

船上訓練紀錄簿 申請電技員適任證書

ONBOARD TRAINING RECORD BOOK CERTIFICATION FOR ELECTRO-TECHNICAL OFFICER

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

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電技員訓練開始日期 (Date training started) : 訓練實際開始日，或船員服務手冊所列任職日期

編號 (Series No.) : ETOR 學員無須填寫此處

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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」第五十四條、第五十五條、第五十七條及第五十八條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 54,55,57,58 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」第六十三條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 63 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」第六十二條者，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 62 of “The Regulation for Seafarer Training Assessment and Application for Certification”, but should issue a restriction the same in the FINAL REPORT section.

四、於公務船或港勤工作船舶完成船上訓練紀錄簿之船員，申請核發適任證書應加註限制。如於公務船或港勤工作船舶完成船上訓練紀錄簿符合一般商船船員標準，雇用人應檢附船舶設備相關資料送本局審議。

When seafarers working on official ship and/or workboat, completed the OBTRB, Certificates should issue with endorsement. If the training keep the same with common merchant seafarers standard, employer should attached with relevant document for review by this office.

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

實務上訓練員常有非正楷簽名之情形，如有該情形，建議將簽名樣式簽於「簽署人姓名」欄左側空白處，以供核對。

附件-船上訓練紀錄簿簽署人員基本資料表→所有欄位不侷限於一定填寫中文，可以填寫英文

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
李師玉	中華民國或 ROC	輪機長或 大管輪	基 XXXX 或 A1234567	中文或英文船名擇一填寫 2021.8.23/在職中	公司章
William Sachs	Singapore	輪機長或 大管輪		中文或英文船名擇一填寫 2021.12.23/在職中	公司章
陳耀祥	中華民國或 ROC	輪機長或 大管輪		中文或英文船名擇一填寫 2022.4.3/在職中	公司章
Jeffrey Hudson	Singapore	輪機長或 大管輪		中文或英文船名擇一填寫 2021.11.1/2022.6.6	公司章
林琨生	中華民國或 ROC	輪機長或 大管輪		中文或英文船名擇一填寫 2022.6.5/在職中	公司章
	本範例：學員見習時間在常運輸自 2021.9.3 到 2022.3.29, 在嘉運輸 2022.4.9 到 2022.9.12 (於本紀錄簿"適任證明","審查核閱","總結報告"欄位之所有訓練員，皆應於此頁登載相關資訊，如本頁不敷使用，請自行影印空白頁使用，浮貼於本頁之上。另建議附上蓋了船章的船員名單，尤其是有外國人簽署的文件)				

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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任輪機長及大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 14 頁）與船上熟悉（第 16 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 14) and mandatory Shipboard Familiarization (page 16), 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 21 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 21) 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 125 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 125).

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

- 第七部分電技員之訓練科目，應予循序完成。對於記錄程序之附加指導在第六部分（第 34 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 34).

- 在第九部分（第 125 頁）之科目概要表亦應循序完成。

The Task Summary Chart in Section 9 (page 125) should also be progressively completed.

- 本紀錄簿應每月及合約期滿離船時陳送輪機長核閱。輪機長之意見應予記錄於第 10 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 10. Comments should only relate to the Trainee's competence and practical progress.

- 本紀錄簿應在學員報到時遞交指派訓練員。嗣後在航程情況許可下每週遞交指派訓練員。其意見應記錄於第 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 12 頁。

The Book should also be inspected by the shipping company. Comments should be recorded on page 12.

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.

- 任職電技匠或電技實習生職務始得填寫本紀錄簿。本訓練紀錄簿完成時間至少 3 個月。相關事項請依我國「船員訓練檢覈及申請核發證書辦法」辦理。

Electro-Technical Rating or Electro-Technical Cadet equivalent could complete this book, and must completed this book at least 3 months. Other matter should refer to the regulation 「Mariner training review and issuing certificate rules」 from MOTCMPB.

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

學員資料 PARTICULARS OF TRAINEE (以下契約所指為上下船之僱傭契約)

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

<p>中文全名 Name in Chinese <u>根據船員服務手冊中文姓名</u> 英文全名 Name in Full <u>根據船員服務手冊</u></p> <p>船員服務手冊字號 Seafarer's Book No <u>根據手冊</u> 出生日期 Date of Birth <u>根據身分證</u></p> <p>住址 Home Address <u>通訊地址</u></p> <p>住址變更 (如變更時) Change of Address (if applicable) _____</p>	 <p>照片</p> <p>PHOTO</p>
<p>公司 Sponsoring Company _____ <small>所有訓練中之任職公司皆應登載，如表格不敷使用，請自行影印空白頁使用</small></p> <p>地址 Address <u>公司所在地址(或台灣代理或辦事處)</u></p>	
<p>僱傭契約 SEA Agreement 起始日期 Date Started(電技員) <u>僱傭契約約定日</u> 終止日期 Date Expired <small>下船日或返台日 (請註明)</small></p> <p>公司變更 (如變更時) Change of Sponsoring Company (if applicable) <small>訓練階段換公司者應填入</small></p> <p>地址 Address <u>如變更時之新地址</u></p>	

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

此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 Training Items	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）	依理應有的證書上的資料		
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			

其他訓練紀錄 RECORD OF OTHER TRAINING

訓練項目 Training Item	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	根據所發證書上的資訊填寫，如無則空白		
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 Basic training for oil and chemical tanker cargo operations			
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 Advanced training for chemical tanker cargo operations			
液化氣體船貨物操作基本訓練 Basic training for liquefied gas tanker cargo operations			
液化氣體船貨物操作進階訓練 Advanced training for liquefied gas tanker cargo operations			
客輪訓練 Passenger ship training			
駛上駛下客輪訓練 Ro-ro passenger ship training			
高速船型式等級訓練 High speed craft type rating training			

船上服務紀錄 SHIPBOARD RECORD OF SERVICE

船名 Ship's Name	IMO 號碼 IMO Number	日期 Dates		海勤資歷合計 Voyage Total -Seagoing Service	
		任職 Sign on	卸職 Sign off	月數 Months	日數 Days
中文或英文船名擇一填寫	該船 IMO 號碼	2021.12.11	2022.3.31	3	21
		2022.3.16	2023.5.2	13	17
海勤資歷計算規則請參閱本局船員智慧服務平台之公告服務>Q&A>序號 3>操作指引>海勤資歷試算 (詳網址： https://gov.tw/iAH ，或下方 QR code)					
總計 Total Service (最後總計以便利作業)				17	8



備註：依據船員訓練檢覈及申請核發證書辦法第 54 條規定，第一次申請電技員適任證書者，須具備主機推進動力七百五十千瓦以上船舶擔任電技匠或電技實習生合計至少一年海勤資歷。

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，本表至少應在該船航務允許之期間或每週一次內完成(視公司規定自行加頁)。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
中文或英文船名 擇一填寫	“意見”選項 以“合格”, “Qualified”, “Competent”, “滿意”, “Satisfied”, “on schedule”, “Successful”為正面表述 以“不合格”, “unsatisfied”, “should repeat”, “不滿意”, “training time to be extended”為負面表述.	C/O William Sachs 註明職級及正楷姓名	訓練員	2021.10.29
		1/E William Sachs 註明職級及正楷姓名	本人簽字	2021.11.30
		1/E William Sachs 註明職級及正楷姓名	訓練員本人之簽字必須能清楚辨識姓名	2021.12.28
		1/E Jeffrey Hudson 註明職級及正楷姓名		2022.2.28

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

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
中文或英文船名 擇一 填寫	“意見”選項 以“合格”, “Qualified”, “Competent”, “滿意”, “Satisfied”, “on schedule”, “Successful” 為正面表述 以“不合格”, “unsatisfied”, “should repeat”, “不滿意”, “training time to be extended” 為負面表述	李師玉	本人之簽字必須清晰可清楚閱讀	2021.10.30	
		李師玉	本人之簽字必須清晰可清楚閱讀	2021.12.29	
		陳耀祥	本人之簽字必須清晰可清楚閱讀	2022.3.1	

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

公司對紀錄簿之核閱

COMPANY'S 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	正楷姓名 Name in BLOCK CAPITALS	簽名 Signature	日期 Date	公司章 Company's Official stamp	
中文或英文船名 擇一填寫	<p>“意見”選項以 以“合格”, “Qualified”, “Competent”, “滿意”, “Satisfied”, “on schedule”, “Successful” 為正面表述</p> <p>以“不合格”, “unsatisfied”, “should repeat”, “不滿意”, “training time to be extended” 為負面表述。</p>	陳耀昌	本人之簽字必須清晰可清楚閱讀	2022.4.2		
		陳耀昌	本人之簽字必須清晰可清楚閱讀	2022.9.12		

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

(建議以通識知識為主, 如果是屬船圖, 機器設備說明書不宜在此列表)

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
	(如無參考書籍或訓練錄影帶支援或任何海技部門發行之出版品者請公司或船長或訓練師提供 P&I 或其他相關網上資料襄助)	以附件船上訓練紀錄簿有做簽署的人員為名單提供者
	公司各部門發往船上的通函或公告 (在訓練中之學員,指派訓練員或船長可考慮隨機詢問對內容的了解程度)	
	公司為船上購買的訓練軟體(如公司並未購置訓練軟體, 指派訓練員可指定以下各專業 領域書籍或網址列入考核, 由於專業部分涉及程度深淺, 由船長或指派訓練員決定項目)	
	液貨輪: ISGOTT, OCIMF/SIRE 散裝輪: RIGHT ship 建議網站,比如船東責任險網址 https://www.ukpandi.com/loss-prevention/safer-ships/ https://britanniapandi.com/knowledgeresult/?document_type=Loss%20Prevention%20Insight	
	一般航安服務網址 https://www.marineinsight.com/marine-navigation/what-is-stowagefactor/	
	汙染議題 https://www.itopf.org/knowledge-resources/documents-guides/technicalinformation-papers/	
	各主機發電機輔機廠商網址	

第三部分強制之安全與船上熟悉 SECTION3 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

在船上被指派任務之前，所有船員應接受安全熟悉訓練，以瞭解在緊急情況下該如何處理。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訓練或講授，足以執行所交付之任務或責任。

Before being assigned to shipboard duties all seafarers must receive basic safety familiarization to know what to do in an emergency. The master or responsible officer on each ship should sign and date below to signify that you have received training or instruction to be able to carry out the following tasks or duties.

船名 Ship's Name	中文或英文船名 擇一填寫	中文或英文船名 擇一填寫			
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:能夠與船上其他人員溝通有關基本安全事宜 Be able to : Communicate with other persons on board on elementary safety matters	William Sachs 2021.9.25 本人簽字需可 清楚辨識其姓	林琨生 2022.6.15 本人簽字需可 清楚辨識其姓	(建議簽署日期應符合該員在船日期之初期 48 小時至 1 週內，且應遵循公司管理程序中有關熟悉船舶或崗位規定)		
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>知道如何處理下列情況 Know what to do if :</p>			<p>(建議簽署日期應符合該員在船日期之初期且強烈建議應遵循公司管理程序中有關熟悉船舶或崗位規定)</p>		
<p>人員落水 A person falls overboard 偵測到火災或煙霧 Fire or smoke is detected</p>					
<p>具有下述能力 Be able to : 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>(建議簽署日期應符合該員在船日期之初期 48 小時至 1 週內，且應遵循公司管理程序中有關熟悉船舶或崗位規定)</p>		
<p>救生衣與浸水衣之位置與穿 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 alarm and have a knowledge to use portable 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</p>					
<p>除了艙口蓋，能夠開關該船上一般之防火、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

必需利用時間，短期內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或職責。

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

船名 Ship's Name	中文或英文船名擇一填寫				
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	William Sachs 2021.9.25 本人簽字需可清楚辨識其姓名				

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					
機艙當值程序與佈置 Engine room watchkeeping procedures and arrangements : 熟悉機艙、機控室、主機、輔機、舵機、主要管路其他工作區域 Visit engine room, control room, main engine, auxiliary machineries, steering gear, main piping and other work areas					
熟悉機艙機器設備相關位置，緊急停止按鈕和逃生路徑 Get acquainted with machineries relative position, emergency stop push button location and escape route					

<p>安全與應急程序 Safety and emergency procedures : 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</p>			<p>(建議簽署日期應符合該員在船日期之初期且強烈建議應遵循公司管理程序中有關熟悉船舶或崗位規定)</p>		
<p>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</p>					
<p>確定醫療與急救設備之位置 Locate medical & first aid equipment</p>					
<p>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</p>					
<p>確定火箭拋繩器之位置 Locate rocket line throwing apparatus</p>					
<p>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</p>					

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 & 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間、液貨艙 與貨艙內滅火設備的控制閥位置 Locate CO2 bottle room, and control valves for smothering apparatus in pump rooms, cargo tanks and holds					
確定應急泵位置並瞭解其操作方法 Locate and understand the operation of the emergency pump					
環境保護 Environmental protection : 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(時間; 任務)。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	中文或英文船名 擇一填寫				
救生艇召集站 Boat Muster Station	救生操演時間不 需要同於消防操 演但均須船長簽 署認證				
消防召集站 Fire Muster Station					
船長正楷姓名 Master's Name BLOCK CAPITALS	正楷名字				
船長簽名 Master's Signature	船長本人簽名 本人簽字需可清 楚辨識其姓名				
日期 Date	操演當天				

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 船舶規格資料請尋找 particulars, 船圖, 證書等資料蒐集完整

船名 MV/SS: _____	IMO 號碼 IMO Number: _____	呼號 Call Sign: _____
船舶規格與容量 Dimensions and Capacities	主機 Main Engine	發電機 Generators (製造商/型式/數量 Maker/Type/Unit) _____
全長 Length Over All _____ m	引擎 Engine (製造廠 Maker) _____	正常負載 Normal electric load:
船寬 Breadth _____ m	引擎 Engine (型式 type) _____	航行中 At sea _____ kW
船深 Depth _____ m	衝程 Stroke _____ mm 缸徑 Bore _____ mm	在港 In port _____ kW
夏季吃水 Summer draft _____ m	輸出功率 Output(MCR) _____ kW _____ rpm	在港裝卸 In port operation _____ kW
夏季乾舷 Summer freeboard _____ m	額定輸出 Service output _____ kW _____ rpm	發電機平日消耗燃料 Generator engine fuel daily
總噸位 Gross tonnage _____	增壓機 Turbo charger (Maker/Type/Set)	航行中(重油)At sea(C oil) _____ T/d
載重量 Deadweight _____ tonnes	燃油種類/日耗油量 Fuel oil category/Daily consump.	在港(輕油)In port(Gas oil) _____ T/d
輕載排水量 Light displacement _____ tonnes	全速日耗油量 Rated speed daily consumption	在港裝卸 In port operation _____ T/d
淡水餘裕 F.W. allowance _____ mm	At speed _____ rpm _____ T/d _____ (HS/LS)	輔機 Auxiliary Machinery
滿載時每公分吃水噸數 TPC in summer draft _____	經濟速日耗油量 Eco speed daily consumption	舵機系統 Steering GearType _____
散裝/液體容積 Grain/Liquid capacitytonnes _____ M ³	At speed _____ rpm _____ T/d _____ (HS/LS)	螺旋槳 Propeller(Type/no. of blades/diameter) _____
航速 Service speed _____ knots	救生設備 Lifesaving Equipment	艏橫向推進器 Thruster(no./type) _____
燃油艙容量 Bunker capacity _____ m ³ /tonnes	救生艇 (數量/容量/引擎) Lifeboat	艉橫向推進器 Thruster(no./type) _____
每日耗油量 Bunker daily consumption _____ T/d	(No./cap/engine) _____	輔助鍋爐 Auxiliary boiler (製造商/型式/型號/數量) _____
淡水艙容量 Fresh water capacity _____ tonnes	救生筏 (數量/容量) Life-rafts (No./capacity) _____	_____
淡水平均每日消耗量 Average fresh water daily consumption _____ T/d	_____	蒸發量/工作壓力/量(Capacity/Working Pressure/ Set) _____ kg/hr X _____ Mpa _____ Set
淡水平均每日消耗量 Average fresh water daily consumption _____ T/d	救生圈 Lifebuoys (數量 No.) _____	
	逃生衣 Survival Suits (數量 No./型式 type) _____	

<p>污水艙容量 Dirty water capacity _____ M³ 汙油艙容量 Sludge tank capacity _____ M³ 高壓電發電機 high voltage generators over 1000V (製造商/型式/數量 Maker/Type/Unit) _____ 額定輸出 output/Volt _____ Kw _____ V 高電壓變壓器 Transformer for High Voltage _____(HV) _____ V/(LV) _____ V _____ sets</p> <p>滅火設備 Fire Fighting Equipment</p> <p>滅火器 (數量與容量) _____ 型式 Types：泡沫 Foam _____ 公升 liters 乾粉 Dry powder _____ 公斤 kg 其他 _____ 公斤 kg 二氧化碳氣瓶間 CO₂ bottles in CO₂ Rm 機艙 Engine Room _____ Bot _____ kg 泵間 Pump room _____ Bot _____ kg 貨艙 Cargo holds _____ Bot _____ kg 消防站 Fire hose monitor _____ Units 消防水龍帶 Fire hoses (數量與口徑 No. & size) _____ mm 呼吸器 Breathing apparatus (數量/製造廠 No/maker) _____ 消防員裝備 Fire-fighter's Outfit (數量 No.) _____</p>	<p>航行/通信設備 Navigational and Communications Equipment 計程儀 Log (製造廠/型式) _____ 應急指位無線電示標數量 EPIRB _____ (數量) 磁羅經 Magnetic compass _____ (數量./型式) 電羅經 Gyro compass _____ (數量/型式) 自動操舵裝置 Autopilot _____ (型式) 雷達 Radar _____ (數量./型式) 電子海圖 ECDIS _____ (數量 No./型式 type) 回音測深儀 Echo sounder _____ (數量./型式) 式) 全球定位系統 GPS _____ (數量/型式) 如有時 If applicable： 整體航行系統 Integrated navigation system (型式 type) _____ 動態定位系統 DP system (型式 type) _____ 衛星通訊 SATCOM (數量 No./型式 type) _____ 全球海上遇險及安全系統 GMDSS (型式 type) _____ 將船上所裝置之其他航行與通信設備列出 List here other navigational and communications equipment fitted on the ship _____ _____ _____</p>	<p>船體 Hull 錨機型式 Windlass type _____ 錨 Anchors 左錨 Port _____ tonnes 右錨 Starboard _____ tonnes 備錨 Spare _____ tonnes 繫纜 Mooring rope (數量與直徑) _____ 合纖纜 Synthetic fiber _____ mm 鋼纜 Wires _____ mm 拖纜 Towing Lines _____ mm 防火纜 Fire Wire _____ mm 貨物裝卸機具 Cargo Handling Gear 吊桿/起重機 Derricks/cranes (數量與安全負荷量 No. and SWL) _____/_____/_____ N 絞纜機 Winches (型式 types) _____ tonnes 壓水艙 Ballast tanks _____ CBM _____ No. 壓載水泵 Ballast pumps _____ MPA _____ set 貨艙 Cargo tanks _____ CBM _____ NO. 貨泵 Cargo pumps _____ MPA _____ set 管路 Pipelines (口徑 sizes) _____ 其他裝卸貨設備 Other cargo equipment _____ _____ _____</p>
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第二艘船 SECOND SHIP

<p>船名 MV/SS: 船舶規格與容量 Dimensions and Capacities 全長 Length OverAllm 船寬 Breadthm 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 輕載排水量 Light displacement tonnes 淡水餘裕 F.W. allowance mm 滿載吃水每公分吃水噸數 TPC 散裝/液體容積 Grain/Liquid capacitytonnes 航速 Service speed knots 燃油艙容量 Bunker capacity m³/tonnes 每日耗油量 Bunker daily consumption tonnes 淡水艙容量 Fresh water capacity tonnes 淡水平均每日消耗量 Average fresh water daily consumption tonnes 污水艙容量 Dirty water capacity tonnes 主機 Main Engine 引擎 Engine (製造廠 Maker) 引擎 Engine (型式 type) 衝程 Stroke</p>	<p>IMO 號碼 IMO Number: 缸徑 Bore 輸出功率 Output bhp/kW rpm 減速齒輪 Reduction gears (型式) 輔機 Auxiliary Machinery 舵機系統 Steering GearType 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/m² or bar 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 耗油率 Specific fuel consumption g.kW/hr 鍋爐燃料 Boiler fuel: 種類 Category 每日耗油量 Fuel consumption per day T 黏度範圍 Viscosity range</p>	<p>呼號 Call Sign: 發電機 Generator (數量 No.) 輸出功率 Output kW 正常負載 Normal electric load: 航行中 At sea kW 在港 In port kW 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 錨 Anchors 左錨 Port tonnes 右錨 Starboard tonnes 備錨 Spare tonnes 錨鏈 (直徑) Cable (diamater.)mm 錨鏈長度 Cable length shackles 錨機型式 Winch type 繫纜 Mooring rope (數量與直徑) 合纖纜 Synthetic fibermm 鋼纜 Wiresmm 拖纜 Towing Spring mm 防火纜 Fire Wiremm</p>
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<p>滅火設備 Fire Fighting Equipment</p> <p>滅火器 (數量與容量)</p> <p>型式 Types : 水 Water 公升 liters</p> <p> 泡沫 Foam 公升 liters</p> <p> 乾粉 Dry powder 公斤 kg</p> <p> 二氧化碳 CO₂ 公斤 kg</p> <p>消防水龍帶 Fire hoses (數量與口徑 No. and size)</p> <p>mm</p> <p>呼吸器 Breathing apparatus (數量/製造廠 No/maker)</p> <p>消防員裝備 Fire-fighter's Outfit (數量 No.)</p> <p>救生設備 Lifesaving Equipment</p> <p>救生艇 (數量/容量/引擎) Lifeboat (No./cap/engine)</p> <p>救生筏 (數量/容量) Life-rafts (No./capacity)</p> <p>救生圈 Lifebuoys (數量 No.)</p> <p>求生衣 Survival Suits (數量 No./型式 type)</p>	<p>貨物裝卸機具 Cargo Handling Gear</p> <p>吊桿/起重機 Derricks/cranes (數量與安全負荷量 No. and SWL) tonnes</p> <p>絞纜機 Winches (型式 types) tonnes</p> <p>壓水艙 Ballast tanks (數量 No.)</p> <p>貨艙 Cargo tanks (數量 No.)</p> <p>貨泵 Cargo pumps (數量 No.)</p> <p>泵輸出量 Pumping ratecbm/Hrs</p> <p>管路 Pipelines (口徑 sizes)</p> <p>型式與輸出量 Type and rating tonnes/hour</p> <p>其他裝卸貨設備 Other cargo equipment</p> <p>將船上所裝置之其他設備列出 List here other equipment fitted on the ship</p> <p>將船上所裝置之其他航行與通信設備列出 List here other navigational and communications equipment fitted on the ship</p>	<p>航行與通信設備 Navigational and Communications Equipment</p> <p>計程儀 Log (製造廠/型式)</p> <p>應急指位無線電示標數量 EPIRB (數量)</p> <p>磁羅經 Magnetic compass (數量./型式)</p> <p>電羅經 Gyro compass (數量/型式)</p> <p>自動操舵裝置 Autopilot (型式)</p> <p>雷達 Radar (數量./型式)</p> <p>電子海圖 ECDIS (數量 No./型式 type)</p> <p>回音測深儀 Echo sounder (數量./型式)</p> <p>全球定位系統 GPS (數量/型式)</p> <p>如有時 If applicable :</p> <p> 整體航行系統 Integrated navigation system (型式 type)</p> <p> 動態定位系統 DP system (型式 type)</p> <p> 衛星通訊 SATCOM (數量 No./型式 type)</p> <p> 全球海上遇險及安全系統 GMDSS (型式 type)</p>
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船舶規格資料請尋找 particulars, 船圖, 證書等資料蒐集完整

第三艘船 THIRD SHIP

<p>船名 MV/SS: 船舶規格與容量 Dimensions and Capacities 全長 Length OverAllm 船寬 Breadthm 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 輕載排水量 Light displacement tonnes 淡水餘裕 F.W. allowance mm 滿載吃水每公分吃水噸數 TPC 散裝/液體容積 Grain/Liquid capacitytonnes 航速 Service speed knots 燃油艙容量 Bunker capacity m³/tonnes 每日耗油量 Bunker daily consumption tonnes 淡水艙容量 Fresh water capacity tonnes 淡水平均每日消耗量 Average fresh water daily consumption tonnes 污水艙容量 Dirty water capacity tonnes 主機 Main Engine 引擎 Engine (製造廠 Maker) 引擎 Engine (型式 type) 衝程 Stroke</p>	<p>IMO 號碼 IMO Number: 缸徑 Bore 輸出功率 Output bhp/kW rpm 減速齒輪 Reduction gears (型式) 輔機 Auxiliary Machinery 舵機系統 Steering GearType 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/m² or bar 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 耗油率 Specific fuel consumption g.kW/hr 鍋爐燃料 Boiler fuel: 種類 Category 每日耗油量 Fuel consumption per day T 黏度範圍 Viscosity range</p>	<p>呼號 Call Sign: 發電機 Generator (數量 No.) 輸出功率 Output kW 正常負載 Normal electric load: 航行中 At sea kW 在港 In port kW 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 錨 Anchors 左錨 Port tonnes 右錨 Starboard tonnes 備錨 Spare tonnes 錨鏈 (直徑) Cable (diamm.)mm 錨鏈長度 Cable length shackles 錨機型式 Winch type 繫纜 Mooring rope (數量與直徑) 合纖纜 Synthetic fibermm 鋼纜 Wiresmm 拖纜 Towing Spring mm 防火纜 Fire Wiremm</p>
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<p>滅火設備 Fire Fighting Equipment</p> <p>滅火器 (數量與容量)</p> <p>型式 Types : 水 Water 公升 liters</p> <p> 泡沫 Foam 公升 liters</p> <p> 乾粉 Dry powder 公斤 kg</p> <p> 二氧化碳 CO₂ 公斤 kg</p> <p>消防水龍帶 Fire hoses (數量與口徑 No. and size) mm</p> <p>呼吸器 Breathing apparatus (數量/製造廠 No/maker)</p> <p>消防員裝備 Fire-fighter's Outfit (數量 No.)</p> <p>救生設備 Lifesaving Equipment</p> <p>救生艇 (數量/容量/引擎) Lifeboat (No./cap/engine)</p> <p>救生筏 (數量/容量) Life-rafts (No./capacity)</p> <p>救生圈 Lifebuoys (數量 No.)</p> <p>求生衣 Survival Suits (數量 No./型式 type)</p>	<p>貨物裝卸機具 Cargo Handling Gear</p> <p>吊桿/起重機 Derricks/cranes (數量與安全負荷量 No. and SWL) tonnes</p> <p>絞纜機 Winches (型式 types) tonnes</p> <p>壓水艙 Ballast tanks (數量 No.)</p> <p>貨艙 Cargo tanks (數量 No.)</p> <p>貨泵 Cargo pumps (數量 No.)</p> <p>泵輸出量 Pumping ratecbm/Hrs</p> <p>管路 Pipelines (口徑 sizes)</p> <p>型式與輸出量 Type and rating tonnes/hour</p> <p>其他裝卸貨設備 Other cargo equipment</p> <p>將船上所裝置之其他設備列出 List here other equipment fitted on the ship</p> <p>將船上所裝置之其他航行與通信設備列出 List here other navigational and communications equipment fitted on the ship</p>	<p>航行與通信設備 Navigational and Communications Equipment</p> <p>計程儀 Log (製造廠/型式)</p> <p>應急指位無線電示標數量 EPIRB (數量)</p> <p>磁羅經 Magnetic compass (數量./型式)</p> <p>電羅經 Gyro compass (數量/型式)</p> <p>自動操舵裝置 Autopilot (型式)</p> <p>雷達 Radar (數量./型式)</p> <p>電子海圖 ECDIS (數量 No./型式 type)</p> <p>回音測深儀 Echo sounder (數量./型式)</p> <p>全球定位系統 GPS (數量/型式)</p> <p>如有時 If applicable :</p> <p> 整體航行系統 Integrated navigation system (型式 type)</p> <p> 動態定位系統 DP system (型式 type)</p> <p> 衛星通訊 SATCOM (數量 No./型式 type)</p> <p> 全球海上遇險及安全系統 GMDSS (型式 type)</p>
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船舶規格資料請尋找 particulars, 船圖, 證書等資料蒐集完整

第四艘船 FOURTH SHIP

<p>船名 MV/SS: 船舶規格與容量 Dimensions and Capacities 全長 Length OverAllm 船寬 Breadthm 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 輕載排水量 Light displacement tonnes 淡水餘裕 F.W. allowance mm 滿載吃水每公分吃水噸數 TPC 散裝/液體容積 Grain/Liquid capacitytonnes 航速 Service speed knots 燃油艙容量 Bunker capacity m³/tonnes 每日耗油量 Bunker daily consumption tonnes 淡水艙容量 Fresh water capacity tonnes 淡水平均每日消耗量 Average fresh water daily consumption tonnes 污水艙容量 Dirty water capacity tonnes 主機 Main Engine 引擎 Engine (製造廠 Maker) 引擎 Engine (型式 type) 衝程 Stroke</p>	<p>IMO 號碼 IMO Number: 缸徑 Bore 輸出功率 Output bhp/kW rpm 減速齒輪 Reduction gears (型式) 輔機 Auxiliary Machinery 舵機系統 Steering GearType 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/m² or bar 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 耗油率 Specific fuel consumption g.kW/hr 鍋爐燃料 Boiler fuel: 種類 Category 每日耗油量 Fuel consumption per day T 黏度範圍 Viscosity range</p>	<p>呼號 Call Sign: 發電機 Generator (數量 No.) 輸出功率 Output kW 正常負載 Normal electric load: 航行中 At sea kW 在港 In port kW 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 錨 Anchors 左錨 Port tonnes 右錨 Starboard tonnes 備錨 Spare tonnes 錨鏈 (直徑) Cable (diamm.)mm 錨鏈長度 Cable length shackles 錨機型式 Winch type 繫纜 Mooring rope (數量與直徑) 合纖纜 Synthetic fibermm 鋼纜 Wiresmm 拖纜 Towing Spring mm 防火纜 Fire Wiremm</p>
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<p>滅火設備 Fire Fighting Equipment</p> <p>滅火器 (數量與容量)</p> <p>型式 Types : 水 Water 公升 liters</p> <p> 泡沫 Foam 公升 liters</p> <p> 乾粉 Dry powder 公斤 kg</p> <p> 二氧化碳 CO₂ 公斤 kg</p> <p>消防水龍帶 Fire hoses (數量與口徑 No. and size)</p> <p>mm</p> <p>呼吸器 Breathing apparatus (數量/製造廠 No/maker)</p> <p>消防員裝備 Fire-fighter's Outfit (數量 No.)</p> <p>救生設備 Lifesaving Equipment</p> <p>救生艇 (數量/容量/引擎) Lifeboat (No./cap/engine)</p> <p>救生筏 (數量/容量) Life-rafts (No./capacity)</p> <p>救生圈 Lifebuoys (數量 No.)</p> <p>求生衣 Survival Suits (數量 No./型式 type)</p>	<p>貨物裝卸機具 Cargo Handling Gear</p> <p>吊桿/起重機 Derricks/cranes (數量與安全負荷量 No. and SWL) tonnes</p> <p>絞纜機 Winches (型式 types) tonnes</p> <p>壓水艙 Ballast tanks (數量 No.)</p> <p>貨艙 Cargo tanks (數量 No.)</p> <p>貨泵 Cargo pumps (數量 No.)</p> <p>泵輸出量 Pumping ratecbm/Hrs</p> <p>管路 Pipelines (口徑 sizes)</p> <p>型式與輸出量 Type and rating tonnes/hour</p> <p>其他裝卸貨設備 Other cargo equipment</p> <p>將船上所裝置之其他設備列出 List here other equipment fitted on the ship</p> <p>將船上所裝置之其他航行與通信設備列出 List here other navigational and communications equipment fitted on the ship</p>	<p>航行與通信設備 Navigational and Communications Equipment</p> <p>計程儀 Log (製造廠/型式)</p> <p>應急指位無線電示標數量 EPIRB (數量)</p> <p>磁羅經 Magnetic compass (數量./型式)</p> <p>電羅經 Gyro compass (數量/型式)</p> <p>自動操舵裝置 Autopilot (型式)</p> <p>雷達 Radar (數量./型式)</p> <p>電子海圖 ECDIS (數量 No./型式 type)</p> <p>回音測深儀 Echo sounder (數量./型式)</p> <p>全球定位系統 GPS (數量/型式)</p> <p>如有時 If applicable :</p> <p> 整體航行系統 Integrated navigation system (型式 type)</p> <p> 動態定位系統 DP system (型式 type)</p> <p> 衛星通訊 SATCOM (數量 No./型式 type)</p> <p> 全球海上遇險及安全系統 GMDSS (型式 type)</p>
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船舶規格資料請尋找 particulars, 船圖, 證書等資料蒐集完整

第五艘船 FIFTH SHIP

<p>船名 MV/SS: 船舶規格與容量 Dimensions and Capacities 全長 Length OverAllm 船寬 Breadthm 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 輕載排水量 Light displacement tonnes 淡水餘裕 F.W. allowance mm 滿載吃水每公分吃水噸數 TPC 散裝/液體容積 Grain/Liquid capacitytonnes 航速 Service speed knots 燃油艙容量 Bunker capacity m³/tonnes 每日耗油量 Bunker daily consumption tonnes 淡水艙容量 Fresh water capacity tonnes 淡水平均每日消耗量 Average fresh water daily consumption tonnes 污水艙容量 Dirty water capacity tonnes 主機 Main Engine 引擎 Engine (製造廠 Maker) 引擎 Engine (型式 type) 衝程 Stroke</p>	<p>IMO 號碼 IMO Number: 缸徑 Bore 輸出功率 Output bhp/kW rpm 減速齒輪 Reduction gears (型式) 輔機 Auxiliary Machinery 舵機系統 Steering GearType 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/m² or bar 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 耗油率 Specific fuel consumption g.kW/hr 鍋爐燃料 Boiler fuel: 種類 Category 每日耗油量 Fuel consumption per day T 黏度範圍 Viscosity range</p>	<p>呼號 Call Sign: 發電機 Generator (數量 No.) 輸出功率 Output kW 正常負載 Normal electric load: 航行中 At sea kW 在港 In port kW 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 錨 Anchors 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 錨機型式 Winch type 繫纜 Mooring rope (數量與直徑) 合纖纜 Synthetic fibermm 鋼纜 Wiresmm 拖纜 Towing Spring mm 防火纜 Fire Wiremm</p>
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<p>滅火設備 Fire Fighting Equipment 滅火器 (數量與容量) 型式 Types : 水 Water 公升 liters 泡沫 Foam 公升 liters 乾粉 Dry powder 公斤 kg 二氧化碳 CO₂ 公斤 kg 消防水龍帶 Fire hoses (數量與口徑 No. and size) mm 呼吸器 Breathing apparatus (數量/製造廠 No/maker) 消防員裝備 Fire-fighter's Outfit (數量 No.) 救生設備 Lifesaving Equipment 救生艇 (數量/容量/引擎) Lifeboat (No./cap/engine) 救生筏 (數量/容量) Life-rafts (No./capacity) 救生圈 Lifebuoys (數量 No.) 求生衣 Survival Suits (數量 No./型式 type)</p>	<p>貨物裝卸機具 Cargo Handling Gear 吊桿/起重機 Derricks/cranes (數量與安全負荷量 No. and SWL) tonnes 絞纜機 Winches (型式 types) tonnes 壓水艙 Ballast tanks (數量 No.) 貨艙 Cargo tanks (數量 No.) 貨泵 Cargo pumps (數量 No.) 泵輸出量 Pumping ratecbm/Hrs 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 將船上所裝置之其他設備列出 List here other equipment fitted on the ship 將船上所裝置之其他航行與通信設備列出 List here other navigational and communications equipment fitted on the ship</p>	<p>航行與通信設備 Navigational and Communications Equipment 計程儀 Log (製造廠/型式) 應急指位無線電示標數量 EPIRB (數量) 磁羅經 Magnetic compass (數量./型式) 電羅經 Gyro compass (數量/型式) 自動操舵裝置 Autopilot (型式) 雷達 Radar (數量./型式) 電子海圖 ECDIS (數量 No./型式 type) 回音測深儀 Echo sounder (數量./型式) 全球定位系統 GPS (數量/型式) 如有時 If applicable : 整體航行系統 Integrated navigation system (型式 type) 動態定位系統 DP system (型式 type) 衛星通訊 SATCOM (數量 No./型式 type) 全球海上遇險及安全系統 GMDSS (型式 type)</p>
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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風險降至最低。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。應使用所有提供安全之防護裝具。

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.

在機艙內所有的工作都有安全及不安全的方式。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防護的安全鞋，隨時使用個人的安全裝備，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 plenty of thought to what you are doing, keep your eyes and ears open and aim to be a safe engineer. Don't take risks. Follow the correct procedures. Wear suitable clothing and protective footwear, and always use the personal protective equipment provided, for example hard hat, hearing protection, goggles, gloves etc.

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 : 保持安全運作 Maintain safe operations		同部門較自身高階之 甲級船員簽名/日期 Assessor Signature/Date
1.1	應用在船上安全工作練習 Application of safe working practices on board	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>	待 1.1 到 1.12, 皆完成後， 由輪機長或大管輪簽署 並押上日期簽署者 必須在附件基本資料處留下資料

	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	記述在船上工作許可系統之流程 Describe the system of permits to work on board	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。	
.2	工作許可核對項目清單 List the items to be checked in a work permit			
.3	熱工許可核對項目清單 List the items to be checked in a hot work permit			
.4	記述密閉空間之定義 Describe an enclosed space			
.5	記述進入密閉空間之程序 Describe the procedures to enter an enclosed space			
.6	說明進入油艙前如何使用瓦斯偵測儀 Explain the use of gas analysis instruments to be used prior to entering : Fuel oil tanks 燃油艙			
.7	Ballast tanks 壓水艙			
.8	Void spaces 空無所有的空間			
.9	記述可用的急救程序： Describe the procedure adopted on finding someone overcome as a result of :			

	Electric shock遭電擊者					
.10	記述在密閉空間遭機入瓦斯中毒者可用的急救程序 Gassing incident in an enclosed space					
.11	記述在船塢有何特別預防 Describe special safety precautions in dry dock					
.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					



第六部分訓練科目資訊及應予達成之適任性

SECTION 5 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 章程對電技員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 an Electron-Technical officer as tabulated in the STCW Code are listed below. This Section is organised as follows:

在電技員之適任要求 (STCW 章程 A-III/6)

COMPETENCES FOR ELECTRO-TECHNICAL OFFICERS (STCW CODE TABLE A-III/6)

操作級-電機、電子及控制工程 Electrical, electronic and control engineering at the operational level (第 40 頁)

1. 對電機、電子與控制系統操作之監測 Monitor the operation of electrical, electronic and control systems
2. 操作推進系統和輔機的自動控制運作之監測 Monitor the operation of automatic control systems of propulsion and auxiliary machinery
3. 操作發電機與配電系統 Operate generators and distribution systems
4. 操作與保養超過 1,000 伏特高電壓動力系統 Operate and maintain power systems in excess of 1,000 volts
5. 操作電腦及網路系統 Operate computers and computer networks on ships

6. 英文寫作與口頭報告 Use English in written and oral form
7. 能使用船上對內部聯絡系統 Use internal communication systems

操作級-保養及維修 Maintenance and repair at the operational level (第 77 頁)

8. 保養及維修電機和電子設備和控制系統 Maintenance and repair of electrical and electronic equipment
9. 保養及維修主推力系統和輔機的自動控制系統 Maintenance and repair of electrical and electronic equipment of main propulsion and auxiliary machinery
10. 保養及維修船橋航海儀器和通信系統 Maintenance and repair of bridge navigation equipment and ship communication systems
11. 保養及維修有關甲板機械及裝卸貨裝置的電機、電子和控制系統 Maintenance and repair of electrical, electronic and control systems of deck machinery and cargo-handling equipment
12. 保養及維修住艙生活裝置 Maintenance and repair of control and safety systems of hotel equipment

操作級-控管船舶操作級船上人員照管 Controlling the operation of the ship and care for persons on board at operation and support level (第 96 頁)

13. 確保符合防止污染要求 Ensure compliance with pollution prevention requirements
14. 船上防火、控制火災及滅火 Prevent, control and fight fires on board
15. 操作救生設備 Operate life-saving appliances
16. 在船上應用醫療急救 Apply medical first aid on board ship
17. 運用領導統御與團隊合作技巧 Application of leadership and team working skills
18. 操作安全管理需求 Contribute the safety of personnel and ship

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	
14	適任 Competence : 船上防火、控制火災及滅火 Prevent, control and fight fires on board			同部門較自身高階之 甲級船員簽名/日期 Assessor (Signature/Date)	
14.1	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>	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	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/E 劉七 25/08/14	器材使用待加強	2/E 劉七	29/08/14
.2	可攜式二氧化碳滅火器 Portable CO2 extinguisher	2/E 劉七 25/08/14			

- (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14.1.1~14.1.2）並分別由同部門較自身高階之船員作為施訓者簽署，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14.1）簽署適任性證明。

- 深色陰影部分之適任性（此例為「船上防火、控制火災及滅火」）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 color (in this case 'Prevent, control and fight fires on board' is directly taken from the text of the STCW Code. By end of this 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14.1「操作偵測火與煙之設備」）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 14.1 'Operate fire and smoke detecting equipment' 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 skills and knowledge 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 colour box), the chief engineer 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 C/E 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.

第七部分電技員之科目 (建議應先參考船圖及說明書後進行)

SECTION 6 TASKS FOR Electro-Technical OFFICER

在本部分訓練中包含對電技員發證之要求，發證規定如次：

The training in this section of this Record Book covers the requirements for the certification of Electro-Technical officer. The requirements for certification are as follows:

STCW規則III/6 Regulation III/6

電技員發證之強制性最低要求

Mandatory minimum requirements for certification of electro-technical officer

1. 凡在主機推進動力750 瓩以上之航行船舶上服務之電機員，應持有適任證書。
Every electro-technical officer serving 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. 業已完成至少12 個月之綜合機工技能訓練，其中包含不少於6個月經認可之海勤資歷，以作為認可訓練計畫之一部分，包括符合STCW 章程A-III/6節規定之訓練，並已於認可之訓練紀錄簿上載明之；或業已完成至少36個月之綜合機工技能訓練，及至少30個月經認可在輪機部門服務之海勤資歷。
have completed not less than 12 months of combined workshop skills training and approved seagoing service of which not less than 6 months will be seagoing service as part of an approved training programme which meets the requirements of section A-III/6 of the STCW Code and is documented in an approved training record book, or otherwise not less than 36 months of combined workshop skills training and approved seagoing service of which not less than 30 months will be seagoing service in the engine department;
 3. 業已完成認可之教育與訓練，並符合STCW 章程第A-III/6 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/6 of the STCW Code; and
 4. 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.

3. 各締約國應對在2012年1月1日前簽發電機員證書所要求的適任標準，與STCW章程第A-III/6節對證書要求之適任標準予以比較，並應決定是否有必要要求此等人員更新其資格。

Every Party shall compare the standards of competence which it required of electro-technical officers for certificates issued before 1 January 2012 with those specified for the certificate in section A-III/6 of the STCW Code, and shall determine the need for requiring those personnel to update their qualifications.

4. 如航海人員在本條規則於其締約國生效前之60個月內，已在船上相關之職務服務至少12個月，則該員得經締約國認為業已符合本規則之規定，並符合STCW 章程第A-III/6節規定之適任標準。

Seafarers may be considered by the Party to have met the requirements of this regulation if they have served in a relevant capacity on board a ship for a period of not less than 12 months within the last 60 months preceding the entry into force of this regulation for that Party and meet the standards of competence specified in section A-III/6 of the STCW Code.

5. 前述第1 至4 項縱有規定，已具適當資格之人員，仍得為締約國所認可，能執行第A-III/6 節之某些專長。

Notwithstanding the above requirements of paragraph 1 to 4, a suitably qualified person may be considered by a Party to be able to perform certain functions of section A-III/6.

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-電機、電子學和控制系統的運作
ELECTRICAL, ELECTRONIC AND CONTROL ENGINEERING AT THE
OPERATIONAL LEVEL

項次 Ref No	訓練 Training			適任性證明 Competence Demonstrated
1	適任 Competence : 對電機、電子與控制系統操作之監測 Monitor the operation of 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)
1.1	初步了解輪機的運作 Basic understanding of the operation of mechanical engineering systems		設備與系統之操作符合 操作手冊；性能水準與 技術說明書相符 <i>Operation of equipment and system is in accordance with operating manuals; Performance levels are in accordance with technical specifications</i>	待 1.1.1 到 1.1.6, 皆完成 後， 由輪機長或大管輪簽署 並押上日期簽署者必須 在附件基本資料處留下資 料
	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	主推進系統: Prime movers, including main propulsion plant: 認識主機燃油供油系統 Know the main engine fuel oil supply system 認識主機潤滑油系統		施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。

	<p>Know the main engine lubricating oil system 認識主機缸套冷卻水系統</p> <p>Know the main engine jacket water cooling system 認識主機空氣啟動系統</p> <p>Know the main engine starting air system 了解主機調速器作動原理及調整參數影響</p> <p>Understand the operation principles and adjustment parameters of speed governor</p>				
.2	<p>機艙各種輔機: Engine-room auxiliary machinery: 認識輔機控制系統/警報與跳脫裝置 Know the auxiliary Engine control systems, alarms and trips</p> <p>認識輔鍋爐操作原理 Know the principles of Auxiliary Boiler operation</p> <p>認識離心式泵的運作原理 Know the use and operating principles of centrifugal type pumps</p> <p>認識淨油機(包括燃油、柴油及滑油)的日常操作和清潔保養程序 Know the procedures for routine operation and cleaning of fuel oil, diesel oil and lube oil separators</p> <p>認識淡水製造機操作與檢查 Know the operation and checking of the fresh water generator</p> <p>認識冷凍空調的機械結構和操作 Know the construction of refrigeration and air-conditioning machinery and their operation</p> <p>認識冷凍系統的準備、啟停步驟 Know the procedures for the preparation, starting and stopping of provision refrigeration plant</p>				

.3	<p>舵機系統: Steering system: 認識舵機的準備、啟停步驟以及開航前的測試 Know the procedures for the preparation, start and pre-sailing test of steering gear 認識舵機在日常航行檢查的步驟 Know the procedures for the routine checks of steering gear during a sea passage 認識緊急舵機系統與其操作連同日用舵機與緊急舵機互換的步驟 Know the emergency steering gear system and its operation as well as the procedure for the changeover of steering gear operation to an emergency mode</p>		施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。
.4	<p>裝卸貨操作系統: Cargo handling system: 認識電動貨泵運作原理及啟停步驟 Know how the operating principles and starting / stopping procedure for electric motor driven cargo pump 認識蒸氣透平機貨泵運作原理及其啟動及停機的步驟 Know the operating principles and starting / stopping procedure for steam turbine cargo pump 認識惰氣系統(IGS)的運作原理及其操作準備工作 Know the operating procedures and preparation of IGS for operation 認識各式遙控閥(包括貨泵、壓載水泵及燃油泵)的操作步驟和檢查工作 Know the procedures for operation and checking</p>			

	<p>of cargo/ ballast/ fuel oil handling valves remote system 認識甲板電動吊車運作原理及啟停步驟 Know the operating principles and starting /stopping procedure for electric deck cranes 認識艙蓋運作原理及操作步驟 Know the operating principles and operating procedures of hatch covers 認識伙食吊車運作原理及啟停步驟 Knowledge the operating principles and starting / stopping procedure for provision cranes</p>					
.5	<p>甲板機械: Deck machinery: 認識電動錨機、絞纜機和絞盤機的運作原理及啟停步驟 Know the operating principles and starting / stopping procedure for electric mooring winches, windlasses and capstans 認識油壓錨機、絞纜機和絞盤機的運作原理及啟停步驟 Know the operating principles and starting / stopping procedure for hydraulic mooring winches, windlasses and capstans 認識救生艇及舷梯絞纜機運作原理 Know the operating principles for life boats and gangway winches 認識解說艙蓋絞鍊機的運作原理及啟停步驟 Knowl the operating principles; starting / stopping procedure for hatch cover winches</p>					

.6	<p>船員住艙管理系統: Hotel systems: 認識廚房裝備的結構和操作原理 Demonstrate knowledge of the construction and operating principles of galley equipment 認識洗衣機和內務服務器具結構和操作原理 Demonstrate knowledge of the construction and operating principles of laundry and hotel services 認識人員升降梯的結構和操作原理 Demonstrate knowledge of the construction and operating principles of personal lifts</p>					
1.2	<p>電工學與電機機械理論 Electro-technology and electrical machinery theory</p>		<p>設備與系統之操作符合操作手冊；性能水準與技術說明書相符 <i>Operation of equipment and system is in accordance with operating manuals;</i> Performance levels are in accordance with technical specifications</p>	<p>待 1.2.1 到 1.2.11,皆完成後， 由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</p>		
.1	<p>船舶電機與系統工作原理和系統的構造細節 The working principles and constructional details of marine electrical machinery and systems</p>	<p>施訓者完成認可後 簽名押日期</p>		<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>		
.2	<p>在工作區域內有否設備、機械牽涉危險可能 The possible hazardous associated with the work area, equipment and machinery in the work area</p>					
.3	<p>機械與系統的隔離及反隔離的要求和步驟 The requirements and procedures for isolating and de-isolating machinery and systems</p>					
.4	<p>公司要求的“工作許可證” The Company requirements for Permit to Work</p>					

.5	<p>工具和裝置的使用，用於電機設備的保養及修理</p> <p>The use of tools and equipment for maintenance and repair of electrical equipments</p>					
.6	<p>例行測試步驟與測試的技術要求</p> <p>Routine test procedures and technical requirements of test</p>					
.7	<p>電機與系統正確的參數設定</p> <p>The correct settings for electrical machinery and systems</p>					
.8	<p>正確調整以維持正確的性能表現</p> <p>The adjustments required to maintain correct performance</p>					
.9	<p>船內通訊系統與有效通訊方式的使用</p> <p>The use of internal communication systems and effective forms of communication</p>					
.10	<p>基於商業和合法目的，保持紀錄很重要</p> <p>The importance and use of records for commercial and legislative purposes</p>					
.11	<p>根據法律規定和指引；國際組織的指示和指引；船舶應急計劃來應用</p> <p>The application of Statutory Regulations and guidelines, organizational instructions and guidelines and vessel contingency plan</p>					
1.3	<p>基本電子學與電力電子學</p> <p>Fundamental of electronics and power electronics</p>			<p>設備與系統之操作符合操作手冊；性能水準與技術說明書相符</p>	<p>待 1.3.1 到 1.3.11,皆完成後，</p> <p>由輪機長或大管輪簽署並</p>	

			<i>Operation of equipment and system is in accordance with operating manuals; Performance levels are in accordance with technical specifications</i>	押上日期簽署者必須在附件基本資料處留下資料		
.1	複習基本電學和電子學原理 Review basic electronic principles	施訓者完成認可後 簽名押日期		如果對學員動作不滿意，應(擇日)重做到滿意再簽署。		
.2	繪圖說明電子控制設備之組件 Sketch and describe a component providing electronic equipment control					
.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特性 Demonstrate a knowledge of the characteristics of basic electronic circuit elements					
.5	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					
.6	應用順序控制電路來描繪一部分船用配電系統 Sketch a part of the ship's electrical distribution system that uses sequential control circuits					
.7	應用順序控制電路來表列它裝備項目					

	List other items of equipment that use sequential control circuits					
.8	示範操作電子裝備的自動控制流程圖及其相關的知識 Demonstrate a knowledge of flowcharts for automatic and control systems for electronic equipment operation					
.9	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					
.10	解釋 PID 控制器三個基本動作原則 Explain the basic principle of Proportional-Integral-Derivative (PID) three term control					
.11	當工作於指定電氣設備前，取得工作許可，並做適當隔離，確保工作人員安全 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					
1.4	配電盤與電機設備 Electrical power distribution boards and electrical equipment			設備與系統之操作符合操作手冊；性能水準與技術說明書相符 <i>Operation of equipment and system is in accordance with operating manuals; Performance levels are in accordance with technical specifications</i>	待 1.4.1 到 1.4.11,皆完成後， 由輪機長或大管輪簽署 並押上日期簽署者必須在附件基本資料處留下資料	
.1	電機工作原理 The working principles of electrical machinery					

.2	準備啟動、併聯及切換發電機組 Prepare starting, coupling and changeover of alternations/generations	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。			
.3	緊急發電機啟動、測試、加負載及停止 Prepare emergency generator starting, testing, running with load and stopping.					
.4	電機設備中的保護裝置 The protection devices fitted to electrical machinery					
.5	電機正常操作參數和調整維持條件 The normal operating parameters for electrical machinery and the adjustments required to maintain conditions					
.6	錯誤出現時必採取的動作 The action to be taken in the event of faults arising					
.7	使用內部通訊系統和有效通訊格式 The use of internal communication systems and effective forms of communications					
.8	應用法定規章、方針、組織指導及引導和船舶 應急計劃 The application of Statutory Regulations and guidelines, organizational instructions and guidance and vessel contingency plans					
.9	展示主配電系統的相關裝置 In relation to the vessel's main switchboard demonstrate and understanding of the application of:					
.10	電氣設備基本的配置及運作原理 Equipments basic configuration and operating principles					
.11	學習主副機電氣設備/控制線路圖及其保護設計					

	Study main and auxiliary machinery electrical equipment, control diagrams and protection devices						
1.5	儀器儀表、警報系統和監視系統 Instrumentation, alarm and monitoring systems			設備與系統之操作符合操作手冊；性能水準與技術說明書相符 <i>Operation of equipment and system is in accordance with operating manuals; Performance levels are in accordance with technical specifications</i>	待 1.5.1 到 1.5.10,皆完成後， 由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料		
.1	儀器、儀表和控制系統的原理和結構 The principles of operation and constructional details of electrical, instrumentation and control systems	施訓者完成認可後 簽名押日期		如果對學員動作不滿意，應(擇日)重做到滿意再簽署。			
.2	船上電氣系統工作的安全要求 The safety requirements for working with vessel shipboard electrical systems						
.3	電氣測試及量度裝置的結構與操作 The construction and operation of electrical test and measuring equipment						
.4	在電氣，儀表和控制系統辨識差異 The identification of variances in electrical, instrumentation and control systems						
.5	測試步驟與技術的要求 Test procedures and technical requirements						
.6	區隔差異並啟動備份和備便系統的方法 The methods required to isolated variance and initiate back-up and standby systems						
.7	設備和線路的監測方法和程序 Equipment and circuit monitoring methods and						

	procedures					
.8	通訊系統與有效通訊方式的使用 The use of internal communication systems and effective forms of communication					
.9	基於商業和合法性，保持紀錄很重要 The importance and use of records for commercial and legislative purposes					
.10	根據法律規定和指引；國際組織的指示和指引；船舶應急計畫來應用 The application of Statutory Regulations and guidelines, organizational instructions and guidance and vessel contingency plans					
1.6	電力推進 Electrical propulsion	設備與系統之操作符合操作手冊；性能水準與技術說明書相符 <i>Operation of equipment and system is in accordance with operating manuals; Performance levels are in accordance with technical specifications</i>			待 1.6.1 到 1.6.13, 皆完成後，由輪機長或大管輪簽署 並押上日期簽署者必須在附件基本資料處留下資料	
.1	對變速驅動裝置和電力推進系統工作的安全注意事項 The safety precautions for working on variable speed drives and electrical propulsion systems	施訓者完成認可後 簽名押日期			如果對學員動作不滿意，應(擇日)重做到滿意再簽署。	
.2	變速驅動裝置/電力推進系統/附屬機械和控制系統的工作原理及構造 The working principles & constructional details of variable speed drives, electrical propulsion and auxiliary machinery and control system					
.3	由法定規章、公司和製造商的資料來源去作操					

	<p>作計畫、計畫方法 Planning of operations, planning methods, sources of information – statutory, company and Manufacturers</p>					
.4	<p>依上級指導員的級別賦予船員的主要職務及責任和機艙人員的授權 The main duties and responsibilities of shipboard personnel, delegation of responsibility in the machinery space and the level of supervision required by individuals.</p>					
.5	<p>依操作檢查程序去操作各別變速驅動裝置和電力推進系統及其附屬機械及如何個別系統以達備妥狀態 The operational checks and procedures to operate each individual variable speed drive propulsion and ancillary system and how to bring each individual system to state of readiness</p>					
.6	<p>指出變速驅動裝置和電力推進系統及其附屬機械和控制系統故障的所在、原因及影響，避免再發生 The location, cause and effects of common faults in variable speed drive, electrical propulsion and auxiliary machinery and control systems and action necessary to prevent damage</p>					
.7	<p>如何獲取診斷資訊和步驟 How to capture diagnostic information and procedures for passing it on</p>					
.8	<p>了解電力推進、輔機和控制系統超出範圍的偏</p>	<p>施訓者完成認可後</p>		<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>		

	差及在調整後造成的影響 The effects of adjustments and consequence of deviation beyond specified range to electrical propulsion, auxiliary machinery, control systems	簽名押日期				
.9	電力推進系統及其附屬機械的遙控系統失效時的 操作 The operation of electrical propulsion and auxiliary machinery in the event of failure of remote control systems					
.10	系統與設備的停機或操作完成 The shutting down of systems and equipment or completion of operations					
.11	使用有效方式的通信系統，與機艙通訊與駕駛台通訊 The use of communication systems, communicating with engine room and bridge personnel and effective forms of communication					
.12	基於商業和合法性，保持紀錄很重要 The importance and use of records for commercial and legislative purposes					
.13	應用法定規章、方針、組織指導及引導和船舶應急計畫 The application of Statutory Regulations and guidelines, organizational instructions and guidance and vessel contingency plans					
1.7	船舶內部通訊與硬體設備系統 Vessel internal communication and Hardware system			設備與系統之操作符合操作手冊；性能水準與技術說明書相符	待 1.7.1 到 1.7.9, 皆完成後，由輪機長或大管輪簽署	

			<i>Operation of equipment and system is in accordance with operating manuals; Performance levels are in accordance with technical specifications</i>	並押上日期簽署者必須在附件基本資料處留下資料		
.1	工作原理和的構造細節 The working principles and constructional details of internal communication and hardware system	施訓者完成認可後 簽名押日期		如果對學員動作不滿意，應(擇日)重做到滿意再簽署。		
.2	操作計畫、計畫方法及資源 - 法定規章，公司和製造商 Planning of operations, planning methods, sources of information – statutory, company and manufacturer					
.3	依監管等級個別賦予相關人員主要職務與責任 The main duties and responsibilities of shipboard personnel and the level of supervision required by individuals					
.4	檢查與程序的要求去操作每一個別船內通訊與硬體系統 The checks and procedures required to operate each individual internal communication and hardware system					
.5	指出及硬體系統故障的所在 The location, cause and effects of common faults in internal communication and hardware system					
.6	使用有效方式的內部通信系統與機艙通訊與駕駛台通訊 The use of internal communication systems, communicating with E/R and bridge personnel and effective forms of communication					
.7	基於商業和合法性，需要保持紀錄					

	The importance and use of records for commercial and legislative purposes					
.8	數據保全、程序、指引和合法要求 Data security and the procedures, guidelines and legislation requirements					
.9	應用安全守則和法定規章、方針、組織指導及引導和船舶應急計劃 The application of Statutory Regulations and guidelines, organizational instructions and guidelines and vessel contingency plans					
1.8	評鑑操作超過 1,000 伏特高電壓動力系統的危險(若有) Appreciation of the hazards for the operation of power systems above 1,000volts (if fitted)			設備與系統之操作符合操作手冊；性能水準與技術說明書相符 <i>Operation of equipment and system is in accordance with operating manuals; Performance levels are in accordance with technical specifications</i>	待 1.8.1 到 1.8.13,皆完成後， 由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料	
.1	對高電壓設備工作的安全注意事項 The safety precautions for working on high voltage equipment	施訓者完成認可後 簽名押日期		如果對學員動作不滿意，應(擇日)重做到滿意再簽署。		
.2	工作原理和變速驅動裝置和電力推進系統及其附屬機械和控制系統的構造 The working principles and constructional details of high voltage equipment					

.3	由法規、公司和製造商的資料來源去作操作計畫、計畫方法 Planning of operations, planning methods, sources of information – statutory, company and manufacturers					
.4	依上級指導員的級別賦予船員的主要職務及責任和機艙人員的授權 The main duties and responsibilities of shipboard personnel, delegation of responsibility in the equipment space and the level of supervision required by individuals					
.5	依操作檢查與程序去操作和如何去帶領個別系統以達備妥狀態 The operational checks and procedures to operate high voltage equipment and how to bring each individual system to state of readiness					
.6	指出高電壓設備一般故障的所在、原因及影響並避免日後再發生 The location, cause and effects of common faults in high voltage equipment and action necessary to prevent damage					
.7	如何診斷所得到的資訊和步驟 How to capture diagnostic information and procedures for passing it on					

.8	調整超出規定範圍的偏差並了解後果及電力推進和輔助機械和控制系統的影響 The permitted range, effects of adjustments and consequence of deviation beyond specified range to high voltage equipment	施訓者完成認可後 簽名押日期		如果對學員動作不滿意，應(擇日)重做到滿意再簽署。		
.9	當遙控系統失效時高電壓設備的操作 The operation of high voltage equipment in the event of failure of remote control system					
.10	系統與設備的停機或操作完成 The shutting down of systems and equipment on completion of operations					
.11	有效的通信系統的使用，與機艙通訊與駕駛台通訊 The use of communication systems, communicating with engine room and bridge personnel and effective forms of communication					
.12	基於商業和合法性，需要保持紀錄 The importance and use of records for commercial and legislative purposes					
.13	根據法律規定和指引;國際組織的指示和指引;船舶應急計劃來應用 The application of Statutory Regulations and guidelines, organizational instructions and guidance and vessel contingency plans					
1.9	評鑑在危險區域操作和保養電機工作的危險性 Appreciation of the hazards for the operation and maintenance of electrical equipments in hazardous areas			依規定檢視其瞭解程度 並提供改進建議 Check his Understanding and offer Advice for Improvement	待 1.9.1 到 1.9.5,皆完成後， 由輪機長或大管輪簽署 並押上日期簽署者必須	

				在附件基本資料處留下資料	
.1	<p>在電技操作上什麼條件會構成危險區域，危險區內的特定設備對工作有何影響</p> <p>What constitutes a hazardous area with regard to electro-technical operation and the implications of working on specific types of equipment in specific hazardous areas</p>				
.2	<p>操作計畫、計畫方法及資源 - 法定，公司和製造商</p> <p>Planning of operations, planning methods, sources of information – statutory, company and manufacturers</p>	<p>施訓者完成認可後 簽名押日期</p>		<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>	
.3	<p>依監管等級個別賦予相關人員主要職務與責任</p> <p>The main duties and responsibilities of shipboard personnel and the level of supervision required by individuals</p>				
.4	<p>基於商業和合法性，保持紀錄很重要</p> <p>The importance and use of records for commercial and legislative purposes</p>				
.5	<p>應用法定規章、方針、組織指導及引導和船舶應急計畫</p> <p>The application of Statutory Regulations and guidelines, recognized standards, organizational instructions; guidance; vessel contingency plans</p>				
1.10	操作與保養在危險區域內的電機設備		依規定檢視其瞭解程度		待 1.10.1 到 1.10.4 皆完成

	<p>Operate and maintain electrical equipment in hazardous areas on board a vessel</p>	<p>並提供改進建議 Check his Understanding and offer Advice for Improvement</p>	<p>後，由輪機長或大管輪簽署 並押上日期簽署者必須在附件基本資料處留下資料</p>
<p>.1</p>	<p>依下列準備動作： Preparation performance: 參照操作與保養要求，正確地識別出船上的危險區塊並確定在每一區塊適用的裝置和設備 Correctly identify hazardous areas on board and determine the fittings and equipment suitable for use within each of the areas, as required for operation and maintenance purposes 依照所建立的安全規則、規定及操作說明書去執行設備的操作和保養以避免損壞 Carry out the operation and maintenance equipment in accordance with established safety rules, regulations and operating instructions to prevent damage 依照技術法規、安全及程序規範去計畫保養行為 Plan maintenance activities in accordance with technical legislative, safety and procedural specification 依照廠商方針及船舶說明書去執行安全隔離、拆解和重新組裝 Carry out isolation, dismantling and reassembly operation in accordance with manufacturers' guidelines and shipboard instructions 確定並採取適當動作和報告誤動作故障之處</p>	<p>施訓者完成認可後 簽名押日期</p>	<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>

	<p>Identify, take appropriate action on and report malfunctions/defects 知會操作的相關人員以使他們能繼續他們的責任 Inform relevant personnel of the operations to enable them continue their responsibilities safety 準確地完成相關紀錄並且傳遞給適當人員 Complete relevant records accurately and pass them on to the appropriate person 丟棄廢棄資材須符合安全工作實務和核可的程序 Dispose of waste materials in accordance with safe working practices and approved procedures</p>					
.2	<p>了解可以安置在船上危險區域的電氣設備 Understand the electrical equipment that can be fitted within each of the hazardous areas on board</p>					
.3	<p>了解在危險區域的電氣設備工作時要採取哪些安全防範措施 Understand the precautions to be undertaken when working on electrical equipment in a hazardous area</p>					
.4	<p>能夠指出一項在危險區域作拆解和重組的電氣設備 Enable to dismantle and reassembly one item of hazardous area equipment</p>					

2	<p style="text-align: center;">適任 Competence : 操作推進系統和輔機的自動控制運作之監測 Monitor the operation of automatic control systems of propulsion and auxiliary machinery</p>		<p style="text-align: center;">評估標準 Criteria for Evaluation</p>	<p style="text-align: center;">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)</p>		
2.1	<p>主機與輔機控制系統運轉的準備工作 Preparation of control systems of propulsion and auxiliary machinery for operation</p>		<p>主推進裝置與輔機系統之監測足以保持安全操作狀況 <i>Surveillance of main propulsion plant and auxiliary systems is sufficient to maintain safe operation condition</i></p>	<p>待 2.1.1 到 2.1.10,皆完成後，由輪機長或大管輪簽署並押上日期 簽署者必須在附件基本資料處 留下資料</p>		
	<p style="text-align: center;">科目/職責 Task/Duty</p>	<p style="text-align: center;">科目已完成 Task Completed 施訓者 (簽名/日期) Instructor(Signature/Date)</p>	<p style="text-align: center;">對改進部分之建議 Advice on Areas for Improvement</p>	<p style="text-align: center;">科目已完成 Task Completed 施訓者 (簽名/日期) Instructor(Signature/Date)</p>		
.1	<p>解說主機的啟動準備工作 Demonstrate knowledge of operations necessary to prepare and start the main engine</p>	<p style="text-align: center;">施訓者完成認可後 簽名押日期</p>	<p style="text-align: center;">如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>			
.2	<p>解說主機進港前及停俾準備工作 Demonstrate knowledge of operations necessary to shut down and prepare main engine to the harbour condition</p>					
.3	<p>解說主機操俾系統由機控室(ECR)轉換到機側緊急操俾台的步驟 To know the procedure change over from M/E control in ECR to emergency manoeuvring position</p>					

.4	解說在主機緊急操俾台操俾步驟，包含啟動、停俾、倒俾或操作 CPP 或反向離合器 Demonstrate an understanding of procedure for controlling the main engine from the emergency manoeuvring position, including start, stop, reverse or CPP or reverse clutch					
.5	解說輔機的啟動準備步驟 Demonstrate knowledge of the procedures for the preparation and starting of Auxiliary					
.6	解說輔鍋爐的啟動準備步驟 Demonstrate knowledge of the procedures for preparation and starting of auxiliary Boiler					
.7	解說空氣壓縮機的啟動準備步驟 Demonstrate knowledge of procedures for the preparation and starting of air compressors					
.8	解說空氣壓縮機的啟動及運轉步驟 Demonstrate knowledge of procedures for the preparation, starting and operation of air					
.9	解說冰機系統的準備、啟動、停機步驟 Demonstrate knowledge of procedures for the preparation, starting and stopping of provision refrigeration plant					
.10	解說空調系統，分別在夏天與冬天的啟動、停機的準備步驟 Demonstrate knowledge of procedures for the preparation, starting and stopping of air conditioning system for summer and winter conditions					

2.2	電力推進的運轉與調整 Operate and adjust vessel electrical propulsion and auxiliary machinery	主推進裝置與輔機系統之監測足以保持安全操作狀況 <i>Surveillance of main propulsion plant and auxiliary systems is sufficient to maintain safe operation condition</i>	待 2.2.1 到 2.2.11, 皆完成後, 由輪機長或大管輪簽署 並押上日期簽署者必須在附件基本資料處留下資料
.1	以下之準備動作: Preparation performance : 建立之安全規範、符合法定規章和廠家操作說明 Ready in hand, Established safety rules, regulations and operating instructions to prevent damage for electrical propulsion and auxiliary machinery 主副機及控制系統的順序及時程準備 The required sequence and timescale for electrical propulsion ; auxiliary machinery and control systems. 啟動停俾電力推進與輔機機械的檢查表 The check list to start up and shut down the electrical propulsion and auxiliary machinery 按照排程, 操作要求和指示, 保持給予限度內去監測和準確地評估推進系統的條件 Monitor and accurately assess the condition of the propulsion system in accordance with schedules, operating requirements and instructions and maintain operating conditions within given limits 廠家說明書的要求及規範 manufacturers' requirements and specifications 用以識別, 報告故障並採取適當措施糾正缺陷的故障排除表 Trouble shooting to identify, report	施訓者完成認可後 簽名押日期	如果對學員動作不滿意, 應(擇日)重做到滿意再簽署。

	<p>malfunctions and take appropriate action to rectify defects 執行緊急停機及隔離步驟，以確保船舶和機械的安全 Carry out emergency shut down and isolating procedures to ensure vessel and machinery safety 操作在緊急情況包含遙控系統失效下的電力推進及其輔助機械 Operate the electrical propulsion and auxiliary machinery in contingency situations, including the failure of remote control systems 通知相關人員的安全責任 Inform relevant personnel about the safety responsibilities</p>				
.2	<p>船舶電力推進系統及其變速驅動裝置的安全運轉和維護 Operate and maintain electrical variable speed drives and electrical propulsion systems on board, to match with appropriate procedures, safety rules and regulations</p>				
.3	<p>電力推進系統及其變速驅動裝置附屬機器的啟動準備 Preparing variable speed devices, electrical propulsion & auxiliary machinery for operations.</p>				

.4	<p>指出通常的錯誤並做出正確的動作以防再犯而造成損傷</p> <p>Locating common faults and identifying the action required to prevent and damage from occurring</p>				
.5	<p>依照最佳或廠商推薦的參數調整以維正常運轉</p> <p>Making adjustments to maintain operation of the systems within identified (optimum) parameters.</p>				
.6	<p>展示能夠操作船舶電力推進系統的電氣設備:Enable to operate the following electrical propulsions systems:</p> <p>主推進馬達 Main propulsion motor 船艏/船艉側推進器 Bow/stern thrusters 其他大型可變速的機器設備 Other large variable speed drives</p>	<p>施訓者完成認可後 簽名押日期</p>		<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>	
.7	<p>瞭解機艙控制室的操俾步驟：按照船橋指令啟動/前進/後退/停俾</p> <p>Understand the procedures for Manoeuvring the propulsion units from ER control; including starting , ahead, astern and stopping to Bridge commands</p>				
.8	<p>能夠施行電力推進系統的啟航前的例行檢測包括整個系統、警報系統和跳脫系統</p> <p>Enable to carry out routine testing of propulsion systems (e.g. prior to sailing), unit alarms and trips</p>				

.9	<p>能夠調整推進馬達的作業參數，優先考慮最大馬力和發電系統</p> <p>Enable to make adjustments to propulsion motor operational parameters (e.g. max power) and generator supply system priority</p>				
.10	<p>描述以下系統： Describe the following systems: 推進系統的相關高電壓分配系統 HV distribution sys. for propulsion system 推進系統的相關低電壓分配系統 LV distribution systems for propulsion sys. 推進馬達的冷卻系統 Propulsion motor cooling system</p>				
.11	<p>瞭解主電力系統失效後的處理步驟</p> <p>Understand the procedure to be followed after main electrical system failure</p>				
3	<p>適任 Competence : 操作發電機與配電系統 Operate generators and distribution systems</p>			<p>評估標準 Criteria for Evaluation</p>	<p>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)</p>
3.1	<p>發電機並聯，負載分配及轉換的能力表現</p> <p>The effective performance coupling, load sharing and changing over generators; coupling and breaking connection between switchboards and distribution panel</p>			<p>操作已計畫並係依操作手冊、既定規則程序進行以確保操作安全；瞭解配電系統並能以圖樣/說明書解析</p> <p>Operations are planned and carried out in accordance with operating manuals, established</p>	<p>待 3.1.1 到 3.1.9, 皆完成後，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</p>

			<i>rules and procedures to ensure safety of operations; Electrical distribution systems can be understood and explained with drawings/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	能夠按照操作說明書和合法的條件下運轉該電機並確保運轉安全 Plan and prepare for operations to comply with operating instructions, safety and other relevant legislation and guidelines to ensure safety of operations 能夠安全有效的啟動和停止 Start up and shut down operations as required for safe and efficient equipment operations 能夠安全並正確的將設備上線、併聯或切換運轉 Put equipment on line, couple up and changeover safely and correctly 確認電機保護裝置並回復保護狀態 Confirm that electrical protection devices and reset and onboard as appropriate 監視、記錄並保持電機在廠商規定正常運轉狀況 Monitor, record and maintain specified electrical conditions, supplies and instrument	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。	

	<p>reacting within defined levels and manufacturers recommendations for normal operation 檢查及辨識出機械和電機的供應是否依時程及作適當調整以維持安全有效運轉 Check for and identify irregularities in the machinery and electrical supply according to schedule and make appropriate adjustments to maintain safe and efficient operation. 指出一般錯誤的地方並採取正確行動以防止損害 Identify and locate common faults and take correct action to prevent damage. 給予充分的操作告示以便讓其他人員能安全地、有效地執行他們的任務 Give sufficient notice of operations to enable other personnel to carry out their responsibilities safely and efficiently. 去和資源管理員有效地溝通 Communicate effectively, to those who will use the resources, the care that they must take 立即準確地報告機械與電機的供料條件和不依常規的事物或調整 Report on the machinery and electrical supply condition and any irregularities or adjustments made promptly and accurately to the appropriate person</p>				
.2	<p>了解備便運轉柴油或蒸汽透平發電機的必備事項 To understand the requirements to prepare and run a diesel or steam generator</p>				

.3	<p>有能力併聯並引進備好的發電機併入運轉中的系統，移轉發電機負荷並撤出及關閉退出的發電機</p> <p>Enable to take control, parallel the incoming machine with running machinery, transfer load and shut down outgoing machinery</p>				
.4	<p>解說發電機和配電系統的組成組態</p> <p>Explain the electrical generation and distribution system on board, including system configuration where appropriate</p>				
.5	<p>解說主配電盤與緊急配電盤的結構和操作</p> <p>Demonstrate knowledge of construction and operation of the main and emergency switch boards</p>				
.6	<p>解說主配電系統的相關裝置：</p> <p>In relation to the vessel's main switchboard to understand the application of:</p> <p>電壓表 Voltmeter 電流表 Ammeter 瓦特表 Wattmeter 同步儀 Synchroscope 功率因數表 Power factor meter 接地指示器 Earthing meter</p>				

.7	<p>了解下列有關於主配電盤之斷路器的跳脫及安全裝置的作用與操作並解釋如何測試 Understand the operation and purpose of the following trips and safety features in relation to a main switchboard circuit breakers and explain how to test</p> <p>過負載電驛 Overload relay 逆電流跳脫 Reverse power trip 低頻跳脫 Low frequency trip 優先跳脫 Preference trip 低電壓跳脫 Under voltage relay</p>				
.8	<p>解說主電力系統全失效後該採取哪些步驟 Demonstrate an understanding of the procedure to be followed after main electrical system failure</p>				
.9	<p>展示本船有哪些負載直接經由緊急發電機配電系統 Demonstrate an understanding of the loads distribute through the emergency switch system on board</p>				
4	<p>適任 Competence : 操作與保養超過 1,000 伏特高電壓動力系統(若有) Operate and maintain power systems in excess of 1,000 volts(where fitted)</p>			<p>評估標準 Criteria for Evaluation</p>	<p>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)</p>
4.1	<p>船舶高壓電機設備的運轉與維護保養(若有) Operate and maintain high voltage equipment on board a vessel (where fitted)</p>			<p>操作已計畫並係依操作手冊、既定規則程序進行以確保操作安全 Operations are planned and carried out in accordance with</p>	<p>待 4.1.1 完成後， 由輪機長或大管輪簽署 並押上日期簽署者必須 在附件基本資料處留下資</p>

			operating manuals, established rules and procedures to ensure safety of operations	料
	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	<p>以下準備動作:Preparation performance: 安全守則、規章及操作說明書 Established safety rules, regulations and operating instruction 完成所要求的檢查、啟動和停機 Carry out the required checks, start up and shut down the high voltage equipment 按照排程，操作要求和指示，並保持給予的限度內去監測和準確地評估高電壓設備的條件 Monitor and accurately assess the condition of the high voltage equipment in accordance with schedules, operating requirements and instructions and maintain operating conditions within given limits 廠家說明書的要求及規範 Manufacturers' requirements and specifications 用以識別，報告故障並採取適當措施糾正缺陷的故障排除表 Trouble shooting to identify, report malfunctions and take appropriate action to rectify defects 執行緊急停機及隔離步驟，以確保船舶和機械的安全</p>	<p>施訓者完成認可後 簽名押日期</p>	<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>	

	<p>Carry out emergency shut down and isolating procedures to ensure vessel and machinery safety 操作在緊急情況包含遙控系統失效下的高電壓設備 Operate the high voltage equipment in contingency situations, including the failure of remote control systems 通知相關人員的安全責任 Inform relevant personnel about the safety responsibilities</p>		
4.2	<p>安全運轉與保養高電壓系統，包含超過 1,000 伏特的危險性與特殊技術的知識(若有) Safe operation and maintenance of high voltage systems, including knowledge of the special technical type of high voltage systems and the danger resulting from operational voltage of more than 1,000 Volts (where fitted)</p>	<p>操作已計畫並係依操作手冊、既定之規則與程序進行以確保操作安全 Operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations</p>	<p>待 4.2.1 到 4.2.4,皆完成後， 由輪機長或大管輪簽署 並押上日期簽署者必須在附件基本資料處留下資料</p>

.1	<p>了解下列高壓電設備的使用和操作: Understand the use and operation of the following HV equipment:</p> <p>配電盤 Switchboards 變壓器 Transformer 保護電驛 Protective Relay 跳脫裝置 (包含過電流、逆電流、低頻率和低電壓) Tripping devices (Including Over Current, Reverse Power, Low Frequency and Low Voltage) 接地指示器 Earthing indicator 關鍵保護裝置(緊急油料截斷裝置、送風切斷裝置) Key safes(including emergency oil cut off device and ventilation cut off device) 安全隔離互鎖裝置 Isolock device</p>		施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。		
.2	<p>展示了解下列之目的: Understand the purpose of the following:</p> <p>鑑別錯誤等級 Appreciation of fault levels 電氣保護在船舶上的應用 Marine application of electrical protection</p>					

.3	<p>展示及區別以了解下列保護系統的角色和目的 Demonstrate and discrimination an understanding of the role and purpose of the following protective systems:</p> <p>保護裝置 Protective devices, 饋線保護裝置 Feeder protection, 變壓器保護裝置 Transformer protection, 馬達保護裝置 Motor protection, 發電機保護裝置 Generator protection, 匯流排保護裝置 Bus-bar zone protection</p>				
.4	<p>展示了解高壓電設備的計畫保養或檢查紀錄，包括作動前、作動中和結束 Demonstrate an understanding of the procedures for recording HV activities before, during, and on completion of the planned maintenance or inspection work</p>				
5	<p>適任 Competence : 操作電腦及網路系統 Operate computers and computer networks on ships</p>		<p>評估標準 Criteria for Evaluation</p>	<p>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)</p>	

5.1	<p>瞭解數據處理之主要特性、船上電腦及網路之構造與使用以及駕駛室與機艙商務電腦之使用</p> <p>Understanding of main features of data processing, construction and use of computer networks on ships and bridge-based,engine-room-based and commercial computer use</p>		<p>正確檢查與操縱電腦網路與電腦</p> <p><i>Computer networks and computers are correctly checked and handled</i></p>	<p>待 5.1.1 到 5.1.7,皆完成後，</p> <p>由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</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	<p>以下準備工作: Preparation performance: 安全守則、規範及操作說明書，正確地操作內部通信系統及硬體系統以避免造成損傷 Operate correctly internal communication and hardware systems in accordance with established safety rules, regulations and operating instructions to prevent damage 依照技術法規、安全及程序規範去計畫保養行為 Plan maintenance activities in accordance with technical legislative, safety and procedural specification 依照廠商方針及船舶說明書去執行安全隔離、拆解及重新組合 Isolate, dismantle and reassemble internal communication and hardware systems in accordance with manufacturers' guideline and shipboard instructions</p>	<p>施訓者完成認可後 簽名押日期</p>		<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>

	<p>識別，採取適當措施並報告誤動作及故障 Identify, take appropriate action on and report malfunctions/defect 通知操作相關人員以便能夠安全地繼續他們的責任 Inform relevant personnel of the operations to enable them to continue their responsibilities safely 準確完成紀錄並傳遞給適當人員 Complete relevant records accurately and pass them on to the appropriate person 丟棄廢棄資材須符合安全工作實務和核可的程序 Dispose of waste materials in accordance with safe working practices and approved procedures</p>					
.2	<p>依照適當的程序、安全守則和法定規章下操作及保養電腦及網路 Operate and maintain the computer network systems on board, in accordance with appropriate procedure, safety rules and regulations.</p>	<p>施訓者完成認可後 簽名押日期</p>	<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>			
.3	<p>了解在獨立電腦或網路重新安裝軟體 Understand the process to re-install software on a stand-alone or networked PC</p>					
.4	<p>有能力從電腦硬碟或相當裝置做備份動作 e.g. hard drive or similar Enable to back-up data from a PC storage device</p>					
.5	<p>有能力連接個人電腦(PC)到船內電腦網路並設定新組態</p>					

	Enable to replace and reconfigure a PC connected to an internal network					
.6	有能力隔離和復歸並重新啟動船內電腦和網路系統 Enable to isolate & reset /restart computer network system					
.7	了解船上計畫保養系統(PMS)紀錄程序步驟 Understand the procedures for recording PMS activities on board					
6	適任 Competence : 能以書面及口頭方式使用英語 Use English in written and oral form			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)
6.1	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			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>	待 6..1.1 到 6.1.5,皆完成後， 由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料	
	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	<p>有能力用英文和船上甲級船員與乙級船員交談溝通</p> <p>Enable to communicate in English language with ship officers and the other crew members</p>	<p>施訓者完成認可後 簽名押日期</p>		<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>		
.2	<p>有能力使用和了解英文版輪機出版物及說明書</p> <p>Enable to use and understand engineering publications in English language</p>					
.3	<p>有能力準備英文文件也就是說用英文作完工報告、申請料配件及材料、計畫保養清單和修船計畫</p> <p>Enable to prepare in English language several documents, i.e. reports of the works carried out, materials and spare parts orders, shipyard planned maintenance list</p>					
.4	<p>列舉所用之英文書刊及手冊如下：</p> <p>List English language publications or manuals used：</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p>					
.5	<p>如果合適的話以英文完成船上定期保養計畫紀錄</p> <p>If appropriate, assist with completion of ship's Planned Maintenance System records in English</p>					

6.2	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>	待 6.2.1 到 6.2.4, 皆完成後， 由輪機長或大管輪簽署 並押上日期簽署者必須 在附件基本資料處留下資料			
.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 緊急操演 Emergency drills					
.3	確定夥伴已正確了解所下達之命令 Ensure that others have understood orders correctly					
.4	對不同國籍夥伴能用英文溝通指令的能力 Enable to communicate instructions effectively in the English language to a multi-lingual crew					
7	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)			
7.1	能使用船上所有對內部聯絡系統 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</i>	待 7.1.1 到 7.1.7 完成後， 由輪機長或大管輪簽署 並押上日期簽署者必須 在附件基本資料處留下資料			

				<i>successful. Communication records are complete, accurate and comply with statutory requirements</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	能夠操作船上內部電話系統 Enable to operate the internal telephone system (PABX)	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。			
.2	能夠操作船上聲力電話系統 Enable to operate emergency telephone system (sound powered)					
.3	能夠操作手題超高頻(VHF) Enable to operate portable VHF equipment					
.4	能夠操作公共廣播系統 Enable to operate public address system					
.5	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					
.6	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 舵機房與駕駛台					

	Steering gear to bridge					
.7	演示使用手持無線電話通訊時能正確的識別站 台程序 Demonstrate correct station ID procedure when using hand held transceivers (portable radios)					

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	評估標準 Criteria for Evaluation	適任性證明 Competence Demonstrated
8	適任 Competence : 保養及維修電機和電子設備和控制系統 Maintenance and repair of electrical and electronic equipment		同部門較自身高階之 甲級船員簽名/日期 Assessor (Signature/Date)
8.1	機電系統工作的安全要求，包含獲得工作許可文件之前必先安全 隔離機電設備 Safety requirements for working on shipboard electrical systems, including the safe isolation of electrical equipment required before personnel are permitted to work on such equipment	工作之安全措施合乎規 定 Safety measures for working are appropriate	待 8.1.1 到 8.1.7 完成後， 由輪機長或大管輪簽署 並押上日期簽署者 必須在附件基本資料處 留下資料
	科目/職責 Task/Duty	科目已完成 Task Completed 施訓者簽名/日期 Instructor (Signature/Date)	科目已完成 Task Completed 施訓者簽名/日期 Instructor (Signature/Date)
.1	解說個人安全保護裝備(PPE) 在不同工作場合 的使用 Demonstrate knowledge of Personal Protective	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。

	Equipment (PPE) used on board for different tasks					
.2	<p>解說隔離及鎖住電氣設備的步驟並實施安全評估</p> <p>Demonstrate knowledge of the procedure to isolate and lock electrical equipment and apply necessary safety measures</p>					
.3	<p>鑑定在你的船上那些區塊屬於危險區域而甚麼設備可以安裝在此區塊</p> <p>Identify the various hazardous areas on board your vessel and understand what electrical equipment can be fitted within each of these zones</p>					
.4	<p>闡述在危險區域內做機電設備維修時應採用哪些特別預防措施</p> <p>Demonstrate knowledge of special precautions to be taken for electrical equipment maintenance in hazardous area</p>					
.5	<p>工具及設備的確認和使用</p> <p>Tools and equipment are identified and use</p>					
.6	<p>確認工作場所的安全，可以進行工作許可證;環境評估與執行步驟</p> <p>Work areas are confirmed as safe for work to proceed and permit to work and environmental issues and procedures implement.</p>					
.7	<p>恢復電機及系統的正确參數設定。測試及最後檢查以確保保養工作確實有效地執行完畢</p> <p>Machinery and system are restored to correct settings and tested, final checks to ensure maintenance has been effective are carried out</p>					

<p>8.2</p>	<p>保養及修理機電設備，配電盤、電動馬達、發電機及直流電設備、檢測出電氣裝置的不良功能及故障所在及其程度以避免損害、電氣測試及亮度設備的結構與操作 Maintenance and repair of electrical system equipment, switchboards, electric motors, generator and DC electrical systems and equipment. Detection of electric malfunction, location of faults and measures to prevent damage. Construction and operation of electrical testing and measuring equipment</p>		<p>手工具選用、量測儀器及測試合乎規定，且結果解釋正確；依據手冊與良好實務拆解、檢查、修理、重組及測試設備 Selection and use of hand tools, measuring instruments, and testing equipment are appropriate and interpretation of results is accurate. Dismantling, inspecting, repairing and reassembling equipment, performance testing are in accordance with manuals and good practice</p>	<p>待 8.2.1 到 8.2.15 完成後，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</p>	
<p>.1</p>	<p>有能力使用及了解每個維修動作所需的通用測試設備和儀器的局限性 Enable to use and understand the limitations of common test equipment and instruments required for each of the maintenance activities</p>	<p>施訓者完成認可後簽名押日期</p>	<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>		
<p>.2</p>	<p>有能力執行螢光燈具的例行保養測試 Enable to carry out routine testing and maintenance to a fluorescent light fitting and other lights</p>				
<p>.3</p>	<p>有能力執行主緊急蓄電池的保養測試 Enable to carry out testing and maintenance to the main emergency storage batteries</p>				
<p>.4</p>	<p>有能力執行電氣馬達及其啟動器例行保養測試 Enable to carry out routine maintenance and testing of an electric motor and its associated</p>				

	starter Demonstrate an ability to carry out the routine maintenance and testing of an electric motor and its associated starter					
.5	展示有能力執行主配電盤及線路斷路器的例行保養測試 Enable to carry out routine maintenance and testing of main switchboard circuit breakers Demonstrate an ability to carry out routine maintenance and testing of main switchboard circuit breaker					
.6	有能力執行發電機或交流發電機例行保養測試 Enable to carry out routine maintenance to generators or alternators Demonstrate an ability to carry out routine electrical maintenance to generators					
.7	有能力執行緊急發電機的保養與測試 Enable to Carry out electrical maintenance and testing of the emergency generator					
.8	有能力執行一般電機的保養與測試 Enable to carry out routine electrical maintenance and testing of the emergency generator					
.9	有能力指出 440V 低絕緣的所在 Enable to locate low insulation of the 400 (440) V AC circuits					
.10	有能力指出 230 (或 110) V 低絕緣的所在 Enable to locate low insulation of the 230 (110) V AC circuits					

.11	有能力指出 24V 直流電低絕緣所在 Enable to locate low insulation of the 24 V DC circuits, supplied from storage batteries					
.12	展示有能力對所有電氣設備作例行絕緣測試 Enable to carry out routine insulation test (megger test) of generators and all electrical equipment supplied from ship electrical system	施訓者完成認可後 簽名押日期 如果對學員動作不滿意，應(擇日)重做到滿意再簽署。				
.13	展示了解船上的計畫保養系統(PMS) Demonstrate an understanding of the PMS system on board					
.14	展示登錄計畫保養系統(PMS)的步驟 Demonstrate an understand the procedures for recording Planned Maintenance System (PMS) activities on board					
.15	展示有能力執行不斷電裝置(如有安裝的話)的保養 Demonstrate an ability to carry out the electrical maintenance to UPS units (where fitted)					

<p>8.3</p>	<p>自動控制的功能測試、調整、設定、歸零、修理 Function check、calibrate、alignment、test and maintenance of automatic control</p>	<p>手工具選用、量測儀器及測試合乎規定，且結果解釋正確；依據手冊與良好實務拆解、檢查、修理、重組及測試設備 <i>Selection and use of hand tools, measuring instruments, and testing equipment are appropriate and interpretation of results is accurate. Dismantling, inspecting, repairing and reassembling equipment, performance testing are in accordance with manuals and good practice</i></p>		<p>待 8.3.1 到 8.3.10 完成後，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</p>		
<p>.1</p>	<p>測試以下裝備及其組態的功能及性能： Function and performance tests of the following equipment and their configuration: 監測系統 monitoring systems 自動控制裝置 automatic control devices 保護裝置 protective devices</p>	<p>施訓者完成認可後 簽名押日期</p>		<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>		
<p>.2</p>	<p>有能力執行機器警報系統故障修理和最終測試 Enable to carry out the repair and final testing to machinery alarm system defects</p>					
<p>.3</p>	<p>有能力執行火災警報系統的例行保養 Enable to carry out routine testing and maintenance of fire detection sys. Demonstrate an ability to carry out routine testing and maintenance to fire detection systems</p>					

.4	能夠操作、設定、紀錄 PID(比例、積分及微分) 三種控制原始參數 Enable to monitor the operation, set and record parameters of PID				
.5	有能力檢查 PT100 電阻溫度感測器或熱電偶 Enable to Check and align a PT100 unit or thermocouple Demonstrate an ability to check and align a PT100 unit or thermocouple				
.6	有能力檢查、校準、歸零及測試壓力傳感器: Enable to check, calibrate, align and test a pressure transmitter Demonstrate an ability to check, calibrate, align and test a pressure transmitter				
.7	闡述閥門操作的遙控系統 Demonstrate an understanding of the operation of a valve remote control system				
.8	了解自動控制系統換成手動的程序步驟 Understanding the procedures for the change-over operation of a control system into manual control				
.9	闡述有能力讓液位傳感器歸零與測試: Enable to align and test a level transducer				
.10	了解分佈式控制(DSC) / 儀器儀表自動化系統 (IAS) 的操作 Demonstrate an Understanding the configuration of the distribu-tive control/instrumentation automation system (DCS/IAS) operations				

8.4	解釋電機和電子線路 The interpretation of electrical and electronic diagrams	手工具選用、量測儀器及測試合乎規定，且結果解釋正確； 依據手冊與良好實務拆解、檢查、修理、重組及測試設備 <i>Selection and use of hand tools, measuring instruments, and testing equipment are appropriate and interpretation of results is accurate. Dismantling, inspecting, repairing and reassembling equipment, performance testing are in accordance with manuals and good practice</i>			待 8.4.1 到 8.4.4 完成後， 由輪機長或大管輪簽署 並押上日期簽署者必須 在附件基本資料處留下資料		
.1	解說各種不同的電機線路圖和符號 Demonstrate knowledge of different types of electrical diagrams and used symbols	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。				
.2	有能力解釋電機線路圖 Enable to interpret electrical diagrams						
.3	解說不同型式電子線路圖和使用的符號 Demonstrate knowledge of different types of electronic diagrams and used symbols						
.4	有能力解釋電子線路圖 Enable to interpret electronic diagrams						

9	<p style="text-align: center;">適任 Competence : 保養及維修主推力系統和輔機的自動控制系統 Maintenance and repair of electrical and electronic equipment of main propulsion and auxiliary machinery</p>	<p style="text-align: center;">評估標準 Criteria for Evaluation</p>	<p style="text-align: center;">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)</p>	
9.1	<p>適當之電機與機械知識與技能；在允准人員對設備與相關系統工作前進行安全隔離；測試、保養、故障偵測與維修之實作知識；電機與電子控制設備之測試、故障偵測並保持與恢復至操作狀態</p> <p>Appropriate electrical and mechanical knowledge and skills; Safe isolation of equipment and associated systems required before personnel are permitted to work on such plant or equipment; Practical knowledge for the testing, maintenance, fault finding and repair; Test, detect faults and maintain and restore electrical and electronic control equipment to operating condition</p>	<p>準確鑑定相關機械與系統之故障、正確解說船舶技術圖表、正確使用量校儀器，並採用適當行動；裝置與設備之絕緣、拆裝依據廠家之安全準則、船上說明書、法規與安全規範，並採取最適當方法及適於一般環境與狀況之措施使自動與控制系統復原</p> <p><i>The effect of malfunctions on associated plant and systems is accurately identified, ship's technical drawings are correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified.</i></p> <p><i>Isolation, dismantling and reassembly of plant and equipment are in accordance with manufacturer's safety guidelines and shipboard instructions and legislative and safety specifications. Action taken leads to the restoration of automation and control systems by the method most suitable and appropriate to the prevailing circumstances and conditions</i></p>	<p style="color: red;">待 9.1.1 到 9.1.9 完成後，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</p>	
	<p style="text-align: center;">科目/職責 Task/Duty</p>	<p style="text-align: center;">科目已完成 Task Completed 施訓者簽名/日期 Instructor</p>	<p style="text-align: center;">對改進部分之建議 Advice on Areas for Improvement</p>	<p style="text-align: center;">科目已完成 Task Completed 施訓者簽名/日期 Instructor</p>

		(Signature/Date)		(Signature/Date)
.1	能夠執行主機控制系統作例行性保養及維修 Enable to carry out routine maintenance and repairs to the control equipment of main engine	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。	
.2	參與執行主機安全跳脫及警報例行性測試 Participate in carrying out the routine testing of the main engine safety trips and alarms			
.3	能夠執行輔機控制系統作例行性保養及維修 Enable to carry out routine maintenance/repairs to the control equipment of auxiliary engines			
.4	能夠執行鍋爐控制系統例行測試和保養 Enable to carry out routine testing and maintenance to the control systems of the boilers			
.5	能夠執行空氣壓縮機控制系統例行性測試保養 Enable to carry out routine testing and maintenance to the air compressors control systems			
.6	能夠執行燃油(FO)，滑油(LO)淨油機控制系統作例行性測試和保養 Enable to carry out routine testing and maintenance to the control systems of FO or LO purifiers			

.7	能執行冷凍空調系統控制系統作例行測試保養 Enable to carry out routine testing and maintenance to the control systems of the refrigeration and air condition compressors					
.8	解說能夠執行伙食冷凍/冷藏冰庫及貨物冷凍冷藏庫作例行性測試和保養 Demonstrate an ability to carry out routine testing and maintenance to the control systems of provision or cargo refrigerated chambers					
.9	解說能夠執行機艙吊俾控制系統作例行性測試和保養 Demonstrate an ability to carry out routine testing and maintenance to the control systems of engine room crane					
10	<p style="text-align: center;">適任 Competence : 保養及維修船橋航海儀器和通信系統 Maintenance and repair of bridge navigation equipment and ship communication systems</p>			<p style="text-align: center;">評估標準 Criteria for Evaluation</p>	<p style="text-align: center;">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)</p>	

<p>10.1</p>	<p>認識航海儀器、船內通訊和對外通訊系統的原理及保養 Knowledge and the principles and maintenance procedures of navigation equipment, internal and external communication systems</p>	<p>準確鑑定相關機械與系統之故障、正確解說船舶技術圖表、正確使用量校儀器，並採用適當行動；裝置與設備之絕緣、拆裝依據廠家之安全準則、船上說明書、法規與安全規範，並採取最適當方法及適於一般環境與狀況之措施使船橋航海儀器和通信系統復原 The effect of malfunctions on associated plant and systems is accurately identified, ship's technical drawings are correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified. Isolation, dismantling and reassembly of plant and equipment are in accordance with manufacturer's safety guidelines and shipboard instructions and legislative and safety specifications. Action taken leads to the restoration of bridge navigation equipment and ship communication systems by the method most suitable and appropriate to the prevailing circumstances and conditions</p>	<p>待 10.1.1 到 10.1.15 完成，由輪機長或大管輪簽署並押上日期 簽署者必須在附件基本資料處留下資料</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>
<p>.1</p>	<p>能夠針對使用一般測試裝備和儀表做個別保養活動 Enable to use common test equipment and instruments required for each of the maintenance activities</p>	<p>施訓者完成認可後 簽名押日期</p>	<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>	

.2	能夠執行雷達系統作例行性保養 Enable to carry out routine maintenance to a radar system					
.3	能夠執行航行燈例行性保養 Enable to carry out routine testing and maintenance to a navigation light					
.4	能夠執行 GMDSS 例行性保養 Enable to carry out routine maintenance of the GMDSS equipment					
.5	能夠執行 GPS 接受器例行性的 測試和非例行性的保養 Enable to carry out routine testing or non-routine maintenance to the GPS receivers					
.6	能夠執行 AIS 或 LRIT 例行性的測試和非例行性的保養 Enable to carry out routine testing or non-routine maintenance to the AIS or LRIT system					
.7	能夠執行回聲測深儀例行性的 測試和非例行性的保養 Enable to carry out routine test or non-routine maintenance to echo sounder units					
.8	能夠執行速度紀錄儀例行性的測試和非例行性的保養 Enable to carry out routine testing or non-routine maintenance to the speed log system					
.9	能夠執行航次數據紀錄器例行性的 測試和非例行性的保養 Enable to carry out routine testing or non routine					

	maintenance to the voyage data recorder system					
.10	能夠執行羅經(旋轉陀螺儀)裝置例行性的測試和非例行性的保養 Enable to carry out routine testing or non routine maintenance to the gyro unit					
.11	能夠例行測試船橋舵機的系統性 Enable to carry out the routine testing of the main steering gear system from the bridge					
.12	能夠在舵機房執行舵機系統例行性的測試和保養 Enable to carry out routine testing or maintenance to the steering gear units within the steering gear space					
.13	能夠例行性的測試和保養船上主要或緊急汽笛 Enable to carry out routine testing or maintenance to the main or emergency ship's whistle					
.14	能夠執行中波/高波接受器及其天線系統作例行性的測試和保養 Enable to carry out routine testing or maintenance to the main MF/HF transceivers and aerial system					
.15	能夠執行主衛星通訊終端機作例行性的功能測試和保養 Enable to carry out routine function testing or maintenance to the main satellite communication terminal					

11	<p style="text-align: center;">適任 Competence : 保養及維修甲板機械及裝卸貨裝置之電機、電子和控制系統 Maintenance and repair of electrical, electronic and control systems of deck machinery and cargo-handling equipment</p>	<p style="text-align: center;">評估標準 Criteria for Evaluation</p>	<p style="text-align: center;">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)</p>
11.1	<p>適當之電機與機械知識與技能；在允准人員對設備與相關系統工作前進行安全隔離；測試、保養、故障偵測與維修之實作知識；電機與電子控制設備之測試、故障偵測並保持與恢復至操作狀態</p> <p>Appropriate electrical and mechanical knowledge and skills; Safe isolation of equipment and associated systems required before personnel are permitted to work on such plant or equipment; Practical knowledge for the testing, maintenance, fault finding and repair; Test, detect faults and maintain and restore electrical and electronic control equipment to operating condition</p>	<p>準確鑑定相關機械與系統之故障、正確解說船舶技術圖表、使用量校儀器，並採用適當行動；裝置與設備之絕緣、拆裝依據廠家之安全準則、船上說明書、法規與安全規範，採取最適當方法及適於一般環境狀況之措施使甲板機械及裝卸貨裝置復原</p> <p><i>The effect of malfunctions on associated plant and systems is accurately identified, ship's technical drawings are correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified. Isolation, dismantling and reassembly of plant and equipment are in accordance with manufacturer's safety guidelines and shipboard instructions and legislative and safety specifications. Action taken leads to the restoration of deck machinery and cargo-handling equipment by the method most suitable and appropriate to the</i></p>	<p style="color: red;">待 11.1.1 到 11.1.12 完成，由輪機長或大管輪簽署並押上日期 簽署者必須在附件基本資料處留下資料</p>

		<i>prevailing circumstances and conditions</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	參與並解說錨機、絞纜機及絞盤作例行性保養 Participate in and know the routine maintenance of anchor/ mooring winches and capstans	施訓者完成認可後 簽名押日期	如果對學員動作不滿意， 應(擇日)重做到滿意再簽署。		
.2	參與並解說救生艇起落架作例行性保養 Participate in and know the routine maintenance of life boat launching devices				
.3	參與並解說舷梯起落裝置的例行性保養 Participate in and know the routine maintenance of gangway lifting device				
.4	參與並解說伙食吊俾作例行性保養 Participate in and know the routine maintenance of provision cranes				
.5	參與並解說大艙蓋閉合裝置作例行性保養 Participate in and know the routine maintenance of hatch covers closing system				
.6	參與並解說油輪貨泵作例行性保養和測試，如過有的話 Participate in and knowledge the maintenance and testing of cargo pumps, if applicable				

.7	參與並解說油輪蒸汽收艙泵作例行性保養和測試，如過有的話 Participate in and know the maintenance and testing of cargo steam stripping pumps					
.8	參與並解說電動壓載水泵/抗傾斜水泵及其驅動馬達作例行性保養和測試 Participate in and know the maintenance and testing of electrically driven ballast / anti- heeling pumps, including drive motor					
.9	參與並解說油輪惰氣系統例行性保養和測試，如過有的話 Participate in and know the maintenance and testing of inert gas system, if applicable					
.10	參與並解說貨物裝卸起重機及其絞盤作例行性保養和測試 Participate in and know the maintenance and testing of cargo handling cranes/ winches					
.11	解說在危險區域內的一項設備作拆解與組裝 Enable to dismantle and reassemble one item of hazardous area equipment					
.12	解說水密門或動力坡道(如果有的話)保養 Enable to carry out the electrical maintenance to watertight door or powered ramps (where fitted)					

12	<p style="text-align: center;">適任 Competence : 保養及維修住艙生活裝置 Maintenance and repair of control and safety systems of hotel equipment</p>	<p style="text-align: center;">評估標準 Criteria for Evaluation</p>	<p style="text-align: center;">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)</p>
12.1	<p>易燃區域內電機與電子系統之操作；施行安全保養與修理之程式；機械設備之故障偵測、故障之位置與防止損毀之行動 Electrical and electronic systems operating in flammable areas; Carrying out safe maintenance and repair procedures; Detection of machinery malfunction, location of faults and action to prevent damage</p>	<p>準確鑑定相關機械與系統之故障、正確解說船舶技術圖表、正確使用量校儀器，並採用適當行動；裝置與設備之絕緣、拆裝依據廠家之安全準則、船上說明書、法規與安全規範，並採取最適當方法及適於一般環境與狀況之措施使住艙生活裝置復原 The effect of malfunctions on associated plant and systems is accurately identified, ship's technical drawings are correctly interpreted, measuring & calibrating instruments are correctly used and actions taken are justified. Isolation, dismantling and reassembly of plant & equipment are in accordance with manufacturer's safety guidelines and shipboard instructions and legislative and safety specifications. Action taken leads to the restoration of control and safety systems of hotel equipment by the method most suitable and appropriate to the prevailing circumstances and conditions</p>	<p>待 12.1.1 到 12.1.4 完成後，由輪機長或大管輪簽署並押上日期 簽署者必須在附件基本資料處留下資料</p>

	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	能夠執行廚房和配膳間裝備的例行保養 Enable to carry out routine electrical maintenance to galley and pantry equipment	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。	
.2	能夠執行洗衣房和服務裝備作例行保養 Enable to carry out the electrical maintenance to laundry and hotel services			
.3	能夠執行人員升降機例行保養 Enable to carry out the electrical maintenance to personal lift			
.4	能夠執行伙食升降機作例行保養 Enable to carry out the electrical maintenance to provision lift			

專長 Function:操作級-控管船舶操作級船上人員照管

Controlling the operation of the ship and care for persons on board at operation and support level Other ability related

項次 Ref No	訓練 Training		評估標準	適任性證明 Competence Demonstrated
13	適任 Competence : 確保符合防止污染要求 Ensure compliance with pollution prevention requirements		Criteria for Evaluation	同部門較自身高階之 甲級船員簽名/日期 Assessor (Signature/Date)
13.1	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 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	待 13.1.1 到 13.1.11 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料
	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	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。	

.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	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 Understand that marine pollutants must be landed ashore for safe disposal in compliance with MARPOL					
.5	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 Understand there are strict rules covering the storage and disposal of oily water mixtures applicable to all ships					
.6	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					

	Understand there are strict rules covering disposal of noxious liquid substances applicable to all ships					
.7	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 Understand there are strict rules covering disposal of harmful substances carried in packaged form applicable to all ships	施訓者完成認可後 簽名押日期 如果對學員動作不滿意，應(擇日)重做到滿意再簽署。				
.8	瞭解有關處置防止污水污染之嚴格規則適用於所有船舶 Understand there are strict rules covering pollution prevention by sewage applicable to ships					
.9	瞭解防止船上垃圾污染之嚴格規則適用於所有船舶 Understand there are strict rules for prevention of pollution by garbage from ships, applicable to all ships					
.10	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 Understand there are strict rules covering air pollution from ships at sea which will progressively apply to all ships					
.11	瞭解SO _x , NO _x 之影響，及為何需盡力減低空氣之污染					

	Understand the impact of SO _x , NO _x , VOC and PM and why efforts are needed to reduce atmospheric pollution				
13.2	<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>	<p>待 13.2.1 到 13.2.4 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</p>
.1	<p>塞住甲板洩水孔</p> <p>Plug deck scuppers</p>				
.2	<p>證明具有船上加燃油程序之知識</p> <p>Know the ship's bunkering procedures</p>				
.3	<p>參與加油作業</p> <p>Participate in bunkering operations</p>				
.4	<p>知道緊急切斷之程序</p> <p>To know the emergency shutdown procedure</p>				
13.3	<p>發現船舶周圍有任何汙染時即刻展開原因調查</p> <p>Initiate immediate investigation to detect the source on discovering any pollution around the ship</p>			<p>運用所有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>	<p>待 13.3.1 到 13.3.2 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</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</p> <p>Participate in an emergency response exercise for controlling spillage of oil or other noxious or toxic substances on board</p>	<p>施訓者完成認可後簽名押日期</p>		<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>	

.2	了解立即報告及檢查潛在汙染的重要性 Be aware of the importance of immediately reporting and investigating potential pollution incidents					
13.4	制止或防止有害液體與固體物質之洩漏與溢出 Stop or prevent leakages and spills of harmful liquids and solid substances	情況經徹底評估。所採之行動具良好組織與演練。並對污染範圍作特別考慮 The situation is thoroughly assessed and the actions taken are well organized and exercised and due consideration taken of the extent of the pollution			待 13.4.1 到 13.4.2 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料	
.1	使用材料安全數據表及IMDG章程資訊及操作指示 Demonstrate use of Material Safety Data Sheets and the IMDG Code to obtain information on cargo hazards and handling instructions	施訓者完成認可後簽名押日期			如果對學員動作不滿意，應(擇日)重做到滿意再簽署。	
.2	參與清除危害貨物溢出之演練 Participate in drill for clean-up of hazardous spillage					
13.5	對所有懷疑有任何損傷之液貨艙櫃及艙區予以測深 Sound all tanks and compartments if any damage is suspected	迅速有效測深並將結果即時向船長報告 The soundings are readily available and the results immediately reported to the Master			待 13.5.1 到 13.5.2 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料	
.1	參與船舶擱淺之應急反應之演練 Participate in an emergency response exercise for stranding					

.2	對艙積水、艙櫃、雙重底與其他液艙櫃施行測深並將資料予以記錄 Perform soundings of bilges, peak tanks, double bottom and other tanks and record information if any hull damage is suspected					
13.6	執行污水、壓載水與加油作業 Carry out bilge, ballast and bunkering operations	所有作業之施行係依據 MARPOL 公約並特別注意船上油污染應急計畫 All operations are carried out in accordance with MARPOL and due regard paid to the Shipboard Oil Pollution Emergency Plan (SOPEP)			待 13.6.1 到 13.6.5 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料	
.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	施訓者完成認可後簽名押日期			如果對學員動作不滿意，應(擇日)重做到滿意再簽署。	
.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) To understand the Oil Discharge Monitor Equipment operation (oil tankers)					

.5	說明油料記錄簿記錄須知 To understand the record keeping required in the Oil Record Book					
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禁止複製

14	<p style="text-align: center;">適任 Competence : 船上防火、控制火災及滅火 Prevent, control and fight fires on board</p>	<p style="text-align: center;">評估標準 Criteria for Evaluation</p>		<p style="text-align: center;">適任性證明 Competence Demonstrated 同部門較自身高階 甲級船員簽名/日期 Assessor (Signature/Date)</p>	
14.1	<p>操作偵測火與煙之設備 Operate fire and smoke detecting equipment</p>	<p>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></p>		<p style="color: red;">待 14.1.1 到 14.1.5 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</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	<p>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</p>	<p>施訓者完成認可後 簽名押日期</p>		<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>	
.2	<p>可攜式二氧化碳滅火器 Portable CO2 extinguisher</p>				
.3	<p>可攜式乾粉滅火器 Portable dry powder extinguisher</p>				
.4	<p>可攜式水滅火器 Portable water extinguisher</p>				

.5	保養軟管、噴嘴與聯結器 Maintain hoses, nozzles and couplings				
14.2	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 Ensure that all persons on watch are able to detect and correct hazardous situations and actions and keep the ship clean and tidy	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 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	待 14.2.1 到 14.2.2 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料		
.1	施行火警巡邏任務 Perform fire patrol duties				
.2	裝備在保養後放回原位並固定 Re-stow gear and secure after maintenance work				
14.3	確定滅火設備、應急逃生路線與發送警報之位置 Locate fire fighting appliances, emergency escape routes and sound alarm	得到手持式或他種滅火筒使用指示並能夠觸動警報 Instruct watch in use of portable or other fire extinguishers. Demonstrate an ability to raise the alarm	待 14.3.1 到 14.3.2 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料		
.1	全面檢查滅火設備並向輪機長提報 Carry out a full inspection of fire-fighting equipment and report to the chief engineer	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。		

.2	參與海上及港口之火警應急反應演練 Participate in an emergency response exercise for fire at sea and in port					
14.4	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 Locate fire stations and demonstrate proper use of fixed installations and other fire fighting appliances and agents	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 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		待 14.4.1 到 14.4.11 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料		
.1	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	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。			
.2	火警警報 Fire alarms					
.3	固定自動灑水器 Fixed automatic sprinklers					
.4	固定蒸汽系統 Fixed steam systems					
.5	固定泡沫滅火器 Fixed foam extinguishers					

.6	固定二氧化碳系統 Fixed CO2 systems					
.7	防火瓣與擋板 Fire flaps and dampers					
.8	自動與手動防火門 Automatic and manual fire doors					
.9	切斷應急閥、停泵、停主機 Emergency shut off valves, pump stops and main engine stops					
.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	說明在操作系統前應注意之安全事項 State the safety precautions required prior to operating the system					
14.5	確定滅火防護設備（消防員裝具包括呼吸器）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>	待 14.5.1 到 14.5.6 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料	
.1	說明進入圍閉空間程序與需注意事項 Demonstrate the procedures and precautions required for entry into an enclosed space	施訓者完成認可後簽名押日期		如果對學員動作不滿意，應(擇日)重做到滿意再簽署。		
.2	確認自足式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					
14.6	在消防演練中證明具有能力依消防計畫行動 Demonstrate ability to act in accordance with the fire-fighting plan during fire drills	<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>			<p>待 14.6.1 到 14.6.3 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</p>	
.1	在演練時擔任消防隊之一員 Take charge of a fire party during an exercise	<p>施訓者完成認可後簽名押日期</p>			<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>	
.2	示範使用機艙所有各處之安全設備 Demonstrate the use and location of all engine room safety appliances					

.3	示範使用機艙所有之與逃生路線 Demonstrate a knowledge of all engine room escape routes				
15	適任 Competence : 操作救生設備 Operate life-saving appliances		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)	
15.1	安排棄船演練 Organise abandon ship drills		警報發出後所有人員著安全帶或浸水衣於指定登艇站集合並依要求執行任務 <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>	待 15.1.1 到 15.1.9 完成， 由輪機長或大管輪簽署 並押上日期簽署者 必須在附件基本資料處 留下資料	
	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	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。		

.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 devises (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					
15.2	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		待 15.2.1 到 15.2.8 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料
.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	施訓者完成認可後簽名押日期				如果對學員動作不滿意，應(擇日)重做到滿意再簽署。
.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： Crew 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					
15.3	將救生筏下水或拋出舷外並操縱離開船舷 Launch or throw overboard a life raft and manoeuvre it clear of ship's side	<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>			<p>待 15.3.1 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</p>	
.1	如有機會，示範救生筏下水與充氣之程序	<p>施訓者完成認可後 簽名押日期</p>			<p>如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>	

	Demonstrate an understanding of the procedure for launching and inflating life rafts, if the opportunity arises				
15.4	操作無線電救生設備 Operate radio life-saving appliances			在未週知任何人發出模擬信號前建立無線電連繫 <i>Radio contact is established without alerting anybody by transmitting false signals</i>	待 15.4.1 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料
.1	在監督下架設並操作可攜式救生艇無線電 Rig and operate the portable lifeboat radio under supervision				
15.5	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 Ensure that all required equipment on board a rescue craft is functioning and maintained as specified in the SOLAS Training manual			適當使用煙火、糧食、水與信號令人滿意 <i>Proper use of pyrotechnics, food, water and signaling equipment is satisfactorily demonstrated</i>	待 15.5.1 到 15.5.12 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料
.1	證明瞭解在求生筏艇上所需之法定設備及其正確之使用 Demonstrate an understanding of statutory equipment required in survival craft and its correct use		施訓者完成認可後簽名押日期		如果對學員動作不滿意，應(擇日)重做到滿意再簽署。
.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_____					
.12	協助救生艇引擎之例行保養					

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16	<p align="center">適任 Competence : 在船上應用醫療急救 Apply medical first aid on board ship</p>		<p align="center">評估標準 Criteria for Evaluation</p>	<p align="center">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)</p>
16.1	<p>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</p>		<p>經證明其行動符合國際醫療 急救指南所接受之建議 <i>The actions demonstrated are in compliance with accepted recommendations given in international medical first aid guidance</i></p>	<p>待 16.1.1 到 16.1.4 完 成， 由輪機長或大管輪簽署 並押上日期簽署者 必須在附件基本資料處 留下資料</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>參與海上急救演練 Participate an emergency first aid drill at sea</p>	<p align="center">施訓者完成認可後 簽名押日期</p>	<p align="center">如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>	
.2	<p>瞭解基本之急救原則 Understand the first aid principles : 止血的處置 Stopping bleeding</p>			
.3	<p>窒息/溺水的處置 Treatment of suffocation/drowning</p>			
.4	<p>安置意外受傷者於康復姿勢中 Placing casualty in the recovery position</p>			

16.2	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>	待 16.2.1 到 16.2.2 完成， 由輪機長或大管輪簽署 並押上日期簽署者 必須在附件基本資料處 留下資料			
.1	說明如何處置休克患者 To know 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					
16.3	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>	待 16.3.1 到 16.3.5 完成， 由輪機長或大管輪簽署 並押上日期簽署者 必須在附件基本資料處 留下資料			
.1	敘述處置電擊意外傷害的程序 State procedure for dealing with a casualty of electric shock	施訓者完成認可後 簽名押日期	如果對學員動作不滿意，應(擇日)重做到滿意再簽署。			
.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					
17	<p style="text-align: center;">適任 Competence : 運用領導統御與團隊合作技巧 Application of leadership and team working skills</p>	<p style="text-align: center;">評估標準 Criteria for Evaluation</p>	<p style="text-align: center;">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)</p>			
17.1	<p>團隊角色扮演 Plays team role</p>	<p>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</p> <p><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></p>	<p style="color: red;">待 17.1.1 到 17.1.7 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</p>			

	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	施訓者完成認可後 簽名押日期		如果對學員動作不滿意，應(擇日)重做到滿意再簽署。
.2	積極參與涉及不同職級的工作會議 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	檢查自己理解情況並分享團隊成員 Check own understanding of situation is shared by other team members			

.7	積極參加不同層級任務檢討和評估 Participate actively in task review and evaluation meetings involving different ranks					
17.2	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>			待 17.2.1 到 17.2.5 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料	
.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	施訓者完成認可後 簽名押日期		如果對學員動作不滿意，應(擇日)重做到滿意再簽署。		
.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					
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18	<p align="center">適任 Competence : 操作安全管理需求 Contribute the Safety of personnel and ship</p>		<p align="center">評估標準 Criteria for Evaluation</p>	<p align="center">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)</p>
18.1	<p>保持安全管理的標準且能保持工作的安全、合法、有效率的適任能力 Maintain safety management standard and Maintain the Competence of safe, legal and effective working practices</p>		<p>操作經證明係有效並符合可適用之規則 <i>Operations are demonstrated to be effective and in accordance with applicable rules</i></p>	<p>待 18.1.1 到 18.1.4 完成，由輪機長或大管輪簽署並押上日期簽署者必須在附件基本資料處留下資料</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 improve</p>	<p align="center">科目已完成 Task completed 施訓者簽名/日期 Instructor (Signature/Date)</p>
.1	<p>在船上工作時需展示，能夠保持健康、個人和其他人的安全與環保標準的能力 Enable to maintain the health and safety of oneself and of others, and environmental standards, when carrying out work activities on board ship</p>		<p align="center">施訓者完成認可後 簽名押日期</p>	<p align="center">如果對學員動作不滿意，應(擇日)重做到滿意再簽署。</p>

.2	<p>能夠計劃，組織和監控工作之進行並保持適宜的工作環境確保在船上工作符合船隊要求，安全、健康、符合組織和法規的要求，得以實踐工作和環保標準能力。</p> <p>Enable to plan, organize and monitor work activities, and maintain suitable work conditions, ensuring that on board working practices meet the requirements of the vessel, and are conducted safely and conform to organizational and legal requirements for health, safety, working practices and environmental standards.</p>					
.3	<p>展示管理軟硬體資源（設備，材料，服務和供應）的能力以便完成在責任範圍內的計畫與工作</p> <p>Enable to manage the physical resources (equipment, materials, services and supplies) required to carry out planned activities in your area of responsibility</p>					
.4	<p>針對本船設備描繪方塊圖說明如何由零(一旦電力全然失效時)建立整船電力系統</p> <p>Sketch a block diagram showing how to build up electrical power from Zero level (once total electrical power failure) according to current ship equipment.</p>					

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.
- (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：閥(NRV, SDNR等)、遙控、或緊急控制及其它配置。辨認壓力洩壓閥、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). 艙積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。

Summarize 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-電技員 SECTION 9 TASK SUMMARY CHART-ETO

本概要表之目的在提供你、貴公司及貴船舶輪機長與甲級船員一種指南，以持續檢查你在第六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。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' CE and officers with a guide and continuous check on the numbers of tasks or duties listed in Section 6 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.

專長 Function: 操作級-電機、電子學和控制系統的運作

ELECTRICAL, ELECTRONIC AND CONTROL ENGINEERING AT THE OPERATIONAL LEVEL

1. 適任 Competence: 對電機、電子與控制系統操作之監測 Monitor the operation of electrical, electronic and control systems.

1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	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
1.1.6.2	1.1.6.8													
1.2.10	1.2.11	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	1.3.11	1.4.1	1.4.2
1.4.3	1.4.4	1.4.5	1.4.6	1.4.7	1.4.8	1.4.9	1.4.10	1.4.11	1.5.1	1.5.2	1.5.3	1.5.4	1.5.5	1.5.6
1.5.7	1.5.8	1.5.9	1.5.10	1.6.1	1.6.2	1.6.3	1.6.4	1.6.5	1.6.6	1.6.7	1.6.8	1.6.9	1.6.10	1.6.11
1.6.12	1.6.13	1.7.1	1.7.2	1.7.3	1.7.4	1.7.5	1.7.6	1.7.7	1.7.8	1.7.9	1.8.1	1.8.2	1.8.3	1.8.4

1.8.5	1.8.6	1.8.7	1.8.8	1.8.9	1.8.10	1.8.11	1.8.12	1.8.13	1.9.1	1.9.2	1.9.3	1.9.4	1.9.5	1.10.1
1.10.2	1.10.3	1.10.4												

2.適任 Competence: 操作推進系統和輔機自動控制運作之監測 Monitor the operation of automatic control systems of propulsion and auxiliary machinery

2.1.1	2.1.2	2.1.3	2.1.4	2.1.5	2.1.6	2.1.7	2.1.8	2.1.9	2.1.10	2.2.1	2.2.2	2.2.3	2.2.4
2.2.5	2.2.6	2.2.7	2.2.8	2.2.9	2.2.10	2.2.11							

3.適任 Competence: 操作發電機與配電系統 Operate generators and distribution systems

3.1.1	3.1.2	3.1.3	3.1.4	3.1.5	3.1.6	3.1.7	3.1.8	3.1.9

4.適任 Competence: 操作與保養超過 1000 伏特高電壓動力系統 Operate and maintain power systems in excess of 1,000 Volts

4.1.1	4.2.1	4.2.2	4.2.3	4.2.3	4.2.4

5.適任 Competence: 操作電腦及網路系統 Operate Computer and Net work on ship

5.1.1	5.1.2	5.1.3	5.1.4	5.1.5	5.1.6	5.1.7

6. 適任 Competence: 能以書面及口頭方式使用英語 Use English in written and oral form

6.1.1	6.1.2	6.1.3	6.1.4	6.1.5	6.2.1	6.2.2	6.2.3	6.2.4

7. 適任 Competence: 能使用船上對內部聯絡系統 Use internal communication systems

7.1.1	7.1.2	7.1.3	7.1.4	7.1.5	7.1.6	7.1.7

專長 Function: 操作級-保養及維修

MAINTENANCE AND REPAIR AT THE OPERATIONAL LEVEL

8. 適任 Competence: 保養及維修電機和電子設備和控制系統 Maintenance and repair of electrical and electronic equipment

8.1.1	8.1.2	8.1.3	8.1.4	8.1.5	8.1.6	8.1.7	8.2.1	8.2.2	8.2.3	8.2.4	8.2.5	8.2.6	8.2.7	8.2.8
8.2.9	8.2.10	8.2.11	8.2.12	8.2.13	8.2.14	8.2.15	8.3.1	8.3.2	8.3.3	8.3.4	8.3.5	8.3.6	8.3.7	8.3.8
8.3.9	8.3.10	8.4.1	8.4.2	8.4.3	8.4.4									

9. 適任 Competence: 保養及維修主推力系統和輔機的自動控制系統 Maintenance and repair of electrical and electronic equipment of main propulsion and auxiliary machinery

9.1.1	9.1.2	9.1.3	9.1.4	9.1.5	9.1.6	9.1.7	9.1.8	9.1.9

10.適任 Competence: 保養及維修船橋航海儀器和通信系統 Maintenance and repair of bridge navigation equipment and ship communication systems

10.1.1	10.1.2	10.1.3	10.1.4	10.1.5	10.1.6	10.1.7	10.1.8	10.1.9	10.1.10	10.1.11	10.1.12	10.1.13	10.1.14	10.1.15

11.適任 Competence: 保養及維修甲板機械及裝卸貨裝置之電機、電子和控制系統

Maintenance and repair of electrical, electronic and control systems of deck machinery and cargo-handling equipment

11.1.1	11.1.2	11.1.3	11.1.4	11.1.5	11.1.6	11.1.7	11.1.8	11.1.9	11.1.10	11.1.11	11.1.12

12.適任 Competence: 保養及維修住艙生活裝置 Maintenance and repair of control and safety systems of hotel equipment

12.1.1	12.1.2	12.1.3	12.1.4

專長 Function:操作級-控管船舶操作級船上人員照管

Controlling the operation of the ship and care for persons on board at operation and support level Other ability related

13.適任 Competence: 確保符合防止污染要求 Ensure compliance with pollution prevention requirements

13.1.1	13.1.2	13.1.3	13.1.4	13.1.5	13.1.6	13.1.7	13.1.8	13.1.9	13.1.10	13.1.11	13.2.1	13.2.2	13.2.3	13.2.4
13.3.1	13.3.2	13.4.1	13.4.2	13.5.1	13.5.2	13.6.1	13.6.2	13.6.3	13.6.4	13.6.5				

14. 適任 Competence: 船上防火、控制火災及滅火 Prevent, control and fight fires on board

14.1.1	14.1.2	14.1.3	14.1.4	14.1.5	14.2.1	14.2.2	14.3.1	14.3.2	14.4.1	14.4.2	14.4.3	14.4.4	14.4.5	14.4.6
14.4.7	14.4.8	14.4.9	14.4.10	14.4.11	14.5.1	14.5.2	14.5.3	14.5.4	14.5.5	14.5.6	14.6.1	14.6.2	14.6.3	

15. 適任 Competence: 操作救生設備 Operate life-saving appliances

15.1.1	15.1.2	15.1.3	15.1.4	15.1.5	15.1.6	15.1.7	15.1.8	15.1.9	15.2.1	15.2.2	15.2.3	15.2.4	15.2.5	15.2.6	15.2.7
15.2.8	15.3.1	15.4.1	15.5.1	15.5.2	15.5.3	15.5.4	15.5.5	15.5.6	15.5.7	15.5.8	15.5.9	15.5.10	15.5.11	15.5.12	

16. 適任 Competence: 在船上應用醫療急救 Apply medical first aid on board ship

16.1.1	16.1.2	16.1.3	16.1.4	16.2.1	16.2.2	16.3.1	16.3.2	16.3.3	16.3.4	16.3.5

17. 適任 Competence: 運用領導統御與團隊合作技巧 Application of leadership and team working skills

17.1.1	17.1.2	17.1.3	17.1.4	17.1.5	17.1.6	17.1.7	17.2.1	17.2.2	17.2.3	17.2.4	15.2.5

18. 適任 Competence: 操作安全管理需求 Contribute the Safety of personnel and ship

18.1.1	18.1.2	18.1.3	18.1.4

若該船員先於 A 輪服務 315 日，後於 B 輪服務 53 日。
 (1) 訓練紀錄簿於 A 輪填寫完成，由 A 輪輪機長填寫總結報告。
 (2) 訓練紀錄簿分別於 A 輪及 B 輪填寫完成，則由 B 輪輪機長填寫總結報告。

第十部份-總結報告 Section 10- Final Report(正本) 申請操作級電技員適任證書

學員姓名 Full Name	如前	出生年月日 Date of Birth	如前	船員服務手冊字號 Seaman's Registration	如前
適任證書等級、級別及編號 Capacity of competency certificate and No.	不需填寫	適任證書有效期限 Valid Until.	不需填寫	紀錄簿起迄時間 Period of Record book	起 From 迄 To 訓練結 束日期，不得晚於輪機 長簽署總結報告之日 期
<p>輪機長評定意見 Evaluating competence by master 此欄由最後經手輪機長填寫 輪機長意見內容應含「適任」、「勝任」或「建議發證」 (Qualified, Competent, Recommend for promotion)等類似詞語。</p>					
			簽名 Signature	日期 Date	船章 
<p>船公司評定意見 Evaluating competence by company 此欄由最後經手公司填寫 公司意見務必寫明「建請或薦舉航政機關發證」、 「Recommend for promotion」</p>					
			簽名 Signature	日期 Date	公司章 
<p>航政機關評定意見 Evaluating competence by administration 由官方填寫部分(請勿填入任何文字)</p>					
			簽名 Signature	日期 Date	蓋戳章 Stamp 

註：請使用複寫紙製作副本。

紀錄簿編號 (Series No) : ETOR

禁止複製

