

財團法人驗船中心

CR CLASSIFICATION SOCIETY



CR Annual Report 2020

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Since 1951



CR Annual Report 2020 www.crclass.org

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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



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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，改組並更名為「財團法人中國驗船中心」。

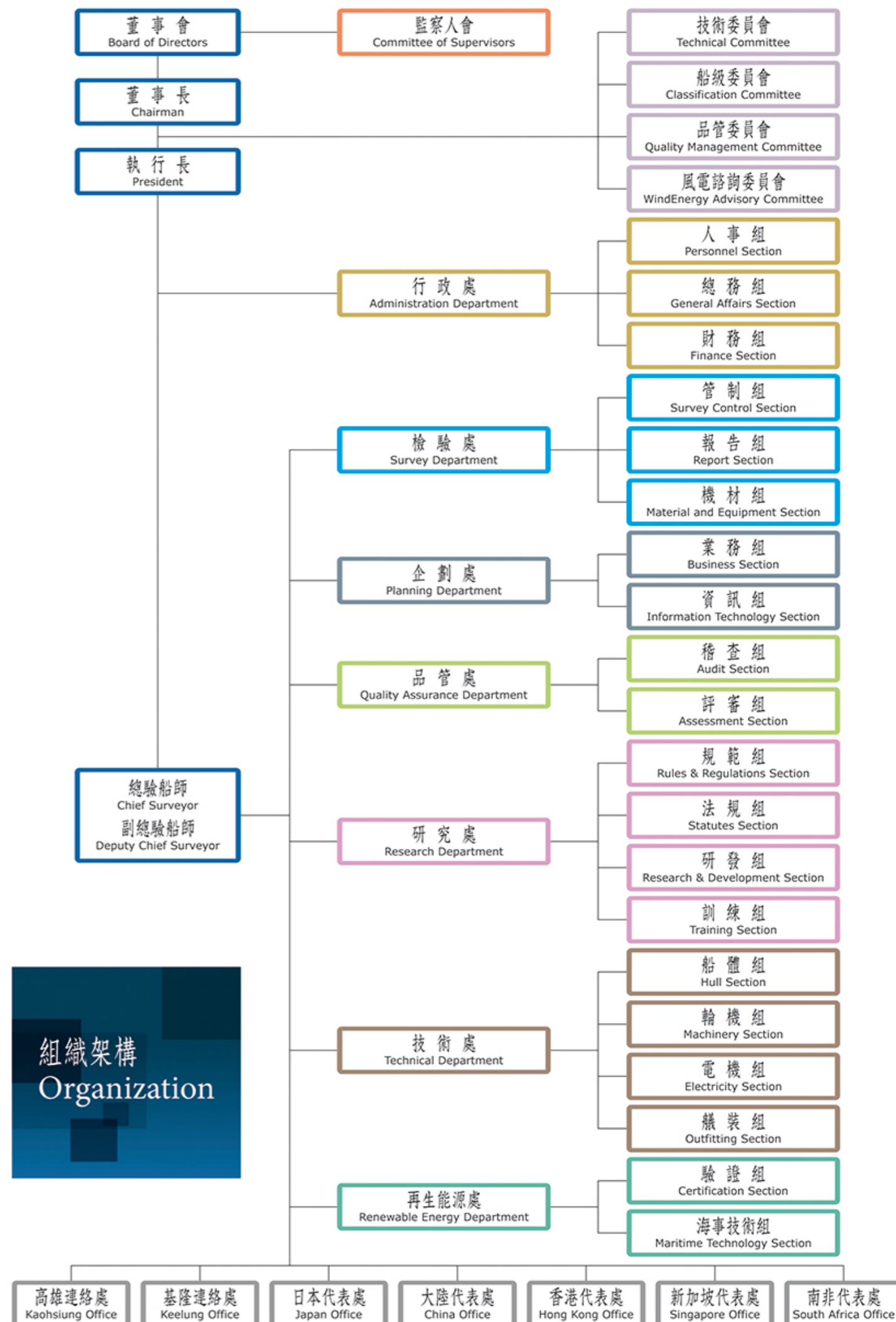
本中心為一民間純技術性，不以營利為目的之服務事業機構，其目標為提供優良之技術、高度之效率與熱忱之服務。組織型態(如下表)及工作內涵，一如世界各大驗船機構，其服務工作據點遍及世界各重要港口，為船東、造船廠及機材製造廠商提供最便捷之服務。



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



2020年驗船中心(CR)在交通部、航商及各界的督導、支持及協助下，於東京備忘錄(Tokyo MOU)港口國管制之評比，CR持續名列「高表現度」之第11名，表現度超越3個IACS船級協會；我船旗國亦持續名列「白名單」，並從去年的第19名進步為第13名，有此成果實屬不易，CR將持續努力維持專業品牌與台灣海運業者共同成長。

此外，我船旗國於2019年首度榮獲美國21世紀優質船舶計劃(QUALSHIP 21)的殊榮，並連續三年持續名列QUALSHIP 21，這樣的優異成績，使得後續國輪若經美國官方審核通過，於航行美國港口PSC檢查週期將降為三年一次，現階段我國航商包括長榮海運、陽明海運、裕民航運、台塑海運皆已獲得QUALSHIP 21之證書，此證書雖僅限定營運美國航線之船舶申請，卻足以證明我國航商船隊在航安與環保等管理作為的精良水準。

2020年離岸風電仍是政府力推之核心產業，CR於8月獲得財團法人全國認證基金會(TAF)頒發之ISO/IEC 17065離岸風場專案驗證服務認證證書，CR再生能源處為離岸風電專業第三方技術團隊，並成立CR風電諮詢委員會，協助經濟部標準檢驗局進行離岸風場專案驗證示範審查，也針對我國特殊環境議題如颱風、地震等進行海事保證鑑定及盡職調查，為台灣離岸風場開發安全和共同捍衛海洋環境資源而把關。



為迎接船舶智慧化時代，2020年CR發行「智能船舶準則2020」提供產業各相關單位參考使用，期與業界共同合作，促進航運產業技術升級；同時，為配合國艦國造政策之海巡造艦計畫，制定「海巡艦艇建造與入級規範2021」，此乃鑒於海巡艦艇其獨特性，CR特別量身打造專用之船級規範，為全世界各驗船機構之首例，CR非常榮幸能為我國藍色國防貢獻心力。

2020年新型冠狀肺炎大流行造成全球性衝擊，雖短期擾亂世界貿易秩序，然而危機即是轉機，疫情促使宅經濟爆發，海運市場銳不可擋，2021年各家船公司積極購建新船，報導指出新船總數及總船價可能創下歷史新高，新的一年驗船中心將持續付出熱誠的驗證服務，為我國航運產業貢獻最大力量，共同達成人安、船安、貨安之目標。

驗船中心 董事長 謝謂君

Chairman's Speech

In 2020, with the guidance, support and assistance of Ministry of Transportation and Communications R.O.C, shipping companies, and other concerned parties, CR has continuously maintained "High Performance" in Tokyo MOU, and ranked 11th. CR's performance is better than that of three IACS classification societies. R.O.C. flag has also been listed in "White List", and ranked 13th, a significant improvement of 6 places from last year. CR has acknowledged that it was not easy to achieve these remarkable results; consequently we will continue to work hard on professionalism and be keen to grow with Taiwanese shipping industries together.

Besides, R.O.C. flag has earned Qualship 21 designation from United States Coast Guard for the first time in 2019, and continued to be listed in qualified flag administrations for three consecutive years. After approval, the examination intervals of R.O.C.-flagged vessels could be reduced to once every three years. Currently, Taiwanese shipping companies, including Evergreen Marine Corp., Yang Ming Transport Corp., U-Ming Marine, Formosa Plastics Marine Corporation, have obtained Qualship 21 Program certificates. Although the certificate is issued only for vessels which may berth in U.S. waters, it is proved that R.O.C.-flagged vessels have been recognized for their commitment to safety, quality, and environment protection.

Offshore wind energy remains the core industry for which Taiwanese government has high ambitions in 2020. In August, CR has obtained the certificate of accreditation within the scope of ISO/IEC 17065 offshore wind farm project certification issued by Taiwan Accreditation Foundation. Our Renewable Energy Department is a third-party technical team with expertise in offshore wind energy. Besides, the Wind Energy Advisory Committee was established in order to conduct demonstrated project certification requested by The Bureau of Standards, Metrology and Inspection(BSMI). We also provide services on marine warranty survey and due diligence with the aim at special environmental issues in Taiwan, such as typhoon and earthquake. We must make sure the safety of Taiwanese wind farms and protection of marine resources.

To embrace the intelligentization of vessels, CR has launched Guidelines for Smart Ships 2020 for reference. We hope to cooperate with the industry and facilitate upgrade for marine techniques. At the same time, in response to newbuilding projects for Coast Guard Administration(CGA), Rules for the Construction and Classification of Coast Guard Ships was stipulated. In view of the uniqueness of vessels owned by CGA, CR has customized class rules for them, which is the first case made by the class society in the world. CR is very honored to contribute to national defense.

The 2020 coronavirus pandemic caused a global impact. Although the world trade order was temporarily disrupted, however the crisis was a turning point. The epidemic prompted the outbreak of the housing economy. There has been a surge for the shipping market. In 2021, various shipping companies has actively purchased and built new ships. It is reported that the total number of new ships and ship prices may hit a record high. CR will continue and try our best to provide our services enthusiastically with the goals of safety of people, ships and cargo.



CR Classification Society
Chairman

David W. Hsieh



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2021年5月18日起至2024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, consisting of 23 directors and 3 supervisors, is the top management of CR. The term of the Board of Directors is 3 years, starting from May 18, 2021 to May 17, 2024. The Chairman is elected from the directors. The name list of directors and supervisors is given below:

董事 Director	現任職務 Position
謝謂君 Wei-Chun Hsieh	驗船中心董事長 Chairman, CR Classification Society
何淑萍 Shu-Ping He	交通部航政司司長 Director of Department of Navigation and Aviation, Ministry of Transportation and Communications R.O.C.
葉協隆 Hsieh-Lung Yeh	交通部航港局局長 Director-General of Maritime and Port Bureau, Ministry of Transportation and Communications R.O.C.
盧公宇 Gong-Yeu Lu	海洋委員會海巡署後勤組副組長 Deputy Chief of Logistics Division, Coast Guard Administration, Ocean Affairs Council
鄭貞茂 Cheng-Mount Cheng	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.
張秋波 Chiu-Po Chang	中鋼運通股份有限公司董事長 Chairman, China Steel Express Corporation
張衍義 Yen-I 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
李健發 Kenneth Lee	世邦海運股份有限公司董事長 Chairman, TVL Marine Co., Ltd.
藍俊昇 James Lan	慧洋海運股份有限公司董事長 Chairman, Wisdom Marine Group
張瑞宗 Ray-Chung Chang	台灣中油股份有限公司發言人 Spokesperson, CPC Corporation, Taiwan
黃健強 Edward Huang	台灣水泥股份有限公司資深副總經理兼逢和航運公司董事 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
陳德勝 T. S. Chen	德翔海運股份有限公司董事長 Chairman, T.S. Lines
戴聖堅 James S.C. Tai	中國航運股份有限公司總經理 President, 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.
陳伯耀 Po-Yao 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副董事長 Vice Chairman, Taiwan Fire & Marine Insurance Co., Ltd.
蕭捷明 Jimmy C. Hsiao	明台輪船股份有限公司董事長 Chairman, MingTai Navigation Co., Ltd.
藍心琪 Irene Lan	四維航業股份有限公司董事長 Chairman, Shih Wei Navigation Co., Ltd.

監察人 Supervisor	現任職務 Position
梁正德 Cheng-Te Liang	兆豐產物保險股份有限公司董事長 Chairman, Chung Kuo Insurance Co., Ltd.
程棟裕 Elizabeth T. H. Cheng	能源航運股份有限公司總經理 President, Energy Shipping Co., Ltd.
康江良 Jiang-Liang Kang	交通部統計處副處長 Deputy Director of Department of Statistics, Ministry of Transportation and Communications, R.O.C.

船級委員會 Classification Committee

職別 Title	姓名 Name	現任職務 Position
主任委員 Chairman	梅家禮 Charlie Mei	中國航運股份有限公司執行副總經理 Executive Vice President, Chinese Maritime Transport Ltd.
副主任委員 Vice-Chairman	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	王大明 Da-Ming Wang	交通部航港局船舶組副組長 Deputy Director, Vessel Management Division, Maritime and Port Bureau, MOTC
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	林正川 J. C. Lin	四維航業股份有限公司經理 Manager, Shih Wei Navigation Co., Ltd.
委員 Member	吳巨聖 James Wu	裕民航運股份有限公司副總經理 Vice President, U-Ming Marine Transport Corporation
委員 Member	呂學修 S. S. Lu	台塑海運股份有限公司協理 Assistant Vice President, Formosa Plastics Marine Corporation
委員 Member	黃崇榮 Ron 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	樂文斌 Wen-Pin Luan	新興航運股份有限公司副總經理 Vice President, Sincere Navigation Corporation
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	陳俊杰 Benson Chen	萬海航運股份有限公司經理 Manager, Wan Hai Lines Ltd.
委員 Member	范永政 Rice Fan	世邦海運股份有限公司協理 Senior General Manager, TVL Marine Co., Ltd.
委員 Member	魏正賜 Cheng-Tzu Wei	台灣國際造船股份有限公司總經理 President, CSBC Corporation, Taiwan
委員 Member	郭志成 C. C. Kuo	光明海運股份有限公司總經理 President, Kuang Ming Shipping Corporation
委員 Member	黃崇智 Eddie C. Huang	協榮航業股份有限公司總經理 President, Glory Navigation Co., Ltd.
委員 Member	吳偉國 Wei-Kuo Wu	新健海運公司協理 Assistant Vice President, Hsin Chien Marine 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 Assistant Vice President, Shipping Division, Chinese Maritime Transport Ltd.
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	謝敏雄 Alan Shieh	逢和航運股份有限公司總經理 President, Ta-Ho Maritime 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



技術委員會 Technical Committee

職別 Title	姓名 Name	現任職務 Position
主任委員 Chairman	王偉輝 W. H. Wang	國立臺灣海洋大學名譽教授 Professor Emeritus, National Taiwan Ocean University
副主任委員 Vice-Chairman	鄧運連 Y. L. Teng	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港務分公司高級研究委員 Senior Researcher, Port of Keelung, Taiwan International Ports Corporation
委員 Member	邵維揚 Wei-Yang Shao	國防部參事 Counselor, Ministry of National Defense R.O.C.
委員 Member	劉嘉洪 C. H. Liu	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	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	鄭添元 T. Y. Cheng	中國鋼鐵股份有限公司冶金技術處專案副處長 Deputy Director of Metallurgical Dept., China Steel Corporation
委員 Member	林頂光 D. K. Lin	台灣中油股份有限公司儲運處副處長 Deputy Director of Department of Storage and Transportation, CPC Corporation, Taiwan
委員 Member	江茂雄 Mao-Hsiung Chiang	國立臺灣大學工程科學及海洋工程學系教授兼系主任 Chairperson and Professor, Department of Engineering Science and Ocean Engineering, National Taiwan University
委員 Member	戴聖堅 James S. C. Tai	中國航運股份有限公司總經理 President, Chinese Maritime Transport Ltd.
委員 Member	顏春木 C. Y. Yen	台灣國際造船股份有限公司設計處經理 Manager of Design Department, CSBC Corporation, Taiwan
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	吳金河 Chih-Ho Wu	海洋委員會海巡署艦隊分署副分署長 Deputy Director, Fleet Branch of Coast Guard Administration, Ocean Affairs Council



品管委員會 Quality Management Committee

職別 Title	姓名 Name	現任職務 Position
主任委員 Chairman	林沛樵 P. C. Lin	全國船聯會秘書長 Secretary General, National Association of Chinese Shipowners
副主任委員 Vice-Chairman	黃志文 Chih-Wen Huang	經濟部標準檢驗局第六組組長 Director of 6 th Division, Bureau of Standards, Metrology and Inspection, MOEA
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	仇忠林 Jong-Lin Chyu	台灣航業公司總經理 President, Taiwan Navigation Co., Ltd.
委員 Member	楊弘明 Hong-Ming Yang	長榮海運股份有限公司海技部協理 Assistant Vice President, Evergreen Marine Co., Ltd.
委員 Member	何秀綺 Alice H.C. Ho	陽明海運股份有限公司行政長 Chief Administration Officer, Yang Ming Marine Transport Corporation
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	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	林暉傑 Wei-Chien Lin	四維航業股份有限公司工程師 Engineer, Shih Wei Navigation Co., Ltd.
委員 Member	俞克維 K. W. Yu	高雄海洋科技大學輪機工程學教授 Professor, Department of Marine Engineering, National Kaohsiung Marine University
委員 Member	林 彬 B. Lin	臺灣海洋大學商船學系教授 Professor, Department of Merchant Marine, National Taiwan Ocean University

風電諮詢委員會 WindEnergy Advisory Committee

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委員 Member	吳志偉 Chih-Wei Wu	經濟部能源局電力組組長 Director, Electricity Division, Bureau of Energy, MOEA
委員 Member	江茂雄 Mao-Hsiung Chiang	國立臺灣大學工程科學及海洋工程學系教授兼系主任 Department Chair and Professor, Department of Engineering Science and Ocean Engineering, National Taiwan University
委員 Member	黃金城 Chin-Cheng Huang	行政院原子能委員會核能研究所機械及系統工程專業計畫組長 Director, Mechanical and System Engineering Program, Institute of Nuclear Energy Research, Atomic Energy Council, R.O.C
委員 Member	林信宏 Peter Lin	富邦產物保險股份有限公司損害防阻暨勞工安全衛生部協理 Assistant Vice President, Loss Control & Labor Safety Dept., Fubon Insurance Co., Ltd.
委員 Member	辛敬業 Ching-Yeh Hsin	中國造船暨輪機工程師學會學術委員會主任委員/國立海洋大學系統工程暨造船學系副教授 Associate Professor, National Taiwan Ocean University Systems Engineering & Naval Architecture
委員 Member	鍾承菡 Cheng-Hsien Chung	財團法人船舶暨海洋產業研發中心專案室主任 Chief, Project Management Office, Ship and Ocean Industries R&D Center
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委員 Member	鄭文傑 Wen-Chieh Cheng	中能發電股份有限公司統包工程副總監 Deputy EPC Director, China Steel Power Corporation
委員 Member	楊迅 Augustine M. Yong Hsun	安能亞太有限公司品質經理 Quality Assurance Specialist, EnBw Asia Pacific Ltd.

建造中入級 Classification of Ships During Construction

2020年建造中入級CR的船舶共計有50艘，分列如下：

There were a total of 50 ships classed by CR during construction in 2020 as listed below:

船東 Owner	造船廠 Shipyard	建造地點 Place	船型 Ship Type	艘數 Number
INDIAN CHALLENGER S.A.	Saiki Heavy Industries Co., Ltd.	日本 Japan	37,372DWT 散裝船 37,372DWT Bulk Carrier	1
國立臺灣海洋大學 National Taiwan Ocean University	CSBC Corporation, Taiwan	台灣 Taiwan	漁業及海洋研究船 FISHING & OCEANOGRAPHIC RESEARCH	1
國立中山大學 National Sun Yat-Sen University	CSBC Corporation, Taiwan	台灣 Taiwan	漁業及海洋研究船 FISHING & OCEANOGRAPHIC RESEARCH	1
國立臺灣大學 National Taiwan University	CSBC Corporation, Taiwan	台灣 Taiwan	漁業及海洋研究船 FISHING & OCEANOGRAPHIC RESEARCH	1
達和航運股份有限公司 TA-HO MARITIME CORPORATION	Shin Kurushima Dockyard Co., Ltd.	日本 Japan	23,000DWT 水泥運輸船 23,000DWT Cement Carrier	1
THC INTERNATIONAL S.A.	Oshima Shipbuilding Co., Ltd.	日本 Japan	82,000DWT 散裝船 82,000DWT Bulk Carrier	1
中鋼運通股份有限公司 CHINA STEEL EXPRESS CORPORATION	CSBC Corporation, Taiwan	台灣 Taiwan	208,000DWT 散裝船 208,000DWT Bulk Carrier	3
中鋼運通股份有限公司 CHINA STEEL EXPRESS CORPORATION	Japan Marine United Corporation	日本 Japan	208,000DWT 散裝船 208,000DWT Bulk Carrier	4
臺灣港務港勤股份有限公司 TIPC Marine Corporation, Ltd.	Jong Shyn Shipbuilding Co., Ltd.	台灣 Taiwan	496GT 拖船 496GT Tug Boat	1
麥寮工業區專用港管理股份有限公司 MAILIAO HARBOR ADMINISTRATION CORPORATION	PaxOcean Engineering Pte. Ltd.	印尼 Indonesia	277GT 拖船 277GT Tug Boat	3
麥寮工業區專用港管理股份有限公司 MAILIAO HARBOR ADMINISTRATION CORPORATION	PaxOcean Engineering Pte. Ltd.	印尼 Indonesia	400GT 拖船 400GT Tug Boat	1
T.S. GLORY LTD.	CSBC Corporation, Taiwan	台灣 Taiwan	1,800TEU 貨櫃船 1,800TEU Container Carrier	1
海洋委員會海巡署艦隊分署 Fleet Branch, Coast Guard Administration, Ocean Affairs Council	CSBC Corporation, Taiwan	台灣 Taiwan	100噸巡邏艇 100TON Patrol Boat	2
高雄港務港勤股份有限公司 KAOHSIUNG MARINE SERVICE CORPORATION	Shin Yang Shipyard Sdn. Bhd.	馬來西亞 Malaysia	437GT 拖船 437GT Tug Boat	2
ALL OCEANS TRANSPORTATION INC.	CSBC Corporation, Taiwan	台灣 Taiwan	2,800TEU 貨櫃船 2,800TEU Container Carrier	3
峰達海運股份有限公司 Ventus Marine Co., Ltd.	Penguin Shipyard Asia Pte Ltd	印尼 Indonesia	199GT 人員運輸船 199GT Crew Boat	2
T.S. DYNASTY LIMITED	Kyokuyo Shipyard Corporation	日本 Japan	1,096TEU 貨櫃船 1,096TEU Container Carrier	2
海洋委員會海巡署艦隊分署 Fleet Branch, Coast Guard Administration, Ocean Affairs Council	Jong Shyn Shipbuilding Co., Ltd.	台灣 Taiwan	35噸巡邏艇 35TON Patrol Boat	5
大發輪船股份有限公司 DA FA MARINE CO., LTD	PT. Palindo Marine Shipyard	印尼 Indonesia	40M 客船 40M Passenger Ship	1
峰達海運股份有限公司 Ventus Marine Co., Ltd.	Penguin Shipyard Asia Pte Ltd.	新加坡 Singapore	492GT 人員運輸船 492GT CTV	1
大統海運股份有限公司 TA TONG MARINE CO., LTD.	Sasaki Shipbuilding Co., Ltd.	日本 Japan	2,400DWT 油品船 2,400DWT Oil Product Tanker	1
風盛航運股份有限公司 Prosperous Wind Shipping Limited	Lung-Teh Shipbuilding Co., Ltd.	台灣 Taiwan	26M 人員運輸船 26M CTV	1
臺灣港務港勤股份有限公司 TIPC Marine Corporation, Ltd.	Jade Shipbuilding Co., Ltd.	台灣 Taiwan	140M 駁船 140M Barge	1
海洋委員會海巡署艦隊分署 Fleet Branch, Coast Guard Administration, Ocean Affairs Council	Karmin International Co., Ltd	台灣 Taiwan	FRP 巡邏艇 FRP Patrol Boat	8
T.S. MAJESTY LIMITED	Kyokuyo Shipyard Corporation	日本 Japan	1,096TEU 貨櫃船 1,096TEU Container Carrier	2

現成船入級 Classification of Existing Ships

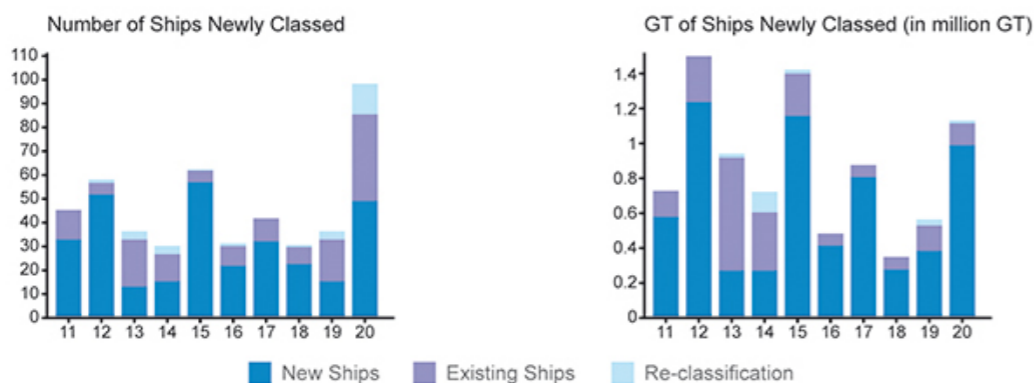
2020年現成船入級CR的船舶共計有37艘，分列如下：

There were a total of 37 existing ships classed by CR in 2020 as listed below:

船名 Ship Name	船東 Owner	船旗 Flag	總噸位 GT	船型 Ship Type
陸海8號 SEA AND LAND NO.8	陸海股份有限公司 SEA & LAND INTEGRATED CORP.	中華民國 R.O.C.	2575	駁船 BARGE
阿凡達勇敢號 AVATAR COURAGE	阿凡達岸外海峽服務股份有限公司 AVATAR OFFSHORE MARINE SERVICES CO., LTD.	中華民國 R.O.C.	1706	TRANSPORT & SUPPLY VESSEL
環島10號 PAN FORMOSA NO.10	環島工程有限公司 PAN FORMOSA ENGINEERING CO., LTD.	中華民國 R.O.C.	76.45	駁船 BARGE
環島 PAN FORMOSA	環島工程有限公司 PAN FORMOSA ENGINEERING CO., LTD.	中華民國 R.O.C.	121.8	駁船 BARGE
港勤451號 KMSC NO.451	高雄港勤服務股份有限公司 KAOHSIUNG MARINE SERVICE CORPORATION	中華民國 R.O.C.	484	拖船 TUG BOAT
堅定 CWINW RESOLUTION	國際海洋股份有限公司 International Ocean Vessel Technical Consultant Co., Ltd	中華民國 R.O.C.	41.53	WORK BOAT
KINGFISH	Kingfish LLC	巴拿馬 Panama	1312	自昇式平台 SELF-ELEVATING UNIT
WHALE SHARK	Whaleshark LLC	巴拿馬 Panama	1142	自昇式平台 SELF-ELEVATING UNIT
保時達 POSH DARING	嘉時航運股份有限公司 PKR OFFSHORE CO., LTD.	中華民國 R.O.C.	3208	TRANSPORT & SUPPLY VESSEL
POSH DAUNTLESS	嘉時航運股份有限公司 PKR OFFSHORE CO., LTD.	Tuvalu	3208	TRANSPORT & SUPPLY VESSEL
GREATSHIP RACHNA	GREATSHIP(INDIA) LIMITED	India	3306	OFFSHORE SERVICE VESSEL
裕達568號 YU DA NO.568	環球海事救護有限公司 GLOBAL SALVAGE CO., LTD.	中華民國 R.O.C.	499	拖船 TUG BOAT
東方巴法洛 DF BUFFALO	宏華營造股份有限公司 HUNG HUA CONSTRUCTION CO., LTD.	中華民國 R.O.C.	5007	駁船 BARGE
海歷145號 SEAGREEN NO.145	海歷企業股份有限公司 SEAGREEN MARINE SERVICE CO., LTD.	中華民國 R.O.C.	1574	駁船 BARGE
同輝9號 TONG YEA NO.9	同輝興業股份有限公司 TONG YEA ENTERPRISE CO., LTD.	中華民國 R.O.C.	2340	化學品及油品船 CHEMICAL AND OIL TANKER
FUGRO VOYAGER	Icon Voyager Pte. Ltd.	新加坡 Singapore	4644	SURVEY & RESEARCH VESSEL
亞昌1號 YACHANG NO.1	泛亞工程建造股份有限公司/皇昌營造股份有限公司 Pan Asia Engineers & Constructors Corp. Co. Ltd./Hwang Chang General Contractor Co., Ltd	Tuvalu	7081	駁船 BARGE
東方8號 ORIENT NO.8	宏華營造股份有限公司 HUNG HUA CONSTRUCTION CO., LTD.	中華民國 R.O.C.	1179	拖船 TUG BOAT
阿凡達冠軍號 AVATAR TRIUMPH	阿凡達岸外海峽服務股份有限公司 AVATAR OFFSHORE MARINE SERVICES CO., LTD.	中華民國 R.O.C.	3511	TRANSPORT & SUPPLY VESSEL
東方6號 ORIENT NO.6	宏華營造股份有限公司 HUNG HUA CONSTRUCTION CO., LTD.	中華民國 R.O.C.	816	拖船 TUG BOAT
東方7號 ORIENT NO.7	宏華營造股份有限公司 HUNG HUA CONSTRUCTION CO., LTD.	中華民國 R.O.C.	816	拖船 TUG BOAT
宏華2號 FALCON NO.2	宏華營造股份有限公司 HUNG HUA CONSTRUCTION CO., LTD.	中華民國 R.O.C.	241.89	TRANSPORT & SUPPLY VESSEL
BRAVE TERN	BRAVE TERN AS	Malta	15328	自昇式平台 SELF-ELEVATING UNIT
阿凡達勝利號 AVATAR VICTORY	阿凡達岸外海峽服務股份有限公司 AVATAR OFFSHORE MARINE SERVICES CO., LTD.	中華民國 R.O.C.	1706	TRANSPORT & SUPPLY VESSEL
金龍 GOLDEN DRAGON	長德海運股份有限公司 CHANG YI MARINE CO., LTD.	中華民國 R.O.C.	168.57	客船 PASSENGER SHIP
金興186號 KIM HENG 186	成功海業台灣有限公司 Bridgewater Marine (Taiwan) Limited	中華民國 R.O.C.	898	駁船 BARGE
金興1860號 KIM HENG 1860	成功海業台灣有限公司 Bridgewater Marine (Taiwan) Limited	中華民國 R.O.C.	928	駁船 BARGE
亞昌3號 YACHANG NO.3	泛亞工程建造股份有限公司/皇昌營造股份有限公司 Pan Asia Engineers & Constructors Corp. Co. Ltd./Hwang Chang General Contractor Co., Ltd	中華民國 R.O.C.	3390	駁船 BARGE
守護1號 GUARD NO.1	亞洲海力打撈有限公司 ASIAN MARINE SALVAGE LIMITED	中華民國 R.O.C.	80.41	帶纜船 MOORING BOAT
高能101號 HIGH ENERGY NO.101	沈滿管理顧問有限公司 Yeun Maan Ship Management & Consultancy Ltd.	中華民國 R.O.C.	198.88	拖船 TUG BOAT
基737 KEE 737	臺灣港務股份有限公司 TAIWAN INTERNATIONAL PORTS CO., LTD.	中華民國 R.O.C.	8.2	WORK BOAT
SEAWAY YUDIN	Seaway Vessels BV.	Cyprus	25527	CRANE VESSEL
奔能 CWINW PHENOM	國際海洋股份有限公司 International Ocean Vessel Technical Consultant Co., Ltd	中華民國 R.O.C.	99.13	客船 PASSENGER SHIP
奔能 CWINW PHOENIX	國際海洋股份有限公司 International Ocean Vessel Technical Consultant Co., Ltd	中華民國 R.O.C.	99.13	客船 PASSENGER SHIP
長晶 EVER BLINK	長榮海運股份有限公司 EVERGREEN MARINE CORP. (TAIWAN) LTD.	中華民國 R.O.C.	32691	貨櫃船 CONTAINER CARRIER
宏華3號 FALCON III	宏華營造股份有限公司 HUNG HUA CONSTRUCTION CO., LTD.	中華民國 R.O.C.	168.11	TRANSPORT & SUPPLY VESSEL
宏華1號 FALCON I	宏華營造股份有限公司 HUNG HUA CONSTRUCTION CO., LTD.	中華民國 R.O.C.	241.89	TRANSPORT & SUPPLY VESSEL

新入級船舶 Newly Classed Ships

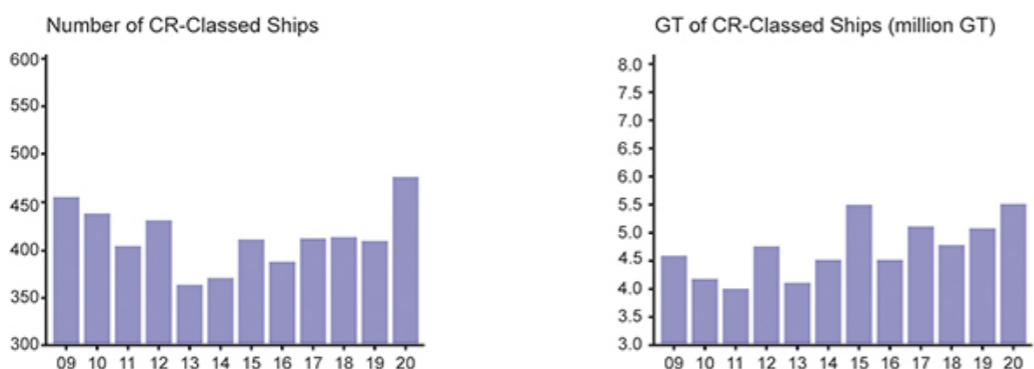
2020年經審核後正式入級的船舶有100艘共計1,138,958總噸，艘數為在級船舶的21%，其中新船入級50艘，現成船入級37艘，重新入級13艘。After careful review, a total of 100 ships with 1,138,958 gross tonnage were formally classed with CR in 2020. The number of ships accounted for 21% of the number of those already classed with CR. Among these newly classed ships, there were 50 new ships, 37 existing ships, and 13 re-classed ships.



在級船舶 Classed Ships

截至2020年底，維持CR船級之船舶有477艘，共計5,491,208總噸，平均船齡為12.1年。Up to the end of 2020 there were 477 ships maintaining CR class with 5,491,208 gross tonnage, and the average age of ships was 12.1 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



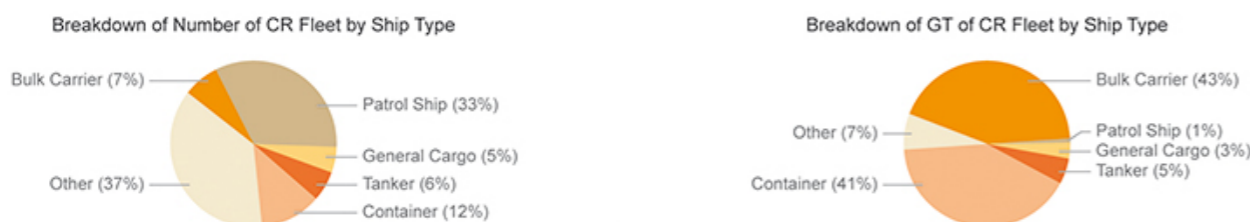
在級船舶之船旗國分析 Analysis of flag states of CR-classed ships



在級船舶之船齡分析 (平均船齡12.1年) Analysis of age of CR-classed ships (the average age of ships : 12.1 years)



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



ISM, ISPS及MLC評鑑

2020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38家，船舶管理評鑑(SMC)72艘，國際船舶保全(ISPS)評鑑共56艘次及海事勞工公約(MLC)檢查共60艘。

ISM, ISPS & MLC Verifications

In 2020, CR conducted ISM, ISPS and MLC verification and certification work, carrying out DOC verifications for 38 companies, SMC verifications for 72 ships, ISPS verifications for 56 ships, and MLC inspection for 60 ships.

港口國管制

為維持我國國輪在港口國管制(PSC)之檢查成績，自2017年起，配合主管機關政策向國輪航商宣導強化管制檢查措施，內容如下：

- 擬定管制檢查措施，針對高風險船舶，本中心驗船師將會同航務中心檢查員每2~4個月登輪執行預防性加強檢驗。
- 本中心提供「港口國管制檢查表(到港前使用)」及「船上保養檢查表」，請船東及船員落實使用，由本中心驗船師登輪檢驗時查核使用狀況。
- 本中心提供IMO決議案A.1119(30) Appendix 2所列之可滯船缺失項目，提醒船東注意。
- 本中心於社群軟體LINE建立「CR PSC應急群組」，方便船舶遇有港口國管制官員登船檢查時，船上人員可即時加入此群組以取得本中心之協助。

依東京備忘錄(Tokyo MOU)發布之年報，本中心十餘年來皆獲得「高表現度」之評比，今年度公布之名次於全球82個驗船機構中，為第11名；國輪亦維持名列「白名單」，且名次逐年向上提升，從去年的第19名進步為第13名，顯見強化管制檢查措施已具成效。後續本中心將持續配合主管機關政策執行國輪強化管制檢查措施，以維持國輪在港口國管制的良好成績。

我船旗國於2019年首度榮獲美國21世紀優質船舶計劃(QUALSHIP 21)的殊榮，並連續三年持續名列QUALSHIP 21，這樣的優異成績，使通過美國官方審核的國輪，於航行美國港口PSC檢查週期將降為三年一次。

Port State Control

In order to maintain performance of R.O.C flagged vessels in Port State Control (PSC), CR has implemented enforcement control measures in accordance with government policies as follows:

- CR has stipulated control measures, which for high-risk vessels, CR surveyors and administration inspectors will conduct preventive surveys onboard every two to four month.
- CR has provided "Pre Arrival PSC Checklist" and "Checklist for Onboard Maintenance" for shipowners and crew to use. CR surveyors will check those document when conducting surveys onboard.
- CR has drawn shipowners' attention to those detainable deficiencies listed in IMO Resolution A1119(30) Appendix 2.
- CR has created a Line group link for PSC inspection. Once there are PSC officers onboard, the crew could join the group immediately to seek CR's assistance.

According to annual reports published by Tokyo MOU, CR has been listed in "High Performance" for more than ten years, and ranked 11th among 82 global classification societies this year. R.O.C. flag has been listed in "White List" and the ranking has gradually elevated. This year, R.O.C. flag was ranked 13th, a significant improvement of 6 places from last year. It is proved that enforcement control measures are effective. In the future, CR will continue to implement enforcement control measures on R.O.C. flagged vessels in accordance with government policies in order to maintain good performance of R.O.C. flagged vessels in Port State Control.

R.O.C. flag has earned Qualship 21 designation from United States Coast Guard for the first time in 2019, and continued to be in qualified flag administrations for three consecutive years. After approval, the examination intervals of R.O.C.-flagged vessels could be reduced to once every three years.

工廠認可及型式認可

2020年CR執行船舶用品工廠認可及產品型式認可共計74家149型，並執行危險品容器之檢驗業務，共計廠商21家，型式209型(包括小型202型及中型7型)。

Works Approval and Type Approval

In 2020, CR conducted works approval of 74 companies and type approval of 149 products for use on vessels, and also carried out certification of packagings for dangerous goods for 21 companies and 209 types (202 types of small packagings and 7 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及交通部核可。目前本中心所編撰之規範有：

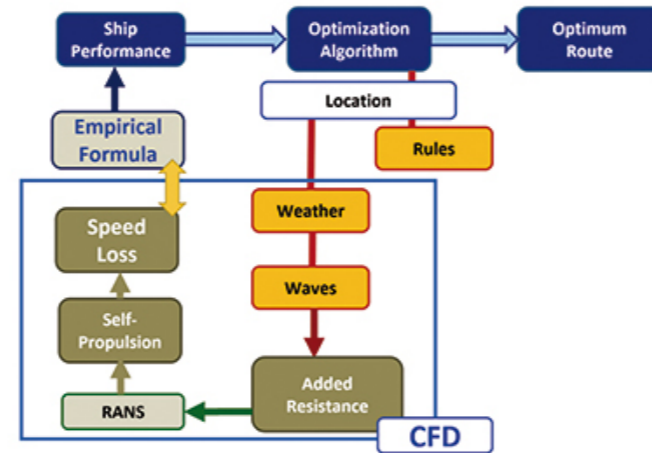
Rules Development

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 and approved by Ministry of Transportation and Communications, R.O.C.. At present, we are compiling the following classification and certification rules.

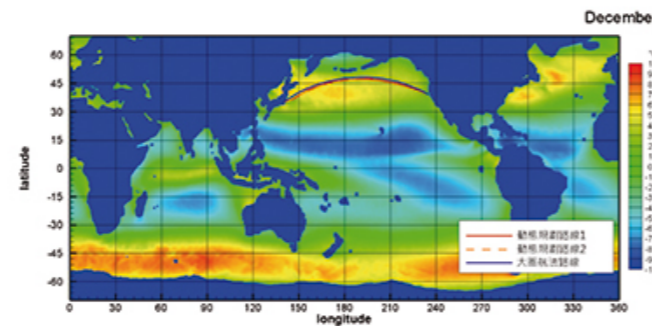
- 2020年鋼船建造與入級規範
Rules for the Construction and Classification of Steel Ships, 2020
- 2017年貨櫃建造與發證規範
Rules for the Construction and Certification of Freight Containers, 2017
- 2013年貨物裝卸設備構造與檢驗規範
Rules for the Construction and Survey of Cargo Gear, 2013
- 2021年高速船建造與入級規範
Rules for the Construction and Classification of High-Speed Craft, 2021
- 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
- 2016年離岸風場認證規範
Rules for the Certification of Offshore Wind Farms, 2016
- 2021年海巡艦艇建造與入級規範
Rules for the Construction and Classification of Coast Guard Ships, 2021



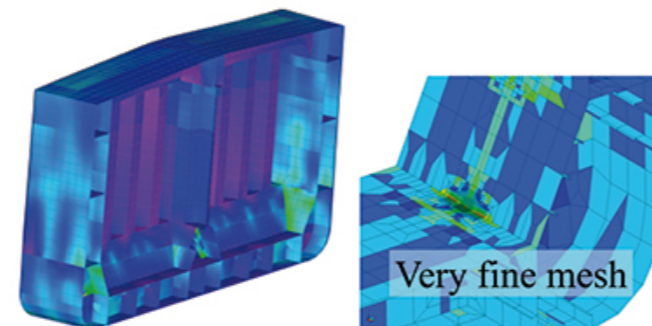
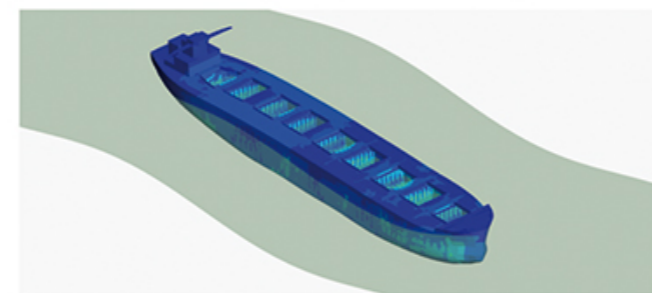
◎ CR智能船舶船級註解(Hx; Mx; Ex; Nx; Cx; Ix)



◎ 天氣定航研究方法與流程



◎ 天氣定航分析範例



◎ 全船直接流固耦合分析

政府授權

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、貝里斯等7國政府之授權執行各該國籍船舶之國際公約檢驗。

交通部航港局於8月24日至26日至9月1日至2日至本中心執行驗船機構實地督導稽核，認可本中心符合驗船機構章程(RO Code)之規定，繼續授權本中心執行船舶法定檢驗及發證。

交通部航港局於12月10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11月4日及11月26日順利完成對本中心授權無線電委辦業務查核之年度稽查工作。

Government Authorization

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, and other five countries for conducting statutory surveys of ships registered with these governments.

Maritime and Port Bureau(MPB) has conducted an the recognized organization audit on August 24-26 and September 1-2. CR was recognized to comply with requirements of RO Code, and authorized to conduct statutory surveys and certification.

CR has smoothly passed the annual audit on yacht inspection conducted by Maritime and Port Bureau on December 10.

CR has smoothly passed the annual audit on radio inspection conducted by National Communications Commission (NCC) on November 4 and 26.

研究成果

本中心於2020年發表十一篇研究論文，題目分別為：「應用不同方法計算離岸風機單樁基礎所受波浪力之適用性探討」、「應用不同方法計算波浪航行中之船舶失速」、「高速雙體客船船艙波擊負荷模擬與結構強度分析」、「穿浪型雙體船在斜浪下的橫跨甲板負荷及結構分析方法」、「Improving the Computational Efficiency for Optimization of Offshore Wind Turbine Jacket Substructure by Hybrid Algorithms」、「The Development of an Analytical Wake Model for the Flow-field Assessment of Offshore Wind Farms」、「腐蝕鋼板機械性質衰減模型研究 - 以實船及加速腐蝕鋼板分析」、「Representative Environmental Condition for Fatigue Analysis of Offshore Jacket Substructure」、「A Multiobjective Perspective to Optimal Sensor Placement by Using a Decomposition-Based Evolutionary Algorithm in Structural Health Monitoring」、「通過風機後方之CFD計算流場推導尾流的參數化解析模型」、「雙體船在斜浪中的橫跨甲板負荷及結構分析方法」。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。

Research Achievement

In 2020, this Society has published eleven technical papers, which respectively entitled as "Applicability of Different Methods for Computing Wave Forces on Monopile Foundation of Offshore Wind Turbine", "Evaluations of the Ship Speed Loss in Waves by Different Methods", "Bow Slamming Simulation and Structural Analysis of High Speed Passenger Catamaran", "Cross Deck Load and Structural Analysis of Wave Piercing Catamaran Under Quartering Sea", "Improving the Computational Efficiency for Optimization of Offshore Wind Turbine Jacket Substructure by Hybrid Algorithms", "The Development of an Analytical Wake Model for the Flow-field Assessment of Offshore Wind Farms", "Declining Model of Mechanical Properties for Corroded Steel Plate - An Empirical Study of Real Ships and Accelerated Corrosion Test", "Representative Environmental Condition for Fatigue Analysis of Offshore Jacket Substructure", "A Multiobjective Perspective to Optimal Sensor Placement by Using a Decomposition-Based Evolutionary Algorithm in Structural Health Monitoring", "The derivation of an analytical wake model from a parameterised study of the CFD-computed flow-fields behind a wind turbine", "Cross Deck Load and Structural Analysis of Catamarans in Quartering Sea". 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

本中心提供各航運公司船舶之緊急技術評估服務 (ETAS)，截至2020年底服務中船舶共計有26艘次。

Emergency Technical Assessment Service (ETAS)

CR provides Emergency Technical Assessment Service (ETAS) to shipping companies. Up to the end of 2020, 26 ships have applied to CR for this service.

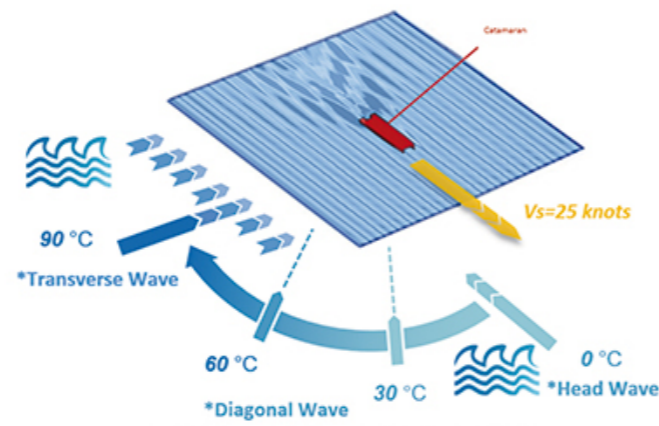


CRPA電子審圖

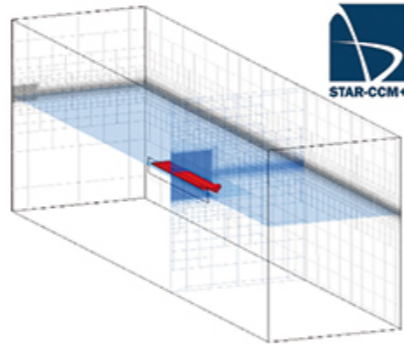
為加強新造船設計圖審核效率，並減少紙張印刷之資源浪費，本中心自行開發電子審圖系統 (CRPA)，其功能包括由船廠傳送設計圖電子檔、本中心審核意見退審、現場驗船師查詢審圖意見、船廠處理退審意見、船東查詢送圖及審圖進度等。

CR Plan Approval (CRPA)

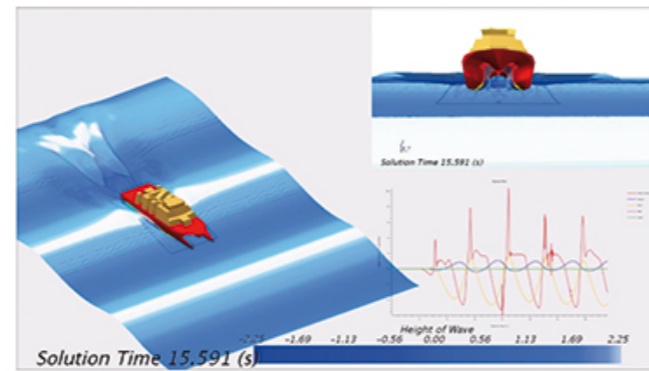
In order to enhance the efficiency of plan approval for newbuildings and to reduce paper consumption in the office, we have developed CR Plan Approval (CRPA). Its functions include submission of design drawings in electronic form by the shipyard, approval of drawings by CR with comments and return of 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.



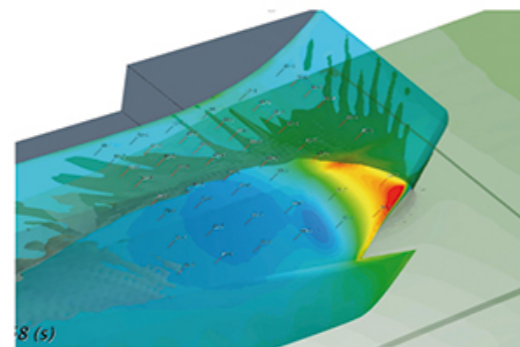
雙體船不同波向下的運動與受力計算



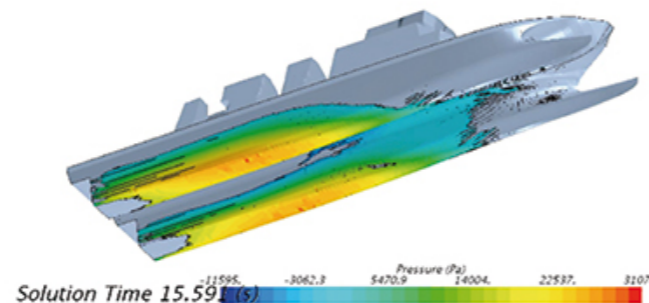
STAR-CCM+計算域及網格建立



高速雙體船船艙波擊模擬



雙體船船艙於波擊下的受力分佈



特定時刻下的船體壓力分佈

研討會 Workshops

本年度共舉辦1次研討會，深獲與會人士好評。

We held 1 workshop during 2020, which received favorable responses from participants.

日期 Date	研討會內容 Topic
2020.9.17	<ul style="list-style-type: none"> CR船級與PSC統計 CR Classification and PSC Statistics 現成船檢驗實務 Existing Ship Survey Practices CR智能船舶準則簡介 Introduction to CR Smart Ship Guidelines 研發策略與年度成果發表 R&D Strategy and Annual R&D Summary



教育訓練

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3班次計47人，及港口設施保全員共3班次計112人。另並舉辦國際安全管理(ISM)內部稽查訓練課程共5班次共計127人，教育訓練課程均深獲參與學員之好評。

Training

In response to the request of the shipping industry, CR has offered 3 CSO training courses for a total of 47 participants and 3 PFSO training courses for a total of 112 participants. Moreover, CR has also held 5 ISM Code training courses for a total of 127 participants. The above-mentioned educational training courses all drew high praise from the participants.



驗船中心

CR CLASSIFICATION SOCIETY