CATALOG

台灣國際造船股份有限公司
CSBC CORPORATION, TAIWAN

CONTENTS

OUR PHILOSOPHY

- Operating with Integrity
- Learning with Innovation
- Growing with Sustainability

INTRODUCTION

Founded in 1973, CSBC Corporation, Taiwan is a shipbuilding enterprise based in Kaohsiung, with two shipyards located separately in Keelung and Kaohsiung. Our services extend over commercial and naval shipbuilding, ship repair, machinery manufacturing, offshore engineering and diversified operations.

BE A PILOT IN OCEAN

CSBC Corporation, Taiwan is the largest shipbuilding company in Taiwan. We can build approximately 18 ships or 1.4 million DWT yearly from two building docks separately located in our Kaohsiung and Keelung shipyards.

We value quality highly and continue developing new ship design and enhancing ship performance. From 1998 to 2022, 26 types (232 ships) of our ships were recognized as “SIGNIFICANT SHIP” by RINA (Royal Institute of Naval Architects).

We build more than a ship; we provide 3D lifetime services: Design, Delivery and Dry-docking. Additionally, to compete in the ever-changing global business environment, we have expanded our business to include offshore engineering. We are ambitious to become one of the world's premier heavy industry companies!

HISTORY

Keelung Shipyard	Kaohsiung Shipyard
1916 May | Founded as Kimura Steel Work	
1937 June | Reorganized as Taiwan Dockyard Company	
1945 October 29 | Taken over by Taiwan Provincial Government	
1948 April | Renamed as Taiwan Shipbuilding Company (TSC)	
	1973 November 7 | Founded as China Shipbuilding Corporation (CSBC)
	1974 January | Groundbreaking of dock
	1976 January 30 | Completion of the factory building
	1977 July 1 | Nationalization December 13 | Completion of Burmah Endeavor, the first 445,000 DWT Ultra Large Crude Carrier (ULCC) in Taiwan
	1978 January 1 | Merger between China Shipbuilding Corporation and Taiwan Shipbuilding Company, with the China Shipbuilding Corporation as the surviving company
	1999 September | Acquisition of N, NA, and NPT Certificates from ASME
	2007 January | Acquisition of ISO 9001 Certificate March 1 | Renamed as CSBC Corporation, Taiwan
	2008 December | Acquisition of OHSAS 18001 Certificate December 22 | Listed on the Taiwan Stock Exchange and completed privatization
	2009 December | Acquisition of TOSHMS Certificate
	2010 December | Acquisition of ISO 14001 Certificate
	2017 December | Acquisition of Taiwan Intellectual Property Management System (TIPS) Certificate
	2019 June | Acquisition of EN ISO 3834-2 and EN 1090-2 Certificate
	2020 December 10 | Acquisition of ISO/IEC 27001 Certificate

SHIPYARDS

Keelung Shipyard

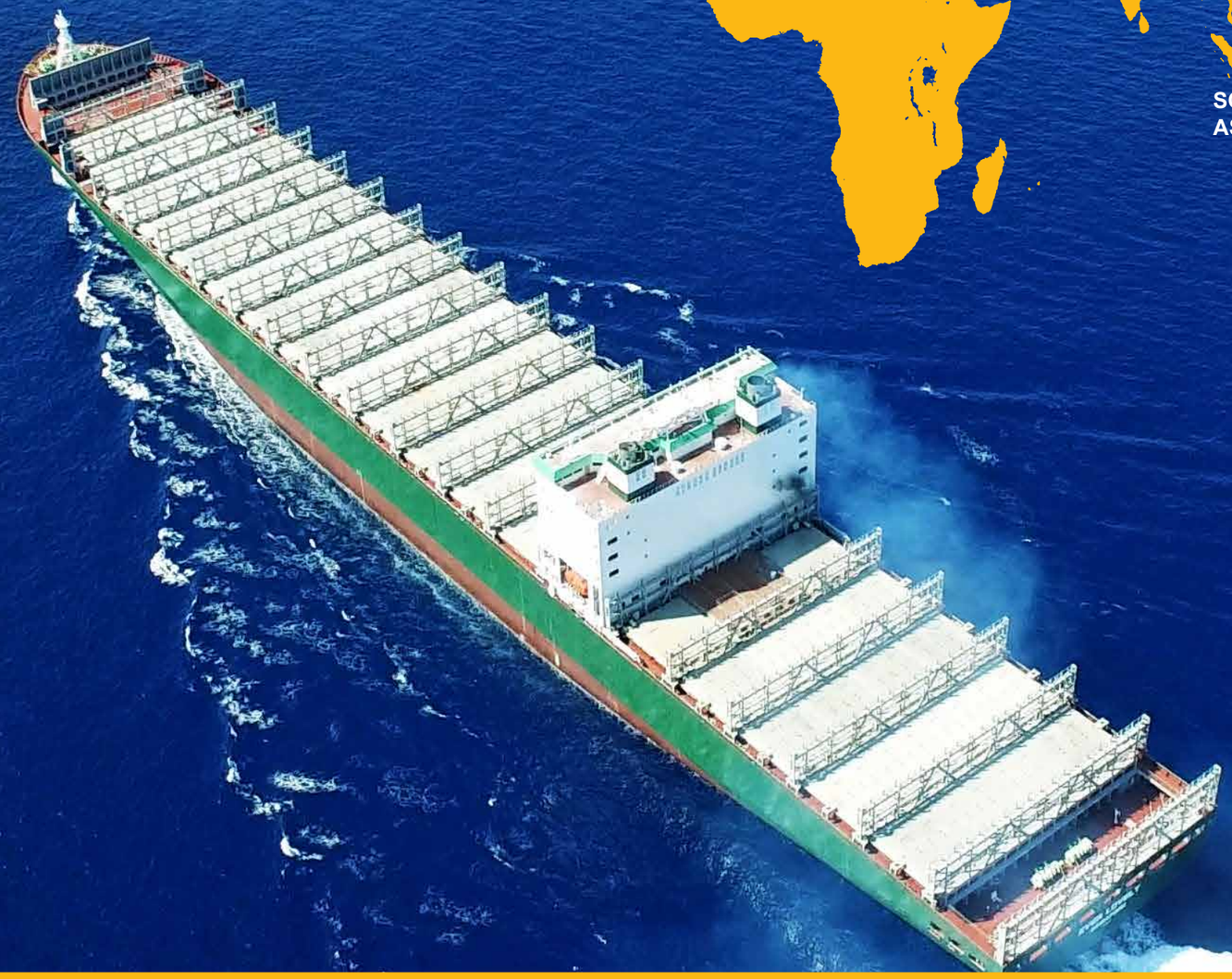
Total Area of Premises (m^2)	355,886
Building Dock (m)	275 X 43.4 X 10
No.1 Repair Dock (m)	210 X 26.4 X 12.4
No.2 Repair Dock (m)	270 X 45 X 11.5
Major Crane	300 t X 1 set
Capacity of Ship Building	approx.6 ships (0.3 M DWT) / year
Capacity of Ship Repair	45~50 ships / year

Kaohsiung Shipyard

Total Area of Premises (m^2)	1,173,051
Building Dock (m)	950 X 92 X 14
Repair Dock (m)	275 X 45 X 12
Major Crane	350 t X 2 sets
Capacity of Ship Building	approx. 12 ships (1.1 M DWT) / year
Capacity of Naval Ship Building	6,000 t (displacement) / year
Capacity of Ship Repair	70~80 ships / year

GLOBAL MARKETS

Over the past few decades, CSBC has expanded business throughout Asia, the Americas and Europe, and has built close relationships with prestigious ship owners all over the world. We go beyond borders and aim to introduce our cutting edge shipbuilding technique to the world.



MAJOR CLIENT AREA

ASIA — Taiwan, China, Hong Kong, Malaysia, India, Israel, Japan, Korea, Kuwait, Singapore

THE AMERICAS — Canada, Chile, U.S.A.

EUROPE — Denmark, France, Germany, Greece, Netherlands, Norway, U.K.

PRODUCT PROFILE

Newbuilding of Container Ships

TAIWAN EXCELLENCE 2017

1 14,000 TEU Container Vessel

2 8,500 TEU Container Vessel

3 4,500 TEU Container Vessel

4 2,800 TEU Container Feeder

5 1,800 TEU Container Feeder

TAIWAN EXCELLENCE 2016

* The "Taiwan Excellence Awards" were established by the Ministry of Economic Affairs in 1993, rewarding for the outstanding products made in Taiwan with excellent performance on R&D, Design, Quality and Marketing.

PRODUCT PROFILE

Newbuilding of Tankers

1

2

3

4

5

1 445,000 DWT Ultra Large Crude Oil Carrier (ULCC)
2 260,000 DWT Very Large Crude Oil Carrier (VLCC)
3 40,000 DWT Product Carrier
4 150,000 DWT Tanker
5 40,000 DWT Tanker

Newbuilding of Bulk Carriers

1

2

3

4

5

1 208,000 DWT Bulk Carrier
2 176,000 DWT Bulk Carrier
3 93,000 DWT Bulk Carrier (Post-Panamax)
4 77,000 DWT Bulk Carrier (Panamax)
5 35,000 DWT Bulk Carrier

PRODUCT PROFILE

Newbuilding of Special Purpose Vessels

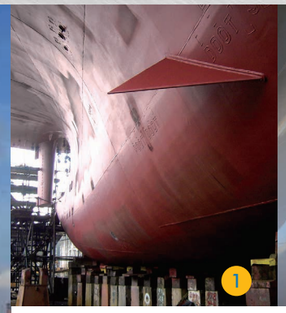
1. 65,000 DWT Semi-Submersible Deck Cargo / Heavy Lift Carrier
2. 23,000 DWT 140 m x 41 m Barge
3. 626,000 ft^3 Reefer Ship
4. 5,200 HP Tugboat
5. 1,000 GT Ocean Research Vessel

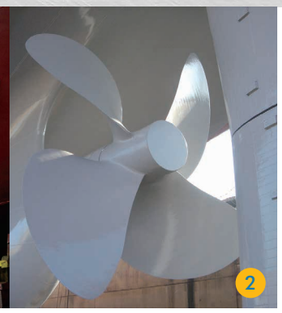
Newbuilding of Governmental Vessels

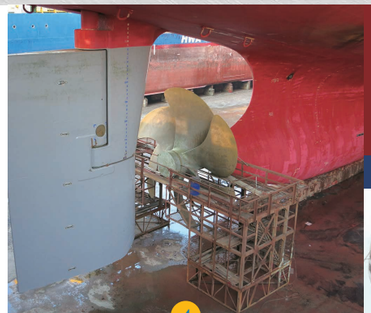
1. Frigate, Guided Missile (PFG-2)
2. Patrol Craft, Guided Missile (PCG)
3. Fast Combat Support Ship (AOE)
4. Landing Platform Dock (LPD)
5. Coastal Patrol Vessel
6. Coastal Rescue Craft

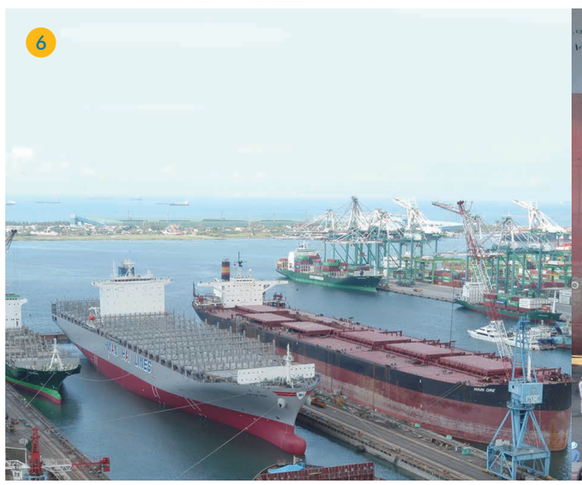
PRODUCT PROFILE

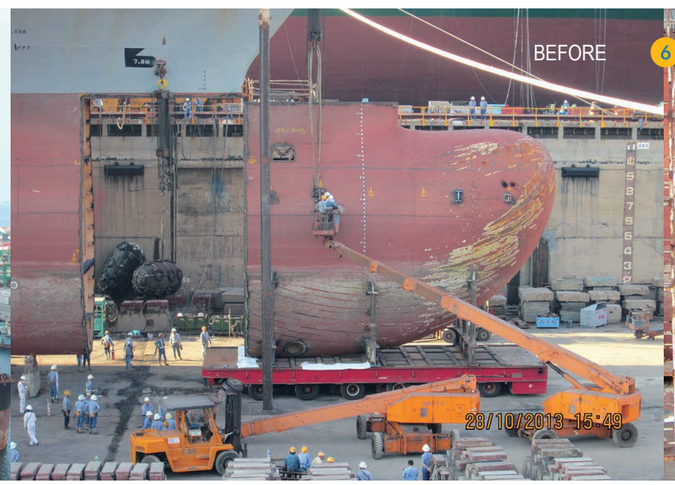
Commercial / Governmental Vessels Retrofit / Repair











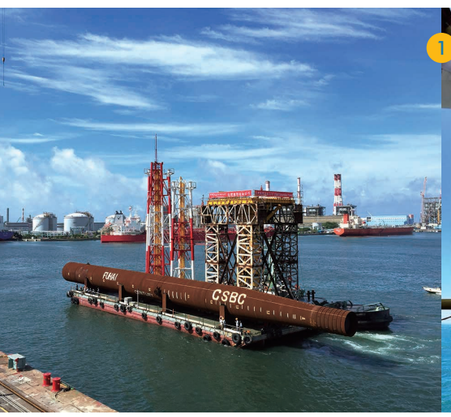
1. 13,000 TEU container vessel SOx scrubbers retrofit
2. Navy PFG-2 “1101” in dry dock
3. Two Panamax bulk carriers abreast in dry dock
4. Navy AOE “530” and Wan Hai Lines container vessel abreast in dry dock
5. Three German Laeisz sister ships in yard
6. 260,000 DWT bulk carrier at berth and two container ships abreast in dry dock

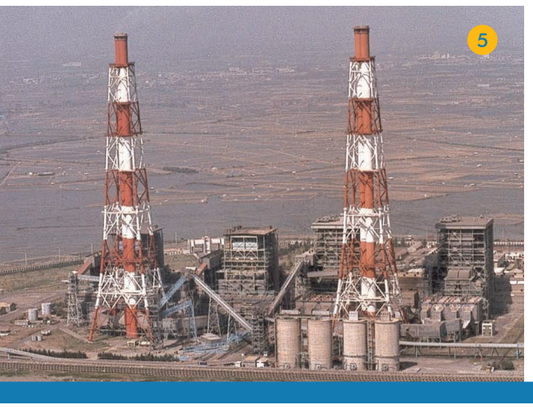
1. Vortex generator installation
2. Silicon base paint application
3. Wake Equalizing Duct (WED) and propeller cap fins installation
4. 8,000 TEU container vessel rudder bulb installation
5. 8,000 TEU container vessel energy saving bulbous bow retrofit
6. 4,500 TEU container vessel energy saving bulbous bow retrofit

PRODUCT PROFILE

Offshore Wind Industry, Ocean Energy Industry and Industrial Business

Engineering | Procurement | Construction | Installation | O&M





1. Marine meteorological observation tower (transportation and installation)
2. 20 kW wave power generator (fabrication, transportation and installation)
3. 70 t level luffing crane (fabrication and installation)
4. Container gantry crane (fabrication and installation)
5. 250 m industrial chimney (fabrication and installation)
6. Continuous ship unloader (fabrication and installation)
7. Machine and pipeline of hot rolling mill factory (installation)
8. Mechanical / electrical equipment and pipeline of LNG terminal (fabrication and installation)
9. Gas-steam combined cycle unit of power plant (installation)
10. Transition piece of offshore wind farm (anti-corrosion and coating)
11. Pin pile of offshore wind farm (fabrication)

SHIPYARD FACILITIES

"It is necessary to have effective tools to do good work."
The major facilities of CSBC are as follows:

CONTRACT SIGNING → DESIGN → LOFTING → STEEL CUTTING → PLATE BENDING → PRIMARY ASSEMBLY → KEEL LAYING → BLOCK ASSEMBLY → LAUNCHING → PAINTING & OUTFITTING → DELIVERY → AFTER SALES SERVICE

1 350 t Goliath Cranes

2 The Surface Treatment System

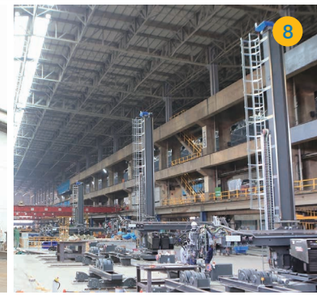
3 Regenerative Thermal Oxidizers for Volatile Organic Compounds (VOCs) Abatement

4 NC Plasma Cutting Machine

5 Parallel Cutting Machine

6 1,000 t Hydraulic Bending Machine

7 Blasting and Painting Room



8 Pin Pile Production Line

DESIGN & RESEARCH

With the ultimate aim of customer satisfaction and awareness of environmental protection, CSBC continues to pursue technological improvement and design innovation through R&D resources, ceaselessly studying and meeting customer needs to create economical, reliable products.

Three Stages of Energy-Saving (ES)

In this context, CSBC implemented a three-stage energy-saving R&D project which intended to reduce energy use by 10%, 20%, 30% progressively.

To achieve 10% energy savings in the first stage, we applied various energy-saving devices which have benefits of reducing hull resistance or improving propulsion efficiency. The second stage reached 20% energy savings by establishing a new procedure of propeller design, the Sea Sword Bow application, and other innovative designs to increase propulsion, reduce resistance, and improve seaworthiness. Standing on the foundation of the previous achievements, the third stage, involving the research of a sea water cooling system, lighting equipment and the development of Cooperative Maritime Performance Analyzing Support System (COMPASS), successfully carried out the goal of 30% energy savings.

Environmental Sustainability

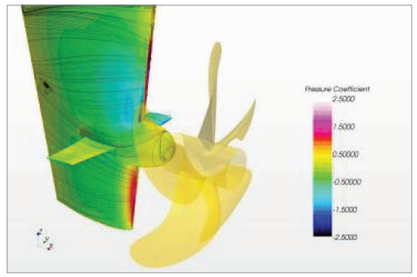
With successful launching of these three stages, the ES-10, ES-20 and ES-30 have become a well-known CSBC brand and example of green technology.

ES not only means the achievement of energy-saving but also indicates the effort of CSBC for environmental sustainability. The fact that ES technologies have been applied extensively in new building design also means that the products of CSBC are effective and reliable.

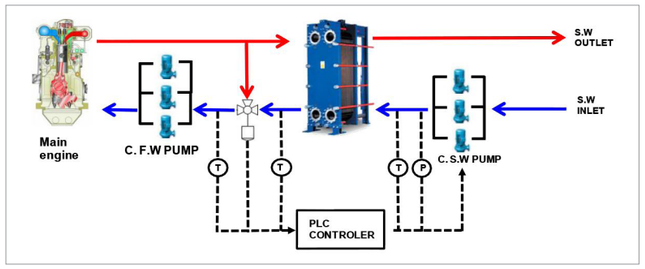
Seaway Optimum Design & Operation

Seaway Optimum Design & Operation
strategy, service and registered mark of CSBC

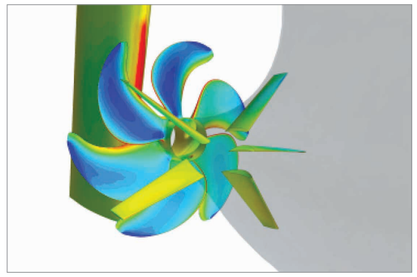
ES : innovative energy saving technique
& sustainable environment consideration



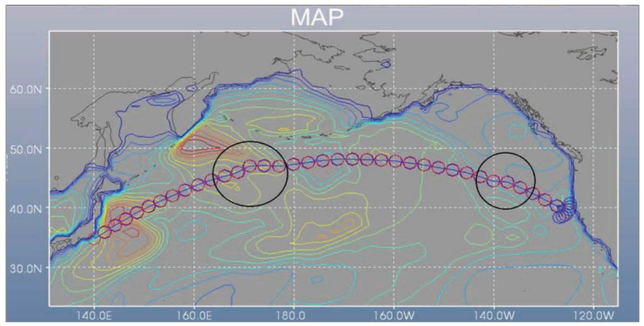
ES Rudder Bulb (ES RB)
ES Rudder Fin (ES RF)



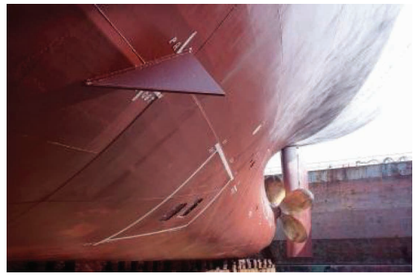
Variable Frequency Control System
for Main Cooling Sea Water Pump in Ships



ES Pre-Rotational Flow Fin

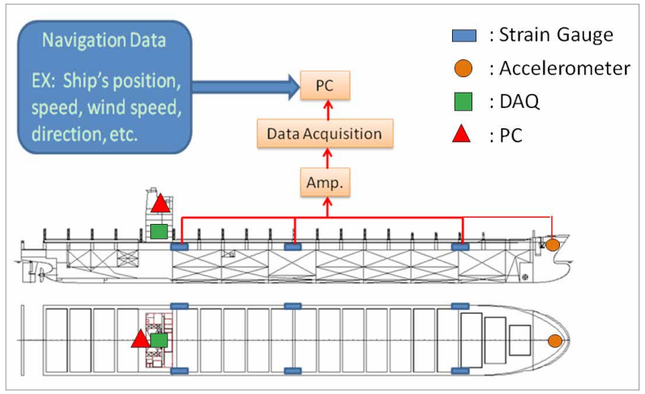


Prediction of COMPASS during Severe Sea Conditions



Vortex Generator

ES Sea Sword Bow

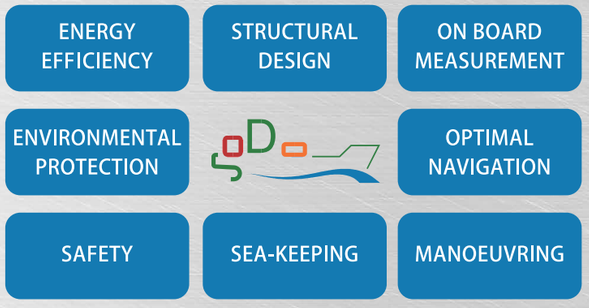


Full Scale Measurement on Large Container Vessel

DESIGN & RESEARCH

SODO

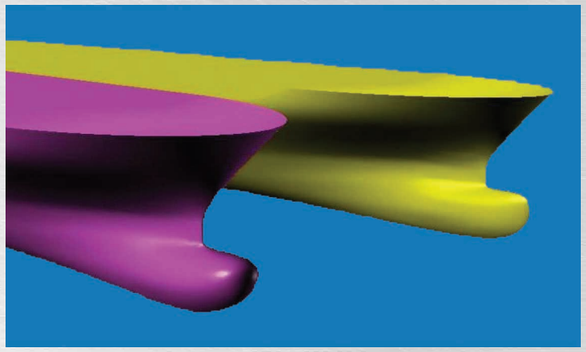
CSBC developed another brand, Seaway Optimum Design & Operation (SODO), in cooperation with ship owners to optimize ship design and operation in different seaways; this creates added value through safety, efficiency, reliability and economy. The purpose of SODO is to reduce carbon emissions, an important requirement of both EEDI (Energy Efficiency Design Index) and EEOI (Energy Efficiency Operation Indicator).



Function of SODO

ES Bow

An innovative product vital to the spirit of SODO is ES Bow which is an enhanced design on the basis of frequent drafts and operating speeds during actual service conditions instead of design draft and speed. By considering realistic operating conditions, CSBC can customize the design of ES Bow and cut operating costs for ship owners.

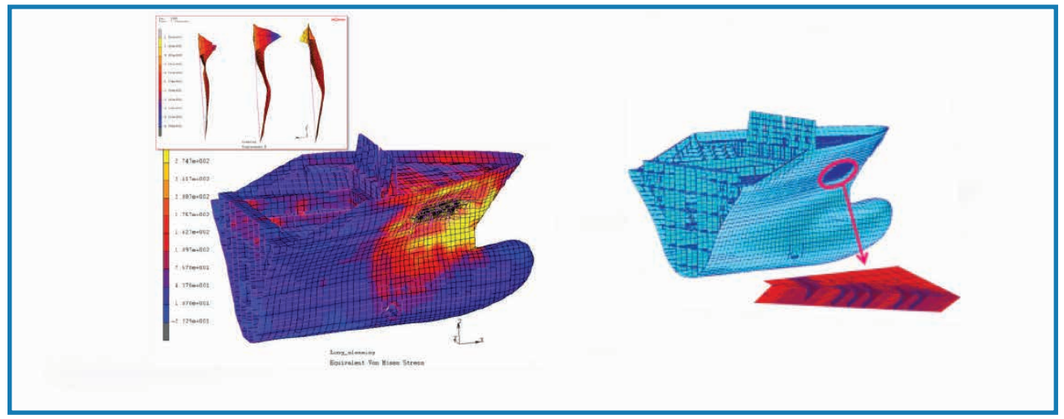


Left Hand Side :
Original Bow

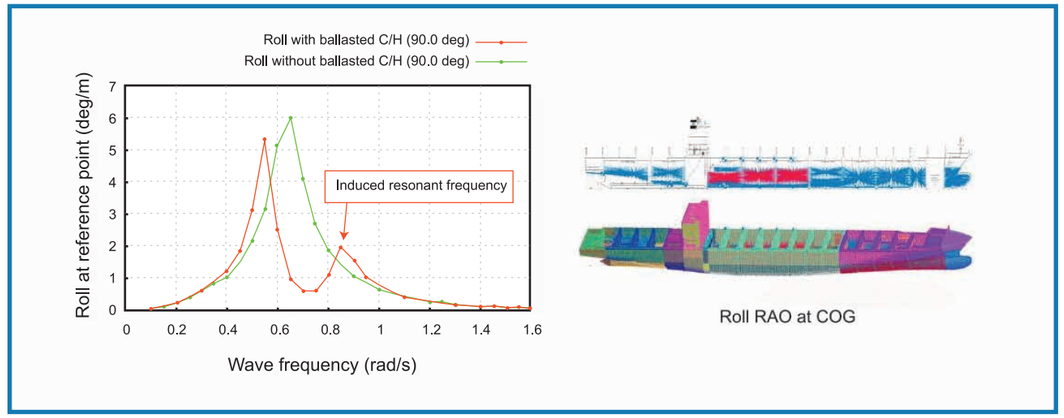
Right Hand Side :
ES Bow

Design, Delivery & Dry-docking

The entire well-known range of CSBC brands: ES-10, ES-20, ES-30 and SODO confirms that CSBC not only builds vessels but also provides 3D lifetime services from Design to Delivery to Dry-docking.

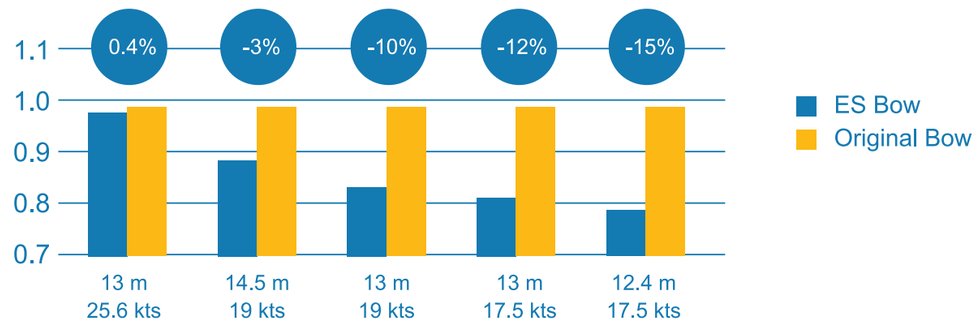


Extensive Study on Bow Flare Impact & Design Alternative



Roll RAO at COG

Numerical Study on Seakeeping:
Sloshing Coupling Effect of Container Ship for Sea Trial



An Example of Resistance Reduction of ES Bow

TOTAL QUALITY MANAGEMENT

- CSBC has effectively implemented total quality management to continuously improve management performance and ensure total quality.
- CSBC has fully implemented quality assurance and control in production to ensure optimal performance and continuously improve our products' reliability.
- CSBC's quality management system includes suppliers and sub-contractors; therefore, CSBC is able to facilitate the development of its partners' quality management systems.
- CSBC maintains an excellent after-sales service system to provide customers with complete and immediate service; all customer feedback and opinions are collected and analyzed to upgrade the system.

- CSBC holds the following certificates to ensure good quality performance:
  - ISO 9001: 2015 Quality management systems
  - ISO 14001: 2015 Environmental management systems
  - ISO 45001: 2018 Occupational health and safety management systems
  - CNS 45001: 2018 Occupational health and safety management systems
  - ISO/IEC 27001: 2013 Information security management systems
  - TIPS-2021 Level A Taiwan intellectual property management system
  - EN ISO 3834-2 Quality requirements for fusion welding of metallic materials Part 2: Comprehensive quality requirements
  - EN 1090-2 Execution of steel structures and aluminium structures Part 2: Technical requirements for steel structures (EXC 4, Material Group 1.1, 1.2, 2.1)

CORPORATE SOCIAL RESPONSIBILITY

CSBC's corporate social responsibility (CSR) activities reflect its ongoing commitment to innovative shipbuilding practices and customer satisfaction.

CSBC conducts business in a vast range of fields including ship building and repair, land based machinery, and offshore engineering etc., on which our operating conditions and stakeholders' interests and expectations depend.

Recognizing our obligations, we are carrying out our corporate social responsibility (CSR) initiatives as a good global corporate citizen, and have set a CSR agenda.

comprised of seven key areas that span broadly across CSBC's business fields: corporate governance, compliance, human resources, responsible sourcing, quality and services, environment, and community engagement.

By operating businesses that are innovative and ethical, we intend to continuously enhance corporate value while helping to build a better world for everyone.

台灣國際造船股份有限公司
CSBC CORPORATION, TAIWAN

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