



Sailing Federation  
of Hong Kong, China  
中國香港帆船運動總會

## Syllabus for Keelboat Sail Training Scheme

龍骨帆船風帆證書  
訓練計劃課程手冊

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## **Introduction**

Welcome to the sport of sailing. We hope that, through our scheme, you will derive a lifetime's enjoyment either from family sailing or from club racing.

The scheme is progressive. You cannot learn the more advanced skills unless the basic techniques are mastered. The Level 1 course introduces sailing, Level 2 covers the basic skills, and after completing the Level 3 course you should be a confident dinghy sailor with the skills to specialise and learn a variety of more advanced techniques.

The full scheme allows complete beginners to eventually become skilled at dinghy racing, cruising, sailing high performance or multihull boats, or even work towards becoming a sailing instructor themselves.

## **Between Courses**

HKSF recommends all participants to get sailing practice between courses, with minimum recommendations laid out in the following table. Participants should carefully record all their sailing experience in the log section of this book.

## **Pre-course Information**

The ability to swim is recommended but not a pre-requisite for learning to sail, however the person should be confident in the water. It is suggested that the willingness to jump into the water wearing a personal buoyancy aid and move through the water is a good indicator of a person's confidence. It is important that dinghy sailors should be capable of working in the water wearing sailing clothing and personal buoyancy, so that they may cope with their boats during capsize. One of the earliest safety instructions given is to "stay with the boat" during such a situation. It is recommended that non-swimmers, when afloat, wear life-jackets rather than buoyancy aids.

## **Certificates Issued by Other Organisations**

In general, no other sailing certificate awarded in Hong Kong will be recognised by HKSF for progressing through the HKSF scheme. Some exceptions will be made in the case of the Junior Sailing Scheme on a case-by-case basis.

HKSF will, in certain circumstances, recognise a certificate issued by another national authority. Those who wish to apply should submit their application, together with copies of certificates they hold, and their personal logbook records, to the HKSF office for consideration.

If there is any discrepancy between the English and Chinese versions in this syllabus and logbook, the English version will prevail.

Any amendment to this logbook will be published on the HKSF website and all HKSF recognised centres will be notified.

## 簡介

歡迎大家參加帆船運動。我們希望學員能通過此訓練計劃，之後無論是與家人朋友出航，或者是參加帆船比賽，都能享受到揚帆航行的樂趣。

此計劃採取漸進的形式，透過不同程度的課程來訓練由淺入深的技巧。第一級課程介紹帆船運動，第二級課程涵蓋基本技巧。在完成第三級課程後，學員應該有足夠信心駕駛帆船航行，掌握相應的技巧，並開始觸及各種深造技巧。

本計劃亦為學員提供完整的訓練途徑，初學者經過訓練而逐步成為熟練的航行者，能駕駛帆船進行競賽或作休閒巡航，能操控高性能的帆船或雙體帆船，甚至向著成為帆船教練的目標進發。

## 課程之間

本會建議所有學員在課程之間進行航行練習，下表為最低航行時數的建議，學員應把航行經驗記錄在本航行日誌中。

## 訓練前須知

本訓練計劃建議學員先懂泳術，計劃雖然不要求學員必須會游泳，但學員必須有信心在水中活動。例如：學員如能穿著個人助浮裝備自願跳入水中並在水中游動，這就是一個良好的信心指標。學習帆船其中一項最早教授的安全指令是「不要離開船隻」，所以學員能在穿著衣物及個人助浮裝備下在水中活動自如是十分重要的，因為這樣他們才能應付風帆傾覆的情況。本計劃建議不會游泳的學員出航時改為穿著救生衣，代替助浮衣。

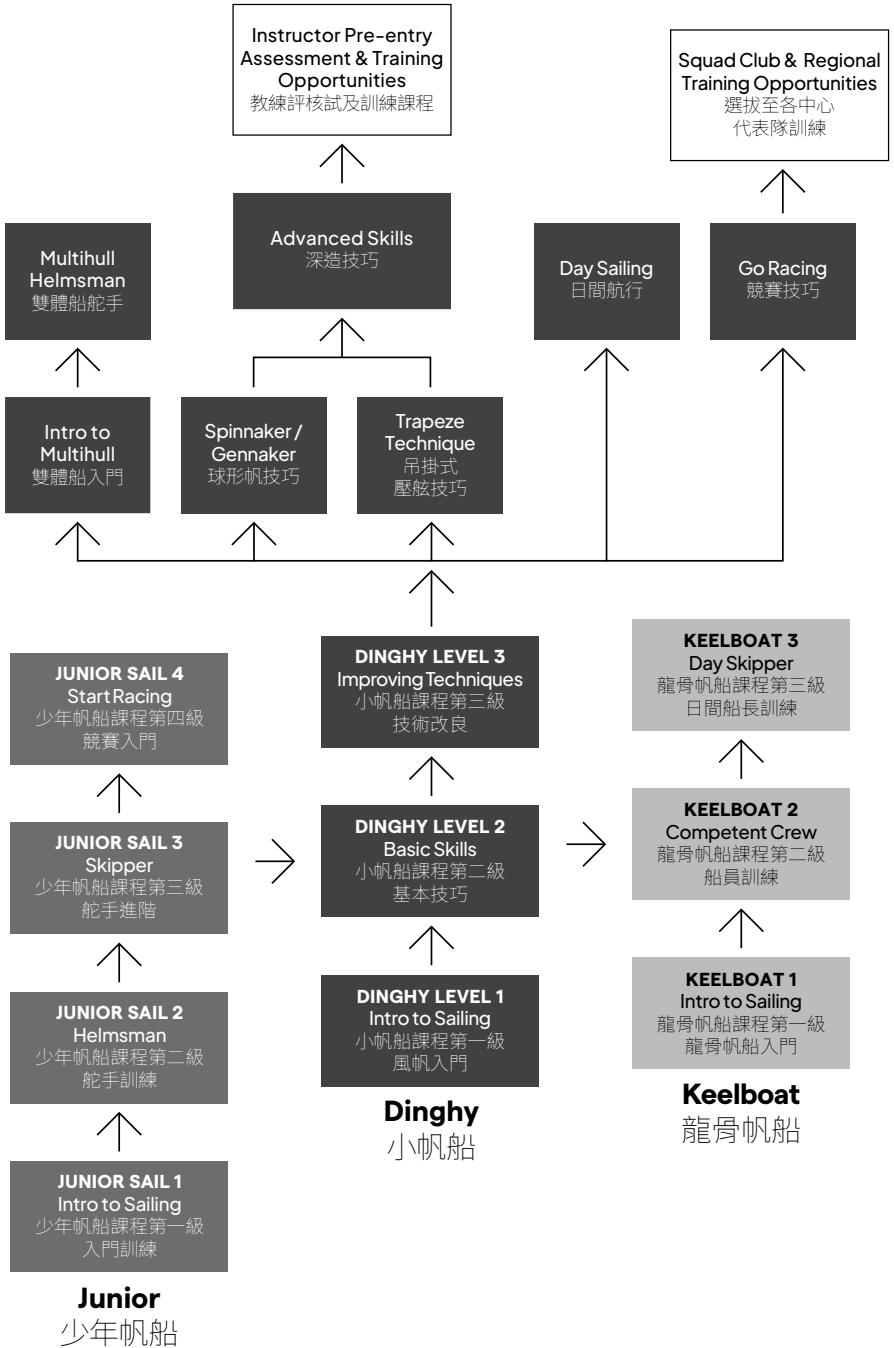
## 其他組織頒發的證書

一般情況下，本會不會認可任何由其他香港訓練機構所頒發的風帆證書。唯本會推行的少年帆船計劃，本會將根據個別情況作考慮。

在特別情形下，本會可考慮認可其它國家帆船總會機構頒發的帆船證書，有意申請者應將申請書連同所持有的資歷證書副本及其航行日誌記錄，提交本會考慮。

如果本教學大綱和日誌的中英文版本存在差異，則以英文版本為準。

課程手冊如有任何改動，將於本會網址發布，並通知所有本會認可的風帆訓練中心。



# COURSE DURATIONS AND ENTRY REQUIREMENTS

## 課程時數及報名資格

Course 課程	Minimum Course Duration 課程最少時數	Minimum Entry Requirement* 報名資格*	Minimum Wind Speed for Assessment 評核時最低的風力要求
<b>Dinghy</b> 小帆船			
<b>Level 1 第一級</b> Intro to Sailing 風帆入門	14 hours; Recommended 2 full days 14小時; 建議兩天	Nil 無	N/A 不需要
<b>Level 2 第二級</b> Basic Skills 基本技巧	28 hours; Recommended 4 full days 28小時; 建議四天	Completed Level 1 or passed Junior Sail 3 完成第一級或 少年帆船第三級及格	Sail(s) are filled 帆被風揚起
<b>Level 1 &amp; 2 (combined)</b> 第一、二級 (合併)	35 hours; Recommended 5 full days 35小時; 建議五天	Nil 無	Sail(s) are filled 帆被風揚起
<b>Level 3 第三級</b> Improving Techniques 技術改良	35 hours; Recommended 5 full days 35小時; 建議五天	Passed Level 2, plus 40 sailing hours 第二級及格後 累積40小時航行時數	BF3 蒲福氏風級三級
<b>Spinnaker / Gennaker</b> 球形帆技巧	14 hours; Recommended 2 full days 14小時; 建議兩天	Passed Level 3, plus 40 sailing hours 第三級及格後 累積40小時航行時數	Sail(s) are filled 帆被風揚起
<b>Trapeze Technique</b> 吊掛式壓舷技巧	14 hours; Recommended 2 full days 14小時; 建議兩天	Passed Level 3, plus 40 sailing hours 第三級及格後 累積40小時航行時數	BF3 蒲福氏風級三級
<b>Go Racing</b> 競賽技巧	35 hours; Recommended 5 full days 35小時; 建議五天	Passed Level 3, plus 40 sailing hours 第三級及格後 累積40小時航行時數	Sail(s) are filled 帆被風揚起

Note: \* Please refer each training course for the entry requirements in details. Individual centres may decide to impose additional requirements to suit their needs.

備註: \*報名資格詳列於各課程內，惟各訓練中心可按中心情況自訂額外報名資格。

Course 課程	Minimum Course Duration 課程最少時數	Minimum Entry Requirement* 報名資格	Minimum Wind Speed for Assessment 評核時最低的風力要求
<b>Day Sailing</b> 日間航行	28 hours; Recommended 4 full days 28小時; 建議四天	Passed Level 3, plus 40 sailing hours 第三級及格後 累積40小時航行時數	Sail(s) are filled 帆被風揚起
<b>Intro To Multihull</b> 雙體船入門	14 hours; Recommended 2 full days 14小時; 建議兩天	Passed Level 3, plus 40 sailing hours 第三級及格後 累積40小時航行時數	N/A 不需要
<b>Multihull Helmsman</b> 雙體船舵手	14 hours; Recommended 2 full days 14小時; 建議兩天	Completed Intro To Multihull 完成雙體船入門	BF3 蒲福氏風級三級
<b>Advanced Skills</b> 深造技巧	28 hours; Recommended 4 full days 28小時; 建議四天	Passed Spinnaker & Trapaze Technique 球形帆技巧及 吊掛式壓舷技巧及格	BF4 蒲福氏風級四級
<b>Keelboat</b> 龍骨帆船			
<b>Keelboat 1 第一級</b> Intro to Sailing 帆船入門	14 hours; Recommended 2 full days 14小時; 建議兩天	Nil 無	N/A 不需要
<b>Keelboat 2 第二級</b> Competent Crew 船員訓練	21 hours; Recommended 3 full days 21小時; 建議三天	Attended Keelboat 1 or passed Dinghy Level 2 已完成第一級龍骨帆船入門 或小帆船第二級及格	Sail(s) are filled 帆被風揚起
<b>Keelboat 3 第三級</b> Day Skipper 日間船長	31 hours; Recommended 4.5 days 31小時; 建議四天半	Passed Keelboat 2, plus minimum 100 nautical miles 龍骨帆船第二級船員訓練及 格後累積航行超過100海哩	BF4 蒲福氏風級四級

Note: \* Please refer each training course for the entry requirements in details. Individual centres may decide to impose additional requirements to suit their needs.

備註: \*報名資格詳列於各課程內，惟各訓練中心可按中心情況自訂額外報名資格。

HKSF encourages all to consider our surroundings and practice sustainability to reduce pollution and environmental impact. Our scheme includes units that introduce and remind all water users of fundamental good practice.

本會鼓勵所有人愛護自然環境，身體力行地減少對環境的污染。  
本計劃的各單元會分別介紹及提醒水上使用者建立基本良好做法。

Special thanks to below contributors for editing and design of the HKSF Training Scheme. In alphabetical order of surnames, they are:

鳴謝以下各人參與編輯及設計本課程手冊及出航日誌，按姓氏英文字母排序：

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# KEELBOAT 1 INTRODUCTION TO SAILING

Minimum 14 hours,  
recommended 2 days

The aim of this course is to provide a short introduction to sailing in a keelboat for those who have never sailed before. By the end of the course, participants will have experienced steering a yacht, sail handling, ropework and be aware of safety on board. The emphasis of this course will be largely practical.

It is recommended that all participants consolidate this short introduction with the Keelboat 2 Competent Crew course as soon as possible.

## 1. Personal Preparation

- Appropriate clothing and footwear
- Personal buoyancy including choosing and adjusting a correctly fitting life jacket
- Sun protection (sunscreen, sunglasses, headwear)
- Water / water bottle (dehydration)

## 2. Introduction

- Wind awareness
- Basic parts of boat
- Sailing terms

## 3. Rigging

- Standing rigging and running rigging
- Sail controls
- Rudder

## 4. Ropework

- Figure of eight knot
- Round turn and two half hitches
- Bowline
- Cleat hitch
- Safe use of winches and jamming cleats

## 5. Leaving & Returning To The Pontoon

- Correct preparation
- Use of fenders and mooring lines
- Consideration of wind direction and tide
- Use of engine (Techniques appropriate to the location should be taught practically)

- 6. Sailing Techniques & Manoeuvres**
  - Wind awareness afloat
  - Hoisting (or dropping) mainsail while under auxiliary power or moored
  - Experience sailing a yacht on all points of sailing
  - Controlling speed and stopping
  - Getting out of irons (i.e. no-go zone)
  - Tack
  - Gybe
  - Importance of effective communications
  
- 7. Safety**
  - Rules concerning life jackets
  - Awareness of hazards on a yacht and actions to be taken in the event of an emergency
  - Understand the actions to be taken for man overboard (MOB) recovery
  - The importance of always keeping a lookout
  
- 8. Sailing Theory**
  - Awareness of other water users
  - Basic rule to always avoid collision
  - Visual methods of attracting attention
  
- 9. Meteorology**
  - Sources of weather information and their relevance
  
- 10. Boating & The Environment**
  - Disposal of rubbish
  - Reusable drinking bottles
  - “Reduce, reuse, recycle”

# 龍骨帆船第一級 帆船入門

訓練時數最少14小時  
建議兩天

本課程的目的是給從未接觸龍骨帆船的初學者，嘗試駕駛帆船的滋味。在完成本課程後，參加者將會有掌舵、操控帆、帆繩等駕駛帆船的初步經驗，對船上的安全亦有簡單的認識，本課程着重實習。

本會建議參加者在完成本課程後儘快參與龍骨帆船第二級船員訓練 (Competent Crew) 課程，以鞏固所學駕駛風帆之技術及知識。

## 1. 個人裝備

- 穿著適當的衣物及鞋
- 挑選、穿上及調整稱身的救生衣
- 防曬保護：防曬霜、太陽眼鏡及防曬帽等
- 補充足夠水份及帶備水瓶 (以防脫水)

## 2. 帆船船行簡介

- 留意風向及風力
- 認識船隻的各部份
- 航行術語

## 3. 裝置船隻

- 認識船隻的索具：固定索具和活動索具
- 帆的操控
- 舵

## 4. 繩藝

- 八字結
- 繫木結 (一圈兩半結)
- 稱人結
- 繫樁結
- 安全使用絞盤和夾繩器

## 5. 船隻駛離 及返回浮橋

- 準備工作
- 碰墊和繫泡纜繩的使用
- 風向及潮汐考慮
- 使用引擎 (以上技術應配合個別中心的地理環境而教授和實踐)

**6. 基本航行技巧  
及操控**

- 留意水上的風向及風力
- 使用輔助動力推進時或船繫浮泡時升起 (或降下) 主帆
- 各種航向的航行
- 如何停船及控制速度 (減速)
- 迎風轉向
- 順風轉向
- 駛離不能航行的角度
- 在船上船員之間溝通的重要性

**7. 安全**

- 救生衣的安全使用手則
- 認識船上各種潛在危險，出現緊急情況時應採取的的行動
- 拯救墜海人員的方法
- 時刻保持瞭望的重要性

**8. 航行理論**

- 留意在同一水域的其他使用者
- 基本避碰規則
- 吸引他人注意的視覺方法

**9. 氣象知識**

- 天氣資料的來源及其對航行的影響

**10. 船藝及海洋保護**

- 垃圾棄置
- 循環及可再用物料的水瓶
- 「減少、重用及循環再造」

# KEELBOAT 2 COMPETENT CREW

Minimum 21 hours,  
recommended 3 days

By the end of the course the successful sailor will be safety-conscious, have basic knowledges of sailing and be capable of sailing a keelboat with little input from the instructor in light winds. The course introduces personal safety, seamanship and helmsmanship to the level required to be a useful member of the crew of a cruising yacht.

Candidates for the Competent Crew course are expected to have either taken the Keelboat 1 Introduction to Sailing course, or passed the dinghy Level 2 Basic Skills course.

## 1. Personal Preparation

- Choice of clothing for different weather conditions, seasons
- Understand and comply with rules regarding wearing of life jackets
- Can wear and use a safety harness, tether
- Dangers of dehydration, heat stroke, hypothermia, seasickness

## 2. Rigging

- Rigging according to weather conditions
- Parts of the boat and their functions
- Setting, reefing and handling of sails
- Use of sheets, halyards, cleats and winches

## 3. Ropework

- Revision of knots from Keelboat 1
- Clove hitch, rolling hitch, reef knot and sheet bend
- Handling of ropes including coiling, stowing, securing to cleats and bollards

## 4. Leaving & Returning To The Pontoon

- Revision of Keelboat 1, plus making the boat fast for longer periods of time
- Practical use of springs

## 5. Sailing Techniques & Manoeuvres

- Use of engine, starting, stopping and running procedures
- Storage of engine and fuel (as appropriate)
- Understand the importance of communication on board and the role of the skipper
- Knowledge and application of the four essentials
- Demonstration of the following tasks:
  - Tacking and gybing efficiently
  - Dangers of a crash gybe
  - Basic stop and furling of sail
  - Sailing around a course that includes upwind and downwind legs using all points of sailing
  - Coming alongside and picking up a mooring under power
  - Coming alongside a moored boat
  - Man overboard (MOB) recovery, including correct technique to return to casualty and how to recover a person from the water
  - Reefing and shaking out reefs
  - Awareness of other water users and importance of an efficient lookout
  - Can use the compass to steer a course
  - Heaving-to
  - How to deploy an anchor

## 6. Safety

- Dangers of fire and precautions including the location and use of fire extinguishers
- First aid skills aboard and location of first aid equipment
- Importance and understanding of the use of flares, operation and storage
- Techniques for emergency communication and who to contact
- Calling for help and distress signals
- Use of VHF radio and limitations of the use of mobile phones
- Telling someone ashore the passage plan
- Awareness of lee shore dangers

## 7. Sailing Theory & Background

- Points of sailing, no-go-zone
- Basic principles of how a sail works and how a sailing boat moves
- Club or centre regulations, local by-laws and maritime regulations as appropriate
- Understand the following terminologies: port and starboard, fore and aft, amidships, abeam, windward and leeward, upwind, downwind, luff up, bear away, pinching, sailing by the lee and broaching
- A basic introduction to the International Rules for the Prevention of Collisions at Sea (IRPCS)

**8. Meteorology**

- How weather forecast relates to local keelboat sailing
- The Beaufort scale of wind
- Awareness of changing weather conditions
- When not to sail and when to reef

**9. Boating & The Environment**

- Sources of pollution at sea and rubbish disposal
- Bio-degradable pollution and non-degradable pollution
- Recycled and reusable materials
- Toxic-free cleaning materials and "WOW" (Water Only Washdowns)

# 龍骨帆船第二級 船員訓練

訓練時數最少21小時

建議三天

在完成本課程後，參加者將會有安全意識，掌握駕駛帆船的初步技術，在輕微至和緩的風力下，極少需教練指導而能夠駕駛帆船。課程介紹個人安全，航藝，掌舵技巧，以提昇學員至稱職船員的水平。

在參加本課程前，參加者應已完成龍骨帆船第一級帆船入門課程或已考取小帆船課程第二級基本技巧。

## 1. 個人裝備

- 相應天氣狀況和季節穿著適當的衣物
- 了解並跟從有關穿著救生衣的規定
- 能穿上並使用掛鈎扣具安全衣或掛鈎系纜
- 認識脫水、中暑、低溫症及暈船之危險

## 2. 裝置船隻

- 根據天氣狀況裝置船隻
- 認識船隻的各部份及其功用
- 設置船隻，縮帆及帆的處理
- 繩索、昇帆索、夾繩器和絞盤

## 3. 繩藝

- 複習龍骨帆船第一級課程內所學的繩結
- 三套結 (rolling hitch)、平結和接繩結 (sheet bend)
- 繩索的處理，包括盤繩、束繩、系纜在羊角和系纜樁上

## 4. 船隻駛離及 返回浮橋

- 複習龍骨帆船第一級帆船入門課程知識，並為船隻停泊較長時間作準備
- 使用交叉纜繩 (springs)

## 5. 基本航行技巧 及操控

- 引擎的使用 —— 啟動，停止和運作的程序
- 引擎及燃油的存放 (如適用)
- 理解船上船員之間溝通的重要性及船長的角色
- 「航行四要訣」

- 能示範以下操作:
  - 有效地迎風轉向及順風轉向
  - 意外順風轉向 (並了解其危險)
  - 基本停船並收起前帆
  - 以各種航向航行一個包括順風及逆風航行的航道
  - 使用輔助動力停靠浮橋或繫泊
  - 停靠另一艘繫泊船
  - 拯救墜海人員，包括回到船員墜海位置及從水中拯救墜海船員的正確技巧
  - 進行縮帆及打開縮帆
  - 留意其他水上使用者及保持有效的瞭望
  - 能使用指南針來航行指定航向
  - 頂風停船
  - 錨的使用

## 6. 安全

- 火災的危險及預防、滅火器的位置及使用
- 急救技巧及急救用品在船上存放的位置
- 認識照明彈，其操作及存放
- 緊急情況下的聯絡技巧及緊急救援聯絡人或機構
- 求救及求救信號
- 甚高頻無線電的使用，手提電話的使用限制
- 通知岸上相關人仕有關出航計劃
- 了解下風岸的危險

## 7. 航行理論 及有關知識

- 各種航向，不能航行區域
- 帆的工作原理，帆把船向前推動的原理
- 跟從帆船中心的指引，適用的本地條例及海事條例
- 認識下列術語：左右舷、船前、船後、船中部、正橫方向、上風、下風、逆風、順風、轉向迎風、轉向下風、搶風航行、反舷順風航行和失控轉向頂風
- 基本國際海上避碰規則 (IRPCS)

## 8. 氣象知識

- 查看與龍骨帆船航行相關的天氣預報資料
- 蒲福氏風級表
- 了解天氣變化對航行的影響
- 了解什麼情況下不應該出航，及何時應該縮帆

## 9. 船藝及海洋保護

- 認識海上污染來源及垃圾棄置
- 可生物降解及不可降解的污染
- 循環及可再用物料
- 無毒性清潔劑以及純清水洗滌法

# KEELBOAT 3 DAY SKIPPER

Minimum 31 hours,  
recommended 4.5 days

By the end of the course, the successful sailor will have a competent, safe, practical approach to the sailing of small keelboats during the hours of daylight and will be capable of sailing and making seamanlike decisions in moderate conditions.

A minimum of 100 nautical miles sailed and logged is recommended since passing the HKSF Keelboat 2 course. Students taking the Keelboat 3 course should have already mastered the practical skills and have absorbed the background knowledge learned in Keelboat 2.

A minimum wind strength of Beaufort force 4 will be required to complete a successful assessment.

\*HKSAR Marine Department regulations state that within the waters of Hong Kong, the Pleasure Vessel Operator Certificate of Competency (PVOCC) must be held by the person in charge of a pleasure vessel that is more than 3 metres in length overall or is fitted with engines of more than 3 kW (4 Hp).

## 1. Rigging

- Preparation of a yacht for sea including engine checks, selection of sails and stowage of gear
- Knowledge of basic engine care and maintenance including oil, fuel and cooling
- Rigging using all the boat's normal equipments including spinnaker
- A basic understanding of the proper use of sail controls, kicker, preventer, cunningham, outhaul, backstay, traveller and how they affect sail shape according to different wind strengths.
- Use of topping lift

## 2. Ropework

Revision of all knots and ropework from Keelboat 1 and 2 courses and others as appropriate

- 3. Setting Sail From A Pontoon Or Mooring**
- The role of the skipper in co-ordinating the crew
  - Revision of Keelboat 1 and 2 courses plus roles of different crew members
  - Use of engine and sailing checklists
- 4. Yacht Handling Under Power**
- Demonstration of the following tasks:
- Can bring a boat safely to and from a berth
  - Can moor bow and stern
  - Is able to leave and return safely to a mooring buoy
  - Can anchor safely and is aware of different types and uses of anchors
  - Safe use of a tender engine / oars
  - Man overboard (MOB) recovery
- 5. Sailing Techniques & Manoeuvres**
- Efficient use of four essentials
  - Use of sail telltales
  - Techniques of good speed control
  - Techniques in handling gusts: signs on the water, pinching
  - Actions to be taken to avoid or manage broaching
  - Knowledge of changing sails according to conditions
  - Sailing with a spinnaker
  - Demonstration of the following tasks:
    - Beating, reaching and running efficiently
    - Man overboard (MOB) recovery
    - Efficient tacking
    - Gybing in a controlled manner
    - Reefing and shaking out of reefs
    - Heaving-to
- 6. Navigation & Tides**
- Charts, tide tables, tidal stream atlases and mobile apps
  - Rule of twelfths, spring tide and neap tide
  - Use of electronic and magnetic compasses
  - Deviation and variation
  - Interpretation of important chart symbols
  - Use of latitude, longitude and scale
  - Position fixing by transits and bearing
  - Steering a course with a compass
  - Difference between estimated position (EP) and dead reckoning (DR) position
  - Understand waypoints, transits and soundings
  - Use of echo-sounder and depth gauge
  - Navigation and general conduct in restricted visibility
  - Use and limitations of GPS for planning and undertaking a passage
  - Basic ability to navigate without a GPS
  - Importance of keeping a log

## 7. Pilotage

- Can prepare a passage plan and have the awareness of specific local hazards and pilotage
- Awareness of Hong Kong traffic separation zones, shipping lanes, anchorages and bridgeheight restrictions
- Basic knowledge of IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) buoyage
- A working knowledge of the International Rules for the Prevention of Collisions at Sea (IRPCS) and knowledge of important parts of the Racing Rules of Sailing (RRS)
- Reduced visibility and sound signals

## 8. Meteorology

- Can interpret forecasts and understand local effects
- Can understand and use a synoptic chart
- Typhoon, monsoon signals and other warnings
- Typhoon shelters and actions to be taken in preparation for a typhoon
- Awareness of changing weather conditions

## 9. Safety

- Revision of Level 2 Competent Crew course safety
- Boat parts, including through-hull fitting, bilge and emergency tiller
- Understanding of the use of distress flares
- Knowledge of how to use a life-raft
- Preparation and handling of a yacht in strong wind conditions
- Towing and being towed; understanding of how to secure a tow
- Running aground
- Know about the use of personal locator beacon (PLB) and personal automatic identification system (AIS) in MOB situations
- Know about EPIRBs
- Know how to contact the Hong Kong Marine Department, Marine Police and Hong Kong Maritime Rescue Co-ordination Centre, and the services they provide

## 10. Boating & The Environment

- Disposal or take-home rubbish
- Appropriate storage and transport containers
- Beach clean-up programmes and environmental organisations
- Noise and exhaust fumes, oil and fuel
- Invasive species and wildlife

# 龍骨帆船第三級

## 日間船長

訓練時數最少31小時

建議四天半

在成功完成本課程後，參加者將有信心及能力在中等風力的情況下，在日間安全地航行一艘小型的龍骨帆船，並能在適當的時候，作出航海者應有的正確判斷。

在參加本課程前，參加者應在龍骨帆船第二級船員訓練課程及格後，具備最少100海哩的航行經驗，並已充份掌握龍骨帆船第二級課程所教授的技巧及吸收其相關知識。

本課程的評核必須在蒲福氏風級風力四級或以上進行。

\*香港海事處規定，在香港水域掌管一艘總長度超過三米或已裝設總推進功率超過三千瓦(四匹馬力)的引擎而在航船隻的人，必需持有遊樂船隻操作人本地合格證明書。

### 1. 裝置船隻

- 為出航作準備 —— 檢查引擎，帆的選擇，器材的儲存
- 基本引擎維護和維修，包括檢查機油，燃料和冷卻水系統
- 因應船上的裝備而設置帆，包括球形帆
- 了解帆的控制，包括斜拉器或支索，防意外轉向拉索(preventer)，主帆下拉索、後拉索、後支索、滑軌及在不同風力下它們對帆的形狀的影響，橫桿固定索的使用。

### 2. 繩藝

複習龍骨帆船第一級及二級內所學的繩結，另加其它適用繩結

### 3. 以帆駛離浮橋或泊泡

- 船長指揮船員的角色
- 複習龍骨帆船第一級及第二級內船員的不同角色
- 使用引擎和出航檢查清單

### 4. 以動力推進時船的操控

- 能示範以下操作：
- 安全駛離並回到泊船位
  - 以船頭或船尾泊繫浮泡
  - 駛離並回到繫泊浮泡

- 安全下錨 —— 了解不同種類的錨及其使用方法
- 安全使用船尾機或以槳划艇
- 拯救墜海人員

## 5. 基本航行技巧 及操控

- 有效運用「航行四要訣」
- 使用風向指示帶
- 船速的控制技巧
- 陣風下的操控 —— 水面現象，搶風行駛
- 能根據天氣而選擇更換帆的使用
- 使用球形帆
- 防止船隻突然橫轉，及突然橫轉時應採取的行動
- 能示範以下操作：
  - 拯救墜海人員
  - 順風航駛、逆風航駛及橫風航行
  - 有效地迎風轉向
  - 受控制下順風轉向
  - 縮帆及打開縮帆
  - 頂風停船

## 6. 導航及潮汐

- 海圖，潮汐，水流圖，及應用軟件
- 十二分律，大潮和小潮
- 電子和磁指南針的使用
- 磁差與自差
- 重要的海圖標記
- 緯度、經度和比例的應用
- 利用疊標方法及羅盤方位測定位置
- 航駛固定的指南針方向
- 概略位置 (EP) 和航位推測法 (DR) 的分別
- 了解航點 (waypoints)，疊標線和水的深度
- 回聲探測器和測水深儀器的使用
- 在有限能見度下的航行安全
- 使用全球定位系統 (GPS) 計劃及跟隨航程
- 能不使用全球定位系統 (GPS) 而進行基本導航
- 航海日誌的重要性

## 7. 領航

- 能計劃並領航長程航行，對當地海域危險有認識
- 認識香港分道航行制、海運航道、錨地和大橋高度限制
- 認識國際航標協會 (IALA) 的浮標制度
- 掌握國際海上避碰規則及國際帆船競賽規則 (RRS) 的實用知識
- 在有限能見度下的行動及聲號

## 8. 氣象知識

- 天氣預告的解析及本地航行的影響
- 解讀天氣圖
- 颱風和季候風的信號和其它天氣警告信號
- 颱風避風港及颱風來臨前的準備
- 了解天氣情況的變化

## 9. 安全

- 複習龍骨帆船第二級課程內的安全內容
- 船有關安全的部件, 包括貫穿船身配件, 污水泵和緊急舵柄
- 了解照明彈的使用
- 認識及了解如何使用救生筏
- 應付強風的船隻準備及操控
- 拖行他船或被拖行, 繫拖繩的安全位置
- 擱淺
- 人員落水時個人定位信標 (PLB) 及個人自動識別系統 (Personal AIS) 的使用
- 了解緊急無線電示位標 (EPIRB)
- 清楚如何聯繫香港海事處, 香港水警和香港海上救援協調中心及各部門可提供的協助

## 10. 船藝及海洋保護

- 可棄置或可帶回的垃圾
- 適合貯存及運輸的容器
- 沙灘清潔活動及有關環境保護組織
- 噪音和廢氣排放對環境的影響, 機油及燃油的處理
- 入侵物種及野生動物的保護

Beaufort Scale 蒲福氏風級	At Open Sea 海上	On Land 陸上	Wind Speed 風速	
			knots 海浬	km/h 公里 / 小時
<b>Force 0 零級</b> Calm 無風	Sea like a mirror. 海平如鏡。	Calm, smoke rises vertically. 平靜，煙垂直上升。	< 1	< 1
<b>Force 1 一級</b> Light air 軟風	Ripples with the appearance of scales are formed but without foam crests. 魚鱗形的波紋，但沒有泡沫的浪頂。	Direction of wind shown by smoke drift. 可由空中飄浮的煙看到風向。	1 - 3	1 - 5
<b>Force 2 二級</b> Light breeze 輕風	Small wavelets, still short but more pronounced. Crests have a glassy appearance and do not break. 明顯短而小的碎浪，浪頂光滑而不破裂。	Wind felt on face, leaves rustle. 面上感覺到風，樹葉瑟瑟搖動。	4 - 6	6 - 11
<b>Force 3 三級</b> Gentle breeze 微風	Large wavelets. Crests begin to break. Perhaps scattered with horses. 較大浪，浪頂開始破裂成泡沫，也許間中有白頭浪出現。	Leaves and small twigs in constant motion. 樹葉及幼枝不斷搖動。	7 - 10	12 - 19
<b>Force 4 四級</b> Moderate breeze 和風	Small waves becoming longer, fairly frequent white horses. 浪由短小而變成長，有較頻密的白頭浪出現。	Raises dust and loose paper, small branches are moved. 風捲起沙塵及紙張，細小的樹搖動。	11 - 16	20 - 28
<b>BF5 五級</b> Fresh breeze 清風	Moderate waves, many white horses formed, changes of some spray. 中浪及很多白頭浪，有機會發現噴沫式的浪花。	Small trees begin to sway. 小樹幹開始左右搖動。	17 - 21	29 - 38
<b>Force 6 六級</b> Strong breeze 強風	Large waves, the white foam crests are everywhere, probably some spray. 大浪及滿海白頭浪，應該有噴沫式的浪花。	Large branches in motion, whistling heard in telegraph wires. 大樹枝搖動，風力使電話聲發出吹哨聲。	22 - 27	39 - 49
<b>Force 7 七級</b> Strong breeze 強風	Sea heaps up and foam begins to streak. 海浪堆疊，碎浪產生之白沫隨風吹成條紋。	Whole trees in motion. Effort needed to walk against the wind. 全樹搖動，人迎風前行有困難。	28 - 33	50 - 61

Beaufort Scale 蒲福氏風級	At Open Sea 海上	On Land 陸上	Wind Speed 風速	
			knots 海浬	km/h 公里/ 小時
<b>Force 8 八級 Gale</b> 烈風	Moderately high waves with breaking crests forming spindrift. Streaks of foam. 將達高浪階段，波峰開始破碎，成為浪花，條紋更覺顯著。	Twigs break off trees; generally impedes progress. 小樹枝折斷，人向前行阻力甚大。	34 - 40	62 - 74
<b>Force 9 九級 Gale</b> 烈風	High waves (2.75 m) with dense foam. Wave crests start to roll over. Considerable spray. 高浪，白沫隨風吹成濃厚條紋狀，波濤洶湧，浪花飛濺，影響能見度。	Slight structural damage (chimney pots and slates removed) 煙囪頂部移動，木屋受損。	41 - 47	75 - 88
<b>Force 10 十級 Storm</b> 暴風	Very high waves. The sea surface is white and there is considerable tumbling. Visibility is reduced. 非常高浪，出現拖長的倒懸浪峰；大片泡沫隨風吹成濃厚白色條紋，海面白茫茫一片，波濤互相衝擊，能見度受到影響。	Seldom experienced inland; trees uprooted; considerable structural damage. 大樹連根拔起，建築物損毀。	48 - 55	89 - 102
<b>Force 11 十一級 Storm</b> 暴風	Exceptionally high waves. 波濤澎湃，浪高足以遮掩中型船隻；長片白沫隨風擺佈，遍罩海面，能見度受到影響。	Very rarely experienced; accompanied by widespread damage 陸上少見，建築物普遍損毀。	56 - 63	103 - 117
<b>Force 12 十二級 Hurricane</b> 颶風	Huge waves. Air filled with foam and spray. Sea completely white with driving spray. Visibility greatly reduced. 海面空氣充滿浪花白沫，巨浪如江河倒瀉，遍海皆白，能見度大受影響。	Devastation. 陸上少見，建築物普遍嚴重損毀。	≥ 64	≥ 118



**Sailing Federation  
of Hong Kong, China**  
中國香港帆船運動總會