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# Start Sailing 航海起步



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This material is only for internal use and aims to introduce basic sailing techniques as a reference. Since it's the first translation into Chinese, we welcome your feedback to help make it better.

Everyone remembers the first day they go sailing. That feeling of freedom on the water and the accomplishment of learning to helm a boat are amazing. Learning via our structured syllabus ensures you learn safely at own pace and sailing is a lifetime sport, so never stop learning new skills.

We hope you come to love dinghy sailing and that you have fun, whilst always keeping safe, because your enthusiasm is infectious and will captivate others! Let's Start Sailing today!

本材料仅用于内部培训，作为培训参考教材，旨在介绍帆船运动的基本技术技能。本材料第一次被译成中文，有任何不足之处，欢迎大家提出讨论，使其更加完善。

有航海经验的人都会记得第一次出海时，在海上航行的自由以及学会驾驶一艘船的成就感。航海是一项终身学习的运动，一旦开始就没有结束。我们的教学系统不仅能保证你的安全，而且让你能根据自己的节奏逐步发展你的航海技术。

希望大家能够爱上小帆船，玩的开心，玩的愉快，你的热情将感染其他人，让越来越多的人参与到这项运动中来。但是也一定要记住，安全第一！

今天就开始航海吧！

Version 1.0



# 1

## How to Start Sailing 如何开始航海

### Where can you sail? 去哪里航海?

Britain is rich in places to sail. You will find sailing clubs and boating facilities on many lakes, gravel pits, reservoirs and rivers, as well as in superb coastal sailing areas. You can also take a course during a holiday at a RYA Recognized Centre overseas.

英国适合航海的地方数不胜数。你可以在英国的湖区、水库和河流区，以及非常棒的沿海区域，找到很多航海俱乐部和船舶设施。你也可以趁假期的时候，在一个 RYA 认证的海外航海中心学习航海课程。



Singlehanded dinghies, like these Picos, are fun to sail and offer a quick way to learn the basics.

单人小帆船，像这些小型的 Picos，玩起来很有趣，而且很快就能学会基本技能。

Learning in a dinghy is a great way to start sailing. Dinghies have simple equipment, are easy to prepare for sailing, and are light to handle.

学习小帆船是开始航海的最佳方式。小帆船的装备简单，易准备，而且操纵轻便。

They respond quickly to your movements so it's easy to see the effect of your actions and to feel the reaction from the boat. Dinghies used for teaching are usually fairly stable and simple, but they are still rewarding and challenging to sail.

它们反应十分迅速，所以很容易看到操作效果且感受到船的反应。小帆船用于教学通常十分平稳，操作简便，但是它们的学习也非常有益，而且也具有挑战性。

Starting in a singlehanded dinghy can be the quickest way to learn, but on the other hand, you may enjoy learning with others in a boat designed to be sailed by two or more people; the choice is yours.

学习单人小帆船应该是开始航海学习最快的方式了。不过，也许你更喜欢和其他人一起，在一条用于两人或者多人航海的船上学习。这要看你自己的选择了。



The laser Stratos is typically sailed by two, but has room for more.

激光 Stratos 是一种典型的双人船，但是也有容纳多人的空间。

## Keelboats 龙骨船

A **keelboat** has a weighted keel under the hull which prevents it capsizing.  
**龙骨船**船体的底部有一个相当重的龙骨，用来保持船只的平衡，防止翻船。

Keelboats are larger than dinghies and are usually sailed by a number of people. They are stable and dry and often more comfortable to sail.  
龙骨船比小帆船要大，通常用于多人航海。它们更加平稳，而且不易进水，更加舒适。

Because of their greater size and weight they do not offer the fast response and instant feedback of dinghies and the equipment tends to be heavier.  
因为它们的尺寸更大，而且更重，所以不像小帆船一样反应很快。这种船型的配备设施也相对更重一些。



*The International Sonar is typical of a day sailing and racing keelboat and is sailed by four people.  
International Sonar 是一种典型的用于日间航海和比赛的龙骨船，由四个人操纵。*

## Multihulls 多体船

Most Multihulls are **catamarans** (two hulls). Although catamarans and **trimarans** (three hulls) are very stable compared with dinghies, they can still capsize if allowed to **heel** (lean over) too far.

多体船中，**双体船**（即有两个船体的船只）占多数。虽然双体船和**三体船**（有三个船体的船只）比小帆船更加平稳，但是如果船只侧倾过度的话，还是会翻船。

The combination of stability and light weight means that multihulls are very fast and offer exhilarating sailing.  
平稳与轻巧的结合，意味着多体船的船速非常快，让航海者们能够充分地享受航海的乐趣。

Most catamarans are designed to be sailed by two people but there are several types that are sailed singlehanded.  
大多数双体船是为双人航海而设计的，但是也有几种船型用于单人航海。

Multihulls require slightly different techniques to boats with a single hull.

双体船的操作技术与单体船略微有点不同。



*The Dart 16 is very popular catamaran that can be sailed by one or two people.  
Dart 16 是一种非常受欢迎的双体船，供一人或两人使用。*

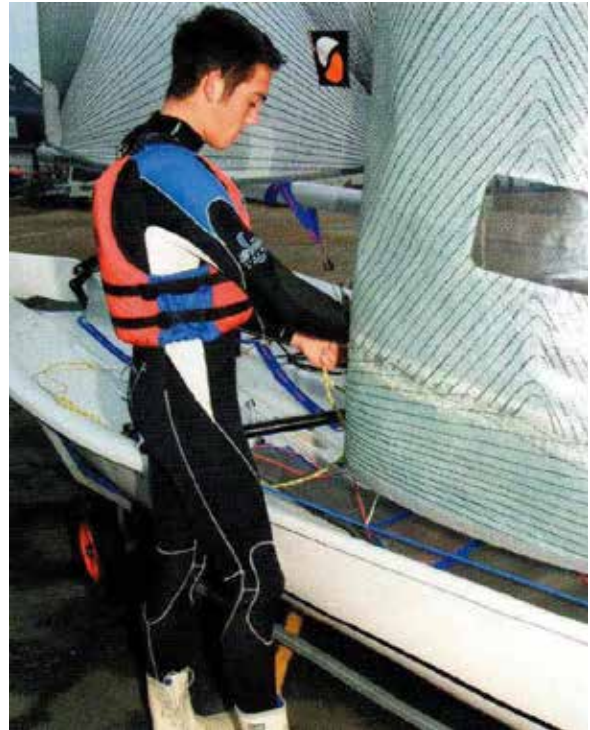
# 1

## Clothing & Personal Equipment 航海服装和个人装备

### Staying comfortable 舒适为主

There is no need to be cold and wet when you are sailing. Modern sailing clothing is warm and comfortable, providing good freedom of movement. Use thermal or fleece clothing for inner layers. Avoid cotton which is cold to wear when damp. Pick your clothing to suit when and where you sail. Even in summer it is nearly always colder on the water than ashore, and the temperature is likely to fluctuate more. Plan to wear sufficient clothing to ensure you do not get chilled. Once you are cold it can be hard to warm up again and heat loss is accelerated if your skin is wet and exposed to evaporation so wear a set of waterproofs if necessary. Staying warm is usually associated with staying dry, and most types of outer layer sailing clothing aim to keep water away from the inner layers and your skin. Alternatively, accept that you will get wet and use a wetsuit to insulate your body. This can be complimented by a waterproof top.

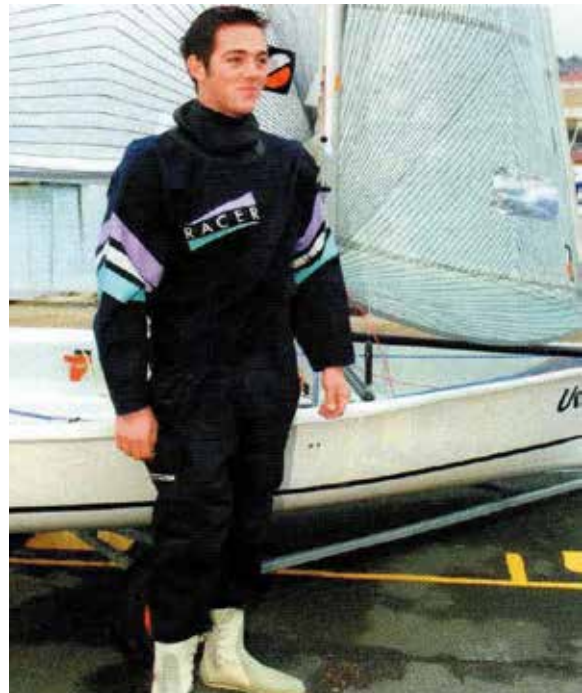
玩船并一定会把你弄得又冷又湿。现代航海服有良好的保暖性和舒适性，而且能保证行动便捷。里层要穿速干服或羊毛衣，不要穿棉织的衣物，弄湿了以后穿在身上会很冷。注意要根据你的航行地点和时间选择着装。即使是夏天，在水上航行也要比在岸上冷，而且海水温度波动大。所以，要提前筹划好穿着足够暖和的帆装，以防在水里冻僵。一旦身体变冷，就很难再暖和起来。如果身上都是湿的，又暴露在空气中，水分蒸发会导致体热流失加快，所以务必穿着一整套防水服。保持温暖和保持干燥息息相关，大多数外层航海服其目的都是防止水进入内层衣服和身体。或者你不怕弄湿的话，可以穿湿式保暖衣，然后再加一件防水服更好。



Wetsuits are a sensible choice when you are likely to get wet. 容易弄湿的话，湿式保暖服是一个明智的选择。



Waterproof jacket and trousers are ideal on a keelboat or stable dinghy. 在驾驶龙骨船或平稳的小帆船时，防水的夹克和裤子十分适用。



Wetsuits are often worn by sailors in high performance dinghies. 驾驶高性能小帆船的人经常穿着干式防寒衣。

## Picking the right clothing 选择合适的帆装

When you start learning, a simple waterproof jacket and trousers will usually suffice and will often be provided by your sailing school. Alternatively, you may be provided with a wetsuit.

初学航海时，一套防水的夹克和裤子通常就足够了，一般由你的航海学校提供。还可能会提供一件保暖服。

When buying your own gear, take into consideration when and where you sail. Good waterproofs plus thermal inner layers are suitable for stable dinghies or keelboats but think about using a wetsuit for faster dinghies or catamarans, especially in the winter.

在购买自己的航海装备时，一定要考虑到你航海的时间和地点。舒适的防水服和内层速干服非常适合平稳的小帆船或龙骨船，但是驾驶快速小帆船或双体船就要穿保暖服了，尤其是在冬天。

If you sail fast boats, a drysuit which uses neck, ankle and wrist seals keeps all water out. However, overheating can be a problem so, if possible, pick a breathable type.

如果你驾驶快速帆船，一定要穿着可以完全密封颈部、脚踝和腰部的防寒服，以防止水进入身体。但是，穿着过多以致身体过热也不行，所以要尽量选择透气性好的着装。

## Personal safety gear 个人安全装备

Personal safety gear is essential.

个人安全装备必不可少。

A buoyance aid is designed to help a conscious person stay afloat if they fall overboard or the boat capsizes. A buoyance aid is usually the most appropriate choice for dinghies or catamaran sailing as long as the sailor can swim.

助浮衣，用于救助从船上不慎落水或翻船后落水的有意识的人。只要水手具备一定的游泳技能，浮力救生设备通常是驾驶小帆船或者双体船航海时的最佳选择。

An inflatable lifejacket is an alternative for keelboat sailors and is often fitted with a safety harness to prevent the person falling overboard. In the water, an inflated lifejacket will support an unconscious person and should turn them on to their back with their face clear of the water.

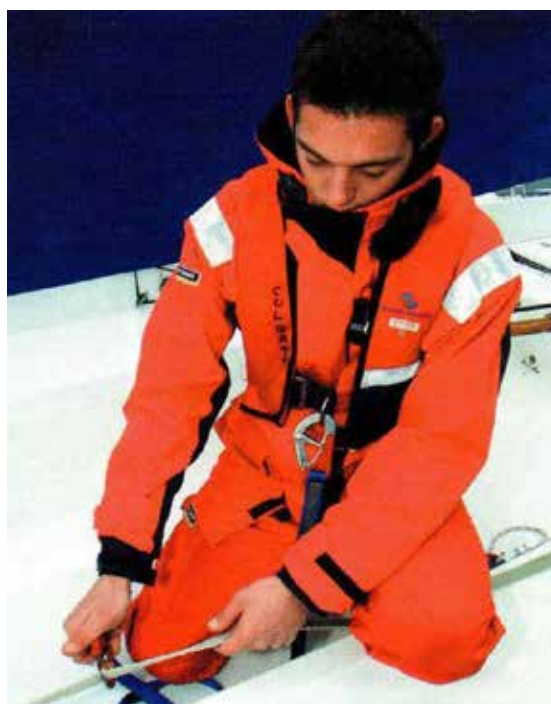
可充气救生衣是龙骨船水手的另一种选择，而且通常配有安全吊带以防止船员落入水中。可充气救生衣可救助没有意识的落水者，使落水者保持面部朝上。



Remember the extremities – boots, gloves and hat are all important.  
不要忘记四肢的防护——靴子、手套和帽子都很重要。



Always wear a buoyance aid or lifejacket when you go afloat.  
在航行的任何时刻，都必须穿着助浮衣或救生衣。



A safety harness, often combined with a lifejacket, is used aboard keelboats.  
安全吊带通常和救生衣连在一起，用于龙骨船上。

## Top Tip 重要提示

Most heat loss occurs through the top of the head so wear a warm hat when sailing in cold weather.

多数热量都是从头顶散失的，所以在寒冷的天气航行时注意戴帽子保暖。

# 1

## Parts of the Boat 帆船的结构

### Understanding the language 理解帆船术语

You only need to know a few basic terms when you start to learn and it is sufficient to know the names for the parts of the boat shown here.

在开始学习航海的时候，你只需要了解少数的基础用语即可，如下图所示，只要知道图中船体各部分的名称就足够了。

Two important words are **port** and **starboard**. The port side is the left side looking forward and always remains so even if turn round to face astern.

需要知道的两个十分重要的帆船运动术语是**左舷**和**右舷**。按船尾向船首的视向，船的左侧称为“左舷”，即使人转身朝向船尾。

The term **windward** means the upwind side of the boat. **Leeward** is the downwind side of the boat. **Bow** and **stern** refer to the front and back of the boat.

术语**上风面**是指船迎风的一侧，**下风面**是指船顺风的一侧。**船头**和**船尾**是指船的前部和尾部。

### Sails and their parts 帆和帆的基本组成

The simplest boats use a single sail behind the mast. This is called the **mainsail**.

构造最简单的帆船其桅杆的后面只有一面帆，被称为**主帆**。

Most boats have a mainsail plus another sail, the **jib**, in front of the mast. Boat sails are controlled by ropes called **sheets**.

大多数帆船有一面主帆和一面**前帆**，位于桅杆的前面。控制船帆的绳索被称为**缭绳**。

The mainsail has a **mainsheet** attached to the boom. The jib has two **jib sheets** – one for each side of the boat.

控制主帆的**主帆索**与帆杆（横杆）相连。前帆有两个**前帆索**，分别在船的两侧。

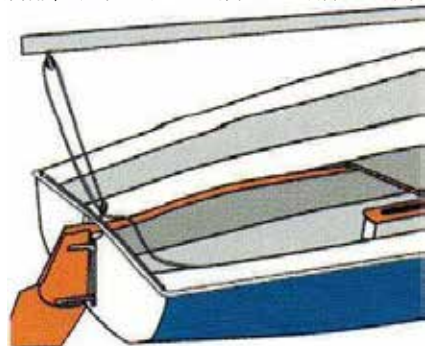


Sailing with a mainsail and jib. 使用主帆和前帆航行

### Variations on a theme 不同布局需要不同技巧

You may encounter a different mainsheet layout. Techniques will vary according to whether you sail a boat with a centre or aft mainsheet.

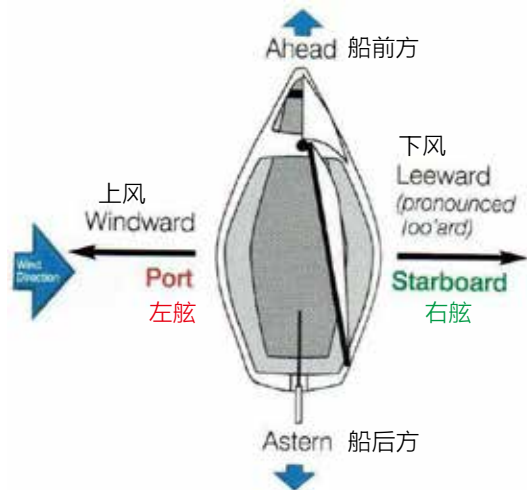
你可能会遇到不同的主帆索布局，根据主帆索在船的中央或后部，调节主帆索的技巧也会相应地改变。



Here the mainsheet is attached at the stern – this is called an aft mainsheet.  
主帆索被连接在船尾，称为主帆索后置。



Standard sails are triangular and each part has a name.  
标准帆都是三角形的，并且每一部分都有相应的名称。



Some directions are described relative to the boat or the wind.  
有些方向是根据船或者风向来描述的。



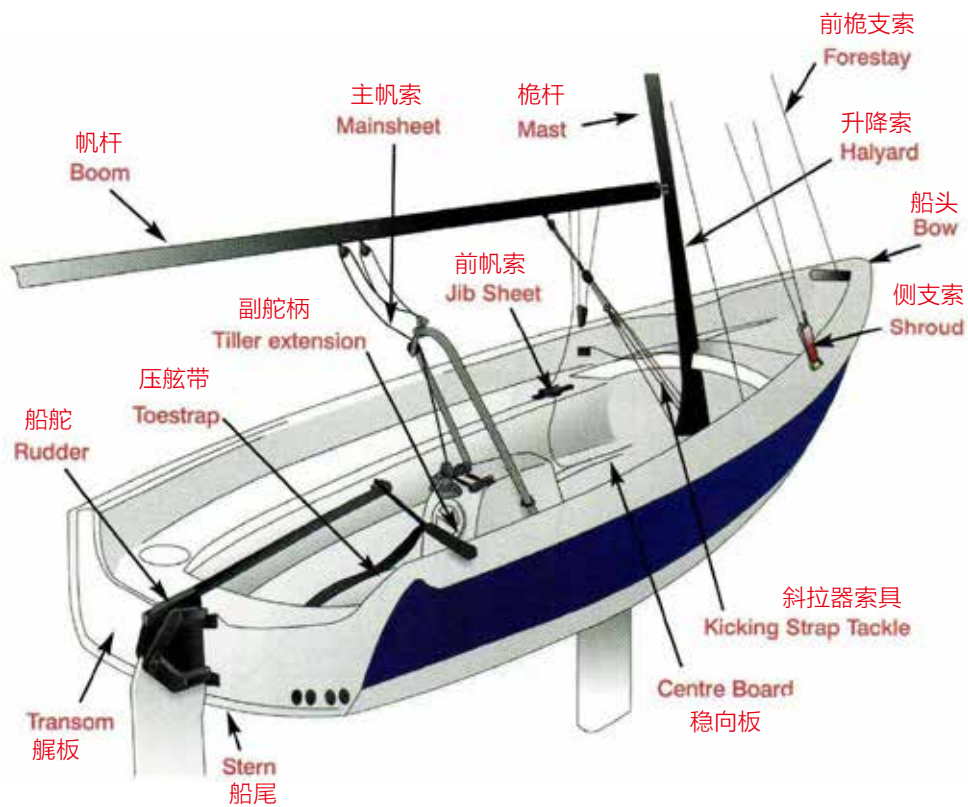
Mainsheet (rope) used to adjust the angle of the boom to the boat.  
主帆索（缆绳）调节帆杆与船的角度。



Kicking strap tackle holds the boom down when sailing.  
斜拉器索具控制帆杆向下。



Shrouds hold the mast up and attach to the shroud plates.  
侧支索保持桅杆竖直，下端连接在底座上。



Jib sheet (rope) is led through a fairlead and held by a cam cleat.  
前帆索（缆绳）穿过导缆孔，被（凸轮夹）夹绳器固定住。



The halyard (rope) that hoists the sail is held by a clam cleat.  
升降索（缆绳）用于升帆，被固定在夹绳器上。



Centreboard pivots up or down to act as a keel.  
稳向板上下移动，充当的龙骨。



Rudder attaches to boat's transom and is removeable.  
船舵卡在船的舵板上，可拆卸。



# 1

## A Variety of Types 帆船的种类

### A singlehanded dinghies 单人小帆船

Singlehanded dinghies are very popular because they are relatively low in cost and light in weight. As they are easy to transport, rig and launch you can arrive at a venue and go sailing within a minutes.

单人小帆船非常受欢迎，因为其价格相对较低，船体轻便。而且移动简便，索具的安装和船的下水都很简单，所以在你到达航海场地不到几分钟的时间就可以出海了。

Most singlehanded dinghies have a single sail (the **mainsail**) set on a simple mast that does not need shrouds to hold it upright.

大多数单人小帆船只有一面帆（**主帆**），安置在桅杆上，不需要侧支索控制其竖直。

The sail usually has a simple sleeve at the luff. The mast is slid into the sleeve. The mast is then fitted into a socket in the deck.

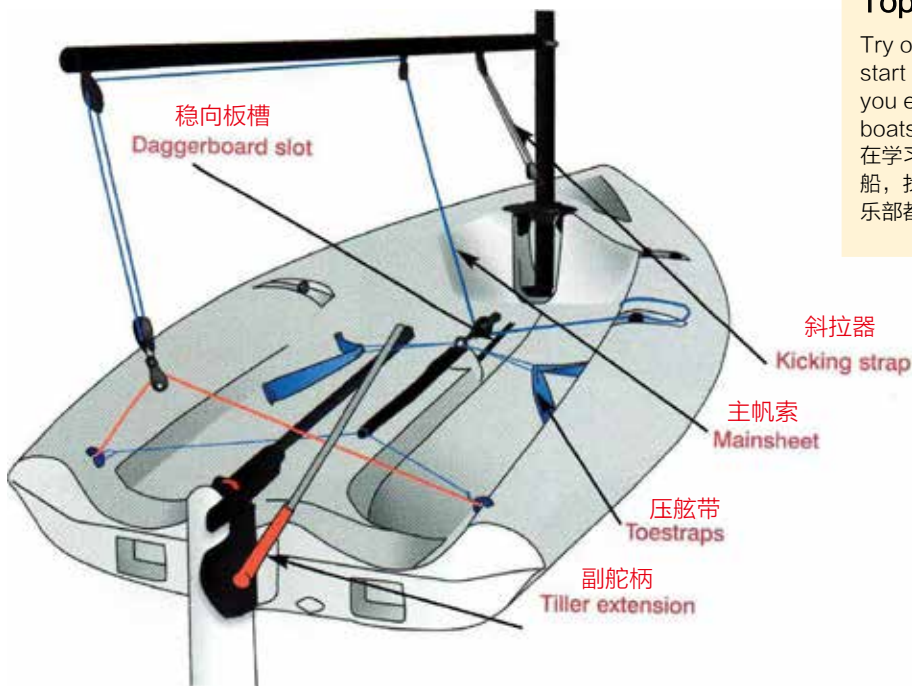
帆的帆前缘通常会会有一个导套，将导套沿着桅杆侧面的槽滑入。桅杆则插入甲板的槽里。

The controls are equally simple; the **mainsheet** controls the position of the sail, while the kicking strap holds the boom down, there are **toestraps** to tuck your feet under when sitting out, and a **tiller extension** for steering.

各部分的操纵也比较简单：**主帆索**控制主帆的位置，同时斜拉器向下拉住帆杆。当你在航行的过程中需要坐到船外时，脚勾住**压舷带**，用**副舵柄**来掌舵。

Most singlehanded dinghies have a **daggerboard** which slides vertically through the bottom of the boat and prevents the boat from sliding sideways. Other types of dinghies may use a pivoting centreboard which does the same job.

大多数单人小帆船有一个**稳向板**，垂直地插入船底，防止船横移。其他类型的小帆船可能会使用旋转稳向板，其作用是一样的。



### Top Tip 重要提示

Try out a range of boats when you start sailing to find out which type you enjoy most. Many clubs have boats available for hire. 在学习航海之初，多去体验不同类型的船，找到你最喜欢的船型。很多帆船俱乐部都是可以租船的。

*The Pico is a popular singlehander that makes a good first boat when you are learning to sail. It is easy to sail alone but can also accommodate another person if you want some company.*

*Pico 是一种非常受欢迎的单人船，也是初学者的最佳选择。方便单人操纵，也有多容纳一人的空间，如果你更愿意和别人一起的话。*

## A small keelboat 小型龙骨船

Small keelboats are not as common as dinghies but there is still a fair selection to choose from.

小型龙骨船虽不如单人小帆船一样常见，但是也有可供选择的类型。

All the normal equipment you should find in a dinghy will be present, except for a centreboard or daggerboard. Instead, a weighted keel gives the boat its stability. In some keelboats, the keel can be raised to make it easier to store or transport the boat shore.

除了稳向板和中插板以外，小型龙骨船配有小帆船所有的基本设备。与小帆船不同的是，龙骨船配有一定重量的龙骨以维持船的稳定。有些龙骨船的龙骨可以被抬起，方便船只的存放和移动。

As well as the normal controls there may also be some other gear, such as winches, that make it easier to handle the larger boat.

除了这些常规的设备外，还有一些其他的配置，例如绞盘，用于简化大型船只的操作。



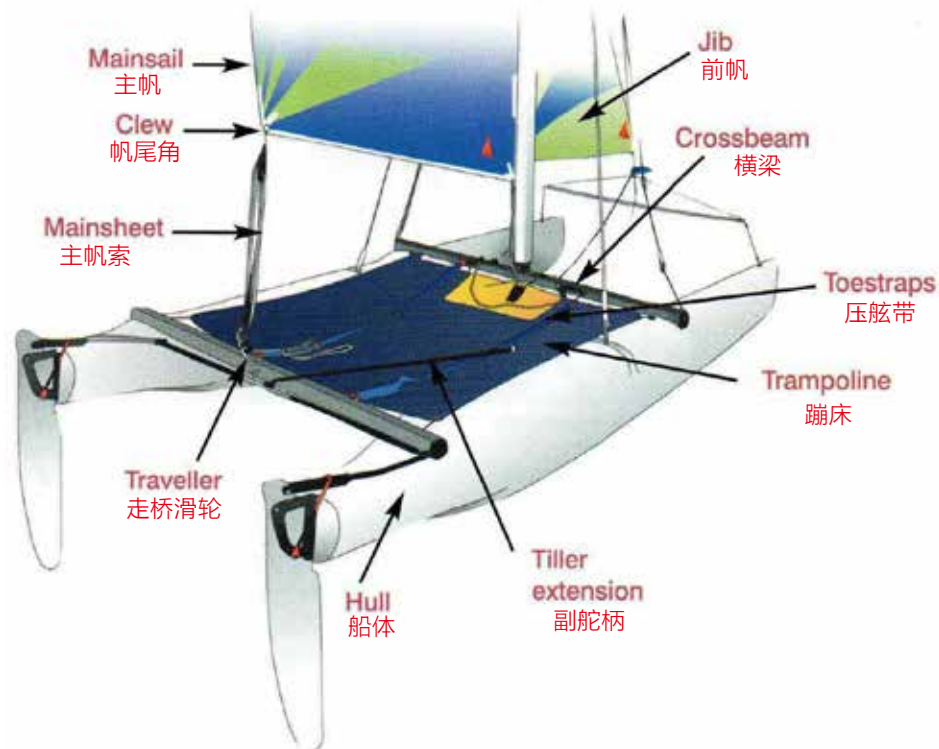
The Sonar has a fixed keel that requires a special cradle or trailer for storage ashore, but it has a simple dinghy-like layout.

Sonar 的龙骨是固定的，所以需要一个专门的支架或拖车，用于岸上存放。但是它的布局跟一般的小帆船差不多。

## A catamaran 双体船

Catamarans have two hulls, which are connected by crossbeams. A fabric trampoline is laced to the two crossbeams and hulls, providing a large area for the crew. Many catamarans use a loose-footed mainsail without a boom. The mainsheet is attached directly to the clew of the sail. The mast partially rotates which makes the mainsail more efficient.

双体船有两个船体，由横梁连接在一起。两个横梁和船体由一个织物蹦床连接，为船员提供了较大的活动区域。很多双体船采用帆底较松的主帆，没有帆杆。主帆索直接连在帆尾脚上，桅杆部分旋转，可使主帆运作更加高效。



The Dart 16 is typical of many small catamarans. It has exciting performance and is suitable for boat learning and racing.

Dart 16 是众多小型双体船中的一种典型。它在航海中的表现十分出色，适用于帆船学习和比赛。

# 1

## Rigging your Boat 备船

### Preparing the boat for sailing 装配船只, 准备出海

The process of attaching and hoisting sails is known as **rigging** the boat. For your first sail, an instructor or experienced sailor will show you how to attach the sails in readiness for **hoisting** them before you go afloat. The different types of dinghies, keelboats and catamarans all have their own ways of attaching and hoisting sails but the principles remain the same.

**装船**包括装帆和升帆这两个过程。第一次出海的时候, 在下水之前, 教练或者经验丰富的水手会教你如何将帆准备就绪, 以待**升帆**。不同类型的小帆船、龙骨船和双体船都有其装帆和升帆的方法, 但是原理相同。



Step 1 Attach the jib tack to the bow.  
第一步, 将前帆前脚系在船头。



Step 2 Lead the jib sheets through their fairleads (guides for ropes). 第二步, 将前帆索穿过导缆孔(用于引导绳索)。



Step 3 Attach the jib halyard.  
第三步, 连接前帆升降索。



Step 4 Fasten the mainsail tack to the boom. 第四步, 将主帆前脚系在帆杆上。



Step 5 Fasten the outhaul to the mainsail. 第五步, 将后拉索系在主帆上。  
Step 6 (No picture) attach the mainsail halyard. 第六步, (无图)连接主帆升降索。

### Using a launching trolley 船车的使用

Most dinghies and catamarans have launching trolleys built to suit their shape. Always tie the bow of the boat to the trolley handle to prevent it sliding off, and make sure the boat is sitting correctly on the supports before moving it.

大多数小帆船和双体船都有依照其船型制造的船车。使用船车时, 一定要把船头系在船车把手上, 防止滑落。在移动船车前, 确保船以正确的方式置于船车上。

Take care when moving a boat on a trolley. Always look up to make sure the mast does not hit overhead obstructions, such as power cables. Be careful not to lose control when going down a slipway. If the mainsail is hoisted, leave the kicking strap slack to de-power the sail.

在移动船车时要十分小心。时刻查看前方, 避免桅碰到上空的障碍物, 例如电缆。还有在下坡时, 注意不要失去对船车的控制。如果主帆没有降下, 就松斜拉器, 减小帆力。



Use a trolley that gives good support to the boat and tie the dinghy to the handle to prevent it sliding off until you are ready to launch.  
在准备好下水前, 确保船平稳地置于船车上, 船头系在把手上, 防止船从船车上滑出。

## Hoisting sails 升帆

It is generally easier to hoist sails ashore but this will depend on the wind direction and strength.

一般来说，在岸上升帆更容易，但是要取决于风向和风力。

- The key points to remember are:  
需要记住的要点:
- Hoist the jib first. Provided the sheets are loose, it will flap freely. The jib can usually be hoisted before launching.  
先升前帆。让前帆索处于松弛状态，前帆自由摆动。一般在水下前就可以升起前帆。
- The mainsheet and the kicking strap must be completely slack before hoisting the mainsail.  
升主帆前，主帆索和斜拉器必须处于完全松弛的状态。
- Point the boat exactly into the wind before hoisting the mainsail so that it can flap freely.  
升主帆前，使船朝向顶风方向，使主帆可以自由摆动。



Step 1 Feed the luff into the mast groove and pull on the halyard.  
第一步，将帆前缘插入主帆凹槽，然后拉升降索。



Step 2 If the mainsail jams, stop pulling and make sure the luff is able to slide smoothly into luff groove.  
第二步，在拉升降索时，如果主帆卡住，马上停止进行调节，确保帆边缘能够平滑地进入凹槽。



Step 3 On dinghies with a removable boom, attach the boom to the mast after hoisting the mainsail.  
第三步，对于帆杆可拆卸的小帆船，升起主帆后，再装帆杆。



Partially roll the mainsail around the mast to reef a singlehanded dinghy.  
单人小帆船缩帆，通常是把主帆的一部分卷在桅杆上。

## Reducing sail area 缩帆

In order to maintain control in strong winds it may be necessary to reduce the amount of sail you use. This is called reefing.

为了在强风中保持对船的控制，必要时可以缩小帆的受风面积，这称之为缩帆。

Most singlehanded dinghies can be reefed by rolling the sail around the mast. Two-person dinghies with aft mainsheet systems can usually be reefed by rolling the mainsail around the boom.

大多数单人小帆船缩帆的方法是，把帆卷在桅杆上。主帆索后置的双人小帆船则通常是把主帆卷在帆杆上。

Whatever method your boat uses, it is easier to reef ashore than afloat. If in doubt, put in a reef before you launch. You can take the reef out afloat, if you find you do not need it.

无论你使用何种方法，在岸上缩帆要比在水里更简单。如果你拿不准，那就在下水前缩帆。如果下水后发现没有必要，就把帆打开。

### Top Tip 重要提示

Before hoisting the mainsail turn the boat directly into the wind, and release the kicking strap and mainsheet.

重要提示 在升主帆前，让船转向顶风，然后松开斜拉器和主帆索。

# 1

## Your First Time Afloat 航海初体验

### Launching the boat 推船下水

Wheel the boat on its trolley to the launching point.  
用船车将船推到下水处。

- Check that you have all the equipment you need. 检查确认你已备好所有需要的装备。
- Check that there is a paddle in the boat. 确认船上配有一只船桨。
- Ensure that all the bungs are in place, sealing the buoyancy compartments. 确认船水堵都拧紧，密封浮箱。
- Attach the rudder and tiller. 装上舵和舵柄。  
If your boat uses a daggerboard, make sure that it is in the boat.  
如果你使用的船配有稳向板，确保稳向板在船上。
- Check that your buoyancy aid is secure. 确保助浮衣穿着正确。

Now you are ready to go:

准备就绪：

- Wheel the boat stern first into the water until it floats off its trolley.  
先把船尾推下水，直到船完全脱离船车。
- Undo the rope securing the boat to the trolley handle.  
解开系住船和船车把手的绳子。
- Hold the boat by its bow and allow it to swing round to point into the wind.  
抓住船头，把船转向顶风方向。
- Pull the trolley clear of the water and park it out of the way of other slipway users.  
把船车从水里拉出来，停在坡道上。注意，放置船车的位置不要影响他人使用坡道。

### Getting away from the shore 离岸

On your first sail you will use a safe open area where you can learn your basic skills. Check the wind direction before you sail away, the jib is a useful indicator. Once sailing it is all too easy to focus inside the boat, so remember to keep a good lookout at all times.

第一次出海时，要选择一片安全开放的水域，适合你学习基本技能。在离开岸边前，要查看风向，前帆就是一个很有用的指示器。一旦开始航海，就很容易只关注船内部，而忽视了周围的情况，所以在航行时要时刻注意查看四周。



Hold the trolley by the handle and wheel the boat stern first into the water.  
抓住船车把手，把船尾推入水中。



Push the boat into deeper water until it floats off its trolley.  
把船推向更深的水域，直至船脱离船车。



Catamarans use an axle with two wheels and hull supports – hold the bows to push the boat.  
双体船的船车由轮轴、两个轮子和船体支架构成。下水时，抓住船头，将船推入水中。



With the boat head to wind, one person holds the bow and the other hoists the mainsail.  
随着船转向顶风，一个人抓住船头，另一个人升起主帆。

## Paddling and rowing 划船

Sometimes it is easier to paddle or row away from the shore than to sail; the launching area may be constricted or the wind could be blowing directly onto the shore, making it difficult to sail off.

在离岸时，有些时候划船要比使帆航行更快。下水区域受限或是吹近岸风，都会增加用帆航行离岸的难度。

Few modern dinghies are equipped for rowing but it is worth carrying at least one paddle in case the wind drops.

现代小帆船很少配有划船的工具，不过还是有必要至少准备一个船桨，以防风变小。

If you are paddling, sit forwards by the shrouds, in a singlehanded dinghy you can sit on the tiller extension to steer while you paddle, or use a one-handed paddle.

如果你需要划船，靠前坐在侧支索旁。如果你驾驶的是单人小帆船，可以坐在副舵柄上控制舵，然后用双手划船或使用单手桨划船。

If your boat is equipped for rowing then practice the skill in a clear stretch of water away from obstructions.

如果船上配有划船工具，找一片远离障碍物，视野清晰的水域练习划船。

## Steering a sailing boat 驾驶小帆船

Once your boat is away from the shore in clear water you will be able to start steering under sail. The person who steers is called the **helmsman** – this is not gender-specific, it's simply a traditional name – while the others on board are called the **crew**.

一旦船远离岸边，处于开阔水域，你就可以开始使帆航行了。掌舵的人被称为**舵手** (helmsman 无性别之分，只是一个传统的称谓)，其他在船上的人被称为**船员**。

The helmsman sits on the windward side of the boat forward of the tiller and holds the tiller extension in his rear hand. In a two-person boat the crew sits just forward of the helmsman.

舵手坐在船的迎风侧，位于舵柄前方，用靠近船尾的手控制副舵柄。在双人船中，船员坐在舵手前面。

On your first sail you will learn how to steer the boat using the tiller extension.

在第一次出海时，你会学习如何用副舵柄掌舵。

Push or pull on the tiller extension and the rudder will turn to change the boat's course.

推或者拉副舵柄，副舵柄作用在船舵上，从而改变船的航向。



With an aft mainsheet use a pan handle grip and hold the extension beside your body.

当主帆索后置时，采用握平底锅的方式握住副舵柄，将其置于你的身体旁边。



In a catamaran use a dagger grip with the extension over your aft shoulder.

在双体船上时，采用握匕首的方式握住副舵柄，将其置于你的肩膀后部之上。



One person paddles while the other steers.  
一个人划船，另一个人掌舵。



Rowing is a satisfying skill to learn.  
划船是一项学起来很有意思的技能。



In a boat with a centre mainsheet, hold the tiller extension in a dagger grip with the end across your body.

当主帆索系在船中央时，采用握匕首的方式握住副舵柄，且使其末端在你前面穿过，整个副舵柄置于你的身体之前。

## Top Tip 重要提示

You can only steer a car when it is moving – a boat is the same and if it slows down too much it will not respond to the tiller.

重要提示 只有在汽车移动的时候你才能操纵驾驶。对船来说，也是一样的道理，而且如果船速过慢，舵就失效了。

## 2

# Understanding how a Boat Works 了解帆船的原理

### How sails work 帆是怎样运作的

To understand how a sail works, try a simple experiment with a spoon under a running tap. Hold the spoon lightly by the handle and move the back of the spoon slowly towards the stream of water. You would expect it to be pushed away by the water but actually the spoon is sucked into the flow.

我们试着做一个简单的实验，来了解帆的原理吧。把一个小勺放在打开的水龙头下，轻轻地握住小勺的手柄，然后缓慢地将小勺的背面靠近水流。你预料它会被水流推开，但是实际上小勺会被吸入水流之中。

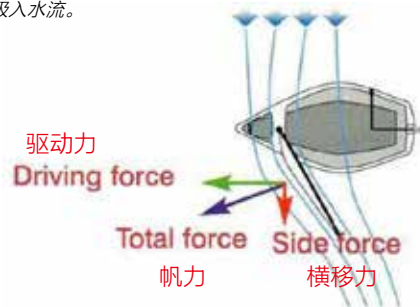
The same thing happens when air flows around a sail. The air travelling around the outside (leeward side) of the sail moves faster round the sail than the air on the windward side. This causes a difference in pressure on the two sides of the sail which pulls the sail to leeward. The force created by the sail acts roughly at right angles to the boom but only part of it drives the boat forward – the rest tries to push it sideways.

同样的事情也会发生在气流通通过帆的时候。空气在帆的外侧（背风侧）流动要比在迎风侧更快。从而导致帆的两侧产生压力差，使船向背风侧行驶。由帆产生的作用力垂直地作用在帆杆上，但是只有一部分力会使船向前行进，剩下的力会使船横移。



Hold a spoon in a tap's water flow and you will feel a force pulling the spoon into the water stream.

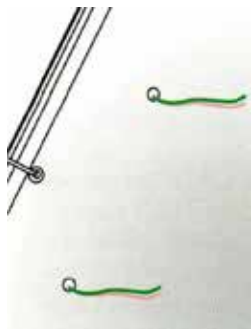
将一只小勺置于水龙头的水流之下，你会感受到一种力，把小勺吸入水流。



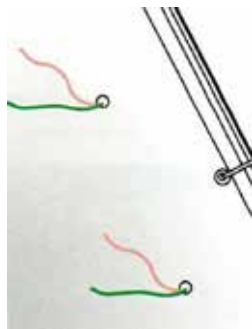
### Trimming sails 调帆

A sail works best when its leading edge (the luff) is held at a small angle to the wind. The angle is quite critical but there is a simple way to find it. Watch the luff of the sail as you pull in the sheet. Stop pulling when the luff stops shaking. To check that the sail is properly trimmed, slowly let out the sheet until the luff starts to shake, then pull it in again until the shaking stops. Most jibs and some mainsails have **telltails**. These are fitted near the luff, on each side of the sail and help to trim the sail accurately.

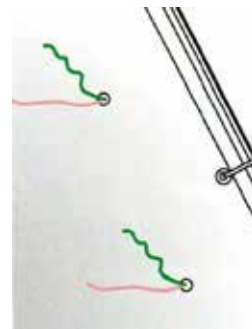
当帆前缘与风成适当的小角度时，帆的作用力最大。虽然这个角度很难达到，还是有一个简单的方法可以做到。收紧缭绳的时候，注意观察帆前缘。当帆前缘不再抖动时，停止拉缭绳。然后检查帆是否调整到合适的位置，慢慢地松一点缭绳，直到帆前缘开始抖动，然后再收紧，直到帆停止抖动。大多数前帆和一些主帆都有**气流线**，贴在帆两侧，靠近帆前缘，用于准确地调整船帆。



When boat telltales stream back together the sail is set perfectly. 当两侧的气流线同时飘起，大致重合时，说明帆的状态最佳。



If the leeward telltale (here the red one) flutters let the sail out a little. 如果背风侧气流线（红色）飘得过高，就松一点帆。



If the windward telltale (here the green one) flutters pull in the sail until it stops. 如果迎风侧气流线（绿色）飘得过高，就收紧帆，直到气流线到达正常状态。

## How keels work 船的龙骨是怎样运作的

A boat's keel, centreboard, or daggerboard is designed to resist the sideways force created by the sails (the rudder also plays a part).

船的龙骨、稳向板和中插板的主要作用是，防止船受到帆横移力的影响，发生横移（舵也有此作用）。

When the boat starts to move, water flows across the keel in much the same way as air flows across the sail. It creates a sideways force to windward that resists the opposite force on the sail. The two sideways forces cancel each other out leaving a forward force which drives the boat.

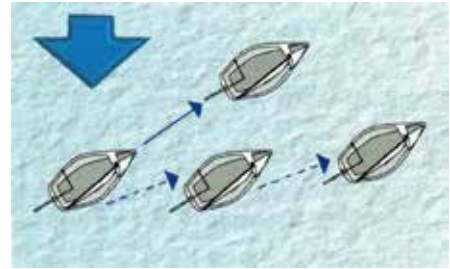
当船开始移动时，水流会像气流过帆一样穿过龙骨。从而产生一个向迎风面的横移力，抵抗船帆所产生的反作用力。这两股横移力相互抵消，剩下推动船向前运动的驱动力。

The force on the sails acts roughly at right angles to the boom. With sails in tight (when sailing close to the wind) the force acts mainly in a sideways direction. More sideways resistance is therefore required from the keel. This is why most dinghies and some catamarans have a lifting centreboard or daggerboard, so that the area under the boat can be adjusted to suit the **point of sailing**.

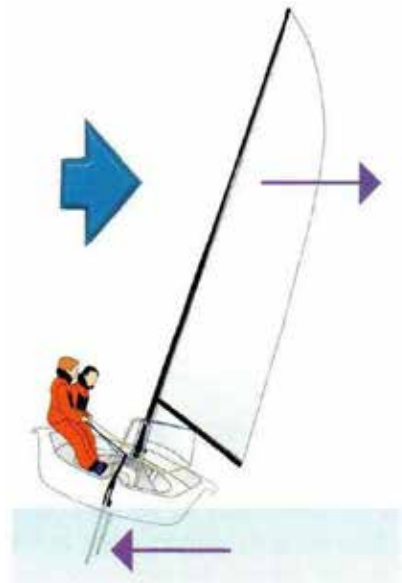
作用在帆上的力大约是垂直地作用在帆杆上，当帆收得很紧（近风航行）时，力主要作用在横移力方向上。因此就需要龙骨能提供更大的抵抗横移的力。这就是为什么大多数小帆船和有些双体船会配有可抬起的稳向板或中插板，这样可以调节船下受力的区域，将船调节到合适的**航行角度**。



The dinghy's crew sit out to balance the heeling force and keep the boat upright.  
小帆船上的船员坐在船外侧，以平衡侧倾力，使船处于竖直状态。



If the centreboard is not lowered sufficiently the boat will slip sideways on upwind courses.  
如果稳向板放得不够低，船在迎风航行时就会发生横移。



The sail's side force is resisted by the keel, causing the boat to heel. This has to be balanced by the crew's weight.  
龙骨抵抗帆的横移力，造成船体侧倾，必须靠船员的体重来平衡。

## Staying upright 保持船体向上

The force created by the sail acts above the boat. Similarly, the force created by the keel acts under the boat. These two opposing forces, acting a long way apart, create a heeling force that will cause the boat to capsize if it is not resisted.

由帆产生的力作用于船体之上，类似地，由龙骨产生的力作用于船体之下。这两股相反的力，在船上的作用点相距较远，产生一种侧倾力，如果不能消除，就会翻船。

Keelboats use the weight of a fixed keel to keep them upright, while dinghies and catamarans rely on the weight and position of the crew.

龙骨船使用龙骨的重量使船保持竖直，而小帆船和双体船则依靠船员自身的体重和他们在船上的位置。

### Top Tip 重要提示

All sails work best when they are pulled in only just enough to stop the flapping at the luff – any more will slow the boat down.

帆的最佳状态是，收紧到刚好能够使帆前缘停止拍打，多收紧一点都会使船减速。



## 2

# The Points of Sailing 航行角度

### Sailing across the wind 在风中航行

One of the delights of sailing is that the boat is completely reliant on the wind. This means that you must be aware of the wind direction and also its strength.

帆船的乐趣之一就是，船完全依靠风力行驶，这就意味着你必须时刻注意风的方向和风的力度。

- On your first sail you will start by steering on a **beam reach** with the wind coming over the side of the boat. This is the easiest point of sailing on which to practice steering the boat.  
第一次航行时，以**横风行驶**的方式开始，风从船的侧面吹过。这是练习掌舵的最简单的一种航行角度。
- You can sail in two directions on a beam reach – on **port tack** when the wind comes over the port side, and on **starboard tack** when the wind comes across the starboard side.  
横风行驶时可以选择左舷或右舷行驶。风来自左舷时为**左舷行驶**，风来自右舷时为**右舷行驶**。
- On a beam reach the sails are set about halfway out. Lower the centreboard about halfway down to resist the sideforce from the sails, which is moderate on this point of sailing.  
横风行驶时，帆松出去一半，稳向板放低一半，以抵抗帆产生的横移力，在这种航行角度下船会比较平稳。

### Sailing upwind 逆风航行

- Turn towards the wind (**luff**) onto a **close reach**. Pull the sails in until they stop flapping. Put the centreboard three-quarters down to resist the increased side force.  
**迎风偏转**，转到**后迎风行驶**。收紧帆直到帆停止抖动，稳向板放下四分之三，来抵抗增强的横移力。
- Turn further towards the wind and pull the sails in tight to sail **closehauled**. Put the centreboard fully down. This is the closest angle a sailing boat can sail to the wind. If you sail any closer the sails will start flapping and the boat will slow down. The heeling force is also greatest so sit out on the windward side to keep the boat upright.  
继续迎风偏转，收紧帆，就能使船**迎风行驶**。把稳向板完全放下。迎风行驶是帆船行驶时与风最近的航行角度。如果再迎一点的话，帆就会开始拍打，船就会减速。在这种航行角度下，侧倾力也是最大的，所以船员要在迎风侧压舷，保持船的竖直。
- To sail directly upwind it is necessary to follow a zigzag course turning (**tacking**) through 90 degrees each time.  
要迎风从一点航行到另一点，需采用“之”字航线航行，每次转（**迎风转向**）90°。

### Sailing downwind 顺风航行

From a beam reach, turn away from the wind (**bearing away**) onto a **broad reach**.

从横风航行转到（**顺风偏转**）**侧顺风航行**的方位。

- As you turn **downwind** let the sails out to keep them set at the correct angle to the wind. As this reduces the side force, the centreboard can be raised three quarters. Move the crew inboard.  
在转向**顺风**的同时松帆，调整帆与风的角度。这样就可以减小横移力，可以将稳向板抬起四分之三，船员停止压舷，回到船内。
- Bear away more, letting out the sails as you go, until the jib falls slack in the wind shadow of the mainsail. The boat is now on a **run** with the mainsail right out. Pull the centreboard almost all the way up.  
继续顺风偏转，同时松帆，一直松到前帆完全置于主帆前面，即主帆完全挡住前帆的风。这时候船**正顺风行驶**，主帆完全放出。稳向板几乎全部抬起。
- Sailing on a run can be quite confusing when you start, so luff up until the jib fills again and sail on a **training run**, this is a more stable route downwind. Sit one on either side to balance the boat.  
刚开始就学习正顺风航行，会让你觉得很困惑。所以使船迎风偏转，直到前帆再次鼓满，进入**顺风航行**，这种航行角度会更加平稳。在船的两侧分别坐一个人，以维持平衡。

### Sailing to windward 上风航行

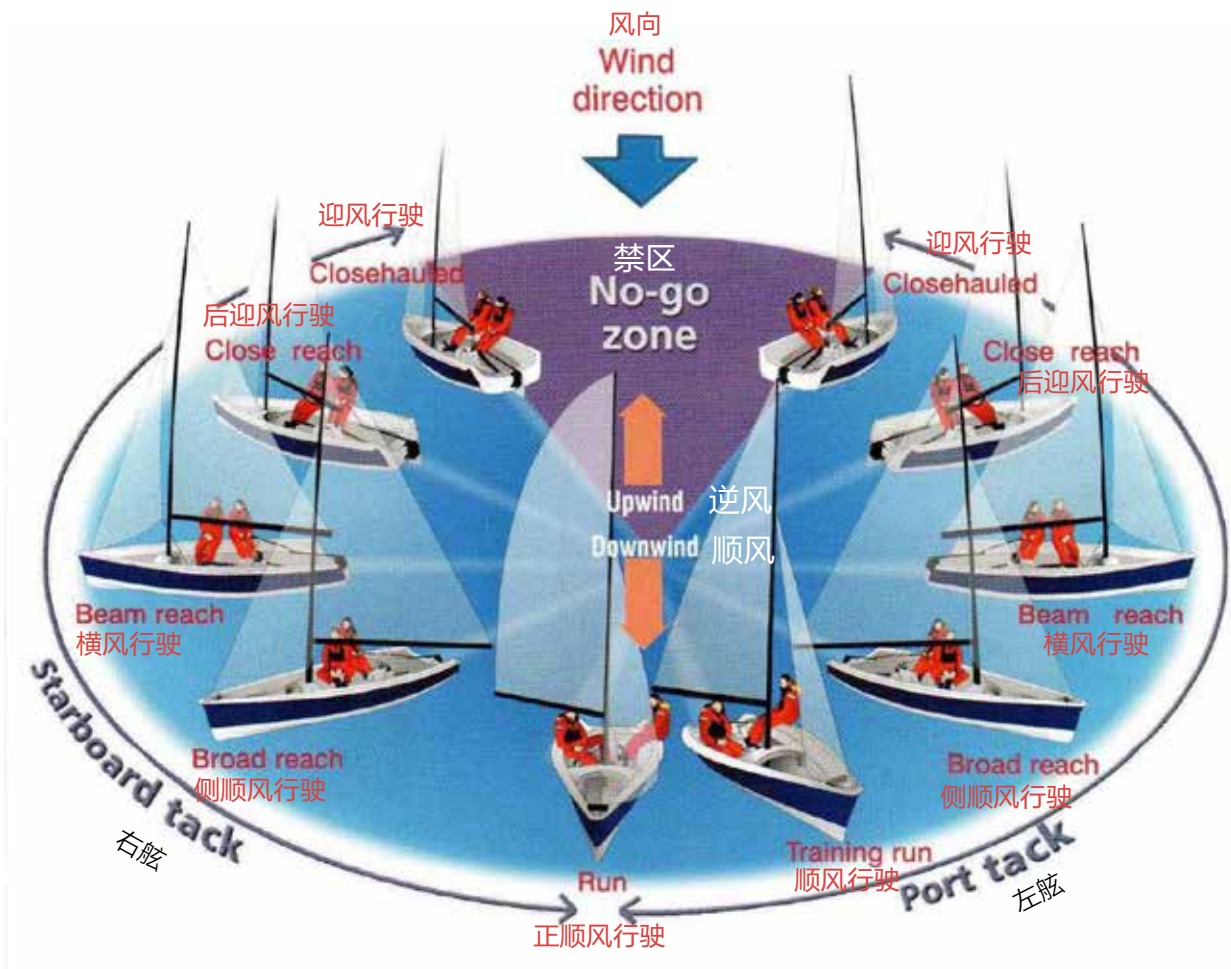
To go upwind, sail as close to the wind as you can. Sailing closehauled efficiently means sailing on the edge of the no-go zone without turning into it.

尽可能地接近风，迎风航行。高效的迎风航行意味着，在禁区的边缘行驶而不进入禁区。

- The crew pulls the jib in tight and can cleat the sheet.  
船员收紧前帆，并卡住前帆索。
- The helmsman steers by watching the jib telltales.  
舵手通过观察前帆的气流线来掌舵。
- Luff gently until the windward telltales lift then, if the boat starts to slow down, bear away until both telltales stream together. If sailing a singlehander, use the telltales on the mainsail.  
缓慢地转向迎风，直到帆迎风侧气流线飘起，如果船开始减速，就顺风偏转直到两侧的气流线飘到重合。如果驾驶单人小帆船，就利用主帆上的气流线。

Use the jib telltales to luff and bear away gently along the edge of the no-go zone.  
利用前帆气流线进行迎风转向，再顺风偏转，缓慢地靠近禁区边缘。



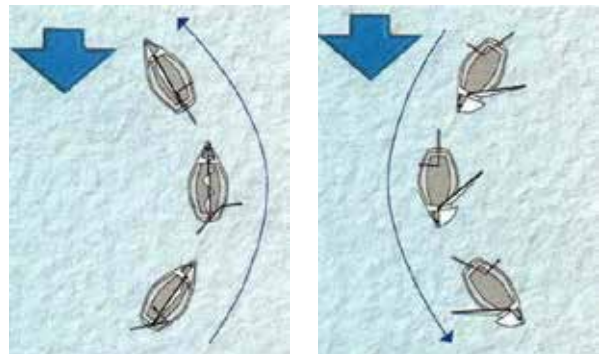


The points of sailing describe a boat's course in terms of the angle of the boat to the wind.  
 航行角度根据船与风向所成的角度，描述船的航向。

## Tacking and gybing 迎风转向和顺风转向

When sailing upwind, to change course from port to starboard tack (or vice versa), turn the bow through the wind. This is known as **tacking**. When sailing downwind turn the stern through the wind. This is known as **gybing**.

逆风航行时，要把船从左舷行驶改为右舷行驶（或从右舷到左舷），就要使船头穿过风，这被称成**迎风转向**。顺风行驶时，使船尾穿过风，这被称为**顺风转向**。



Change from one tack to the other by tacking (left) or gybing (right).  
 通过迎风转向（左）和顺风转向（右）来改变航向。

## 2

# First Skills 初级技巧

### Stopping and starting 停船与起航

Sailing boats do not have brakes so to stop you have to make use of the wind. To do this, turn the boat onto a close reach and let out the sails until they flap. The boat will stop in the **lying-to** position with the sails out of your way on the leeward side.

帆船没有制动装置，只能依靠风力来停船。需把船转到后迎风行驶的角度，然后松帆直到帆开始拍打。船便会到飘帆停船的位置，帆位于下风侧。

It is also possible to stop by turning head to wind but the boat will not stay in this position for long. Use the lying-to position whenever you need to stop the boat temporarily. To start sailing again, pull in the sails and as the boat moves forwards, steer on to the new course.

使船顶风，也可以让船停下来，但是不会停很久。使用飘帆停船可以使你在任何时候暂时停船。要再次开始航行，就要收紧帆，随着船向前，就可以重新掌舵，继续航行了。



*Make sure that you are on a close reach then let the sails right out.  
确定你处于后迎风行驶的方位，然后松帆。*



*This keelboat is lying-to while the crew tidy up the gear before a race.  
比赛前，船员整理装备时，龙骨船船头顶风。*



To turn towards the wind (luff) steer onto the new course and:

向迎风方向转（迎风偏转）进入新的航向：

- pull in the sails  
收紧帆
- lower the centreboard  
放下稳向板
- move your weight to balance the boat  
利用身体的重量平衡船体

### Turning the boat 转向

Although the rudder steers the boat, this is not the only control and it is important to adjust the sails, crew position and the centreboard as you turn.

掌舵并不是控制帆船航向的唯一方式。在转向时，调整船帆，改变船员的位置，调节稳向板都很重要。

Practice turning the boat and making adjustments to the controls as you turn towards and away from the wind.

通过转向迎风和转向背风，可以练习转向和对各项控制的调节。

To turn away from the wind (bear away) steer onto the new course and:

向背风方向转（顺风偏转）进入新的航向：

- let out the sails  
松帆
- raise the centreboard  
抬起稳向板
- move your weight to balance the boat  
利用身体的重量平衡船体

## The five essentials 五要素

There are five essential factors to sailing a boat efficiently. Whenever one factor changes, check the other four to make sure they are still correct.

有五个基本要素会影响船的高效行驶。无论哪个要素改变，都要检查其他四个要素，确保它们的状态是正确的。

- **Sail trim** – Constantly check that the sails are set properly by using the telltales or by slowly letting out the sails until they start to shake along the luff, then pulling them in again until the shaking just stops. This becomes second nature after a while.

**调帆** 时常利用气流线来检查帆的状态，或者是缓慢地松帆，直到它开始抖动。然后再紧帆，直到帆停止抖动。在反复地练习后，调帆技巧就会成为你的本能了。

- **Centreboard position** – The daggerboard or centreboard position needs to be adjusted according to the side force. The amount of side force, and hence the centreboard area, varies from maximum when closehauled to virtually zero when on a run. On a keelboat you cannot adjust the area.

**稳向板的位置** 根据横移力来调节中插板或者稳向板的位置。从迎风行驶转到顺风行驶，横移力会从最大减小到几乎为零，稳向板从完全放下到完全抬起。龙骨船无法调节龙骨。

- **Boat balance** – Most boats sail fastest when upright. This is achieved by the crew moving their weight to balance the boat. When sailing closehauled, the heeling force is large so the

helmsman and crew sit out to keep the boat upright. On a run, the heeling force is small as the crew moves to the opposite side of the boat to balance the helmsman's weight.

**船的左右** 大多数帆船在船体竖直时航行最快。这需要船员移动他们在船上的位置来保证船的平衡。迎风行驶时，侧倾力大，需要舵手和船员坐到船舷外侧，以保持船竖直。顺风航行时，侧倾力小，船员坐到舵手的对面即可保持船的平衡。

- **Boat trim** – Generally, the boat should be level fore-and-aft. Depending on the conditions, the helmsman and crew sit close together and avoid depressing the bow or stern excessively.

**船的前后** 一般来说，船头和船尾应处于同一水平线上。视情况而定，舵手和船员应该坐近一点，避免过分地压低船头或船尾。

- **Course** – Keep checking your course and the best route to your destination. If your target is to windward anywhere in the no-go zone, you will have to zig-zag upwind to get there.

**最佳航线** 时刻检查你的航线，确认你选择的是最佳航线。如果你的目的地在迎风方向禁区的某个地方，就要采取“之”字迎风路线航行到达。

### Top Tip 重要提示

The sails have a big turning effect so when you want to bear away let out the mainsail first. To luff up pull the mainsail in as you turn.

帆在转向时有很大的作用力。所以，如果你要顺风偏转，就要先松主帆。要迎风偏转，就先收紧主帆。



## 2

# Learning to Tack 学习迎风转向

## Basic Principles 基本原则

Tacking involved turning the boat so that the bow passes through the wind while the sails and the crew change sides. It requires good co-ordination between helmsman and crew: turning the boat, moving your weight to the new side, and trimming the sails. The basic principles apply to all boats but different equipment may require different techniques.

迎风转向涉及到船的偏转。船头穿过风时，帆和船员都要换到与之前相对的一侧。这一操作要求舵手和船员能够配合默契。转向时，船员换到船的另一侧，同时调节船帆。这些基本原则适用于所有的帆船，但是不同的装备采用的技术也不同。

The easiest way to learn is to tack from one beam reach to the other. To tack successfully, get the boat sailing fast before the tack and hold the tiller over until the turn is complete.

学习迎风转向最简单的方法是，从横风行驶转到其他航行角度。为了成功实现转向，在转向前，使船快速行驶，推舵，直到转向完成。



Step 1



Step 2



Step 3

## Tacking with a centre mainsheet 主帆索中置帆船的迎风转向

**Step 1** Look over your shoulder and check that the area is clear of other boats. Call "Ready about" to warn the crew. The crew also check that area is clear, uncleats the jib sheet and replies, "Ready". Call "Lee-oh" to tell the crew that the turn is starting.

**第一步** 仔细查看你的船周围，确认没有其他船只。发出“准备迎风转向”的指令，提醒船员准备。船员也要查看周围是否无障碍，确认后，解开卡住的前帆索并回应“准备就绪”。然后舵手喊“开始转向”，告诉船员开始转向。

**Step 2** Ease the tiller away from you, the boom will start to move into the boat. As the sail crosses the boat, hold the end of the tiller extension ahead of you and move across the boat, facing forward. Ease the sheet a little. Keep looking forward and hold the tiller over until the sail starts to fill on the other side.

**第二步** 缓慢地推舵，帆杆会移向船内。随着帆换到船的另一侧，握好副舵柄尾部，置于你的前面，坐到船的另一侧，注意面朝前方。稍稍松一点缭绳。动作过程中，始终保持看着前方，推舵直到帆开始在另一侧受风。

**Step 3** Turn to sit down on the new side, holding the extension behind your back.

**第三步** 随着你坐到船的另一侧，将副舵柄置于身后。

**Step 4** Once the boat is on course, straighten the tiller, bring the hand holding the mainsheet to the tiller hand and swap hands on the sheet and extension. Trim the sails as necessary. Tidy up the sheet falls.

**第四步** 一旦船处于正确航向，就使舵柄回正，然后交换控制绳索和副舵柄的双手。必要的时候调一下帆。最后，整理缭绳。

## Tacking with an aft mainsheet 主帆索后置帆船的迎风转向

Tacking a boat with an aft mainsheet is slightly different: change hands on the mainsheet and tiller extension before the tack, and cross the boat facing the stern. To do this:

主帆索后置帆船的迎风转向有稍微有点不同，在转向前交换控制主帆索和副舵柄的双手，然后坐到船的另一侧，面朝船尾。步骤如下：

**Step 1** look over your shoulder and check that the area is clear of other boats. Call "Ready about" then change hands on the tiller extension and the mainsheet. Hold the extension in the new hand and ease the tiller away, calling "Lee-oh".

**第一步** 查看你的周围，确认没有其他船只。发出“准备迎风转向”的指令，然后交换控制副舵柄和主帆索的手。换手后，缓慢推舵，同时喊出“开始转向”的指令。

**Step 2** Put your front foot across the boat and pivot to move into the middle of the boat facing aft.

**第二步** 让前面的脚跨过船，然后移动到船中央，注意面朝船尾。

**Step 3** As the boom passes over your head turn to sit down on the new side and straighten the tiller as the sail fills. Trim the sails. Tidy up the sheet falls.

**第三步** 随着帆杆从你头上转过，坐到船的另一侧。随着船帆鼓满，船舵回正。调帆。最后，整理缆绳。

## The crew's role 船员的职责

The crew's job during the tack is to check for obstructions and to move across the boat while setting the jib on the new side.

在迎风转向过程中，船员的职责是查看周围是否有障碍物，在将前帆换到另一侧的同时，自己也坐到船的另一侧。

**Step 1** When the helmsman calls "Ready about", check that the area is clear, uncleat the jib sheet and reply "Ready".

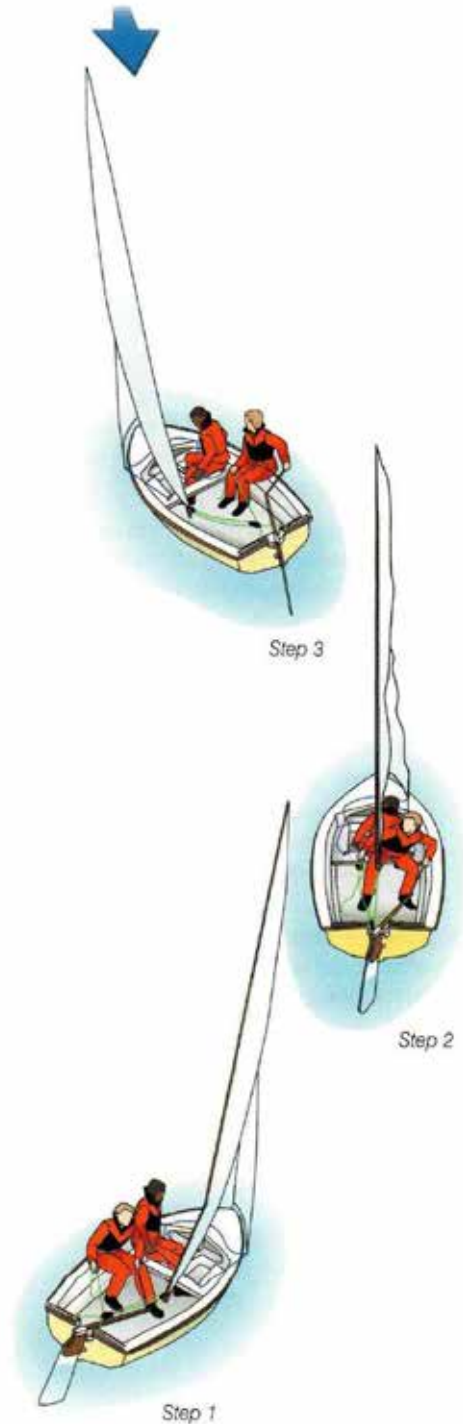
**第一步** 当舵手发出“准备迎风转向”的指令时，船员要查看周围环境，确认周围环境正常后，解开卡住的前帆索，并回应“准备就绪”。

**Step 2** Aim to be in the middle of the boat at the same time as the boom. As the boat turns and the jib starts to flap let go of the old jib sheet and pick up the new one.

**第二步** 船员要能和帆杆同时到达船中央。随着船的转向，前帆开始拍打，松开握住的前帆索，拉另一侧的前帆索。

**Step 3** When the jib has blown across to the new side, pull in the sheet to trim the jib for the new course and balance the boat.

**第三步** 当前帆被吹到船的另一侧时，收紧前帆索调节前帆，使船平衡，继续航行。



### Top Tip 重要提示

When tacking or gybing a centre mainsheet boat face **forward** and change hands **after** the tack.

In an aft mainsheet boat change hands first and face aft.

在迎风转向或顺风转向时，对于主帆索中置帆船，要面朝**前方**，在**转向后**交换双手。对于主帆索后置帆船，要先交换双手，而且要面朝船尾。

## 2

# Learning to Tack 学习迎风转向

## Tacking a catamaran 双体船的迎风转向

Tacking a catamaran requires a slightly different technique. A catamaran's light weight and wide beam causes the boat to stop quickly when it comes head to wind in the middle of the tack. To prevent this, make sure the boat is sailing fast on a closehauled course before the tack.

双体船迎风转向的技巧有点不同。由于双体船船体轻，横梁宽，使得船在转向中，顶风时，容易迅速停止。为了防止这种情况，要确保在转向前，船处于迎风航行的角度，且航行速度够快。

## The helmsman's role 舵手的职责

The preparatory checks and commands to the crew are the same as in the single-hull dinghy:

与单体小帆船一样，双体船也需要检查周围情况，向船员下达指令。

**Step 1** To start the tack, push the tiller extension to turn the rudders to an angle of about  $45^\circ$ . At the same time, sheet in the mainsail tightly to help the boat turn into the wind.

**第一步** 开始转向时，推副舵柄，使舵大约转  $45^\circ$ 。同时，收紧主帆，使船转向迎风。

**Step 2** Move into the middle and kneel on the trampoline, facing aft. As the mainsheet traveller moves into the centre, rotate the tiller extension aft behind the mainsheet. Pass it to the other side and change hands on the mainsheet and extension.

**第二步** 船员移到船中央，跪在蹦床上，面朝船尾。随着主帆索滑轮滑到中间，使副舵柄向船尾旋转，置于主帆索之后。将副舵柄转到另一侧，交换控制主帆索和副舵柄的手。

**Step 3** As soon as the boat passes head to wind, ease the mainsheet a little. Bear away slightly and sheet in until the boat picks up speed, then luff back to closehauled.

**第三步** 等船一转过顶风，就松一点主帆索。稍微往下风方向转一点，收紧缆绳，直到船提速，然后转向上风，迎风行驶。

## The crew's role 船员的职责

When the boat turns head to wind, allow the jib to back a little (**backing the jib**). This will help the boat turn through the wind without stopping. As the mainsail fills, release the windward sheet and pull in the sail on the leeward side. Move across the boat to the new windward side.

船转向顶风时，让前帆反受风一点（**前帆反受风**）。这样可以避免船在转向的过程中，穿过风的时候停下。随着主帆鼓满，松开迎风侧绳索，收紧背风侧的帆。船员换到迎风侧。



Step 1



Step 2



Step 3

### Top Tip 重要提示

In a boat with a jib, the crew can help recover from in-irons by pulling the jib sheet on the side opposite the boom – called backing the jib.

在使前帆航行的船上，船员可以通过收紧帆杆对侧的前帆索，使船从运转不灵的状况下恢复。这一方法被称为前帆反受风。

## Tacking a singlehanded dinghy 单人小帆船的迎风转向

Good timing and smooth movements are the key to tacking a singlehanded dinghy. Most have a centre mainsheet arrangement, so you tack facing forwards. Being small and light singlehanded dinghies turn quickly. 好的时机和平稳的操作是单人小帆船迎风转向的关键。大多数小帆船的主帆索置于中央，所以在转向时，要面朝前方。单人小帆船小巧轻便，所以转得很快。

At first, aim to tack fairly slowly until you get used to the routine. 刚开始练习迎风转向要慢慢来，直到你完全掌握整个操作步骤。

**Step 1** Check the area is clear, push the tiller gently away, ease the mainsheet as the boat turns head to wind to give yourself a little time. Don't move across the boat until the boom approaches the centreline, with the boat heeled slightly towards you.

**第一步** 检查周围环境，确认清晰无障碍后，轻轻推舵。随着船转向顶风，松主帆索，给自己一点时间为转向做好准备。等到帆杆靠近中央线，船稍微朝向你的方向倾斜时，才开始移动到船的另一侧。



Step 1



Step 2



Step 3

**Step 2** The boom is often low so duck to get under it as you cross the boat. Move across quickly and get your weight onto the new windward side, centralise the tiller as the boat completes the tack.

**第二步** 帆船帆杆位置普遍较低，所以在从帆杆下钻到船的另一侧时，要注意压低自己的身体。快速地穿过，然后坐到另一侧。完成转向后，将舵柄回正。

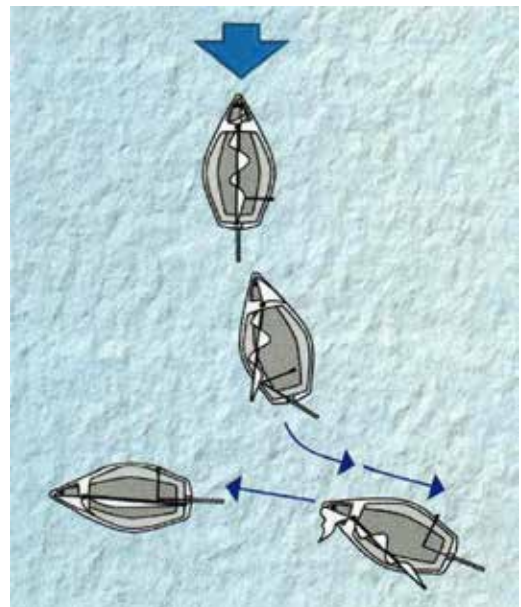
**Step 3** Sit out to balance the boat, and pull mainsheet back in as the boat comes upright. Change hands on mainsheet and tiller extension after the tack then sheet in the mainsheet and resume a closehauled course. Keep the sheet falls tidy.

**第三步** 坐在船舷外侧，保持船的平衡。当船恢复竖直状态时，收紧主帆索。转向后，交换控制主帆索和操纵副舵柄的手，然后收紧主帆索，重新开始迎风航行。最后，整理绳索，要始终保持绳索的安放有条不紊。

## In-irons 帆船转动不灵

When a boat stops head to wind, usually during a failed tack, it is **in-irons**. The rudder has no effect because the boat is not moving through the water. To recover from this situation push the tiller away from you and push the boom away to back the mainsail. The boat will move backwards and turn away from the wind. Now pull on the tiller and pull on the mainsheet to get the boat sailing again.

迎风转向失败，通常是由于船在转向的过程中，在顶风时停止，这种情况称为**转动不灵**。这个时候，船在水中停止，舵失去效用。为了从这种状况中恢复，推舵，并推动帆杆，使主帆反受风。船会向后移，然后转到背风方向。接着拉舵，收紧主帆索，船就恢复航行了。



If you get stuck in-irons remember the solution: PUSH PUSH then PULL PULL. 如果你陷入帆船转动不灵的状况，记住这个小口诀：**推，推，然后拉，拉。**



## 2

# Learning to Gybe 学习顺风转向

## Basic principles 基本原则

Gybing takes the boat from one tack to the other when sailing downwind by turning the stern through the wind. During a gybe, the sails stay full throughout. Gybing happens more quickly than tacking. 顺风航行时，使船尾穿过风，从而顺风转向使船换到另一侧航行。顺风转向过程中，帆处于完全鼓满的状态。而且，顺风转向要比迎风转向更快。



Step 1



Step 2



Step 3



Step 4

## Centre mainsheet gybing 主帆索中置帆船的顺风转向

Always face forward when gybing a centre mainsheet boat. 使用主帆索中置的帆船顺风转向时，要始终保持面朝前方。

**Step 1** Bear away until the jib hangs limply behind the mainsail, then luff up to a training run. This is the best starting point when you are learning to gybe. Check the area is clear and pull the boom off the leeward shroud. Check the centreboard is three-quarters up. Call "**Stand by to gybe**". Swing the tiller extension round to the leeward side, place your aft foot across the boat, moving to the middle.

**第一步** 顺风偏转，直到前帆松弛地下垂，位于主帆之后，然后迎风偏转，使船顺风航行。这是学习顺风转向最好的航行角度。确保周围环境良好，然后拉帆杆，使其远离下风侧侧支索。确保稳向板上抬起四分之三，然后发出“**准备顺风转向**”的指令。将副舵柄转向下风侧，先让你的后脚跨过船，然后移向船中央。

**Step 2** Call "**Gybe-oh**" to warn the crew, then push the tiller to windward. Watch the leech of the mainsail just above the boom; when it starts to curl, the boat is on the point of gybing. Be ready to duck under the boom and pull on the mainsheet falls to start the boom swinging across. As the boom crosses the centreline smoothly centralise the tiller to stop the turn.

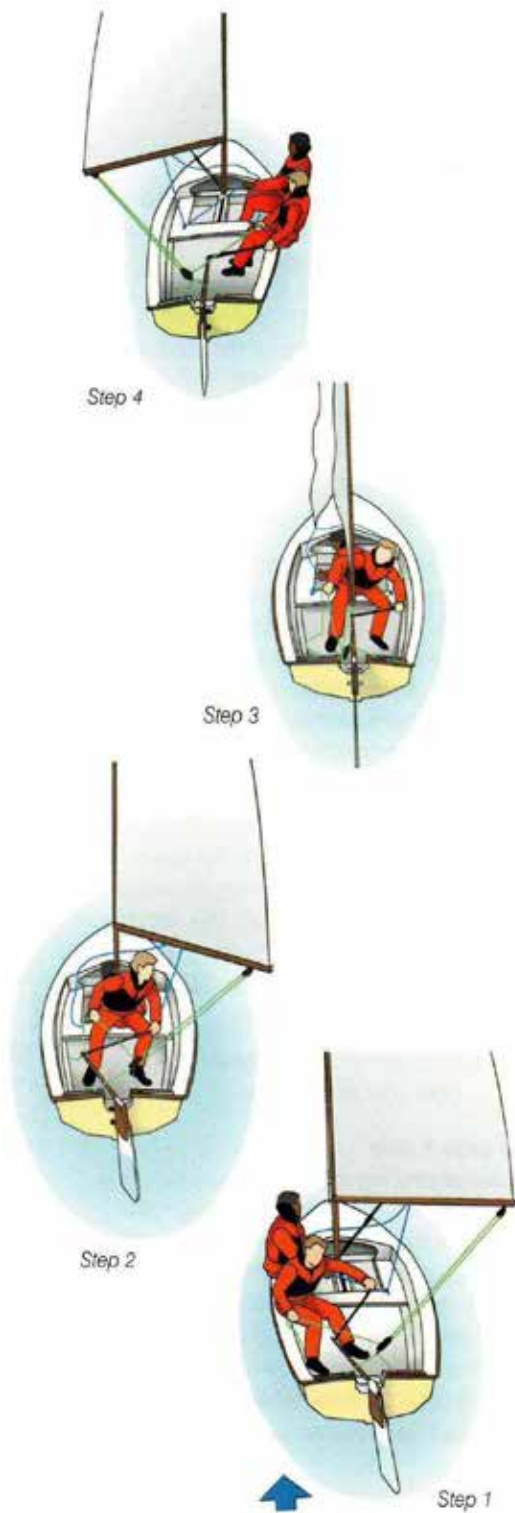
**第二步** 发出“**开始转向**”的口令，然后将舵柄推向迎风。观察位于帆杆之上的主帆帆后缘。当它开始翻卷时，船就开始顺风转向了。准备压低身体，从帆杆下钻过，然后拉主帆索，使帆杆转到另一侧。随着帆杆平滑地转过中央线，使舵柄回正，停止转向。

**Step 3** Move smartly across and sit down on the new side, steering with the extension held behind your back.

**第三步** 灵敏地换到船的另一侧坐下，握住副舵柄，将其置于你的背后。

**Step 4** Change hands on the extension and mainsheet to finish the gybe. Trim the sails as necessary. Tidy sheet falls.

**第四步** 交换操纵船舵和主帆索的双手，这样就完成了顺风转向。必要时调节船帆。注意整理绳索。



## Aft mainsheet gybing 主帆索后置帆船的顺风转向

Gybing with an aft mainsheet is slightly different. As with tacking, change hands on the mainsheet and tiller extension before the gybe and cross the boat facing aft.

主帆索后置帆船的顺风转向稍有不同。和迎风转向一样，在顺风转向前，交换操纵主帆索和副舵柄的双手，然后跨到船的另一侧坐下，面朝船尾。

**Step 1** Do the pre-gybe checks, including checking the area is clear and warn the crew you are about to gybe by calling "Stand by to Gybe". Change hands on the mainsheet and extension. Call "Gybe-oh" and push the tiller to windward to start the turn.

**第一步** 顺风转向前的准备工作，包括检查周围水域，确保没有其他障碍物，发出“准备顺风转向”的指令提醒船员。交换操纵主帆索和副舵柄的双手。发出“开始转向”的指令，然后将舵推向迎风侧，开始转向。

**Step 2** Move to the middle of the boat, facing aft. Be ready to duck to avoid the boom. Watch the leech of the mainsail just above the boom; when it starts to curl, the boat is on the point of gybing. Give a tug on the mainsheet to start the boom moving.

**第二步** 移到船中央，面朝船尾。准备压低身体，钻过帆杆。注意不要碰到帆杆。观察位于帆杆之上的主帆帆后缘，当它开始翻卷时，船就开始顺风转向了。用力拉主帆索，从而转动帆杆。

**Step 3** Centralise the tiller to stop the boat turning as the boom crosses the centreline.

**第三步** 当帆杆转过船中心线时，使舵柄回正，停止转向。

**Step 4** Sit down on the new side and trim the sails. Tidy sheet falls.

**第四步** 坐到船的另一侧，调帆，整理缭绳。

## The crew's role 船员的职责

The crew's main job during a gybe is to balance the boat while sheeting the jib to the new side. Before the gybe, check for obstructions and check the centreboard position. When the jib blows to the new side, release the old sheet and pull in the new leeward one. As in tacking, the crew should be in the middle of the boat as the boom swings across and be ready to balance the boat after the turn.

船员在顺风转向过程中的主要职责是，当前帆换到另一侧时，注意平衡船体。在顺风转向前，检查周围是否有障碍物，检查稳向板的位置。当前帆被风吹到船的另一侧时，松开夹住的前帆索，收紧下风侧的前帆索。在转向过程中，当帆杆向船的另一侧移动时，船员要在船中央，并准备好转向后，坐到船的另一侧平衡船体。

### Top Tip 重要提示

Make sure that the boat is upright before the gybe. If it heels to leeward it will be much harder to gybe as the boat will try to turn the wrong way.

确保船体在顺风转向前是竖直的。如果船体倾向下风，转向会变得十分困难。因为在这种情况下，船会转向错误的方向。

## 2

# Learning to Gybe 学习顺风转向

## Gybing a catamaran 双体船的顺风转向

It is usually easier to gybe a catamaran than a single-hull dinghy because its greater stability means that there is less chance of a capsizes. However, its extra speed means that you need plenty of room to manoeuvre and the boat should be under full control before you start the gybe.

由于双体船的稳定性更好，所以顺风转向要比单人小帆船更简单，翻船的几率也 smaller。但是，双体船的速度快，意味着你需要更大的操纵空间，并且在船开始顺风转向前，要确保船完全在你的控制之下。



Step 1



Step 2



Step 3



Step 4

### The helmsman's role 舵手的职责

The checks and warnings for the crew are the same as in a single-hull dinghy. If your catamaran has centreboards or daggerboards they should be fully raised.

转向前的检查工作和向船员下达指令与单人小帆船一样。如果船上配有稳向板或中插板，一定要完全抬起。

**Step 1** Start the gybe by pulling the tiller extension to turn the rudders.  
**第一步** 顺风转向开始，推动副舵柄，开始转舵。

**Step 2** Move to the middle of the boat as the boat turns onto a run and kneel, facing aft. Keep the rudders over to continue the turn and rotate the tiller extension aft. Swing the tiller extension behind the mainsheet to the other side and change hands on the mainsheet and extension.

**第二步** 当船转向正顺行驶时，跪到船中央，面朝船尾。保持推舵，继续转向，然后将舵柄转向船尾。转动副舵柄到主帆索后侧，然后转到船的另一侧，之后交换控制主帆索和操纵船舵的手。

**Step 3** With your new mainsheet hand, grasp the mainsheet falls. As the sail swings across, briefly check the mainsheet's movement to leeward. This will cause the sail's full-length battens to 'pop' across on the new tack. Straighten the rudders.

**第三步** 交换双手后，拉滑轮与滑轮之间的主帆索。随着帆的转动，快速检查一下主帆索向下风侧的移动。接着你会听到帆骨“嘭”的声音，帆就转到另一侧了。然后将船舵回正。

**Step 4** Sit down on the windward hull and steer onto your new course.

**第四步** 坐到船的迎风侧，然后沿着新航向继续航行。

### The crew's role 船员的职责

A catamaran's stability makes it easy for the crew to balance the boat. Before the gybe, check that the route is clear. If your boat has centreboards or daggerboards make sure that they are raised. Respond with "Ready", uncleat the old jib sheet and pick up the new one. When the jib crosses to the new side, release the jib sheet, pull in the other one, and move to the new windward side.

由于双体船稳定性良好，船员在平衡船体时会很简单。在顺风转向前，确保航线上没有障碍物。如果你的船上配有稳向板或中插板，确保它们完全抬起。然后回复“准备就绪”，解开卡住的前帆索，拿起另一侧的前帆索。当前帆转到另一侧时，松开这一侧的前帆索，然后拉紧另一侧前帆索，同时船员坐到另一侧。

## Gybing a singlehanded dinghy 单人小帆船的顺风转向

In a singlehanded dinghy you have sole responsibility for balancing the boat. Plan your gybe in advance. The end of the low boom may hit the water when it swings across which could result in a capsize, so ease the kicking strap a little before the gybe, to let the boom lift and reduce the risk. Also, pull the daggerboard nearly all the way up, but not so far that the top could be snagged by the kicking strap during the gybe. (If this happens a capsize is certain).

在操纵单人小帆船时，你唯一的职责就是平衡船体。要提前计划好顺风转向。当帆杆转动时，较低的一端可能会碰触到水面，从而翻船。所以在顺风转向前，适当松一点斜拉器，让帆杆上移一点，从而减小翻船的风险。你也可以把稳向板几乎全部抬起，但是，也不要抬得太高，在转向时，稳向板顶端可能会绊住斜拉器（如果发生这种情况，翻船是必然的）。

The faster you go the easier it is to gybe, so wait until the boat is moving well. When sailing in waves, this is when the boat accelerates down a wave face.

船速越快，顺风转向越容易。所以，等到船航行够快时进行顺风转向。在有浪时，船在下浪时，速度最快，这是转向的最佳时机。



Step 1



Step 2



Step 3



Step 4

Most singlehanded dinghies have a centre mainsheet so gybe facing forward.

大多数单人小帆船的主帆索置于中央，所以在顺风转向时要面朝前方。

**Step 1** Steer onto a run and swing the end of the tiller extension round to point across the boat, then push the tiller to windward.

**第一步** 在正顺航行驶时，转动副船舵末端使之跨过船，然后将舵柄推向迎风。

**Step 2** Move into the middle of the boat ready to gybe.

**第二步** 移动到船中央，准备顺风转向。

**Step 3** Watch the leech and when it curls tug on the mainsheet to help the boom across.

**第三步** 观察帆后缘，当它开始翻卷时，用力拉主帆索，使帆杆转动到另一侧。

**Step 4** Move to the new side and change hands.

**第四步** 坐到船的另一侧，并交换双手。

## Developing wind awareness 建立风向意识

It is much easier to learn key manoeuvres if you develop a good awareness of wind direction. The wind is constantly changing so check its direction regularly. While flags ashore, or smoke from chimneys give a general idea of wind direction, most dinghies have a wind indicator at the masthead. String tied to the shrouds will give you an eye level guide. The best indicator is the feel of wind on your face and neck and the set of the sails. With a little practise, you will soon develop an automatic awareness of wind direction.

建立良好的风向意识，能更好地掌握关键的操纵技巧。风向是不断变化的，所以要定时进行检查。岸上飘动的旗子，或是从烟囱里冒出来的烟，都能够让你大致了解风向。不过，大多数小帆船的桅杆顶端都有一个风向标。在侧支索上系一根绳子，与你的视线差不多高，也能指示风向。其实最好的风向指示是你的脸部和颈部对风的感受，以及帆的状态。稍加练习，你就可以建立起自动感知风向的意识了。

## 2

# Knots and Ropework 绳结技巧

### Introduction 简介

Ropes are an essential part of a sailing boat and whilst many racing boats have quite complex control systems you only need to know a few knots to cope with most needs.

绳子是帆船上必不可少的一部分。虽然很多赛船的控制系统很复杂，但是，你只需要掌握少数绳结就能满足大多数需要了。

Modern ropes are incredibly strong and light, and come in a wide range of sizes. Use low stretch rope for sheets, halyards and control lines. Keep the length just long enough for the job so rope doesn't tangle.

现代的绳索相当结实轻巧，而且类型多种多样。低弹力绳可做缭绳，升降索和控制索。绳索的长度满足需要即可，不需要过长，这样绳索就不容易打结。

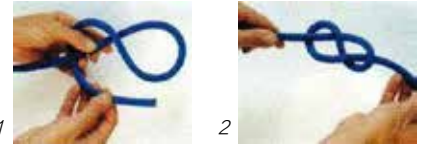


A simple passing turn (left) and a round turn (right).  
将绳子绕标杆一次（左图），然后再绕一次（右图）。

### Figure-of-eight 八字结

The figure-of-eight is used to put a stopper knot in the end of rope to stop it running out through a fairlead or turning block.

八字结用在绳子的末尾作为绳端结，以防止绳子从导缆孔或转动块上脱落。



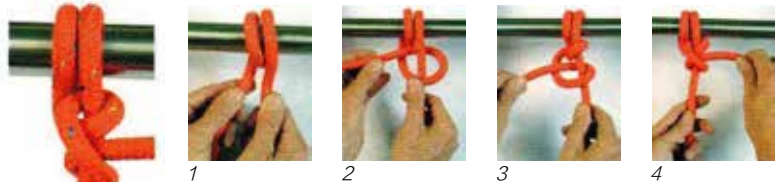
(1) Cross the end over then under the standing part and (2) pass it through the loop made by the crossing turn. Leave a long tail for security and pull to tighten.

(1) 将绳端先行交叉，然后将绳索的一端从主绳下面穿过 (2) 将绳头穿过交叉所形成的绳圈，尾端要留长一点，拉紧，即完成。

### Round turn & two half hitches 圆结和双半结 (系木结)

The round turn and two half hitches is a secure knot that is used to tie to a post or a ring.

系木结是一种安全结，用来系在标杆或者环形物上。



(1) Make a turn around the post or through the ring. (2) Pass the end around the standing part and over itself, to form a half hitch. (3) Pass the end around the standing part and over itself again to form the second half hitch. (4) Pull the end and the standing part to tighten the knot.

(1) 绕标杆或环形物一圈。(2) 然后再将绳索的一端绕主绳一圈，形成一个半结。(3) 然后再绕一次，形成第二个半结。(4) 最后拉紧末端和主绳。

### Bowline 单套结

The bowline is used to make a loop in a rope or to tie to a ring or post. It is a secure knot but cannot be untied when under load.

单套结用于在绳索上做成一个环，也用于系在环形物或标杆上。单套结是一种安全绳结，但是，在有负载的情况下无法解开。



(1) Make a crossing turn and hold both parts of the rope with your fingers. (2) Roll your wrist over to form a crossing turn around your hand and the end. (3) Pass the end behind the standing part and back down through the crossing turn. (4) Pull the standing part and the doubled working end to tighten.

(1) 先将绳子交叉，形成一个绳圈，用手指控制住绳子的两边。(2) 转动你的手腕，绕着你的手和绳子另一端交叉。(3) 将绳末端从主绳的后面穿过，然后穿过绳圈。(4) 最后拉紧主绳和绳子末端。

## Clove hitch 双套结

A clove hitch can be used to tie a rope to a post or ring. It is quick to tie but a snatching load can undo it, so leave a long working end.

双套结用于把绳子系在标杆或者环形物上。双套结打起来很快捷，但是经常猛抓，猛拉会使绳结打开，所以尾端要留长一点。

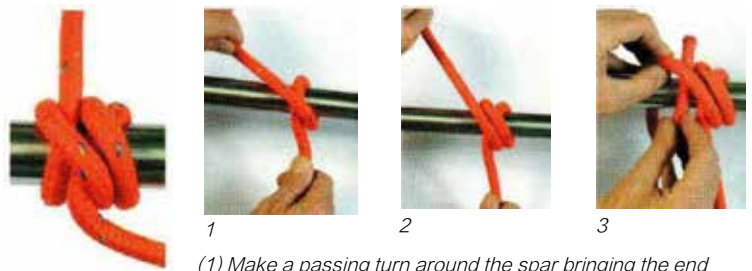


1  
2  
(1) Pass the end around the post and bring it over the standing part. (2) Make another turn and tuck the end under the second turn. Pull the working end and standing part to tighten.  
(1) 将绳子绕过标杆，然后将绳子的一端从主绳上绕过。(2) 再绕一次，然后将末端穿过第二次绕标杆形成的绳圈。最后拉紧绳末端和主绳。

## Rolling hitch 轮结

The rolling hitch is more secure than the clove hitch and will not slide along another rope or a spar. It is useful when you need to take the load off another rope.

轮结比双套结更加安全牢靠，并且不会从另一根绳子或杆上滑落。当你需要给另一根绳子解负时，轮结十分有用。



1 2 3  
(1) Make a passing turn around the spar bringing the end up over the standing part. (2) Make another identical turn, crossing over the standing part again. (3) Cross over the standing part again and make a third turn, tucking the end under the turn. (4) Pull the end and the standing part. Put strain on the standing part only in the direction of the double turns in this case to the right.  
(1) 绳子绕在标杆上一圈，然后交叉。(2) 然后绕着标杆再绕一圈(3) 绕第三圈时，将绳子末端穿过形成的绳圈。(4) 拉紧绳子的末端和主绳。

## Using a cleat 系索羊角的操作步骤



1  
Take the rope to the back of the cleat and make a full turn around the cleat's base.  
使绳子从系索羊角的下端开始，绕羊角底座一整圈。



2  
Make two or three full figure-of-eight turns around the cleat.  
然后绕两个或者三个八字结。



3  
Finish by taking a full turn around the base of the cleat.  
最后绕系索羊角一整圈作为结尾。

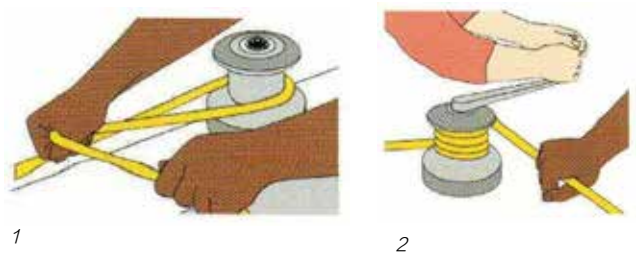
## Using winches 使用绞盘的操作步骤

Larger boats tend to use winches to help with the heavy loads on sheets and halyards.

大型船只倾向于借助绞盘来处理缆绳和升降索上负载很重的情况。

(1) Wrap the rope clockwise around the winch keeping your hands well away to avoid trapping your fingers between rope and drum. (2) Put three turns on the drum then insert the handle in the winch and pull on the tail (end) while winding the handle. With two people, one person winds while the other tails.

(1) 把绳子顺时针缠绕在绞盘上，并注意双手离的远一点，避免手指被夹在绳子和滚筒之间。(2) 使绳子在滚筒上绕三圈，然后将摇把插在绞盘上，一边转动摇把一边拉绳子。两人合作，一个人转动把手，另一个人拉绳子。



# 3

## Leaving and Returning to Shore 离岸和回岸

### Onshore and offshore winds 近岸风和离岸风

Sailing to and from the shore is straightforward if you understand the importance of wind direction. The wind direction dictates the type of shore situation you will encounter. When the wind is blowing along the shore, you can easily sail away and return on a beam reach. More often the wind blows off the shore (**windward shore**) or onto the shore (**lee shore**).

如果你掌握了风向，驶向海岸和驶离海岸就很容易了。风向决定着你将驶入的海岸类型。当风沿着海岸吹时，横风行驶能让你很容易地驶离或者返回海岸。大多时候，风是远离海岸（**向风海岸**）或者是吹向海岸（**背风海岸**）。

### Offshore winds 离岸风

It is often deceptively calm on a windward shore but there may be stronger winds offshore. Be cautious in case you start with too much sail. Launch the boat with the sails hoisted before sailing away on a broad reach or run.

向风海岸通常看上去很平静，但是事实上可能会有很大的离岸风。所以，一定要小心，以防你在开始航行时，帆展开过大。升帆，下水，然后侧顺风行驶或正顺行驶离开海岸。

To return, sail to windward to reach the shore. As the water gets shallower be ready to raise the centreboard and rudder to keep them clear of the bottom. Turn into the wind and let out the sails to stop. Step over the side when the water is waist deep or less. Hold the boat by the bow, lower the sails, and take the boat out of the water.

返回时，迎风行驶，以到达海岸。随着水越来越浅，准备抬起稳向板和船舵，以免碰到地面。将船转向迎风，松帆，让船停下。当水差不多齐腰或更浅时，从船的一侧下来。抓住船头，降帆，然后把船从水里拉出来。



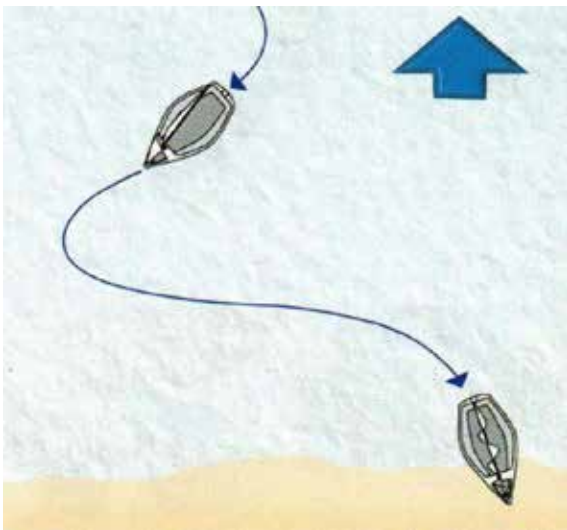
Offshore wind 离岸风



Onshore wind 向岸风



To leave a windward shore push the bow away and sheet in the jib as you climb aboard.  
要离开向风海岸，将船头推离岸边，爬上船，收紧前帆。



Approach a shallow shoreline on a close reach lifting the centreboard as you approach.  
后迎风航行，接近水浅的海岸线，并抬起稳向板。



Returning to a windward shore stop the boat and step over the side into shallow water.  
返回向风岸，停船，从水浅的地方下船。

## Onshore winds 向岸风

Waves break on a lee shore in moderate or strong winds and make launching harder and recovery more difficult. If the shore line shelves steeply it may be unsafe to launch, so find a better launching site.

在中度或者强风中，海浪击打背风海岸。这会使船下水变得非常困难，回岸也更加不易。如果海岸线十分陡峭的话，下水会很不安全，所以一定要找一个合适的下水点。

Before launching into deep water, turn the boat head to wind and hoist the jib. Then launch, hoisting the mainsail once afloat. In a singlehanded dinghy, rig ashore and get a friend to help you launch.

在深水区下水前，使船顶风，升起前帆。然后下水，一旦船漂浮在水上，立刻升起主帆。如果你驾驶的是单人小帆船，在岸上装好船后，让一个朋友帮助你下水。

To leave a lee shore push off, climb aboard quickly and steer onto a close reach until you reach water deep enough to fully lower the centreboard and rudder. Then sail closehauled to get away from the shore.

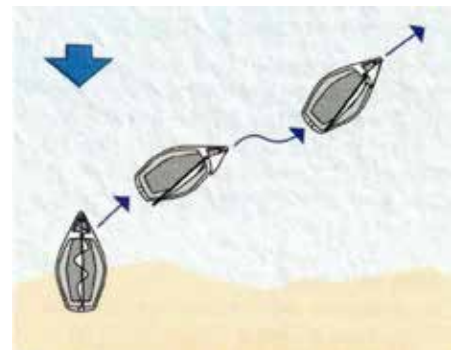
要离开背风海岸，先把船推下水，快速爬上船。然后后迎风航行，直到水深足够深后，放下稳向板和舵。然后迎风航行，驶离海岸。

To return to a lee shore, turn head to wind just offshore, lower the mainsail, and sail in using the jib alone. In a singlehanded dinghy, sail in and, if the bottom is gently shelving, turn head to wind near the shore and step out.

要返回背风海岸，船一靠近海岸，就使船头顶风，然后降下主帆，仅用前帆驶向岸边。在驾驶单人小帆船的时候，如果地面微微倾斜，那么在靠近海岸的时候，把船头转向顶风，然后从船上下来。

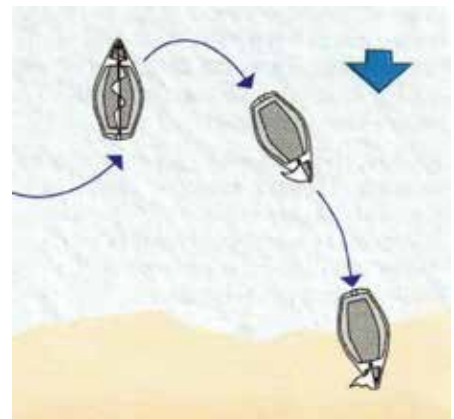
On a steeply shelving shore, sail straight in, luff sharply to de-power the sail and jump out on the windward side when the water is shallow enough. Then get the boat ashore quickly.

如果海岸比较倾斜，在最后靠近岸边时，迎风急转，减弱帆力，然后到水足够浅的地方后，在迎风侧下船。最后快速把船拖上岸。



To sail off from a lee shore steer on a close reach until the water is deep enough to lower the centreboard fully.

要离开背风岸，后迎风行驶，直到水深足够，将稳向板完全放下。



To return to a lee shore turn head to wind and lower the mainsail before sailing in on a run using the jib alone.

要回到背风岸，使船顶风，降主帆。仅用前帆航行靠近海岸，然后顺风行驶回岸。

## Under tow 拖船

To get to and from the sailing area, boats are often towed one behind the other. Lower the sails when being towed, pull the centreboard right up and remove the rudder. Sit near the stern to lift the bow. The last boat in the tow keeps its rudder fitted and steers to follow the boat directly ahead. In a singlehanded dinghy, remove the boom to allow the mainsail to flap freely or roll the sail up.

拖船进入或者离开航海区域，通常将一个接一个连接在一起。在拖船的时候，降帆，抬起稳向板，并卸下船舵。坐在船尾附近，使船头上翘。在最后面的船，舵不拆，用来掌舵，跟着前面的船。如果拖的是单人小帆船，要卸下帆杆，完全松掉主帆或卷起主帆。



The last boat is steered to follow the boat ahead.  
水手在最后面的船掌舵跟着前面的船。



# 3 Moorings and Pontoons 系泊和浮码头

## Picking up a mooring 选择系泊处

In many locations **moorings** are used to provide temporary or permanent berths for keelboats and larger dinghies. A mooring is normally a floating buoy tethered to an anchor on the bottom.

在很多地方，**系泊处**是用来为龙骨船或者是大型帆船提供临时或者固定泊位的。一个泊位，通常是将一个漂浮的浮标拴在海岸底部的一个锚上。

Head for a mooring on a close reach, letting out the sails to slow the boat down as you approach. Turn almost head to wind, stopping alongside the buoy and secure the boat to the buoy. Raise the centreboard, lower the sails and remove the rudder. See diagram A. 迎风航行使船头朝向泊位，在靠近泊位时，松帆，降低船速。调转船头几乎顶风，停在浮标旁边，然后把船拴到浮标上。抬起稳向板，降帆，然后卸下船舵。参见图 A。

In tidal waters, take account of the direction of the current. If wind and tide are in the same direction again, follow diagram A. If wind and tide are opposed, follow diagram B; drop the mainsail and approach under jib alone. Note that you must have enough speed under jib to get over the tide.

在潮汐水域，要考虑到涌流的方向。如果风向和涌流的方向是一样的，靠泊可参照图 A。如果风向和涌流方向相反，则参照图 B；降主帆，仅用前帆靠泊。注意在使用前帆行驶时，一定要有足够的速度才能驶过潮汐水域。



*In sheltered waters a dinghy can be left on a mooring, but the rudder should be removed.  
在隐蔽的水域，可以将小帆船系泊，但是要确保把舵卸下。*

## Using an engine 引擎的使用

Some dinghies and small keelboats have the facility to use an engine. This is usually an outboard that clamps onto a bracket on the transom when needed.

一些小帆船和小型龙骨船有配有引擎设备。有需要时，通常是将一个引擎外挂，固定在艉板的支架上。

Outboard engines use petrol as fuel and since this is explosive it should be stored in a purpose-built fuel tank. The tank should be kept in a well ventilated locker when not in use, so that any fumes can escape.

帆船的外置引擎使用汽油作为燃料。由于汽油易爆炸，所以要储存在专用的燃料罐里。平时在不使用时，要存放在通风好的柜子里，使燃料的烟气溢出。

When using an outboard engine make sure that it is clamped tightly to its bracket. Check that it is not in gear before you start it and do not use an engine near swimmers or people stood in shallow water. Lower the sails when under power and pull up the centreboard.

在使用外置引擎时，一定要确保引擎紧紧地固定在支架上。在发动引擎前，检查引擎是否能够正常工作。在游泳者附近，或是靠近浅水区的人时，不要使用引擎。使用引擎时，需降帆，抬起稳向板。



*Having the facility to fit an outboard can expand the ways in which you can use your boat and add to your pleasure.  
配有引擎外置的设备，可以扩展你用船的方法，从而增加航行的乐趣。*

## Tying up to a pontoon 系浮码头

A floating **pontoon** can be convenient as a temporary parking place for a dinghy or a permanent home for a keelboat. When approaching a pontoon under sail, come in on a close reach, letting the sails out to slow down the final approach. There are two golden rules when approaching a pontoon:

浮码头的应用为停船提供了很多方便，它可以作为小帆船的临时泊位，或是龙骨船的固定泊位。在驶帆靠近浮码头时，迎风航行驶入，松帆，减速到达泊位。有两个停靠浮码头的黄金法则：

- Always control your speed to reduce the risk of collision and increase control.  
时刻注意调节船速，减小碰撞的危险，增强对船的控制。
- Plan an escape route so that if you find yourself sailing too fast in the final stages you can sail out and try again.  
计划一个脱险路线。以防最后阶段你航行的船速过快，可以通过脱险路线驶出，再重新驶入。

As you reach the pontoon, turn head to wind to stop. If this is not possible, approach under jib alone.

在靠近浮码头时，调转船头顶风，停船。如果不可行，就只用前帆航行。

Secure the boat quickly and lower the sails. Tie the bow and stern to the pontoon.

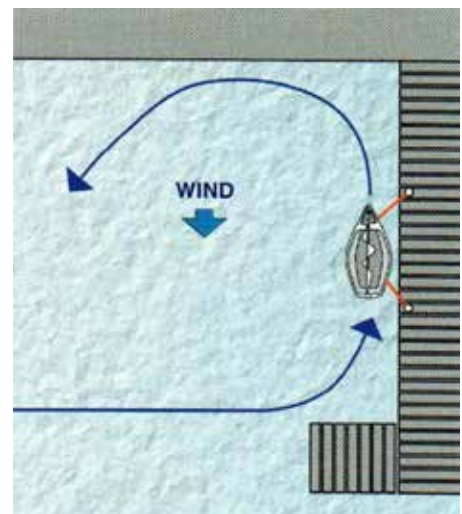
快速系船，降帆。把船头和船尾系在浮码头上。

To leave, hoist the sails, untie the boat then push the bow off and sail away.

离开时，升帆，解开系在浮码头上的绳索，将船推离码头，然后驶离。

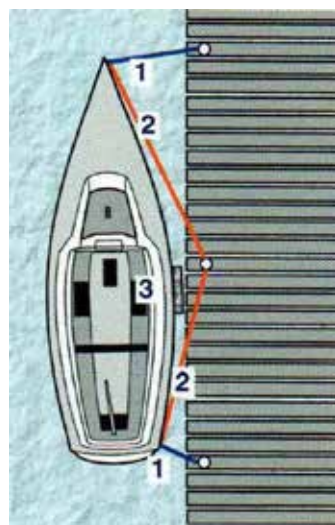
If you sail a keelboat, secure the boat alongside the pontoon using two sets of ropes. The ones from bow and stern, holding the boat close to the pontoon, are called **breast ropes** (1). The others are called **springs** (2) and they stop the boat moving fore and aft. Tie some fenders (3) at the widest part of the boat to stop it rubbing against the pontoon.

如果你驾驶的是龙骨船，使用两套绳子把船拴在浮码头旁。一套绳子，将船头和船尾固定在浮码头旁，被称为**船向系缆**（1）。另一套被称为**弹性绳**（2），用来防止船前后晃动。在船体最宽的地方系上**防碰垫**（3），防止船体与浮码头的摩擦碰撞。



*Sail in on a reach and aim to stop head to wind alongside the pontoon. Sail away by pushing off and turning to a reach.*

*横风驶入，最后使船头顶风，停靠在浮码头旁。推船离开，然后横风驶离。*



*Tie a keelboat to a pontoon using breast rope (1) and springs (2). Place fenders (3) to prevent damage. 用船向系缆 (1) 和弹簧绳 (2) 将龙骨船系在浮码头旁。碰垫 (3) 防止摩擦船体损伤。*

### Top Tip 重要提示

Don't leave your dinghy tied to a pontoon for long as the action of the waves can cause damage to the hull by banging it against the pontoon – always use a fender.

不要长时间地把小帆船拴在浮码头上，海浪冲击船体，与浮码头相撞，会损害船体。务必要使用防碰垫。

# 3

## Avoiding Other Boats 避碰

### Sailing sensibly 合理航行

Popular sailing areas can get very busy in the summer so it is important to understand the rules for avoiding collisions. They are called the International Regulations for Preventing Collisions At Sea. Your principle duty is to avoid hitting anything; as a beginner it is always better to slow or stop the boat by letting the sheets go and turning into the wind, rather than turning away from the wind which will increase momentum. If you were to hit something at speed it would cause considerably more damage than if the boat were going slowly. A good principle is to keep checking the other boat's course even when you have right of way. If the risk of collision increases, be prepared to take evasive action.

有些航海区域十分受欢迎，在夏天的时候航海的人特别多，所以了解避碰规则十分重要的。这些规则被称为国际海上避碰规则。基本原则就是，在航行的时候，避免一切碰撞。存在碰撞可能时，转向背风行驶会使船的动量增加，作为初学者，最安全的做法是松缆绳，调转船头迎风，减速航行或者是停船。万一发生碰撞，高速航行要比缓慢航行造成的损害大得多。一个十分重要的航海原则是，即使你有先行权，也要时刻注意其他船只的航线。当碰撞危险增加时，要时刻准备好避让。



### Under sail 使帆航行

'STARBOARD TACK HAS RIGHT OF WAY'

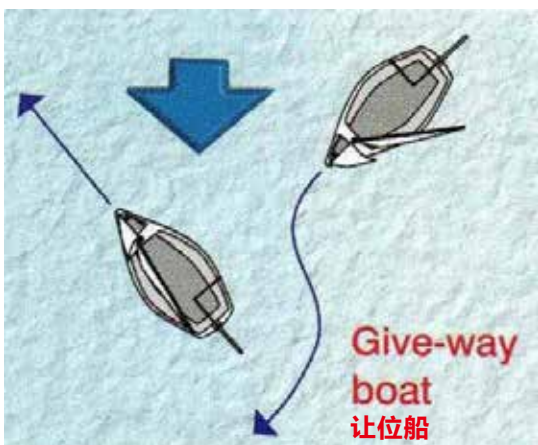
右舷行驶的船有先行权（左舷让右舷）

A sailing boat on port tack must keep clear of a boat on starboard tack. If you are on starboard tack, hold your course but be watchful in case the 'port tacker' has not seen you.

如果航行中两船相向而行，处于左舷行驶的船，一定要避让右舷行驶的船。如果你的船是右舷受风行驶，那么就继续沿着既定的航线行驶。但是一定要十分小心，以防左舷行驶的船没有注意到你。

Remember, you are on a starboard tack if the wind is coming from the right hand side of the boat.

记住，如果风来自船的右舷，那么你的船处于右舷行驶。



'WINDWARD BOAT KEEPS CLEAR'

上风行驶的船让行（上风让下风）

When boats are on the same tack, the boat to windward of the other keeps clear. Remember this if you are running towards a boat that is closehauled – you may have to keep clear.

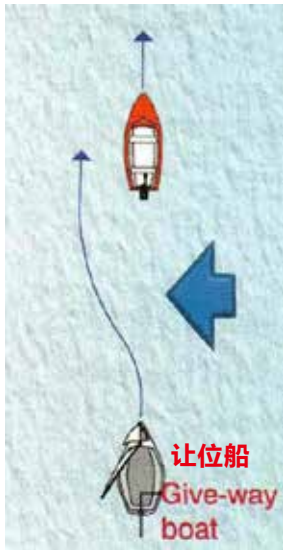
当两船在同舷受风时，上风行驶的船要避让下风行驶的船。记住，如果你的船正驶向一艘迎风航行的船，要注意避让。

'POWER GIVES WAY TO SAIL'

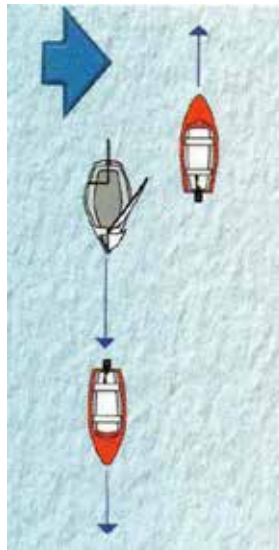
机动船要给帆船让行

But beware, it is unrealistic to expect large vessels to give way to a small sailing boat and in many cases it is your duty to give way, use your common sense and take early and clear avoiding action.

但是要意识到让大船给小船让行是很不现实的。在很多情况下，要依靠你的常识来判断是否需要让行，尽早地采取有效的避让措施，这是你在航行时应尽的义务。



'OVERTAKING BOAT KEEPS CLEAR'  
 超越船需让行  
 If you are overtaking another boat, you must keep clear, even if you are sailing past a power vessel.  
 如果你在超越另一船只, 要注意让行。即使你将超越一艘机动船。



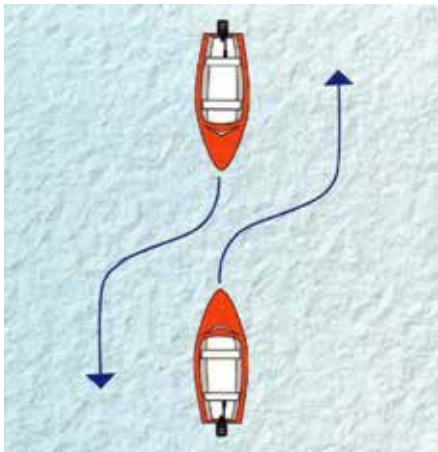
'DRIVE ON THE RIGHT'  
 靠右行驶  
 When sailing up or down a narrow channel always 'drive on the right' – whether under power or sail – and stay on the right hand side of the channel, if you cross the channel do so at right angles and give way to all boats following the channel.  
 不论是动力航行还是使帆航行, 在驶入或者驶出狭窄的通道时, 都要靠右行驶——保持在通道的右边。在横穿航道时, 要垂直于航道行驶, 并且注意给其他在航道内的船只让行。

## Under power 动力航行

When rowing, paddling or using the engine you are considered to be under power so be aware of your responsibilities. This applies even if the sails are hoisted.  
 在航行中, 无论你是否用帆, 只要你有划船或使用引擎都属于动力航行, 所以一定要明确你的责任。

'POWER BOATS MEETING HEAD-ON'  
 机动船相向而行

When two power boats meet head-on they must both turn to starboard so they pass port side to port side.  
 当两艘机动船相向而行时, 各自都应该转向右舷, 从对方的左舷驶出。



'POWER BOATS CROSSING'  
 机动船交叉相遇

When two power boats are crossing, the boat on the other's starboard side has right of way. The give way boat must alter course. Remember, "if you're on the right you're in the right".  
 当两艘机动船交叉相遇, 在他船右舷的船有先行权。让行船必须改变航向。记住, 如果你在右边, 你就有先行权。



## Top Tip 重要提示

Write Port Tack on the port side of your boom, and Starboard Tack on the starboard side. A glance will tell you which tack you are on.  
 在帆杆的左侧标记左舷, 在帆杆右侧标记右舷。以便在航行中, 迅速分辨你是处在右舷航行还是左舷航行。

# 3

## Capsize Recovery 翻船恢复（正船）



*The point of no return for this dinghy crew. They are about to capsize during a gybe – probably because the centreboard is too far down, and they did not move their weight to the new windward side quickly enough as the boom swung across.*  
对这个小帆船船员来说已经没有回转的余地了。他们马上就要翻船了，这种情况发生在顺风转向的过程中，很有可能是因为稳向板放得过低了。并且在帆杆转动时，他们没有及时地转移到迎风侧。

### Capsizing 翻船回正

Knowing how to deal with a capsize is an important part of learning to sail small boats. At a RYA recognised sailing school, you will be taught how to handle a capsize.

知道如何处理翻船，是学习驾驶小帆船很重要的一部分。在 RYA 认证的航海学校中，你会学习到处理翻船的各种方法。

Practice capsizing under controlled conditions. In this way you will learn the simple techniques for righting the boat and gain confidence for dealing with the real situation.

在可控的环境中练习翻船回正。这样你可以学到一些简单的正船技巧，从而增强你处理翻船的信心。

How often you have to recover from a capsize will depend on the type of boat you sail, your level of skill, and the conditions you sail in. Racers will tend to push the limits more frequently than cruisers.

练习翻船回正的频率取决于你使用的船型，你的处理水平，以及你航行的水域情况。相比一般的休闲用船，赛船会更加频繁地接近翻船的极限。

Once you have mastered a recovery technique that works well for your type of boat, a capsize will usually be little more than an inconvenience from which you can quickly recover.

一旦你掌握了正船的技巧，并且能够将其很好地运用到你所使用的船型，那么翻船就不会给你带来太多不便了，你完全可以用你所学的技巧快速正船。



**Top Tip** if you find yourself in the water under a sail just put your hand above your head to create an airspace and swim to the edge of the sail.

**重要提示** 如果你落入水中后，发现自己在帆下面，就将手伸过头顶，把帆往上推，以便呼吸，然后游到帆的边缘。

## Righting a two-person boat 双人船的正船方法

The most common type of capsize occurs when the boat heels too much and capsizes to leeward. This type of capsize is relatively slow and gentle. Your buoyancy aid will keep you afloat so relax.

由于船向背风面侧倾过度而引起的翻船是最常见的。这种情况发生的相对比较缓慢温和。救生衣会使你浮在水面上，所以不要担心。遵循以下正船步骤：



Step 1



Step 2



Step 3



Step 4



Step 5

**Step 1** As the boat falls onto its side, helmsman and crew lower themselves into the water between the hull and the sail. Both helmsman and crew work their way to the stern and check that rudder is secure in its fastenings and has not floated off.

**第一步** 随着船的倾斜，舵手和船员落入水中，在船体和帆之间。舵手和船员都要游到船尾，查看舵是否还在锁扣里，确保它没有脱落。

**Step 2** The helmsman takes the end of mainsheet as a safety line and swims round the hull to the centreboard. He checks it is fully down, if not the crew puts it down. (if the helmsman is very light, the crew may go to the centreboard.)

**第二步** 舵手抓住主帆索尾端作为安全线，然后绕着船体游到稳向板。检查稳向板是否完全放下，如果没有，让船员把稳向板完全插下去。（如果舵手体重较轻，就让船员去查看稳向板。）

**Step 3** The crew now moves back into the boat and finds the end of the upper jib sheet, throwing it over the hull to the helmsman.

**第三步** 接下来船员回到船的内侧，找到在上侧的前帆索尾端，然后越过船体扔给舵手。

**Step 4** Once he has the jib sheet, the helmsman lets go of the mainsheet and climbs onto the centreboard. The crew floats inside the boat, holding on to a toestay and checking the mainsheet is free.

**第四步** 一旦舵手接到前帆索，就可以松开主帆索了，然后爬到稳向板上。船员在船内侧操作，抓住压舷带，检查确保主帆索没有被缠住。

**Step 5** The helmsman now stands with his feet near the hull and leans back on the jib sheet. The mast and sails will slowly start to lift from the water as the boat comes upright. The crew will be scooped aboard and can help the helmsman into the boat over the side or stern.

**第五步** 舵手站在稳向板上靠近船体的地方，身体后倾，向后拉前帆索。慢慢地桅杆和帆就会从水中升起，船恢复竖直状态。船员会随着船的翻转回到船上，然后帮助舵手从船的一侧或船尾上船。

**Top Tip** Once modern boats are fully inverted they have no effective air pocket underneath. Stay clear of an inverting boat.

**重要提示** 现代帆船完全倒置后，船底没有安全气囊。注意一定要远离正在颠覆的船只。

# 3

## Capsize Recovery 翻船恢复（正船）

### Righting from an inversion 从完全倒置的状态中恢复

Any boat will turn completely upside down if left on its side for long. This is known as inversion. Some boats are more prone to this than others.

任何船只只要长时间地向一侧倾斜，都会完全倒置，这种情况称为翻船。有一些船与其他船只相比，更容易翻船。



After inversion stand on the edge of the boat and lean back on the centreboard to bring the boat onto its side.  
帆船倒置后，站到船边缘，抓住稳向板，身体后倾，使船回到一侧。

The first step in recovering is to bring the boat back on its side. Pull yourself onto the upturned hull and stand on the edge while leaning back against the centreboard. If the centreboard has retracted into its case, use a sheet from the other side of the boat to pull against. Now use the standard righting method.

正船的第一步是让船回到一侧。爬到倒置的船体上，站在船体边缘，抓住稳向板身体后倾。如果稳向板已经缩回稳向板箱里，就拉船另一侧的一根缆绳。然后再使用标准的正船方法。

If you have to right an inverted catamaran, sit on the stern of the leeward hull until the opposite bow lifts and the mast starts to come to the surface. As it does so, move to the middle of the lower hull and continue the normal righting process.

如果你使倒置的双体船恢复过来，坐到下风侧船体的船尾上，直到对侧的船头上升，桅杆开始露出水面。之后，移到下面的船体中央，然后继续基本的正船步骤。

### Righting a singlehander 单人船的恢复

Righting a singlehander is easy if you can climb over the high side and onto the centreboard as the boat goes over. From here you can quickly pull the boat upright and climb aboard – staying dry throughout the process. If you fail to climb the high side or if the boat capsizes to windward, lower yourself gently into the water. Use the mainsheet as a safety line and swim round the hull to the centreboard. To right the boat, pull on the centreboard, or climb onto it. As you pull on the side of the hull the boat will right itself you can climb aboard.

如果你能做到以下步骤，单人船的恢复就容易了。爬到船较高的一侧，随着船的翻转，慢慢地站到稳向板上。这时快速地把船拉到竖直状态，然后爬上船。在整个过程中，一定要注意不能滑倒。如果你无法成功地爬到船较高的一侧，或者船翻向迎风侧，那就缓缓地降低自己的身体，进入水中。把主帆索当做安全绳，然后绕着船体游到稳向板，拉稳向板，或者是爬到稳向板上。在你拉船体的一侧时，船会逐渐自动正过来，你就可以爬上船了。



Step 1



Step 2



Step 3



Step 4

## Righting a catamaran 双体船的正船

As the catamaran capsizes, slide into the water between the trampoline and sail. Keep hold of something – the boat may drift quite fast. Once capsized a catamaran can be harder to right than a dinghy, especially if it turns upside down.

在双体船翻覆时，游到蹦床和帆之间的水中。船会迅速地漂移，一定要努力地抓住一些东西。双体船一旦翻船，要比单人船更难恢复，尤其是当船完全倒置的时候。



Step 1



Step 2



Step 3



Step 4



Step 5

**Step 1** Move around the front beam to the underside of the boat. Climb onto the hull and throw the righting line over the upper hull. Free the sheets and traveller to prevent the boat sailing away once righted.

**第一步** 绕着前横梁移动到船的下面。爬到船体上，把正船绳从船体上方扔过去。松开绳索和滑轮，防止船恢复后漂走。

**Step 2** Turn the boat so that the mast points into wind (the opposite to a dinghy) – the windage of the trampoline and rig will help you right the boat. If necessary, gently depress the bow to swing the hulls around in the breeze.

**第二步** 调转船，使桅杆迎风（与小帆船相反），蹦床和帆船装备的顶风面会帮助船恢复。有必要的話，缓慢地压船头下沉，使船体在风中翻转。

**Step 3** Lean back on the righting line (or sheet) to lift the mast tip clear of the water. When the mast lifts clear, the wind will get under the sail, lifting it. The boat will start to right more quickly.

**第三步** 向后拉正船绳，使桅杆从水里升起。当桅杆离开水面，帆就会受风，帆力会使桅杆逐渐上升。船就会快速地正过来。

**Step 4** Stay under the boat by the front beam as the top hull drops back into the water. Be careful it does not hit you. Grab the front beam as it comes down. This will prevent the boat sailing off or capsizing again.

**第四步** 当上面的船体进入水中时，保持人在船下，靠近前横梁的地方。注意不要被打到。在前横梁落下时抓住它，防止船漂离，或者再次翻船。

**Step 5** Climb aboard over either beam, check the rudder and sheets and stow any loose lines. Climbing over the lower rear beam is easier if you are tired.

**第五步** 通过其中的一个横梁爬上船，检查舵和绳索，整理松掉的绳子。如果你有些疲劳的话，从后面较低的横梁爬上船会容易一些。

### Top Tip 重要提示

Many boats will drift faster when on their side than you can swim so always keep hold of the boat when you are in the water.

很多船单侧移动的速度比你游的速度还快，所以在水里时要一直要抓着船。



# 3

## Man Overboard Recovery 落水人员救助

### First reactions 第一反应

Man overboard does not happen very often but if it does, you need to know what to do and how to react quickly. If you are sailing a two-person dinghy or a catamaran when the other person falls overboard, your first priority is to get the boat under control and to avoid a capsize.

人员落水不会经常发生，但是一旦发生，你要知道应该采取什么样的措施，以及如何快速地应对。如果你驾驶的是双人小帆船或者双体船，当另一个人落入水中时，你的首要任务是控制好船，防止翻船。

If you are helming and your crew falls overboard let the jib sheet go immediately. If you are crew and the helmsman falls out of the boat, release the jib sheet and grab the tiller to regain control.

如果你是舵手，你的船员落入水中，要立刻松开前帆索；如果你是船员，舵手从船上落入水中，立即松开前帆索，并且抓住舵柄，重新控制好船。

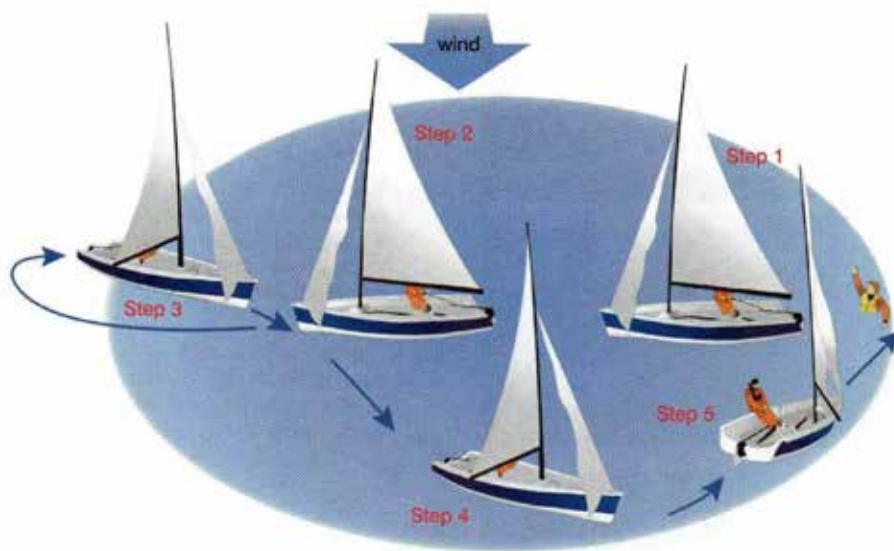
If the boat capsizes, you may be close enough for the person in the water to swim to the boat. If not you must try and right the boat while keeping the person in the water in sight. Do not leave the boat to try and reach them.

如果船翻了，你和船在一起，另一个人可能离船不远，可以游回来。如果另一个人离船很远，那么你要先努力尝试把船恢复，并时刻关注落水者。绝对不要为了试着去救助或者接近落水者而远离船。

### Getting back to the man overboard 返回落水者所在位置

Once you have the boat under control; steer onto a beam reach and check the position of the person in the water. Let the jib sheet go and ease the mainsail sufficiently to keep the boat upright while retaining enough speed to manoeuvre. Sail away from the person in the water until you have enough room to get downwind of them, ten boat lengths is typical.

一旦你控制住船，使船横风行驶，并查看落水者的位置。松开前帆索，并充分地松主帆，以保持船竖直，同时也要保持足够的航行速度。驶离落水者，直到你有足够的空间转向，然后靠近他们的下风侧，一般驶离落水者的距离是十倍船长。



Step 1 Turn to a beam reach and release the jib sheet.

Step 2 Sail away until you have room to tack.

Step 3 Tack around and

Step 4 bear away to a broad reach.

Step 5 Approach the person on a close reach letting out the mainsheet to slow you down.

第一步，转为横风行驶，松前帆索。

第二步，驶离落水者，直到你有空间转向。

第三步，迎风转向。

第四步，顺风偏转到侧顺风航行。

第五步，后迎风航行，靠近落水者，然后松主帆索减速。

Check the boat jib sheets are loose and tack round to the opposite beam reach. Check that you have the person in sight and bear away to a broad reach to get to leeward of him. Make your final approach on a close reach so you can slow down by letting out the mainsheet, without the boom hitting the shroud. The flapping jib is a useful indicator of wind direction. Aim to stop with the person alongside the windward shroud.

检查确保松掉前帆索，然后转向，向相反的方向横风行驶。查看落水者，确保他在你的视线之内，然后顺风偏转到侧顺风航行，以便接近落水者的下风位置。在最后靠近落水者时，后迎风行驶，这样你就能松主帆索减速了。注意不要让帆杆碰到侧支索。可利用松掉的前帆作为风向指示器。最终目标是停船时，使落水者处于迎风侧支索旁。

In a catamaran you can gybe round to avoid getting stuck in-irons trying to tack. In strong winds aim to stop the boat with the person between the bows. This avoids the boat blowing away from him as it slows down.

在操纵双体船时，可能因为迎风转向不成功而使帆船转动不灵，你可以通过顺风转向来避免。在强风中停船，要使落水者位于船头之间的位置，这样可以避免船在减速时，被风吹往远离他的方向。

## Getting the person aboard 救助落水者上船

As the boat stops alongside the person in the water let the mainsheet run out fully and move forward to grab hold of them. If the boat is still moving it may try to tack around the person in the water so give the tiller extension a tug to windward as you leave it.

随着船在落水者旁边停下，完全松掉主帆索，船向前移动，这个时候就可以抓住落水者了。如果船继续移动，可能会在落水者附近转向。所以在你松开副舵柄前，将它拉向迎风侧。



*Stop the boat alongside the person in the water so that he can be brought aboard just aft of the shroud, at the widest part of the boat. Depress the side to the water and pull his torso into the boat.*  
在落水者旁边停船，这样落水者就可以从船尾侧支索后方的位置——船最宽的地方被救起。压船侧下沉，然后把落水者拉上船。

**Top Tip** When making the final approach, sail slowly and allow the jib to flap. Luff onto a close reach well before the line of the jib points at the person in the water.

**重要提示** 靠近落水者的最后阶段，缓慢行驶，完全松掉前帆。在离落水者一定的距离时，迎风偏转到迎风行驶。

To get the person out of water:  
救助落水者上船步骤：

Kneel at the side of the boat and hold the person by their buoyancy aid or under their armpits.  
跪到船的一侧，然后抓住落水者的救生衣或是他们的腋窝。

Lean towards them to depress the side of the boat. Now lean backwards and pull their torso over the side.  
朝着他们的方向，压船下沉。然后向后仰，把他们拉上船。

From here most people can help themselves aboard. If not, have them float alongside the boat, get one of their feet into the boat, then roll their torso aboard horizontally.

到这个阶段，大多数人自己能上到船上了。如果不行的话，那么让他们先在船旁漂浮，让他们的一只脚先上船，水平转动他们的身体，使他们上到船上。

In a catamaran bring the person aboard over the forward beam or, if too difficult, over the aft beam where the freeboard is less.

在双体船上，让落水者从前横梁上船。如果这样比较困难，那么就从后横梁干舷较低处上船。

# 3

## Weather Basics 气候因素

### The causes of weather 气候的形成

Weather is a key consideration when you go sailing. Before you go afloat you should know the predicted wind strength and direction, and understand how local effects may alter the forecast. The weather we experience in the UK is caused by the interplay between two types of weather systems: **low pressure** systems (called depressions or lows) and **high pressure** systems (highs or anticyclones).

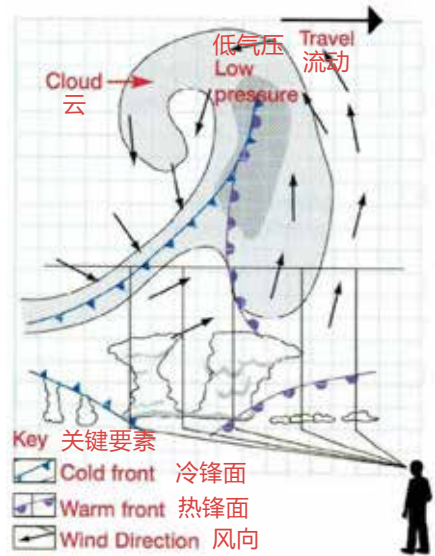
气候是航海的一个关键因素。在下水前，一定要知道预测的风力和风向，了解当地可能会影响天气预报的因素。英国的气候是由两种天气系统相互影响形成的，**低气压**系统（被称为低气压或者低频）和**高气压**系统（高频或者高气压）。

Low pressure systems travel across the Atlantic and are associated with strong winds, rain and shifting wind direction. They also feature warm and cold **fronts**, the dividing lines between warm and cold air. Fronts are associated with changes in wind direction and often gusty conditions.

低气压系统穿过亚特兰大时，伴随着强风、雨水和风向的改变，。这个过程中显著的变化就是**暖锋面**和**冷锋面**，它们是暖空气和冷空气之间的分割线。锋面与风向的改变和阵风有关。

High pressure systems are born over land or sea and move more slowly. Highs are generally associated with good weather and light winds.

高气压系统形成于陆地或者海洋区域，移动更加缓慢，一般会带来好天气。



Winds circulate anticlockwise around the low. Changes of wind direction occur when warm and cold fronts pass through.  
风一般在低气压附近逆时针流动。当暖锋面和冷锋面穿过时，风向就会改变。

### Understanding local effects 了解当地因素

The general wind direction is determined by the location of areas of low and high pressure – the air simply blows from high to low pressure.

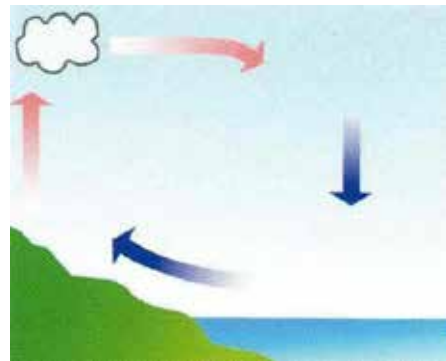
一般来说，风向由地势的气压高低来决定，空气会从气压高的地方吹向气压低的地方。

With the general direction offshore, the wind is likely to be light inshore and strong further out, but local land features often affect wind direction or strength. For example, the wind will funnel along a river valley and so increase in strength. A high headland will bend the wind so it strengthens just offshore. High land, trees, or tall buildings to windward of the sailing area will create wind shadows (light patches) resulting in shifty and gusty conditions. Get to know the area you sail in and look for geographical and man-made features which will make a difference to the wind pattern.

单从风离岸的远近来看，风在近海岸时较小，离岸越远，风越大。但是当地的地势特性会影响风的方向或强度。例如，风在沿着河谷吹时，会形成漏斗状，风力也会上升。风吹向海拔较高的地方，会被阻挡。随着风远离海岸，阻挡越来越少，风力自然就会增强。在航海区域附近的高地，树木或者是高的建筑群的迎风面，会形成风影（光斑），易使风产生突变。由于风的变数多，所以在航海前要充分了解你航行的区域，寻找影响风场类型的地理因素和人为因素。

On hot summer days a **sea breeze** often brings a refreshing onshore wind in the afternoon; but if the sea breeze is combined with the general wind direction the result could be strong conditions and rough sailing.

在炎热的夏天，**海风**经常会带来清爽的向岸风。但是如果海风与一般的风相结合，天气可能会变得比较恶劣，航行会更加困难。



The sun heats the land faster than the sea. Hot air rises from the land and starts a circulatory system in which the rising hot air is replaced by colder air flowing in from the sea – the sea breeze. 在太阳照射下的陆地升温比海更快。在太阳的照射下，热空气从陆地上上升，被从海上吹来的冷空气——海风代替。这种不停地进行，从而形成了一个循环系统。

## Weather forecasts 天气预报

You do not need detailed knowledge of weather to go sailing but if you plan to go to the coast, it is wise to get a forecast.

如果你只是去一般的水域玩船，可以不必了解详细的天气情况，但是如果你计划去海上航行，知晓准确的天气预报更加明智。

Check the forecast for wind strength and direction as well as poor visibility or fog (often a problem on Britain's coastline). Good sources of information include radio, television, phone, and fax in addition to numerous websites. Detailed marine forecasts are now available by phone.

查看关于风力和风向的预报，以及能见度的高低和是否有雾（在英国海岸线上经常发生的问题）。获取天气信息比较好的途径有，无线电、电视机、电话、传真以及各种相关网站。现在也可以通过手机获取详细的海洋天气预报。

## Judging wind strength 风力的判断

Wind strength is described in the Beaufort Scale below. Learn to recognise the strength of the wind by what you see ashore and afloat.

下表是描述风力的蒲福风级表。学会根据岸上和海上时看到的现象来判断风力。

**Top Tip** Check out the local weather forecast before you go sailing and ask advice from experience locals if you are not sure about the conditions.

**重要提示** 在出海前查看当地的天气预报，如果你不太确定，可以咨询当地有经验的人。

Force 风力等级	Wind Speed 风速	Description 名称	Signs on land 陆地现象	Effects on Sea 海况
0	Less than 1 knot 小于1节	Calm 无风	Flags hang limply, leaves do not move on tress, smoke rises vertically. 旗子松弛地下垂，树叶不动，烟垂直上升。	Glassy sea, boats drift with limp sails. Heel the boat to leeward a little to help the sail hold their shape. Move gently and slowly in the boat. 海面平静，船帆松弛。将船向下风处微微倾斜，有助于保持帆的形状。在船内移动时，动作要轻且慢。
1	1-3 knots	Light Air 软风	Light flags start to stir and smoke drifts away from vertical. 较轻的旗子开始飘动，烟从垂直方向漂移。	Small catspaws and ripples on surface and sails fill. Sit forward in the boat and allow it to heel slightly to keep sails full. Move gently in the boat. 海面有细波纹和涟漪，帆张满。此时要坐在船前方一点，让船微微倾斜，使帆保持张满。在船内移动时，动作要轻。
2	4-6 knots	Light Breeze 轻风	Flags start to indicate wind direction and leaves rustle on tress. 旗子能显示风向，树叶发出沙沙声。	Steady light wind for sailing. Boats are still underpowered but can be sailed upright. Use smooth movements during manoeuvres to maintain speed. 轻风平稳。船的动力依旧不足，但是能航行。操纵帆船时，行动要平缓，以保持船速。
3	7-10 knots	Gentle Breeze 微风	Flags extend outwards but remain below horizontal from the flagstaff. 旗子随风伸展，但还没有达到水平。	Ideal conditions for learning to sail. Small waves form and most small boats sail efficiently with full power available from the sails. 学习航海的理想条件。小波浪形成，帆能提高足够的动力，大多数小帆船可以进行有效航行。
4	11-15 knots	Moderate Breeze 和风	Small branches move on tress, and flags are fully extended horizontally. Small pieces of paper blow along the ground. 小树枝摇动，旗子完全沿水平伸展开来。地面上的小纸片被吹起。	Waves have foaming tops. Crews have to work hard to balance dinghies and catamarans. Beginners should reef or head for shore. 浪形成白色泡沫，船员需努力用自己的体重来平衡小帆船和双体船。初学者应缩帆或者返回海岸。
5	16-21 knots	Fresh Breeze 清风	The tops of large tress move and small trees sway. Flags are extended slightly above horizontal. 大树的顶部开始摇动，小树摇摆，旗子微微地水平飘起。	Good conditions for experienced crews but capsizes are common. Inexperienced sailors should stay ashore. 对于有经验的船员是很好的航行条件。但是翻船也很常见，缺乏经验的航海者最好不要下水。
6	22-27 knots	Strong Breeze 强风	Wind whistles through telephone lines and large trees sway. Flags blow above horizontal. 电线呼啸有声，大树开始摇动，旗子完全飘过水平。	Experienced crews may sail but only if good safety cover is available. 有经验的船员只能在有安全保障的情况下才可以出海。

# 3

## Sailing in Coastal Waters 在沿海水域航行



*Sailing in coastal waters offers the freedom to explore new areas – but be aware of tidal movements. Ensure that your boat is seaworthy and carries sufficient safety equipment.*  
在沿海水域航行，可以让你尽情地去探索新的水域，但是也要注意潮汐的动向。确保你的船适于航行水域，并且船上配备了充足的安全装备。

### Safety matters 安全第一

Coastal waters provide some wonderful sailing venues with the opportunity for good racing or day sailing. You will face the challenge of sailing in tides and on open water. Waves develop quickly in the sea when the wind reaches Force 3 or more, and you may be much further from shore and safety cover.

沿海水域是十分不错的航海场地。在那里，你有更多机会参加航海比赛或日间航海。你可以挑战潮汐水域和开放水域。当风力到达三级或以上时，海浪会迅速增长，离岸越远，安全保障就越低。

Before you go afloat in coastal waters check the weather forecast for several hours ahead and ensure that the conditions will be within your capabilities. Also check the time of high and low water, and find out the direction of the tidal stream during the time you plan to be sailing. You can find the time of high and low water in a local tide table, and the direction of the tidal stream from a pilot guide, tidal atlas, or chart of the sea.

在沿海水域航行前，提前几个小时查看天气预报，确保当时的天气情况在你的能力控制范围内。同时，在做航海计划的时候，查看水位高低变化的时间，找出潮汐流的方向。你可以在当地的潮汐表里找出高潮和低潮的时间，通过航行指南、潮汐集图或海图找到潮汐流的方向。

If you are in any doubt, ask an experienced local sailor for advice. Tell a reliable person of your plans and the time you expect to be back so they can notify the rescue services if you do not return on time.

如果有任何疑问，可以向有经验的水手请教。还有，将你的航海计划和预计的返航时间告知一个你信赖的人。以防特殊情况发生，你无法及时返回，他们可以通知救援机构救助你。

## Causes of tides 潮汐的起因

Tides are caused by gravitational pull on the earth by the moon and sun, **Spring** tides occur about every fortnight – when the sun and moon are in line at the times of the full and new moon. They feature the highest high tides and the lowest low tides.

潮汐是由于地球受到月球和太阳的引力作用产生的。每两星期出现一次**大潮**，发生在新月和满月，当太阳和月球在一条线上时。这个时候，最高高潮与最低低潮的特性加强。

In between spring tides there are **neap** tides, when the moon is in its first and last quarter. During neap tides there is less height difference between high and low tide (tidal range).

**小潮**在大潮与大潮之间，这时候月亮处于其第一个或是最后一个四分之一。小潮中的最高潮与最低潮的高度差较小（**潮差**）。

Tidal streams are stronger during spring tides and weaker at neap tides.

潮汐流在大潮期间比较强，在小潮期间比较弱。



Strong tides occur in some coastal waters. The wake around a buoy shows strength and direction; here the tidal stream is running from right to left.

强潮发生在一些沿海水域。浮标的尾迹可以显示潮汐流的强度和方向，该图里的潮汐流是从右向左流。



Spring tides occur at the times of new and full moon.

The difference in height between high and low tide (tidal range) is at its greatest.

大潮在新月和满月的时候发生，最高潮和最低潮的高度差（潮差）最大。



Neap tides occur at the moon's first and last quarter.

The difference in height between high and low tide (tidal range) is at its greatest.

小潮发生在月亮形成第一个和最后一个四分之一的时候，最高潮和最低潮的高度差（潮差）是最小的。

## Sailing in tides 在潮汐中航行

When you sail in coastal waters take the effect of the tide into account. Find out the tide's direction before you go afloat and remember that it is likely to change in strength and direction while you are sailing.

在沿海水域航行时，一定要考虑到潮汐的影响。在下水之前，要查明潮汐的方向，记住航行时，潮汐的大小和方向很可能会改变。

Plan to have the tide with you when you head for home to make the return journey easier and to allow for a deterioration in the weather.

在做计划时，要考虑到在返航时如何应对潮汐的出现，这样返程准备更充分，更容易。当然也要考虑到恶劣的天气变化。

Conditions will be rougher than usual for the strength of the wind if the wind blows against a strong tidal stream.

如果风与强潮汐流相遇，情形就会比往常艰难得多。

### Top Tip 重要提示

To sail a straight course across a tidal stream or current, line up two fixed objects ahead of you on the shore and keep them in line.

直行穿过潮汐流或涌流的技巧是，在你前面的岸上选择两个位于一条直线上且静止的物体，并保持它们在一条直线上。

# 3

## Sailing to Race 航海比赛

### Where to race 去哪里参加航海比赛

One of the best ways to develop your new-found sailing skills is to start racing.

参加航海比赛，是学习航海新知识的最好方式之一。

Most clubs organise racing for their members and visitors. Many dinghy, keelboat and catamaran classes organise Open Meetings where you can race against some of the top sailors in your class.

很多俱乐部都会为会员和来访者组织航海比赛。有小帆船、龙骨船和双体船等不同级别的公开赛。你可以在公开赛上，与同一级别的顶尖选手一较高下。

To start with, visit your local sailing club and find someone who needs crew.

刚开始，可以去当地帆船俱乐部了解一下，看看是否有需要船员的。

If you have your own boat join a club that offers racing for the class.

如果你有自己的船的话，可以加入一个提供相应级别比赛的俱乐部。

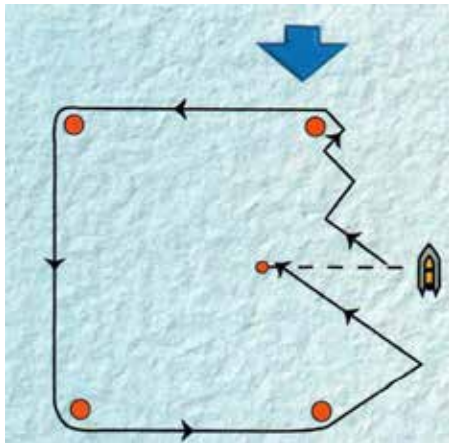
### Types of race courses 各式各样的比赛航线

Many different courses can be set to suit the types of boats and local conditions. Dinghies, catamarans and small keelboats often sail a sausage course, featuring a series of upwind and downwind legs, but there are also triangular or square courses.

依照船型的不同，结合当地的环境，比赛的航线也多种多样。通常小帆船、双体船和小型龙骨船航行线路形状类似“香肠”，它的主要特点是不断交替的迎风航线和顺风航线。除此之外，还有形状类似三角形和正方形的航线。

Details of the course will be found in the sailing instructions, together with details on starting signals, special rules etc.

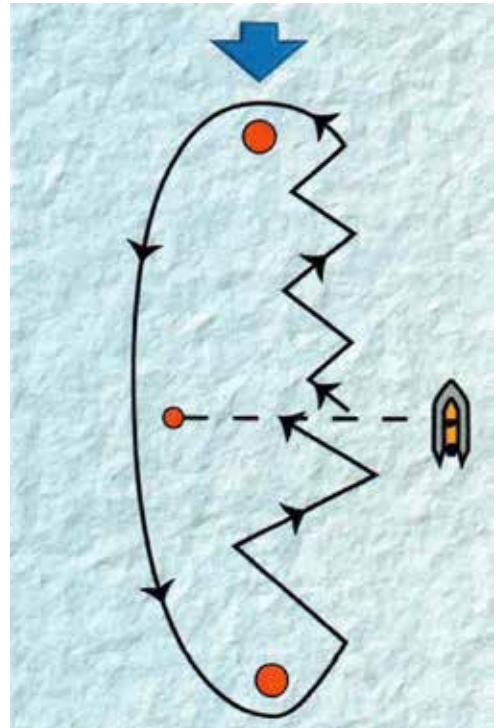
关于航线的更多细节，可以在航海细则中找到，其中还有关于起航信号、特殊规则等其他信息。



A square course tests sailing on a reach, run, and to windward.  
“正方形”航线可以检验水手横风航行、顺风航行和迎风航行的水平。



Racing can help to improve your skills in strong conditions when you might not otherwise go out without the safety cover provided by the club that organises the racing.  
俱乐部能够为你在恶劣的环境下提供安全保障，让你能挑战各种不同的情况，使你比赛中提高自己的航海技能。



A sausage course puts the emphasis on upwind and downwind sailing.  
“香肠”航线着重于迎风航行和顺风航行。

## Starting procedures 起航步骤

The start line will usually be laid at right angles to the wind, often between a committee boat and a small buoy. 起航线一般应与风成直角，通常在裁判船和一个小浮标之间。

The race officer will display flags or coloured boards and make sound signals to indicate the course and the countdown to the start.

比赛裁判通常会举起一些旗子或者彩色的信号板，并发出声音信号，来说明比赛的航线，然后倒计时开始。

Unless the sailing instructions specify otherwise, there will be a warning signal five minutes before the start, followed by a preparatory signal at four minutes to go, a one minute signal, and the starting signal.

除非航行细则里有特别的说明，否则一般在比赛开始前五分钟，会有一个提醒信号，随后是四分钟准备信号，然后一分钟信号，最后就是开始信号。



Races for popular classes often have crowded start lines but when you start racing it is likely to be in small fleets with less intense competition.

有些级别的帆船比赛比较受欢迎，参加的人多，致使起航线特别拥挤。但你刚开始参加航海比赛时，应选择参赛船较少的比赛，竞争少一些。

## Sailing the course 按航线航行

For your first few races don't worry if you are left behind by the rest of the fleet – it will take you a little while to understand how to start on time and how to sail at maximum speed. The start and the first leg are of crucial importance. If you get round the first mark near the front of the fleet, it will be easier to stay in touch throughout the race.

在起初的比赛中，不要担心会被其他的船只超过。掌握如何按时起航，如何才能以最大速度行驶，都是需要花点时间的。起航和航线的第一段至关重要。如果你在队伍较靠前绕第一个标，整场比赛中，就会更容易保持靠前。

Practice sailing up to an improvised start line until you can hit the line at full speed on the starting

signal. The first leg of the course is nearly always set to windward. It is here that your skill at sailing closehauled will be tested.

你可以利用临时设置的起航线练习起航，直到你可以做到在起航信号发出时，能以全速冲过起航线。航线的第一段大多都设在迎风侧，考验你迎风行驶的能力。

If you find that you are sailing slowly compared to other boats around you, look at how they have their sails set and the way they sail their boats and try to copy them.

当你发现你比周围的船航行得慢时，可以观察他们是如何使用帆的，以及他们控船的方式，然后模仿他们。

### Top Tip 重要提示

Join a club that races dinghies, keelboats, or catamarans and get some experience crewing for others before you buy your own boat.

加入一个组织小帆船、龙骨船或双体船比赛的俱乐部。在购买自己的船之前，询问一些有经验的船员。



# 3

## Staying Safe 注意安全

### Safety equipment 安全设备

Sailing is generally a very safe sports but it is important to carry the appropriate safety equipment and know how to summon assistance if necessary. The type and amount of gear you need will depend on the boat you sail and where you go afloat. A paddle to get you home if the wind drops may suffice if you sail on inland waters.

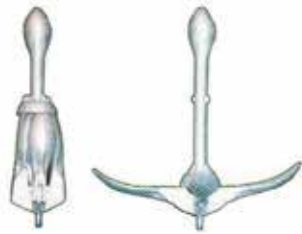
一般来说，航海是一项很安全的运动。但是携带合适的安全设备，以及知道在紧急情况下如何呼救是很有必要的。依据你驾驶的船型以及你航行的地点，选择你所需的安全装备类型和数量。如果你在内陆水域航行，准备一支船桨，这样能够确保你在风小时顺利返航。

If you sail on coastal waters, carry an anchor with sufficient line in case of a breakdown or lack of wind. Folding anchors are the easiest to stow on a small boat.

如果你在沿海水域航行，携带一个系有足够长绳子的锚，以防船受损或风很小。对于小船来说，折叠锚是最容易携带的。

If your boat is fitted with an engine or gas-fuelled cooking equipment you should have a fire extinguisher on board. 如果你的船上装有引擎或者天然气烹饪设备，那么你应该在船上准备一个灭火器。

A small first aid kit stowed in a waterproof container is useful in case an injury needs treatment before you can get ashore. Whatever equipment you carry, keep it in good condition and make sure that you know how to use it. 准备一个小型急救箱，储存在防水箱里，在必要时会派上大用场。在到岸前，为有需要的伤者提供紧急治疗。无论你要携带什么装备，一定要确保安全储存，并且清楚地知道它们的使用方法。



An anchor is essential if you sail on the sea and can also be useful inland. 在海上航行时，务必要携带一个锚，同样在内陆水域也会十分有用。



A simple first aid kit is a sensible item of safety gear. 一个基本的急救箱是安全装备中必不可少的一项。



Carry a fire extinguisher if your boat has gas or petrol on board. 如果你的船上有天然气或者汽油，一定要配备一个灭火器。



A paddle, or a pair of oars, are vital items when the wind drops. 一个船桨或是一副橹对于风变小的情况极其重要。

### How to summon help 怎样呼救

If a situation develops beyond the point where you can deal with it, seek outside assistance. If you sail on inland waters you may be able to attract attention by shouting. If you sail on coastal waters carry flares and keep them dry. Read the instructions and explain to your crew how to use the flares before the need arises.

如果发生了超出你能控制范围之外的事情，要寻求外部援助。如果你在内陆水域航行，你可以通过大声呼喊来吸引别人的注意；如果你在沿海水域航行，务必要携带信号弹，并保持干燥。提前阅读说明书，并向你的船员解释如何使用信号弹，以备不时之需。



Flares are used to attract attention when you need assistance. 当你需要帮助时，可以发射信号弹来吸引注意力。



If you need assistance and have to flares, raise and lower your extended arms. 如果你需要帮助，但是没有信号弹，可以通过手势来吸引注意力，展开你的胳膊，上下晃动。