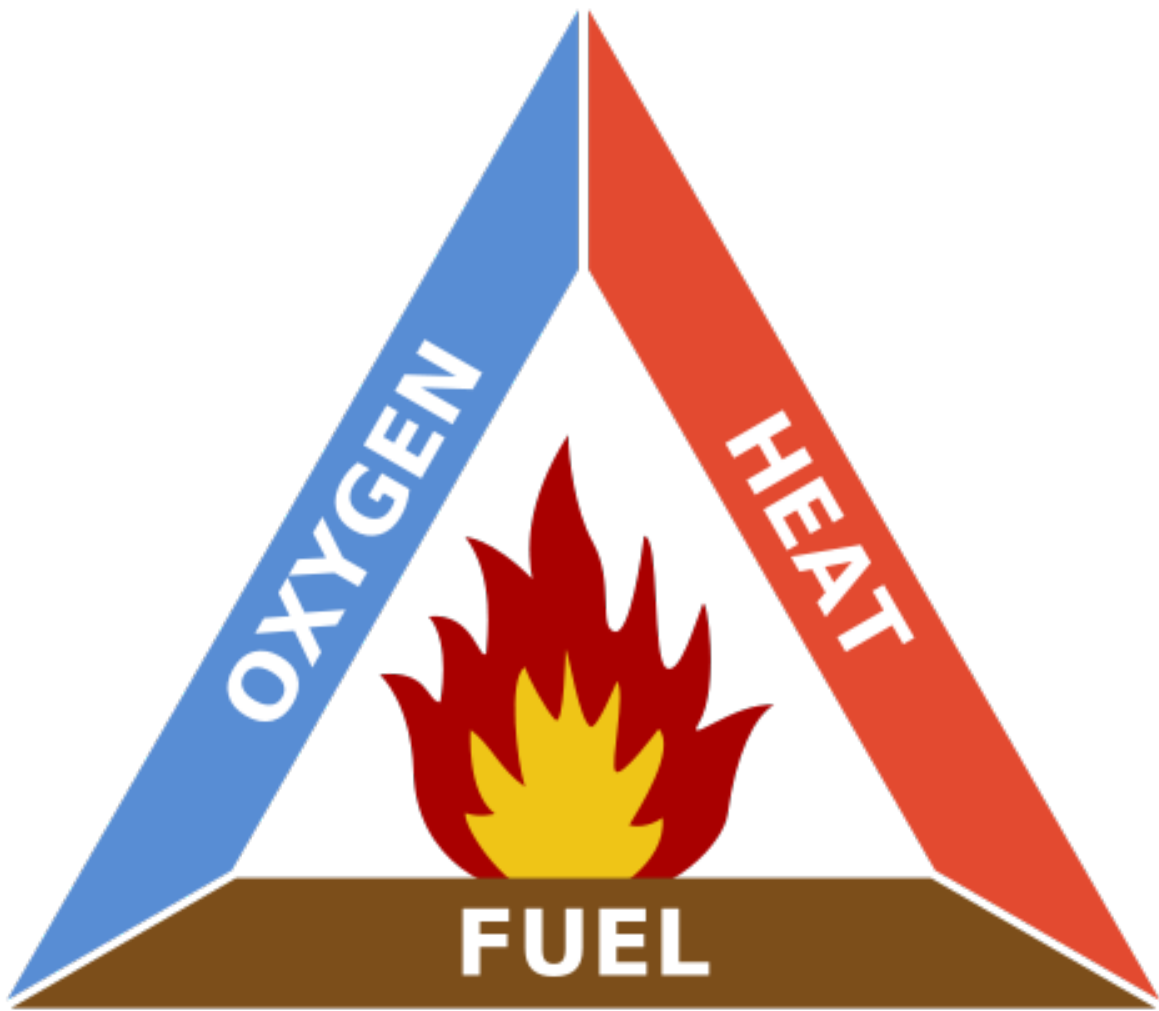
Prevention is better than cure, so;

- Smoking is only permissible near the foremast.
- Keep the ship tidy by disposing of or stow rags and rubbish safely.
- Report any damage to Fire Fighting equipment to the Officer of the Watch.

### 1.10.2 Basic Principles Of Fire – In Brief

Fire is a chemical reaction. The most common chemical reaction is the one between oxygen in the air and flammable vapours released from the fuel.

The components necessary for a fire to burn, or continue to burn, are illustrated in the fire triangle below.



Combustion is a process of oxidation i.e. a combination of oxygen and a substance.

Substances oxidise at different temperatures. When a substance is oxidising at such a rate that heat and light are being released, it is described as being 'alight' or 'on fire'.

For a fire to be sustained a chain reaction between the fuel and oxygen is promoted by the heat.

Fire, once started, can be transferred or travel by;

- Radiation
- Convection
- Conduction

Therefore to fight a fire in the ship appropriate methods and equipment are used to break, at least, one leg of the triangle and reduce the ability of the fire to spread.

Some examples that may be used:-

Oxygen - restrict flow of air to the fire by smothering i.e. fire blanket, extinguisher, seal a compartment.

Heat - if safe to do so, cool with water.

Fuel - turn off or, if possible, remove the source.



Radiation - shield with water fog or non flammable screen.

Convection - ventilate the space to allow flammable gas to escape safely.

Conduction - cool down surfaces.

### 1.10.3 Equipment In The Ship

Fire Fighting appliances fitted in James Craig are shown on the Fire & Emergency Plan displayed on the port side in the 'tween deck and near the Engine Room entrance.

The ship is equipped with detection equipment, extinguisher flood system in engine room, hose reels with fire pumps, extinguishers, fire blankets, fire buckets.

The control panel for smoke and thermal detection is located near the engine room access door.

**All** crew are required to be familiar with the location and type of portable extinguishers carried in the vessel and their use.

Crew will also make themselves familiar with the location and operation of hose reels and hydrants.

Fire Alarm can be initiated verbally, by smoke detector alarm, fire alarm, public address system or any means available to attract attention.

### 1.10.4 Action In The Event Of A Fire

#### ACTION TO BE CONSIDERED ON DISCOVERING A FIRE.

**“Rescue”** any person/s in immediate danger.

*Only if safe to do so.*

**“Alarm”** Raise alarm and follow the ship's emergency procedure.

**“Contain”** Close doors and hatches to contain fire.

**“Extinguish”** Attempt to extinguish the fire *only if you are trained and it is safe to do so.*

If any member of the ship's company discovers smoke or a fire, they must immediately raise the Alarm shouting loudly the words “Fire, Fire, Fire” as they make their way quickly to the Quarter Deck to report to the Officer Of the Watch. It is essential that the alarm be given first before any attempt is made to extinguish the fire.

It is not a requirement that flames be seen before raising the alarm, sighting or smelling smoke are also signs of fire and should be so regarded. It is preferable that the alarm be given and subsequently found to be a False Alarm than that timidity or over caution, preventing an early response to a developing fire.

If possible, the space in which the fire is situated should be isolated after first making sure that it is unoccupied.

Crew discovering a fire are permitted to make a single attempt to extinguish a small fire with an appropriate portable extinguisher only after somebody has gone to raise the alarm, and only if they are confident of doing so and do not endanger themselves. In the case of a large fire, the crewmember discovering the fire should not attempt to extinguish it. Passengers are not permitted to attempt to extinguish any fire.

The closing of special doors e.g. Engine room doors, in the event of fire are set out in respect to each compartment.

### 1.10.5 Crew Response To Fire Emergency

Fire Party crew, as shown on crew cards, will immediately report to the fire assembly point.



Crew who have not been designated to Fire Party duties on their Crew Cards, will immediately report to their emergency station.

### **1.10.6 Basic Fire Fighting Strategies**

#### **First attack Strategy**

For example, at a very small fire in the ship a first-attack strategy may be used.

This might typically involve simultaneously protecting people and property by putting out the fire with a fire extinguisher, fire blanket or fire bucket. It simply means that the fire can be extinguished quickly and easily with minimum equipment.

Such a strategy can prevent a fire developing to a point where “heavier” fire fighting equipment, such as hose lines, would be required.

**\*A first-attack strategy may be used by crew who are trained to use fire extinguishers.\***

#### **Second attack Strategies.**

These attacks should only be undertaken at the direction of an officer or fire party leader due to complexities of the ship environment. i.e. Confined spaces, ship stability etc.

### **1.10.7 Fire Extinguishers**

Training and practice are the only effective ways to become familiar with using extinguishers. Some general guidelines are given below.

**NOTE:** When an extinguisher is empty, lay it on its side.

Remember Fire Buckets at the break of the quarter deck are there to be used.

#### **Water Extinguishers (Red Colour)**

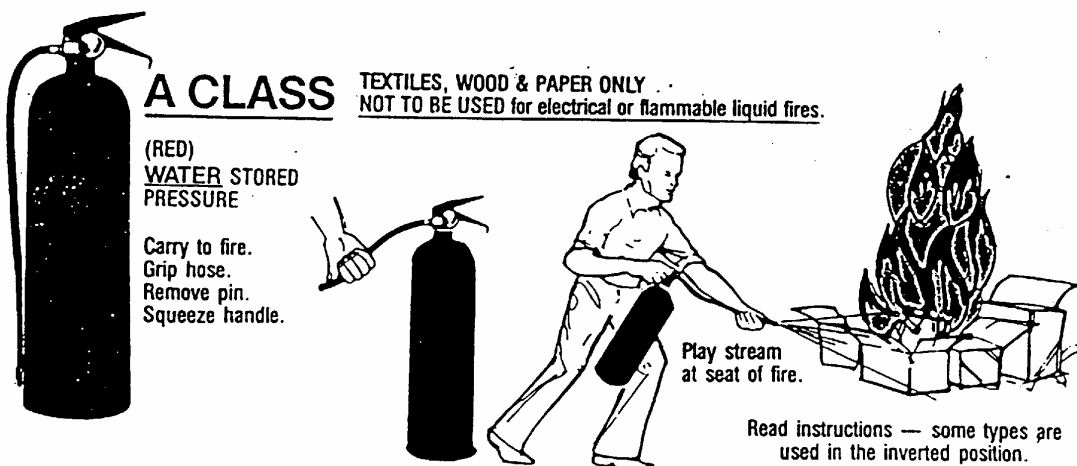
Water extinguishers (Red Colour) should be used only for Class A fires (Wood, paper & plastic). The range of the discharge is about 6 metres and it should be aimed at the base of the burning material. The extinguisher will be empty after about 1 minute of discharge.

Hose reels in the ship can be used to apply water in a similar way to water extinguishers. They can only be used at the direction of an officer.

Water can conduct electricity and water extinguishers or hose-reels should not be used on fires involving electricity.

Water from an extinguisher or hose reel should not be used on burning flammable liquids as it will make the fire spread and become more intense.

## CORRECT USE OF EXTINGUISHER



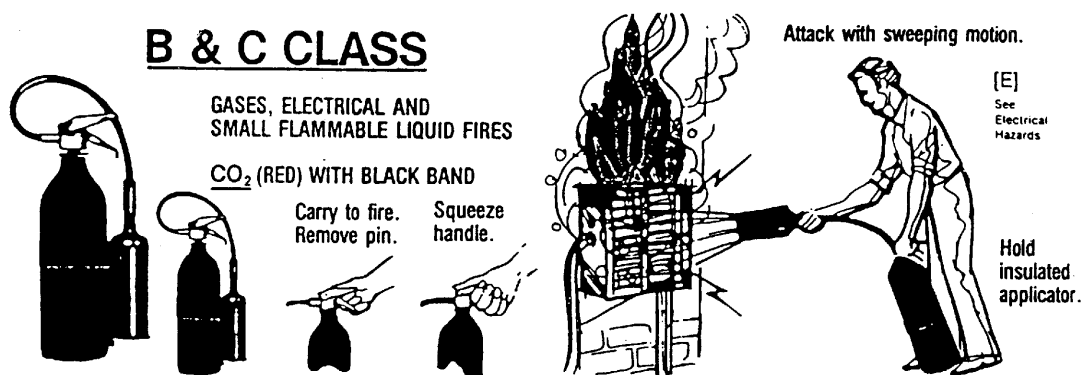
### Carbon Dioxide (CO<sub>2</sub>) Extinguishers (Black Band)

Mainly for use on fires involving electricity and small Class B (Flammable and combustible liquids) fires. Range of discharge is only about 1 to 2 metres. It should be applied with a sweeping motion, and the duration of discharge is similar to that of extinguishing powder.

CO<sub>2</sub> extinguished fires are also subject to reignition if not completely put out.

CO<sub>2</sub> makes a loud roaring noise and is intensely cold when discharged.

## CORRECT USE OF EXTINGUISHER

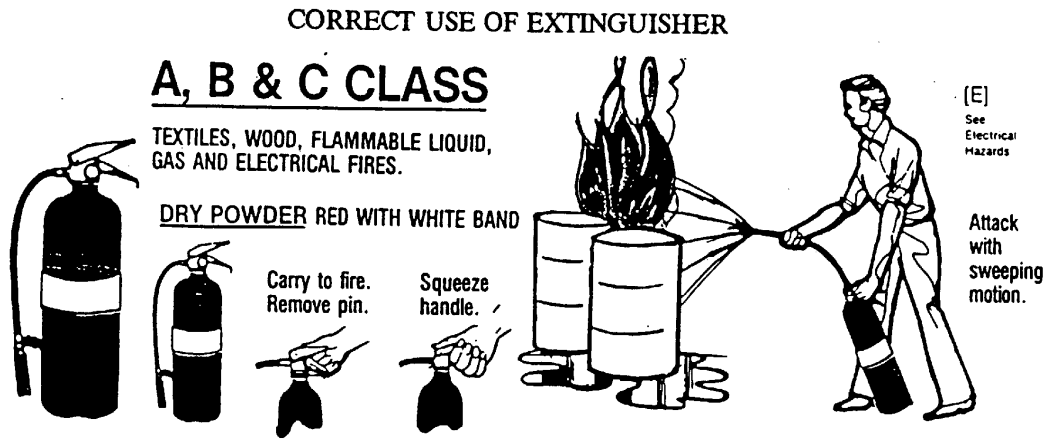


### Powder Extinguishers (White Band)

Mainly for use on Class B (Flammable and combustible liquids) fires, but can be used on some other types, including fires involving electricity. Range of discharge is about 5 to 7 metres, with a typical duration of about 8 to 30 seconds, depending on the size of the unit.

The powder stream should be applied in a sweeping motion across the flames. Note that the powder has little cooling effect, and reignition may occur if the fire is not completely put out, or a hot spot or spark is present.

Though a powerful fire fighting agent, extinguishing powder does leave a messy powder residue, which, may damage sensitive equipment.



### 1.10.8 Hose Lines

The ship is equipped with 6 hose lines which are fed from two pump systems.

### Pump Systems

Two pumping systems are on board.

1. In the engine room there are two electric pumps which can be used for multiple purposes.

- Bilge pumps
- Fire pumps

The port pump is set up for fire and the starboard pump as a bilge pump.

2. A stand alone diesel engine pump is located in the lower hold, forward on the starboard side. This pump can be used for fire fighting or as a bilge pump.

Pumps are switched on by an engineer, officer or watchleader.

When using a fire hose to fight a fire on board, it must be remembered that provision must be made to pump excess water overboard. Not to do so could lead to ship instability due to free fluid movement.

Module 16, pages 17 to 28 contains information on Engine Room Fire and General Service Pumps and Emergency Fire and Bilge Pump.

### Hoses

Location of hose lines are shown on the Ship's Fire and Emergency Plan.

All the hoses and fittings are interchangeable.

The hoses are stowed in swing out racks near valve outlets, refer photograph below.

Deploy by holding the two ends and bowling the coil down the deck, away from the fire.

To stow;

- lay hose out on the deck double with the ends off set by approximately one metre.
- the short end on top.
- roll the hose up tightly from the folded end.
- when completed both ends should be together.
- replace in rack.

### 1.10.9 Fire Party

The Fire Party is made up of a Leader and 4 crew, under the direction of an Officer.

Duties for each party member are shown on the member's crew card.

Assembly point is the entrance to the crew deck house. Equipment is in bags under the bottom starboard bunk near the door.

Fire Part radio is kept in the deckhouse. It is to be carried by the patrol party when doing their rounds. This radio also is the only radio which has a channel to the dockside security for guides and weekend maintenance.

In addition to being on stand by, each hour the Leader of the party is to organise a patrol of all decks of the ship.

The patrol will look out for;

- fire hazards.
- potential flood situations.
- anything that may affect the security of the ship or passengers /crew.
- check refrigeration is on.
- report any anomalies to the Officer of the Watch.
- record the patrol in the log.

Members of the fire party DO NOT CLIMB.

### 1.10.10 Guide For Fire Party Leader

- Establish fire party meeting point.
- Brief fire party and check that they know their respective roles.
- Check all equipment;
  - Protective clothing.
  - Torch
  - Hose reels
  - Fire extinguishers
  - Fire buckets
  - Radio
- Walk the ship each hour, main deck, 'tween deck, hold and all closed compartments i.e. engine room, etc. Start patrol at chart room by checking the log for possible hazards etc noted by previous patrol.

- Fire party/patrol radio lives in the deckhouse. Patrol collects the radio at commencement of patrol and returns it to the deckhouse after completing patrol. This enables the patrol to immediately report any problems they find to the Officer of the Watch.
- Look out for potential hazards and fix/report.
- Fire extinguishers and hose reels are not obstructed.
- Fire station clear.
- When in the hold - check for flooding
- check ballast blocks for movement
- Fire doors and escape hatches are not obstructed.
- “Exit” lights are lit and not obscured.
- Note completion of the patrol in the log in the chart room.
- Report to officer of the watch when patrol has been completed.
- Return Radio to its holder in the deck house.

### 1.10.11 Fire Incident Procedures

In the event of a fire, the following **immediate actions** are to be carried out:

#### **Person Discovering the Fire**

If possible, attack the fire with an appropriate extinguisher

Evacuate the compartment, shutting the door/hatch

Raise the alarm.

Report the fire to the OOW.

#### **Officer of the Watch**

Sound the General Alarm and broadcast:

*Emergency Stations, Emergency Stations, Emergency Stations,*

*Fire, Fire, Fire*

*Fire in the...*

*Shut down all ventilation.'*

The OOW is to manoeuvre the ship as required to reduce the wind over the deck and/or the ship's motion.

### **Incident Control**

**Second Mate** Go to the scene of the fire and assume the role of Incident Coordinator. Establish communications with the quarter deck.

**Chief Engineer** Start the fire and bilge pumps

Start the second generator

Go to the scene of the fire and make an engineering assessment.

Isolate power and shut off fuel as directed by the Incident Controller.

**Crew I/C of Fire Party** muster the fire party.

Ensure personnel are correctly dressed and the appropriate fire fighting appliances are present.

Report to the Incident Controller.

**Fire Party members** Get dressed in protective clothing.

Go to the location indicated in the broadcast.

Fight the fire as directed by the Crew I/C of the Fire Party.

**Medical & Stretcher Party** Muster at the deckhouse.

Assemble equipment.

Await instructions.

### Other Positions

First Mate Take over the Watch on the Quarter Deck.

Third Mate Establish the ship's position and standby to transmit a Pan Pan or May Day on VHF Ch 16 or HF 2182

Second Engineer Take over the engine throttles on the quarterdeck.

Chief Steward Muster the passengers in accordance with the manifest and report the numbers to the First Mate.

Remaining Crew Muster in watches at Muster Stations.

### Considerations in Fighting the Fire

In fighting the fire, the Incident Controller is to consider carrying out the following as soon as practical:

- Search the affected compartment for possible personnel;
- Isolate the compartment electrically;
- Ensure ventilation is off and the compartment shut down to the maximum extent possible.
- If internal combustion machinery is involved or the fire is in a machinery space, shut off fuel
- Boundary cooling
- In the event of an Engine Room fire, consider drenching the space (to be approved only by the Master).

### Considerations when the Fire has been Extinguished

- Assigning a fire sentry
- Clearance of toxic fumes
- Restoration of ship's services
- Documentation of the incident
- Debriefing of the ship's company

### 1.10.12 Fire Extinguisher Selection

A **labeling system** uses standard pictorial symbols which show the class or classes of fire for which the extinguisher is suited. The symbols identify the type of fire the extinguisher can be used for.

**Note:** A red slash stroked through any of the fire classification symbols means it is unsafe to use that extinguisher on that class of fire. For example, a water-filled extinguisher would show the symbols for Class B and C fires slashed through as water should never be used to extinguish a flammable liquid or an electrical fire.

If a symbol is not shown on the extinguisher's label, it simply means the extinguisher was not tested for that class of fire.

## 1.10.13 Fire Extinguisher Selection Chart

| INDICATOR                                                                                                           | CLASS OF FIRE ➡                                                                          |                                                                                         | A                                                                                   | B                                                                                               | C                                                                                    | (E)                                                                                   | F                                                                                     | SPECIAL NOTES                                                                                  |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <br>FIRE EXTINGUISHER<br>POST 1995 | TYPE OF FIRE ➡                                                                           |                                                                                         | Ordinary combustibles<br>(wood, paper, plastics, etc)                               | Flammable and combustible liquids                                                               | Flammable gases                                                                      | Fire involving energised electrical equipment                                         | Fire involving cooking oils and fats                                                  |                                                                                                |
|                                                                                                                     | <br>YES | <br>NO |    |                |    |    |    |                                                                                                |
| PRE 1995                                                                                                            | IDENTIFYING COLOURS                                                                      | TYPE OF EXTINGUISHER                                                                    | EXTINGUISHER SUITABILITY                                                            |                                                                                                 |                                                                                      |                                                                                       |                                                                                       |                                                                                                |
|                                    |         | WATER                                                                                   |    |                |    |    |    | Dangerous if used on electrical fires                                                          |
|                                    |         | WET CHEMICAL                                                                            |    |                |    |    |    | Dangerous if used on electrical fires                                                          |
|                                   |        | FOAM                                                                                    |   |               |   |   |   |                                                                                                |
|                                  |       | AB(E) DRY CHEMICAL POWDER                                                               |  |              |  |  |  |                                                                                                |
|                                                                                                                     |                                                                                          | B(E) DRY CHEMICAL POWDER                                                                |  |                                                                                                 |                                                                                      |                                                                                       |                                                                                       |                                                                                                |
|                                  |       | CARBON DIOXIDE (CO <sub>2</sub> )                                                       |  |              |  |  |  | * May be used on small surface fires                                                           |
|                                  |       | VAPOURISING LIQUID<br>Fumes may be dangerous in confined spaces                         |  | 5kg only<br> |  |  |  | * Vapourising Liquid extinguishers are not suitable for smouldering deep seated A class fires. |

MODULE 11.

## 1.11 Special Sea Duties

Aim:



Introduce and outline the special sea duty posts manned by crew while the ship is underway.

New crew are expected to further their skills while serving at these posts, supported by Officers, Watchleaders and other crew.

**Overview:**

The safety of the ship, and all who she carries, relies on seamanship of crew and the technical apparatus carried (radar, etc.). A very important component of ship safety is made up of the various special sea duties carried out by the crew.

Crew cards, handed to each of the crew by the watchleader, will list special duty/duties to be performed, time and duration. It is a crew responsibility to be at the required position on time or when called.

Prior to change of watch, individual crew should find their watch leader and report that they are going onto a special sea duty post. Also report when returning from special sea duty post.

While on duty, focus and concentration must be maintained, to the exclusion of chatting to fellow crew or passengers. Conversation should be limited to that relevant to their role.

If not fully familiar with a special duty, ask.

**Contents:**

- Forward lookout
- Captain's runner
- Helmsman
- Lazy helmsman
- Stern lookout (Includes Man overboard lookout)
- Fire party
- Berthing party
- Sea boat
- Stretcher party
- Life raft preparation
- First Aid
- Damage control
- Spill
- Recover from aloft/rescue

**Assessment:**

Assessment by Officer of the watch or Watchleader will be carried while the various duties are being performed. When competency is displayed they will sign the appropriate entries in the crew member's 'Diary of Service and Experience Log' book.

**Outcomes:**

All crew to become fully competent at all special duties.

### **1.11.1 Forward Lookout**

The ship's forward eyes.

This position is manned at all times while the ship is underway. Crew man this position in rotation. Details are shown on relevant crew cards with time and period of duty.

One member of the crew is assigned to take over this position for and during **ALL EMERGENCY** situations. This also includes drill exercises.

At night two crew man this position.

Lookout post is the anchor deck. This is a very exposed area so crew should wear suitable clothing and wear a harness which is attached to the ship at all times.

Remember;

- A lookout is to be maintained in **All Directions**, not just forward.
- Avoid “blind spots” created by jibboom, net, sails and rigging by moving about.
- A harness is to be worn at **all** times and clipped to the ship.
- Be aware of jib and fore topmast staysail bullet blocks.
- Prior to first trick (watch) of the voyage, lookout is to obtain a radio from the chart room and establish which channel to use. Carry out a radio check.
- Lookout is to radio the quarterdeck sighting of other vessels, navigation markers or buoys, breaking water, fishing buoys, any lights seen at night (e.g. navigation buoys, vessels, lighthouses) and anything unusual ahead of or approaching the ship’s course from any direction. Never assume the quarter deck may have seen what is observed.
- In harbour, be aware that you may be obstructing the forward view of the Quartermaster, who could be using a landmark ahead to guide the ship.
- During daylight hours use the ship’s forward bell to answer the bell strike on the quarter deck, viz each half hour.

Reports are given as:

**Direction** - given in “Points” off the port or starboard bow (directly forward to abeam equals 8 points). Refer Module 3, page 8 for “hand” method of estimating points.

**Distance** - using general terms such as “very close” (within 100m), “close” (within 1km), “far” (several kilometres), “very far” (on the horizon).

**Description** - nice and brief, e.g. “a large ship”, “a yacht”, “a small fishing boat”, “a commercial fishing boat”, “a yellow buoy”.

**Destination** - “it’s standing still”, “it’s heading towards us”, “it’s moving away from us”.

**Deviation** - any change in target’s speed or heading.

*Example of typical report:*

*Call* – “Quarterdeck this is Focs’l.”

*Reply* – “Focs’l this is quarterdeck.”

*Report* – “Four points off our starboard bow and close, a fishing boat stationary

*Reply* – “Quarterdeck romeo.”

When being relieved, lookout is to brief new lookout on what objects are currently visible and which have/have not been reported aft.

New lookout should then carry out a radio check with quarter deck- e.g.

*Call* – “Quarterdeck this is Focs’l radio check.”

*Reply* – “Focs’l this is quarterdeck - loud and clear.” or “breaking up.” or as the case may be.

### 1.11.2 Captain's Runner

This position is manned at all times while the ship is underway.

One member of the crew is assigned to take over this position for and during **ALL EMERGENCY** situations. This also includes drill exercises.

Relief is provided by other crew, details are shown on relevant crew cards together with time period of duty.

Prior to first trick of the voyage, the runner obtains a hand held UHF radio from the chart room and establishes which channel is to be used.

Runner's post is with the "officer of the watch" (OOW) who will be on the quarterdeck. The officer of the watch can be established by checking with any officers on the quarterdeck. The runner should introduce him or herself to the OOW.

The runner relays any messages from the forward lookout to the OOW. Often this is made easier by staying close with radio turned up reasonably loud.

The runner must stay with the OOW at all times so as to be available for any errands forward or below.

Ship's bell is sounded by the Captain's runner and repeated by forward lookout. Refer to Module 3 for the bell system for marking time.

When being relieved, the new runner should report to the existing runner, take over the radio and introduce themselves to the OOW.

New runner should then carry out a radio check with the focs'l; e.g.

*Call* – "Focs'l this is Quarterdeck. Can you give me a radio check."

*Reply* – "Quarterdeck this is Focs'l. Loud and clear." or "breaking up." or as the case may be.

### 1.11.3 Helmsman (or Quartermaster)

A crew member is assigned to be the Helmsman (Quartermaster, Mud-pilot) for a voyage.

Quartermaster (mud pilot) takes the wheel when leaving and returning to port and **ALL EMERGENCY** situations. This also includes drill exercises.

Relief is provided by other crew, details are shown on relevant crew cards together with time and period of duty. Refer later to the formal handover procedure.

Helmsman's post is at weather side of wheel, un-harnessed. Helmsman is responsible for steering the ship to a compass course, full and by, visible landmark heading (usually in harbour) or turns of the wheel, as directed by the OOW.

Helmsman is to understand how the ship's bow relates to the wheel, which is instinctive, so as to steer a straight course or head to an object (i.e. bring her bow to port, turn the top of the wheel to port).

Helmsman is to understand how the ship's bow relates to the compass lubber line, so as to keep the ship on a compass course (i.e. if lubber line drifts to left of correct compass course, it and the bow can be bought back to the right by turning the top of the wheel to starboard). Remember the compass card is stationary and the ship moves around it.

Helmsman is to immediately and loudly repeat any order given by the OOW so that the OOW knows the helmsman has heard him correctly. When the order has been completed (executed) again report as in the following example.

*OOW order* – "Three turns to port."

*Helmsman immediately repeats order* – "Three turns to port, Sir."

*When turns completed, report* – "Three turns to port on Sir."

Or,

*OOW order* – “Come to port and steer two seven zero.”

*Helmsman* - “Steer two seven zero, Sir.”

*When complete, and the ship is steady on the new heading report* - “Ship’s head steady two seven zero Sir.”

Note; Numbers such as 270 are spoken as “two, seven, zero” **NOT** as “two hundred and seventy”.

Prior to first trick of a voyage, Quartermaster for the voyage;

- removes locking chains and stows
- inspects steering gear for obvious faults
- oils the thread, bearings and sliding nuts
- checks nut pins are in place
- turn the wheel through full 16 turns, both ways
- check rudder moves with wheel
- checks helm indicator for damage
- check compass.

### Procedure For Relieving At The Wheel

The process of change of helmsman is an important and formal part of the ship’s routine, which should be meticulously learnt and performed.

The Helmsman is to report at least five minutes before the nominated time of his taking over the wheel so that he can adjust to the light, the weather conditions and sea state, the course steered and the steering conditions.

He should first approach the OOW., introduce himself and seek permission to take over the wheel in the following terms:

“Officer of the Watch Sir - this is. . . - permission to take the wheel?”

The Officer of the Watch, taking into account such factors as,

- known ability of crew member
- the possibility of an impending alteration of course
- the proximity of other ships and the time required for new helmsman to settle into the steering role, will either approve the request by saying, “Yes please.”

Or, if a delay is considered, he will say –

“Please stand by.”

On receiving approval to take over the wheel the relieving Helmsman will introduce himself to the current helmsman, saying –

“..... to relieve the wheel.”

The current Helmsman will then inform the relieving Helmsman of the course to be steered, whether or not the ship is carrying any wheel and how ship is handling. For example:

- a) “Course zero four five, carrying one turn of port wheel.”
- b) “Steering full and by on the main upper topsail luff, carrying about two turns of starboard wheel.”

The relief Helmsman will repeat this report and the current Helmsman is responsible for ensuring that relief Helmsman has heard and understood the report.

The current Helmsman will then steady the ship on her course and hand over to the relieving Helmsman saying.

“Have YOU got the wheel?”

The relieving Helmsman should then reply-

“Yes I have the wheel.”

The relieved Helmsman should then report to the OOW saying –

“..... – relieved at the wheel by ....., course zero four five, carrying one turn of port wheel, Sir.”

The OOW will acknowledge this report by saying –

“Thank you ..... - carry on.”

The observance of the formality of the procedure is more important in James

Craig than in a normal merchant ship where the names and professional capabilities of the crew are well known to the master and officers of the watch.

#### 1.11.4 Lazy Helmsman

This post is not regularly filled unless weather or other factors are making steering difficult.

Lazy helmsman’s post is at helm, opposite the helmsman. He/she is there to assist when requested by helmsman and in case of emergency. Common requests may include confirming orders from OOW providing compass headings or tiller indicator readings, assisting in strong blows.

In the case of man overboard, lazy helm immediately throws the nearest life ring and other safety gear if it has not already been deployed. He then maintains eye contact with man overboard and points to his direction.

When relieved there is no need to report to O.O.W.

#### 1.11.5 Stern Lookout (includes Man Overboard Lookout)

The ship’s eyes aft.

Also refer to Module 8.

This position is manned at all times while the ship is underway.

One member of the crew is assigned to take over this position for **ALL EMERGENCY** situations. This also includes drill exercises.

Relief is provided by other crew, details are shown on relevant crew cards together with time and period of duty.

Prior to first trick of the voyage, the equipment on the port side (Dan buoy, life ring, smoke buoy and connecting lanyards) is to be checked. Also check the equipment on the starboard side.

Man overboard lookout post is aft on the quarterdeck. Lookout wears a safety harness and should stand next to the safety equipment (Dan Buoy, life ring and smoke buoy).

When taking over the position, check that all gear is present and clear for use.

Like the Forward Lookout, the MOB Lookout is the ship’s eye, at the stern. Lookout is to scan in **ALL DIRECTIONS** overboard as well as monitor ship board activities on deck and aloft. Report to the OOW any unusual situations or potentially dangerous activities observed.

In the case of a man overboard situation occurring, the lookout immediately launches the safety equipment, establishes eye contact with the **person** in the water and points in his direction. When relieved, lookout smartly climbs 2/3 to 3/4 of the way up the mizzen weather shrouds. Lookout then re-establishes eye contact with the man overboard and points in his direction. He can call out directions to crew on deck, but is not to take his eyes off the man in the water.

Lookout maintains this role through the entire recovery procedure - while sea boat is launched, while man overboard is recovered and while rescue boat is returning. He stands easy and comes down to deck **only** when rescue boat is back and secure in its cradle.

When being relieved, there is no need to report to OOW.

### 1.11.6 Fire Party

#### **Primary role.**

The Fire Party is made up of a leader and 5 crew. Duties of each party member are shown on the relevant crew cards.

An officer always has control of the party and its actions.

Refer to Module 10 for detail.

Members of the party make regular patrol of the ship to monitor and look for potential hazards.

At the beginning of each voyage fire party is briefed by the leader to ensure each member is aware of their role.

Members of this party **DO NOT CLIMB**.

**Second role** of fire party is to lead the Ship Security Patrols.

The patrols, made up of 2 crew, carries out an inspection of all areas of the ship once an hour while the ship is underway.

Duties;

- Check the Patrol Log in the chartroom for notes made by the previous patrol.

- Carry a torch and radio. The radio is so that any problems or potentially dangerous situations can be advise immediately to the OOW.

- When inspecting any confined spaces, such as the lower hold, consider the condition before entry. One member with the radio stays at the entrance as sentry, the other proceeds with the inspection. If there is a problem the crew at the entrance is to advise OOW immediately and **NOT** enter the space until assistance arrives.

- On completion of the patrol, record the entry in the Log and advise the OOW.

### 1.11.7 Shore/berthing Party

Berthing party is responsible for handling the ship's lines on shore for departure and on arrival.

Party is made up of a leader plus 3 crew.

While performing their duties all members of the party are to wear self inflating life jackets.

Refer to Module 8 & 9 for details.

Duties include unlocking berthing lines on wharf, inverting gangway wheels, ensure power cable has been cleared and clearing any members of the public that may be at risk from heaving lines etc.

They also clear, stow and install the gangway.

Party is ferried to and from the ship by attending tug.

### **1.11.8 Sea Boat**

The sea boat is manned by a crew of 2, Coxswain and crew.

Routine and Emergency launch of the sea boat is carried out by a team of 8 under the leadership of a watch leader. Overall control is in the hands of an officer.

Refer to Module 8 for details of launch and recovery procedure.

Refer to Module 12 for details of Small Boat Handling.

Members of this team DO NOT CLIMB.

### **1.11.9 Stretcher Party**

The party is made up of the 4 members of the Shore/Berthing Party.

To assist the Doctor and stewards during an emergency, there may be a call for stretcher party.

Shore/Berthing party leader is to check all the equipment prior to departure and brief his crew.

### **1.11.10 Life Raft Preparation**

Each raft party is made up of a leader and 3 crew.

Leader checks the raft and rig. Report any damage or irregularity.

If necessary, in emergency situation, rig life raft for launch.

### **1.11.11 First Aid**

This position is not listed on the crew cards.

A Doctor is usually carried and handles First Aid situations, with, in need the assistance of the stretcher party.

All crew are required to have current Senior First Aid certification and should be familiar with the location of all first aid kits on board.

Crew members should be able to render first aid assistance to fellow crew or passengers in need.

### **1.11.12 Damage Control**

This party is made up of members of the Fire Party.

Should the ship suffer damage or gear failure, this party will initially assemble to secure the situation.

Location of tools etc. and materials are to be noted in case they are needed.

### **1.11.13 Spill**

This party is made up of members of the Fire Party.

This party will assemble and deploy spill control equipment to contain any form of spill.

Refer to Module 16 - Spill.

### **1.11.14 Recovery From Aloft**

This is a special party made up of Topmen, who, in need with the aid of special gear, render assistance to crew in difficulty aloft.

Refer to Module 18 – Recovery from aloft.



## CHAPTER 2

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### Indices and tables

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