

中國驗船中心

CR CLASSIFICATION SOCIETY



CR Annual Report 2017



台北總部 HEAD QUARTER

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中國驗船中心 品質政策

增進船舶及海上人命安全，防止船舶對海洋造成污染

CR CLASSIFICATION SOCIETY



財團法人中國驗船中心
CR CLASSIFICATION SOCIETY

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CR

CR簡介

鑒於船舶檢驗與航行安全息息相關，世界各航運大國均設立本國驗船機構以執行船舶之嚴格檢驗。我航運業、保險業及造船業各界有識之士，為求航業蓬勃發展，幾經磋商籌劃，始於民國40年2月15日在台北市成立「社團法人中國驗船協會」，英文名稱為CR Classification Society(former name: China Corporation Register of Shipping), 簡稱CR。復於民國67年7月1日接受民間捐助，改組並更為「財團法人中國驗船中心」。

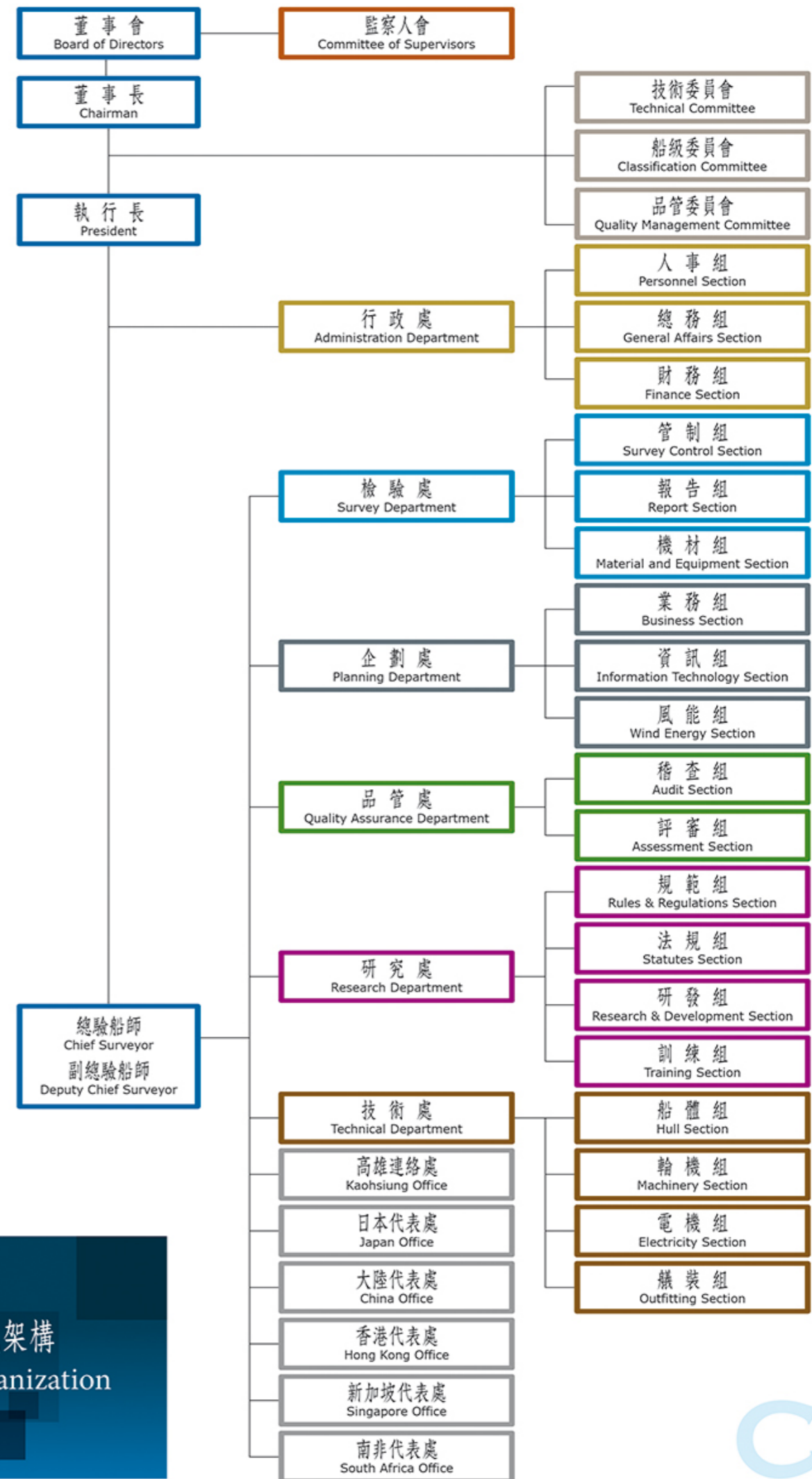
本中心為一民間純技術性，不以營利為目的之服務事業機構，其目標為提供優良之技術、高度之效率與熱忱之服務。組織型態(如下表)及工作內涵，一如世界各大驗船機構，其服務工作據點遍及世界各重要港口，為船東、造船廠及機材製造廠商提供最便捷之服務。



Brief Introduction of CR

As survey of ships and safety of navigation are closely related, countries throughout the world engaged in shipping activities have their own classification societies in order to conduct ship surveys in a strict manner. A good number of people of insight from the shipping industry, insurance industry, and shipbuilding industry in Taiwan share the same views on the importance of establishing this country's own classification society for the prosperity of its shipping industry. After repeated negotiations and adequate preparation, "CR Classification Society" (former name: China Corporation Register of Shipping), also know as CR, was founded on February 15, 1951, in Taipei City. On July 1, 1978, it was restructured after receiving financial contributions from non-governmental sources and hence changed its Chinese name.

CR is a non-governmental and nonprofit organization rendering technical services. The purpose of its work is to provide excellent techniques, high efficiency and cordial services. Its structure (see the following Organization Chart) and scope of work are similar to those of the other leading classification societies in the world, and it has a worldwide network of branch offices in important foreign ports, rendering quick services to shipowners, shipyards, and manufacturers of materials and equipment.



董事長感言



航運市場經歷了2016年的低迷，在2017年有了短暫復甦的喘息機會，不但運費上調，長久以來的過剩產能也因新船訂單萎縮及現有船隻的拆除而暫時舒緩。展望2018年的航運走勢，大型航商持續尋求擴大市佔率，船東希望藉由提升運能效率以提高營利，並透過資源集中與客源共享的理念，降低交易成本，因此預估企業併購以及策略聯盟，仍將會是2018年航運市場的主旋律。而在這樣動盪的市場背景下，中國驗船中心堅守初衷，自我提升，為台灣航運界提供最高品質之服務，竭盡所能，全力以赴。

回顧2017年，本中心為維護本國航運聲譽，執行強化國輪管制檢查作業精進作為，與船東合作，施行預防性加強檢驗，以維持本中心於東京備忘錄之港口國管制紀錄之高表現度成績，同時提升我國籍船舶成績至白名單。同時，因應國艦國造之政策，本中心提供我國海軍造艦規範的相關服務，並透過論壇與座談會等，與包括政府單位、海軍、造船廠與設備廠商等，討論與說明國艦國造的檢驗測量相關實務工作，確立本中心在國艦國造政策中，所提供船舶與裝備機材之第三方驗證服務。

在離岸風能方面，本中心身為經濟部標準檢驗局所領導的風能檢驗證團隊成員，於2017年與國內多家離岸風電開發商簽訂合作備忘錄，針對離岸風場專業融資之盡職調查，本中心將扮演技術盡職調查評估之角色，此外為了提供國內業者海事保證鑑定(Marine Warranty Survey)服務，與國際驗證機構簽署合作協議，除將安排專業訓練外，也將由雙方於我國共同推展離岸風能之海事保證鑑定服務。



而為了彌補歐洲與我國離岸風能環境之差異，本中心研發組特別針對台灣地區特有的地震與颱風現象作分析，並建立未來於台灣地區離岸風能於颱風與地震之影響下的可靠性評估能力。

未來，本中心將持續發展船舶檢驗服務、海軍造艦規範與第三方驗證服務，以及離岸風能產業之驗證服務，憑藉著過去數十年所累積之專業經驗，加上與國際專業組織之合作，持續與國內產業討論與溝通，以期本中心能不斷自我提升，提供國內各產業最優質的服務，以不負交通部、經濟部、國內航商與離岸風能開發商，以及各相關單位之期許。

中國驗船中心
董事長

趙國標

Chairman's Speech

The shipping market suffered from downturn in 2016, and finally had a chance to revive in 2017. The shipping fees have risen, and the overcapacity has also relieved because of shrinkage of newbuilding orders and demolition of current vessels. To outlook 2018, big shipowners continue to enlarge market share, and try to obtain more revenue by promoting operation efficiency. They also seek for lowering transaction cost through concentration of resources and share of customers. As a result, it is estimated that corporation merge and strategy alliance will be the mainstream in 2018. In this turbulent market, CR will stick to original intention, promote ourselves, and devote every effort to provide the highest quality services to Taiwanese shipping industry.

Looking back to 2017, in order to protect reputation of R.O.C. flag, advance R.O.C.-flagged vessels to White List, and maintain CR's High Performance grade in Tokyo MOU, CR has cooperated with shipowners to carry out enforced management measures and conduct preventive enforcement surveys. At the same time, in response to navy new shipbuilding and force modernization program, CR provides shipbuilding rules to R.O.C. Navy. CR has discussed and explained inspection works with Administration, Navy, shipyards, and equipment manufacturers in some symposiums. This ensures CR will be the third party to provide inspection for vessels and equipment in navy new shipbuilding and force modernization program.

In view to offshore wind energy, CR is a member of offshore wind energy inspection and certification team led by Bureau of Standards, Metrology & Inspections, M.O.E.A. R.O.C. In 2017, CR has signed MOU with many domestic offshore wind energy developers. CR will be the role of due diligence evaluation. Besides, in order to provide Marine Warranty Survey services, CR has signed cooperation MOU with international certified institutes. The professional training will be applied to CR personnel, and we will also promote due diligence in Taiwan. For making up the differences for wind farm environment between Europe and Taiwan, Our R&D section has analyzed earthquake and typhoon which are particular in Taiwan, and established reliable ability for evaluating wind energy farm in Taiwan influenced by earthquake and typhoon.

In the future, CR will continue to develop vessel inspection services, Navy shipbuilding rules, the third party inspection services, and wind farm inspection services. By means of professional experiences accumulated for many decades, and cooperation with international institute, CR will continue to discuss and communicate with domestic industries. It is hoped that CR will endlessly promote ourselves to provide excellent services in response to support of Ministry of Transportation and Communications, Ministry of Economic Affairs, domestic shipowners, offshore wind farm developers, and relevant sections.

Donald Chao, Chairman
CR Classification Society



CR

董事會 Board of Directors

董事會係本中心最高管理階層，共有董事23人，監察人3人，第13屆董事會任期自2015年5月18日起至2018年5月17日止，為期三年，董事長由董事會遴選之。第13屆董事會之董事及監察人如下：

The Board of Directors, which has a total of 23 directors and 3 supervisors, is the highest decision-making body of CR. Their term of service is 3 years starting May 18, 2015. The Chairman elected from among the directors is Mr. Kuo-Liang Chao. The list of the elected directors and supervisors is given below:

董事 Director	現任職務 Position
趙國樑 Kuo-Liang Chao	中國驗船中心董事長 Chairman, CR Classification Society
范植谷 Chih-Ku Fan	交通部政務次長 Political Deputy Minister, Ministry of Transportation and Communications R.O.C.
陳進生 Jim-Sheng Chen	交通部航政司司長 Director of Department of Navigation and Aviation, Ministry of Transportation and Communications R.O.C.
謝謂君 Wei-Chun Hsieh	交通部航港局局長 Director-General of Maritime and Port Bureau, Ministry of Transportation and Communications R.O.C.
黃肇嘉 Chao-Chia Huang	行政院海岸巡防署參事 Counselor, Coast Guard Administration, R.O.C.
謝志堅 Chih-Chien Hsieh	陽明海運股份有限公司董事長 Chairman, Yang Ming Marine Transport Corporation
劉文慶 Wen-Ching Liu	台灣航業股份有限公司董事長 Chairman, Taiwan Navigation Co., Ltd.
吳俊龍 Chun-Lung Wu	中鋼運通股份有限公司董事長 Chairman, China Steel Express Corporation
張正鏞 Anchor Chang	長榮海運股份有限公司董事長 Chairman, Evergreen Marine Corporation
王文潮 Wilfred Wang	台塑海運股份有限公司董事長 Chairman, Formosa Plastics Marine Corporation
陳柏廷 Po-Ting Chen	萬海航運股份有限公司董事長 Chairman, Wan Hai Lines Ltd.
王書吉 C. K. Ong	裕民航運股份有限公司總經理 General Manager, U-Ming Marine Transport Corporation
藍俊昇 James Lan	四維航運股份有限公司顧問 Consultant, Shih Wei Navigation Co., Ltd.
張瑞宗 Ray-Chung Chang	中美和石油化學股份有限公司董事長 Chairman, China American Petrochemical Co., Ltd.
黃健強 Edward Huang	台灣水泥股份有限公司資深副總經理兼遠和航運公司董事 Senior Vice President, Taiwan Cement Corporation
周志明 Chih-Ming Chou	台灣國際造船股份有限公司副總經理 Vice President, CSBC Corporation, Taiwan
郭義隆 I-Lung Guo	藍海海運及松光航業董事長 Chairman, OceanLance Maritime Co., Ltd. and Biggin Shipping Corporation
彭士孝 William S. H. Peng	中國航運股份有限公司副董事長 Vice Chairman, Chinese Maritime Transport Ltd.
許志堅 Chih-Chien Hsu	益利航運股份有限公司董事長 Chairman, Eddie Steamship Co., Ltd.
陳燦煌 Steve T. H. Chen	富邦產物保險股份有限公司董事長 Chairman, Fubon Insurance Co., Ltd.
宋道平 Charles Sung	台灣產物保險股份有限公司總經理 General Manager, Taiwan Fire & Marine Insurance Co., Ltd.
蕭捷明 Jimmy C. Hsiao	明台輪船股份有限公司總經理 General Manager, MingTai Navigation Co., Ltd.
劉英如 Ying-Ru Liu	中國驗船中心執行長 President, CR Classification Society
監察人 Supervisor	現任職務 Position
李秋嫻 Chiu-Yen Li	交通部統計處副處長 Deputy Director of Department of Statistics, Ministry of Transportation and Communications, R.O.C.
魏家祥 James C. H. Wei	兆豐產物保險股份有限公司總經理 President, Chung Kuo Insurance Co., Ltd.
程采禾 Elizabeth T. H. Cheng	能源航運股份有限公司董事長 Chairman, Energy Shipping Co., Ltd.

船級委員會 Classification Committee

(任期自2015年5月18日起至2018年5月17日止，為期三年)

職別 Title	姓名 Name	現任職務 Position
主任委員 Chairman	盧峯海 Frank F. H. Lu	中國驗船中心船級委員會主任委員 Chairman of Classification Committee, CR Classification Society
副主任委員 Vice-Chairman	陳 籐 T. Chen	世邦海運船舶管理處董事長特助 Special Assistant to Chairman of Ship Management Dept., TVL Marine Company Limited
委員 Member	葉陳輝 C. H. Yeh	光明海運股份有限公司董事長 Chairman, Kuang Ming Shipping Corporation
委員 Member	賴永智 Y. C. Lai	中鋼運通股份有限公司總經理 President, China Steel Express Corporation
委員 Member	高雅平 Y. P. Kao	裕民航運股份有限公司副總經理 Vice President, U-Ming Marine Transport Corporation
委員 Member	陳 嘉 Charles Chen	陽明海運股份有限公司副總經理 Vice President, Yang Ming Marine Transport Corporation
委員 Member	謝敏雄 Alan Shieh	遠和航運股份有限公司總經理 President, Ta-Ho Maritime Corporation
委員 Member	張豐州 F. J. Chang	新興航運股份有限公司總經理 General Manager, Sincere Navigation Corporation
委員 Member	黃戊辰 W. C. Wu	台灣中油股份有限公司海技組組長 Section Manager, Marine Technique & Safety Section, CPC Corporation, Taiwan
委員 Member	黃崇榮 Tsun-Yung Huang	長榮海運股份有限公司造船部副總經理 Acting Executive Vice President of Shipbuilding Department, Evergreen Marine Corporation
委員 Member	何尤彥 You-Yen Ho	四維航業股份有限公司協理 Assistant Vice President, Shih Wei Navigation Co., Ltd.
委員 Member	張傑德 Jie-De Chang	台灣國際造船股份有限公司副總經理 Vice President, CSBC Corporation, Taiwan
委員 Member	曹祥超 H. C. Tsao	慧洋海運股份有限公司技術長 Chief Technology Officer, Wisdom Marine Lines S.A.
委員 Member	賴金池 C. C. Lai	台塑海運股份有限公司協理 Assistant Vice President, Formosa Plastics Marine Corporation
委員 Member	林炳圻 Jeong-Shin Lin	萬海航運股份有限公司資深協理 Senior Assistant Vice President, Wan Hai Lines Ltd.
委員 Member	林家淦 C. K. Lin	明台輪船股份有限公司副總經理 Vice President, MingTai Navigation Co., Ltd.
委員 Member	黃崇智 Eddie C. Huang	協榮航業股份有限公司董事 Director, Glory Navigation Co., Ltd.
委員 Member	褚世傑 Dino S. J. Chuu	中國航運股份有限公司海運部協理 Vice President, Shipping Division, Chinese Maritime Transport Ltd.
委員 Member	馬耀湘 Yao-Shiang Ma	新健海運公司副總經理 Vice President, Hsin Chien Marine Co., Ltd.
委員 Member	李慶超 Steve Lee	中國驗船中心船級委員會委員 Member of Classification Committee, CR Classification Society
委員 Member	謝承宏 Arthur Hsieh	東森國際公司協理 Assistant Vice President, Eastern Media International Corporation



職別 Title	姓名 Name	現任職務 Position
主任委員 Chairman	王偉輝 W. H. Wang	國立臺灣海洋大學教授 Professor, National Taiwan Ocean University
副主任委員 Vice-Chairman	鄧運連 Y. L. Teng	中國驗船中心技術委員會副主任委員 Vice-Chairman of Technical Committee, CR Classification Society
委員 Member	劉詩宗 Shy-Tzong Liou	台灣港務股份有限公司基隆分公司總經理 President, Port of Keelung, Taiwan International Ports Corporation
委員 Member	陶自勳 Zhi Li Tao	交通部航港局船舶組組長 Director, Vessel Management Division, Maritime and Port Bureau, MOTC
委員 Member	韓碧祥 P. H. Han	中信造船股份有限公司董事長 Chairman, Jong Shyn Shipbuilding Co., Ltd.
委員 Member	洪錦榮 C. J. Hung	協同造船廠股份有限公司董事長 Chairman, Hsieh Tung Shipbuilding Co., Ltd.
委員 Member	林福堂 F. T. Lin	台灣國際造船股份有限公司副總經理 Vice President, CSBC Corporation, Taiwan
委員 Member	林鴻志 Hong-Jyh Lin	財團法人船舶暨海洋產業研發中心副執行長 Vice President, Ship and Ocean Industries R&D Center
委員 Member	戴聖堅 James S. C. Tai	東方海外貨櫃航運有限公司總經理 President, Orient Overseas Container Line Limited
委員 Member	桑滿林 Man-Lin Sang	沈滿管理顧問有限公司執行副總經理 Executive Vice General Manager, Yeun Mann Ship Management & Consultancy Ltd.
委員 Member	何永順 Jackie Ho	陽明海運股份有限公司協理 Assistant Vice President, Yang Ming Marine Transport Corporation
委員 Member	黃守真 Sheldon Huang	龍德造船工業股份有限公司董事長 Chairman, Lung Teh Shipbuilding Co., Ltd.
委員 Member	林頂光 D. K. Lin	台灣中油股份有限公司儲運處造船組組長 Section Manager, Shipbuilding Section, CPC Corporation, Taiwan
委員 Member	鄭添元 T. Y. Cheng	中國鋼鐵股份有限公司冶金規範及試驗組組長 Manager of Metallurgical Specification and Testing Section, China Steel Corporation
委員 Member	蔡進發 J. F. Tsai	國立臺灣大學教授 Professor, National Taiwan University
委員 Member	胡信正 H. C. Hu	國防科技發展推行會產業合作發展會報計畫主持人



品管委員會 Quality Management Committee (任期自2015年5月18日起至2018年5月17日止，為期三年)

職別 Title	姓名 Name	現任職務 Position
主任委員 Chairman	許洪烈 H. L. Hsu	中華民國輪船商業同業公會全國聯合會秘書長 Secretary General, National Association of Chinese Shipowners
副主任委員 Vice-Chairman	曹志毅 Chih-I T'sao	中華民國品質學會理事 Director, Chinese Society for Quality
委員 Member	黃姿婷 Tzu-Ting Huang	交通部航港局專門委員 Specialist, Maritime and Port Bureau, MOTC
委員 Member	黃文哲 W. C. Huang	陽明海運股份有限公司副總經理 Vice President, Yang Ming Marine Transport Corporation
委員 Member	林沛樵 Pei-Chiao Lin	長榮海運股份有限公司副總經理 Executive Vice President, Evergreen Marine Co., Ltd.
委員 Member	陳木川 M. C. Chen	四維航業股份有限公司副總經理 Vice President, Shih Wei Navigation Co., Ltd.
委員 Member	陳志宏 Chih-Horng Chen	台灣航業公司工務部協理 Assistant Vice President of Technical Department, Taiwan Navigation Co., Ltd.
委員 Member	劉守麟 Shou-Lin Liu	裕民航運股份有限公司船務處經理 Manager, Marine Department, U-Ming Marine Transport Corporation
委員 Member	俞克維 K. W. Yu	高雄海洋科技大學教授 Professor, National Kaohsiung Marine University
委員 Member	林哲宏 Jei-Horng Lin	台灣中油股份有限公司儲運處航管組組長 Section Manager, Marine Management Section, CPC Corporation, Taiwan
委員 Member	陳火財 H. T. Chen	安生理算檢定公司總經理 President, Overseas adjusters and Surveyors Co., Ltd.
委員 Member	林彬 B. Lin	臺灣海洋大學教授 Professor, National Taiwan Ocean University

據點擴展

為擴展海外據點，加強對船東之服務，CR於2009年9月11日在新加坡正式成立代表處，2010年6月4日在南非正式成立代表處，由楊沛光擔任駐南非代表。CR總部及各代表處的連絡方式如下：

Network Expansion

In order to expand our overseas network and render better services to shipowners, CR officially established the Singapore Office on September 11, 2009 and the South Africa Office on June 4, 2010, represented by Mr. P. K. Yang. CR Operation Center and other offices can be reached in the following ways:



台北總部 Head Quarter

104 台北市中山區南京東路3段103號8樓
8th Fl., No.103, Sec. 3, Nanking E. Rd., Jhongshan Dist., Taipei, 104, Taiwan R.O.C.
Tel: +886-2-2506-2711 Fax: +886-2-2507-4722
E-mail: cr.tp@crclass.org

高雄連絡處 Kaohsiung Office

802 高雄市苓雅區海邊路31號26樓之3
26th Fl.-3, No. 31, Haibian Rd., Lingya Dist., Kaohsiung, 802, Taiwan R.O.C.
Tel: +886-7-330-5617 Fax: +886-7-330-6295
E-mail: cr.kh@crclass.org

日本代表處 Japan Office

〒650-0031 日本神戸市中央區東町116-1シテイライフ三宮ビル9階
9F., No. 116-1, Higashimachi, Chuo-ku, Kobe 〒650-0031, Japan
Tel: +81-78-333-8515 Fax: +81-78-333-8506
E-mail: crskobe@silver.ocn.ne.jp

大陸代表處 China Office

廣州市經濟技術開發區青年路東園二街明珠廣場1603室
Rm. 1603, Pearl Garden Square, Qingnian Rd., Guangzhou Economic & Technological Development Dist., Guang Dong Province, China.
Tel / Fax: +86-20-3207-0330
Mobile: +86-134-162-52949
E-mail: cr.cn@crclass.org

香港代表處 Hong Kong Office

Tel: +852-5394-0874
E-mail: cr.hk@crclass.org

新加坡代表處 Singapore Office

2B, Hong San Walk, #17-06, Singapore 689048
Tel: +65-63101034 Fax: +65-68935997
E-mail: cr.sg@crclass.org

南非代表處 South Africa Office

P. O. Box 298, Plumstead 7801, Cape Town, South Africa 23, Manson Close, Bergvliet Cape Town, South Africa
Tel: +27-21-7125382 Fax: +27-862736840
Mobile: +27-82-8813690
E-mail: frank7yang@hotmail.com



建造中入級 Classification of Ships During Construction

2017年建造中入級CR的船舶共計有26艘，分列如下：

There were a total of 26 ships classed by CR during construction in 2017 as listed below:

船東 Owner	造船廠 Shipyard	建造地點 Place	船型 Ship type	艘數 Number
長榮海運 EVERGREEN MARINE CO., LTD.	台船 CSBC	台灣 TAIWAN	2,800TEU 貨櫃船 2,800TEU Container Ship	4
達和航運 TA-HO MARITIME CORPORATION	大島 OSHIMA	日本 JAPAN	83,820DWT 散裝船 83,820DWT Bulk Carrier	2
達和航運 TA-HO MARITIME CORPORATION	新來島 SHIN KURUSHIMA	日本 JAPAN	23,500DWT 水泥船 23,500DWT Cement Carrier	2
海有航運 HAI YOU SHIPPING CO., LTD.	STRETEGIC MARINE	越南 VIETNAM	40M 客船 40M Passenger Ferry	1
裕民航運 U-MING MARINE TRANSPORT CORPORATION	大島 OSHIMA	日本 JAPAN	82,000DWT 散裝船 82,000DWT Bulk Carrier	2
海岸巡防總局 COAST GUARD ADMINISTRATION, R.O.C.	置晏	台灣 TAIWAN	多功能艇 Multi-Functional Ferry	3
科技部 MINISTER OF SCIENCE AND TECHNOLOGY	台船 CSBC	台灣 TAIWAN	500GT 海洋研究船 500GT Ocean Research Boat	2
科技部 MINISTER OF SCIENCE AND TECHNOLOGY	台船 CSBC	台灣 TAIWAN	1,000GT 海洋研究船 1,000GT Ocean Research Boat	1
屏東縣衛生局 PUBLIC HEALTH BUREAU, PINGTUNG COUNTY	大舟	台灣 TAIWAN	緊急救護船 EMERGENCY Boat	1
台灣港務港勤公司 TIPC MARINE CORPORATION, LTD.	中信 JONG SHYN	台灣 TAIWAN	SRP 拖船 SRP Tug Boat	1
金廈海運 KING XIA MARINE CO., LTD.	GLOW MARINE	新加坡 SINGAPORE	鋁合金客船 Aluminum Passenger Ferry	1
中鋼運通 CHINA STEEL EXPRESS CORPORATION	台船 CSBC	台灣 TAIWAN	200,800DWT 散裝船 200,800DWT Bulk Carrier	2
台灣航業 TAIWAN NAVIGATION CO., LTD.	大島 OSHIMA	日本 JAPAN	61,670DWT 散裝船 61,670DWT Bulk Carrier	2
慧洋海運 WISDOM MARINE GROUP	AUSTAL	菲律賓 PHILIPPINE	50M 鋁合金客船 50M Passenger Ship	2

現成船入級 Classification of Existing Ships

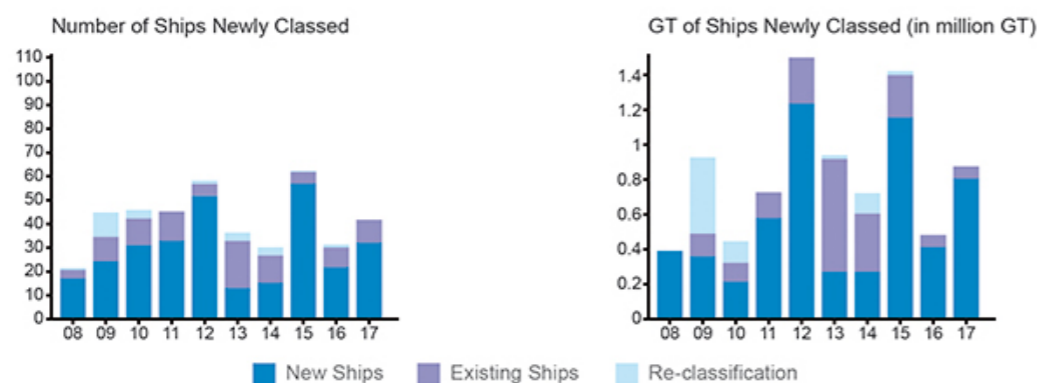
2017年現成船入級CR的船舶共計有10艘，分列如下：

There were a total of 10 existing ships classed by CR in 2017 as listed below:

船名 Ship name	船東 Owner	船旗 Flag	總噸位 GT	船型 Ship type
永康656 EC656	永康船舶股份有限公司 EVER COMFORT SHIPPING CO., LTD.	中華民國 R.O.C.	492	拖船 Tug Boat
台塑貨櫃6號 FPMC CONTAINER 6	台塑海運股份有限公司 FORMOSA PLASTICS MARINE CORPORATION	中華民國 R.O.C.	8766	貨櫃船 Container Carrier
凱旋6號 KAI SHIUAN NO.6	凱旋海運股份有限公司 KAI SHIUAN MARINE CO., LTD.	中華民國 R.O.C.	481	客船 Passenger Ship
優秀 YUSHO STELLA	泰山航運股份有限公司 PARAMOUNT NAVIGATION LIMITED	中華民國 R.O.C.	6004	一般乾貨船 General Dry Cargo Ship
通捷 CSE CLIPPER EXPRESS	中鋼運通股份有限公司 CHINA STEEL EXPRESS CORPORATION	中華民國 R.O.C.	16962	散裝船 Bulk Carrier
金平 JIN PING	引航者海運股份有限公司 NAVIGATION MARINE CO., LTD.	中華民國 R.O.C.	1997	散裝船 Bulk Carrier
國強 KUO CHANG	寶華海運股份有限公司 COASTAL NAVIGATION CO., LTD.	中華民國 R.O.C.	15095	貨櫃船 Container Carrier
永康646 EC646	永康船舶股份有限公司 EVER COMFORT SHIPPING CO., LTD.	中華民國 R.O.C.	396	拖船 Tug Boat
台北快輪 TAIPEI EXPRESS	億洋航運股份有限公司 GREAT WAGON MARINE CORPORATION	中華民國 R.O.C.	18080	駛上駛下船 Ro-Ro Cargo Ship
同暉7號 TONGYEA NO.7	同暉興業股份有限公司 TONG YEA ENTERPRISE CO., LTD.	中華民國 R.O.C.	1865	油輪 Oil Tanker

新入級船舶 Newly Classed Ships

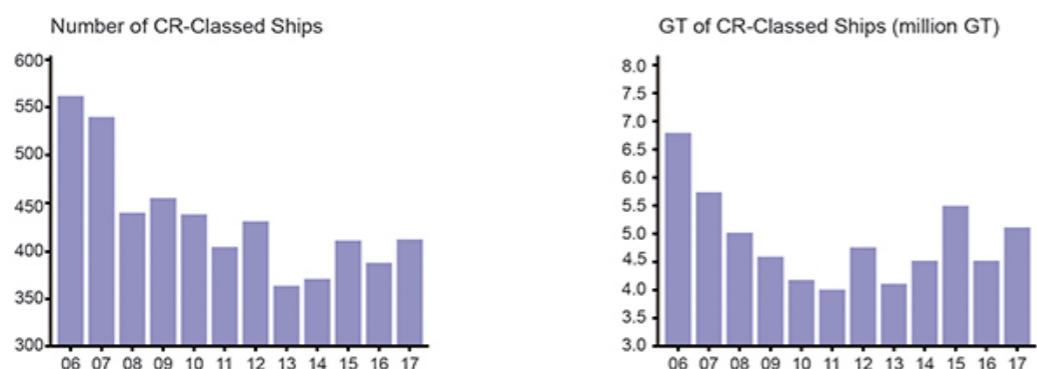
2017年經審核後正式入級的船舶有42艘共計884,515總噸，艘數為在級船舶的10.74%，其中新船入級32艘，現成船入級10艘，重新入級0艘。After careful review, a total of 42 ships with 884,515 gross tonnage were formally classed with CR in 2017. The number of ships accounted for 10.74% of the number of those already classed with CR. Among these newly classed ships, there were 32 new ships, 10 existing ships, and 0 re-classed ships.



在級船舶 Classed Ships

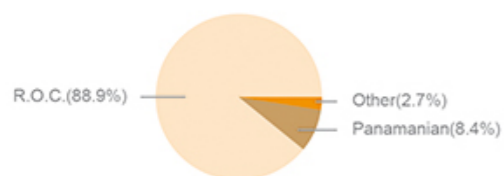
截至2017年底，維持CR船級之船舶有413艘，共計5,090,000總噸，平均船齡為13.6年。Up to the end of 2017 there were 413 ships maintaining CR class with 5,090,000 gross tonnage, and the average age of ships was 13.6 years.

歷年在級船舶艘數及總噸位 The number of CR-classed ships over the years and their gross tonnage

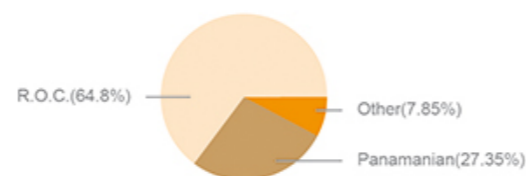


在級船舶之船旗國分析 Analysis of flag states of CR-classed ships

Breakdown of Number of CR Fleet by Flag

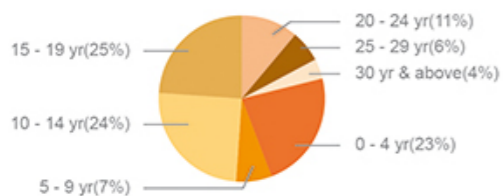


Breakdown of GT of CR Fleet by Flag

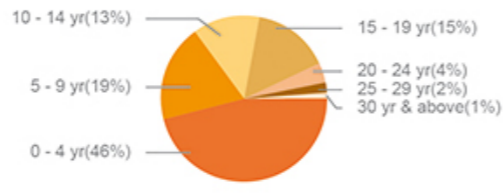


在級船舶之船齡分析 (平均船齡13.6年) Analysis of age of CR-classed ships (the average age of ships : 13.6 years)

Breakdown of Number of CR Fleet by Age

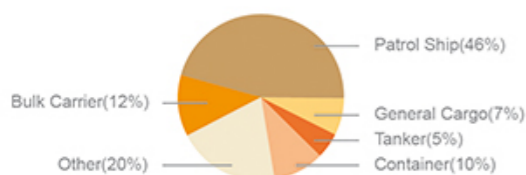


Breakdown of GT of CR Fleet by Age

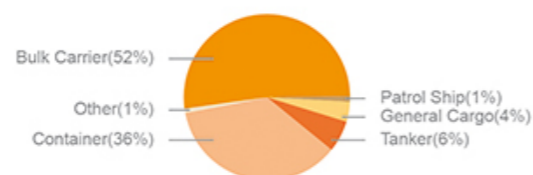


在級船舶之船型分析 Analysis of types of CR-classed ships

Breakdown of Number of CR Fleet by Ship Type



Breakdown of GT of CR Fleet by Ship Type



ISM, ISPS及MLC評鑑

2017年CR辦理航業公司及其所屬船舶申請國際安全管理章程(ISM)及國際船舶與港口設施保全章程(ISPS)及海事勞工公約(MLC)之評鑑及發證工作，共計符合文件(DOC)評鑑37家，船舶管理評鑑(SMC)58艘，國際船舶保全(ISPS)評鑑共55艘次及海事勞工公約(MLC)檢查共33艘。

ISM, ISPS & MLC Verifications

In 2017, CR conducted ISM, ISPS and MLC verification and certification work, carrying out DOC verifications for 37 companies, SMC verifications for 58 ships, ISPS verifications for 55 ships, and MLC inspection for 33 ships.



工廠認可及型式認可 Works Approval and Type Approval

2017年CR執行船舶用品工廠認可及產品型式認可共計45家88型，並執行危險品容器之檢驗業務，共計廠商32家，型式216型(包括小型207型及中型9型)。

In 2017, CR conducted works approval of 45 companies and type approval of 88 products for use on vessels, and also carried out certification of packagings for dangerous goods for 32 companies and 216 types (207 types of small packagings and 9 types of intermediate bulk containers).

CR

港口國管制

自2006年起，為改善本中心入級船舶之PSC滯留率，特制定「現成船加強檢驗及管理辦法」及「加強管制現成船入級辦法」等二辦法以加強對高齡船舶之嚴格檢驗及入級之適當設限，如今已見成效。本中心在2014-2017年東京備忘錄(TOKYO MOU)的紀錄為高績效的表現。

Port State Control

In order to improve the detention rate of CR-classed ships, since 2006 we have established the "Rules for intensifying inspection and management of existing ships" and the "Rules for controlling Classification of existing ships" as part of our effort to enhance the inspection of aged ships and to impose proper restrictions on classification of these ships. So far, this has demonstrated effectiveness. From 2014 to 2017, the performance of CR in Tokyo MOU remains at a HIGH level.



規範研究

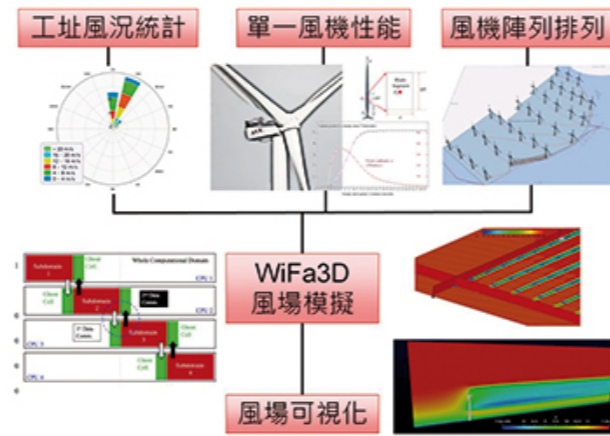
規範發展

本中心自行開發所有入級規範與認證規範，並因應最新國際法規及技術發展，每年實行規範之修訂與更新並經本中心技術委員會審查通過。目前本中心所編撰之規範有：

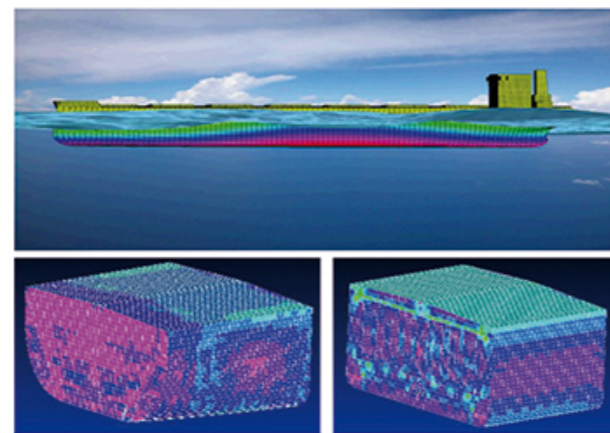
Rules Development

All the CR classification rules and certification rules are self-developed by the Society and have been revised and updated every year in response to the latest international conventions and the development of technology. In addition, the amendments of CR rules are also validated by the Technical Committee of CR. At present, we are compiling the following classification and certification rules.

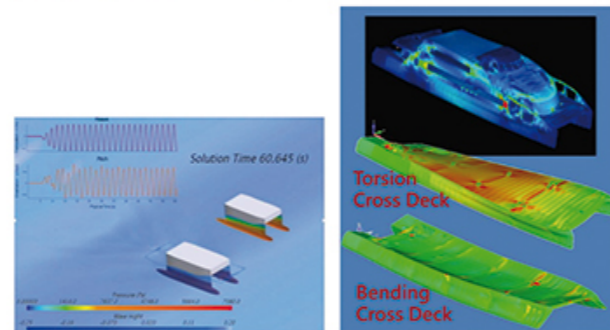
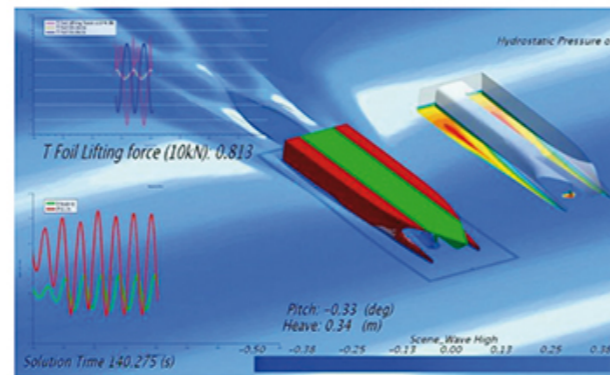
- 2018年鋼船建造與入級規範
Rules for the Construction and Classification of Steel Ships, 2018
- 2017年貨櫃建造與發證規範
Rules for the Construction and Certification of Freight Containers, 2017
- 2013年貨物裝卸設備構造與檢驗規範
Rules for the Construction and Survey of Cargo Gear, 2013
- 2018年高速船建造與入級規範
Rules for the Construction and Classification of High-Speed Craft, 2018
- 2018年鋁合金船建造與入級規範
Rules for the Construction and Classification of Aluminum Vessels, 2018
- 2018年玻璃纖維強化塑膠船建造與入級規範
Rules and Regulations for the Construction and Classification of Ships of Fibreglass Reinforced Plastics, 2018
- 2015年潛艇建造與入級規範
Rules for the Construction and Classification of Submarines, 2015
- 2016年離岸風場認證規範
Rules for the Certification of Offshore Wind Farms, 2016



離岸風場模擬程式架構與流程



全船結構分析



高速雙體船耐海性能與結構分析

政府授權 Government Authorization

CR接受交通部委託，承辦本國籍船舶之國際公約檢驗。此外，本中心亦符合IMO決議案MSC.349(92)RO Code之規定，並獲得巴拿馬、貝里斯、蒙古、柬埔寨、吉里巴斯、吐瓦魯、多米尼克等政府之授權執行各該國籍船舶之國際公約檢驗。

交通部航港局陳副局長賓權率團於2017年12月1日前來本中心，進行遊艇驗證機構之年度查核並順利完成。國家通訊傳播委員會(NCC)於2017年8月15日及11月7日順利完成對本中心授權無線電現場稽核及委辦業務查核之年度稽查工作。



CR is authorized by the Ministry of Transportation and Communications to carry out statutory surveys of ROC ships. In addition, we have met the requirements of IMO Resolutions MSC. 349 (92) RO Code and obtained authorization from the governments of Panama, Belize, Mongolia, Cambodia, Kiribati, Tuvalu, and Dominica for conducting statutory surveys of ships registered with their respective governments.

Mr. Ping-Chun Chen, Deputy General Director of Maritime and Port Bureau, Ministry of Transportation and Communications R.O.C. visited CR with an audit team to conduct annual audit on yacht inspection on December 1, 2017. The audit was smoothly completed. The annual audit on radio inspection and other authorized business by National Communications Commission (NCC) on August 15 and November 7, 2017.

研究成果 Research Achievement

本中心於2017年發表十五篇研究論文，題目分別為：「長期時域疲勞損傷模擬之數值收斂性探討於套管式離岸風力機基礎結構」、「四種離岸風機桁架式支撐結構之疲勞壽命評估」、「大型貨櫃船之節能導風罩設計與結構分析」、「考慮銲接變形之薄板結構應力分析」、「黏性耦合三維小板法於風力發電機氣動力分析」、「離岸風機之長時域疲勞負荷校正」、「高速雙體船側浪與斜浪下強度實務計算方法驗證」、「浮游式黑潮發電機葉片設計與結構分析」、「以Round Robin試驗法評估銲接點譜疲勞」、「離岸風場跡流制動盤模型數值模擬」、「應用體積力方法進行船舶於波浪中之自推模擬」、「雙艙體船耐海性能之數值方法探討」、「比較三種離岸風場發電量預估之計算方法」、「離岸風場風機跡流數值模擬」與「應用改良式基因演算法對離岸風機支撐結構最佳化設計」。另外完成一個海洋大學委託之「浮游式黑潮渦輪發電機FRP葉片結構分析」研發案，以及開發「軸系d校中與振動分析ShaftCRest」、「貨櫃繫固分析LashingCRest」、「船舶參考船速計算CResta」等三套船舶審圖專用軟體。本中心以紮實的技術基礎為我國航運產業和再生能源產業發展提供專業服務。

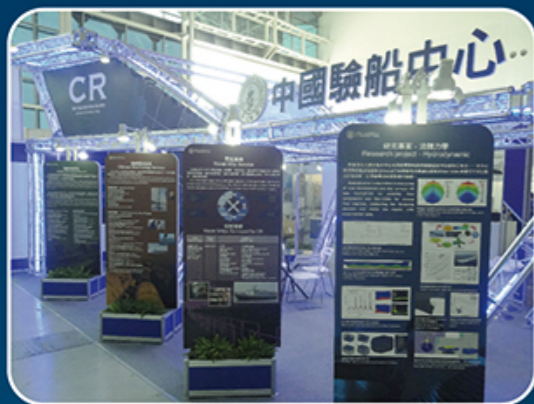
In 2017, this Society has published fifteen technical papers, which respectively entitled as "Numerical Convergence Study of Long-term Time-domain Fatigue Damage Simulation for Jacket Foundation of Offshore Wind Turbine", "Fatigue life evaluation of four offshore wind turbine jacket substructures", "Energy-saving Wind Shield Design and Structural Analysis for a Large Containership", "Benchmark study on considering welding-induced distortion in structural stress analysis of thin-plate structures", "The Aerodynamic Analysis of a Rotating Wind Turbine by Viscous-Coupled 3D Panel Method", "Calibration of Long-Term Time-Domain Load Generation for Fatigue Life Assessment of Offshore Wind Turbine", "Validation of Practical Approaches for the Strength Evaluation of High-speed Catamaran under Beam and Quartering Seas", "The Floating Kuroshio Turbine Blades Geometry Design with Consideration of the Structural Strength", "Round robin study on spectral fatigue assessment of butt-welded joints", "Wake Flow Prediction of an Offshore Wind Farm via Turbulent Flow Modeling", "Applying the Body Force Method to the Ship Self-Propulsion Simulation in Waves", "Investigation of the Seakeeping Performance of Twin Hull Vessels by Different Computational Methods", "Comparative Three Computational Approaches to Evaluate Energy Production of Offshore Wind Farm", "Wake Modeling of Wind Turbines in an Offshore Wind Farm", "Optimization for Substructure of Offshore Wind Turbine Using Modified Genetic Algorithm." CR has also been authorized in 2017 to conduct research and development projects by NTOU for "Composite Blade Structure Analysis for Floating-type Current Turbine," and developed three packages of software, "ShaftCRest", "LashingCRest", and "CResta," for shafting, container lashing, and EEDI reference speed calculation respectively. Based on the sound technics CR has provided professional services for developing shipping and renewable energy industries in Taiwan.

ETAS緊急技術評估服務

截至2017年底，各航運公司向本中心申請緊急技術評估服務(ETAS)的船舶共計有 27 艘次。

Emergency Technical Assessment Service (ETAS)

Up to the end of 2017, there are 27 ships for which the companies applied to CR for Emergency Technical Assessment Service (ETAS).



CRPA 電子審圖

為加強新造船設計圖審核效率，並減少紙張印刷之資源浪費，本中心自行開發電子審圖系統 (CRPA)，其功能包括由船廠傳送設計圖電子檔、本中心審核意見退審、現場驗船師查詢審圖意見、船廠處理退審意見、船東查詢送圖及審圖進度等。

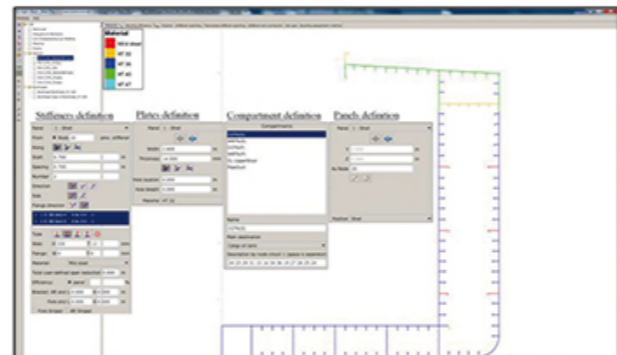
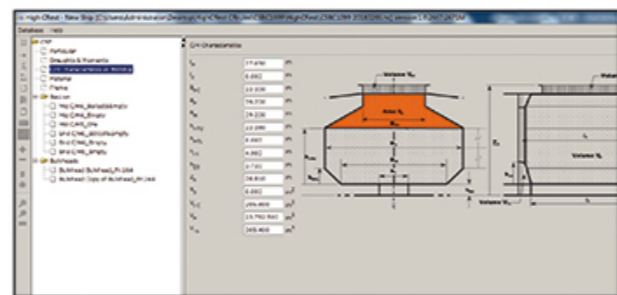
CR Plan Approval (CRPA)

In order to enhance the efficiency of plan approval for newbuildings and to reduce paper consumption in the office, we have developed CR Plan Approval (CRPA). Its functions include submission of design drawings in electronic form by the shipyard, approval of drawings by CR with comments and return of drawings, review of approval comments by the field surveyors, handling of comments on returned drawings, and inquiries from the shipowner about submission of drawings and progress of drawing approval.

CR

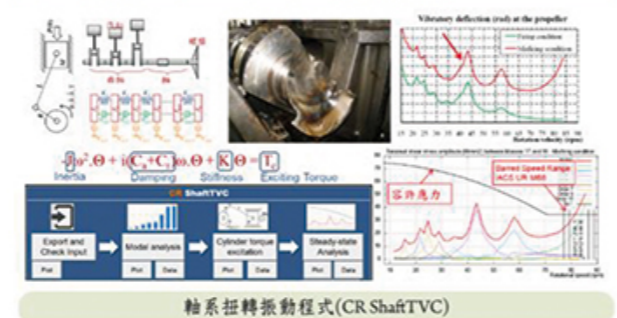
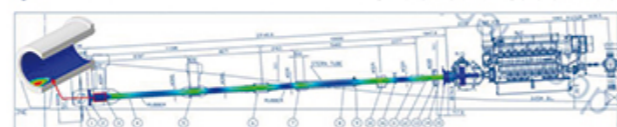
High Rest

船體規範縱向強度計算



Shaft-CRest

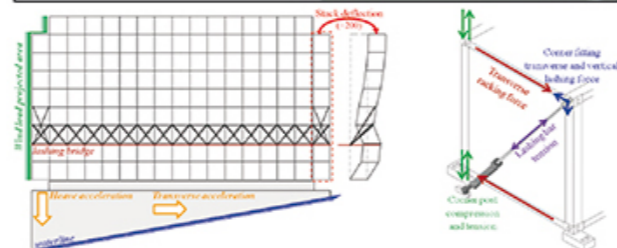
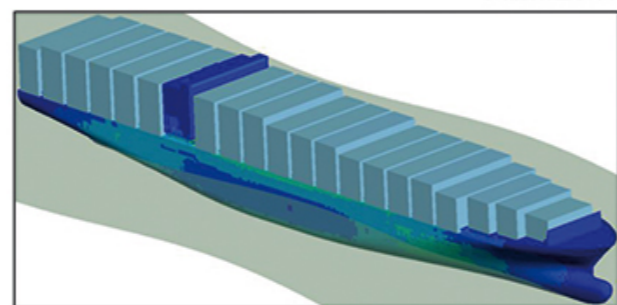
軸系校中與扭轉振動計算



軸系扭轉振動程式(CR ShaftTVC)

Lashing CRest

貨櫃繫固計算



對外研討會 External Workshops

本年度對外共舉辦4次研討會，均深獲與會人士好評。

We held 4 external workshops during 2017, all of which received favorable responses from attendees.

日期 Date	研討會內容 Topic
2017.03.23	<ul style="list-style-type: none"> 壓艙水管理公約之檢驗與發證 Survey and Certification Requirements for BWM Convention 離岸風場船舶營運之注意事項 Notes for Fleet Operation in Offshore Wind Farm
2017.06.29	<ul style="list-style-type: none"> 漫談PSC檢查之缺失矯正 The Rectification of the Deficiencies of PSC Inspection CO2排放之監控、報告及驗證法規 Monitoring, Reporting, and Verification(MRV) of Carbon Dioxide Emission 澳洲PSC檢查重點與程序-AMSA訪問交流 AMSA PSC Inspection Procedure and FIC Communications with AMSA
2017.08.31	<ul style="list-style-type: none"> 船級檢驗動態、PSC統計及CIC重點檢查 CR Classification Activity, Port State Control Statistics and Concentrated Inspection Campaign 簡介2018年生效之國際公約修正案 Introduction of International Convention's Amendments that will Come into Force in 2018
2017.12.21	<ul style="list-style-type: none"> 國際公約發展現況 Recent Development of International Convention 年度研發專題報告 Annual R&D Summary

教育訓練 Training

CR應業界要求舉辦公司保全員(CSO)及港口設施保全員(PFSO)之訓練課程，本年度舉辦公司保全員共4班次計55人，及港口設施保全員共3班次計136人。另並舉辦國際安全管理(ISM)內部稽查訓練課程共2班次共計55人，教育訓練課程均深獲參與學員之好評。

In response to the request of the shipping industry, CR has offered 4 CSO training courses for a total of 55 participants and 3 PFSO training courses for a total of 136 participants. Moreover, CR has also held 2 ISM Code training courses for a total of 55 participants. The above-mentioned educational training courses all drew high praise from the participants.

國際交流 International Exchange

劉執行長英如於106年9月29日至10月6日率團出席IMO於巴拿馬舉行之2017海事日，並同時慶祝巴拿馬海事局100周年慶。期間亦拜訪巴拿馬海事局，確認其對中心之授權不受台巴斷交影響，對此巴拿馬海事局商船部主任Mr. Solorzano表示授權仍將維持，並請中心持續提供台灣船東巴拿馬海事局良好服務。

鄭總驗船師率團於106年11月28日至29日拜訪香港海事局，進行PSC檢查重點及檢驗技術交流，有助於未來雙方維持良好關係。

President Ying-Ru Liu led a group to attend IMO Maritime Day and 100 Anniversary for Panama Maritime Authority held in Panama from September 29 to October 6, 2017. They also visited Panama Maritime Authority to confirm its authorization to CR would not be influenced because of diplomatic break between Panama and Taiwan. The Chief of Directorate General of Merchant Marine Solorzano stated that its authorization would maintain and request CR to continuously provide excellent services to Taiwanese shipowners and Panama Maritime Authority.

Chief Surveyor Chih-Wen Cheng led a group to visit Marine Department of The Government of Hong Kong Special Administrative Region to discuss PSC inspection issues and exchange technical opinions on November 28 and 29, 2017. This would be helpful for future cooperative relationship between two sides.