

船上訓練紀錄簿  
申請操作級輪機員適任證書  
**ON BOARD TRAINING RECORD BOOK**  
**FOR OFFICERS IN CHARGE OF AN**  
**ENGINEERING WATCH (ENGINE CADET)**

依據國際海事組織航海人員訓練發證及當值標準國際公約 2010 年修正對適任性之要求  
Based on the competence requirement of the 2010 amendments to the IMO STCW Convention

姓名 (Name): 中文 傑克史派羅 英文 Jack Sparrow

住址 (Home Address): \_\_\_\_\_

訓練開始日期 (Date training started): \_\_\_\_\_

編號 (Series No.): EOTR \_\_\_\_\_

應填上第一筆  
訓練日期之時  
間, 非上船日

104 年 1 月版

### 各職級船上訓練紀錄簿審核須知

- 一、交通部航港局（以下簡稱本局）為落實「船員訓練檢覈及申請核發證書辦法」第四十條、第四十一條、第四十三條及第四十三條之一有關船員申請核發適任證書應檢附船上訓練紀錄簿規定，辦理船上訓練紀錄簿審查事宜，特訂定本須知。

Ministry of Transportation and Communications, Maritime and Port Bureau (MOTCMPB) set this direction to implement the Article 40,41,43,43-1 in “The Regulation for Seafarer Training Assessment and Application for Certification” about seafarers’s application for certificate of competency should attach with “On-board training record book” (OBTRB),

- 二、船員進行船上訓練紀錄簿所列之各項訓練前，應備妥船上訓練紀錄簿，並應於「船員訓練檢覈及申請核發證書辦法」第四十五條之二所列船舶及航行區域完成。自一百零六年一月一日起申請核發適任證書者，應檢附依據「航海人員訓練、發證及當值標準國際公約二〇一〇年修正案」適任性要求且經本局核定之版本。

Before on-board training proceed, seafarers should prepare OBTRB and should follow the Article 45-2 of “The Regulation for Seafarer Training Assessment and Application for Certification”, complete the ship and touring area in the book. Since 1st of January of 2017, all the applicant should follow the requirement in 2010 STCW amendment and hold the updated version of OBTRB which approved by MOTCMPB.

- 三、船上訓練紀錄簿規定欄位均應完成簽署。但符合「船員訓練檢覈及申請核發證書辦法」第四十五條之一者，准予豁免，惟其適任證書應加註限制。

All the sections on OBTRB to be completed, except clause which could be exempted as mentioned in the Article 45-1 of “The Regulation for Seafarer Training Assessment and Application for Certification”, but should issue a restriction the same in the FINAL REPORT section.

- 四、船員如依一般商船船員標準於公務船舶或港勤工作船舶上完成訓練紀錄簿者，應由船公司於總結報告之評定意見欄，敘明「不限服務於公務船舶或港勤工作船舶」。

When seafarers working on official ship and/or workboat follow the procedure above, completed the OBTRB as well as common merchant seafarers, should state “not limitation on official ship and/or workboat” on the final report section by shipping company.

- 五、學員與船上訓練紀錄簿簽署人員，於訓練期間應服務於同一艘船舶，並請學員檢附簽署人員基本資料表（格式如附件），俾利審查 Trainee and the signatory in OBTRB, should service on same ship and same time, trainee should fill the Attachment-Basic data of Signatory on OBTRB hereunder for easy reviewing.

- 六、船上訓練紀錄簿訓練項目簽署完成後，須經船長或輪機長及其所屬雇用人於總結報告填寫評定意見，按照訓練紀錄簿規範及所載項目完成訓練且經評估合格，再予正楷簽署，未填寫評定意見者不予受理。

After OBTRB has completed, the Master and/or Chief Engineer of the ship should post their comment in the final report, as the regulation on OBTRB, complete all the items, evaluate and signature. OBTRB will not accept by this office if no comment posted.

附件-船上訓練紀錄簿簽署人員基本資料表  
Attachment-Basic data of Signatory on "on-board training record book"

簽署人姓名 Name of the signatory	簽署人國籍 Nationality	簽署人 職務 Duty	船員服務手冊字號 (外籍船員免填) Seaman Book Number(N.A. if other Nationality)	船名/任卸職日期 Ship's name/Date Sign On-Off	公司確認後蓋章 Company Endorsement
麥哲倫	台灣	船長	KEE-03801	黑珍珠號 01. JAN. 2015 航行中	
哥倫布	台灣	大副	KEE-03809	黑珍珠號 15. AUG. 2014 18. MAR. 2015	
鄭 和	台灣	輪機長	KAO-03814	黑珍珠號 30. OCT. 2014 航行中	
愛迪生	台灣	大管	KEE-03882	黑珍珠號 11. SEP. 2014 航行中	
張 衡	台灣	二管	KEE-03884	黑珍珠號 18. OCT. 2014 航行中	
張 飛	台灣	三管	KAO-03813	黑珍珠號 15. AUG. 2014 18. MAR. 2015	
趙子龍	台灣	大副	KEE-03810	黑珍珠號 18. MAR. 2015 航行中	
孫 策	台灣	三管	KAO-03813	黑珍珠號 18. MAR. 2015 航行中	

簽署之甲級船員  
如下船需補上新  
任船員資料。

## 國際航運同盟 (ISF) 第三版 THIRD EDITION

1909年所設立之國際航運同盟 (ISF) 係代表國際海運協會當在勞工事務、人力和訓練問題時，所使用的名稱。ISF/ICS之會員包括36個國家之船東協會。ISF享有國際海事組織 (IMO) 諮詢之地位並率海運雇主代表自始至終完成2010年6月在馬尼拉所召開修正STCW國際公約之外交會議。

Established in 1909, the International Shipping Federation (ISF) is the name used by the International Chamber of Shipping (ICS) when representing maritime employers globally on labour affairs, manpower and training issues. ISF/ICS membership comprises national shipowners' associations from 36 countries. ISF enjoys consultative status with the International Maritime Organization (IMO) and led the representation of maritime employers throughout the revision of the STCW Convention culminating with the Diplomatic Conference, in Manila, in June 2010.

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本中譯之船上訓練紀錄簿係獲國際海事業務公司於2014年9月9日來函同意並授權中華民國船長公會以中文翻譯其刊行之「船上訓練紀錄簿」在案。

The Master Mariners' Association of the Republic of China had been received a latter of permission from Maritime International Secretariat Services Limited. (ISF), Dated on 9<sup>th</sup> Sep, 2014, for authorize of translation and publication of this "ON Board Training Record Book" in Chinese edition.

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## 國際航運同盟 (ISF) 第三版序 THIRD EDITION INTRODUCTION

國際海事組織之航海人員訓練發證及當值標準公約 (STCW) 業於 2010 年予以修正更新。本訓練紀錄簿完全考慮及該項對操作級輪機員包括領導與團隊合作及保護海洋環境採保護措施等適任標準之規定。

In 2010, the IMO Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) was revised and updated. This Training Record Book takes full account of the new requirements for engineer cadets, including new competence for leadership and team working, and proactive measures to protect the marine environment.

該修正之 STCW 國際公約持續重視對訓練成果之評估，即航海人員適任所執行職責之能力。尤其是該 2010 公約要求學員之海勤資歷必需適當建構並記錄於訓練紀錄簿，經負責簽發適任證書之海事主管機關核定。修正之 STCW 本文明確提及 ISF 訓練紀錄簿為此文件之例。

The revised STCW Convention continues to place emphasis on assessment of the outcome of training, i.e. the ability of seafarers to perform their duties competently. In particular, the 2010 Convention requires that a cadet's seagoing service must be properly structured and recorded in a training record book approved by the maritime administration responsible for issuing certificates of competence. The footnotes of the amended STCW text specifically refer to ISF training record books as an example of such documentation.

STCW 章程含有經修正 STCW 國際公約之詳細規定，對申請為管輪達到適任性所需之各項技能作一致之標準。該 STCW 章程亦對學員達到此等適任性應經指派訓練員予以評估之標準作出規定。

The STCW Code, which contains the detailed requirements of the revised STCW Convention, sets out new uniform standards for the attainment of competences in the various maritime skills required to qualify as a watchkeeping officer. The STCW Code also stipulates criteria by which a trainee's attainment of these competences should be assessed by designated on board training officers.

在本紀錄簿中之科目業經周密之設計以協助學員符合 STCW 所規定適任性之發證要求，並儘可能使監督他們訓練之訓練員利用 STCW 章程表 A-III/1 為基準予以評估。然該等科目已考慮安排在船上訓練監督。該訓練科目與評估之標準在許多情況下比在該公約全文中者更為詳盡。這是為了協助學員確使其在海上服務中作最佳之利用並協助學員之訓練員作客觀之評估他們是否的確適任。

The tasks contained in this Record Book have been carefully designed to help ensure that trainees meet the requirements for certification stipulated by the STCW competences and that as far as possible the officers supervising their training use evaluation based on Table A-III/1 of the STCW Code. However, the tasks have been arranged with on board training in mind. The training tasks and associated criteria are, in many instances, presented in more detail than in the text of the Convention. This is to help ensure that trainees make the best use of their seagoing service and to help officers supervising trainees make an objective evaluation of whether they are indeed competent.

完成本紀錄簿通常並不能自認為正式之適任性評估，此為政府所指定審查員之任務。但完成本船上訓練紀錄簿可提供足夠之書面證據，證明該學員業已完成船上適當之訓練方案，並證明其技能可適任修正 STCW 2010 修正案為發適任證書，可擔任管輪之規定。

Normally completion of this Book will not itself constitute an official assessment of competence. This is the task of government appointed examiners. However, completion of the On Board Training Book should provide sufficient documentary evidence that a trainee has completed a properly structured on board training programme and demonstrated competence in the skills required by the amended STCW Convention in order to be certificated as an officer in charge of an engineering watch on ships.

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## 第一部分 使用說明 SECTION 1 GUIDE TO COMPLETION

### 輪機長、指派訓練員及學員應注意事項

### For the attention of chief engineer officer, designated on board training officers and trainees

#### 本紀錄簿之目的 Purpose of the Record Book

- 本紀錄簿之目的在協助學員，使其在海上期間遵循建構之訓練進度作最佳之運用。依此他們能取得 STCW 國際公約 2010 年修正所要求成為適格管輪所需之實際訓練與經驗。因此小心遵循本指導是很重要的。

The purpose of this Record Book is to help ensure that trainee follow a structured programmed of training and make best use of their time at sea. In so doing they will gain the practical training and experiences necessary to become competent chief engineer officer and second engineer officer in accordance with the STCW Convention, as amended in 2010. It is therefore important that this guidance is carefully followed.

- 本訓練紀錄簿依規定需陳送至政府指定之審查員處，因此適當使用及填寫本紀錄簿是很重要的。所填寫之內容應經該學員所服務船舶之輪機長、指派訓練員及船公司仔細核閱。

Given that this Training Record Book will be submitted to government appointed examiner proper use and completion of this Book is essential. It should be subject to close scrutiny by the chief engineer officer of the ships on which the trainee serves, by the trainee's designated on board training officers and the shipping company.

#### 當收到本紀錄簿時 On receipt of this Book

- 受訓學員應填寫下列各頁所要求之資料，包括第 4 頁依 STCW 國際公約應接受之基本訓練與任何特殊訓練之細節。並由學員個人在整個訓練過程中，對本紀錄簿負起安全保管之責。

The trainee should complete the information required on the following pages including details of Basic Training (page 4) received in accordance with the STCW Convention. The trainee will then be personally responsible for the safe keeping of this Book throughout training.

#### **上船後應儘速完成事項 As soon as possible after joining each ship**

- 第三部分有關強制之安全熟悉（第 13 頁）與船上熟悉（第 15 頁）學員應於向各船報到後立即完成，並由一位甲級船員簽署以表示依 STCW 國際公約規定之該強制性熟悉業已施行。

Section 3, concerning details of mandatory Safety Familiarization (page 13) and mandatory Shipboard Familiarization (page 15), should be completed immediately after the trainee joins each ship. An officer should sign to signify that mandatory familiarization as required by the STCW Convention has been undertaken.

- 學員應填寫第 19 頁第四部分有關該船之技術性細項。各船之輪機長與指派訓練員應提供機會以進行此訓練。

The trainee should complete Section 4 (page 19) concerning the technical details of the vessel. The chief engineer officer and the designated training officer on board each ship should provide an opportunity for this exercise to be undertaken.

- 由輪機長指派之訓練員應檢查此紀錄簿以確定已依程序為之。為了解尚未完成之適任性評估項目，應作成計畫以便掌握。有關科目概要表如第九部分（第 120 頁）。

The designated on board training senior officer appointed by the chief engineer officer should inspect this Book in order to check progress already made. A plan should be made to tackle the competences that still need to be demonstrated. A Task Summary Chart can be found in Section 9 (page 120).

### **當學員於海上服務期間 Throughout the trainee's seagoing service**

- 第七部分管輪之訓練科目，應予循序完成。對於記錄程序之附加指導在第六部分（第 31 頁）另有說明。

Section 7, which contains a list of on board training tasks, should be progressively completed. Additional guidance on recording progress is given at the start of Section 6 (page 31).

- 在第九部分（第 120 頁）之科目概要表亦應循序完成。

The Task Summary Chart in Section 9 (page 120) should also be progressively completed.

- 本紀錄簿應每月及各航次結束時陳送輪機長核閱。輪機長之意見應予記錄於第 9 頁並加註日期及蓋章。所提之意見應限於與該學員適任性及實際進度有關者。

The Book should be submitted to the chief engineer officer for inspection every month and at the end of each voyage. The chief engineer officer's comments should be recorded, dated and stamped on page 9. Comments should only relate to the Trainee's competence and practical progress.

- 本紀錄簿應當學員向各船報到時遞交指派訓練員。嗣後在航程情況許可下應每週遞交指派訓練員。其意見應予記錄於第 7 頁。

The Book should be submitted to the designated on board training officer on joining each vessel - and then, as far as the voyage pattern allows, every week. Comments should be recorded on page 7.

- 本紀錄簿亦應由船公司予以審閱。其意見應予記錄於第 11 頁。

The Book should also be inspected by the shipping company. Comments should be recorded on page 11.

### **重要注意事項 Important note**

- STCW 國際公約規定施行船上訓練之任何人員，應限於不致嚴重影響船舶正常操作之情況下及有時間專注於訓練與任何適任性評估時始施行之。

The STCW Convention requires that any person conducting on board training shall do so only when it will not adversely affect the normal operation of the ship and time can be dedicated to the training and any evaluation of competence.

- 任職輪機部門乙級船員當值職務，始得填寫本訓練紀錄簿。本訓練紀錄簿完成時間至少 6 個月。相關事項依我國「船員訓練檢覈及申請核發證書辦法」辦理。



## 第二部分 學程摘要紀錄 SECTION 2 SUMMARY RECORD OF PROGRESS

### 學員資料 PARTICULARS OF TRAINEE

應由學員以正楷填寫 to be completed by the trainee in **BLOCK CAPITALS**

中文全名 Name in Chinese	<b>傑克史派羅</b>	英文全名 Name in Full	<b>Jack Sparrow</b>
船員服務手冊字號 Seafarer's Book No.	<b>KEE-82348</b>	出生日期 Date of Birth	<b>21/FEB/1987</b>
住址 Home Address	<b>No. 1, KaiDeDaLan Da Rd., Taipei, Taiwan, R. O. C</b>		
住址變更 (如變更時) Change of Address (if applicable)	.....		
公司 Sponsoring Company	<b>EVERGREEN MARINE CORP. LTD. (TAIWAN)</b>		
地址 Address	<b>8F, No. 163, Sec. 1 Hsin-Nan Rd., LuChu, TaoYuan, 338, Taiwan, R. O. C.</b>		
契約 Trainee Agreement 起始日期 Date Started	<b>01.JAN.2015</b>	終止日期 Date Finished	<b>31.JUN.2015</b>
公司變更 (如變更時) Change of Sponsoring Company (if applicable)	.....		
地址 Address	.....		



### 訓練進度 Training Program (適用時 as applicable)

學校階段 COLLEGE PHASES :		
國立高雄海洋科技大學	起 From : <b>SEP.2007</b>	迄 To : <b>JUN.2011</b>
	起 From :	迄 To :
	起 From :	迄 To :
船上階段 SEA PHASES :		
<b>EVER LEGACY</b>	起 From : <b>JAN.2015</b>	迄 To : <b>JUN.2015</b>
	起 From :	迄 To :
	起 From :	迄 To :
工廠階段 WORKSHOP PHASES :		
	起 From :	迄 To :
	起 From :	迄 To :
	起 From :	迄 To :

### 基本訓練 BASIC TRAINING

依 STCW 章程第 A-VI/1 節第 2 項之規定

As required by Section A-VI/1 paragraph 2 of the STCW Code

為航前訓練之一部分，應於航前完成下列之基本訓練或講授。並將此訓練或講授詳細填寫於下表。

As part of your pre-sea training you should have completed Basic Training or instruction as listed. Enter details of this training or instruction below.

訓練項目	日期 Date	訓練單位 Location	文件字號 Document Number
基本安全訓練 Basic training : (應包含以下四項訓練)			
人員求生技能 Personal survival techniques			
防火及基礎滅火 Fire prevention and basic fire fighting			
基礎急救 Elementary First aids			
人員安全與社會責任 Personal safety and social responsibility			

☆ 號部分請填寫。



### 其他訓練紀錄 RECORD OF OTHER TRAINING

訓練項目	日期 Date	訓練單位 Location	文件字號 Document Number
☆ 救生艇筏及救難艇操縱 Proficiency in survival craft and rescue boats			
快速救難艇 Proficiency in fast rescue boats			
☆ 進階滅火 Advanced fire fighting			
☆ 醫療急救 Medical first aid			
☆ 保全意識 Security awareness training			
☆ 保全職責 Security training for seafarers with designated security duties			
☆ 領導統御與機艙資源管理 Leadership and bridge resource management			
油輪與化學液體船貨物操作基本訓練 <b>Basic training for oil and chemical tanker cargo operations</b>			
油輪貨物操作進階訓練 Advanced training for oil tanker cargo operation			
化學液體船貨物操作進階訓練 <b>Advanced training for chemical tanker cargo operations</b>			
液化氣體船貨物操作基本訓練 <b>Basic training for liquefied gas tanker cargo operations</b>			
液化氣體船貨物操作進階訓練 <b>Advanced training for liquefied gas tanker cargo operations</b>			
客輪訓練 Passenger ships training			
駛上駛下客輪訓練 Ro-ro passenger ships training			
高速船型式等級訓練 High speed craft type rating training			

☆ 號部分請填寫。

當值時間，為海上  
實習日數之 1/3

## 船上服務紀錄 SHIPBOARD RECORD OF SERVICE

船名 Ship	IMO 號碼 IMO Number	日期 Dates		機艙當值累計時間 Time Spent on Watchkeeping Functions		海上航行服務合計 Voyage Total -Seagoing Service	
		任職 Sign on	卸職 Sign off	月數 Months	日數 Days	月數 Months	日數 Days
EVER LEGACY	9595515	2015-01-01	2015-06-30	2	0	6	0
<b>總計服務 Total Service</b>				<b>2</b>	<b>0</b>	<b>6</b>	<b>0</b>

在此欄內所填寫之資歷，請依手冊所登錄之實際資料填入；如服務船數多於可填寫欄位時，請由最近之年資往前追溯。

請填入加總月數及天數，天數以 30 天為進位標準

備註：依 STCW 公約規則 III/1 規定完成工廠技能訓練及具有經認可之海勤資歷至少 12 個月，作為符合 STCW 章程 A-III/1 所要求包含船上訓練在內經認可訓練計畫之一部分，並在認可的訓練紀錄簿中載明；所要求之海勤資歷期間在輪機長或合格輪機員之監督下執行機艙當值職責至少 6 個月。

指派訓練員對訓練進度之審查

**DESIGNATED TRAINING OFFICER'S REVIEW OF TRAINING PROGRESS**

指派訓練員應為同部門較自身高階之甲級船員，本表至少應每週一次或在該船航務允許之期間內完成。

This table should be completed at least once a week or at such intervals as the trading of the vessel allows.

所填之意見限與學員實際進度及適任性有關者，不應涉及個人性格特質。

Comments should only relate to the trainee's practical progress and competence and should NOT refer to character.

船名 Ship	意見 Comments	正楷姓名 Name in BLOCK CAPITALS	簽名 Signature	日期 Date
EVER LEGACY	瞭解住艙環境與求生裝備			
EVER LEGACY	瞭解機艙環境與逃生路線			
EVER LEGACY	瞭解機艙各工具之用途與方法			
EVER LEGACY	完成 F. O. 管路圖			
EVER LEGACY	完成 SLUDGE 管路圖			
EVER LEGACY	完成 BILGE 管路圖			
EVER LEGACY	完成淨油機說明書閱讀			
EVER LEGACY	完成淨油機之拆裝清潔			

在此欄內所填寫之意見需為學員實際進度及適任性。禁止填寫之內容如：表現優秀、認真努力、工作表現佳...等。需明確寫上學習進度與內容

指派訓練員對訓練進度之審查（續）

**DESIGNATED TRAINING OFFICER'S REVIEW OF TRAINING PROGRESS**

船名 Ship	意見 Comments	正楷姓名 Name in BLOCK CAPITALS	簽名 Signature	日期 Date

### 輪機長每月對紀錄簿之核閱

## CHIEF ENGINEER OFFICER'S MONTHLY INSPECTION OF RECORD BOOK

所填之意見限與學員實際進度及適任性有關者，不應涉及個人性格特質。

Comments should only relate to the trainee's practical progress and competence and should NOT refer to character.

船名 Ship	意見 Comments	輪機長正楷姓名 Chief engineer officer's Name in BLOCK CAPITALS	輪機長簽名 Chief engineer officer 's Signature	日期 Date	船章 Ship's Official stamp
EVER LEGACY	瞭解機艙環境逃生路線,棄船滅火佈署,公司環保政策,垃圾管理				
EVER LEGACY	瞭解各式油、水管路圖				
EVER LEGACY	完成淨油機、空壓機說明書閱讀及實際拆裝清潔				
EVER LEGACY					
EVER LEGACY					
EVER LEGACY					

在此欄內所填寫之意見需為學員實際進度及適任性。禁止填寫之內容如:表現優秀、認真努力、工作表現佳...等。需明確寫上學習進度與內容



輪機長每月對紀錄簿之核閱 (續)

**CHIEF ENGINEER OFFICER 'S MONTHLY INSPECTION OF RECORD BOOK**

船名 Ship	意見 Comments	輪機長正楷姓名 Chief engineer officer's Name in BLOCK CAPITALS	輪機長簽名 Chief engineer officer 's Signature	日期 Date	船章 Ship's Official stamp



給予大管簽署

基本訓練學習所採用書籍、錄影帶或訓練用電腦課程之清單

**LIST OF PUBLICATIONS, VIDEO OR COMPUTER-BASED TRAINING PROGRAMMES STUDIED/USED**

日期 Date	標題 Subject/Title	訓練員簽名 Officer's Signature
	F. O. 管路圖	
	BILGE 管路圖	
	SLUDGE 管路圖	
	淨油機說明書	
	空壓機說明書	
	油水分離器說明書	
	焚化爐說明書	

此欄內所填寫  
之內容先以三  
管本職內容為  
主

### 第三部分 強制之安全與船上熟悉

## SECTION 3 MANDATORY SAFETY AND SHIPBOARD FAMILIARISATION

### 安全熟悉 SAFETY FAMILIARISATION

依 STCW 章程第 A-VI/1 節第 1 項之規定 as required by Section A-VI/1 paragraph 1 of the STCW Code

在指派上船任職之前，所有航海人員應接受安全熟悉訓練，並加註日期顯示業已接受下列之任務或責任。各船之船長或負責之甲級船員應在下表簽署，並加註日期顯示業已接受下列之任務或責任。

Before being assigned to shipboard duties all seafarers shall receive safety familiarization to know what to do in an emergency. The master or responsible officer on each vessel shall sign the table below to signify that you have received training or instruction to be able to carry out the following:

給予大副簽署。  
上船後儘速完成

船名 Ship's Name	EVER LEGACY				
任務/職責 Task/Duty	訓練員 簽名/日期 Officer's Signature/Date	訓練員 簽名/日期 Officer's Signature/Date	訓練員 簽名/日期 Officer's Signature/Date	訓練員 簽名/日期 Officer's Signature/Date	訓練員 簽名/日期 Officer's Signature/Date
具有下述能力 Be able to : 能夠與船上其他人員溝通有關基本 安全事宜 Communicate with other persons on board on elementary safety matters					
能夠瞭解安全資訊之符號、標記與警 報信號 Understand safety information symbols, signs and alarm signals					

<p><b>知道如何處理下列情況</b> <b>Know what to do if :</b> 人員落水 A person falls overboard 偵測到火災或煙霧 Fire or smoke is detected 發出之火警或棄船警報 The fire or abandon ship alarm is sounded</p>					
<p><b>具有下述能力 Be able to :</b> 了解部署表，登艇站位置及緊急逃生路線 Identify muster and embarkation stations and emergency escape routes</p>					
<p>救生衣與浸水衣之位置與穿著 Locate and don life jackets and survival suits</p>					
<p>啟動警報，並具有使用輕便滅火器之基本知識 Raise the alarm and have a basic knowledge of the use of portable fire extinguishers</p>					
<p>於遇到事故時採取立即行動或在得到船上進一步醫護救助前可能的緊急醫護處置 Take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board</p>					
<p>除了艙口蓋，能夠開關該船上之防火、風雨密及水密門 Close and open the fire, weather tight and watertight doors fitted in the particular ship, other than those for hull openings</p>					

# 船上熟悉 SHIPBOARD FAMILIARISATION

依 STCW 國際公約規則 I/14 之規定 as required by Regulation 1/14 of the STCW Convention

在短期內必需利用時機，熟悉你未來所需應用之設備及特定之當值、安全、環境與應急程序及執行職責所需之安排。由於安全與應急設備因船而異，應確定熟悉與你經常或應急有關之職責及所有船上之佈置、裝置、設備操作程序及船舶特性，在報到該船後，應儘早完成下列科目。

You will be given a period of time during which you will become acquainted with the equipment you will be using, and specific watchkeeping, safety procedures and arrangements required to perform your duties. The location of safety and fire equipment will vary from ship to ship. To be sure that you are familiar with your duties and all ship arrangements, you must complete the following tasks or duties as soon as possible on joining your ship.

給予大副簽署。  
上船後儘速完成

船名 Ship's Name	EVER LEGACY				
任務/職責 Task/Duty	訓練員 簽名/日期 Officer's Signature/Date	訓練員 簽名/日期 Officer's Signature/Date	訓練員 簽名/日期 Officer's Signature/Date	訓練員 簽名/日期 Officer's Signature/Date	訓練員 簽名/日期 Officer's Signature/Date
當值程序與佈置 Watchkeeping procedures and arrangements : 熟悉駕駛台、瞭望台、艙艙、艙甲板、主甲板及其他工作區域 Visit bridge, look-out post, forecastle, poopdeck, main deck and other work areas					
熟悉舵輪控制台、電話、電報與其他駕駛台設備及顯示器 Get acquainted with steering controls, telephones, telegraphs and other bridge equipment and displays					

在監督下，操作例行作業之設備 Activate, under supervision, equipment to be used in routine duties					
<b>安全與應急程序 Safety and emergency procedures :</b> 對公司之火災與安全規定能予以解讀並以實作證明瞭解 Read and demonstrate an understanding of your Company's Fire and Safety Regulations					
示範能夠識別下列警報信號 Demonstrate recognition of the alarm signals for : 火警 FIRE 應急 EMERGENCY 棄船 ABANDON SHIP					
確定醫療與急救設備之位置 Locate medical and first aid equipment					
確定滅火設備之位置：警報作動點、警鈴、滅火器、消防栓、太平斧與水龍帶 Locate firefighting equipment alarm activating points, alarm bells, extinguishers, hydrants, fire axes and hoses					
確定火箭拋繩器之位置 Locate rocket line throwing apparatus					
確定遇險火箭、紅光火焰及其他煙火信號彈之位置 Locate distress rockets, flares and other pyrotechnics					



確定呼吸器及消防員裝具等之位置 Locate breathing apparatus and firefighter's outfits etc					
確定 EPIRB、SART 及攜帶式無線電對講機之位置 Locate EPIRB, SART and walkie-talkie radios					
確定應急逃生呼吸設施之位置 Locate Emergency Escape Breathing Devices (EEBDs)					
確定二氧化碳瓶室及泵室、液貨艙與貨艙內滅火設施控制閥之位置 Locate CO2 bottle room, and control valves for smothering apparatus in pump rooms, cargo tanks and holds					
確定應急泵之位置並瞭解其操作方法 Locate and understand the operation of the emergency pump					
<b>環境保護 Environmental protection :</b> 熟悉處理廚餘、垃圾及其他廢棄物之程序 Get acquainted with the procedure for handling garbage, rubbish and other wastes					
垃圾集壓器或其他適當裝置之使用 The use of garbage compactor or other equipment as appropriate					

### 救生艇與召集站 **BOAT AND MUSTER STATIONS**

在下表之適當欄內填入救生艇與消防召集站暨其他細節。呈請船長於該欄內簽署。

Insert Boat and Fire Muster Stations and other details in the appropriate space. Ask the master to sign in the space provided.

船名 Ship's Name					
救生艇召集站 Boat Muster Station					
消防召集站 Fire Muster Station					
船長正楷姓名 Master's Name BLOCK CAPITALS					
船長簽名 Master's Signature					
日期 Date					

## 第四部分 船舶規格 SECTION 4 PARTICULARS OF SHIPS

瞭解所服務船舶為訓練重點，為協助你符合此重要規定，當你在各船上時應將下列規格予以記錄。對照先前所服務之船舶，在申請適任證書之口試與評估中，這方面的內容有可能會被詢問。

It is an essential feature of your training that you obtain knowledge of the ships on which you serve. To assist you in meeting this important requirement the following particulars are to be recorded during the time spent on each ship. Questions on this subject, with particular reference to your last ship, are likely to be put to you during an oral examination and assessment for your certificate of competency.

### 第一艘船 FIRST SHIP

船名 MV/SS:	IMO 號碼 IMO Number:	呼號 Call Sign:
<b>船舶規格與容量 Dimensions and Capacities</b> 全長 Length Over All _____ m 船寬 Breadth _____ m 船深 Depth _____ m 夏季吃水 Summer draft _____ m 夏季乾舷 Summer freeboard _____ m 總噸位 Gross tonnage _____ tonnes 載重量 Deadweight _____ tonnes	<b>輔機 Auxiliary Machinery</b> 舵機系統 Steering Gear Type _____ 螺旋槳 Propeller (Type/no. of blades/diameter) _____ 橫車 Thruster (no./type) _____ 副鍋爐 Auxiliary boiler (型式與數量) _____ 工作壓力 Working Pressure _____ kg/m <sup>2</sup> or bar	發電機引擎燃料 Generator engine fuel : 種類 Category _____ 每日耗油量 Fuel consumption per day _____ T 黏度範圍 Viscosity range _____  <b>錨 Anchors</b> 左錨 Port _____ tonnes 右錨 Starboard _____ tonnes 備錨 Spare _____ tonnes 錨鏈 (直徑) Cable (diameter.) _____ mm 錨鏈長度 Cable length _____ shackles
輕載排水量 Light displacement _____ tonnes 散裝/液體容積 Grain/Liquid capacity _____ tonnes <b>主機 Main Engine</b> 引擎 Engine (製造廠 Maker) _____ 引擎 Engine (型式 type) _____ 衝程 Stroke _____ 缸徑 Bore _____ 輸出功率 Output _____ bhp/kW _____ rpm 減速齒輪 Reduction gears (型式) _____	廠商 Maker _____ 增壓機 Turbo Charger _____ 廢熱回收型式 Waste heat recovery _____ 引擎燃料 Engine fuel: 種類 Category _____ 每日耗油量 Fuel consumption per day _____ T 黏度 Viscosity _____ cSt at _____ °C 發電機 Generator (數量 No.) _____ 輸出功率 Output _____ kW	

貨物裝卸機具 Cago Handling Gear	滅火設備 Fire Fighting Equipment	救生設備 Lifesaving Equipment
吊桿/起重機 Derricks/cranes (數量與安全負荷量 No. and SWL) _____ tonnes	滅火器 (數量與容量) 型式 Types : 水 Water 公升 liters	救生艇(數量/容量/引擎) Lifeboats (No./cap/engine) _____
絞纜機 Winches (型式 types) _____ tonnes	泡沫 Foam 公升 liters	救生筏 (數量/容量) Life-rafts (No./capacity) _____
壓水艙 Ballast tanks (數量 No.) _____	乾粉 Dry powder 公斤 kg	救生圈 Lifebuoys (數量 No.) _____
貨艙 Cargo tanks (數量 No.) _____	二氧化碳 CO <sub>2</sub> 公斤 kg	求生衣 Survival Suits (數量 No. /型式 type) _____
貨泵 Cargo pumps (數量 No.) _____	消防水龍帶 Fire hoses (數量與口徑 No. and size) _____ mm	逃生呼吸組 (數量/型式) EEBD (No./type) _____
泵輸出量 Pumping rate _____ cbm/Hrs	呼吸器 Breathing apparatus (數量/製造廠 no/make) _____	其他固定系統 Other fixed fire-fighting system(s) (型式) _____
管路 Pipelines (口徑 sizes) _____		
型式與輸出量 Type and rating _____ tonnes/hour		
其他裝卸貨設備 Other cargo equipment _____ _____ _____		

**第二艘船 SECOND SHIP**

船名 MV/SS:	IMO 號碼 IMO Number:	呼號 Call Sign:
<p><b>船舶規格與容量 Dimensions and Capacities</b></p> <p>全長 Length Over All _____m</p> <p>船寬 Breadth _____m</p> <p>船深 Depth _____m</p> <p>夏季吃水 Summer draft _____m</p> <p>夏季乾舷 Summer freeboard _____m</p> <p>總噸位 Gross tonnage _____tonnes</p> <p>載重量 Deadweight _____tonnes</p> <p>輕載排水量 Light displacement _____tonnes</p> <p>散裝/液體容積 Grain/Liquid capacity _____tonnes</p>	<p><b>輔機 Auxiliary Machinery</b></p> <p>舵機系統 Steering Gear Type _____</p> <p>螺旋槳 Propeller(Type/no. of blades/diameter) _____</p> <p>橫車 Thruster(no./type) _____</p> <p>副鍋爐 Auxiliary boiler (型式與數量) _____</p> <p>工作壓力 Working Pressure _____kg/m<sup>2</sup> or bar</p> <p>廠商 Maker _____</p> <p>增壓機 Turbo Charger _____</p> <p>廢熱回收型式 Waste heat recovery _____</p> <p>引擎燃料 Engine fuel:</p> <p>種類 Category _____</p> <p>每日耗油量 Fuel consumption per day _____T</p> <p>黏度 Viscosity _____cSt at _____°C</p> <p>發電機 Generator (數量 No.) _____</p> <p>輸出功率 Output _____kW</p>	<p>發電機引擎燃料 Generator engine fuel :</p> <p>種類 Category _____</p> <p>每日耗油量 Fuel consumption per day _____T</p> <p>黏度範圍 Viscosity range _____</p> <p><b>錨 Anchors</b></p> <p>左錨 Port _____tonnes</p> <p>右錨 Starboard _____tonnes</p> <p>備錨 Spare _____tonnes</p> <p>錨鏈(直徑)Cable (diameter.) _____mm</p> <p>錨鏈長度 Cable length _____shackles</p>
<p><b>主機 Main Engine</b></p> <p>引擎 Engine (製造廠 Maker) _____</p> <p>引擎 Engine (型式 type) _____</p> <p>衝程 Stroke _____</p> <p>缸徑 Bore _____</p> <p>輸出功率 Output _____bhp/kW _____rpm</p> <p>減速齒輪 Reduction gears (型式) _____</p>		

<b>貨物裝卸機具 Cago Handling Gear</b>	<b>滅火設備 Fire Fighting Equipment</b>	<b>救生設備 Lifesaving Equipment</b>
吊桿/起重機 Derricks/cranes (數量與安全負荷量 No. and SWL) _____tonnes	滅火器 (數量與容量)	救生艇 (數量/容量/引擎) Lifeboats
絞纜機 Winches(型式 types) _____tonnes	型式 Types: 水 Water 公升 liters	(No./cap/engine) _____
壓水艙 Ballast tanks (數量 No.) _____	泡沫 Foam 公升 liters	救生筏 (數量/容量) Life-rafts
貨艙 Cargo tanks (數量 No.) _____	乾粉 Dry powder 公斤 kg	(No./capacity) _____
貨泵 Cargo pumps (數量 No.) _____	二氧化碳 CO <sub>2</sub> 公斤 kg	救生圈 Lifebuoys (數量 No.) _____
泵輸出量 Pumping rate _____cbm/Hrs	消防水龍帶 Fire hoses (數量與口徑 No. and size) _____mm	求生衣 Survival Suits(數量 No./型式 type) _____
管路 Pipelines (口徑 sizes) _____	呼吸器 Breathing apparatus (數量/製造廠 no/make) _____	逃生呼吸組(數量/型式)EEBD(No./type) _____
型式與輸出量 Type and rating _____ tonnes/hour	其他固定系統 Other fixed fire-fighting system(s) (型式) _____	
其他裝卸貨設備 Other cargo equipment _____		
_____		
_____		
_____		

**第三艘船 THIRD SHIP**

船名 MV/SS:	IMO 號碼 IMO Number:	呼號 Call Sign:
<p><b>船舶規格與容量 Dimensions and Capacities</b></p> <p>全長 Length Over All _____m</p> <p>船寬 Breadth _____m</p> <p>船深 Depth _____m</p> <p>夏季吃水 Summer draft _____m</p> <p>夏季乾舷 Summer freeboard _____m</p> <p>總噸位 Gross tonnage _____tonnes</p> <p>載重量 Deadweight _____tonnes</p> <p>輕載排水量 Light displacement _____tonnes</p> <p>散裝/液體容積 Grain/Liquid capacity _____tonnes</p>	<p><b>輔機 Auxiliary Machinery</b></p> <p>舵機系統 Steering Gear Type _____</p> <p>螺旋槳 Propeller(Type/no. of blades/diameter) _____</p> <p>橫車 Thruster(no./type) _____</p> <p>副鍋爐 Auxiliary boiler (型式與數量) _____</p> <p>工作壓力 Working Pressure _____kg/m<sup>2</sup> or bar</p> <p>廠商 Maker _____</p> <p>增壓機 Turbo Charger _____</p> <p>廢熱回收型式 Waste heat recovery _____</p> <p>引擎燃料 Engine fuel:</p> <p>種類 Category _____</p> <p>每日耗油量 Fuel consumption per day _____T</p> <p>黏度 Viscosity _____cSt at _____°C</p> <p>發電機 Generator (數量 No.) _____</p> <p>輸出功率 Output _____kW</p>	<p>發電機引擎燃料 Generator engine fuel :</p> <p>種類 Category _____</p> <p>每日耗油量 Fuel consumption per day _____T</p> <p>黏度範圍 Viscosity range _____</p> <p><b>錨 Anchors</b></p> <p>左錨 Port _____tonnes</p> <p>右錨 Starboard _____tonnes</p> <p>備錨 Spare _____tonnes</p> <p>錨鏈(直徑)Cable (diameter.) _____mm</p> <p>錨鏈長度 Cable length _____shackles</p>
<p><b>主機 Main Engine</b></p> <p>引擎 Engine (製造廠 Maker) _____</p> <p>引擎 Engine (型式 type) _____</p> <p>衝程 Stroke _____</p> <p>缸徑 Bore _____</p> <p>輸出功率 Output _____bhp/kW _____rpm</p> <p>減速齒輪 Reduction gears (型式) _____</p>		



<b>貨物裝卸機具 Cago Handling Gear</b>	<b>滅火設備 Fire Fighting Equipment</b>	<b>救生設備 Lifesaving Equipment</b>
吊桿/起重機 Derricks/cranes (數量與安全負荷量 No. and SWL) _____tonnes	滅火器 (數量與容量)	救生艇 (數量/容量/引擎) Lifeboats
絞纜機 Winches(型式 types) _____tonnes	型式 Types: 水 Water 公升 liters	(No./cap/engine) _____
壓水艙 Ballast tanks (數量 No.) _____	泡沫 Foam 公升 liters	救生筏 (數量/容量) Life-rafts
貨艙 Cargo tanks (數量 No.) _____	乾粉 Dry powder 公斤 kg	(No./capacity) _____
貨泵 Cargo pumps (數量 No.) _____	二氧化碳 CO <sub>2</sub> 公斤 kg	救生圈 Lifebuoys (數量 No.) _____
泵輸出量 Pumping rate _____cbm/Hrs	消防水龍帶 Fire hoses (數量與口徑 No. and size) _____mm	求生衣 Survival Suits(數量 No./型式 type) _____
管路 Pipelines (口徑 sizes) _____	呼吸器 Breathing apparatus (數量/製造廠 no/make) _____	逃生呼吸組(數量/型式)EEBD(No./type) _____
型式與輸出量 Type and rating	其他固定系統 Other fixed fire-fighting	
_____ tonnes/hour	system(s) (型式) _____	
其他裝卸貨設備 Other cargo equipment		
_____		
_____		
_____		

**第四艘船 FOURTH SHIP**

船名 MV/SS:	IMO 號碼 IMO Number:	呼號 Call Sign:
<p><b>船舶規格與容量 Dimensions and Capacities</b></p> <p>全長 Length Over All _____m</p> <p>船寬 Breadth _____m</p> <p>船深 Depth _____m</p> <p>夏季吃水 Summer draft _____m</p> <p>夏季乾舷 Summer freeboard _____m</p> <p>總噸位 Gross tonnage _____tonnes</p> <p>載重量 Deadweight _____tonnes</p> <p>輕載排水量 Light displacement _____tonnes</p> <p>散裝/液體容積 Grain/Liquid capacity _____tonnes</p>	<p><b>輔機 Auxiliary Machinery</b></p> <p>舵機系統 Steering Gear Type _____</p> <p>螺旋槳 Propeller(Type/no. of blades/diameter) _____</p> <p>橫車 Thruster(no./type) _____</p> <p>副鍋爐 Auxiliary boiler (型式與數量) _____</p> <p>工作壓力 Working Pressure _____kg/m<sup>2</sup> or bar</p> <p>廠商 Maker _____</p> <p>增壓機 Turbo Charger _____</p> <p>廢熱回收型式 Waste heat recovery _____</p> <p>引擎燃料 Engine fuel:</p> <p>種類 Category _____</p> <p>每日耗油量 Fuel consumption per day _____T</p> <p>黏度 Viscosity _____cSt at _____°C</p> <p>發電機 Generator (數量 No.) _____</p> <p>輸出功率 Output _____kW</p>	<p>發電機引擎燃料 Generator engine fuel :</p> <p>種類 Category _____</p> <p>每日耗油量 Fuel consumption per day _____T</p> <p>黏度範圍 Viscosity range _____</p> <p><b>錨 Anchors</b></p> <p>左錨 Port _____tonnes</p> <p>右錨 Starboard _____tonnes</p> <p>備錨 Spare _____tonnes</p> <p>錨鏈(直徑)Cable (diameter.) _____mm</p> <p>錨鏈長度 Cable length _____shackles</p>
<p><b>主機 Main Engine</b></p> <p>引擎 Engine (製造廠 Maker) _____</p> <p>引擎 Engine (型式 type) _____</p> <p>衝程 Stroke _____</p> <p>缸徑 Bore _____</p> <p>輸出功率 Output _____bhp/kW _____rpm</p> <p>減速齒輪 Reduction gears (型式) _____</p>		

貨物裝卸機具 Cago Handling Gear	滅火設備 Fire Fighting Equipment	救生設備 Lifesaving Equipment
吊桿/起重機 Derricks/cranes (數量與安全負荷量 No. and SWL) _____ tonnes	滅火器 (數量與容量)	救生艇 (數量/容量/引擎) Lifeboats
絞纜機 Winches(型式 types) _____ tonnes	型式 Types: 水 Water 公升 liters	(No./cap/engine) _____
壓水艙 Ballast tanks (數量 No.) _____	泡沫 Foam 公升 liters	救生筏 (數量/容量) Life-rafts
貨艙 Cargo tanks (數量 No.) _____	乾粉 Dry powder 公斤 kg	(No./capacity) _____
貨泵 Cargo pumps (數量 No.) _____	二氧化碳 CO <sub>2</sub> 公斤 kg	救生圈 Lifebuoys (數量 No.) _____
泵輸出量 Pumping rate _____ cbm/Hrs	消防水龍帶 Fire hoses (數量與口徑 No. and size) _____ mm	求生衣 Survival Suits(數量 No./型式 type) _____
管路 Pipelines (口徑 sizes) _____	呼吸器 Breathing apparatus (數量/製造廠 no/make) _____	逃生呼吸組(數量/型式)EEBD(No./type) _____
型式與輸出量 Type and rating	其他固定系統 Other fixed fire-fighting	
_____ tonnes/hour	system(s) (型式) _____	
其他裝卸貨設備 Other cargo equipment		
_____		
_____		
_____		

**第五艘船 FIFTH SHIP**

船名 MV/SS:	IMO 號碼 IMO Number:	呼號 Call Sign:
<p><b>船舶規格與容量 Dimensions and Capacities</b></p> <p>全長 Length Over All _____m</p> <p>船寬 Breadth _____m</p> <p>船深 Depth _____m</p> <p>夏季吃水 Summer draft _____m</p> <p>夏季乾舷 Summer freeboard _____m</p> <p>總噸位 Gross tonnage _____tonnes</p> <p>載重量 Deadweight _____tonnes</p> <p>輕載排水量 Light displacement _____tonnes</p> <p>散裝/液體容積 Grain/Liquid capacity _____tonnes</p>	<p><b>輔機 Auxiliary Machinery</b></p> <p>舵機系統 Steering Gear Type _____</p> <p>螺旋槳 Propeller(Type/no. of blades/diameter) _____</p> <p>橫車 Thruster(no./type) _____</p> <p>副鍋爐 Auxiliary boiler (型式與數量) _____</p> <p>工作壓力 Working Pressure _____kg/m<sup>2</sup> or bar</p> <p>廠商 Maker _____</p> <p>增壓機 Turbo Charger _____</p> <p>廢熱回收型式 Waste heat recovery _____</p> <p>引擎燃料 Engine fuel:</p> <p>種類 Category _____</p> <p>每日耗油量 Fuel consumption per day _____T</p> <p>黏度 Viscosity _____cSt at _____°C</p> <p>發電機 Generator (數量 No.) _____</p> <p>輸出功率 Output _____kW</p>	<p>發電機引擎燃料 Generator engine fuel :</p> <p>種類 Category _____</p> <p>每日耗油量 Fuel consumption per day _____T</p> <p>黏度範圍 Viscosity range _____</p> <p><b>錨 Anchors</b></p> <p>左錨 Port _____tonnes</p> <p>右錨 Starboard _____tonnes</p> <p>備錨 Spare _____tonnes</p> <p>錨鏈(直徑)Cable (diameter.) _____mm</p> <p>錨鏈長度 Cable length _____shackles</p>
<p><b>主機 Main Engine</b></p> <p>引擎 Engine (製造廠 Maker) _____</p> <p>引擎 Engine (型式 type) _____</p> <p>衝程 Stroke _____</p> <p>缸徑 Bore _____</p> <p>輸出功率 Output _____bhp/kW _____rpm</p> <p>減速齒輪 Reduction gears (型式) _____</p>		

貨物裝卸機具 Cago Handling Gear	滅火設備 Fire Fighting Equipment	救生設備 Lifesaving Equipment
吊桿/起重機 Derricks/cranes (數量與安全負荷量 No. and SWL) _____tonnes	滅火器 (數量與容量)	救生艇 (數量/容量/引擎) Lifeboats
絞纜機 Winches(型式 types) _____tonnes	型式 Types: 水 Water 公升 liters	(No./cap/engine) _____
壓水艙 Ballast tanks (數量 No.) _____	泡沫 Foam 公升 liters	救生筏 (數量/容量) Life-rafts
貨艙 Cargo tanks (數量 No.) _____	乾粉 Dry powder 公斤 kg	(No./capacity) _____
貨泵 Cargo pumps (數量 No.) _____	二氧化碳 CO <sub>2</sub> 公斤 kg	救生圈 Lifebuoys (數量 No.) _____
泵輸出量 Pumping rate _____cbm/Hrs	消防水龍帶 Fire hoses (數量與口徑 No. and size) _____mm	求生衣 Survival Suits(數量 No./型式 type) _____
管路 Pipelines (口徑 sizes) _____	呼吸器 Breathing apparatus (數量/製造廠 no/make) _____	逃生呼吸組(數量/型式)EEBD(No./type) _____
型式與輸出量 Type and rating _____ tonnes/hour	其他固定系統 Other fixed fire-fighting system(s) (型式) _____	
其他裝卸貨設備 Other cargo equipment _____		
_____		
_____		
_____		

## 第五部分 工作安全 SECTION 5 SAFETY AT WORK

在船上及機艙工作都是危險場所。採取適當的預防措施將會將危機降至最低。船長是全船及船上所有人之安全負責人，但每位船員在其個別負責的工作中，應確實維護安全並在其控制中。所有安全指南及其他題共安全之設備應充分利用。

Ships and ships' engine rooms can be dangerous places in which to work. Taking proper precautions will minimize the risks. Whilst the master is responsible for the overall safety of the ship and those on board, individual crew members have a duty to ensure safety in those matters within their own control. All the safeguards and other facilities provided for your safety should be used.

在機艙所有的工作都在安全及不安全的方式下進行。當你在工作時應充分思考、保持耳聰目明，以期成為一位安全的工程師。千萬不要冒險，一定要遵守正確的工作程序。要穿適當的衣服及有安全裝備，如硬式安全帽、耳塞、護目鏡及手套等。

In all engine room tasks there is a safe way and an unsafe way to proceed. Give your best effort, be open and aim to be a safe engineer. Don't take risks. Follow the correct work procedures. Use the personal protective equipment provided, for example hard hat, hearing protection, eye protection and gloves.

**無敵重要 無敵重要 無敵重要**

灰色欄位之日期需大於或等於左方所有白色欄位之日期，下列各頁所有簽署之表單亦同，請參考 P29 P30 底線

項次 Ref No	訓練 Training			評估標準 Criteria for Evaluation	評估者 Assessor (Signature/Date)
	<p><b>無敵重要 無敵重要 無敵重要</b></p> <p>對改進部分之建議之：右方欄位不簽署 (黃色欄位內不需填寫) 如需改進請寫上改進事項，修正後再補日期</p>			<p>對設計特性與作動機構能適當之說明與瞭解 <i>Operations, maintenance and repairs are planned and carried out in accordance with safety rules and procedures</i></p>	<p>同部門較自身高階之人員簽署/日期 22.JAN.2015</p>
		<p>科目已完成 Task Completed</p> <p>施訓者 Instructor (Signature/Date)</p>	<p>對改進部分之建議 Advice on Areas for Improvement</p>	<p>科目已完成 Task Completed</p> <p>施訓者簽名/日期 Instructor (Signature/Date)</p>	
.1	記述在船上工作許可系統之流程 Describe the system of permits to work on board	2/E 劉七	10.JAN.2015		

.2	工作許可核對項目清單 List the items to be checked in a work permit	2/E 劉七	10.JAN.2015			
.3	熱工許可核對項目清單 List the items to be checked in a hot work permit	2/E 劉七	10.JAN.2015			
.4	記述密閉空間之定義 Describe an enclosed space		12.JAN.2015			
.5	記述進入密閉空間之程序 Describe the procedures to enter an enclosed space		12.JAN.2015			
.6	說明如何使用瓦斯偵測儀： 進入燃油艙前 Explain the use of gas analysis instruments to be used prior to entering : Fuel oil tanks		12.JAN.2015			
.7	進入壓水艙前 Ballast tanks		16.JAN.2015			
.8	進入空無所有的空間前 Void spaces		<u>21.JAN.2015</u>			
.9	記述可用的急救程序： 遭電擊者 Describe the procedure adopted on finding someone overcome as a result of : Electric shock		16.JAN.2015			
.10	在密閉空間遭機入瓦斯中毒 Gassing incident in an enclosed space		17.JAN.2015			
.11	記述在船塢有何特別預防 Describe special safety precautions in dry dock		19.JAN.2015			
.12	安全工作示範證明對電焊及切割設備之使用已完全了解 Demonstrate an understanding of safe working practices for use of welding and cutting equipment		12.JAN.2015			

21. JAN. 2015 為左方白色欄位最大之日期。



## 第六部分 訓練科目資訊及應予達成之適任性

# SECTION 6 INFORMATION ON TRAINING TASKS AND COMPETENCES TO BE ACHIEVED

本部分明列訓練科目的細節，學員應充分的利用並在海上期間完成之。學員可在下列各頁內看到應進行之科目與職責。完成它們將讓你符合適任性的要求。

This section of your Record Book gives details of the training tasks that you should follow to make best use of your time at sea. You will see that each page lists the tasks or duties that you should undertake. Completion of these will lead to meeting the competences.

你的進度與表現應由同部門較自身高階之甲級船員予以審查後，於該頁之右側陰影空格內簽入姓名及日期，表示你在該項目的表現已符合評估標準並證明為適任。該甲級船員並可在需要改進之部分作出建議。茲將 STCW 章程對輪機長及大管輪適任性表列之要求列出如次：

A senior officer should review your progress and indicate, with Signature and date in the blue box on the right hand side of the page, that your performance is considered to meet the Criteria for Evaluation and that competence has been demonstrated in that element. The officer may offer advice on areas in which improvement is necessary. The competences required by a chief engineer officer and second engineer officer as tabulated in the STCW Code are listed below. This Section is organised as follows:

### 在有人值守機艙負責當值之輪機員或指派在定期無人值守機艙為值勤輪機員之適任性 (STCW 章程表 A-III/1) COMPETENCES FOR OFFICERS IN CHARGE OF AN ENGINEERING WATCH IN A MANNED ENGINE-ROOM OR DESIGNATED DUTY ENGINEERS IN A PERIODICALLY UNMANNED ENGINE-ROOM (STCW CODE TABLE A-III/1)

#### 操作級-輪機工程 Marine Engineering at the Operational Level (第 37 頁)

1. 保持安全機艙當值 Maintain a safe engineering watch
2. 能以書面及口頭方式使用英語 Use English in written and oral form
3. 能使用船上對內部聯絡系統 Use internal communication systems
4. 能操作主機、副機及各種操縱系統 Operate main and auxiliary machinery and associated control systems
5. 能操作燃油、潤滑油、壓艙水、其他泵浦系統及各種操縱系統 Operate fuel, lubrication, ballast and other pumping systems and associated control systems

**操作級-電機、電子及控制工程 Electrical, electronic and control engineering at the Management Level (第 55 頁)**

6. 能操作電機、電子及控制工程 Operate electrical, electronic and control systems
7. 能保養及維修電機與電子設備 Maintenance and repair of electrical and electronic equipment

**操作級-保養及維修 Maintenance and repair at the Operational Level (第 73 頁)**

8. 在船上裝配及維修時能正確使用手、機械工具與量測儀器 Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board
9. 保養及維修船上機械與設備 Maintenance and repair of shipboard machinery and equipment

**操作級-船舶操作與船上人員管理 Controlling the Operation of the Ship and Care for Persons On Board at the Operational Level (第 94 頁)**

10. 運用領導統御與團隊合作技巧 Application of leadership and team working skills
11. 確保符合防止污染要求 Ensure compliance with pollution prevention requirements
12. 維持船舶之適航性 Maintain seaworthiness of the ship
13. 船上防火、控制火災及滅火 Prevent, control and fight fires on board
14. 操作救生設備 Operate life-saving appliances
15. 在船上應用醫療急救 Apply medical first aid on board ship
16. 監督符合法定要求 Monitor compliance with legislative requirements

### 如何填寫訓練科目及達成適任性之範例

### Example of How to Complete the List of Training Tasks and Competences Achieved

項次 Ref No	訓練 Training		評估標準 Criteria for Evaluation	適任性證明 Competence Demonstrated	
1	適任 Competence : 保持安全機艙當值 Maintain a safe engineering watch			同部門較自身高階之 甲級船員簽名/日期 Assessor (Signature/Date)	
1.1	當值之接班及交班 Relieve and hand over the watch		當值應依照常規、程序、船上特定的指示去執行。溝通時應清楚明確的發送及接收訊息 <i>The duties are carried out in accordance with accepted principles, procedures and ship specific instructions. Communication is clearly and unambiguously given and received</i>	C/E 趙六	31/08/14
	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	
.1	遵循交班之正確程序 Follow the correct procedure for handing over a watch : 航行中 At sea	2/E 劉七 25/08/14	對交班程序之瞭解待加強	2/E 劉七	29/08/14
.2	在港內 In port	2/E 劉七 26/08/14			
.3	遵循接班之正確程序 Follow the correct procedures for taking over and accepting a watch : 航行中 At sea	2/E 劉七 27/08/14			
.4	在港內 In port	2/E 劉七 28/08/14			

- (1). 簽名部分含職級與中文正楷全名，如為外籍船員請簽英文正楷全名。
- (2). 先完成各別細項（如上述1.1.1 ~ 1.1.4）並分別簽署，如有需改進處於其右方空白欄位填寫需改進事項，並於完成再次訓練後簽署。
- (3). 各別細項皆簽署完成後，請同部門較自身高階之甲級船員於大項（如上述1.1）簽署適任性證明。

- 深色陰影部分之適任性（此例為「保持安全機艙當值」）係直接摘自STCW章程之本文。應於學員海勤資歷期末予以記錄，以認定其能儘可能適任此等適任性。  
The competence shaded blue (in this case 'Maintain a safe engineering watch'.) is directly taken from the text of the STCW Code. By the end of the period of seagoing service the trainee should be recorded as being considered competent in as many of these competences as possible.
- 主要之科目（此例為1.1「當值之接班及交班」）經再分項列於該頁訓練科目或職責之左側。學員應儘可能完成此等訓練科目。然可能因船舶之設備、貨物或航程之情況，此等所有之科目並不期望學員在任務前能被認為足以適任。應予注意者某些適任性之技能與知識可能需要岸上訓練時取得。  
The primary tasks (in this case 1.1 'relieve and hand over the watch') is sub-divided into training tasks or duties on the left hand side of the page. The trainee should complete as many of these training tasks as possible. However, in view of the likely equipment, cargo or voyage pattern of the ship, it is not expected that all these tasks will be completed before the trainee is considered competent in the primary task. It should be noted that some of the skills and knowledge that underpin the competences may well have been obtained during shore based training.
- 各訓練科目之完成提供兩空格供施訓者記錄。此並不意謂該各科目應完成兩次，依該施訓者之意見，一次亦可。  
Space is provided to record completion of each training task twice by the instructor. This does not mean that each task must be completed twice if, in the opinion of the instructor, once is considered sufficient.
- 施訓者並不必要為指派訓練員。
- Instructor does not necessarily have to be the designated training officer.
- 輪機長或同部門較自身高階之甲級船員在淡色陰影部分空格前記錄「適任性證明」時，得對改進部分作建議。為此目的，在評估標準之下方留有較大之空格，以便填寫。如此等主要科目之適任性證明為適任，則應由輪機長或同部門較自身高階之甲級船員，在評估標準下方陰影部分靠右側之適當空格簽署，並加註日期（年月日）。  
Before 'Competence Demonstrated' is recorded (in the light blue box), the chief engineer officer or designated on board training officer may record any appropriate advice about areas for improvement. A large blank space for this purpose is provided beneath the criteria for evaluation. As competence in these primary tasks is demonstrated, the appropriate light blue box next to the criteria for evaluation, on the far right hand side of the page, should be signed and dated (day, month and year) by the chief engineer officer or designated training officer on board the ship to attest that competence has been demonstrated.
- 當輪機長或同部門較自身高階之甲級船員確認學員能在無監督之下執行其職責或該學員在執行其職責時亦可監督其他人員時，始可簽署「適任性證明」欄位。  
A trainee's attainment of the competence should only be recorded as 'Competence Demonstrated' when the chief engineer officer or designated training officer is satisfied that the trainee can perform the duty without supervision or, where appropriate, that the trainee is able to supervise others in the performance of the duty.
- 當記錄「適任性證明」時應仔細考慮在該頁右側內之評估標準，亦為航海人員與良好安全工作實踐之最佳方法。  
When recording 'Competence Demonstrated', careful account should be taken of the criteria for evaluation contained on the right hand side of the page, as well as the best practices of seafarers and good safe working practices.

## 第七部分 管輪之科目

### SECTION 7 TASKS FOR OFFICERS IN CHARGE OF AN ENGINEERING WATCH

在本部分訓練中包含對管輪發證之要求，發證規定如次：

The training in this section of this Record Book covers the requirements for the certification of officers in charge of an engineering watch. The requirements for certification are as follows:

#### STCW 規則 III/1 STCW Regulation III/1

在有人值守機艙負責當值之輪機員或指派在定期無人值守機艙為值勤輪機員發證之強制性最低要求

**Mandatory minimum requirements for certification of officers in charge of an engineering watch in a manned engine-room or designated duty engineers in a periodically unmanned engine-room**

1. 凡在主機推進動力 750 瓩以上之航行船舶上，有人值守機艙負責輪機當值輪機員或指派在定期無人值守機艙為值勤輪機員者，應持有適任證書。  
Every officer in charge of an engineering watch in a manned engine-room or designated duty engineer officer in a periodically unmanned engine-room on a seagoing ship powered by main propulsion machinery of 750 kW propulsion power or more shall hold a certificate of competency.
2. 凡申請發證者應：  
Every candidate for certification shall:
  - .1 年齡滿 18 歲；  
be not less than 18 years of age;
  - .2 業已完成工廠實務技能訓練，及至少 12 個月經認可之海勤資歷，作為符合STCW 章程第 A-III/1 節所要求包含在船訓練在內經認可訓練計畫之一部分，並在認可的訓練紀錄簿中載明；或業已完成綜合機工技能訓練，及至少 36 個月經認可之海勤資歷，其中至少30 個月係在輪機部門服務。  
have completed combined workshop skill training and an approved seagoing service of not less than 12 months as part of an approved training programme which includes onboard training that meets the requirements of section A-III/1 of the STCW Code and is documented in an approved training record book, or otherwise have completed combined workshop skill training and an approved seagoing service of not less than 36 months of which not less than 30 months will be seagoing service in the engine department;
  - .3 在所要求之海勤資歷期間，在輪機長或合格之輪機員監督下，執行輪機當值 職責至少 6 個月；  
have performed, during the required seagoing service, engine-room watchkeeping duties under the supervision of the chief engineer officer or a qualified engineer officer for a period of not less than six months;

- .4 業已完成認可之教育與訓練，符合 STCW 章程第 A-III/1 節規定之適任標準； 及  
have completed approved education and training and meet the standards of competence specified in section A-III/1 of the STCW Code;  
and
- .5 符合 STCW 章程第 A-VI/1 節第 2 項、第 A-VI/2 節第 1 至 4 項、第 A-VI/3 節第 1 至 4 項、及第 A-VI/4 節第 1 至 3 項規定之適任標準。  
meet the standards of competence specified in section A-VI/1, paragraph 2, section A-VI/2, paragraphs 1 to 4, section A-VI/3, paragraphs 1 to 4 and section A-VI/4, paragraphs 1 to 3 of the STCW Code.

本訓練紀錄簿的完成應確實採架構化之方法，以使學員能在海上期間作最佳運用。  
Completion of ISF Training Record Book for Deck Trainees should ensure a structured approach is undertaken so that trainees can make best use of their time at sea.

學員可利用第九部分之科目概要表，標出其所完成船上訓練科目。  
A Task Summary Chart, which trainees can tick off as they complete their on board training tasks, can be found in Section 9.

專長 FUNCTION：操作級-輪機工程

MARINE ENGINEERING AT THE OPERATIONAL LEVEL

項次 Ref No	訓練 Training		評估標準 Criteria for Evaluation	適任性證明 Competence Demonstrated	
1	適任 Competence： 保持安全機艙當值 Maintain a safe engineering watch			當值應依照常規、程序、船上特定的指示去執行。溝通時應清楚明確的發送及接收訊息 The duties are carried out in accordance with accepted principles, procedures and ship specific instructions. Communication is clearly and unambiguously given and received	同部門較自身高階之 甲級船員簽名/日期 Assessor ( Signature/Date )
1.1	當值之接班及交班 Relieve and hand over the watch		對改進部分之建議 Advice on Areas for Improvement		科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )
	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )		對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )
.1	遵循交班之正確程序 Follow the correct procedure for handing over a watch： 航行中 At sea				
.2	在港內 In port				
.3	遵循接班之正確程序 Follow the correct procedures for taking over and accepting a watch： 航行中 At sea				
.4	在港內 In port				

填寫方式請參考P.29

1.2	執行當值 Conduct the watch	機器、設備及系統之監視頻率和範圍，經常符合廠商之建議，可接受的長規及程序，而且充分對付一般操作錯誤及瑕疵狀況時。可疑的決斷及/或行動將導致面對的挑戰及回應 The frequency and extent of monitoring: machinery, equipment and systems conform to manufacturers' recommendations and accepted principles and procedures and are sufficient to deal with common operational errors and fault condition.:Questionable decisions and/or actions result in appropriate challenge and response		
.1	在一位當值輪機員指導下執行下列職能： Assist with the duties of an engineer officer on : 航行當值 Seagoing watches			
.2	在港當值 Port watches			
.3	錨泊當值 Anchor watches			
.4	在監督下執行例行之當值工作，校對自動控制與監測系統之正確功能 Under supervision, carry out all routine watchkeeping duties, checking the correct functioning of all automatic control and monitoring systems			
.5	必要時予以調整 Make adjustments as found necessary			
.6	在機器的運轉區內進行正確水位顯示之例行檢查 Perform routine checks in machinery space for correct water levels			

填寫方式請參考P.29



.7	洩放主機掃氣凝水 Blow down main engine scavenge drains					
.8	確認壓縮空氣自動排放凝水功能正常 Ensure that compressed air automatic drains are functioning correctly					
.9	檢查高壓燃油管外層覆套 Check sheathing on high-pressure fuel pipes					
.10	清潔渦輪增壓機進氣端 Clean air side of the turbo charger					
.11	執行鍋爐水試驗與處理 Carry out boiler water tests and corrective treatment					
.12	檢查加熱管的回水及其他可能污染給水的來源 Check returns from heating coils and other possible sources of contaminated feed water					
.13	核對正確的鍋爐操作包含鍋爐水位及噴嘴 Check the correct operation of the boiler including water level and burner					
.14	執行煙囪吹灰程序 Carry out a soot-blowing procedure					
.15	檢查所有空氣接收器之凝水 Check all air receiver drains					
.16	在駕駛台協助船舶操控 Assist on the bridge during maneuvering operations : 進港時 Entering port					
.17	離港時 Leaving port					
.18	了解有效的當值涉及善於處理當值職責，除監督外尚包含對推進機組及其他機器繼續維持安全運作 Understand that effective watchkeeping involves managing watch duties, including supervision, as well as maintaining the safe operation of propulsion plant and other machinery					

填寫方式請參考P.29

1.3	突然斷電及緊急情況的因應 Respond to black-out and emergency situations	依照擬定的程序立即採取行動，並改善當時的情況。有效的領導行為及示範 <i>Immediate actions are executed in accordance, with laid down procedures, and due regard paid to the actual situation. Effective leadership behaviors are demonstrated</i>		
.1	在下列緊急操演中應採取之正確行動： Take corrective action during emergency drills : 消防演練 Fire drill			
.2	棄船演練 Abandon ship drill			
.3	突然斷電演練 Black out drill			
.4	協助/示範使用主機主控台及緊急操作台 Assist with/demonstrate use of main engine local control and emergency maneuvering			
.5	協助/示範主機恢復正常運轉之程序 Assist with/demonstrate procedure for returning main engine to normal running			
.6	操演緊急運轉及操船運轉程序 Demonstrate in a drill, emergency running and maneuvering procedures			
.7	操演緊急舵機操作須知 Demonstrate knowledge of emergency steering gear operation			
.8	說明設備在故障排除後如何重置及重新啟動須知 Demonstrate a knowledge of how to reset machinery following failure and how to restart plant			
.9	說明修復供電之優先順序 State the priorities for restoring services			
.10	說明首次啟動安排須知 Demonstrate knowledge of first start arrangements			

填寫方式請參考P.29

1.4	遙控自動系統與現場手控系統之互換 Change-over of remote-automatic and local control systems			依照程序說明準確的執行。可疑的決斷及/或行動將導致面對的挑戰即回應 <i>The operation are decisively carried out and in accordance with procedures stated. Questionable decisions and/or actions result in appropriate challenge and response</i>			
.1	轉換到備便系統 Change over to the stand by system for : 主機 Main engines						
.2	發電機 Generators						
.3	主機系統泵 Main engine system pumps	<b>填寫方式請參考P.29</b>					
.4	舵機 Steering gear						
.5	備俾前準備 Prepare for stand by engines						
1.5	完成機艙日誌及其他紀錄簿之登錄 Complete the engine room log book and other records			所有引擎系統相關的重要讀數、動態及活動應都被適當的登錄 <i>All significant readings, movements and activities related to the engineering systems are properly recorded</i>			
.1	填寫機艙日誌及各式紀錄簿 Complete the engine room log book and record books	<b>填寫方式請參考P.29</b>					
.2	在動俾期間記錄全部主機動態 Record the complete engine movements in the log during periods of maneuvering						
.3	登錄警鈴紀錄簿 Evaluate record entries in the Alarm Record Book						

.4	關注機器運作狀況的顯示裝備之性能及裝態 Observe and note performance and condition of machinery using condition monitoring equipment, where appropriate					
.5	關注正常操作時的溫度/壓力 Observe and note normal operating temperatures/ pressures					
.6	說明警鈴紀錄簿之用途及須知 Demonstrate a knowledge of and understand the purpose of the Alarm Record Book					
1.6	瞭解機艙資源管理之原則 Knowledge of engine room resource management principles	資源之配置依需要之優先而分配以執行所需完成之工作 <i>Resources are allocated and assigned as needed in correct priority to perform necessary tasks</i>				機艙資源管理配置及應用設定可行之方案 Set realistic plans for allocation and use of engine room resources
.1	機艙資源管理配置及應用設定可行之方案 Set realistic plans for allocation and use of engine room resources					
.2	計畫工作能及時完成 Plan tasks to achieve timely outcome					
.3	瞭解為達成目標或目的計畫必須有明確充分的細節 Understand that to achieve a goal or an objective the plan must be specific with sufficient detail					
.4	收集及說明管理資料以確定工作進度 Demonstrate collection and interpretation of management data to assess task progress					
.5	帶領團隊成員在進度中重行檢查所設定之計畫以確保工作能如期達成 Lead progress review with team members to ensure task is attainable within the plan set					
.6	工作完成後之檢討能給予讚許的回饋因在其他場合中可能會很困難達成 Lead task review on completion giving credit where due and noting areas where things may be done differently on another occasion					

填寫方式請參考P.29

填寫方式請參考P.29

2	<p align="center"><b>適任 Competence :</b> 能以書面及口頭方式使用英語 <b>Use English in written and oral form</b></p>	<p align="center"><b>評估標準</b> <b>Criteria for Evaluation</b></p>		<p align="center"><b>適任性證明</b> <b>Competence Demonstrated</b> 同部門較自身高階之 甲級船員簽名/日期 Assessor (Signature/Date)</p>	
2.1	<p>能閱讀英文輪機書刊、操作手冊及故障排除指示 Use English engineering publications, operational manuals and fault finding instructions</p>	<p>能正確的翻譯與輪機職責相關之英文書刊及手冊 <i>The publications and manuals relevant to the engineering duties are correctly interpreted</i></p>			
	<p align="center">科目/職責 Task/Duty</p>	<p align="center">科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )</p>		<p align="center">對改進部分之建議 Advice on Areas for Improvement</p>	<p align="center">科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )</p>
.1	<p>列舉所用之英文書刊及手冊如下： List English language publications or manuals used :</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p>				
.2	<p>如果合適的話以英文完成船上定期保養計畫紀錄 If appropriate, assist with completion of ship's Planned Maintenance System records in English</p>				

**填寫方式請參考P.29**

2.2	能適時與用英語和他人溝通 Communicate with others in English language, as appropriate	溝通應清晰及明確 <i>Communications are clear and understood</i>					
.1	在機艙無論對機械、設備及工具名稱上都能正確地使用英文術語 Demonstrate correct use of terms used in the engine room and names of machinery, equipment and tools						
.2	用英文下達及執行下列項目： Give and take orders in English concerning： 例行操作 Routine operations						
.3	緊急操演 Emergency drills						
.4	確定夥伴已正確了解所下達之命令 Ensure that others have understood orders correctly						
.5	對不同國籍夥伴能用英文下達有效指令的能力 Demonstrate an ability to communicate instructions effectively in the English language to a multi-lingual crew						
3	適任 Competence： 能使用船上對內部聯絡系統 Use internal communication systems	評估標準 Criteria for Evaluation	適任性證明 Competence Demonstrated 同部門較自身高階之 甲級船員簽名/日期 Assessor (Signature/Date)				
3.1	能使用船上所有的對內部聯絡系統 Operation of all internal communication systems on board	能連續且有效的發送及接收信息，通信紀錄應依當時情況完整及確實記錄 <i>Transmission and reception of messages are consistently successful. Communication records are complete, accurate and comply with statutory requirements</i>					

填寫方式請參考P.29

	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )
.1	操作船上內部電話系統 Demonstrate operation of the ship's internal phone system			
.2	使用船上內部訊息系統傳送及接受訊息或指示 Use internal message system to send and receive information or instructions			
.3	瞭解溝通係雙向交換，練習下列實作： Understand communication is a two-way exchange and demonstrate this in practice： 舵機房與機艙 Steering gear to engine room			
.4	舵機房與駕駛台 Steering gear to bridge			
.5	當使用手執無線電話通訊時能正確的表明自己知識別台別 Demonstrate correct station ID procedure when using hand held transceivers (portable radios)			
4	<p><b>適任 Competence：</b> 能操作主機、副機及各種操縱系統 <b>Operate main and auxiliary machinery and associated control systems</b></p>		<p><b>評估標準</b> <b>Criteria for Evaluation</b></p>	<p><b>適任性證明</b> <b>Competence Demonstrated</b> 同部門較自身高階之 甲級船員簽名/日期 Assessor ( Signature/Date )</p>
4.1	離港前機器的備便 Prepare machinery for departure		<p>依照擬定的指示執行各項檢查及操作，並且使輔機及控制系統能發揮適當功能。紀錄各項相關的檢查及操作 All checks and actions are carried out in accordance with laid down instructions and all auxiliary and control systems are functioning properly. All relevant checks and actions are recorded</p>	

填寫方式請參考P.29

	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )		對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	
.1	草繪主機系統的配置圖，並且對主要組件以方塊圖表示之 Draw a schematic arrangement of the main engine system, using blocks to indicate the main components					
.2	準備及測試舵機及俾鐘 Prepare and test the steering gear and telegraphs					
.3	確認船橋與機艙通訊正常 Confirm bridge and ER communications	<div style="border: 2px solid red; border-radius: 15px; padding: 10px; display: inline-block;"> <p style="color: red; font-size: 1.2em; margin: 0;">填寫方式請參考P.29</p> </div>				
.4	查核啟動空氣機及備便啟動空氣系統 Check starting air compressor and prepare starting air system					
.5	備便主機及輔機以便出港 Prepare main and auxiliary machinery for port departure					
.6	備便主機及輔機以便巡航 Prepare main and auxiliary machinery for the sea passage					
.7	說明選擇高水位及低水位海水閘須知 Demonstrate a knowledge of the use of high level and low level sea suction					
4.2	主、輔機之操作 Operate main and auxiliary machinery	<p>依照指示、程序及安全工作習慣操作機器。執行機器的監控、適時調整及必要的動作等，並正確記錄之</p> <p><i>The machinery is operated in accordance with instructions, procedures and safe working practices. All instruments are monitored, necessary adjustments made and required actions carried out and properly recorded</i></p>				



.1	以線形圖方式記述船上主要系統的概要 Sketch, in diagrammatic form, the main systems as appropriate for the ship : 主機 Main engine					
.2	輔機 Auxiliary engine					
.3	鍋爐系統 Boiler system					
.4	由現場及遙控處啟動主機 Start main engine from local and remote control positions					
.5	完成主機及軸系啟動後的檢查 Carry out post start-up checks of main engine and shafting					
.6	手動主壓縮機然後轉換成正常自動運轉模式 Manually operate main compressor and change over to normal automatic running mode					
.7	紀錄正常運轉模式時之壓力及溫度及在正常運轉模式下各閥定置及位置之標示系統 Record pressures and temperatures for normal running, and note system valve settings and positions in normal running mode					
.8	回應操縱期間船橋的指示並操控主機 Respond to instructions from the bridge and operate the main engine controls during periods of maneuvering					
.9	用水清洗主機渦輪增壓機的排氣側 Water wash exhaust side main engine turbocharger					
.10	適時將機器及系統的現場/手動操控轉換為遙控/自動控制 Change local/manual control of machinery and systems to remote/automatic control as appropriate					
.11	調整主機及輔機以便持續運轉 Adjust main engine and auxiliary machinery for continuous running					

填寫方式請參考P.29

.12	報告不正常情況並記錄之及記錄所採取因應之行動 Report abnormal conditions, making a record of same and note corrective action required					
.13	準備運轉及操作蒸發器/淡水製造機 Prepare for running and operate an evaporator/fresh water generator					
.14	測試及調整所製淡水之純度及輸送狀態 Apply tests and conditioning for purity and portability of fresh water					
.15	檢查曲柄箱油霧探測器並示範緊報發生時的對應動作 Check crankcase oil mist detector and demonstrate action to be taken in case of an alarm					
.16	檢查調速器 Check governors					
.17	量取示工圖或讀數並計算平均有效壓力及指示功率 Take power diagram or readings and calculate mean effective pressure and indicated power					
.18	完成下列例行測試： 引擎冷卻水 Engine cooling water					
.19	燃油 Fuel oil					
.20	滑油 Lube oil					
.21	結束引擎運作時協助關閉主、輔機系統 Assist with shutting down main engine and auxiliary systems after finishing with engines					
.22	冷爐注水並進行釀氣 Fill a boiler and raise steam from cold					
.23	將然油加熱至正確的溫度 Raise the temperature of main engine fuel oil from cold to the correct level					

.24	蒸氣導入管線或系統時應採取所有預防措施以防溫度及壓力產生激變及避免水錘 Admit steam to a line or system, taking all precautions against thermal and pressure shock and avoiding water hammer					
.25	檢查蒸氣管路及任何膨脹部分支安全 Check the security of steam pipes and any expansion pieces					
.26	檢查蒸氣凝氣瓣及排凝水功能 Check that steam traps and drains are functioning					
.27	關閉蒸氣管線，觀察排水過程 Close down a steam line, observing procedure for draining					
.28	燃燒品質的檢查，注意下列事項： Check quality of combustion, noting： 煙囪排放煙的濃度 Smoke from the funnel 火焰周邊的清澈度 Clarity around the flame 火焰的形狀、大小及顏色 Flame shape, size and color 過給空氣、CO <sub>2</sub> /CO讀數 Excess air, CO <sub>2</sub> /CO reading 碳及未燃燒的殘渣 Carbon and unburned fuel deposits					
.29	檢查加熱管內之回水及其他可能污染給水的來源 Check returns from heating coils and other possible sources of contaminated feed water					
.30	檢查所有鍋爐狀態指示器及緊報器之正確功能 Check the correct functioning of all boiler condition indicators and alarms					
.31	核對鍋爐維持正確水位 Check that correct boiler water level is maintained					
.32	示範鍋爐儀表玻璃管內排放空氣程序 Demonstrate the correct procedure for blowing down a boiler gauge glass					

.33	說明循環水溫度變化的效應 Explain the effect of varying the temperature of circulating water					
.34	啟動及操作船上冷凍設備 Start up and operate ship's refrigeration plant					
.35	適時補充滷水 Make up brine, if appropriate					
.36	核對滷水濃度 Check density of the brine					
.37	停機及關妥冷凍機/空調裝置 Shut down and secure refrigeration/AC plant					
.38	執行冷凍機添加冷媒程序 Carry out refrigerant charging procedure					
.39	執行冷媒漏泄檢測 Carry out leak detection for refrigerant gases					
.40	更換乾燥劑及過濾器 Replenish driers and filters					
.41	檢查壓力櫃之安全裝置 Check pressure tank safety devices					
.42	將汙水處理系統連線及查核正確運作 Put sewage system on line and check correct operation					
.43	操作下列廢棄物處理設備： Operate waste handling equipment： 焚化爐Incinerator					
.44	絞碎機/打包機Shredder/compactor					
.45	其他(請列出)Other (state) 1. _____ 2. _____ 3. _____					

5	<p>適任 Competence :</p> <p>能操作燃油、潤滑油、壓艙水、 其他泵浦系統及各種操縱系統</p> <p><b>Operate fuel, lubrication, ballast and other pumping systems and associated control systems</b></p>	<p>評估標準</p> <p><b>Criteria for Evaluation</b></p>		<p>適任性證明 Competence Demonstrated</p> <p>同部門較自身高階之 甲級船員簽名/日期 Assessor ( Signature/Date )</p>	
5.1	<p>規劃輔助及管路系統的操作及選用裝備</p> <p><b>Plan the operations of auxiliary and piping systems and service plants</b></p>	<p>各項操作規畫妥當並於執行 操作前完成各項裝備及控制 系統的檢查</p> <p><i>Operations are planned and all equipment and control systems checked before operations are executed</i></p>			
	<p>科目/職責 Task/Duty</p>	<p>科目已完成 Task Completed</p>	<p>施訓者簽名/日期 Instructor( Signature/Date )</p>	<p>對改進部分之建議 Advice on Areas for Improvement</p>	<p>科目已完成 Task Completed</p> <p>施訓者簽名/日期 Instructor( Signature/Date )</p>
.1	<p>繪一油水分離器(OWS)系統線路圖 Sketch a line diagram of the oily water separator (OWS) system</p>				
.2	<p>繪一壓艙水系統線路圖 Sketch a line diagram of the ballast water system</p>				
.3	<p>繪一機艙汗水系統線路圖 Sketch a line diagram of the engine room bilge water system</p>				
.4	<p>繪一保留汗水系統線路圖 Sketch a line diagram of the hold bilge water system</p>				
.5	<p>協助油水分離器(OWS) 之操作 Assist with the operation of the OWS</p>		<p>15.MAY 2015</p>		
.6	<p>有正確填寫油紀錄簿的知識 Demonstrate a knowledge of making correct entries in the Oil Record Book</p>				

.7	協助規畫壓艙水操作管理 Assist with planning ballast water management operations					
.8	規劃及執行 Plan and line-up : 壓艙水泵浦 Ballast water pump					
.9	汙水泵浦 Bilge pump					
.10	對汙水泵浦的知識 Demonstrate a knowledge of the bilge pump					
.11	繪一加燃油系統線路圖 Sketch a line diagram of the fuel oil bunker system					
.12	協助規畫下列工作 Assist with planning for : 加燃油 Receiving bunkers					
.13	自燃油櫃駁至日用櫃 Transfer of fuel from bunker tanks to service tanks					
5.2	燃油、滑油、壓艙水、艙底水、汙水、海洋環境維護等設備和裝卸貨泵之操作 Operate the systems for fuel oil, lube oil, ballast, bilge, MARPOL equipment and cargo pumping				依照海上環境污染防治的規定及程序完成各項操作 <i>The operations are carried out in accordance with rules and procedures to ensure safety of operations and avoid pollution of the marine environment</i>	
.1	在監督下從儲油櫃駁送至日用櫃，注意所有安全、船舶穩度及防止污染的要求 Under supervision, transfer fuel from bunkers to service tanks, observing all safety, ship stability and pollution prevention requirements					
.2	自沉澱櫃中排放凝水及殘渣 Drain water/sludge from settling tanks					
.3	啟動、操作及監測燃油淨油機 Start, operate and monitor fuel oil purifiers					

.4	瞭解產生含硫(磺)物質管制區之知識 Demonstrate a knowledge of Sulphur Emissions Control Areas					
.5	如有機會，在指導下轉換重黏(滯)度燃油到輕黏(滯)度燃油，反之亦然。 Assist an officer with change over from heavy fuel oil to low viscosity fuel oil and vice versa, where applicable					
.6	啟動、操作及監測滑油淨油機 Start, operate and monitor lube oil purifiers					
.7	執行例行檢查及加滿滑油系統櫃至正確油位 Perform routine checks and top ups to maintain lube oil system tanks at the correct levels					
.8	協助貨艙的裝、卸工作及收艙程序 Assist with loading and discharging cargo tanks, including stripping procedures					
.9	依照 MARPOL 公約之規定設定及使用油水分離器(OWS) Set up and use an OWS in compliance with MARPOL					
.10	遵照 MARPOL 公約之規定操作油排放監視器的設備 Operate an oil discharge monitor in compliance with MARPOL (oil tankers)					
.11	汗水儲存艙的運用 Use bilge holding tanks					
.12	陳述所有污染防止的規定 Observe all pollution prevention requirements					
.13	拆解油水分離器(OWS)所有組件，清潔所有零件後再重新裝配 Open up OWS units, clean all parts and reassemble					

.14	陳述所有安全、船舶穩度、汙染防止等之規定，協助完成： Observing all safety, ship stability and pollution prevention requirements, assist an officer with： 加壓艙水 Ballasting					
.15	排放壓艙水 Deballasting					
.16	抽掉船上汙水保留艙實應確保遵守防止汙染的規定與要求 Pump out hold bilges ensuring that all pollution prevention regulations and requirements are observed					
.17	示範船舶進水時緊急淨空機艙艙底水的措施 Demonstrate the emergency arrangements for emptying engine room bilges in the event of flooding					



**專長 FUNCTION：操作級-電機、電子及控制工程**  
**ELECTRICAL, ELECTRONIC AND CONTROL ENGINEERING AT THE**  
**OPERATIONAL LEVEL**

項次 Ref No	訓練 Training			適任性證明 Competence Demonstrated	
6	適任 Competence： 能操作電機、電子及控制工程 Operate electrical, electronic and control systems		評估標準 Criteria for Evaluation	同部門較自身高階之 甲級船員簽名/日期 Assessor ( Signature/Date )	
6.1	電器設備基本的配置及操作原則： 電器設備及其配置系統應確定其位置及 有關的操作手冊、圖表及說明書 Basic configuration and operating principles of electrical equipment： Locate and use relevant manuals, drawings, diagrams and instructions for electrical equipment and distribution systems		相應的說明書及手冊能快速 辨認及適當使用此為安全有 效的作業。能用電路圖/說明 書瞭解及說明電路系統 The instructions and manuals relevant for safe and efficient operations are quickly identified and properly used. Electrical systems can be understood and explained： with drawings/instructions		
	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	
.1	說明系統圖、電路圖、配線圖之不同 Explain the difference between a system diagram, a circuit diagram and a wiring diagram				

.2	<p>有能力使用船上圖表識別下列：                  Demonstrate an ability to use ship's diagrams to identify：                  主斷電器                  Main circuit breakers                  緊急配電盤連接器                  Emergency switchboard connections                  跳脫開（過電流、逆電力、低頻率）                  Trips(over current, reverse power, low frequency)                  變壓器                  Transformers                  保險絲                  Fuses                  供電壓                  Supply voltages                  接岸電                  Shore connections                  每個設備之負荷                  Loads to each piece of equipment                  各類型馬達及其啟動器                  The types of motors and motor starters</p>					
.3	<p>說明在電路圖上常用符號之意義                  Demonstrate a knowledge of symbols commonly used on circuit diagrams</p>					
.4	<p>說明在配電網路中主控板及保護裝置之位置                  Demonstrate a knowledge of the location of major control and protection devices within the distribution network</p>					
.5	<p>說明電負荷的類別如主要的或次要的，主要的負荷是提供那些服務                  Demonstrate a knowledge of which electrical loads are classed as essential or non-essential, and how essential services are supplied</p>					
.6	<p>指出岸電接頭之位置及說明接/拆岸電之程序                  Locate shore power connection and state the procedures for connection/disconnection</p>					

6.2	準備及啟動交流發電機或發電機 Prepare and start alternators or generators	操作應先規劃然後依照作業手冊，確定的準則及程序，以確保安全作業之達成 <i>The operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations</i>				
.1	在啟動前協助檢查及測試電器設備及控制系統 Assist with pre start-up checks and tests on electrical equipment and control systems					
.2	手動模式及遙控模式啟動之準備 Prepare for starting in manual and remote modes					
.3	執行啟動後的檢查 Carry out post start-up checks					
.4	正確地核對各種控制產生的作用 Check that all controls are functioning correctly					
.5	說明以下跳脫的知識及如何重置 Demonstrate knowledge of trips and how to reset for : 過電流 Over current					
.6	逆電力 Reverse power					
.7	低頻率 Low frequency					
.8	檢查排氣管的漏泄 Check exhaust pipes for leakage					
.9	檢查高壓燃油管外層護套及相聯的溢漏指示器之功能 Check efficiency of sheathing on high-pressure fuel pipes and associated leak-off indicators					

6.3	交流發電機或發電機之並聯及取消 Parallel and change-over alternators or generators			操作應先規劃然後依照作業手冊，確定的準則及程序，以確保安全作業之達成 The operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations		
.1	啓動後加快運轉速度，應用並聯程序與加上負載，包括軸發電機與緊急發電 After start-up, run up to speed, use paralleling procedures and put on load, including shaft generators and emergency generators					
.2	調整並聯運轉中機器分擔之負載 Adjust the load share of machines running in parallel					
.3	移除並聯中一部機器的負載並停止及關妥它 Remove the load from a machine running in parallel, stop and shut down					
.4	評述在配電系統中如主電源故障時是何保護備用器是安全組件 Describe the safety features in the power distribution system which protect alternators in case of a major fault					
6.4	合適時，啟動電動馬達包含高壓設備 Start electric motors including high voltage installations, where appropriate		操作應先規劃然後依照作業手冊，確定的準則及程序，以確保安全作業之達成 The operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations			
.1	說明啟動電動馬達的條件 Demonstrate an understanding of the starting methods for electric motors					
.2	說明如何啟動及操作大容量泵浦 Start up and operate a high capacity pump					

.3	說明與高電壓結合裝置中之保護開關知識 Demonstrate a knowledge of protective switch gear associated with high voltage installations					
.4	說明在船上電器施工工作前許可須知 Demonstrate an understanding of the ship's permit to work system concerning electrical equipment					
6.5	電子設備的基本配置及操作原則： 基本電路元素之特性 Basic configuration and operating principles of electronic equipment : Characteristics of basic electronic circuit elements			能快速確認及正確使用有關安全及有效操作的說明書及手冊。並藉由附圖/介紹來瞭解及闡明電子系統 <i>The instructions and manuals relevant for safe and efficient operations are quickly identified and properly used. Electronic systems can be understood and explained with drawings/instructions</i>		
.1	繪草圖說明提供電子控制設備之組件 Sketch and describe a component providing electronic equipment control					
.2	協助對設備之例行檢查與測試 Assist with routine checks and tests on electronic equipment					
.3	說明電子線路圖上符號之意義 Demonstrate a knowledge of electronic circuit symbols					
.4	說明電子線路上基本元件之特性 Demonstrate a knowledge of the characteristics of basic electronic circuit elements					

6.6	<p>自動及控制系統流程圖 Flow chart for automatic and control systems</p>			<p>能快速確認及正確使用有關安全及有效操作的說明書及手冊。並藉由附圖/介紹來瞭解及闡明電子系統 <i>The instructions and manuals relevant for safe and efficient operations are quickly identified and properly used. Electronic systems can be understood and explained with drawings/instructions</i></p>		
.1	<p>闡述程序信號的符號和一般術語應用在控制系統圖的知識 Demonstrate a knowledge of process signal symbols and terminology commonly used with control system diagrams</p>					
.2	<p>應用順序控制電路來描繪一份船電分配系統 Sketch a part of the ship's electrical distribution system that uses sequential control circuits</p>					
.3	<p>應用順序控制電路來表列其它裝備項目 List other items of equipment that use sequential control circuits</p>					
.4	<p>闡述電子裝備操作的自動和控制系統流程圖的知識 Demonstrate a knowledge of flowcharts for automatic and control systems for electronic equipment operation</p>					
.5	<p>協助進行電子裝備控制系統的例行檢查和測試 Assist with routine checks and tests on electronic equipment control systems</p>					

6.7	<p>機械控制系統之功能、特性及特色</p> <p>Functions, characteristics and features of control systems for machinery</p>	<p>很快辨認出安全、有效操作相關的說明書及手冊並加以適當地應用。藉由附圖/說明書來瞭解及闡明電子系統</p> <p><i>The instructions and manuals relevant for safe and efficient operations are quickly identified and properly used. Electronic systems can be understood and explained with drawings/instructions</i></p>				
.1	<p>繪草圖及說明電子控制系統</p> <p>Sketch and describe a system of electronic control</p>					
.2	<p>說明下列設備控制系統之功能及特性</p> <p>Demonstrate a knowledge of the functions, characteristics and features of the control system for :</p> <p>主機 Main propulsion engine</p>					
.3	<p>鍋爐 Steam boiler</p>					
.4	<p>舵機 Steering gear</p>					
6.8	<p>電氣及電子控制系統的基本構造和操作原理： 自動控制的方法和特性</p> <p>Basic configuration and operating principles of electrical and electronic control systems : Automatic control methodologies and characteristics</p>	<p>很快辨認出安全、有效操作相關的說明書及手冊並加以適當地應用。藉由附圖/說明書來瞭解及闡明電子系統</p> <p><i>The instructions and manuals relevant for safe and efficient operations are quickly identified and properly used. Electronic systems can be understood and explained with drawings/instructions</i></p>				

.1	解釋在控制系統的術語“高增益” Explain the term 'high gain' in a control system					
.2	說明控制系統不穩定性是如何發生的 Explain how instability in a control system can occur					
.3	描繪出你闡述的控制元件工作的自動化控制系統的佈置示意圖 Sketch a diagrammatic arrangement of an automatic control system you have worked on showing the control elements					
.4	舉例藉由調整比例-積分-微分 (PID) 控制器可以達到其成效改善/穩定性 Give examples of Proportional-Integrate-Derivative (PID) controllers that may be adjusted to achieve improved results/stability					
.5	表列一般用在船上調整的方法 List tuning methods commonly used on board					
.6	表列在 PID 迴路調節使用的應用程式 List software applications used in PID loop tuning					
.7	解釋控制系統供暖、通風和空調系統的基本區別 Explain the fundamental difference in control system for heating, ventilation and air conditioning systems					
.8	舉一個系統“下垂”已被控制的例子 Give an example of a system where 'droop' has to be controlled					
.9	描述一個基於 PLC 控制器的功能，識別預先設定的可調參數 Describe the function of a PLC-based controller, identifying pre-set and adjustable parameters					



6.9	比例-積分-微分 (PID) 控制的特性 Proportional-Integral-Derivative (PID) control characteristics	很快辨認出安全、有效操作相關的說明書及手冊並加以適當地應用。藉由附圖/說明書來瞭解及闡明電子系統 <i>The instructions and manuals relevant for safe and efficient operations are quickly identified and properly used. Electronic systems can be understood and explained with drawings/instructions</i>				
.1	解釋三種控制的基本原則 Explain the basic principle of three term control					
.2	闡述 PID 控制特性的知識和相關的系統設備進行程序控制 Demonstrate a knowledge of PID control characteristics and associated system devices for process control					
7	<p style="text-align: center;"><b>適任 Competence :</b>  <b>能保養及維修電機與電子設備</b>  <b>Maintenance and repair of electrical and electronic equipment</b></p>	<p style="text-align: center;"><b>評估標準</b>  <b>Criteria for Evaluation</b></p>	<p style="text-align: center;"><b>適任性證明</b>  <b>Competence Demonstrated</b>                  同部門較自身高階之                  甲級船員簽名/日期                  Assessor ( Signature/Date )</p>			
7.1	找出並解讀電氣和簡單的電子圖 Locate and interpret electrical and simple electronic diagrams	快速找出手冊和圖紙並選擇那些對任務的執行最適合的 <i>Manuals and diagrams are quickly located and those selected are the most suitable for the task to be performed</i>				
	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )		

.1	表列相關的手冊/圖紙用於船上的裝備： List shipboard equipment for which relevant manuals/ diagrams used : 1. _____ 2. _____ 3. _____ 4. _____						
7.2	結構的知識和電氣測試和測量設備的操作 Knowledge of construction and operation of electrical testing and measuring equipment	快速找出手冊和圖紙並選擇那些對任務的執行最適合的 Manuals and diagrams are quickly located and those selected are the most suitable for the task to be performed					
在下面框中表列使用了下列的船上裝置或設備：電池阻抗測試計、夾式電流表、萬用表、絕緣試驗台、高/低電壓檢測器和絕緣測試 In the box below list the shipboard plant or equipment on which you have used the following : battery impedance testers, current clamp meters, multi-meters, dielectric test sets, high/low voltage detectors and insulation testers							
	工作項目 Item Worked On	量測工具及測試 裝備 Measuring Instruments and Test Equipment Used	科目已完成 Task Completed 施訓者簽名/日期 Instructor (Signature/Date)		對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor (Signature/Date)	
.1							
.2							
.3							
.4							

7.3	<p>確保所有人員在電氣系統工作的安全，包括電氣設備的安全隔離，在這些設備工作之前要求人員得到許可</p> <p>Ensure safety of all personnel working on electrical systems, including the safe isolation of electrical equipment, required before personnel are permitted to work on such equipment</p>			<p>依據裝備的手冊及最佳方式進行拆解、檢查、維修及組裝。並依據手冊及最佳方式進行組裝及性能測試</p> <p><i>Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice. Reassembling and performance testing is in accordance with manuals and good practice</i></p>		
.1	<p>應用安全措施，隔離和鎖定電氣設備</p> <p>Isolate and lock out electrical equipment, applying safety measures</p>					
.2	<p>應用安全使用在危險區域測試和維護電氣設備的知識</p> <p>Apply knowledge of safe use of electrical equipment for testing and maintenance in hazardous areas</p>					
.3	<p>闡述安全工作的方法和程序的認識，包括穿著適當的服裝：使用動力操作的工具</p> <p>Demonstrate an understanding of safe working practices and procedures including use of appropriate clothing for : Use of power operated tools</p>					
.4	<p>進入電氣設備的密閉的空間（進入艙櫃）</p> <p>Entry into enclosed spaces (tank entry) with electrical equipment</p>					
.5	<p>在電力配電盤工作</p> <p>Work on electrical switchboards</p>					
.6	<p>起動工具的使用</p> <p>Use of lifting gear</p>					
.7	<p>在冷凍機械的艙間工作</p> <p>Work within refrigeration machinery spaces</p>					
.8	<p>在電動機械工作</p> <p>Work on electrical machinery</p>					

.9	<p>解釋發電機電纜和電路連接至自動電壓調節器(AVR)的單元測試絕緣時要採取的預防措施 Explain the precautions to be taken when testing the insulation of generator cables and wiring connected to an automatic voltage regulator (AVR) unit</p>					
.10	<p>解釋為什麼有時採用變壓器與便攜式工具和手提工作燈間逐步隔離方式 Explain why step down isolating transformers are sometimes used with portable tools and hand lamps</p>					
7.4	<p>電力系統設備、配電盤、電動機、發電機和直流電氣系統和設備的維修和維修 Maintenance and repair of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment</p>	<p>依據裝備的手冊及最佳方式進行拆解、檢查、維修及組裝。並依據手冊及最佳方式進行組裝及性能測試 <i>Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice : Reassembling and performance testing is in accordance with manuals and good practice</i></p>				
.1	<p>準確地解釋在系統圖、電路圖和接線圖中的訊息 Interpret accurately the information in a system diagram, a circuit diagram and a wiring diagram</p>					
.2	<p>在電子控制系統協助進行例行檢查和測試 Assist with routine checks and tests on electronic control systems</p>					
.3	<p>闡述主配電盤、控制室控制台的佈置的知識 Demonstrate a knowledge of main switchboard and control room console layouts</p>					
.4	<p>繪製一個電路圖來表示機艙報警系統的緊急電池充電的安排 Sketch a circuit diagram showing the arrangements for emergency battery charging for the ER alarm system</p>					

.5	闡述船舶應急電源要求的知識 Demonstrate a knowledge of the vessel's emergency power requirements					
.6	協助主配電盤日常維修的聯繫人和聯繫 Assist with main switchboard routine maintenance of contacts and connections					
.7	闡述脫開主配電盤程序的知識 Demonstrate a knowledge of the procedure to split the main switchboard					
.8	闡述相關維修配電盤儀表和安全工作準則的知識 Demonstrate a knowledge of switchboard instrumentation and safe working practices associated with its maintenance					
.9	協助測量發電機的絕緣電阻 Assist with measuring the insulation resistance of a generator					
.10	解釋為什麼絕緣測試最好趁熱或在工作溫度進行 Explain why insulation testing is best conducted while hot, or at working temperature					
.11	用兆歐表進行對電動機絕緣的測試 Carry out insulation tests on a motor using a Megger					
.12	協助對起動器的維修 Assist in the maintenance of a starter					
.13	繪製一個顯示安排的電池充電電路圖 Sketch a circuit diagram showing the arrangements for battery charging					
.14	進行對應急蓄電池的日常檢測和維修 Carry out routine testing and maintenance on emergency storage batteries					

7.5	<p>檢測和維修電氣故障和失靈及採取防止損壞措施</p> <p>Detect and repair electrical faults and malfunctions and take measures to prevent damage</p>	<p>依據裝備的手冊及最佳方式進行拆解、檢查、維修及組裝。並依據手冊及最佳方式進行組裝及性能測試</p> <p><i>Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice. Reassembling and performance testing is in accordance with manuals and good practice</i></p>				
.1	<p>繪製電路圖顯示在主配電盤的接地指示燈</p> <p>Sketch the circuit diagram for the earth indicator lamps on the main switchboard</p>					
.2	<p>對絕緣電阻和連續性的測試進行兆歐表測試</p> <p>Carry out Megger testing for insulation resistance and continuity testing</p>					
.3	<p>協助對電氣設備控制系統進行故障查找</p> <p>Assist with fault finding on electrical equipment control systems</p>					
.4	<p>協助追查接地故障</p> <p>Assist with tracing earth faults</p>					
7.6	<p>維修故障和正確故障修理</p> <p>Repair faults and correct malfunctions</p>	<p>依據裝備的手冊及最佳方式進行拆解、檢查、維修及組裝。並依據手冊及最佳方式進行組裝及性能測試</p> <p><i>Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice. Reassembling and performance testing is in accordance with manuals and good practice</i></p>				

<p>.1</p>	<p>協助電子控制系統的維修、維修和故障的查找。列表工作過的項目： Assist with maintenance, repair and fault finding on electronic control systems. List items worked on :</p> <p>1. _____ 2. _____ 3. _____ 4. _____</p>					
<p>2</p>	<p>協助交流電力系統的維修、維修和故障的查找。列表工作過的項目： Assist with maintenance, repair and fault finding on AC electrical systems. List items worked on :</p> <p>1. _____ 2. _____ 3. _____ 4. _____</p>					
<p>.3</p>	<p>協助直流電力系統的維修、維修和故障的查找。列表工作過的項目： Assist with maintenance, repair and fault finding on DC electrical systems. List items worked on :</p> <p>1. _____ 2. _____ 3. _____ 4. _____</p>					

7.7	<p>發現電力失靈，找出故障所在和處置防止損傷</p> <p>Detection of electric malfunction, location of faults and measures to prevent damage</p>		<p>依據裝備的手冊及最佳方式進行拆解、檢查、維修及組裝。並依據手冊及最佳方式進行組裝及性能測試</p> <p><i>Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice. Reassembling and performance testing is in accordance with manuals and good practice</i></p>		
.1	<p>闡述接地故障的知識及如何避免之</p> <p>Demonstrate a knowledge of earth faults and how to avoid them</p>				
.2	<p>協助追查和維修接地故障</p> <p>Assist in tracing and correcting earth faults</p>				
.3	<p>當從事維修或維修工作時，隔離和鎖定電氣設備</p> <p>Isolate and lock out associated equipment when engaged in repair or maintenance work</p>				
.4	<p>執行日常檢測和維護上的報警系統，確保電路隔離，鎖定和保護的通知，及核發相應的工作許可</p> <p>Carry out routine testing and maintenance on alarm systems, ensuring that the circuits are isolated, locked out and protected by notices and that appropriate permit to work is issued</p>				
.5	<p>協助進行正確的常規接地放電的高電壓設備的維護工作</p> <p>Assist with correct earthing-down routine for maintenance work on high voltage equipment</p>				
.6	<p>協助進行船舶照明電路的故障檢查和組件測試</p> <p>Assist with fault finding on ship's lighting circuits and component testing</p>				
.7	<p>協助維修或更換各種類型的住艙照明燈，在船上貨艙及甲板使用的投射照明燈</p> <p>Assist with repairing or replacing various types of accommodation lights, cargo hold and deck flood lights used on board</p>				



7.8	<p>監測系統、自動控制裝置及保護裝置的作用、性能測試及結構配置等知識</p> <p>Knowledge of the function and performance tests and configuration of monitoring systems, automatic control devices and protective devices</p>			<p>依據裝備的手冊及最佳方式進行拆解、檢查、維修及組裝。並依據手冊及最佳方式進行組裝及性能測試</p> <p><i>Dismantling, inspecting, repairing and reassembling equipment are in accordance with manuals and good practice. Reassembling and performance testing is in accordance with manuals and good practice</i></p>		
.1	<p>解釋為什麼任何監測、控制系統都有獨立的感應器</p> <p>Explain why on any system there should be separate sensors for monitoring and control</p>					
.2	<p>檢查及更換有缺陷的感應器對機器操作是必要的</p> <p>Check and replace defective sensors essential for engine operation</p>					
.3	<p>當發生故障時，應至少要有一台主機監測系統狀態連接自動停止主機</p> <p>State at least one main engine monitoring system that automatically stops the engine in case of a fault</p>					
.4	<p>維修或換新 Repair or replace : 保險絲 Fuses</p>					
.5	<p>控制指示燈 Control lamps</p>					
.6	<p>溫度感應器 Temperature sensors</p>					
.7	<p>壓力感應器 Pressures sensors</p>					

.8	完成例行的測試和保養於 Carry out routine testing and maintenance on : 電路開關 Circuit breakers					
.9	脫開機構 Tripping mechanisms					
.10	馬達啓動器 Motor starters					
.11	燈具 Lights					
.12	在系統保養日誌記錄包括檢查警報器設定及預設值 Check alarm settings and pre-sets contained In a system maintenance log					
.13	描述直流、交流馬達的優、缺點 Outline the advantages and disadvantages of DC and AC motors					
.14	描述如何由一個電子驅動控制來停止超載的馬達，但仍保持其運行 Outline how an electronic drive control can stop a motor overloading but keep it operating					
.15	說明在何處的電子驅動中會產生熱及如何散熱 Explain where heat is generated in an electronic drive and how it is dissipated					

**專長 FUNCTION：操作級-保養及維修**

**MAINTENANCE AND REPAIR AT THE OPERATIONAL LEVEL**

項次 Ref No	訓練 Training					
8	<b>適任 Competence：</b> 在船上裝配及維修時能正確使用手、機械工具與量測儀器 <b>Appropriate use of hand tools,                      machine tools and measuring instruments for                      fabrication and repair on board</b>		<b>評估標準</b> <b>Criteria for Evaluation</b>		<b>適任性證明</b> <b>Competence                      Demonstrated</b> 同部門較自身高階之 甲級船員簽名/日期 Assessor ( Signature/Date )	
8.1	材質和工序特性和限制的知識應用在船舶和裝備的建造和維修 Knowledge of characteristics and limitations of materials and processes used in construction and repair of ships and equipment		確認建造同型船相關組件的重要參數是適合的。選擇的材質亦是合適的 <i>The identification of important parameters for fabrication of typical ship-related components is appropriate. Selection of materials is appropriate</i>			
	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )		對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	
.1	闡述有關軟鋼的特性、性質及侷限等知識 Demonstrate a knowledge of characteristics, properties and limitations of : 軟鋼 Mild steel					
.2	高張力鋼 High tensile steel					
.3	不鏽鋼 Stainless steel					
.4	黃銅 Brass					
.5	鋁合金 Aluminum alloy					

.6	銅 Copper					
8.2	工序特性和限制的知識應用在製造和維修 Knowledge of characteristics and limitations of processes used for fabrication and repair			確認建造同型船相關組件的重要參數是適合的。選擇的材質亦是合適的。符合製造設計公差 <i>The identification of important parameters for fabrication of typical ship-related components is appropriate. Selection of materials is appropriate. Fabrication is to designated tolerances</i>		
.1	闡述以下有關的特性、性質及限制等知識： Demonstrate a knowledge of characteristics, properties and limitations of： 軟鋼的焊接 Welding mild steel					
.2	電焊 Electric arc welding					
.3	氬焊 Argon arc welding					
.4	銅(硬)焊 Brazing					
.5	鉚接 Riveting					
.6	綜合性固定方式 Synthetic fixing methods					
8.3	完成安全的緊急性/臨時性維修的方法 Methods for carrying out safe emergency/temporary repairs			使用裝備和手工具、工具機及測量儀器是正確和安全的 <i>Use of equipment and hand tools, machine tools and measuring instruments is appropriate and safe</i>		

.1	闡述如何臨時性維修有洩漏的管子 Demonstrate temporary repair to leaking pipe					
.2	表列其它的臨時性維修 List other temporary repairs made 1. _____ 2. _____ 3. _____ 4. _____					
8.4	使用手工具、工具機及測量儀器要採取安全措施， 確保安全的工作環境 Safety measures to be taken to ensure a safe working environment and for using hand tools, machine tools and measuring instruments			使用裝備和手工具、工具機 及測量儀器是正確和安全的 <i>Use of equipment and hand tools, machine tools and measuring instruments is appropriate and safe</i>		
.1	闡述有關安全規範和程序的理解： Demonstrate an understanding of safe working practices and procedures for： 使用動力操作的工具 Use of power operated tools					
.2	工具機 Machine tools					
.3	焊接裝備 Welding equipment					
.4	做好適當的個人防護裝備 Done appropriate personal protective equipment					

8.5	手工具和工具機的使用 Use of hand tools and machine tools	使用裝備和手工具/工具機 及測量儀器是正確和安全的 <i>Use of equipment and hand tools/                  machine tools and measuring                  instruments is appropriate and safe</i>		
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在下面框中表列的船上設備或裝置您已使用過，例如，下列的手工具：  
 鑿、鋸、扳手、銼刀，手動鑽頭和工具機，鑽床、銑床、鋸、砂磨機和砂輪  
 In the box below list the shipboard plant or equipment on which you have used, for example, the following hand tools :  
 chisels, saws, spanners, files, hand-drills and machine tools, drill press, milling machine, saw, grinding machine and abrasive wheel

	裝配或維修項目 Item Fabricated or Repaired	所用手或機動工 具 Hand Tools/Machine Tools Used	科目已完成 Task Completed 施訓者簽名/日期 Instructor ( Signature/Date )		對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor ( Signature/Date )	
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8.6	<p>測量儀器的使用 Use of measuring instruments</p>	<p>用於維修和保養機械和設備選定的測量儀器相關的作業；正確的測量，並檢查是否符合規定的公差 <i>The selected measuring instruments used for repair and maintenance of machinery and equipment are relevant for the tasks; correct measurements are taken and checked for compliance with stated tolerances</i></p>
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在下面框中表列的船上設備或裝置您已使用的測量設備。測量儀器或可包括，例如，半內徑卡尺、數字卡尺、內徑千分尺、深度計和游標卡尺  
In the box below list the shipboard plant or equipment on which you have used measuring equipment. Measuring instruments may include, for example, odd leg calipers, digital calipers, internal micrometer, depth gauge and venire gauge

	裝配或維修項目 Item Fabricated or Repaired	所用量測工具 Measuring Instruments Used	科目已完成 Task Completed 施訓者簽名/日期 Instructor (Signature/Date)		對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor (Signature/Date)	
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8.7	密封劑和填料的使用 Use of sealants and packings	選擇正確的材質 The selection of materials is appropriate		
.1	闡述正確使用各類密封劑和填料及注意當使用： Demonstrate the correct use of various types of sealants and packings and note when used： 密封壓蓋密封 Gland seals			
.2	法蘭(盤) Flanges			
.3	襯墊材質，包括壓縮非石棉、軟木、橡膠和纖維 Gasketing materials, including compressed non-asbestos, cork, rubber and fiber			
.4	閥桿填料 Valve stem packing			
.5	泵密封 Pump seal			
.6	液壓密封 Hydraulic seal			
.7	O型環密封 O-Ring seal			
.8	法蘭(盤)氣密接合密封劑 Flange joint sealants			
.9	排氣及管路 Exhausts and piping			
.10	軸封/填料 Shaft seals/packing			



8.8	在船上製造或維修工作特殊工具的使用 Use of special tools for fabrication and repair work on board	選擇正確的工具，並依據說明書、手冊和安全操作守則來使用 <i>Correct tools are chosen and used in accordance with instructions, manuals and safe working practice</i>				
在下面框中表列的船上設備或裝置上已施行維修，或協助他人維修，指出專用工具的使用。這包括拆卸、檢查、維修和組裝工作。作為至少維修所需要的：液壓工具、軸承拆卸和扭矩扳手。機械包括舵機、機艙泵和風扇，甲板絞纜機和錨機，廚房及餐飲設備和空調。 In the box below list the machinery or equipment on which you have carried out repairs, or assisted in repairs with others, showing the special tools used. This includes dismantling, inspection, repair and reassembly work. As a minimum carry out repairs requiring use of: hydraulic tools, bearing pullers and torque wrench. Machinery may include steering gear, engine room pumps and fans, deck winches and windlass, galley and catering equipment and air conditioning.						
	裝配或維修項目 Item Fabricated or Repaired	所用特別工具 Special Tools Used	科目已完成 Task Completed 施訓者簽名/日期 Instructor (Signature/Date)	對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor (Signature/Date)	
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8.9	製造和維修使用的工具機及焊接設備 Use of machine tools and welding equipment for fabrication and repairs	所選擇的材料符合該部分要製造和工作進行中所指定的公差，並要依據安全操作準則 <i>The selected material is suitable for the part to be fabricated and the work is carried out within the designated tolerances and in accordance with safe working practice</i>		
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在下面框中表列的船上設備或裝置上已施行維修，或協助他人維修，指出專用工具的使用。這包括拆卸、檢查、維修和組裝工作。作為至少維修所需要的：液壓工具、軸承拆卸和扭矩扳手。機械包括舵機、機艙泵和風扇，甲板絞纜機和錨機，廚房及餐飲設備和空調。  
 In the box below list the parts which you have fabricated (made), or assisted in making, using machine tools. For example : centre lathes, drill press, gas welding/brazing equipment, gas cutting equipment including plasma arc, electric arc welding and other special equipment.

	裝配或維修項目 Item Fabricated or Repaired	所用機動工具或設備 Machine Tools or Equipment Used	科目已完成 Task Completed 施訓者簽名/日期 Instructor (Signature/Date)		對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor (Signature/Date)	
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9	<b>適任 Competence :</b> <b>保養及維修船上機械與設備</b> <b>Maintenance and repair of shipboard machinery and equipment</b>		<b>評估標準</b> <b>Criteria for Evaluation</b>	<b>適任性證明</b> <b>Competence Demonstrated</b> 同部門較自身高階之 甲級船員簽名/日期 Assessor ( Signature/Date )	
9.1	找出並使用相關的數據來源、說明書和圖紙 在開始任何維護或維修工作應確保完成除涉及安全工作第29頁上的作業，在你熟悉的程序安全隔離電氣設備，確保您在船上都可以獲得適當工作的許可。 Locate and use relevant data sources, manuals and drawings Before starting any maintenance or repair work ensure that you have completed the tasks concerned with Safety at Work on page 29 in addition, ensure that you are familiar with the procedures for safe isolatin of electrical equipment for your present ship and that yuou are in possession of an appropriate permit to work		製造商的說明書及圖紙對應工作上需快速識別及正確使用 The manufacturers' instructions and drawings relevant for the job are quickly identified and properly used		
	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	
.1	闡述船舶計劃維修系統的知識 Demonstrate a knowledge of the ship's Planned Maintenance System				
.2	闡述對製造商的說明書和圖紙的理解應用在維修工作上 Demonstrate an understanding of manufacturers' instructions and drawings for use in maintenance tasks				
.3	在計劃維修系統的現況有什麼需求 State what is required in a Planned Maintenance System				

.4	協助投入船舶計劃維修系統 Assist with input to the ship's Planned Maintenance System					
.5	從電腦的維修系統取得報告 Retrieve reports from a computer-based maintenance system					
.6	共同對運轉中的機器使用狀況監測設備進行檢查，如適用 Participate in a survey of running machinery using condition monitoring equipment, if applicable					
.7	協助這樣檢查結果的說明 Assist in interpretation of results of such survey					
.8	描述如何對備用齒輪項目的存儲和保持良好的狀態 Describe how items of spare gear are stored and maintained in good condition					
9.2	在計劃或設備安排係確保所有人員安全的工作 Ensure safety of all personnel working on pland or equipment				車間及設備的分離、拆解和重新組裝是按照認可的安全工作方法和程序 <i>Isolation, dismantling and reassembly of plant and equipment is in accordance with accepted safe working practices and procedures</i>	
.1	在危險區域的維修和保養工作應特別採取預防措施的狀態 State special precautions to be taken for repair and maintenance work in hazardous areas					
.2	闡述對安全操作準則和程序的理解： Demonstrate an understanding of safe working practices and procedures for： 使用便攜式動力操作工具 Use of portable power operated tools					
.3	進入密閉的空間（進入艙櫃） Entry into enclosed spaces (tank entry)					

.4	在樓板下方工作 Work beneath floor plates					
.5	起動裝置的使用 Use of lifting gear					
.6	移動重機械 Moving heavy machinery					
.7	在冷凍機械的艙間工作 Work within refrigeration machinery spaces					
.8	在電氣機械工作 Work on electrical machinery					
.9	含廢油材料的處理 Disposal of oily waste materials					
.10	採用適當的防護衣物 Use of appropriate protective clothing					
.11	高處工作 Working at height					
.12	吊起及運送手冊 Manual lifting and carrying					
9.3	主機進行保養和維修 Undertake maintenance and repairs to the main engine				拆卸、檢查、維修和重新組裝設備是依照手冊和良好的工序，再運行和性能測試是按照手冊和良好的工序。選擇的材質和配件是合適的 <i>Dismantling, inspecting, repairing and reassembling equipment is in accordance with manuals and good practice, Decommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>	

.1	測取曲柄軸撓度的讀數 Take and log readings of crankshaft deflections					
.2	適時更換、檢查、核對條件、磨損及間隙種底檢查及測試： Change, inspect, check condition, wear and clearance, overhaul and test, as appropriate： 進氣閥 Inlet valves					
.3	燃油噴射閥 Fuel injection valves					
.4	空氣啓動閥 Air start valves					
.5	洩壓閥 Relief valves					
.6	排氣閥 Exhaust valves, where appropriate					
.7	燃油泵 Fuel pumps					
.8	凸輪軸 Cam shafts					
.9	十字頭軸承 Crosshead bearings					
.10	燃油濾器 Fuel oil filters					
.11	滑油濾器 Lube oil filters					
.12	空氣濾器 Air filters					

.13	在監督下，使用轉俾機，採取所有安全預防措施 Use turning gear, under supervision, taking all safety precautions					
.14	更換和/或檢修以下主機部件，檢查間隙，在適當情況下： Change and/or overhaul the following main engine components, checking clearances, where appropriate： 活塞 Pistons					
.15	氣缸蓋 Cylinder heads					
.16	增壓機 Turbochargers					
.17	頂端軸承 Top end bearings					
.18	底端軸承 Bottom end bearings					
.19	指示閥旋塞 Indicator cocks					
.20	主軸承 Main bearings					
.21	活塞桿刮油盒/填料盒 Piston-rod scraper box/stuffing box					
.22	十字頭導板 Crosshead guides					
.23	貫穿螺栓 Tie bolts					
.24	定位螺栓及墊塊 Holding-down bolts and chocks					

.25	檢查掃氣通道和排氣室和報告： Inspect scavenge trunk and exhaust spaces and report on： 清潔程度/淤積物 Cleanliness/deposits					
.26	掃氣疏放 Scavenge drains					
.27	掃氣閥 Scavenge valves					
.28	完成曲軸箱的檢查 Carry out a crankcase inspection					
9.4	輔機進行保養和維修 Undertake maintenance and repair to the auxiliary engine	拆卸、檢查、維修和重新組裝設備是依照手冊和良好的工序，再運行和性能測試是按照手冊和良好的工序。選擇的材質和配件是合適的 <i>Dismantling, inspecting, repairing and reassembling equipment is in accordance with manuals and good practice. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>				
.1	測取及紀錄曲軸撓度的讀數 Take and log readings of crankshaft deflections					
.2	更換、檢查、檢查情況、磨耗及間隙、檢修和試驗： Change, inspect, check condition, wear and clearance, overhaul and test： 燃油噴射閥 Fuel injection valves					
.3	空氣起動閥 Air start valves					



.4	釋壓閥 Relief valves					
.5	進氣閥 Inlet valves					
.6	排氣閥 Exhaust valves					
.7	燃油泵 Fuel pumps					
.8	凸輪軸 Camshaft					
.9	燃料油過濾器 Fuel oil filters					
.10	滑油過濾器 Lube oil filters					
.11	空氣過濾器 Air filters					
.12	缸套冷却水泵 Jacket cooling water pump					
.13	更換和/或檢修以下部件，檢查及調整間隙， 在適當情況下： Change and/or overhaul the following components, checking and adjusting clearances, where appropriate : 活塞 Pistons					
.14	氣缸蓋 Cylinder heads					
.15	增壓機 Turbochargers					

.16	頂端軸承 Top end bearings					
.17	底端軸承 Bottom end bearings					
.18	指示閥旋塞 Indicator cocks					
.19	主軸承 Main bearings					
.20	定位螺栓及墊塊 Holding-down bolts and chocks					
.21	完成曲軸箱的檢查 Carry out a crankcase inspection					
.22	機器檢修後的運行 Commission engine after overhaul					
9.5	輔鍋爐進行保養和維修 Undertake maintenance and repair to the auxiliary boiler			拆卸、檢查、維修和重新組裝設備是依照手冊和良好的工序，再運行和性能測試是按照手冊和良好的工序。選擇的材質和配件是合適的 <i>Dismantling, inspecting, repairing and reassembling equipment is in accordance with manuals and good practice. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		
.1	進行鍋爐暫停服務 Take a boiler out of service					

.2	隔離鍋爐 Isolate boiler					
.3	鍋爐吹放 Blow a boiler down					
.4	拆解鍋爐 Open up a boiler					
.5	測試鍋爐、記錄現況： Examine a boiler, reporting on its condition： 內部 Internally					
.6	外部 Externally					
.7	拆解及檢查 Open up and inspect： 安全閥 Safety valves					
.8	給水止回閥 Feed check valves					
.9	附屬閥 Ancillary valves					
.10	檢修及測試水位計玻璃及檢查水通道、旋塞和閥是完善的 Overhaul and test water gauge glass and check that passages, cocks and valves are clear					
.11	更換及檢修燃燒器 Change and overhaul burner					

9.6	車間及裝備進行保養和維修 Undertake maintenance and repair to plant and equipment			拆卸、檢查、維修和重新組裝設備是依照手冊和良好的工序，再運行和性能測試是按照手冊和良好的工序。選擇的材質和配件是合適的 <i>Dismantling, inspecting, repairing and reassembling equipment is in accordance with manuals and good practice. Recommissioning and performance testing is in accordance with manuals and good practice. Selection of materials and parts is appropriate</i>		
.1	拆解淨油機/分油機進行清潔及維修 Open up purifiers/separators for cleaning and maintenance					
.2	組裝淨油機/分油機 Reassemble purifiers/separators					
.3	完成主空壓機的例行維修 Carry out routine maintenance on a main compressor					
.4	檢查及投入 Check and service : 控制空氣過濾器 Control air filters					
.5	控制空氣乾燥機，更換乾燥劑 Control air driers, replacing desiccant					
.6	完成冷凍機的例行維修 Carry out routine maintenance on refrigeration plant					
.7	完成淡水造水機的例行維修 Carry out routine maintenance on fresh water generator					
.8	拆解及檢修正排量式泵 Open up and overhaul positive displacement pump					
.9	拆解及檢修離心式泵 Open up and overhaul centrifugal pump					

.10	檢修及測試各型閥，包括： Overhaul and test valves including： 閘閥 Gate					
.11	停止盤式止回 Stop disk non return					
.12	螺旋提升 Screw lift					
.13	釋壓 Relief					
.14	二路或三路 Two or three way					
.15	切斷旋塞 Shut-off cock					
.16	完成例行維修於： Carry out routine maintenance on： 錨機 Anchor windlass					
.17	揚貨機 Cargo winches					
.18	起動貨機 Cargo cranes					
.19	繫纜機 Mooring winches					
.20	絞盤 Capstans					
.21	艙口蓋 Hatch covers					
.22	舵機 Steering gear					

.23	機艙起吊工具 Engine room lifting gear										
.24	在車間及裝備表列已工作的其他項目： List other items of plant and equipment on which you have worked： 1. _____ 2. _____ 3. _____ 4. _____ 5. _____										
9.7	緊急裝備進行保養和維修 Undertake maintenance and repair to emergency equipment	分離、拆解和重新組裝是按照認可的方法和程序。選擇正確的工具及使用且不會損壞機器或設備 Isolation, dismantling and reassembly are in accordance with accepted practices and procedures. Correct tools are chosen and used without causing damage to machinery or equipment			.1	進行下列設備例行保養： Carry out routine maintenance on： 消防泵 Fire pumps					
					.3	機艙滅火系統及設備 ER fire extinguishing system and equipment					
					.4	緊機發電機 Emergency generator					

.5	緊機壓縮機 Emergency compressor					
.6	卸出泵遙控緊急停止閥 Remote stops for pumps with overboard discharges					
.7	燃油閥脫開 Fuel valve trips					
.8	氧氣呼吸器組和充氣呼吸器瓶 Breathing apparatus sets and recharging breathing apparatus bottles					
.9	救生艇筏 Survival craft					

**專長 FUNCTION：操作級-船舶操作與船上人員管理**  
**CONTROLLING THE OPERATION OF THE SHIP AND CARE FOR PERSONS ON BOARD AT THE OPERATIONAL LEVEL**

項次 Ref No	訓練 Training			適任性證明 Competence Demonstrated	
10	適任 Competence： 運用領導統御與團隊合作技巧 Application of leadership and team working skills		評估標準 Criteria for Evaluation	同部門較自身高階之 甲級船員簽名/日期 Assessor (Signature/Date)	
10.1	團隊角色扮演 Plays team role		在工作周遭展現的意識及共同的目標。對深入溝通和明確語言的理解。以海員身份的方式挑戰可商確的決定。自由分享關於當下的行動和任務信息 <i>Displays awareness of others working nearby and in common goals. Communicates clearly and unambiguously in language understood. Challenges questionable decisions in a seamanlike manner. Freely shares information concerning the manoeuvre or task in hand</i>		
	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	
.1	了解到作為一個團隊成員每個人都有不同的經驗及在任何任務中發揮作用 Understand that as a team member everyone has different experience and has a role to play in any task				
.2	積極參與涉及不同職級的工作計劃會議 Participate actively in task planning meetings involving different ranks				



.3	輪機和在甲板工作時是藉由雙向的交流和說明來瞭解溝通的 Understand communication is a two-way exchange and demonstrate this in practice both in the engine room and when working on deck					
.4	保持對改變形勢的認識 Maintain awareness of changing situations					
.5	接受決議，如有疑問應提出質疑 Accept authority but not be afraid to question if in doubt					
.6	檢查自己的理解情況並分享其他團隊成員 Check own understanding of situation is shared by other team members					
.7	積極參加不同層級任務檢評和評估會議 Participate actively in task review and evaluation meetings involving different ranks					
10.2	展現領導能力 Exhibits leadership ability	提出創見，並在時間內執行必要的任務 <i>Takes initiative and carries others along with what needs to be done in timely way</i>				
.1	在緊急任務及演習時，思考前衛，並妥適規劃任務 Think ahead and plan tasks that will follow the immediate task or manoeuvre					
.2	當緊急任務間有所衝突，無法同時執行時，需正確地設定優先次序 Set priorities correctly when seeing conflict between immediate needs and tasks that may be held back					
.3	妥善配置資源，以有效達成預期的成果 Allocate resources effectively to achieve desired outcomes					
.4	根據需求或被教導的方式，檢查結果，並採取正確的行動 Check results and take corrective actions as needed/ instructed					

.5	接受資深船員意見，有所疑問時，應展現自信與成熟 Demonstrate confidence and maturity to refer to senior officer if in doubt					
11	<b>適任 Competence :</b> <b>確保符合防止污染要求</b> <b>Ensure compliance with pollution prevention requirements</b>		<b>評估標準</b> <b>Criteria for Evaluation</b>	<b>適任性證明</b> <b>Competence Demonstrated</b> 同部門較自身高階之 甲級船員簽名/日期 Assessor ( Signature/Date )		
11.1	執行保護措施以保護海洋環境 Implement proactive measures to protect the marine environment		操作經適當之計劃並符合國際規則精神與指示。保證維持正面環境之信譽 <i>The operations are properly planned and comply with international regulation in spirit as well as in word. Ensures that a positive environmental reputation is maintained</i>			
	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )		
.1	瞭解環境之保護包括海與空兩方面，其保護之細節依防止船舶污染國際公約之規則 Understand that environmental protection includes both sea and air which are protected by mandatory MARPOL regulations					
.2	至少說出兩處特別敏感海域之名稱 Name at least two Particularly Sensitive Sea Areas (PSSAs) 1. _____ 2. _____					
.3	舉例示範準備接受個人行動之責任以保護海洋環境 Demonstrate by example preparedness to take personal responsibility for actions to protect the marine environment					

.4	<p>瞭解海上之污染物必需符合防止船舶污染國際公約之規定於岸上安全處置</p> <p>Understand that marine pollutants must be landed ashore for safe disposal in compliance with MARPOL</p>					
.5	<p>瞭解有關在海上處置油水混合物之嚴格規則適用於所有船舶</p> <p>Understand there are strict rules covering the storage and disposal of oily water mixtures applicable to all ships</p>					
.6	<p>瞭解有關在海上處置有毒液體物質之嚴格規則適用於所有船舶</p> <p>Understand there are strict rules covering disposal of noxious liquid substances applicable to all ships</p>					
.7	<p>瞭解有關處置以包裝型式載運有害物質之嚴格規則適用於所有船舶</p> <p>Understand there are strict rules covering disposal of harmful substances carried in packaged form applicable to all ships</p>					
.8	<p>瞭解有關處置防止污水污染之嚴格規則適用於所有船舶</p> <p>Understand there are strict rules covering pollution prevention by sewage applicable to ships</p>					
.9	<p>瞭解防止船上垃圾污染之嚴格規則適用於所有船舶</p> <p>Understand there are strict rules for prevention of pollution by garbage from ships, applicable to all ships</p>					
.10	<p>瞭解防止船上所致空氣污染之嚴格規則正逐步適用於所有船舶</p> <p>Understand there are strict rules covering air pollution from ships at sea which will progressively apply to all ships</p>					
.11	<p>瞭解SO<sub>x</sub>, NO<sub>x</sub> 之影響，及為何需盡力減低空氣之污染</p> <p>Understand the impact of SO<sub>x</sub>, NO<sub>x</sub>, VOC and PM and why efforts are needed to reduce atmospheric pollution</p>					

11.2	<p>在加燃油前確保其程序業經同意並經適當規劃， 且所有之排水孔均已封閉</p> <p>Ensure that procedures are agreed and properly planned before bunkering</p>	<p>在加燃油前，其操作經適當之計劃，所有之洩水孔均已封閉、所有之管路與軟管亦經檢查</p> <p><i>The operations are properly planned, all scuppers are blocked and pipes and hoses inspected before bunkering takes place</i></p>				
.1	<p>塞住甲板洩水孔 Plug deck scuppers</p>					
.2	<p>證明具有船上加燃油程序之知識 Demonstrate knowledge of ship's bunkering procedures</p>					
.3	<p>參與加油作業 Participate in bunkering operations</p>					
.4	<p>示範緊急關斷之程序 Demonstrate the emergency shutdown procedure</p>					
11.3	<p>在加燃油前確保其程序業經同意並經適當規劃， 且所有之洩水孔均已封閉</p> <p>Initiate immediate investigation to detect the source on discovering any pollution around the ship</p>	<p>運用所有可用對策偵測污染源並適時向船長或主管陳報</p> <p><i>All available resources are utilized to detect the source and the master or authorities are informed as appropriate</i></p>				
.1	<p>參與船上油或其他有毒或毒性物質溢出之應急反應演練 Participate in an emergency response exercise for controlling spillage of oil or other noxious or toxic substances on board</p>					
.2	<p>了解立即報告及檢查潛在汙染事件的重要性 Be aware of the importance of immediately reporting and investigating potential pollution incidents</p>					

11.4	<p>制止或防止有害液體與固體物質之洩漏與溢出</p> <p>Stop or prevent leakages and spills of harmful liquids and solid substances</p>	<p>情況經徹底之評估。所採之行動具良好之組織與演練。並對污染之範圍作特別之考慮</p> <p><i>The situation is thoroughly assessed and the actions taken are well organized and exercised and due consideration taken of the extent of the pollution</i></p>		
.1	<p>示範使用材料安全數據表及國際海運危險品章程以獲取貨物危害性資訊及操作指示</p> <p>Demonstrate use of Material Safety Data Sheets and the IMDG Code to obtain information on cargo hazards and handling instructions</p>			
.2	<p>參與清除危害貨物溢出之演練</p> <p>Participate in drill for clean-up of hazardous spillage</p>			
11.5	<p>對所有懷疑有任何損傷之液貨艙櫃及艙區予以測深</p> <p>Sound all tanks and compartments if any damage is suspected</p>	<p>迅速有效測深並將結果即時向船長報告</p> <p><i>The soundings are readily available and the results immediately reported to the Master</i></p>		
.1	<p>參與船舶擱淺之應急反應之演練</p> <p>Participate in an emergency response exercise for stranding</p>			
.2	<p>對艙部、艙櫃、雙重底與其他液艙櫃施行測深並將資料予以記錄</p> <p>Perform soundings of bilges, peak tanks, double bottom and other tanks and record information if any hull damage is suspected</p>			
11.6	<p>施行污水、壓載水與加燃、油作業</p> <p>Carry out bilge, ballast and bunkering operations</p>	<p>所有作業之施行係依據防止船舶污染國際公約並特別注意船上油污染應急計畫</p> <p><i>All operations are carried out in accordance with MARPOL and due regard paid to the Shipboard Oil Pollution Emergency Plan (SOPEP)</i></p>		

.1	確定船舶壓載水管理計畫所在之位置並證明瞭解其內容 Locate the ship's ballast water management plan and demonstrate an understanding of its content					
.2	在當值輪機官員指導下進行壓艙作業 Understudy the engineer officer conducting a ballasting operation					
.3	對MARPOL及其附錄要求之認知 Have knowledge of requirements of MARPOL and Annexes					
.4	說明監控卸油裝備操作須知(油艙) Demonstrate an understanding of Oil Discharge Monitor Equipment operation (oil tankers)					
.5	說明油料記錄簿記錄須知 Demonstrate an understanding of the record keeping required in the Oil Record Book					
<b>12</b>	<b>適任 Competence : 維持船舶之適航性 Maintain seaworthiness of the ship</b>	<b>評估標準 Criteria for Evaluation</b>			<b>適任性證明 Competence Demonstrated</b> 同部門較自身高階之 甲級船員簽名/日期 Assessor ( Signature/Date )	
12.1	檢查船體與船體之開口、艙室、艙口蓋與設備，並對所發現之瑕疵採取行動 Inspect hull and hull openings, compartments, hatch covers and equipme and take action where defects are detected	檢查之施行適當、並注意及主要之環境與通常會有瑕疵發生之區域。發現任何瑕疵會即時提報並予記錄，所作之建議或執行之行動適於當時之情況 <i>The inspection is properly carried out due regard paid to the prevailing circumstances and areas where defects are most likely to occur. Any defect is immediately reported and recorded and the suggested or executed action adequate for the situation</i>				

	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )		對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	
.1	證明瞭解下列需要預防之注意事項： Demonstrate an understanding of the precautions required for： 進入圍閉空間 Entry into enclosed spaces					
.2	高處作業 Working at height					
.3	使用動力工具 Using power tools					
.4	人力搬動 Manual lifting and carrying					
.5	如屬可行協助開啟、關閉與固定下列艙口蓋板 Where applicable, assist with the opening, closing and securing of hatches					
.6	協助保養水密門、舷窗與艙口 Assist with the maintenance of watertight doors, ports and hatches					
.7	進行下列設備例行保養及維修： Carry out routine maintenance and repair on： 起錨機 Anchor windlass					
.8	裝卸貨設備 Cargo handling equipment					
.9	絞纜機 Mooring winches					
.10	全面盤點機艙物料 Carry out full inventory check of the engine stores					
.11	鋼板與其他表面預為處理俾便施加防護塗料 Prepare steel plates and other surfaces for protective coating					
.12	適當對表面施加防護塗料 Apply protective coats to appropriate surfaces					

12.2	<p>確使所有鬆散之物體均已安全固繫以免受損</p> <p>Ensure that all loose objects are securely fastened to avoid damage</p>			<p>檢查已定期施行，並於惡劣天候或有其他事故發生時增加檢查之次數。對於重或危險之物體以良好之船藝最優先施行</p> <p><i>Inspection is carried out at regular intervals and more frequently in heavy weather or if other incidents occur. Heavy or otherwise dangerous objects are given the highest priority and good seamanship exercised</i></p>		
.1	<p>確使所有之裝置、工具、備品等均已適當儲置與固定</p> <p>Ensure that all gear, tools, spares etc. are properly stowed and secured</p>					
12.3	<p>安排定期之管制措施以確保水密完整性</p> <p>Arrange for regular control measures to ensure watertight integrity</p>			<p>定期對尖艙、艙部、液艙櫃與其他艙區施行測深，其結果已予記錄，任何不正常已提報並作進一步檢查</p> <p><i>Peaks, bilges, tanks and other compartments are sounded regularly, the results recorded and any irregularities reported and examined further</i></p>		
.1	<p>逐日以下列方式對液艙櫃、污水艙、與其他空間進行測深並予記錄：</p> <p>Take and record the daily soundings of engine room tanks, bilges and other spaces :</p> <p>用手工方法</p> <p>By manual means</p>					
.2	<p>用量測儀器</p> <p>By use of gauges</p>					



13	<b>適任 Competence :</b> <b>船上防火、控制火災及滅火</b> <b>Prevent, control and fight fires on board</b>		<b>評估標準</b> <b>Criteria for Evaluation</b>	<b>適任性證明</b> <b>Competence Demonstrated</b> 同部門較自身高階之 甲級船員簽名/日期 Assessor ( Signature/Date )	
13.1	操作偵測火與煙之設備 Operate fire and smoke detecting equipment		設備已定期依製造廠商之手冊與船舶特定之說明書予以試驗及操作 <i>The equipment is tested and operated at regular intervals and in accordance with manufacturer's manuals and ship specific instructions</i>		
	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )		對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )
.1	說明下列器材之使用並協助保養 Understand use and assist in the maintenance of : 可攜式泡沫滅火器 Portable foam extinguisher				
.2	可攜式二氧化碳滅火器 Portable CO2 extinguisher				
.3	可攜式乾粉滅火器 Portable dry powder extinguisher				
.4	可攜式水滅火器 Portable water extinguisher				
.5	保養軟管、噴嘴與聯結器 Maintain hoses, nozzles and couplings				

13.2	<p>確使所有當值人員均能偵測、矯正危險情況、採取行動並保持船舶之清潔與整齊</p> <p>Ensure that all persons on watch are able to detect and correct hazardous situations and actions and keep the ship clean and tidy</p>			<p>當值人員自監測到可能發生火災之危險區域施行檢查。確使易燃材料係安全儲置、並由其當值證明其對防火之警覺性</p> <p><i>Personnel on watch making inspections in areas at risk from possible fires are supervised. Ensure readily combustible materials are stored safely and the watch demonstrate an attitude of alertness to fire prevention</i></p>		
.1	<p>施行火警巡邏任務</p> <p>Perform fire patrol duties</p>					
.2	<p>裝備在保養後放回原位並固定</p> <p>Re-stow gear and secure after maintenance work</p>					
13.3	<p>確定滅火設備、應急逃生路線與發送警報之位置</p> <p>Locate fire fighting appliances, emergency escape routes and sound alarm</p>			<p>得到手持式或他種滅火筒使用的指示並能夠觸動警報</p> <p><i>Instruct watch in use of portable or other fire extinguishers. Demonstrate an ability to raise the alarm</i></p>		
.1	<p>全面施行檢查滅火設備並向輪機長提報</p> <p>Carry out a full inspection of fire-fighting equipment and report to the chief engineer</p>					
.2	<p>參與在海上與在港口之火警應急反應演練</p> <p>Participate in an emergency response exercise for fire at sea and in port</p>					

13.4	<p>確定滅火站之位置並示範固定滅火裝置 與其他滅火設備暨化學劑之正確使用</p> <p>Locate fire stations and demonstrate proper use of fixed installations and other fire fighting appliances and agents</p>			<p>能確定所有滅火站之位置，並能選擇出發生火災之際最適當之一站。能就火災之不同材料選用適當之設備與滅火劑</p> <p><i>All stations are located and the most suitable one selected in the event of a fire. Proper equipment and extinguishing agents for the various materials on fire are selected</i></p>		
.1	<p>協助測試可能裝有之下列設備： Assist with the testing of the following systems, where fitted： 探火與警報系統 Fire detection and alarm systems</p>					
.2	<p>火警警報 Fire alarms</p>					
.3	<p>固定自動灑水器 Fixed automatic sprinklers</p>					
.4	<p>固定蒸汽系統 Fixed steam systems</p>					
.5	<p>固定泡沫滅火器 Fixed foam extinguishers</p>					
.6	<p>固定二氧化碳系統 Fixed CO2 systems</p>					
.7	<p>防火瓣與擋板 Fire flaps and dampers</p>					
.8	<p>自動與手動防火門 Automatic and manual fire doors</p>					
.9	<p>應急關斷閥、泵停開關與主機停止開關 Emergency shut off valves, pump stops and main engine stops</p>					

.10	敘述機艙內固定滅火系統之操作 Describe the operation of the fixed fire extinguishing system for the engine room					
.11	說明在操作該系統前應注意之安全事項 State the safety precautions required prior to operating the system					
13.5	確定滅火防護設備（消防員裝具包括呼吸器）之位置及其使用 Locate and use fire protective equipment (fire-fighter's outfit, including breathing apparatus)				設備穿著迅速且使用時不致發生意外 <i>The equipment is quickly donned and used in such a way that no accidents are likely to occur</i>	
.1	示範進入圍閉空間之程序與需注意事項 Demonstrate the procedures and precautions required for entry into an enclosed space					
.2	確認自足式呼吸器與應急逃生呼吸器之不同 Recognise the different uses for a Self Contained Breathing Apparatus (SCBA) set and an Emergency Escape Breathing Device					
.3	示範穿著並使用自足式呼吸器 Demonstrate donning and use of SCBA sets					
.4	示範穿著並使用消防員裝具 Demonstrate donning and use of a fire-fighter's outfit					
.5	示範穿著並使用消防員裝具連同自足式呼吸器 Demonstrate donning and use of a fire-fighter's outfit with a SCBA set					
.6	示範使用自足式呼吸器之紀錄/控制板 Demonstrate the use of a SCBA record/control board					

13.6	<p>在消防演練中證明具有能力依消防計畫行動</p> <p>Demonstrate ability to act in accordance with the fire-fighting plan during fire drills</p>	<p>在演練或真實滅火事故後之檢討報告時，能解釋其所採每一行動之理由與優先順序，經公認最為適當</p> <p><i>During debriefing after an exercise or a real fire extinguishing incident the reasons for each action taken, including the priority in which they were taken, are explained and accepted as the most appropriate</i></p>				
.1	<p>在演練時承擔消防隊之一員</p> <p>Take charge of a fire party during an exercise</p>					
.2	<p>示範使用機艙所有各處之安全設備</p> <p>Demonstrate the use and location of all engine room safety appliances</p>					
.3	<p>示範使用機艙所有之與逃生路線</p> <p>Demonstrate a knowledge of all engine room escape routes</p>					
14	<p><b>適任 Competence :</b></p> <p><b>操作救生設備</b></p> <p><b>Operate life-saving appliances</b></p>	<p><b>評估標準</b></p> <p><b>Criteria for Evaluation</b></p>	<p><b>適任性證明</b></p> <p><b>Competence Demonstrated</b></p> <p>同部門較自身高階之 甲級船員簽名/日期 Assessor ( Signature/Date )</p>			
14.1	<p>安排棄船演練</p> <p>Organise abandon ship drills</p>	<p>在警報發出後所有人員穿著安全帶或浸水衣於指定之登艇站集合並依要求執行任務</p> <p><i>On sounding the alarm all persons meet at the designated lifeboat station wearing safety belts or immersion suits and carry out their duties on request</i></p>				
	<p>科目/職責 Task/Duty</p>	<p>科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )</p>	<p>對改進部分之建議 Advice on Areas for Improvement</p>	<p>科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )</p>		

.1	瞭解在演練及練習時使航海人員於救生艇就位之危險性 Understand the hazards to seafarers of manning life boats for drills and exercises					
.2	瞭解熟悉操縱有負載釋放機構之必要性 Understand the need to be familiar with the operation of on-load release mechanisms					
.3	如裝有防止墜落設施時，，確認應於演練中使用之（以防止過早脫離） Recognise that fall prevention devices (FPDs), where fitted, should be used in drills (to prevent unforeseen detachment)					
.4	確認仔細檢查與保養有負載釋放機構之必要性 Recognise the need for meticulous inspection and maintenance of on-load release mechanisms					
.5	辨識在救生艇筏上之永久標誌尤其是乘載人數 Identify the permanent marking on survival craft with regard to the number of occupants					
.6	確定下列設備之位置並操作試驗之： Locate and test the operation of： 無線電設施包括應急指位無線電示標與搜救雷達詢答機 Radio devices including satellite EPIRBs and SARTs					
.7	煙火遇險信號 Pyrotechnic distress signals					
.8	說明處置過期煙火信號彈之注意事項 State precautions for disposal of out of date pyrotechnics					
.9	在棄船演練中學習當值甲級船員 Understudy an officer in charge of an abandon ship drill					

14.2	救生艇之下水、操縱與歸位 Launch, handle and recover a lifeboat			以正確口令乘載、下水、及立即駛離船舷。救生艇依適當以馬達、槳或帆安全操縱。救生艇之回收安全迅速 Correct orders for embarkation, launching and immediately clearing the ship's side are given. The boat is safely handled under motor or oars, as appropriate : The boat is safely recovered and ready		
.1	協助準備將救生艇旋出並知道伴隨而來之風險 Assist with preparation and swinging out of lifeboats and be aware of potential risks					
.2	協助準備並登入自由降落式救生艇並知道伴隨而來之風險 Assist with preparation and boarding of free fall lifeboat and be aware of potential risks					
.3	協助將救生艇降至水面駛離船舶並應用海錨 Assist with lowering a lifeboat to clear the ship and ride to a sea anchor					
.4	啟動並操作救生艇引擎 Start and operate a lifeboat engine					
.5	在下列何種救生艇擔任過艇員： Crew a boat under： 槳式 Oars <input type="checkbox"/> 動力 Power <input type="checkbox"/>					
.6	在下列何種救生艇擔任過舵手： Cox a boat under： 槳式 Oars <input type="checkbox"/> 動力 Power <input type="checkbox"/>					
.7	協助回收並固定救生艇 Assist with recovering and securing a lifeboat					
.8	協助回收並固定自由降落式救生艇 Assist with recovering and securing a free fall lifeboat					

14.3	<p>將救生筏下水或拋出舷外並操縱離開船舷</p> <p>Launch or throw overboard a life raft and manoeuvre it clear of ship's side</p>			<p>明確分配指定至各救生筏人員之任務，命令之執行有效，翻覆之筏能迅速扶正，所有人員能在筏遠離船舶前登筏</p> <p><i>The duties for the person designated for the raft are clearly allocated, orders efficiently executed, the raft is quickly righted if inverted, and all persons boarded before the raft moves away from the ship</i></p>		
.1	<p>如有機會，示範救生筏下水與充氣之程序</p> <p>Demonstrate an understanding of the procedure for launching and inflating life rafts, if the opportunity arises</p>					
14.4	<p>操作無線電救生設備</p> <p>Operate radio life-saving appliances</p>			<p>在不致發出偽信號使任何人員警覺下建立無線電連繫</p> <p><i>Radio contact is established without alerting anybody by transmitting false signals</i></p>		
.1	<p>在監督下架設並操作可攜式救生艇無線電</p> <p>Rig and operate the portable lifeboat radio under supervision</p>					
14.5	<p>確使在救難筏艇上所有規定之設備其功能與保養符合海上人命安全國際公約之要求</p> <p>Ensure that all required equipment on board a rescue craft is functioning and maintained as specified in the SOLAS Training manual</p>			<p>證明適當使用煙火信號、糧食、水與航行設備令人滿意</p> <p><i>Proper use of pyrotechnics, food, water and signaling equipment is satisfactorily demonstrated</i></p>		
.1	<p>證明瞭解在求生筏艇上所需之法定設備及其正確之使用</p> <p>Demonstrate an understanding of statutory equipment required in survival craft and its correct use</p>					



.2	說明求生筏艇乘載人員糧食與水之最低需要量 State minimum food and water requirements for occupants of survival craft					
.3	確定遇險信號彈之位置並說明與瞭解其使用方法包括其處置應注意事項 Locate and understand operation of pyrotechnics including precautions for their disposal					
.4	解說火箭式拋繩設備之操作 Explain the operation of rocket line throwing apparatus					
.5	解說遇險信號彈、手執煙火信號與其他煙火信號之操作 Explain the operation of distress rockets, flares and other pyrotechnics					
.6	協助保養下列設備： Assist with the maintenance of： 救生艇與救難艇 Lifeboats and rescue boats					
.7	救生艇設備與口糧 Lifeboat equipment and provisions					
.8	下水吊架與機具 Launching davits and gear					
.9	漂浮設備如救生圈、救生衣及其附屬設備 Buoyant apparatus, e.g. lifebuoys, lifejackets and attachments					
.10	浸水衣與保溫設備 Immersion suits and thermal protective aids					
.11	其他救生艇筏，其類型 Other survival craft, specify type					
.12	協助救生艇引擎之例行保養 Assist with the routine maintenance of a lifeboat engine					

15	<b>適任 Competence :</b> <b>在船上應用醫療急救</b> <b>Apply medical first aid on board ship</b>		<b>評估標準</b> <b>Criteria for Evaluation</b>		<b>適任性證明</b> <b>Competence Demonstrated</b> 同部門較自身高階之 甲級船員簽名/日期 Assessor ( Signature/Date )	
15.1	止住傷患之大量出血、確保其呼吸 並將之安置於適當之恢復位置 Stop excessive bleeding, ensure breathing and put casualties in proper position		經證明其行動符合國際醫療 急救指南所接受之建議 The actions demonstrated are in compliance with accepted recommendations given in international medical first aid guidance			
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.1	參與海上急救演練 Participate in an emergency first aid drill at sea					
.2	證明瞭解基本之急救原則 Demonstrate a basic understanding of first aid principles : 止血的處置 Stopping bleeding					
.3	窒息/溺水的處置 Treatment of suffocation/drowning					
.4	安置意外受傷者於康復姿勢中 Placing casualty in the recovery position					

15.2	能診察休克及中暑之症狀並依此診治 Detect signs of shock and heat stroke and act accordingly			所建議或給予之處置適當。 經證明有能力請求無線電醫師之忠告 <i>The treatment recommended or given is adequate. Ability to request Radio Medico for advice is demonstrated</i>		
.1	說明如何處置休克患者 Demonstrate how to handle a casualty in shock					
.2	說明處置中暑者的程序 Demonstrate procedures for dealing with heat stroke					
15.3	燒傷、燙傷、骨折及體溫過低等之治療 Treat burns, scalds, fractures, and hypothermia			說明所推薦的指導為正確行動的理由及說明為避免體溫過低的原則 <i>Recommended guidelines for proper actions are explained. Principles for avoiding hypothermia are demonstrated</i>		
.1	敘述處置電擊意外傷害的程序 State procedure for dealing with a casualty of electric shock					
.2	說明照料燒傷的程序 Demonstrate procedure for treating burns					
.3	說明照料輕微骨折的程序 Demonstrate procedure for treating minor fractures					
.4	敘述避免體溫過低的程序 State procedures for avoiding hypothermia					
.5	說明體溫過低造成意外傷害之照料程序 Demonstrate procedures for treating casualty with hypothermia					

16	<b>適任 Competence :</b> <b>監督符合法定要求</b> <b>Monitor compliance with legislative requirements</b>		<b>評估標準</b> <b>Criteria for Evaluation</b>		<b>適任性證明</b> <b>Competence Demonstrated</b> 同部門較自身高階之 甲級船員簽名/日期 Assessor (Signature/Date)	
16.1	說明涉及船上作業及汙染防止有哪些法律、命令及規章 State where laws, rules and regulations concerning ship operation and pollution prevention are available		陳述應正確並包含相關的人或組織聯繫以得到特別的訊息或指示 The statement given is correct and includes relevant bodies or organisations which may be contacted to obtain special information or guidance which is not easily accessible			
	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )		對改進部分之建議 Advice on Areas for Improvement	科目已完成 Task Completed 施訓者簽名/日期 Instructor( Signature/Date )	
.1	下列副本設置在何處： Locate on board copies of： 海上人命安全公約 SOLAS					
.2	海上汙染防止公約 MARPOL					
.3	船上發生油汙染時緊急應變計畫 Shipboard Oil Pollution Emergency Plan (SOPEP)					
.4	船上廢棄物處置紀錄簿 Garbage Record Book					
.5	指出SOLAS, MARPOL, LOAD LINE, STCW, ILO, MLC及其他規章證書何在 Locate copies of certificates issued under SOLAS, MARPOL, Load Line, STCW, ILO, MLC, and other regulations					

16.2	利用法規核對船上作業是否符合國際要求 Use legislation to check on board operations comply with international regulation	已制定在可接受的期限內正確的回應及執行後續動作 Correct response is established within an acceptable period of time and consequential actions executed				
.1	依照 MARPOL 之規定，參與機艙油料及含油廢棄物作業 Participate in engine room oil and oily waste handling operations in compliance with MARPOL					
.2	依照 MARPOL 及船上垃圾處置計畫的規定，處置廢棄物 Dispose of garbage in compliance with MARPOL and ship's Garbage Management Plan					
.3	在船舶檢查前協助查驗機械及設備 Assist in checking machinery and equipment prior to survey					
.4	在國際油汙防止檢驗前，參與船上的相關查驗 Participate in shipboard inspection prior to an International Oil Pollution Prevention (IOPP) survey					
16.3	搜尋偷渡者 Searching for stowaways	全面搜尋並將結果報告負責的長官 A comprehensive and thorough search is conducted and findings reported to the responsible officer				
.1	執行偷渡者之搜尋 Carry out a stowaway search					

## 第八部分 工作計畫 SECTION 8 PROJECT WORK

### 引言 INTRODUCTION

為在海上服務期間完成計畫目標，需確認船員逐步獲得所服務船舶、設備與救生裝置之知識。

The purpose of carrying out projects during sea service is to ensure that you gain a knowledge progressively of the ships in which you serve and the equipment and life-saving appliances carried on board.

為成功達成目標，需要仔細觀察並具主動精神，適當時參考船舶計畫、資料、參考資訊、船舶製造說明書與操作手冊。此外，也要參考許多個案，尋求協助，並參照主管意見，以獲得所需資訊。

To achieve this objective successfully will require intelligent observation, initiative and reference, where appropriate, to ships' plans and other data, besides manufacturers' instructions and operational manuals. It will, moreover, be essential in a number of cases to seek the help and guidance of your officers in order to obtain the information required.

本計畫在於獲取實際資訊細節，如船舶之結構特性與設備，包括不同之供應系統如燃油、淡水與海水等。

The majority of the projects deal with obtaining factual details which concern such matters as the ship's structural features and equipment including various supply systems - bunker fuel, fresh and salt water, etc.

輪機長需檢查每一計畫之技術正確性，並接受公司或海事院校的評估。評估內容包含：

The technical accuracy of each project will be checked by the chief engineer and will be evaluated by your company and/or by your nautical college. The evaluation will look for :

- (a) 船上撰寫資料、說明或計算之正確性 Accuracy of information in written text, illustrations or calculations;
- (b) 撰寫內容必須涵蓋研究的深度及事實的邏輯呈現 Coverage of subject showing depth of research and logical presentation of facts;
- (c) 簡單扼要的文字、圖表、標籤；及 Neatness of writing, diagrams/labels; and
- (d) 拼字與文法 Spelling and grammar.

### 說明 INSTRUCTIONS

1. 在著手各項計畫前，先確定所需資料之型式如文字、文字及圖解或僅圖解。

Before commencing each project determine the type of information required, i.e. written, written with illustration, or an illustration.

2. 各項計畫應分頁開始，並敘明船名、計畫標題、開始日期與完成日期。

Begin each project on a separate page and state the Name of Ship, Project Title, Date Commenced and Date Completed.

3. 如非使用電腦，本文與計算用鋼筆書寫，圖解用鉛筆，圖解之繪製大體上係依比例。可能之時應使用彩色。

If not using a computer, use pen for written text and calculations and pencil for illustrations, which are to be drawn roughly to scale. Colours should be used whenever possible.

4. 你的工作計畫應與本訓練紀錄簿同時陳送船長檢查。

Your project work should be handed to the master for inspection at the same time as you present this Training Record Book.

5. 所完成之工作計畫應送公司或所就讀之院校。並應依其建議修正。

Completed project work should be submitted either to the company or to your college. You will be advised accordingly.

## 計畫之內容 PROJECTS

### 1. 管路系統 Pipe Systems

找出、製作下列管路系統的線形圖。使用正確的符號在圖形上表示：閘(NRV, SDNR等)、遙控、或緊急控制及其它配置。辨認壓力洩壓閘、破裂盤、洩凝水器、空氣旋塞、濾器、測聲配置及通氣管。

Trace and make line diagrams of the following pipe systems. Use the correct symbols to show on the appropriate diagrams : valves (NRV, SDNR, etc.), remote or emergency controls and other arrangements. Identify pressure relief valves, bursting discs, drains, air cocks, filter units, sounding arrangements and vent pipes.

- 1). 主海水 Main sea water
- 2). 泌污水包括緊急污水泵裝置 Bilge, including OWS and emergency bilge pumping arrangements
- 3). 主消防 Fire main
- 4). 壓艙水 Ballast
- 5). 自製的淡水(高溫/低溫蒸溜) Domestic fresh water (high temperature, low temperature)
- 6). 燃料輸送系統(重油及柴油)，包括遙控、緊急控制及燃油輸送之溢流裝置 Fuel-transfer system, (HFO and MDO), including remote or emergency controls and overflow arrangements for fuel transfer
- 7). 主蒸汽 Main steam
- 8). 給水 Feed-water
- 9). 輔助蒸汽 Auxiliary steam
- 10). 主機燃油系統 Main engine fuel oil system
- 11). 輔機燃油系統 Auxiliary engine fuel oil system
- 12). 主機滑油系統 Main engine lube oil service

- 13). 污水處理系統 Sewage system
- 14). 機艙及甲板壓縮空氣系統 Compressed air systems for engine room and deck services
- 15). 凝水器 Drain valves
- 16). 空氣旋塞 Air cocks
- 17). 船用冷凍系統 Domestic refrigeration system

## 2. 比例尺繪圖 Scale Drawings

繪製下列近似比例圖 Draw approximately to scale:

- (a) 一張通過船中線，呈現具編名之貨艙、燃料艙、壓水艙及其它各種艙區/空間之縱切面圖；  
A longitudinal section through the centre line of your ship showing and naming cargo holds (tanks), bunker, ballast and all other compartments/spaces;
- (b) 一張各層甲板呈現具編名之住艙、儲物間等之平面圖。  
A plan of each of the decks showing and naming accommodation, store rooms etc.

## 3. 安全 Safety

在上述所繪之機艙平面圖上顯示出下列各項 On the plan of machinery spaces drawn above

- (a) 用英文字母表示各種型式之救生與滅火設備之位置；及  
Show the position by key letters of each type of life-saving and fire fighting equipment; and
- (b) 將上述(a)所使用之關鍵字母列出，並於各關鍵字母旁作簡要說明。  
List the above key letters used in (a) and alongside each one give a brief description of each item.

## 4. 海洋環境的維護 Protection of the Marine Environment

概述船公司對海洋環境維護政策。船上使污染危害降至最低的措施有那些？包括塑膠物、廚房廢棄物、噪音、黑煙、油、殘油渣、污水、生活廢水等。調查及列出維護海洋環境的國際公約主要規定及管理目標。

Summarise the company's policy on environmental protection. What measures are taken aboard your ship to minimize the risk of pollution? This includes the disposal of plastics, galley waste, noise, smoke, oil, sludge, sewage, grey water etc. Investigate and list the MARPOL regulations that aim to control and protect the marine environment.

## 5. 主機 Main Engine

繪出主機主要潤滑系統之線形圖，簡述各種閥、泵及濾器的型式並以輔助圖及一般滑油分佈表示之。氣缸滑油平均消耗量為多少？為何會產生這消耗量？



Make a line diagram of the lubricating system for the main engine. Indicate the types of valves, pumps and filters fitted. Show with the aid of a diagram, the general lube oil distribution. What is the average lube oil consumption of cylinder and crankcase oil? Why does this loss occur?

## 6. 操舵裝置 Steering Gear

敘述舵機之緊急操作程序

Describe the emergency operation of the steering gear.

## 7. 電力系統 Electrical Systems

敘述船上交流發電機或直流發電機之並聯程序。解釋如何進行負載的分擔。

Describe the procedure for paralleling the ship's alternators or generators. Explain how load sharing is achieved.

## 8. 補充燃料 Bunkering

敘述加填燃料所採取的程序。清楚說明該事件之後的連續動作及採取的防備措施。提交經當時所作測試或岸上實驗室分析的結果：

Describe the procedures for taking bunkers. State clearly the sequence of events and the precautions taken. Evaluate the results of any tests taken at the time or from analysis made by a laboratory ashore.

## 9. 駕駛臺當值 Bridge Watches

簡述船橋的主要設備之用途及功能。觀察駕駛臺在操縱期間之各種操作的步驟並協助之。

Describe very briefly the purpose and functions of the main items of bridge equipment. Observe procedures and assist on the bridge during maneuvering operations

- (a) 進港 Entering port
- (b) 離港 Leaving port
- (c) 下錨或起錨時及 When anchoring or weighing anchor, and
- (d) 海上當值期間 During one watch at sea.

說明如何下達、確認及執行以上各項指令及敘述駕駛臺與機艙及船上其它部門間的交互動作。

Describe how orders are given, confirmed and executed and the interactions with the engine room and other parts of the vessel.

## 第九部分 科目概要表-操作級輪機員

# SECTION 9 TASK SUMMARY CHART - ENGINEER OFFICERS AT THE OPERATIONAL LEVEL

本概要表之目的在提供你、你的公司及你船舶的輪機長與甲級船員一種指南，以繼續檢查你在第七部分所列應完成之各項科目或職責是否完成。對 **已完成部分，於欄內填註完成日期並用斜線刪除**。在下表有陰影之方格，係表示新一組科目或職責之開始。

The purpose of the summary chart is to provide you, your company and your ships' chief engineer officer and officers with a guide and continuous check on the numbers of tasks or duties listed in Section 7 that you have completed and those that remain outstanding. Tick off only those tasks which you have completed. In the charts below the tinted boxes simply indicate the start of a new group of tasks or duties.

請參閱 P51 及 P121。

### 專長 FUNCTION：操作級-輪機工程 Marine Engineer Officer at the Operational Level

#### 1. 適任 COMPETENCE – 保持安全機艙當值 Maintain a safe engineering watch

1.1.1	1.1.2	1.1.3	1.1.4	1.2.1	1.2.2	1.2.3	1.2.4	1.2.5	1.2.6	1.2.7	1.2.8	1.2.9	1.2.10	1.2.11	1.2.12
1.2.13	1.2.14	1.2.15	1.2.16	1.2.17	1.2.18	1.3.1	1.3.2	1.3.3	1.3.4	1.3.5	1.3.6	1.3.7	1.3.8	1.3.9	1.3.10
1.4.1	1.4.2	1.4.3	1.4.4	1.4.5	1.5.1	1.5.2	1.5.3	1.5.4	1.5.5	1.5.6	1.6.1	1.6.2	1.6.3	1.6.4	1.6.5
1.6.6															

#### 2. 適任 COMPETENCE –能以書面及口頭方式使用英語 Use English in written and oral form

2.1.1	2.1.2	2.2.1	2.2.2	2.2.3	2.2.4	2.2.5
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#### 3. 適任 COMPETENCE –能使用船上對內部聯絡系統 Use internal communication systems

3.1.1	3.1.2	3.1.3	3.1.4	3.1.5	3.1.6
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4. 適任 COMPETENCE - 能操作主機、副機及各種操縱系統 Operate main and auxiliary machinery and associated control systems

4.1.1	4.1.2	4.1.3	4.1.4	4.1.5	4.1.6	4.1.7	4.2.1	4.2.2	4.2.3	4.2.4	4.2.5	4.2.6	4.2.7	4.2.8	4.2.9
4.2.10	4.2.11	4.2.12	4.2.13	4.2.14	4.2.15	4.2.16	4.2.17	4.2.18	4.2.19	4.2.20	4.2.21	4.2.22	4.2.23	4.2.24	4.2.25
4.2.26	4.2.27	4.2.28	4.2.29	4.2.30	4.2.31	4.2.32	4.2.33	4.2.34	4.2.35	4.2.36	4.2.37	4.2.38	4.2.39	4.2.40	4.2.41
4.2.42	4.2.43	4.2.44	4.2.45												

5. 適任 COMPETENCE - 能操作燃油、潤滑油、壓艙水、其他泵浦系統及各種操縱系統 Operate fuel, lubrication, ballast and other pumping systems and associated control systems

5.1.1	5.1.2	5.1.3	5.1.4	5.1.5	5.1.6	5.1.7	5.1.8	5.1.9	5.1.10	5.1.11	5.1.12	5.1.13	5.2.1	5.2.2	5.2.3
				IS MAY 2015											
5.2.4	5.2.5	5.2.6	5.2.7	5.2.8	5.2.9	5.2.10	5.2.11	5.2.12	5.2.13	5.2.14	5.2.15	5.2.16	5.2.17		

**專長 FUNCTION: 操作級-電機、電子及控制工程 Electrical, Electronic and Control Engineering at the Operational Level**

6. 適任 COMPETENCE- 能操作電機、電子及控制工程 Operate electrical, electronic and control systems

6.1.1	6.1.2	6.1.3	6.1.4	6.1.5	6.1.6	6.2.1	6.2.2	6.2.3	6.2.4	6.2.5	6.2.6	6.2.7	6.2.8	6.2.9	6.3.1
6.3.2	6.3.3	6.3.4	6.4.1	6.4.2	6.4.3	6.4.4	6.5.1	6.5.2	6.5.3	6.5.4	6.6.1	6.6.2	6.6.3	6.6.4	6.6.5
6.7.1	6.7.2	6.7.3	6.7.4	6.8.1	6.8.2	6.8.3	6.8.4	6.8.5	6.8.6	6.8.7	6.8.8	6.8.9	6.9.1	6.9.2	

7. 適任 COMPETENCE- 能保養及維修電機與電子設備 Maintenance and repair of electrical and electronic equipment

7.1.1	7.2.1	7.2.2	7.2.3	7.2.4	7.2.5	7.3.1	7.3.2	7.3.3	7.3.4	7.3.5	7.3.6	7.3.7	7.3.8	7.3.9	7.3.10
7.4.1	7.4.2	7.4.3	7.4.4	7.4.5	7.4.6	7.4.7	7.4.8	7.4.9	7.4.10	7.4.11	7.4.12	7.4.13	7.4.14	7.5.1	7.5.2
7.5.3	7.5.4	7.6.1	7.6.2	7.6.3	7.7.1	7.7.2	7.7.3	7.7.4	7.7.5	7.7.6	7.7.7	7.8.1	7.8.2	7.8.3	7.8.4
7.8.5	7.8.6	7.8.7	7.8.8	7.8.9	7.8.10	7.8.11	7.8.12	7.8.13	7.8.14	7.8.15					

**專長 FUNCTION：操作級-保養及維修 Maintenance and Repair at the Operational Level**

8. 適任 COMPETENCE-在船上裝配及維修時能正確使用手、機械工具與量測儀器 Appropriate use of hand tools, machine tools and measuring instruments for fabrication and repair on board

8.1.1	8.1.2	8.1.3	8.1.4	8.1.5	8.1.6	8.2.1	8.2.2	8.2.3	8.2.4	8.2.5	8.2.6	8.3.1	8.3.2	8.4.1	8.4.2
8.4.3	8.4.4	8.5.1	8.5.2	8.5.3	8.5.4	8.5.5	8.5.6	8.5.7	8.5.8	8.5.9	8.5.10	8.6.1	8.6.2	8.6.3	8.6.4
8.6.5	8.6.6	8.6.7	8.6.8	8.6.9	8.6.10	8.7.1	8.7.2	8.7.3	8.7.4	8.7.5	8.7.6	8.7.7	8.7.8	8.7.9	8.7.10
8.8.1	8.8.2	8.8.3	8.8.4	8.8.5	8.8.6	8.8.7	8.8.8	8.8.9	8.8.10	8.9.1	8.9.2	8.9.3	8.9.4	8.9.5	8.9.6
8.9.7	8.9.8	8.9.9	8.9.10												

9. 適任 COMPETENCE- 保養及維修船上機械與設備 Maintenances and repair of shipboard machinery and equipment

9.1.1	9.1.2	9.1.3	9.1.4	9.1.5	9.1.6	9.1.7	9.1.8	9.2.1	9.2.2	9.2.3	9.2.4	9.2.5	9.2.6	9.2.7	9.2.8
9.2.9	9.2.10	9.2.11	9.2.12	9.3.1	9.3.2	9.3.3	9.3.4	9.3.5	9.3.6	9.3.7	9.3.8	9.3.9	9.3.10	9.3.11	9.3.12
9.3.13	9.3.14	9.3.15	9.3.16	9.3.17	9.3.18	9.3.19	9.3.20	9.3.21	9.3.22	9.3.23	9.3.24	9.3.25	9.3.26	9.3.27	9.3.28
9.4.1	9.4.2	9.4.3	9.4.4	9.4.5	9.4.6	9.4.7	9.4.8	9.4.9	9.4.10	9.4.11	9.4.12	9.4.13	9.4.14	9.4.15	9.4.16
9.4.17	9.4.18	9.4.19	9.4.20	9.4.21	9.4.22	9.5.1	9.5.2	9.5.3	9.5.4	9.5.5	9.5.6	9.5.7	9.5.8	9.5.9	9.5.10
9.5.11	9.6.1	9.6.2	9.6.3	9.6.4	9.6.5	9.6.6	9.6.7	9.6.8	9.6.9	9.6.10	9.6.11	9.6.12	9.6.13	9.6.14	9.6.15
9.6.16	9.6.17	9.6.18	9.6.19	9.6.20	9.6.21	9.6.22	9.6.23	9.6.24	9.7.1	9.7.2	9.7.3	9.7.4	9.7.5	9.7.6	9.7.7
9.7.8	9.7.9														

**專長 FUNCTION：操作級-船舶操作與船上人員管理 Controlling the Operation of the Ship and Care for Persons On Board at the Operational Level**

10. 適任 COMPETENCE- 運用領導統御與團隊合作技巧 Application of leadership and team working skills

10.1.1	10.1.2	10.1.3	10.1.4	10.1.5	10.1.6	10.1.7	10.2.1	10.2.2	10.2.3	10.2.4	10.2.5

11. 適任 COMPETENCE- 確保符合防止污染要求 Ensure compliance with pollution prevention requirements

11.3.2	11.4.1	11.4.2	11.5.1	11.5.2	11.6.1	11.6.2	11.6.3	11.6.4	11.6.5

12. 適任 COMPETENCE- 維持船舶之適航性 Maintain seaworthiness of the ship

12.1.1	12.1.2	12.1.3	12.1.4	12.1.5	12.1.6	12.1.7	12.1.8	12.1.9	12.1.10	12.1.11	12.1.12	12.2.1	12.3.1	12.3.2

13. 適任 COMPETENCE-船上防火、控制火災及滅火 Prevent, control and fight fires on board

13.1.1	13.1.2	13.1.3	13.1.4	13.1.5	13.2.1	13.2.2	13.3.1	13.3.2	13.4.1	13.4.2	13.4.3	13.4.4	13.4.5	13.4.6	13.4.7
13.4.8	13.4.9	13.4.10	13.4.11	13.5.1	13.5.2	13.5.3	13.5.4	13.5.5	13.5.6	13.6.1	13.6.2	13.6.3			

14. 適任 COMPETENCE- 操作救生設備 Operate life-saving appliances

14.1.1	14.1.2	14.1.3	14.1.4	14.1.5	14.1.6	14.1.7	14.1.8	14.1.9	14.2.1	14.2.2	14.2.3	14.2.4	14.2.5	14.2.6	14.2.7
14.2.8	14.3.1	14.4.1	14.5.1	14.5.2	14.5.3	14.5.4	14.5.5	14.5.6	14.5.7	14.5.8	14.5.9	14.5.10	14.5.11	14.5.12	

15. 適任 COMPETENCE- 在船上應用醫療急救 Apply medical first aid on board ship

15.1.1	15.1.2	15.1.3	15.1.4	15.2.1	15.2.2	15.3.1	15.3.2	15.3.3	15.3.4	15.3.5

16. 適任 COMPETENCE-監督符合法定要求 Monitor compliance with legislative requirements

16.1.1	16.1.2	16.1.3	16.1.4	16.1.5	16.2.1	16.2.2	16.2.3	16.2.4	16.3.1

## 第十部份-總結報告 Section 10 - Final Report (正本)

### 申請操作級輪機員 (管輪) 適任證書

學員姓名 Full Name		出生年月日 Date of Birth		船員服務手冊字號 Seaman's Registration	
適任證書等級、級別及編號 Capacity of competency certificate and No.		適任證書有效期限 Valid Until.		<u>紀錄簿起迄時間</u> Period of Record book	起 From  迄 To
輪機長評定意見 Evaluating competence by chief engineer officer					
			簽名 Signature	日期 Date	
船公司評定意見 Evaluating competence by company					
			簽名	日期 Date	公司 Stamp
航政機關評定意見 Evaluating competence by aviation authority	1. 輪機長寫完評定意見後務必寫上『 <u>已按照要求進行訓練, 建議航政機關發證</u> 』。2. 輪機長簽完名後 <u>請補上船章</u>			日期 Date	蓋戳章 Stamp

寫上本記錄簿第一筆及最後一筆訓練時簽署日期。此欄位非上下船日期

1. 輪機長寫完評定意見後務必寫上『已按照要求進行訓練, 建議航政機關發證』。2. 輪機長簽完名後請補上船章

註：請使用複寫紙製作副本。

紀錄簿編號 (Series No) : EOTR





## 第八部份-總結報告 Section 8 - Final Report (副本)

### 申請操作級輪機員 (管輪) 適任證書

學員姓名 Full Name		出生年月日 Date of Birth		船員服務手冊字號 Seaman's Registration							
適任證書等級、級別及編號 Capacity of competency certificate and No.		適任證書有效期限 Valid Until.		紀錄簿起迄時間 Period of Record book	起 From  迄 To						
<p>輪機長評定意見 Evaluating competence by chief engineer officer</p> <div style="text-align: right; margin-top: 20px;"> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 0 20px;">簽名</td> <td>日期</td> </tr> <tr> <td style="padding: 0 20px;">Signature</td> <td>Date</td> </tr> </table> </div>						簽名	日期	Signature	Date		
簽名	日期										
Signature	Date										
<p>船公司評定意見 Evaluating competence by company</p> <div style="text-align: right; margin-top: 20px;"> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 0 20px;">簽名</td> <td>日期</td> <td>公司章</td> </tr> <tr> <td style="padding: 0 20px;">Signature</td> <td>Date</td> <td>Stamp</td> </tr> </table> </div>						簽名	日期	公司章	Signature	Date	Stamp
簽名	日期	公司章									
Signature	Date	Stamp									
<p>航政機關評定意見 Evaluating competence by administration</p> <div style="text-align: right; margin-top: 20px;"> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 0 20px;">簽名</td> <td>日期</td> <td>蓋戳章</td> </tr> <tr> <td style="padding: 0 20px;">Signature</td> <td>Date</td> <td>Stamp</td> </tr> </table> </div>						簽名	日期	蓋戳章	Signature	Date	Stamp
簽名	日期	蓋戳章									
Signature	Date	Stamp									

註：請使用複寫紙製作副本。

**紀錄簿編號 (Series No) : EOTR**

