

中國驗船中心

CR CLASSIFICATION SOCIETY



CR Annual Report 2018



台北總部 HEAD QUARTER

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CR

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Management System
Certification
MS005

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



財團法人中國驗船中心
CR CLASSIFICATION SOCIETY

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CR



CR CLASSIFICATION SOCIETY

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」。

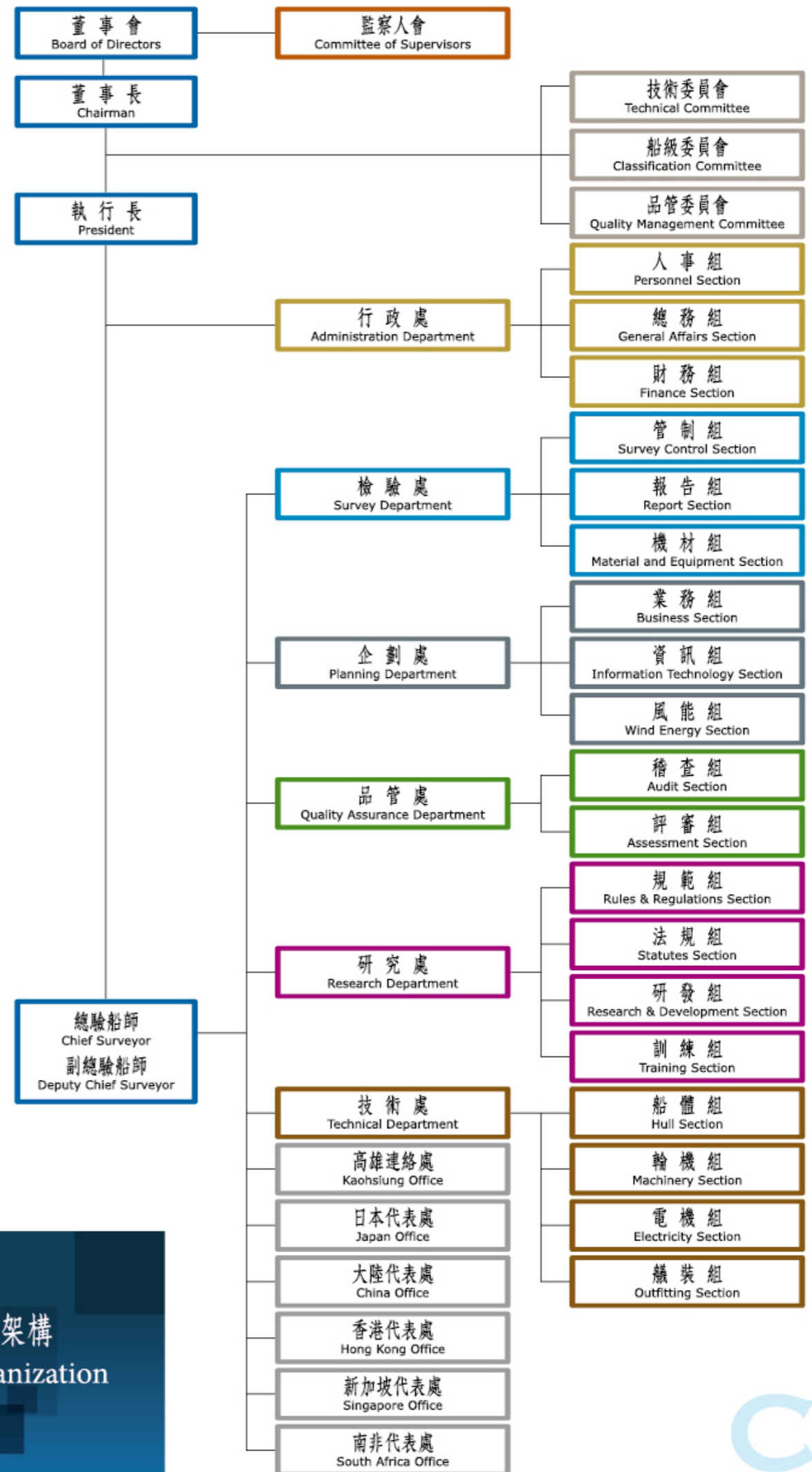
本中心為一民間純技術性，不以營利為目的之服務事業機構，其目標為提供優良之技術、高度之效率與熱忱之服務。組織型態(如下表)及工作內涵，一如世界各大驗船機構，其服務工作據點遍及世界各重要港口，為船東、造船廠及機材製造廠商提供最便捷之服務。



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.



組織架構 Organization



董事長感言



2018年航運市場在波羅的海乾散貨指數(BDI)創7年新高的市場氛圍下，營運狀況稍見回穩，感謝各航商、交通部、海軍、海巡署及各界在過去一年中一如往常支持CR，並在國艦國造政策的順利開展下，使CR業務得以穩健成長。回顧過去一年CR業務在各方支持、協助及督導下，主要在三個方向取得豐碩成果：

檢驗業務方面，CR配合交通部航港局政策，執行加強檢驗，致力於維持我國旗國及CR在Tokyo MOU白名單及高表現度名單內，在多項環境保護章程新規即將實施之際，CR與國際海事組織(IMO)、巴拿馬、香港、澳洲海事局...等重要國際組織與單位緊密合作，在加強執行檢驗的過程中，同時協助航商仍能維持正常營運，乃能獲得此高績效成果。

軍艦規範方面，CR為響應政府國艦國造政策，感謝國防部和海軍的支持，以及財團法人船舶暨海洋產業研發中心的協助，自2016年起投入大量人力建置排水型軍艦規範，預計2019年10月建置完成；高速型軍艦規範之建置與維護也將逐步啟動，預計執行至2025年；此外，CR亦參與軍艦材料與設備的認證，在海軍和海巡署的各式造艦計畫下，為國防自主和產業在地化，貢獻一份心力。



離岸風電業務方面，感謝經濟部、標檢局及航港局的支持，多項教育訓練、風場驗證技術建置以及船隊入級等業務也如期、如質開展中，基於過去CR豐富的船舶及海工驗證經驗，目前正與政府、產業、學術及法人等各方面擴大合作，持續推動離岸風電產業國產化的理念，也期望通過穩健的規畫與持續的努力，使國人共享台灣高品質的再生能源。

展望2019年，儘管全球海運局勢仍因中美貿易協商及限硫法令等議題尚存在諸多不確定性，可能因此部分老舊船舶將加速汰舊換新，致使全球運能的供需重新調整，連帶運價走勢與燃油成本的變化等影響海運市場因素，均值得吾人密切關注，並期待能審慎樂觀看待之。

謹祝來年，人安、船安、貨安、航業興榮、諸事順利！

中國驗船中心
董事長

范植谷

Chairman's Speech

In 2018, the shipping market has become stable with the record high of Baltic Dry Index (BDI) within the past seven years. We would like to appreciate continuous support of shipping companies, Ministry of Transportation and Communications R.O.C., Navy Command R.O.C., and Coast Guard Administration. CR's business has steadily grown with successful beginning of indigenous naval shipbuilding policy.

Looking back to 2018, CR gained fruitful achievement in three aspects with support, assistance and guidance from all sectors:

For survey business, CR has conducted enforced survey to coordinate with policy of Maritime and Port Bureau, M.O.T.C. to maintain R.O.C. flag and CR as White List and High Performance in Tokyo MOU. Due to several environmental protection regulations that is going to come into force, CR has intimately worked with International Maritime Organization, Panama Maritime Authority, Marine Department of the Government of Hong Kong Special Administrative Region, Australian Maritime Safety Authority and other international organizations. We anticipate that we can enforce our survey strength while helping shipping companies to maintain normal operation at the same time.

For naval rules, in response to indigenous naval shipbuilding policy as well as for purpose of appreciation for support and assistance of Ministry of National Defense R.O.C., Navy Command R.O.C., and Ship and Ocean Industries R&D Center, Rules for Naval Ships, which CR has devoted substantial human resources, is expected to be finished in October 2019. CR is also working on development and maintenance of Rules for High-Speed Naval Ships, which is estimated to be completed in 2025. Furthermore, CR provides certification services on materials and equipment used in naval ships. CR would like to devote ourselves to military autonomy and localization in various shipbuilding projects for Navy Command R.O.C and Coast Guard Administration.

For offshore wind energy business, we would like to express appreciation to Ministry of Economic Affairs, R.O.C., Bureau of Standards, Metrology and Inspection, M.O.E.A., as well as Maritime and Ports Bureau, M.O.T.C.. A number of jobs including training courses, establishment of offshore wind farm certification techniques, and classification of fleet have begun on time under good quality. Based on CR's abundant experiences of certification on vessels and marine engineering, CR is currently expanding cooperation with government, industries, schools, juridical persons, and all sections. CR will continue to promote the concept of localization in offshore wind energy industries. We also anticipate that Taiwanese people can enjoy high-quality renewable energy through our solid planning and continuous effort.

In 2019, because of trade negotiation between the U.S. and China as well as low-sulfur regulations, there are still many uncertainties in global shipping market. This may cause the replacement of old vessels and modification of supply and demand in shipping capacity. Also, the shipping fees and fuel cost may be influenced. I hope you could prudently optimistic to it.

We wish you safety of people, safety of goods, safety of vessels, prosperity of shipping market and every success in your business.



CR Classification Society
Chairman

Chih-ku Jan

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14屆董事會任期自2018年5月18日起至2021年5月17日止，為期三年，董事長由董事會遴選之。第14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, 2018. The Chairman elected from among the directors is Mr. Chih-Ku Fan. The list of the elected directors and supervisors is given below:

董事 Director	現任職務 Position
范植谷 Chih-Ku Fan	中國驗船中心董事長 Chairman, CR Classification Society
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	海洋委員會海巡署督察組組長 Chief of Patrol Division, Coast Guard Administration, Ocean Affairs Council
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.
李新民 Samuel Lee	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
王文漸 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
周慕豪 M. H. Jou	中國航運股份有限公司董事長 Chairman, Chinese Maritime Transport Ltd.
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.
藍心琪 Irene Lan	藍海海運股份有限公司總經理 President, OceanLance Maritime Co., Ltd.

監察人 Supervisor	現任職務 Position
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2018年5月18日起至2021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	葉陳輝 C. H. Yeh	光明海運股份有限公司董事長 Chairman, Kuang Ming Shipping Corporation
副主任委員 Vice-Chairman	梅家禮 Charlie Mei	台灣航業股份有限公司總經理 President, Taiwan Navigation Co., Ltd.
委員 Member	陳宏州 Hong-Joe, Chen	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	李健發 Kenneth Lee	世邦國際企業集團董事長 Chairman, T. V. L. Business Group
委員 Member	何永順 Jackie Ho	陽明海運股份有限公司技術長 Chief Technical Officer, 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 Tsung-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	周英朗 Alan Y.L. Chou	四維航業股份有限公司總經理 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	高國隆 Davis Kao	萬海航運股份有限公司協理 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



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	中國驗船中心顧問 Consultant, 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	陶自勵 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	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	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	何永順 Jackie Ho	陽明海運股份有限公司技術長 Chief Technical Officer, 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	邵維揚 Wei-Yang Shao	海軍造船發展中心主任 Director, Naval Shipbuilding and Development Center
委員 Member	謝曜安 Yao-An Hsieh	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	胡信正 H. C. Hu	明新科技大學電機工程學系助理教授 Assistant Professor, Minghsin University of Science and Technology



品管委員會 Quality Management Committee

(任期自2018年5月18日起至2021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	財團法人中國驗船中心品管委員會主任委員 Chairman of Quality Committee, CR Classification Society
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	紀允晴 Y. C. Chi	交通部航港局副長級技正 Technical Specialist, Maritime and Port Bureau, MOTC
委員 Member	史美琦 Michael Shih	陽明海運股份有限公司行政長 Chief Administration Officer, Yang Ming Marine Transport Corporation
委員 Member	黃義恩 Ian Huang	長榮海運股份有限公司海技部副協理 Deputy Senior 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	仇忠林 Jong-Lin Chyu	台灣航業公司工務部經理 Manager 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	王紹培 Davis Wang	台灣中油股份有限公司儲運處組長 Section Manager, Marine Management Section, CPC Corporation, Taiwan
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.
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建造中入級 Classification of Ships During Construction

2018年建造中入級CR的船舶共計有23艘，分列如下：

There were a total of 23 ships classed by CR during construction in 2018 as listed below:

船東 Owner	造船廠 Shipyard	建造地點 Place	船型 Ship type	艘數 Number
光明海運股份有限公司 KUANG MING SHIPPING CORPORATION	岩城 IWAGI	日本 JAPAN	63,000DWT 散裝船 63,000DWT Bulk Carrier	2
財團法人國家實驗研究院 National Applied Research Laboratories	TRIYARDS	越南 VIETNAM	海洋研究船 Oceanographic Research Vessel	1
台灣中油股份有限公司 CPC CORPORATION, TAIWAN	TRIYARDS	越南 VIETNAM	1,992GT 油輪 1,992GT Oil Tanker	2
德翔海運股份有限公司 T. S. LINES CO., LTD.	台船 CSBC	台灣 TAIWAN	1,800TEU 貨櫃船 1,800TEU Container Carrier	1
台灣中油股份有限公司 CPC CORPORATION, TAIWAN	ASL	印尼 INDONESIA	492GT 油輪 492GT Oil Tanker	3
坤龍航運股份有限公司	龍德 LUNG TEH	台灣 TAIWAN	32M 鋁合金客船 32M Passenger Ship	1
涌江輪渡有限公司 WU JIANG FERRY CO., LTD	龍德 LUNG TEH	台灣 TAIWAN	30M 鋁合金客船 30M Passenger Ship	1
台灣中油股份有限公司 CPC CORPORATION, TAIWAN	高鼎 JADE	台灣 TAIWAN	VSP 拖船 VSP Tug Boat	2
台灣中油股份有限公司 CPC CORPORATION, TAIWAN	高鼎 JADE	台灣 TAIWAN	600匹馬力工作船 600PS Work Boat	1
長榮海運股份有限公司 EVERGREEN MARINE CORP. (TAIWAN) LTD.	台船 CSBC	台灣 TAIWAN	2,800TEU 貨櫃船 2,800TEU Container Carrier	4
海有航運股份有限公司 HAI YOU SHIPPING CO., LTD.	STRATEGIC MARINE	越南 VIETNAM	鋁合金客船 Passenger Ship	1
海洋委員會海巡署 COAST GUARD ADMINISTRATION, OCEAN AFFAIR COUNCIL	昱旻 KARMIN	台灣 TAIWAN	FRP 巡邏艇 FRP PATROL BOAT	2
屏東縣政府衛生局 Public Health Bureau, Pingtung County Government	大舟 TACHOU	台灣 TAIWAN	醫療船 HOSPITAL BOAT	1
遠和航運股份有限公司 TA-HO MARITIME CORPORATION	大島 OSHIMA	日本 JAPAN	46,832DWT 散裝船 46,832DWT Bulk Carrier	1

現成船入級 Classification of Existing Ships

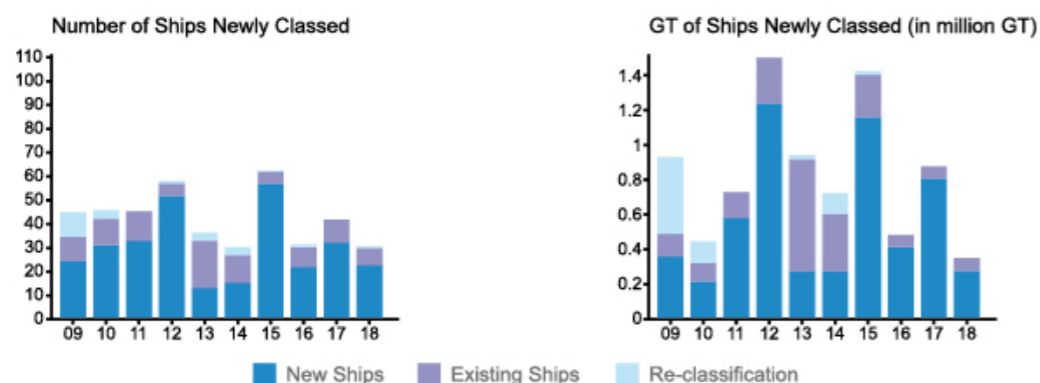
2018年現成船入級CR的船舶共計有6艘，分列如下：

There were a total of 6 existing ships classed by CR in 2018 as listed below:

船名 Ship name	船東 Owner	船旗 Flag	總噸位 GT	船型 Ship type
新華8號 SHIN HWA NO.8	鴻福航運股份有限公司 Hong Fu Shipping Co., Ltd.	中華民國 R.O.C.	1355	油輪 Oil Tanker
永康659號 EC659	永康船舶股份有限公司 EVER COMFORT SHIPPING CO., LTD	中華民國 R.O.C.	354	拖船 Tug
德翔臺中 TS TAICHUNG	德翔海運股份有限公司 T.S. LINES CO., LTD.	中華民國 R.O.C.	27104	貨櫃船 Container Carrier
大地能源 GEO ENERGY	環球測繪股份有限公司 PDE Offshore Corporation	中華民國 R.O.C.	2151	Offshore Service Vessel
台塑貨櫃4號 FORMOSA CONTAINER NO.4	台塑海運股份有限公司 FORMOSA PLASTICS MARINE CORP.	中華民國 R.O.C.	9280	貨櫃船 Container Carrier
長合 EVER BEFIT	長榮海運股份有限公司 EVERGREEN MARINE CORP. (TAIWAN) LTD.	中華民國 R.O.C.	32145	貨櫃船 Container Carrier

新入級船舶 Newly Classed Ships

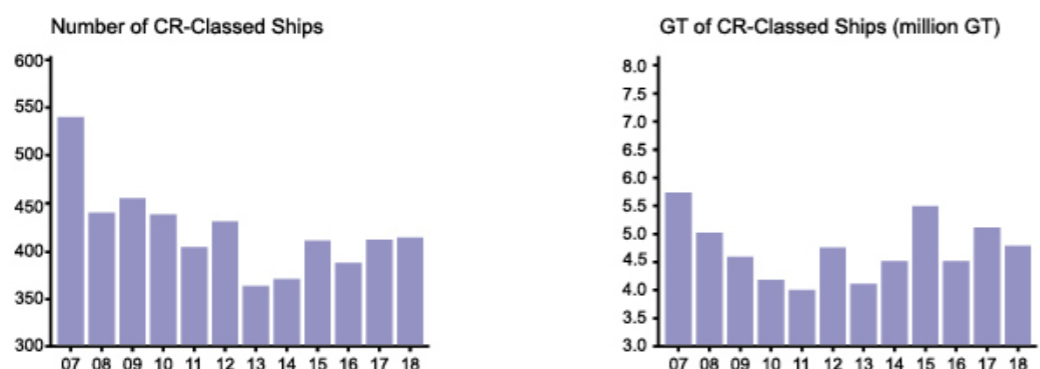
2018年經審核後正式入級的船舶有30艘共計356,643總噸，艘數為在級船舶的7%，其中新船入級23艘，現成船入級6艘，重新入級1艘。
After careful review, a total of 30 ships with 356,643 gross tonnage were formally classed with CR in 2018. The number of ships accounted for 7% of the number of those already classed with CR. Among these newly classed ships, there were 23 new ships, 6 existing ships, and 1 re-classed ships.



在級船舶 Classed Ships

截至2018年底，維持CR船級之船舶有416艘，共計4,772,721總噸，平均船齡為13.8年。
Up to the end of 2018 there were 416 ships maintaining CR class with 4,772,721 gross tonnage, and the average age of ships was 13.8 years.

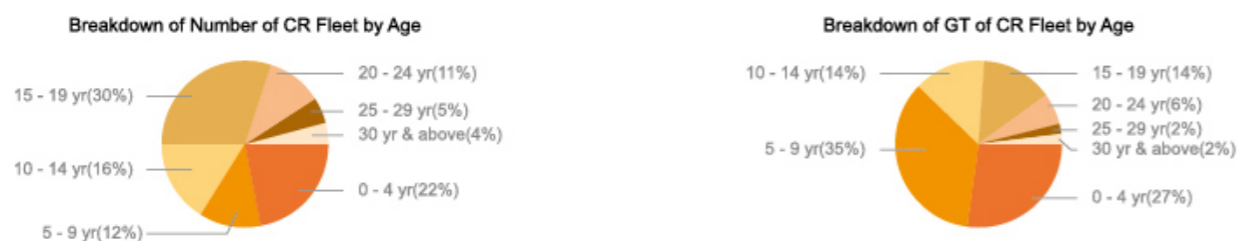
歷年在級船舶艘數及總噸位 The number of CR-classed ships over the years and their gross tonnage



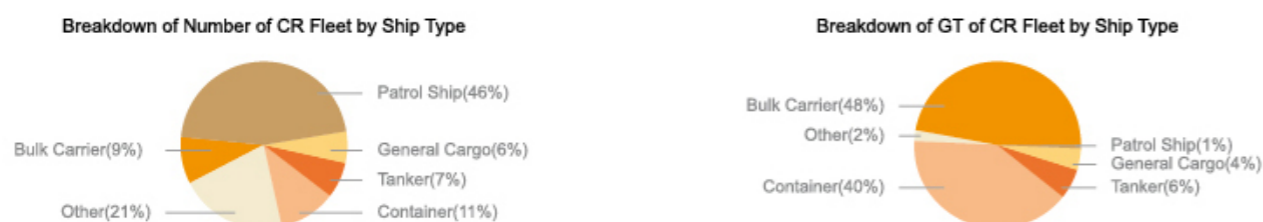
在級船舶之船旗國分析 Analysis of flag states of CR-classed ships



在級船舶之船齡分析(平均船齡13.8年) Analysis of age of CR-classed ships (the average age of ships : 13.8 years)



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



ISM, ISPS及MLC評鑑

2018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36家，船舶管理評鑑(SMC)63艘，國際船舶保全(ISPS)評鑑共65艘次及海事勞工公約(MLC)檢查共105艘。

ISM, ISPS & MLC Verifications

In 2018, CR conducted ISM, ISPS and MLC verification and certification work, carrying out DOC verifications for 36 companies, SMC verifications for 63 ships, ISPS verifications for 65 ships, and MLC inspection for 105 ships.

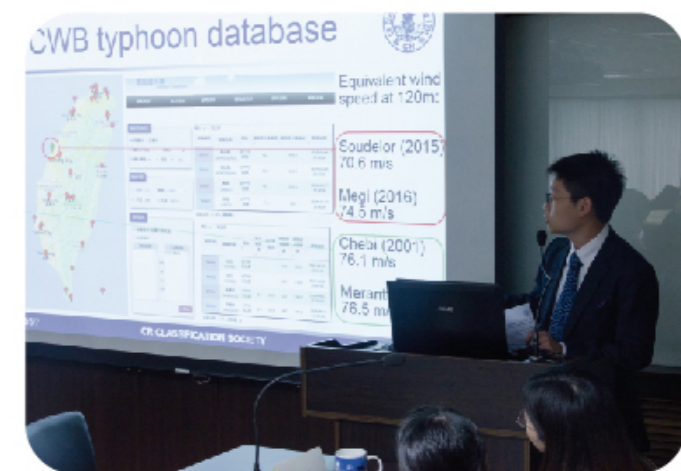


港口國管制

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2015-2018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 2015 to 2018, the performance of CR in Tokyo MOU remains at a HIGH level.



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

2018年CR執行船舶用品工廠認可及產品型式認可共計42家56型，並執行危險品容器之檢驗業務，共計廠商27家，型式186型(包括小型178型及中型8型)。

In 2018, CR conducted works approval of 42 companies and type approval of 56 products for use on vessels, and also carried out certification of packagings for dangerous goods for 27 companies and 186 types (178 types of small packagings and 8 types of intermediate bulk containers).

規範研究

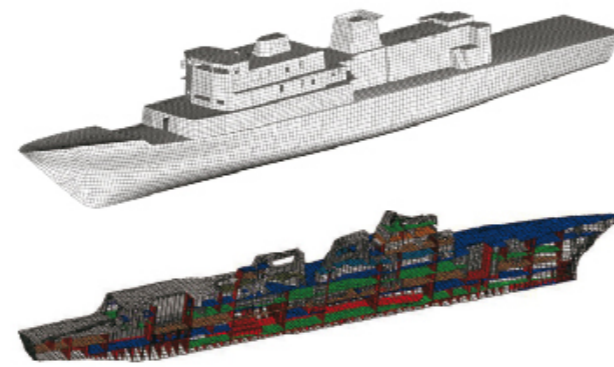
規範發展

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：

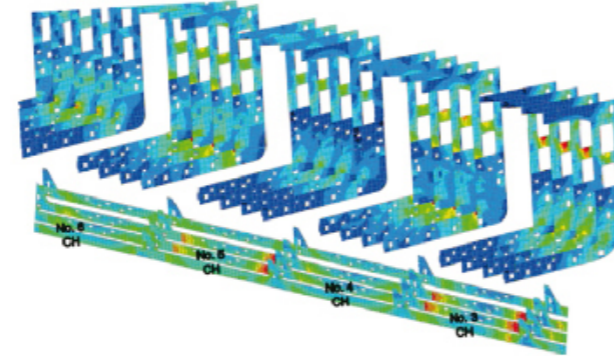
Rules Development

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.

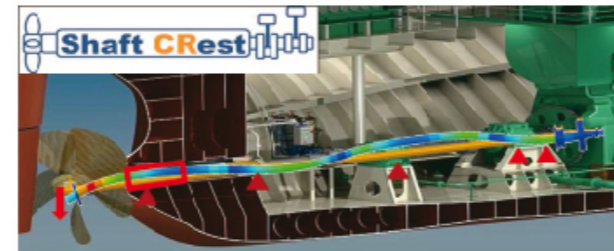
- 2019年鋼船建造與入級規範
Rules for the Construction and Classification of Steel Ships, 2019
- 2017年貨櫃建造與發證規範
Rules for the Construction and Certification of Freight Containers, 2017
- 2013年貨物裝卸設備構造與檢驗規範
Rules for the Construction and Survey of Cargo Gear, 2013
- 2019年高速船建造與入級規範
Rules for the Construction and Classification of High-Speed Craft, 2019
- 2019年鋁合金船建造與入級規範
Rules for the Construction and Classification of Aluminum Vessels, 2019
- 2019年玻璃纖維強化塑膠船舶建造與入級規範
Rules and Regulations for the Construction and Classification of Ships of Fibreglass Reinforced Plastics, 2019
- 2015年潛艦建造與入級規範
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



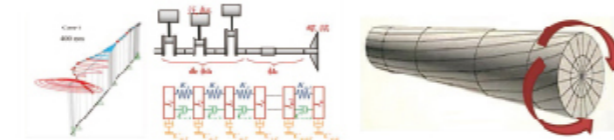
● 船艦全船有限元素建模



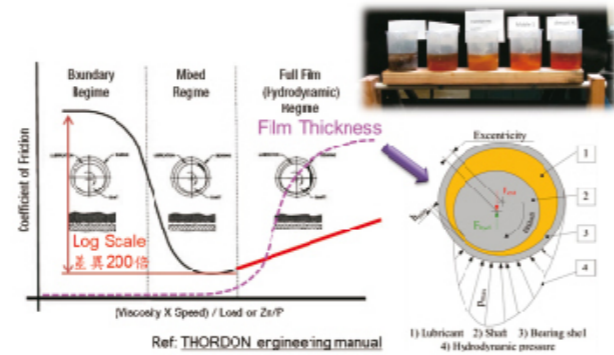
● 商船全船各結構之應力反應與檢核



● 軸線校中計算



● 軸系橫向及扭轉振動計算



● 軸承潤滑薄膜數值模擬

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。

交通部於2018年12月18日順利完成對中心業務監督稽核工作。交通部航港局於2018年12月20日前來本中心辦理遊艇驗證機構之年度查核，本中心已順利通過查核。

國家通訊傳播委員會(NCC)於2018年8月8日及10月25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.

CR has smoothly passed the audit conducted by Ministry of Transportation and Communications R.O.C. on December 18, 2018.

CR has smoothly passed the annual audit on yacht inspection conducted by Maritime and Port Bureau, Ministry of Transportation and Communications R.O.C. on December 20, 2018.

CR has smoothly passed the annual audit on radio inspection and other authorized business by National Communications Commission (NCC) on August 8 and October 25, 2018.

研究成果 Research Achievement

本中心於2018年發表十五篇研究論文，題目分別為：「具控制翼之小水面雙體船運動性能探討」、「以跡流導向方式進行前後排列風機功率最適化數值模擬」、「以再生核質點法分析淺水波方程式」、「額定風況兩前後直線排列風機功率數值模擬」、「應用計算方法探討小水面雙體船阻力與運動性能」、「任意幾何外形浮體之靜水性能計算方法」、「浮游式黑潮發電機葉片設計與分析」、「潛體高至斜螺槳之數值推進分析」、「小水面雙體船之控制翼水動力性能參數化分析」、「離岸風機基礎結構之時域疲勞計算-格狀法與蒙地卡羅法之比較」、「離岸風場中風機基礎結構之疲勞壽命分析」、「耦合耐海性模擬分析高速雙體船之橫跨甲板結構強度」、「考慮風力機跡流曲折效應於固定套管基礎結構之疲勞壽命評估」、「應用不同計算方法評估離岸風機基礎之波浪負荷」與「樞軸式S型舵之參數化設計與優化」。另外完成海洋大學委託之「離岸結構物波浪負荷分析」研發案與中科院委託之「船艦有限元素數值模型及破損穩度分析軟體」計畫，以及開發「離岸風場風能評估軟體WiFa3D」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 2018, this Society has published fifteen technical papers, which respectively entitled as "Seakeeping Performance Study of the Control Fins on SWATH Ship", "Numerical Study on the Power Optimization of Two Cascading Wind Turbines via a Wake Steering Approach", "Reproducing Kernel Particle Method for Shallow Water Equation", "Power Performance Simulation of Two Inline Wind Turbines", "Applying Two Computational Methods to Investigate Resistance and Seakeeping Performances of SWATH", "An alternative method for computing hydrostatic performances of a floating body with arbitrary geometrical configurations", "Design and Analysis of the Floating Kuroshio Turbine Blades", "Numerical Analysis of Propulsion for Submarine with Highly Skewed Propeller", "Parametric Studies of Hydrodynamic Performance of the Control Fins on SWATH Ship", "Comparative Study of Time-domain Fatigue Assessments for an Offshore Wind Turbine Jacket Substructure by using Conventional Grid-based and Monte Carlo Sampling Methods", "Fatigue Life Analysis of Offshore Wind Turbine Support Structures in an Offshore Wind Farm", "Strength Evaluation of Cross Deck for High-speed Catamaran Coupling with Seakeeping Simulation", "Effects of Wake Meander on Fatigue Lives of Offshore Wind Turbine Jacket Support Structures", "Wave Load Assessment of Offshore Wind Turbine Foundation via Different Computational Methods", "Parametric Design and Optimization of a Pivoting S-type Rudder for Containerships." CR has also been authorized in 2018 to conduct research and development projects by NTOU for "Assessment of Wave Loads on an Offshore Structure," and by NCSIST for "Ship Finite Element Modeling and Damage Stability Analysis Tool," and developed one package of software, "WiFa3D" for power capacity assessment of offshore wind farms. 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2018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22艘次。

Emergency Technical Assessment Service (ETAS)

Up to the end of 2018, there are 22 ships for which the companies applied to CR for Emergency Technical Assessment Service (ETAS).



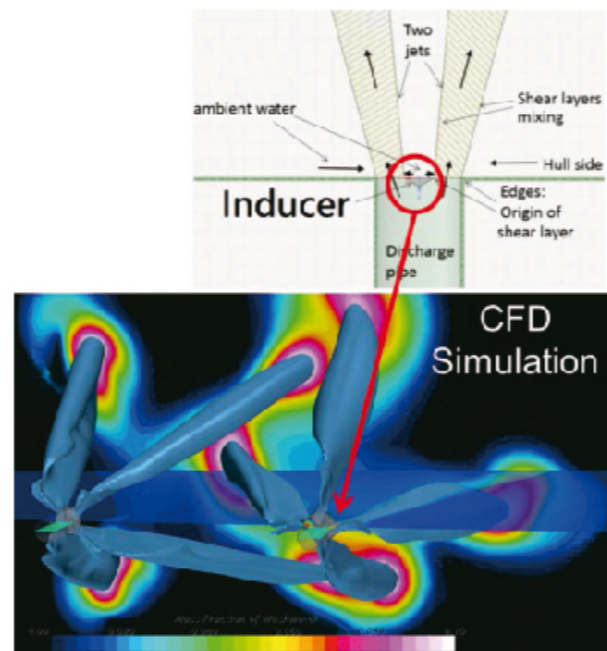
CRPA電子審圖

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。

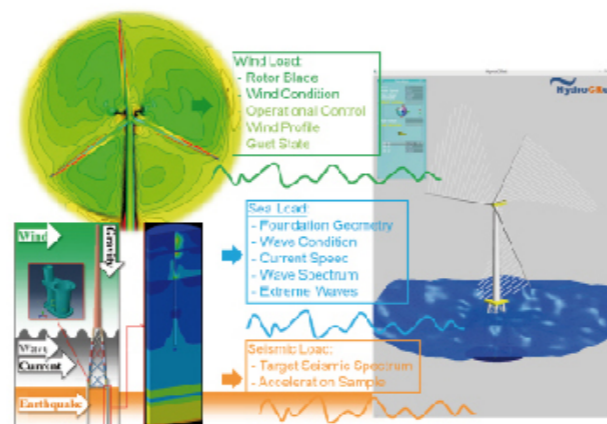
CR Plan Approval (CRPA)

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.

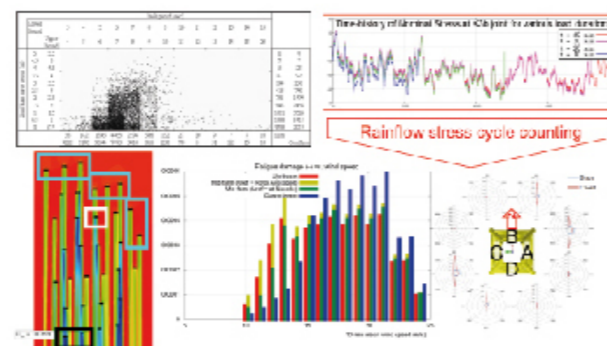
CR



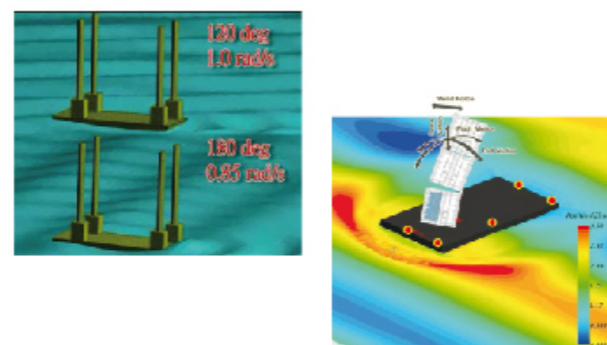
水平對臥式雙排放管流場模擬



基礎結構極限強度有限元素分析



跡流效應對離岸風機基礎結構壽命影響



自升式平台安裝船運動模擬與貨物繫固計算

對外研討會 External Workshops

本年度對外共舉辦7次研討會，均深獲與會人士好評。

We held 7 external workshops during 2018, all of which received favorable responses from attendees.

日期 Date	研討會內容 Topic
2018.03.29	• 香港港口國檢查及港口檢查之準備 PSC Inspection in Hong Kong and Preparedness for PSC Inspection
2018.04.02	• 台灣離岸風場發展與船隊需求 Taiwan Offshore Wind Farm Development and the Support Fleets Need
2018.06.28	• PSC檢查之缺失矯正 The Rectification of the Deficiencies of PSC Inspection
2018.06.29	• 船舶低硫燃油發展趨勢與因應策略 Development Tendency and Response Strategy of Low-Sulfur Fuel Oil for Ship
2018.09.20	• 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(CIC)2018
2018.09.21	• 船舶檢查常見缺失及預防 Common Deficiencies of Ship and their Prevention
	• CR Voyage簡介 - 船舶能效監控系統 Introduction to CR Voyage-Ship Performance Monitoring System
2018.11.28	• 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
	• 澳洲港口國管制宣導事項 Port State Control in Australia
	• LNG燃料加注的考量和解決方案 LNG Fuel Bunkering: Considerations & Solutions

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2班次計46人，及港口設施保全員共3班次計120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68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 2 CSO training courses for a total of 46 participants and 3 PFSO training courses for a total of 120 participants. Moreover, CR has also held 2 ISM Code training courses for a total of 68 participants. The above-mentioned educational training courses all drew high praise from the participants.

國際交流 International Exchange

鄭總驗船師志文率員於2018年8月6-8日拜訪上海海事局及崇明海事處、9月3日拜訪廣州海事局、9月11日拜訪福建省海事局船舶監督處，針對中國之港口國管制檢查重點、兩岸直航及小三通船舶檢驗、國內航線船舶管理等議題進行交流，建立良好和善互動基礎及迅速暢通聯繫管道。

2018年7月派員參加巴拿馬海事局在邁阿密召開之授權機構會議，巴拿馬海事局於會中說明電子發證將為未來發展之趨勢，中心已將電子發證列入重點開發計畫。

Chief Surveyor Chih-Wen Cheng led a group to visit Shanghai Maritime Safety Administration of PRC on August 6-8, 2018, Guangdong Maritime Safety Administration on September 3, and Fujian Maritime Safety Administration on September 11. Both sides exchanged opinions on port state control in China, cross-straits navigation, survey on mini-three-links vessels as well as management on domestic vessels. Through the visit, CR has established good interaction and rapid communication channels with them.

CR has attended Recognized Organization Meetings held by Panama Maritime Authority in Miami in July, 2018. In the meeting, PMA declared that electronic certificate will become latest trend. CR has set a targeted plan for development of electronic certificates.