



**HMB**  
**ENDEAVOUR**  
~ **AROUND** ~  
**AUSTRALIA**  
**2011-2012**

*Voyage of a Lifetime*

# Voyage Crew Manual



“Be excellent to each other”

# Table of Contents

Page

<b>1. Overview</b>	<b>3</b>
<b>2. History of the HMB Endeavour Replica</b>	<b>4</b>
<b>3. Ship's Specifications</b>	<b>4</b>
<b>4. HMB Endeavour's Professional Crew</b>	<b>4</b>
<b>5. Safety</b>	<b>6</b>
<b>6. Voyage Preparation</b>	<b>6</b>
<b>7. Your Role Onboard</b>	<b>7</b>
<b>8. What to Expect</b>	<b>8</b>
<b>9. Three-Watch Watch Bill</b>	<b>9</b>
<b>10. Daily Sea Routine (3 Watch)</b>	<b>9</b>
<b>11. What to Pack</b>	<b>10</b>
<b>12. Accommodation</b>	<b>12</b>
<b>13. Meals</b>	<b>12</b>
<b>14. Climbing Aloft</b>	<b>12</b>
<b>15. Medical Matters</b>	<b>13</b>
<b>16. Other matters</b>	<b>13</b>
<b>17. Decks</b>	<b>14</b>
<b>18. Sails</b>	<b>16</b>
<b>19. Glossary of Lines to Control Sails</b>	<b>18</b>
<b>20. Line Identification</b>	<b>18</b>
<b>21. Line Handling Glossary</b>	<b>26</b>
<b>22. Line Belays</b>	<b>27</b>
<b>23. Sail Handling</b>	<b>29</b>
<b>24. Bracing Yards</b>	<b>30</b>
<b>25. Helming</b>	<b>30</b>
<b>26. Knots &amp; Hitches</b>	<b>31</b>
<b>27. Cleaning</b>	<b>32</b>
<b>28. Glossary of Terms</b>	<b>33</b>

# HMB *Endeavour's* Circumnavigation

2011-2012

## 'Voyage of a Lifetime'



## Voyage Crew Manual

# Welcome aboard the replica of James Cook's HM Bark *Endeavour*!

You are joining the Australian National Maritime Museum and this internationally acclaimed replica on our most ambitious voyaging program ever.

Since we assumed management of the ship in 2005 we have been committed to sailing to distant ports, to share the unique historical experience that the replica embodies.

When the ship is in museum mode, alongside in distant ports, many thousands are able to place themselves in *Endeavour*'s fascinating 18th-century spaces, the better to visualise our history.

You who come aboard as voyaging crew will encounter another aspect of the ship altogether. You will experience the skills and traditions of 18th-century seamanship itself, as the ship comes to life under your hands in its natural element, revealing its true nature on the open sea.

I wish you every reward from the unique and challenging opportunity you have embraced.

Mary-Louise Williams  
Director  
Australian National Maritime Museum

## **1. Overview**

Thank you for sailing with HMB *Endeavour*. Your involvement and support ensures *Endeavour* remains a 'sailing ship'.

A tall ship is a unique environment and one of the most graceful and romantic forms of transport ever created. Soaring masts, spars and rigging form a dynamic latticework against the sky.

At sea, the ship becomes a living being, responsive to wind and weather, the ultimate sailing experience. Sails swell to catch the wind whilst ropes and woodwork creak gently. Sunlight sparkles on the sea. The smells of salt, tar and tallow hang in the air. To have the opportunity to be part of a tall ship's crew is a memorable experience.

Paying crew members that join an *Endeavour* voyage are signed onto the ship as voyage crew or supernumeraries (referred to collectively as voyage crew from hereon). They are never termed 'passengers' which implies a purely passive role onboard which is not the case. We expect your voyage aboard *Endeavour* to be an unforgettable and fulfilling one. This manual is a guide to aid your experience, enjoyment and safety and help you prepare for your voyage. More information can be found at [www.endeavourvoyages.com.au](http://www.endeavourvoyages.com.au) or you can contact the *Endeavour* office on 02 9298 3859 or [endeavour@anmm.gov.au](mailto:endeavour@anmm.gov.au) with more specific questions.

Your feedback is invaluable to our operation; please do not hesitate to contact us with your thoughts.

## 2. History of the HMB *Endeavour* Replica

HMB *Endeavour* is an accurate replica of the 18th-century tall ship used by Captain James Cook on his epic 1768-71 voyage. Every aspect of the ship has been meticulously researched to be as close to the original as possible. When coming aboard, you will effectively be stepping back into the 18th century, as the ship still utilises the same sailing techniques Cook and his men used nearly 250 years ago – there are no modern conveniences such as winches and colour-coded lines in order to set the 10,000 square feet of sails. Of course, the 21st century still has a part to play – *Endeavour* employs technology such as GPS, satellite phones, engines, modern galley and showers that are required by law in order for the ship to voyage. *Endeavour* complies with the high survey requirements set out by the Australian Maritime Safety Authority (AMSA).

Built in Fremantle, Western Australia, this remarkable ship took six years to complete – from the laying of the keel in 1988 to her launch in 1993 and commissioning in 1994, at a cost of over \$17 million. Funding came from various sources; corporate, government and private, with an incalculable contribution of voluntary labour, goods and services from the Fremantle community and Australia in general. The result of these years of hard work and passion produced what is recognised as one of the best replica sailing ships in existence.

*Endeavour* was launched and operated by the non-profit HM Bark Endeavour Foundation until 2005, when she was acquired by the Australian Government. *Endeavour* is now operated by the Australian National Maritime Museum.

Since her commissioning, *Endeavour* has sailed thousands of nautical miles and has circumnavigated the world twice. By joining an *Endeavour* voyage, you are becoming part of the history of the *Endeavour* replica.

## 3. Ship's Specifications

<b>Length extreme</b>	End bowsprit to end stern: 143'5" (43.7m)
<b>Length overall</b>	109'3" (33.3m)
<b>Height</b>	127'11" (39m)
<b>Weight</b>	550 tonnes displacement
<b>Sail Area</b>	Approximately 10,000 sq feet
<b>Draught</b>	11'10" (3.6 m)
<b>Beam</b>	29'2" (8.89 m)
<b>Machinery</b>	Two 405-hp, 6-cylinder Caterpillar diesels. Fully feathering propellers. Two diesel generators.
<b>Total Crew Complement</b>	56

## 4. HMB *Endeavour's* Professional Crew

*Endeavour* has a professional crew complement of 16 and their role is to supervise and support the voyage crew. The instructions of the professional crew are to be

adhered to at all times. If you have any questions or concerns during your voyage, please do not hesitate to ask a member of the professional crew.

The professional crew includes:

**Master:** Has overall command of the ship and crew whilst at sea. The master carries the ultimate responsibility for the safety and care of the vessel and her complement. The master's authority for all matters concerning the sailing of the ship, the management and discipline of the crew is absolute.

**Chief Officer/Mate:** The master basically runs the ship via the chief officer, who is second in the chain of command. The chief officer runs the deck while sailing and is responsible for the management of the crew, overseeing vessel maintenance, all watch rosters, etc.

**Second Officer/Mate:** Assists the chief officer and is third in the chain of command. Also has the responsibility for logging and checking all safety equipment, charts and navigation gear.

The master, chief officer and second mate each stand a watch while at sea.

**Chief Engineer:** Runs the engine room and all its equipment, is responsible for generator sets and shore power, bilge and plumbing systems. Keeps the record of all maintenance, engineering stores and spares and the official machinery logs.

**Navigator:** Responsible for the ship's official log books, navigation equipment, charts, publications and all matters pertaining to the safe navigation of *Endeavour*. Also acts as *Endeavour's* radio operator.

**Catering Officer:** Responsible for the galley and meals onboard. The catering officer will budget and purchase all stores, plan menus and provide meals whilst at sea. The catering officer is assisted by the cook's mate.

**Boatswain:** Responsible for the upkeep and maintenance of *Endeavour's* rig, sails, cordage and deck equipment.

**Topman:** Their responsibility is to organise, lead and look after a designated watch, acting as a watch leader. Stands watch and assists in the training and familiarisation of the voyage crew.

**Upperyardsman:** Their responsibility is to organise and look after their designated watch. Stands watch and assists in the training and familiarisation of the voyage crew.

**Steward:** Looks after the needs of the supernumeraries and is also the Master's clerk. Duties include writing the daily log, acting as the ship's photographer and handling all social media aspects of the voyage.

**Cook's Mate:** Assists the catering officer in the galley.

**Medical Officer:** Additional duty appointed to a member of the professional crew. Responsible for the medical locker and treating and recording any injuries sustained onboard.

Sailing crew can also include:

**Ship's Carpenter:** Responsible for the upkeep, maintenance and material state of *Endeavour*, with special emphasis on the timber work of the vessel, under the coordination of the boatswain.

**Sail maker:** As above, with special emphasis to the sails of the vessel, under the coordination of the boatswain.

**Sail maker/Carpenter/Boatswain's Mate:** Responsible for the upkeep, maintenance and material state of *Endeavour*, under the direct management of the sail maker, carpenter or boatswain.

## 5. Safety

**The safety of everyone onboard is the paramount concern of the master and crew.** The master has overall control of the ship, while the chief officer is directly involved with the day-to-day operations. In order for *Endeavour* to sail, we must comply with the strict survey requirements set out by the Australian Maritime Safety Authority (AMSA). Inflatable life rafts, emergency radio beacons, life jackets, survival suits, radar, radio and fire fighting equipment are all standard.

There are numerous potential hazards and dangers onboard *Endeavour* that, as voyage crew, you must be aware of. Upon joining *Endeavour*, you will be introduced to the crew and much of the first day will be spent acquainting you with the ship and explaining the various routines, safety procedures, equipment and how the watch system works. You will be shown how to handle sails lines and how to climb aloft safely. Emergency drills will be conducted throughout the voyage and your participation is imperative.

All crew are issued with a safety harness and high visibility vest. The safety harness must be worn when you are on duty or climbing aloft and the high visibility vest must be worn on deck at all times from sunset to sunrise.

The professional crew will guide you in safety matters and their instructions must be adhered to at all times.

## 6. Voyage Preparation

No sailing experience or special physical preparation is necessary for a voyage on *Endeavour*. As long as you are in good health and approach the experience with an open mind, you will enjoy yourself.

Power required for handling lines is achieved by teamwork rather than individual strength, but for those so inclined, arm, wrist and shoulder muscles are the ones best exercised. If you are unsure whether you can climb aloft, or would like some practice in climbing, we suggest that you visit an indoor rock climbing facility to practise.

## **7. Your Role Onboard**

Voyage crew are of all ages and come from diverse backgrounds. Many have never sailed before, while others have vast commercial or recreational maritime experience. The first day of each voyage involves inducting the voyage crew into the ship and training them in all aspects of sailing *Endeavour* including the safety procedures. The voyage crew are the ship's most precious asset – without your continuing support and goodwill the ship would be unable to keep sailing.

People choose to voyage on *Endeavour* for many different reasons; for some it may be the fulfilment of a long standing ambition to experience sailing on a tall ship, others may choose to voyage with *Endeavour* as they are interested in the history of the original ship and Captain Cook and others may be returning having enjoyed a previous voyage.

Your voyage will be an adventure where everybody has a role to play in life aboard the ship. You will be taking an active role in sailing *Endeavour*!

It is important to realise that this is not a pleasure cruise, it is hard work. Voyage crew are signed on to the ship as working crew, and are expected to fully participate in the operation of the vessel, including watches, climbing aloft, sail handling, emergency drills, cleaning and galley duties.

The combination of disrupted sleep patterns, seasickness, the unfamiliar sailing routine, weather and the constant motion of the vessel can be physically demanding. But it is a great adventure and worth every minute. In short- the Voyage of a Lifetime!

### **7.1 Voyage Crew**

Voyage crew are amateur sailors who join to learn 18th-century sailing skills. Just like Cook's crew, they sleep in hammocks, handle the rigging, set & furl the ship's 17 sails, stand watches and steer the ship - all under the supervision of *Endeavour*'s professional crew. Although previous sailing experience is not essential, voyage crew are required to climb aloft (39 metres in a harness) in any weather to handle the sails, be physically fit and not suffer chronic seasickness. A full complement of voyage crew consists of 36 people.

### **7.2 Supernumeraries**

Supernumerary berths are for people who prefer not to undertake all the sailing activities on board, or who may not meet all the physical requirements. Supernumeraries are allocated a single cabin in the after fall and can choose their own level of involvement, but are encouraged to take part in sailing the ship where possible. A full complement of supernumeraries consists of 4 people.



## 8. What to Expect

The *Endeavour* replica is a three watch sailing vessel. The pace onboard is 18<sup>th</sup>, not 21<sup>st</sup> century. The voyages are planned in order to focus on the journey, not the destination. As routines onboard are weather dependant, it is difficult to define exactly what you will experience on a daily basis, but we will try!

A typical day sees the crew rise at 0715, hammocks stowed and breakfast served. The morning program includes sail handling, ship maintenance and cleaning, while the afternoon may include rigging, sail and rope work under the guidance of our professional crew.

When signing onto *Endeavour* you will be allocated to a watch, designated by the masts; fore, main or mizzen, for working and safety purposes. Each watch generally works two four hour watches in a twenty four hour period on a rotational basis (four hours on, eight off). Each watch is led by two professional crew members, a topman and an upperyardsman. If you have any questions, these professional crew members are your first port of call. When your watch is on duty, there is also an officer of the watch overseeing the deck.

Please note that on the first day of the voyage, the professional crew will carry out necessary training for all voyage crew and supernumeraries in safety procedures, climbing aloft, line and sail handling. Depending on the port of departure, this training may be facilitated either at anchor in sheltered waters or alongside. Attendance is mandatory. Time of departure is subject to the completion of training and weather and tide conditions and it may be necessary to stay alongside or at anchor on the first night.

When on watch, voyage crew are expected to keep *Endeavour* on course whilst helming, stand lookout, complete safety rounds and if necessary, brace yards, haul lines and climb aloft to furl sail. It is important to follow the instructions of the professional crew, for your safety and for the safety of your fellow crew members. Do not anticipate the orders or calls when line or sail handling, but wait until you are instructed. Presumption can cause accidents and injuries. Safety harnesses must be worn when on watch and climbing aloft and high visibility vests must be worn on deck between sunset and sunrise.

Off duty is not technically off duty – you are on call for any sail handling that may be required. 10,000 square feet of canvas requires a lot of manpower to handle. There are also cleaning duties – known as ‘happy hour’. You will have some free time when off duty, where you will be able to chat with your watch mates, catch forty winks, read or just enjoy the experience of being on the open ocean. You may even like to assist the boatswain and his mate with maintenance to help keep *Endeavour* in tip top condition.

Voyaging on *Endeavour* offers a unique chance to be a part of a living maritime tradition and to enjoy an adventure of a lifetime!

## 9. Three-Watch Watch Bill

Example:

O.O.W.	TIME	WATCH NAME	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6
2 <sup>nd</sup> Mate	0000-0400	Middle	Fm	Mm	Mz	Fm	Mm	Mz
1 <sup>st</sup> Mate	0400-0800	Morning	Mm	Mz	Fm	Mm	Mz	Fm
Master	0800-1230	Forenoon	Mz	Fm	Mm	Mz	Fm	Mm
2 <sup>nd</sup> Mate	1230-1600	Afternoon	Fm	Mm	Mz	Fm	Mm	Mz
1 <sup>st</sup> Mate	1600-1800	1 <sup>st</sup> Dog	Mm	Mz	Fm	Mm	Mz	Fm
1 <sup>st</sup> Mate	1800-2000	2 <sup>nd</sup> Dog	Mz	Fm	Mm	Mz	Fm	Mm
Master	2000- 2400	First	Fm	Mm	Mz	Fm	Mm	Mz

NOTE: Watches to muster on deck 5 minutes prior to the beginning of the Watch  
If voyage lasts more than 6 days, day 7 reverts to day 2

Fm – Foremast Watch      Mm – Mainmast Watch      Mz – Mizzenmast Watch

## 10. Daily Sea Routine (3 Watch)

### Ship's Watches

Afternoon      1200-1600  
 1<sup>st</sup> Dog          1600-1800  
 2<sup>nd</sup> Dog          1800-2000  
 Evening          2000-2400  
 Middle           0000-0400  
 Morning          0400-0800  
 Forenoon        0800-1200

0640	Wake up Idlers.	1100	Lecture/Sail handling
0700	Duty Watch and Idlers deck scrub	1150	1 <sup>st</sup> sitting lunch for Afternoon & Morning watches
0715	Wake Forenoon Watch – Stow Hammocks	1230	2 <sup>nd</sup> sitting lunch Forenoon watch & idlers
0730	1st Sitting breakfast Forenoon Watch and Idlers	1300	Free time for Forenoon and Morning watches, Idlers to maintenance
0745	Wake all hands	1400	Hands to maintenance
0755	Clear mess/galley and set up for 2 <sup>nd</sup> sitting breakfast. Forenoon watch takes over bridge	1530	Morning watch stand down and smoko
0800	2nd Sitting breakfast middle and morning watches	1600	Forenoon & Afternoon watches & Idlers to smoko
0830	Breakfast finished – clear galley	1700	Clear decks
0835	Professional Crew meeting Voyage Crew stow personal gear	1720	1 <sup>st</sup> sitting dinner (2nd Dog and Evening watches
0855	General meeting in the waist	1800	2 <sup>nd</sup> sitting dinner (1st Dog Watch and Idlers)
0910	Happy Hour – cleaning stations 20 <sup>th</sup> Century Deck - Morning watch/Lower Deck, Middle watch/Gentlemen's accommodation, Forenoon watch	1840	Galley cleared. Idlers final deck check Set up hammocks
1030	Morning Smoko for all hands	1900	Quiet ship

## 11. What to Pack

All your gear (except wet weather gear and sleeping bag) must fit inside a locker (76 x 50 x 50cm - split by a shelf). Supernumeraries are not issued with a locker as they can store their personal belongings in their cabin. We recommend you bring:

- Trousers
- Shorts
- T-shirts
- Warm clothing, including warm hat & gloves
- Thermals
- Wet weather jacket & pants (spray jackets are not suitable)
- Sun hat
- Sailing/sports shoes (with non-slip soles)
- Sailing gloves (optional for supernumeraries)\*available from marine supply stores
- Sleeping attire (suitable for communal living)
- Bathing suit
- Medium sized towel (voyage crew only)

- Sleeping bag (voyage crew only)
- Sunscreen
- Seasickness medication
- Toiletries
- Small padlock for locker (voyage crew only)
- Plastic water bottle
- Camera
- Your sense of humour!
- Optional: Musical instrument

Please keep in mind:

- The safety harness can chafe around the neck so collared shirts are more comfortable.
- Tar is used in Endeavour's rig so all clothes and shoes used for voyaging, including wet weather gear, may get black marks on them which do not always wash out.
- Please be aware of the time of year that Endeavour is voyaging and pack weather appropriate clothing.
- Please name all clothing to avoid confusion.
- There are NO laundry facilities for voyage crew and supernumeraries on voyages.

There are normal Australian three prong 240 volt electrical sockets on the 20th-century deck so you will be able to charge your electrical items such as camera batteries. The electricity is supplied from a generator located in *Endeavour's* engine room. Please be aware that the voltage can fluctuate and there is a very small chance that damage to your electrical item may occur.

There is limited space on *Endeavour* and requests for additional baggage cannot be accommodated.

The following items are **NOT PERMITTED**

- Suitcases
- Cigarettes/pipes/cigars
- Alcohol
- Weapons
- Anything that cannot fit into your locker!

We provide:

- Pillows
- Hammock
- All linen for supernumeraries
- *Endeavour* t-shirt
- Safety harness
- High visibility vest
- All meals
- THE VOYAGE OF A LIFETIME!

The supplied items remain the property of *Endeavour* and must be returned at the end of your voyage.

## **12. Accommodation**

### **12.1 Voyage Crew**

Voyage crew sleep in hammocks in the communal 18th-century mess deck and provide their own sleeping bag. You will be allocated a watch number and there is a hammock berth that corresponds with this. You will be required to sling your hammock in this space. Pay attention to your knots!! Hammocks must be taken down and stowed during the day, with your sleeping bag rolled up inside.

### **12.2 Supernumeraries**

Supernumeraries are allocated a single cabin in the after fall. These cabins are the same as the gentlemen scientists were allocated on the original *Endeavour*. Depending on the cabin, there is either a fixed bunk or a swinging cot provided. All linen is provided by *Endeavour*. Supernumeraries are able to store their belongings in their cabin.

## **13. Meals**

*Endeavour* has a modern galley and a professional catering team who cook hearty meals throughout the voyage. There is always plenty of food and you will not need to bring your own provisions. A well fed crew is a happy crew! The watch system dictates when these meals are served and is it important to arrive/depart promptly at these times.

Everyone on board is on a roster to assist the galley with setting tables and washing up. When it is your turn, please arrive at the galley promptly in order to assist the catering officer and cook's mate. It goes without saying that hygiene in the galley is of paramount importance – whenever you are helping out in the galley, you must maintain a high standard of hygiene.

Safety harnesses and wet weather gear are not to be worn on the 20th-century deck, so please ensure these are removed before sitting down.

## **14. Climbing Aloft**

Going aloft is one of the particular joys of square-rig sailing, but there are clear guidelines and procedures that must be followed. Safety harnesses are always worn when climbing aloft. Aloft on *Endeavour* includes the bowsprit, jib boom and outboard. Anyone going aloft must be accompanied by an experienced crewman and permission must be obtained from the officer of the watch. This lets the officer know what you intend to do, where you will be and where necessary to shut down any equipment, such as the radar, before allowing any climbing to occur.

Before climbing aloft, your topman will check any necessary lines for the appropriate sail or yard, during which time you should perform a buddy check of your fellow

crewmember's harness making sure it is done up correctly, firm and on top of any clothing or jackets. Your topman will check harnesses as well.

Whenever we climb aloft or outboard of the ship we maintain three points of contact at all times. When climbing aloft, our hands should always be on the shrouds, and feet on ratlines. Irrespective of whether climbing aloft or outboard, remember - it is not a race, move as quickly as you feel comfortable. If at any time you feel uncomfortable, stop and let your topman know, where possible move to one side to allow your fellow crew members to pass.

Voyage crew must read, understand, sign and comply with the Safety Aloft Standing Orders at all times.

## **15. Medical Matters**

*Endeavour* has a comprehensive medical locker onboard and a qualified medical officer. As part of the application process, you were required to have your GP complete a medical application form stating any pre-existing medical conditions that may affect you on your voyage. In addition, the general practitioner will have stated that you are physically and mentally capable of participating in an *Endeavour* voyage.

If you take any medication on a regular basis, this information must be passed onto the ship's medical officer and you will need to bring adequate supplies.

Sun protection is very important and you should bring sunscreen and a hat and wear this sun protection when appropriate. It is equally important to drink plenty of water so you do not get dehydrated.

You should anticipate that you will experience some form of seasickness. As *Endeavour* sails, the deck pitches and rolls and sometimes even the hardiest sailor can feel the effects. We recommend that you bring some seasickness preventatives as a precaution. Talk to a pharmacist or general practitioner for more information.

## **16. Other matters**

### **16.1 Alcohol**

For safety reasons, *Endeavour* is a dry ship and no alcohol is allowed onboard.

### **16.2 Smoking**

There is no smoking allowed anywhere onboard *Endeavour*.

### **16.3 Water**

As on all ships, fresh water is a precious commodity. Please ensure that you use water sensibly. When showering, use the rinse/wash/rinse method.

### **16.4 Bathroom Facilities**

We have modern showers and marine toilets onboard. When showering, please be aware that there is only a limited supply of hot, fresh water onboard. Please also

follow the instructions for the marine toilets, as these are different to household toilets.

### **16.5 Staying Onboard In Port**

It is the responsibility of the voyage crew member to find accommodation in port before and after their voyage. There may be an opportunity to stay onboard *Endeavour* after their voyage, as the ship requires night ship keepers whilst visiting a port. If this occurs, the shore manager will contact the voyage crew.

### **16.6 Friends & Family**

When voyage crew and supernumeraries join *Endeavour* on the day of departure, there are various briefings and training that must be completed. Therefore friends and family of the voyage crew are unable to come aboard. However, when *Endeavour* arrives at her destination port, there maybe an opportunity for family and friends to come aboard for a short period of time. Whilst they are onboard, they are the responsibility of the voyage crew member.

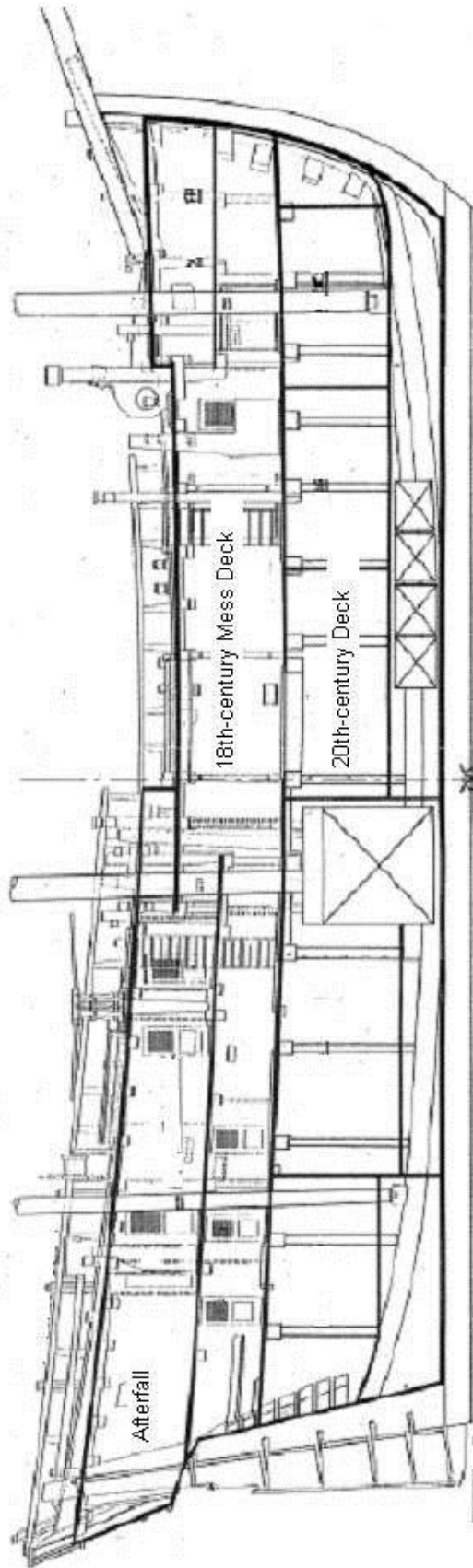
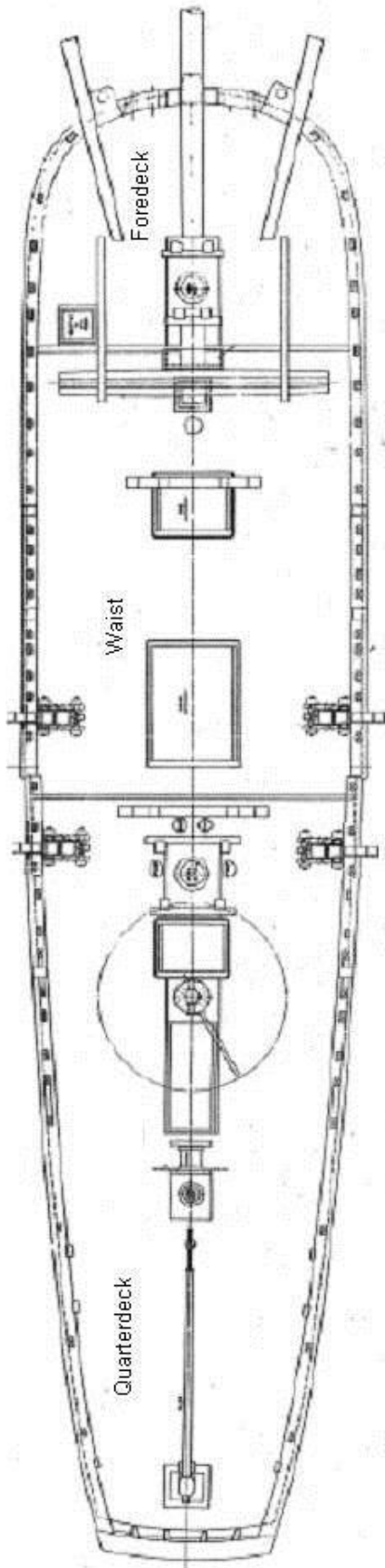
### **16.7 Entertainment Onboard**

Continuing the Royal Navy tradition, a Sod's Opera may be incorporated into each voyage (weather permitting). This is a show that is put on by the ship's company to entertain each other and have some laughs.

For one night only, a full Mess Deck dinner is held and each watch is asked to perform a skit or song. Music is encouraged and musical instruments are welcome on board. The ship's professional crew will also show off their talents!

## **17. Decks**

The following diagram shows the layout of *Endeavour's* decks.





### 17.1 Weather Deck

Comprised of the foredeck, waist and quarterdeck and as the name suggests, it is open to the elements.

### 17.2 18th-century Decks

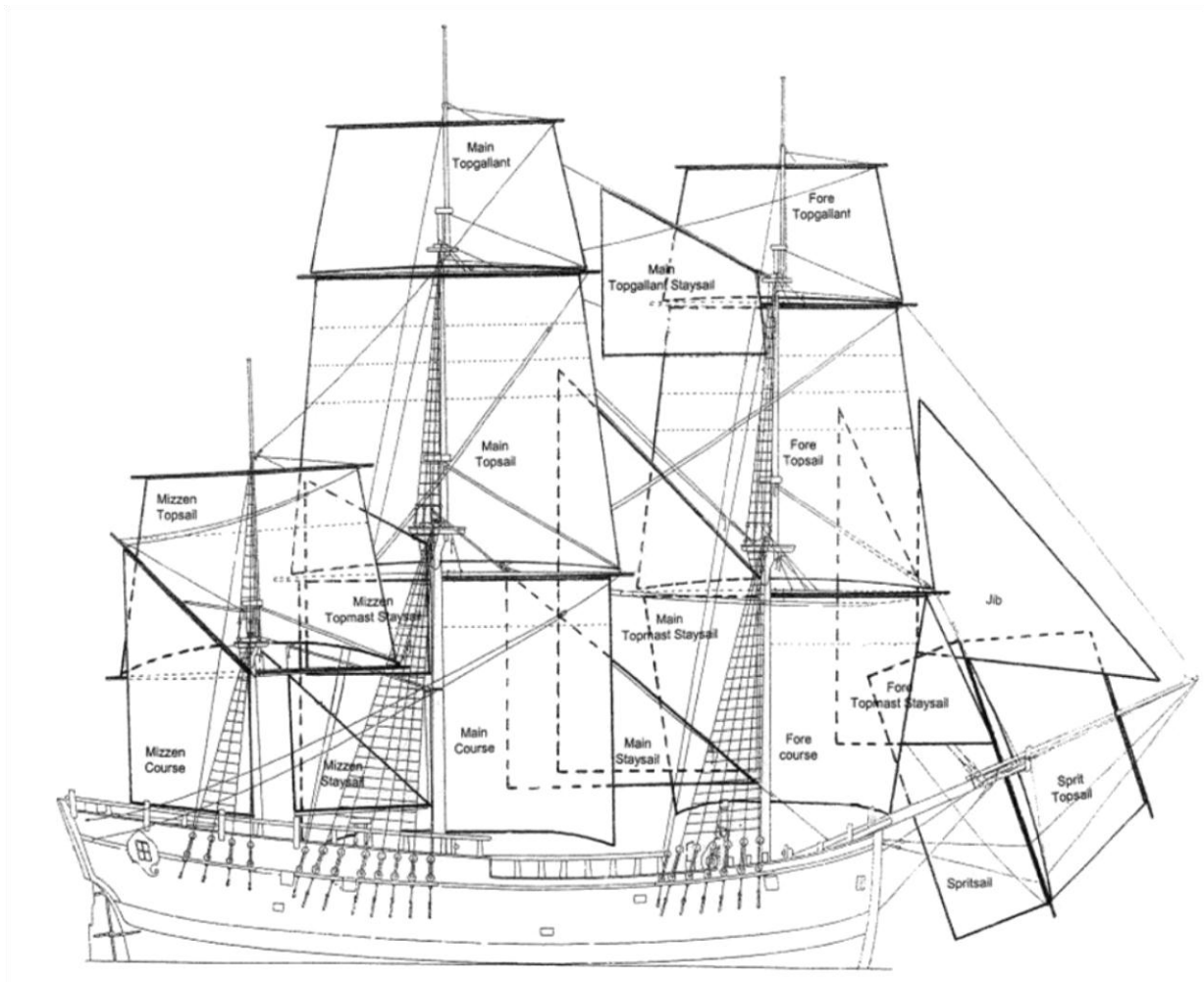
Comprised of the mess deck and after fall, these decks are set out as closely as possible to the original *Endeavour*. The sleeping areas for all 56 crew are located here.

### 17.3 20th-century Deck

As the name suggests, this deck contains most of the modern facilities onboard *Endeavour*, including the engine room, galley and bathroom facilities.

## 18. Sails

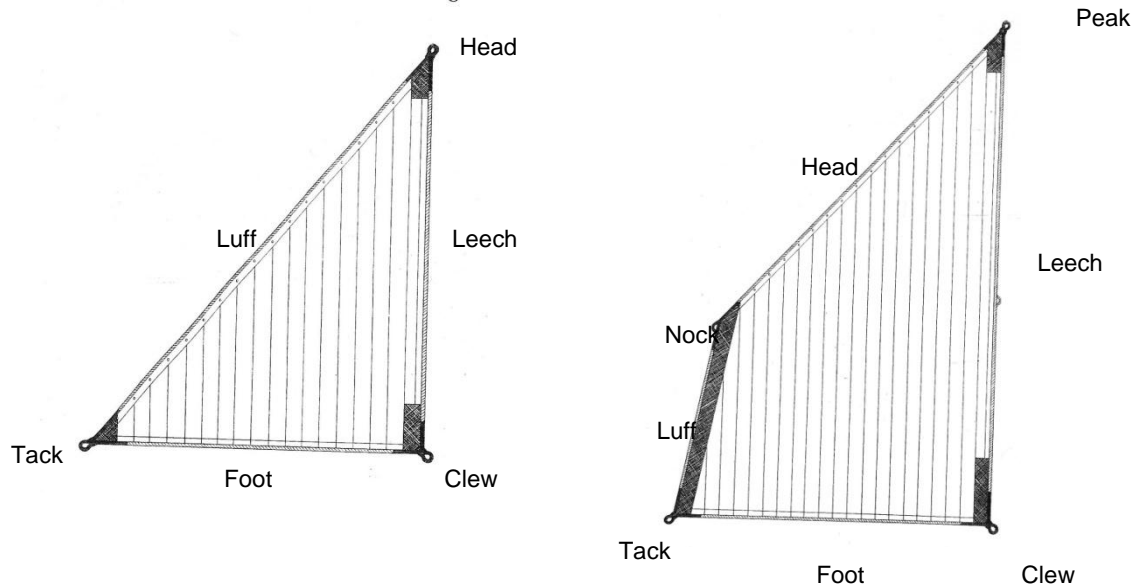
*Endeavour* has a basic rig of 17 sails, excluding studding sails. These are divided into fore and aft sails, and square sails. The diagram below illustrates these sails.



The diagrams below outline the components of *Endeavour's* sails.

### 18.1 Fore and Aft Sails

The diagram below is a triangular fore and aft sail.

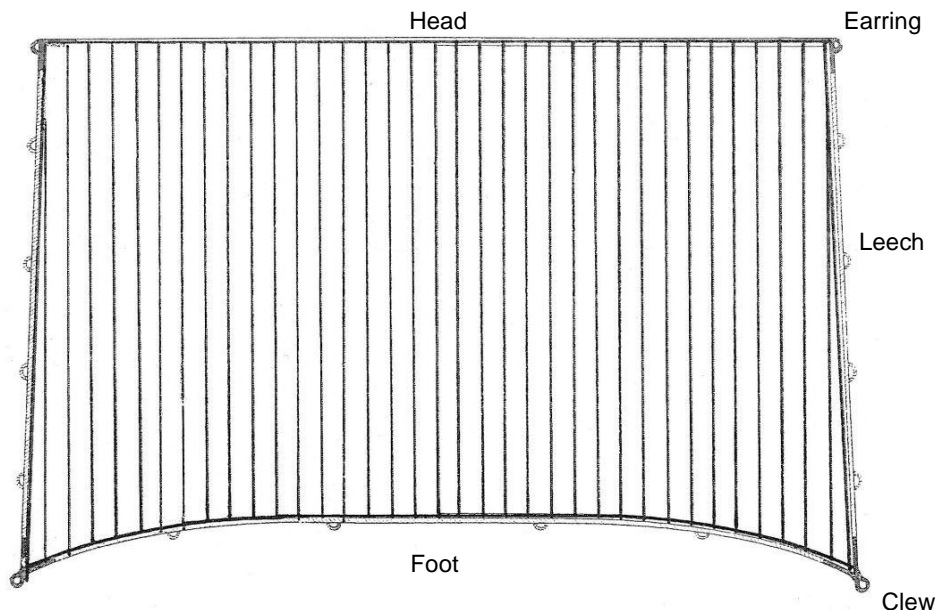


### 18.2 Square Sails

Square sails have a head - the top edge of the sail that is bent to the yard, and a foot - the bottom edge of the sail. The leeches are the sides of the sail and the lower corners of the sail are the clews. Attached to the clews are sheets. The sheets are used to secure the sail to the yard below or to trim the courses when they are set. The tacks are for securing the forward clew on the courses when braced.

*Endeavour* has three types of square sails:

- 1.Course
- 2.Topsail
- 3.Topgallant



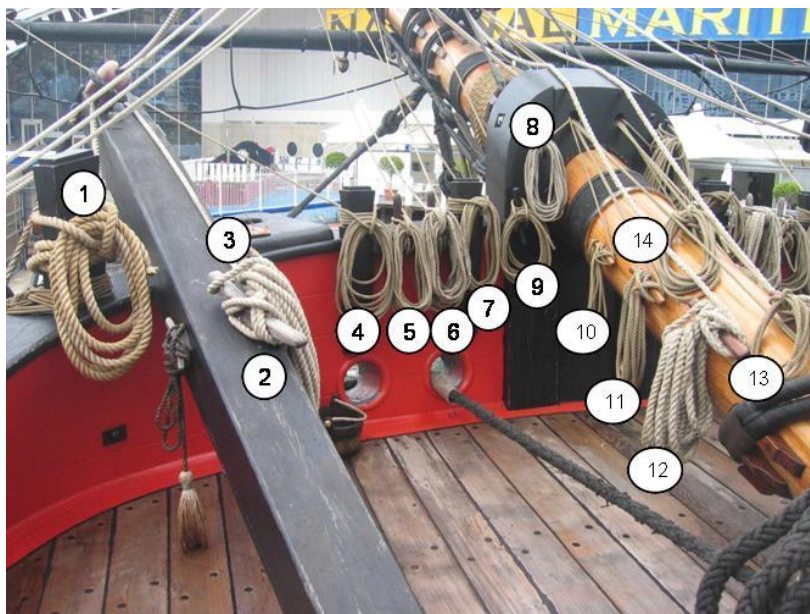
## 19. Glossary of Lines to Control Sails

Bowlines	Are used to help steady the weather leech of a square sail when sailing close to the wind.
Braces	Used to control the angle of the yards to catch the wind
Brails	Lines attached to the leech of a fore and aft sail used to lift the leech and body of the sail to its gaff or spar when taking in sail.
Buntlines	Are to haul the foot of the square sails up to the yards when handing
Clew Garnets	Are the same as clewlines, but are only on the courses
Clewlines	Are used on square sails to haul up the clews when handing
Downhaul	Used on fore and aft sails to haul the sail down
Halyard	Are used to hoist up a sail
Lifts	Are connected to the yards to support them when the sail is not set.
Reef Tackles	Only on the topsails. Used to haul the leech of the sail to the yard when handing or to help take weight out of the sail when reefing
Sheets	Are used to control and trim the sails
Tack	Confines the lower forward corner of a fore and aft sail or is used to haul forward and confine the weather clew on the courses

## 20. Line Identification

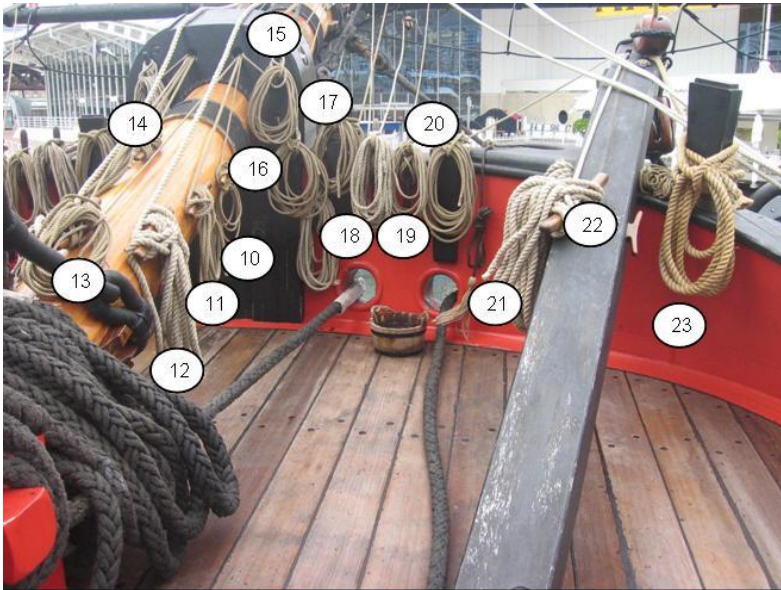
Learning lines is not a passive task; you need to take responsibility for your own learning. The professional crew will be happy to assist you.

### 20.1 Bow (port)



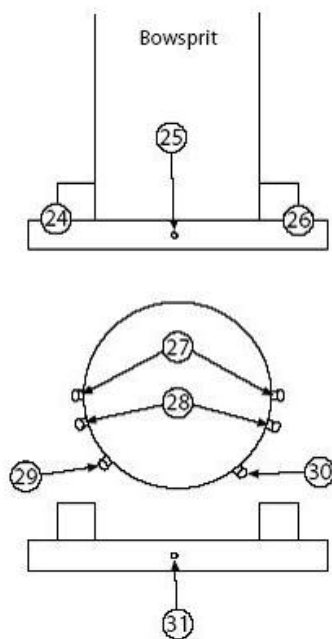
1	Fore course tack (port)
2	Cat fall (port)
3	Anchor Stopper
4	Jib boom guy (port)
5	Sprit topsail clewline (port)
6	Spritsail clewline and buntline (port)
7	Spritsail lift/Sprit topsail sheet (port)
8	Fore topmast staysail downhaul (port)
9	Sprit topsail lift (port)
10	Fore topgallant bowline (port)
11	Fore topsail bowline (port)
12	Fore course bowline (port)
13	Jib traveller inhaul & outhaul
14	Sprit topsail halyard

## 20.2 Bow (starboard)



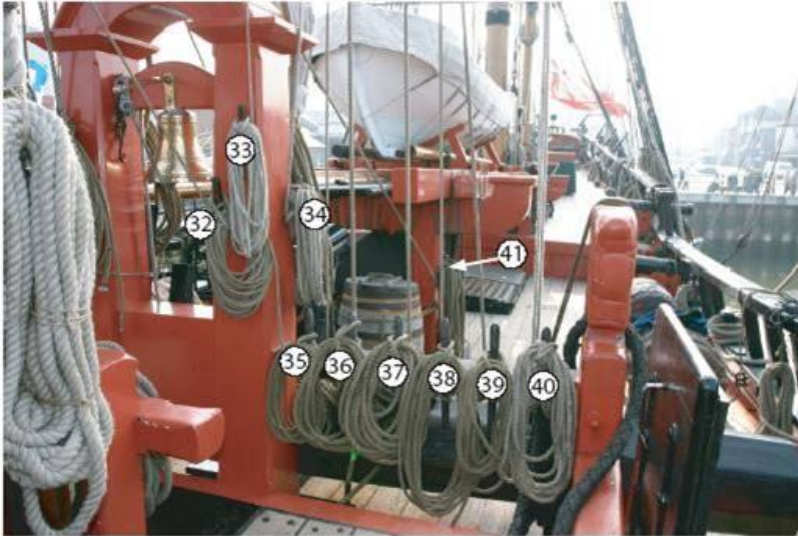
10	Fore topgallant bowline (starboard)
11	Fore topsail bowline (starboard)
12	Fore course bowline (starboard)
13	Jib traveller inhaul & outhaul
14	Sprit topsail halyard
15	Jib downhaul
16	Sprit topsail lift (starboard)
17	Spritsail lift/Sprit topsail sheet (starboard)
18	Spritsail clewline and buntline (starboard)
19	Sprit topsail clewline (starboard)
20	Jib boom guy (starboard)
21	Anchor Stopper
22	Cat fall (starboard)
23	Fore course tack (starboard)

## 20.3 Foremast (viewed from above)



24	Fore topsail sheet (port)
25	Fore course clew garnets
26	Fore topsail sheet (starboard)
27	Fore course truss tackle
28	Fore topsail rolling tackle
29	Main topmast staysail downhaul
30	Nave line
31	Main course bowlines

## 20.4 Forward Belfry Rail (port)



32	Mail staysail downhaul
33	Fore topgallant halyard
34	Fore topgallant brace (port)
35	Main topgallant bowlines
36	Main topsail bowlines
37	Sprit topsail brace (port)
38	Spritsail brace (port)
39	Fore topmast staysail halyard
40	Fore course buntlines (port)
41	Fore topsail brace (port)

## 20.5 Forward Belfry Rail (starboard)



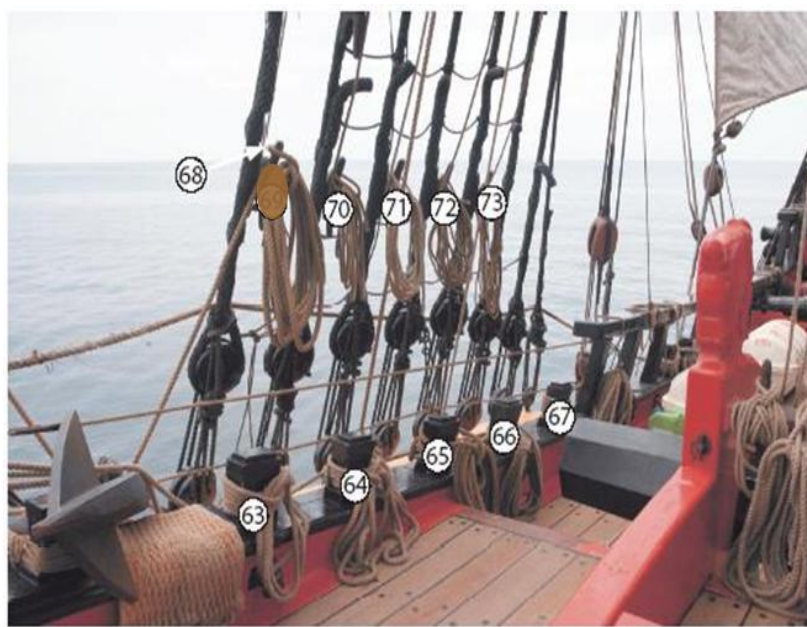
42	Fore course bunts (starboard)
43	Jib halyard
44	Spritsail brace (starboard)
45	Sprit topsail brace (starboard)
46	Main topsail bowlines
47	Main topgallant bowlines
48	Jib stay tackle
49	Main topgallant stay tackle
50	Fore topgallant brace (starboard)
51	Fore topsail brace (starboard)

## 20.6 Foremast Shrouds (port)



52	Fore topmast staysail sheet (port)
53	Jib sheet (port)
54	Fore course lift (port)
55	Fore topsail lift (port)
56	Fore topsail halyard (port)
57	Fore course yard tackle tricing line (port)
59	Fore topsail clewline (port)
60	Fore topsail buntline (port)
61	Fore topsail reef tackle (port)
62	Fore topgallant clewline (port)

## 20.7 Foremast Shrouds (starboard)



63	Fore topmast staysail sheet (starboard)
64	Jib sheet (starboard)
65	Fore course lift (starboard)
66	Fore topsail lift (starboard)
67	Fore topsail halyard (starboard)
68	Fore course yard tackle tricing line (starboard)
70	Fore topsail clewline (starboard)
71	Fore topsail buntline (starboard)
72	Fore topsail reef tackle (starboard)
73	Fore topgallant clewline (starboard)

## 20.8 Waist (port)



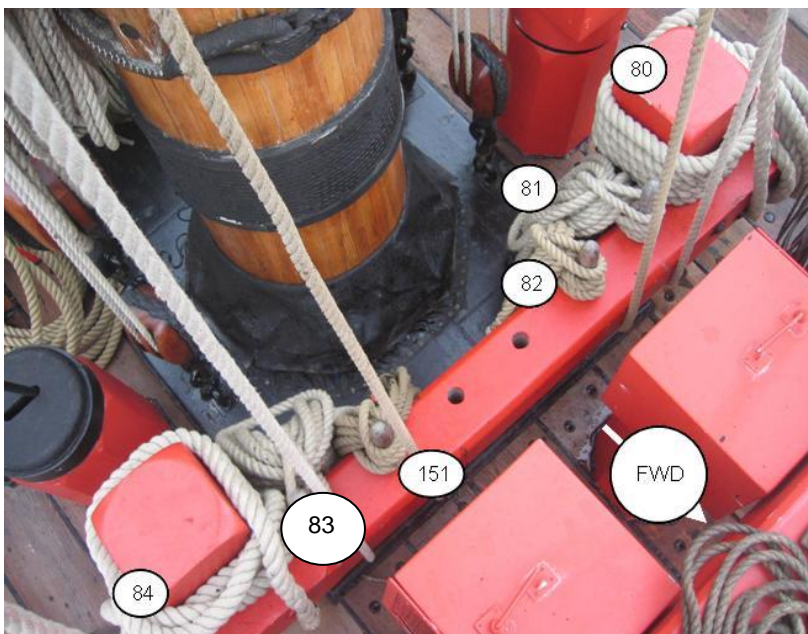
74	Main course tack (port)
75	Fore course sheet (port)
76	Spritsail sheet (port)

## 20.9 Waist (starboard)



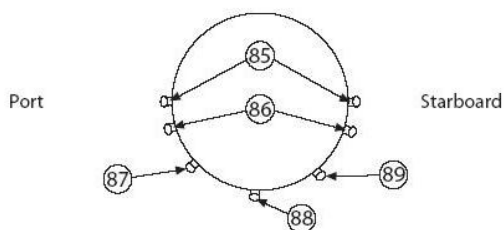
77	Main course tack (starboard)
78	Fore course sheet (starboard)
79	Spritsail sheet (starboard)

## 20.10 Main Topsail Sheet Bitts



80	Main topsail sheet (port)
81	Main course clew garnet (port)
82	Main staysail halyard
83	Main course clew garnet (starboard)
84	Main topsail sheet (starboard)
151	Main topmast staysail halyard

### 20.11 Main Mast (viewed from above)



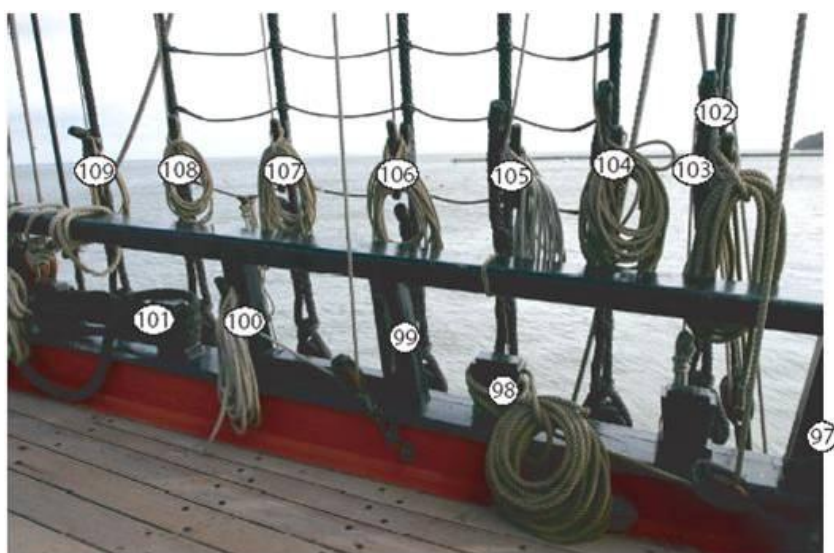
85	Main course truss tackle
86	Main topsail rolling tackle
87	Mizzen topmast staysail downhaul
88	Mizzen topmast staysail tack
89	Nave line

### 20.12 Main Jeer Bitts



90	Fore course brace (port)
91	Main course buntlines (port)
92	Main topgallant staysail halyard
93	Mizzen staysail downhaul
94	Main topgallant halyard
95	Main course buntlines (starboard)
96	Fore course brace (starboard)

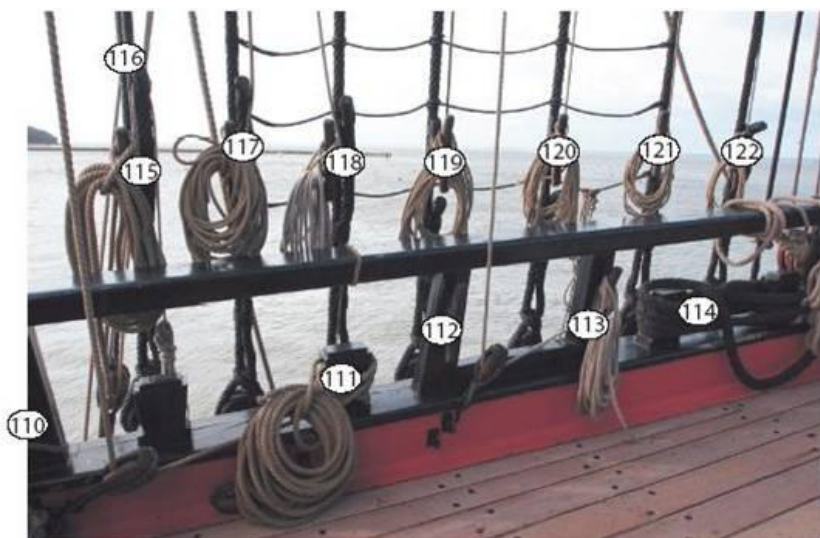
### 20.13 Main Mast Shrouds (port)



97	Main staysail sheet (port)
98	Main course lift (port)
99	Main topmast staysail sheet (port)
100	Main topsail lift/Main topgallant sheet (port)
101	Main topsail halyard (port)
102	Main course yard tackle
103	Main course yard tackle tricing line (port)
104	Main topsail clewline (port)
105	Main topsail buntline (port)
106	Main topsail reef tackle (port)
107	Main topgallant clewline (port)
108	Cro'jack brace
109	Mizzen topsail bowline (port)



## 20.14 Main Mast Shrouds (starboard)



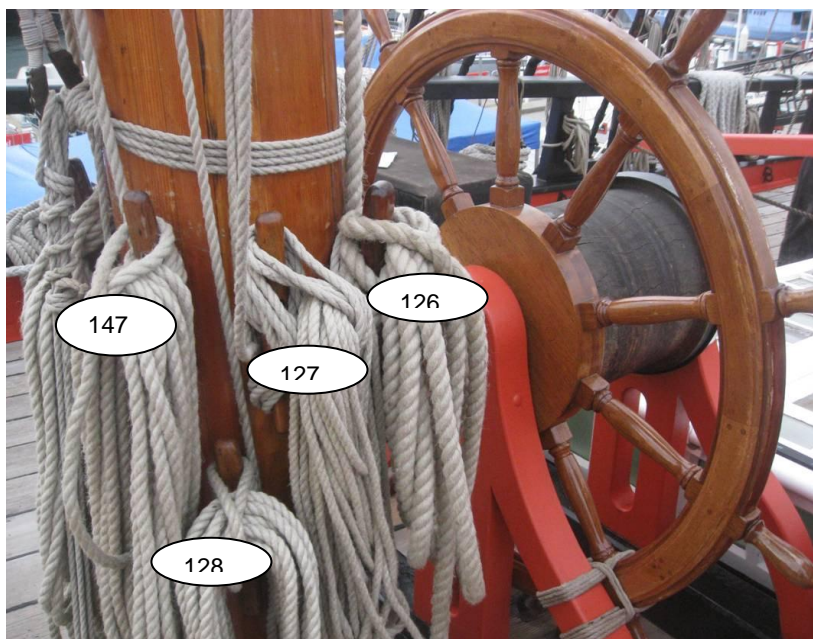
110	Main staysail sheet (starboard)
111	Main course lift (starboard)
112	Main topmast staysail sheet (starboard)
113	Main topsail lift/Main topgallant sheet (starboard)
114	Main topsail halyard (starboard)
115	Main course yard tackle
116	Main course yard tackle tricing line (starboard)
117	Main topsail clewline (starboard)
118	Main topsail buntline (starboard)
119	Main topsail reef tackle (starboard)
120	Main topgallant clewline (starboard)
121	Cro'jack brace
122	Mizzen topsail bowline (starboard)

## 20.15 Mizzen Mast (port)



123	Mizzen topsail sheet (starboard)
124	Mizzen topsail clewline, buntline & reef tackle (port)
125	Mizzen peak halyard
141	Mizzen course throat brail

## 20.16 Mizzen Mast (starboard)



126	Mizzen topsail sheet (port)
127	Mizzen topsail clewline, buntline & reef tackle (starboard)
128	Mizzen throat halyard
147	Mizzen course throat brail

## 20.17 Mizzen Shrouds (port)



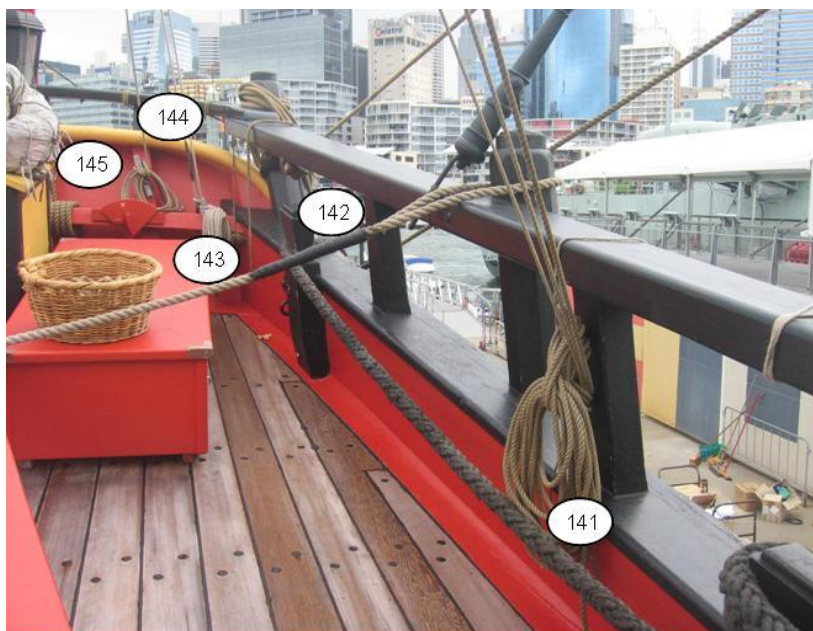
129	Main topsail brace (port)
130	Mizzen topmast staysail halyard
131	Cro'jack lift (port)
132	Main topgallant brace (port)
133	Mizzen topsail lift (port)
134	Main course sheet (port)

## 20.18 Mizzen Shrouds (starboard)



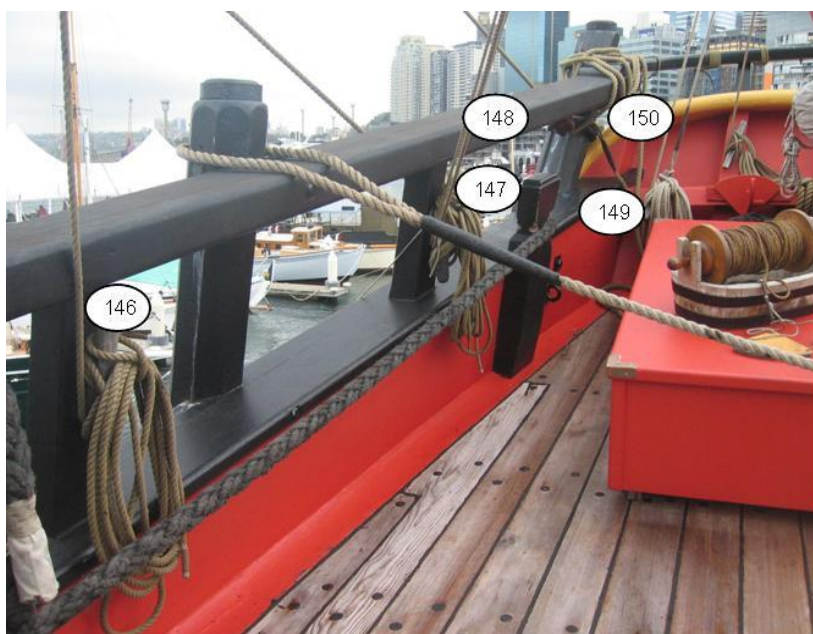
135	Main topsail brace (starboard)
136	Mizzen staysail halyard
137	Cro'jack lift (starboard)
138	Main topgallant brace (starboard)
139	Mizzen topsail lift (starboard)
140	Main course sheet (starboard)

## 20.19 Quarterdeck (Aft, port)



141	Mizzen course brails (port) x3
142	Main course brace (port)
143	Mizzen course vang (port)
144	Mizzen topsail brace (port)
145	Fancy lines (port & starboard)

## 20.20 Quarterdeck (Aft, starboard)



146	Mizzen topsail halyard
147	Mizzen course brails x3
148	Main course brace
149	Mizzen course vang (starboard)
150	Mizzen topsail brace (starboard)

## 21. Line Handling Glossary

Belay	Secure a line, fasten to a bit, pin or cleat.
Belay pin	A cylindrical piece of timber mounted in a hole in a timber rail onto which lines are belayed.
Bit	Strong point on the ship onto which lines are made fast.
Cleat	A timber piece or projection with two horns on which lines are belayed.
“Come up”	Call made by a person about to belay a line requesting that everyone holding the line immediately and completely let go of it.
“Ease away”	Slowly ease or pay out a line so that the weight on a line is

	released under control.
Hand	“Hand the ... “ Expression often used to clew up a sail.
“Haul away”	Expression used when heaving or pulling on a line. Also can be used as the final command in a series of commands, meaning “do it now.”
Make up	To coil a line and secure it to its relevant pin, cleat, bit or timberhead.
Overhaul	To ease out a line by pulling the slack line through the blocks ensuring that no weight is on any part of the line.
Reefing	To reduce the size of a sail. Usually in or before high winds.

## 22. Line Belays

The following diagrams and images show the various line belays used around the ship. Your topman will demonstrate each of the belays shown here. If you are unsure or need assistance at any time in carrying out any of the belays, ask either your topman or a member of the professional crew.

### 22.1 Cleat Belay



### 22.2 Pin Belay





To belay on a pin or cleat, choose the best lead to the cleat. The most important matter is that the line is to pass around the top in a clockwise direction. The line is to pass in a 'Figure 8' between top and bottom, with a total of three turns around the top.

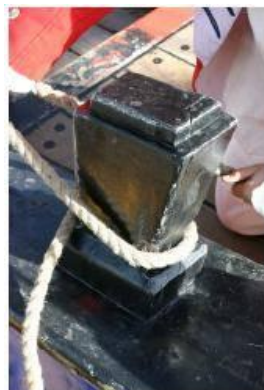
### 22.3 Bit Belay



The belay is to pass around the cross piece first and then clockwise around the top. The line is to pass in a 'Figure 8' between the top and crosspiece with a total of three turns around the top.

### 22.4 Single Timberhead Belay

This is the most complicated belay onboard.



Take hold of the line and pass it around the timberhead twice in a clockwise direction.



Then make a bight in the line and pass it under the standing part of the line then over the top of the timberhead as shown making sure the working end is not trapped underneath.



Finally, bring the working end over and around the timberhead in a clockwise direction.



## 23. Sail Handling

When sail handling there will always be a member of the professional crew directing operations. *Endeavour's* rig is quite similar to the rig carried on the original Ship. Unlike the rigging of modern sailing vessels, *Endeavour's* rigging can be damaged if used incorrectly, so please follow the instructions of the professional crew.

The following points should be noted when sail handling:

- Whenever there is sail handling, all chatter should cease, so orders can be heard.
- Only two people talk, one person on deck who is giving the orders and one person aloft (the upperyardsman).
- Do not anticipate orders; carry them out only after they have been given.
- Before setting any sails the person in charge will inform the officer of the watch that the sail is ready to be worked.

- One member of the professional crew will be present on deck to oversee any sail handling.
- An upperyardsman is required aloft when handling topsails, topgallants, and the jib and sprit topsail.
- A member of the professional crew must be present on deck and aloft whenever crew are working aloft.
- On completion of any sail handling, whether it is setting, handing or furling, the officer of the watch must be informed when all crew are back on deck.

## **24. Bracing Yards**

Yard bracing is carried out to trim the square sails to a change in course or wind. It is a task in which you will often be employed. The watch you are assigned to - Fore, Main or Mizzenmast - denotes which mast you will be responsible for bracing. Your topman will assign you to a particular task and instruct you in how to complete it.

The braces are attached to either end of a yard. One side is hauled as the other is eased, allowing the yard to pivot to the desired angle.

## **25. Helming**

When helming you may spend 30 to 60 minutes steering the ship during each watch. This allows you to get a feel for helming without it becoming too taxing.

Steering the vessel is conducted via the helm (wheel) on the quarterdeck and takes concentration. At times this can be heavy work. Two people are usually required, particularly in rough or heavy weather.

When helming one person makes the decisions – “The Brain” and the second person provides additional muscle power – “The Muscle” or “The Brawn”.

When you are asked to relieve the helm and become “The Brain”, it is important that you follow the correct procedure.

Find out from the current “Brain” what course is being followed. Once you have this information, you must request permission to take the helm from the officer of the watch. Inform them of the course you have been given when doing so.

The officer then knows the correct course is being followed and the helmsperson is about to be relieved. The officer can then be on their guard for slight deviations in the course as the new helmsperson becomes accustomed to helming.

Once the officer has given permission, you may relieve the helm. Only take over the helm when the ship is on a steady course. The person you relieve has probably been there for 30 minutes or more, and should be able to provide you advice on helming, including how many spokes to port or starboard are required to maintain the given course, how the swell may affect the helm and how quickly the ship responds to changes of the helm.

Suggestions:

1. Communicate with your partner. Let the person helping you turn the wheel know what you intend to do. Remember to speak clearly and loud enough to be heard over the wind
2. Be mindful of what action to take to correct a deviation in your course before it happens. There will always be a member of the professional crew on hand to advise you.
3. The 'Brain' and the 'Brawn' should always know how much helm you have on at any given time.
4. When a course is given to you, you are steering the ship! Therefore you must maintain a steady course at all times. We are aware that deviations can occur but you must be actively aware of the heading to be maintained.
5. Keep an eye on the bow. Watching its movement relative to an object on the horizon will give you the earliest indication of any tendency to turn.
6. Concentration is paramount. You cannot follow a course and do something else at the same time.

In some situations, the officer may give direct orders to the helmsperson, known as conning. It is important that you:

1. Repeat the order in a clear and loud voice, for example, "Starboard two". This lets the officer know that you have heard their order correctly.
2. Carry out the order.
3. Inform the officer when the order is complete, that is "Starboard two on". Now the officer can observe the ship's behaviour and determine if any further action is needed.
4. The order given is the **total** number of spokes to either port or starboard, from the midship position.

## 26. Knots & Hitches

If you have any difficulties in tying any of the knots in this section, your topman or a professional crew member will be able to demonstrate the knot for you.

### 26.1 Half Hitch

The half hitch is used to quickly tie a line. A half hitch is not a secure hitch and is prone to slipping. To tie a half hitch pass the end of the line either through a loop or under a line or rail, then cross the standing part of the line and pass the end of the line under up through the loop in the line just formed, as shown in Figure A.



Figure A



## 26.2 Reef Knot

The reef knot as its name suggests primarily originates from reefing sails. It is used for lashing when a strong secure knot is required. It is used to join two lines of equal size. The knot is fairly simple to tie and does not jam or slip readily under load, assuming both lines are the same size. To tie a reef knot, hold the ends of each line in each hand; pass the end of the line in the left hand over, down and around the line in the right hand effectively crossing the two lines. Next take the end of the line in the right hand over, down and around the line in the left hand, now pull both lines taught. The finished reef knot is shown in Figure A.



Figure A

## 26.3 Round Turn and Two Half Hitches

The round turn and two half hitches is a common method of securing a line to a bollard, spar or ring. To tie a round turn and two half hitches, follow the components in the name, firstly take the end of the line (bitter end), around the bollard, spar or ring, such that there is one full turn, then complete the hitch by performing two half hitches along the standing part of the line.

## 26.4 Bowline

The bowline is one of the most useful ways to tie a loop in the end of a line. A bowline will not jam under load and is easy to undo.

To tie a bowline, holding the line in your left hand and the bitter end in the other, form a loop, then pass the bitter end upwards through the loop, then over the side of the loop, passing it underneath the line, then back down through the loop, as shown in Figure A. Holding the loop and the bitter end in one hand, pull on the standing part of the line, to complete the bowline, as shown in Figure B.



Figure A



Figure B

## 27. Cleaning

Cleaning on the *Endeavour* is organised by the various decks, each of which has its own set of cleaning equipment which is specifically colour coded for hygiene purposes. Your topman will explain how each area on the ship is to be cleaned.

## 28. Glossary of Terms

The following terms or expressions are commonly heard aboard Endeavour.

20th-century deck	The lower most deck on Endeavour, which houses all the modern equipment.
Aloft	Above deck in the rig.
Bowline	A hitch used to make a secure loop in a line.
“Below”	Call from above to gain the attention of those on deck. See also “On deck”.
Bow sprit	Mast set at an angle extending from the bow of the ship.
Bunt	The main body of a square sail.
Companion way	Stairway.
Course	Direction of a vessel’s progress.
Fall deck	Those portions of the below deck area that lie beneath the quarterdeck and foredeck but above the lower deck.
Fore and aft	Something set or placed approximately parallel to the keel of the ship.
Galley	Kitchen
Head(s)	Marine toilet.
Heading	The course the ship is being steered.
Jib Boom	An extension to the bow sprit.
Lee	The side away from the direction of the wind.
Lower deck	The full length deck below the weather deck. Often referred to as the 18th-century deck.
Mess dining area	Referred to as the 20 <sup>th</sup> -century mess on Endeavour to differentiate it from the 18 <sup>th</sup> century mess.
Port	The left hand side of the ship when facing the bow.
Port tack	Sailing with the wind coming over the port side of the ship.
Quarterdeck	The raised section of deck at the stern. Historically the domain of officers.
Ratline(s)	A line which runs across shrouds, used as a footrope when climbing aloft.
Shroud(s)	Rigging used to support and tension the masts.
Starboard side	The right hand side of the ship when facing the bow.
Starboard tack	Sailing with the wind coming over the starboard side.
Tack ship	To turn the bow of the ship through the wind such that the wind is on the other side.
Thwart ships	At right angles to the keel.
Tiller	A lever attached to the rudder used to adjust its angle relative to the fore and aft line of the ship.
Topsides	The side of the ship above the waterline.
Wear ship	To turn the stern of the ship through the wind so putting the wind on the other side.
Windward	The side from which the wind is blowing.

**For further information please log on to:**

[www.endeavourvoyages.com.au](http://www.endeavourvoyages.com.au)

Or ring

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