

THE REPORT ON THE CHINESE SHIPBUILDING INDUSTRY: TARGETS AFTER 2008

- Public Version –



**An industry report prepared by
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1 Preface

This report serving as a public version is adapted from the member version report. Both reports are prepared by Bob Li, Chief Representative of DC Marine Supply China in cooperation with Anne Kathrine Mehlsen, Business Consultant of DI-Asia Base Business Services. The content of the report is based on guidance and input provided by Bob Li as well as market research provided by DIAB through sources such as the internet, catalogs and other relevant marine material. The foundation of the report is based on the previous Annual Reports prepared by Bob Li and DI-Asia Base Business Services. It is the aim to continuously update the report on a yearly basis.

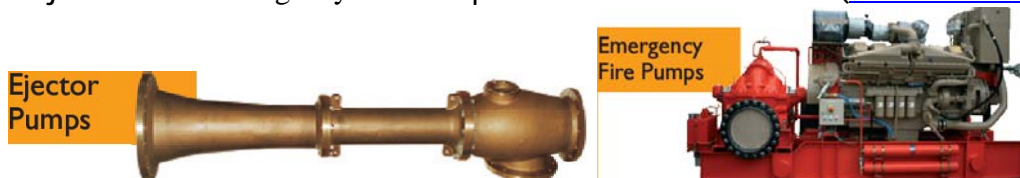
This report covers 6 major categories: 1) Shipbuilding groups, 2) Shipyards, 3), Fledgling and Greenfield yards, 4) Ship design companies, 5) Ship owners and 6) Engine makers.

The description of each of these categories starts with a numerical ranking of the biggest players within each category. This is followed by specific company information summarized in tables which is only elaborated in the member version report.

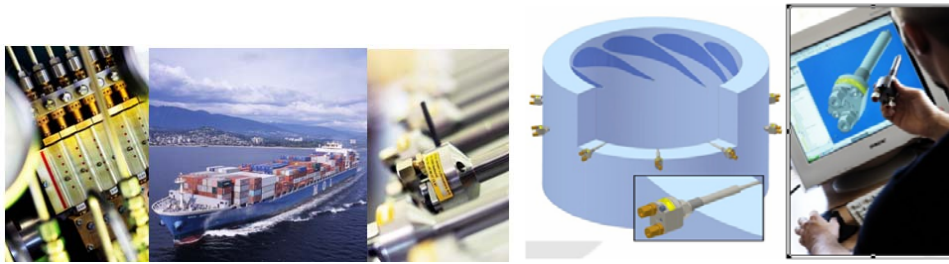
Besides the 6 major categories, the report sheds light on topics of current interest from the Shipbuilding Industry. Among others the Annual Report of 2008 provides fast facts on China and additionally discusses the future moves and the major policies impacting the industry.

DC Marine Supply is a joint venture between some Danish marine manufacturers. Each of them has been individually active on the Chinese market for several years but lured by the promising potential ahead, they insightfully decided to join forces in China and found the JV office in Shanghai in 2006. Currently company members with DC Marine Supply are:

- 1) Ejectors and Emergency Fire Pumps maker Ellehammer A/S (www.ellehammer.dk)



- 2) Cylinder lubricating systems maker Hans Jensen Lubricators A/S (www.hjlubricators.com);



3) Marine & offshore pumps makers Iron Pump A/S (www.ironpump.dk):



4) Auxiliary/Emergency Generators maker West Diesel Engineering A/S (www.westdiesel.dk)



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2 General Introduction

China's shipbuilding industry produced good results by the end of 2008. With the annual output hitting a record high over 28.8 million DWT (dead weight tonnage), new order over 58 million DWT, order backlog 204.6 million DWT and profits going up 50% by average, China has overtaken Japan as the world's second largest shipbuilder.

Since 2003, the world's shipbuilding industry has experienced a five-year boom and during this boom period, China has emerged as a much stronger player within the industry. At present, there are more than 3,000 shipyards in China with 1,242 yards being put into national industry statistical scope and over 400 active yards being focused by European classification societies.

After overtaking Japan China has moved one step closer to the goal of becoming the world's biggest shipbuilder in 2015. However, several challenges lie ahead as well for reaching this target. The global financial crisis goes for China and the Shipbuilding Industry too, resulting in uncertainties due to the global economic downturn. The new economic climate is expected to result in fewer shipbuilding orders, more order book cancellations and delivery delays.

In China's way to becoming a global economic power, China's GDP growth target shows small signs of losing momentum despite global downturn. The shipbuilding industry attaches an importance in many dimensions. China's largest official think tank (China Chinese Academy of Social Sciences (CASS)) even ranked China's shipbuilding industry as the most industrialized field in China above the steel, petroleum, automotive, textile, chemical, coal mining and machine tool industry.

Due to the current dynamic situation, many questions raised for the prospects of the shipbuilding industry. What support will China government extend in bolstering the industry? What landscape will China shipbuilding industry evolve into? How China shipbuilding will develop in the new economic climate? What will be the targets for China shipbuilding in 2009 and beyond based on the ones achieved in 2008? What opportunities will China shipbuilding provide?

This report aims to present a helicopter view in order to bring out a broad perspective on the Shipbuilding Industry.

2.1 Chinese shipbuilding output record and trend

Since joining the World Trade Organization in 2001, the shipbuilding in China has experienced an incredibly rapid annual growth as the table shown below:

Year	Clarkson figures	Chinese experts figures	Actual figures
1999			143
2000			346
2001			393
2002			461
2003			641
2004		855	880
2005	980	1309	1356
2006	1280	1452	1587
2007	1766	1900	2164
2008	2374	2600	2881
2009	3758	4000	
2010	4106	5200	

Unit: 10,000 dwt

We can see aggressive expansion of shipbuilding capacity in China and expect total capacity to reach 52 million DWT by 2010; that would represent more than 40% of global shipbuilding volume! It is interesting that both Clarkson and China's authorities' predictions have been very conservative as the above table reflects. Some industry observers say that real performance will far outpace this projection and that China will be the dominant shipbuilding nation by 2012 or very soon after.

2.2 China ship owners' orders record

Year	Ships Num.	Volume (100M US\$)	World share
2002	33	9.2	
2003	84	27.3	
2004	105	35.0	3.8%
2005	109	50.0	4.5%
2006	154	66.0	4.1%
2007	354	189.0	7.9%

2.3 Ship order rank by country (2007)

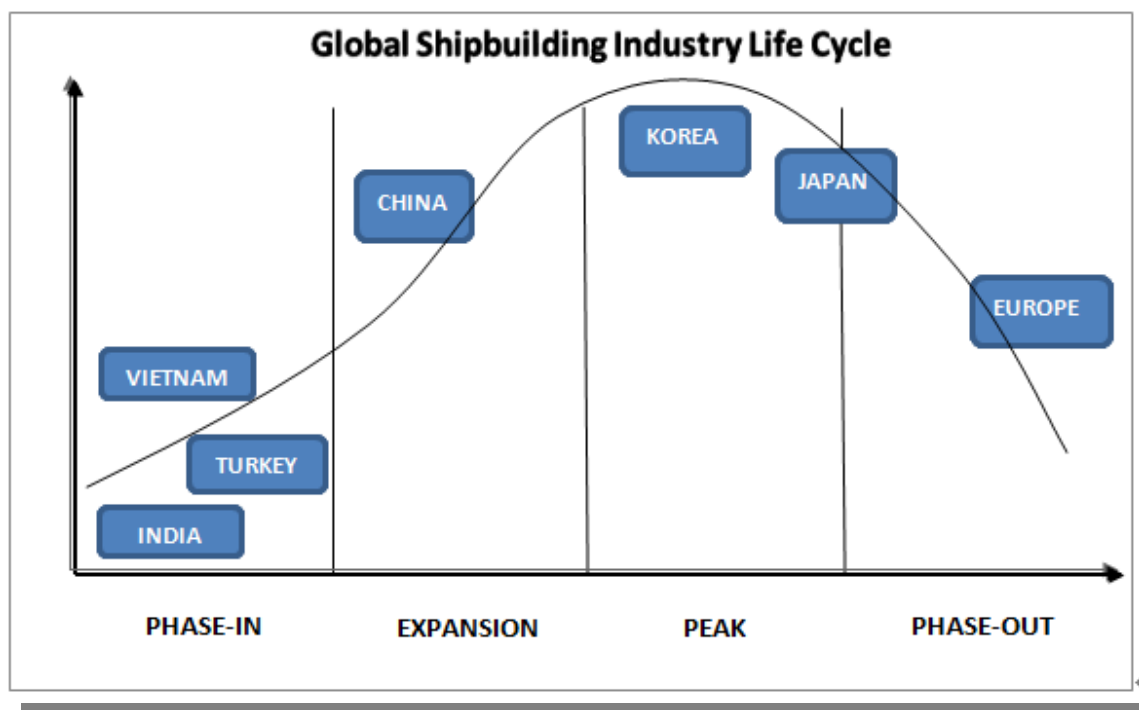
In 2007 the ship order rank by country was as below (unit: 10,000 DWT)

1. Greece, 5048
2. China, 3487
3. Germany, 2808
4. Turkey, 1172
5. Korea, 1132

China ship owners placed 31,800,000 dwt to Chinese shipbuilders in 2007, accounting for 91.2% of its orders.

2.4 Global shipbuilding development trend

In prolonging of the above the table below outlines the life cycle by country:



The global shipbuilding relocation has been transferred from firstly Europe to Japan, secondly to Korea and then is being shifted to China on a large scale. Low labor cost is the key driver of the relocation.

- Europe's share from 50 % down to less than 5%, sunset industry
- Japan's share from 48% down to current 20 %
- Korea's share reached the peak 33 %
- China share 22 % in 2007 and 30% in 2008. China's shipbuilding industry is enjoying an up-cycle with an aggressive capacity expansion

Presently the Asian region mainly China, Japan and Korea accounts for 82 percent of the shipbuilding industry.

Traditional shipbuilding countries in Europe is downsizing its shipbuilding capacity and moving into other areas such as specialist marine equipment.

3 Fast Facts on China in 2008

This section has the purpose of highlighting key facts on China related to the Shipbuilding Industry. A map of Mainland China is provided to outline all provinces, followed by a description of where the shipbuilding bases and clusters are.

- **Population:** 1.3 billion (by the end of 2006; official estimate)
- **Time:** 8 hours ahead of GMT
- **Economy:** 3rd largest in the world—one that's still growing
- **GDP growth rate:** Consecutively about 10% per year. The rate will be tried to maintain over 8% in 2009 and later (indicated that the country would need to increase in most industries including shipbuilding and shipping)
- **Total trade for 2008:** 2.56 trillion U.S. dollars, up 17.8 percent from 2007. The total included 1.43 trillion U.S. dollars in exports, up 17.2 percent, and 1.13 trillion U.S. dollars in imports, up 18.5 percent. Figures: General Administration of Customs (GAC)
- **Shipbuilding:** 2008, completed 28.81 m DWT, 29.5% of world share
- **Shipyards:** More than 3,000 yards with 1242 yards being put into national industry statistical scope and over 400 active yards being focused by European classification societies.
- **Shipping:** By the end of 2008, total registered vessels reached 250,000 vessels with 96,000,000 dwt.
- **Imported marine equipment:** 2,600 million US\$ in 2007
- **Import/Export key facts:** As the world's largest iron ore importer, the world's second-largest oil importer and the world's third-largest exporting country.

3.1 Map of China

For administrative purposes China is divided into 23 provinces, five autonomous regions and four municipalities (Beijing, Shanghai, Tianjin and Chongqing)



Source: [People's Daily Online](http://www.people.com.cn)

3.2 Shipbuilding bases and clusters in China

According to China state official planning, three Shipbuilding Bases is put into operation and still expanding in respectively:

- 1) Bohai Bay in northern China Liaoning Province, 2) the mouths of Yangtze River in Shanghai 3) Pearl River in Guangdong Province in the east and south respectively. Additionally, there are two new bases invested by the private shipyards emerging in Nantong and Zhoushan regions.

Below is an overview of the primary Shipyard Clusters in the key Shipbuilding Provinces with good shore lines:

- Jiangsu Province
- Zhejiang Province
- Shanghai City
- Liaoning Province
- Guangdong Province
- Shandong Province
- Fujian Province
- Hubei Province
- Chongqin City
- Tianjin City
- Hebei

In 2006, China's top two shipbuilding giants, the China State Shipbuilding Corporation (CSSC) and the China Shipbuilding Industry Corporation (CSIC), reported annual output of 6.02 million dwt and 2.67 million dwt respectively. CSSC alone accounted for 43 percent of China's total output and 8.2 percent of the world's total output.

In 2007, CSSC attained 6.55 million dwt output, 23 million dwt new orders and 50 million dwt backlogs.

In 2008, CSSC completed 8,539,000 dwt. Additionally CSSC set targets with 11,600,000 dwt in 2009 and 18,000,000 dwt in 2010 while achieving more efficiency and less consumption. CSIC completed 4,121,000 dwt with 103.2 billion RMB sales volumes; up 26% with profit 6.18 billion RMB. Additionally CSIC set targets set for 2009 to 120 billion RMB sales volume and 7 billion RMB profit.

Jiangsu Province completed with 8,895,000 dwt and Zhejiang Province with 5,206,000 dwt.

3.3 Shipbuilding capacity plan

Below is the forecasted Shipbuilding Capacity divided by country in 2010 (unit: 10,000 DWT):

1. Korea,	5600
2. China,	5200
3. Japan,	3600
4. Others,	2000
Total	16,400

For China the original shipbuilding capacity divided major geographical areas are as follows:

- Shanghai 12 million dwt
- Liaoning 6 million dwt
- Guangdong 4 million dwt
- Jiangsu 7 million dwt
- Zhejiang 8 million dwt
- Shandong 3 million dwt
- Others 3 million dwt

The actual capacity has exceeded this planning figures greatly. For example, Jiangsu alone completed over 8.89 million dwt in 2008 and may reach a peak in 2010 with 26, 50 million dwt. Hebei province also plans to expand the existing capacity to 3.5 million dwt by the year 2015.

Generally speaking there will be a worldwide overcapacity in the industry. During the recent years there has been significant capacity expansion both through the construction of new facilities and the upgrading of existing shipyards in China.

And according to the Eleventh Five-Year Plan set earlier, by 2010, China's shipbuilding capability will reach 40 million deadweight tons. This target has fully realized in the early 2009.

3.4 Key foreign shipbuilders in China

Following 8 market players constitutes the major foreign shipbuilders in China:

1. Japanese Tsuneishi Group (Zhoushan) Shipbuilding Inc.
2. Korean Samsung Heavy Industries (Ningbo)
3. Korean Qingdao Hyundai Shipbuilding Co., Ltd
4. Korean Daewoo Shipbuilding & Heavy Machinery (Shandong)
5. Korean Weihai Samjin Shipbuilding Co.,Ltd.
6. Dutch Damen Yichang shipyard
7. Singaporean Keppel Nantong shipyard Co., Ltd
8. Korean Qingdao Mastek shipyard Co., Ltd

3.5 China' advantages in Shipbuilding industry

For most industries worldwide the global financial crisis has created uncertainties and generated several discussions as well as unanswered questions on the future. The shipbuilding industry is no exception.

This section has the purpose of outlining China's advantages generally speaking. Consequently in order to provide fair future estimations on the shipbuilding industry more specifically, the challenges which the industry is facing ahead will be outlined in the following Section 3.6.

China's primary advantage lies in its low cost in labor resources, land, raw materials, overhead and financing as well as outsourcing. Generally, there are seven great advantages of China as outlined in the following:

First, China's great advantage is the quality of Chinese labor (diligent, disciplined, more willingness to learn) with low cost. Labor force with quality and skills is most suitable for shipbuilding industry.

Second, China's economy is complete and balanced. A complete and balanced industry is capable to provide most parts and materials as well as the industry experience.

Third, the sheer size of China — a huge country with a population of 1.3 billion — greatly magnifies the advantages of effective state-led growth and sophisticated manufacturing. It produces the benefit of economy of scale China

The fourth advantage, China has a huge market. As a largest raw materials buyer and second largest exporter in the world, China also demands huge shipping fleets to perform seaborne transportation.

The fifth advantage, China has good infrastructure for industry development. The harbor achievement bolsters both shipping and shipbuilding in good cycle.

The sixth advantage, China has a growing fast economy. China's GDP growth rate achieved consecutively about 10% per year since 1978. The rate will be tried to maintain over 8% in 2009 and later.

Last but not the least; China has a unique advantage as a big virtually integrating economy. Culturally and Economically, Mainland China, Hong Kong, Singapore, Taiwan and Macau have begun integrating a greater China economy which can lead to synergy in many ways. Hong Kong, Singapore, Taiwan and Macau serve as mainland China's door or front desk to the world while mainland China plays the role of backyard's workshop. Typically, Stock Exchanges in Hong Kong and Singapore have provided big financial support to some Chinese shipbuilders and will provide more.

3.6 The challenges ahead

The global economic slowdown and financial crisis as well as the loomed overcapacity described in section 3.3, have put the challenges to China's shipbuilding industry. The challenges for China's shipyards are primarily centered on:

Fierce competition in the world's shipbuilding market and the overcapacity scenarios can induce a decrease building prices. The competition might become even fiercer, which urges all local players in the industry to optimize management and enhance technical innovation as to secure a safer position.

Competing by quality instead of price will be one of the factors to overcome the competition intensity, including new product diversification as many private yards focus on low-tech and low-value bulk carriers. Market credibility revealed that as the steel price is surging, the cost of constructing each boat has soared greatly, leaving almost no profit margin to the boat maker who has to execute the contracts strictly so as to build up its business reputation.

A ship's price is fixed when the contract is signed, but raw material prices have jumped higher than expected, as an excess of capacity limits demand for new orders and tightening credit forces cancellations while higher raw material costs squeeze margins. Financing/funding, the most difficult problem facing private shipbuilders is capital. Insufficient ship design according to market demand can be a future challenge for the industry. In section 18 the major ship design companies is described.

4 Status on Policies in the Shipbuilding Industry

4.1 Rush for Shipbuilding boom; state-owned vs. private

Attracted by the shipbuilding boom and profit expectation, many ambitious Chinese entrepreneurs without shipbuilding knowledge and experience, encouraged by local officials, rushed into the shipbuilding industry in recent 5 years. Most of them come from real estate with accumulated rich capitals. It seemed overnight numerous shipyards have sprung up along the shorelines in Jiangsu, Zhejiang, Shandong and Fujian provinces and some entrepreneurs even set the eyes on the undeveloped shoreline in Guangxi and Hainan provinces.

Previously the shipbuilding industry in China was dominated by two huge state-owned enterprises: China State Shipbuilding Corporation (CSSC) and China Shipbuilding Industry Corporation (CSIC). In 2008, nearly 40% output was generated by private shipbuilders. The private-owned shipyards are competing with the state-run shipyards in terms of talent recruitment, financial funding, decision process, and operation flexibility, openness to new approach and management efficiency as well as business innovation. Some private yards even built vessels without orders, just based on marketing prediction and could make more profit when ship owners bought ready-made vessels. This building first and selling second model surprised many experts.

Talking about the openness to new approach, newly start-up big private yards such as Sinopacific Shipbuilding Group, Rongsheng Heavy Industries and Minde Heavy Industries spent huge budgets implementing western advanced ERP solutions that hope to streamline their business processes and sharpen the competitive edge. In contrast, many state-owned established shipyards still doubt if such western advanced ERP solutions are suitable to Chinese enterprises.

Previously, inefficiency is a problem to state-owned yards. A typical Chinese yard may employ 9,000-12,000 workers, but these workers are not always kept busy. Poor management, rigid procedures, red tape, low technical knowledge and administrative mandates from upper levels always undermine operations. In recent years, so much has improved and Chinese builders have become more competitive in world markets, particularly in traditional sizes of bulk carriers and crude oil tankers and containerships.

In immediate past boom times, upon signing orders, ship-owners would first make a deposit payment and these initial payments could reach 30%-40% or even over 50% of total orders. The initial payments could be used for construction. At the same time, encouraged by the expected positive performance of the shipbuilding industry, it is relatively easy for the

industry to obtain bank loans and to raise money on the stock markets. All these spur the new wave for start-up and expansion of yard building fever.

However, in this round new wave, despite the private shipyards have helped reshape the landscape of China shipbuilding industry with good prospect, the shortfalls for certain private yard are also noticed as below:

- Unacceptable way to build;
- Weak technical team;
- Entry level-low standard;
- Shortage of experienced engineers and workers;
- Lack of systematic management;
- Without in-house design team;
- Low production efficiency
- Poor network for international sourcing and sales.

4.2 The Current Business Status in China shipbuilding

The current business status within China's shipbuilding industry is outlined as below, seen from respectively the Shipyards and Ship Owners side.

On the Shipyard side:

1. Export-oriented: Normally, 80% of the shipbuilding orders are for export and the exporting share can reach 90% for the yards in Jiangsu, Zhenjiang, Shandong and Fujian provinces.
2. Contract time is long term. Most extended to the year of 2010, some to 2015
3. Final payment time for a single contract can last to 36 months
4. Biggest competitive advantage comes from labor cost
5. The contracts are close-type with fixed price involving a large sum
6. The currency is in US\$ which is not stable and depreciated while facing the risk of RMB appreciation
7. Installment payment time: normally, the payment of the ships in the contracts will be paid in five installments at various stages of contract signing, steel cutting, keel laying, launching and delivery or 20% of the payment at each stage.

Although some big Chinese shipyards have received payments in advance for the orders, in some cases as high as 50% of the total, which has effectively eased the pressure of order cancellations

8. There are big imbalance development levels among Chinese shipbuilders. While advanced shipyards can build world class FPSOs and LNGs, some yards just struggled to complete simple ships and found finished ships sunken or broken when launching or don't know when they can proceed on schedule.
9. Lots of new building orders placed to yards are for bulk carriers' types which have more risk for cancellations.
10. Loomed triple difficulties in new order taking, finance and delivery which will hurt the shipbuilders. Analysts estimated that new orders will fall 40% in 2009 and the downward trend will last for two to three years. Furthermore shipyards may find difficulty to get the finance and some ship owners may also try to find ways to obstruct deliveries in order to cover up its financial problem.

On the Ship Owner's side:

1. The order needs bank's loan to provide cash flow. Normally 80% the contract value needs bank's loan. But nowadays, the banks deploy strict loan policy and require ship owner's relevant shipping contracts to guarantee
2. There were many speculative orders in the shipbuilding bubble without shipping contracts or shipping goods. Speculators just want to sell out the ordered new buildings as a way of quick money making. Many shipyards' order backlogs hold lots of such risky orders.
3. When shipbuilding time was boom, the shipyards were in upper hand and now as the whole market changed to the buyers market, the ship owners have the dominant say.

4.3 Industry Chain's key tiers Analysis

Industry Chain from order placement to delivery, the involved parties are: ship owners, shipyards, designers, engine makers, equipment and materials suppliers, classification societies. Most European ship owners comes to China to build vessels and nearly all major China's shipyards buy most marine equipment from European makers.

China has some manufacturers of marine equipment. However, due to the lack of a global service network and a lot of key components simply cannot be manufactured in China at the present time, the majority of Chinese manufacturers are not competitive providing equipment for ships built for European ship owners unless it is a product made under a license agreement from a foreign company. It is said that up to 60% of a new ship's price can be attributed to imported equipment– an excellent opportunity for European marine equipment companies.

China's shipbuilding industry still has obstacles to overcome before it can take full advantage of the opportunities offered. China's goal of sourcing large percent of ship components from Chinese industry was never met. The actual use of Chinese-made equipment is very limited due to its poor quality. The ratio of Chinese Marine equipment used is between 30-40%. Far less than the target of 80% localization

4.4 Major Policies

In 1995, China's shipbuilding capacities exceeded Germany's for the first time, rising to third place after Korea and Japan and now number two after Japan.

In May 2002, Chinese ex-Premier Zhu Rongji asked shipyards to propel the country to world No. 1 status and China's industrial watchdog at that time, the State Commission of Science, Technology and Industry for National Defense (CSTIND), set 2015 as the goal for China to become the largest shipbuilding country.

In August 2006, The State Council approved 2006-2015 Medium and long term development program for China shipbuilding industry. A blueprint for the Shipbuilding Industry, highlighting the following growth targets:

- 1) State-owned shipbuilding capacity to reach 23 mn DWT with production volume of 17 mn DWT by 2010
- 2) Shipbuilding capacity to reach 28 mn DWT with production volume to reach 22 mn DWT by 2015

On Mar.27 2007, the Commission of Science Technology & Industry for National Defense (CSTIND) issued CB/T3000-2007 basic requirements and evaluation method for production condition for shipbuilding enterprises, aiming at implementing a licensing system to control capacity expansion.

Recently, as a counter move to the global financial crisis, China's State Council approved a stimulus plan for the shipbuilding industry in February 2009. The plan will increase credit support for ship buyers.

China will extend the policy of giving a 17 percent subsidy on ship prices for domestic ocean-going ship buyers till 2012 and also offer preferential interest rates to shipbuilders, as a part of the stimulus package for the industry.

The government plans to aid shipbuilders by granting them loans should ship owners delay delivery of vessels, and ensuring that they have sufficient liquidity to complete shipbuilding orders. The plan gives incentives to Chinese companies to buy contracts for ships from Chinese yards which face cancellation. The Chinese shipping companies will be able borrow at low interest rates if they take over shipbuilding orders from China State Shipbuilding Corp. and China Shipbuilding Industry Corp. that have been cancelled by other customers due to the global financial crisis. Leasing companies will be granted tax benefits if they take over cancelled orders from the two shipbuilding companies.

The stimulus package also calls for the country to raise its annual shipbuilding capacity to 50 million dead weight tons in 2011 with three world-level shipbuilding bases in the Bohai Bay, Yangtze River entrance and Pearl River entrance.

Banks would also be encouraged to offer financing support for ship buyers through issuance of US dollar bonds to avoid order cancellations.

Qualified domestic shipyards would be encouraged to list or issue bonds to solve capital shortage problems.

Meanwhile, the government will limit construction of new capacity in the industry and is studying a policy to force outdated ships to be replaced, encourage production of more advanced ships and promote mergers and acquisitions in the industry through capital injection and the establishment of an industrial fund.

China's shipbuilding industrial watchdog changed to Ministry of Industry and Information Technology of the People's Republic China (MIIT) as The Commission of Science, Technology and Industry for National Defense (CSTIND) was dismissed in China's governmental restructure.

When discussing the major policies within the industry, the key authorities and interest groups are:

- China's State Council (CSC)
- The State Development and Reform Commission (SDRC)

- China Association of The National Shipbuilding Industry (CANSI)
- China Classification Society (CCS)
- China Ship owners' Association (CSA)

4.5 Technologies

Chinese shipbuilders have expanded their technical capabilities and strength immeasurably, where key features are as outlined below:

- 1) Types of made-in-China ships have developed from traditional sizes of bulk carriers and crude oil tankers and containerships into high value and sophisticated vessels. Major domestic shipbuilding companies have also made breakthroughs by building very large crude carriers (VLCCs), liquefied natural gas carriers (LNG), semi-submersible drilling Platform, floating production, storage and offloading (FPSO), passenger vessels and 10,000 TEU containerships. Through moving up the value chain, Chinese shipbuilders have significantly improved its shipbuilding competitiveness in the global market;
- 2) Carrying out independent design and construction of new ship type of Bulker, Tanker and Containership and Ventured into the field of high-tech vessels and marine engineering construction;
- 3) New techniques and methods have been widely applied. Such as 3D design tools and ERP practice;
- 4) China's shipbuilding industry is ranked as the most industrialized field in China, followed by the steel sector and the petroleum sector. They are up already half-way to the world's most advanced level, according to the report. And the cement sector, the coal mining sector and the machine tool sector are listed as the bottom three. The largest official think tank in China Chinese Academy of Social Sciences (CASS) reported this.
- 5) More ship design companies sprung up together with shipbuilding boom and more investment ship R& D.

5 Moves for the Future

Besides the moves in the political arena which we discovered above, also other factors are determining in which direction the industry will move. Among others financial issues and the offshore sector shows signs of highly interesting aspects to keep an eye on.

5.1 Chinese shipbuilders plan IPOs to finance the expansion

The shipbuilding industry is a highly capital intensive industry, which needs huge funds and investment to support business operation and expansion. Most Chinese shipbuilders learned that most effective way to get the enough finance is to make an initial public offer (IPO) in the stock exchanges in Hong Kong, Singapore or mainland China. The priority stock exchanges will be in mainland China, as IPO there can get high value and the financial reports required are notorious easier. But threshold to listing in the mainland China's stock exchanges is quite high and demanding, whereas to list in Hong Kong and Singapore stock exchanges are relatively easier and much simple but may get lower IPO and market value and have to face the more stricter financial reports.

At present, only 3 shipbuilders China shipbuilding, Jiangnan heavy industry and Guanzhou shipbuilding international are listed in the mainland China's stock exchanges. However, there are 3 shipbuilders are listed in the Singapore stock exchange and more are planning to list in in Singapore and Hong Kong. Cosco Shipyards, Yangzhijiang Shipbuilding Holdings and Jiangsu Eastern Shipyard (JES) have been already listed in the Singapore stock exchange. Yantai Raffles Shipyard Limited ("YRS") is listed in Norwegian Oslo stock exchange.

Probably the largest of the anticipated initial public offerings is likely to come from state-owned China Shipbuilding Industry Corporation (CSIC). CSIC wants to raise about \$900 million on the Chinese mainland A-share market. Meanwhile, many privately owned shipbuilders – Jiangsu Rongsheng, Sinopacific Group, Yangfan Group, Mingde Nantong and Jiangmen Nanyang Shipyard, have been prepared to list in the market oversea.

5.2 China Shipyards diversify into Offshore sector

Given the anticipated shipping recession and higher the gross margin of offshore sector which has reached up to 30%, many China shipbuilders are prepared to diversify into offshore engineering, through the sector requires much more technical design, skillful engineering and knowhow.

The largest private shipbuilder in China, Jiangsu Rongsheng Heavy Industries Group Co., has entered this offshore engineering market earlier in the hope that the offshore engineering field will not be affected by market volatility and will contribute 40% of its total revenues in

the future. It began building a deepwater pipe-lay and lifting vessel for China National Offshore Oil Corporation (CNOOC) on September 16, 2008.

Other start-up private yards like Hantong, Daoda and Jiaolong Heavy Industry also focus on this sector. CSSC and CSIC both have also been preparing for expansion of their offshore engineering businesses when the shipbuilding industry is still in its boom. CSSC plans a target to build offshore engineering into one of its pillar businesses in 2015

Meanwhile China's offshore oil and gas sector moves into the fast lane. By 2010, China's largest offshore oil company, CNOOC, will spend \$12.5 billion to raise its oil and gas production by 32 percent to 50 million metric tons of oil and gas equivalent (760,000 barrels per day of oil and about 1.2 Bcf per day of gas). The expansion plans will need 87 jackets and 11 floating production, storage, and offloading vessels, developing 18 oil fields and six gas fields in Chinese waters. CNOOC is also evaluating 21 offshore oil and gas projects, some in deepwater.

The key players in the field of FPSO and jackup rig, Dalian Shipbuilding Industry Co., Shanghai Waigaoqiao Shipyard, Yantai Raffles Shipyard and Cosco shipbuilding Group are all geared up to accommodate the new market demands

6 Industry Analysis on the Shipbuilding Industry

This part is only for member version

7 Description of top 7 shipbuilding groups in China

7.1 Overview

No.	Company
1	China State Shipbuilding Corporation (CSSC)
2	China Shipbuilding Industry Corporation (CSIC)
3	COSCO Shipyard Group (COSCO)
4	China Changjiang National Shipping (Group) Corp. (CSC)
5	China Shipping Industry (CSI)
6	Fujian Shipping Industry Group Corporation (FSIGC)
7	Sinopacific Shipbuilding Group Co., Ltd. (SSG)

7.2 China State Shipbuilding Corporation (CSSC)

Description	China State Shipbuilding Corporation (CSSC) is an extra large conglomerate by the central government of China and the mainstay of the shipbuilding industry in China. There are totally 60 sole proprietorship enterprises and shareholding institutions under CSSC, including a batch of most powerful and some renowned shipbuilding and ship repairing yards, research and design institutes, marine-related equipment manufacturers and trading firms in China. CSSC has a wide spectrum of products, ranging from the conventional oil tankers and bulk carriers to the sophisticated and state-of-the-art vessels, such as LNG carriers, VLCCs, chemical carriers, ro/ro passenger freight ships, large containerships, large LPG carriers, large self-un loading ships, high speed ships and various civil ships and offshore engineering facilities CSSC plan to be the world's number one shipbuilding group in the year 2015
Major shipyards include	<ul style="list-style-type: none"> ➤ Shanghai Waigaoqiao Shipbuilding Co., Ltd. ➤ Hudong Zhonghua Shipbuilding (Group) Co., Ltd. ➤ Jiangnan Shipyard (Group) Co., Ltd. ➤ Shanghai Shipbuilding Co., Ltd. ➤ Chengxi Shipyard ➤ Wuhu Shipyard ➤ Guangzhou Shipyard International Co., Ltd. ➤ Guangzhou Huangpu Shipyard ➤ Guangzhou Wenchong Shipyard Co., Ltd.

	<ul style="list-style-type: none"> ➤ Guangxi Xijiang Shipyard ➤ Guangxi Guijiang Shipyard ➤ Jiangxin Shipyard ➤ CSSC's Changxing Shipbuilding Base ➤ CSSC's Longxue Shipbuilding Base
Major design Institutes	Marine Design & Research institute of China (MARIC) Shanghai Merchant Ship Research & Design Institute (SDARI)
Trading	China Shipbuilding Trading Co., Ltd. (CSTC). CSTC has set-up regional companies in China, and 8 branch companies in Hong Kong, USA, Germany, Russia, Algeria, Thailand, Iran and Pakistan.
Web	www.cssc.net.cn

7.3 China Shipbuilding Industry Corporation (CSIC)

Description	CSIC was established in 1999. It is a state-owned enterprise, and an entity with state authorization for investment and capital management, directly under the supervision of the Chinese central government. CSIC owns a total of 48 industrial enterprises, 28 Scientific & Technological research institutes, and 15 share holding companies.
Major shipyards include	<ul style="list-style-type: none"> ➤ Dalian Shipbuilding Industry Co., Ltd. ➤ Bohai Shipbuilding Heavy Industry Co., Ltd. ➤ Qingdao Beihai Shipbuilding Heavy Industry Co., Ltd. ➤ Shanhaiguan Shipyard ➤ Tianjin Xingang Shipyard ➤ Tianjin Xinhe Shipyard ➤ Wuchang shipyard
Major design institutes	China Ship Design & Research Center Co., Ltd. (CSDC)
Trading	China Shipbuilding Offshore International Co., Ltd. (CSOC)
Web	www.csic.com.cn

7.4 COSCO Shipyard Group

Description	Formerly known as Nantong Zhong Yuan Shipyard, the group was established in 1988 and comprises Nantong, Dalian, Shanghai, Zhoushan, Guangzhou, Qidong, and Lianyungang shipyards. In 2001, the company went through a major restructuring and was renamed COSCO Shipyard Group Co., Ltd. COSCO Shipyard Group is a leading group in China specializing in shipbuilding, ship repair and conversion. The group owns seven ship repair yards that are strategically located along China's most important coast line.
Major shipyards include	<ul style="list-style-type: none"> ➤ Cosco Dalian shipyard ➤ Cosco Nantong shipyard ➤ Cosco Zhou Shan shipyard ➤ Cosco Guangzhou shipyard ➤ Cosco Shanghai shipyard ➤ Cosco Qidong shipyard ➤ Cosco Lianyungang shipyard
Major design institutes	Cosco shipbuilding center

Trading	Cosco shipbuilding business department
Web	www.cosco-shipyard.com

7.5 China Changjiang National Shipping (Group) Corp. (CSC)

Description	In 1984, the administration system of Changjiang shipping was reformed, and Changjiang Ship Corporation was founded under the Ministry of Communications. In 1991 this corporation changed its name into China Changjiang Ship Corporation. In March 1993, China Changjiang Shipping Group was founded with China Changjiang Ship Corporation as its core. In 1996, the name of the core enterprise was changed into China Changjiang National Shipping (Group) Corporation. Currently, CSC owns 19 subsidiaries of which one is overseas.
Major shipyards include	<ul style="list-style-type: none"> ➤ Jinling Shipyard ➤ Qingshan Shipyard ➤ Jiangdong Shipyard ➤ Yichang Shipyard
Major design institutes	Changjiang Shipbuilding Design Institute
Trading	Changjiang Shipbuilding Foreign Economic Company
Web	www.china-csc.com.cn

7.6 China Shipping Industry Co., Ltd (CIC)

Description	China Shipping Industry Co., Ltd (CIC) was established in 1998. It is not only an important land supporting subsidiary of China Shipping Group who is one of the most important players in the world marine market, but also a shining star in the sky of domestic ship repair and shipbuilding industry. China Shipping Industry Co., Ltd (CIC) offers excellent services in ship repairs/vessel conversions to large bulk carrier, tankers, passenger liners, reefer carriers and many other types of vessels domestically and worldwide.
Major shipyards include	<ul style="list-style-type: none"> ➤ CIC Jiangsu shipyard ➤ Lifeng Shipyard ➤ Boluomiao Shipyard
Major design institutes	
Trading	
Web	http://www.csqcic.com/index.htm

7.7 Fujian Shipping Industry Group Corporation (FSIGC)

Description	<p>FSIGC was established in 1997 and is authorized by Fujian Provincial Government to manage the state-owned assets.</p> <p>The predecessor of FSIGC is Fujian Shipbuilding Industry Corporation, which was established in 1983 to lead the major shipbuilding enterprises in Fujian province.</p> <p>FSIGC is a multi-functional shipbuilding entity with shipbuilding as its main business and skilled worker training, design, research & development, ship trading and block sub-contracting as auxiliary businesses.</p> <p>It owns a total of 23 enterprises and institutes and has a 15 % share in Dalian FKAB Marine Engineering Co., Ltd.</p>
Major shipyards include	<ul style="list-style-type: none"> ➤ Fujian Mawei Shipbuilding Ltd. ➤ Fujian Southeast Shipyard ➤ Xiamen Shipbuilding Industry Co., Ltd.
Major design institutes	<p>Dalian FKAB Marine Engineering Co., Ltd.</p> <p>Fujian Ship Design & Research Center Co., Ltd.</p>
Trading	Each shipyard has independent trading departments
Web	www.fsigc.com

7.8 Sinopacific Shipbuilding Group Co., Ltd. (SSG)

Description	<p>SSG has five subsidiaries involved in shipbuilding as well as a ship design company and a technical school, located in Ningbo, Yangzhou, Nantong, and Shanghai, respectively.</p> <p>It is a private trans-continental shipbuilding group formed out of a joint venture between China and France with headquarters both in China and France.</p> <p>In 2006 the enterprise changed its name from Sinopacific Heavy Industries Group Co., Ltd. to Sinopacific Shipbuilding Group Co., Ltd.</p>
Major shipyards include	<ul style="list-style-type: none"> ➤ Zhejiang Shipbuilding Co., Ltd. ➤ Yangzhou Dayang Shipbuilding Co., Ltd. ➤ Yangzhou Dadong Shipbuilding Co., Ltd.
Major design Institutes	Shanghai Design Associates (SDA)
Trading	Sinopacific Shipbuilding Group business department
Web	www.sinopacificshipbuilding.com

8 Current Chinese Shipbuilders Rank

8.1 Top 10 shipyards Rank by building output in 2008

Rank	Company name	10,000 dwt
1	Shanghai Waigaoqiao Shipbuilding Co., Ltd	458.5
2	Dalian Shipbuilding Industry Co.,Ltd	292.4
3	New Century Shipbuilding Co., Ltd.	193.2
4	Hudong-zhonghua Shipbuilding(Group) Co.,Ltd.	127.4
5	Tsuneishi Group (ZHOUSHAN) Shipbuilding Inc.	93.2
6	Jiangsu Yangzijiang Shipbuilding Co., Ltd.	83.9
7	Bohai Shipbuilding Heavy Industry Co.,Ltd	81.6
8	Guangzhou Shipyard International Co., Ltd	69.7
9	Nantong COSCO KHI Ship Engineering Co., Ltd	63.2
10	Shanghai Shipyard Co., Ltd.	56.9

(Source: <http://www.eworldship.com>)

8.2 Top 43 shipyards Rank by building output in 2007

Rank	Company name	output(dwt)	Share
1	Shanghai Waigaoqiao Shipbuilding Co., Ltd	3531621	19.62%
2	Dalian Shipbuilding Industry Co.,Ltd	3108884	17.27%
3	Nantong COSCO KHI Ship Engineering Co., Ltd	1284521	7.41%
4	New Century Shipbuilding Co., Ltd.	1176519	6.54%
5	Hudong-zhonghua Shipbuilding(Group) Co.,Ltd.	720310	4.00%
6	Bohai Shipbuilding Heavy Industry Co.,Ltd	710771	3.95%
7	Jiangnan Shipyard (Group) Co., Ltd.	627197	3.48%
8	Shanghai and Chengxi Shipyard Co., Ltd.	602000	3.34%
9	Guangzhou Shipyard International Co., Ltd	541953	3.01%
10	Yangzhou Dayang Shipbuilding Co., Ltd	360966	2.01%
11	Jiangsu Yangzijiang Shipbuilding Co., Ltd.	294712	1.64%
12	CSC Jinling Shipyard	235258	1.31%
13	Qingshan Shipyard	229914	1.28%
14	Yangfan Group Co.,Ltd	215925	1.20%
15	Taizhou Kouan Shipbuilding Co., Ltd	214330	1.19%
16	Tianjin Xingang Shipbuilding Heavy Industry Co., Ltd	162442	0.90%
17	Shandong Huanghai Shipbuilding Co., Ltd	115923	0.64%
18	Zhejiang Shipbuilding Co.Ltd	106362	0.59%
19	Shanhaiguan Shipbuilding Industry Co., Ltd	90535	0.50%

20	Jiangsu Eastern Heavy Industry Co., Ltd	78440	0.44%
21	Fujian Mawei Shipbuilding Ltd	72246	0.40%
22	(ZSG Zhoushan Wuzhou Ship Repairing & Building Co.,	61480	0.34%
23	Taizhou Sanfu Ship Engineering Co., Ltd	50852	0.28%
24	Yantai Raffles Shipyard Limited	45000	0.25%
25	Zhenjiang Sopo Shipbuilding Co., Ltd	44935	0.25%
26	Xiamen Shipbuilding Industry Co., Ltd	36000	0.20%
27	Shandong Weihai Shipyard	34721	0.19%
28	Nanjing Shenghua Shipbuilding Co., Ltd	34224	0.19%
29	Hangzhou Dongfeng Shipbuilding Co., Ltd	28577	0.16%
30	Zhejiang Haifeng Shipbuilding Co., Ltd	27800	0.15%
31	CSC Yichang Shipyard	27800	0.15%
32	Nantong Yahua Shipbuilding Co.,Ltd	27478	0.15%
33	Taizhou Maple Leaf Shipbuilding Co.,Ltd	26880	0.15%
34	CSC Jiangdong Shipyard	24744	0.14%
35	Yangzhou Kejin Shipyard Co., Ltd	24209	0.13%
36	Xinle Shipbuilding Co., LTD	23652	0.13%
37	Zhejiang Donghong Shipbuilding Co., Ltd	22000	0.12%
38	Nantong Tongshun Shipbuilding Co.,Ltd	21979	0.12%
39	Jianghai Shipbuilding Company Ltd	17000	0.09%
40	Zhejiang Hongxin Shipbuilding Co., Ltd.	15394	0.09%
41	Qingdao Heshun Shipyard Co., Ltd	15230	0.08%
42	Titan Quanzhou Shipyard Company Limited	13000	0.07%
43	Ningbo Boda Shipbuilding Co., Ltd	13000	0.07%

(Source: <http://www.eworldship.com>)

9 Top 40 shipyards Rank in 2008

9.1 Overview

The shipyards are primarily ranked according to DWT, but other factors like order backlog, technology strength, equipment importation, number of employees, operation size, growth potential and production facilities have also played a role in this rank estimate.

No.	Company
1	Shanghai Waigaoqiao Shipbuilding Co., Ltd. (Shanghai)
2	Dalian Shipbuilding Industry Co., Ltd. (Dalian)
3	Hudong Zhonghua Shipbuilding (Group) Co., Ltd. (Shanghai)
4	Jiangnan Shipyard (Group) Co., Ltd. (Shanghai)
5	Jiangsu New Century Shipbuilding Co., Ltd. (Jinjiang)
6	Nantong COSCO KHI Shipping Engineering Co., Ltd. (NACKS) (Nantong)
7	Bohai Shipbuilding Heavy Industry Co., Ltd. (Huludao)
8	Jiangsu Rongsheng Heavy Industry Co., Ltd. (RSHI) (Nantong)
9	Guangzhou Shipyard International Co., Ltd. (Guangzhou)
10	Yangzijiang Shipbuilding Co., Ltd. (Jinjiang)
11	Yangzhou Dayang Shipbuilding Co., Ltd. (Yangzhou)
12	Shanghai Shipyard Co., Ltd. (Shanghai)
13	CSSC Guangzhou Longxue Shipbuilding Co., Ltd.
14	Yantai Raffles Shipyard Co., Ltd. (Yantai)
15	Jinling Shipyard (Nanjing)
16	Zhejiang Shipbuilding Co., Ltd. (Ningbo)
17	Guangzhou Wenchong Shipyard Co., Ltd. (Guangzhou)
18	Chengxi Shipbuilding Co., Ltd. (JiangYin)
19	Kouan Shipbuilding Industry Company (Taizhou)
20	Yangfang Group Co., Ltd (Zhoushan)
21	Jiangsu Eastern Shipbuilding & Heavy Industry Co., Ltd. (JES) (Jinjiang)
22	Cosco (Dalian) Shipyard
23	Cosco (Nantong) Shipyard
24	Qingshan shipyard (Wuhan)
25	Xiamen Shipbuilding Industry Co., Ltd (Xiamen)
26	Taizhou Sanfu Ship Engineering Co., Ltd
27	Cosco (Zhoushan) Shipyard
28	Wuhu Xinlian Shipbuilding Co., Ltd
29	Beihai Shipbuilding Heavy Industry Co., Ltd. (Qingdao)
30	Jiangsu Hantong Ship Heavy Industry Co., Ltd.
31	Mawei Shipyard (Fuzhou)

32	Tianjin Xingang Shipbuilding Heavy Industry Co., Ltd. (Tianjin)
33	Guangzhou Huangpu Shipyard (Guangzhou)
34	Zhejiang Ouhua Shipbuilding Co., Ltd.
35	ZSG Zhoushan Wuzhou Ship Repairing & Building Co.,
36	CIC Jiangsu shipyard
37	Mingde Heavy Industry Co.,Ltd.
38	Shanhaiguan Shipyard
39	Zhejiang Hongguan Shipbuilding Co., Ltd.
40	CSC Jiangdong Shipyard

10 Description of top 40 shipyards in 2008

This part is for the member's version only and the format is as shown below.

10.1 Shanghai Waigaoqiao Shipbuilding Co., Ltd. (SWS)

Description	SWS is China's largest shipbuilder and is currently the largest single investment project in the Chinese shipbuilding industry. SWS have passed the accreditation of ISO9001 Quality Assurance System, ISO14001 Environmental Management System and OHSAS18001 Occupational Health and Safety Management System.	
Production facilities	Dry docks, Goliath cranes, flat panel production lines.	
Products	Green capesize bulk carriers: (175,000 and 177,000 DWT) Aframax tankers (105,000 DWT) FPSOs: (150,000, 170,000, and 300,000 DWT)	VLOCs VLCCs Large containers Product tankers. Bulk carriers
S T A T U S	Ellehammer	
	HJL	
	Ironpump	
	West Diesel	
	DCMS	
Biggest Customers		
Company Size:		
Company Owner:		
Contact information		

- 10.2 Dalian Shipbuilding Industry Co., Ltd. (DSIC)**
- 10.3 Hudong Zhonghua Shipbuilding Group Co., Ltd. (HZGC)**
- 10.4 Jiangnan Shipyard Group Co., Ltd. (JSGC)**
- 10.5 Jiangsu New Century Shipyard (NCS)**
- 10.6 Nantong COSCO KHI Shipping Engineering Co., Ltd. (NACKS)**
- 10.7 Bohai Shipbuilding Heavy Industry Co., Ltd. (BSHIC)**
- 10.8 Jiangsu RongSheng Heavy Industries Group (RSHI)**
- 10.9 Guangzhou Shipyard International Co., Ltd. (GSI)**
- 10.10 Yangzijiang Shipyard (YZJS)**
- 10.11 Yangzhou Dayang Shipbuilding Co., Ltd. (YDSB)**
- 10.12 Shanghai Shipbuilding Co., Ltd. (SSC)**
- 10.13 CSSC Guangzhou Longxue Shipyard (CGLS)**
- 10.14 Yantai Raffles Shipyard Co., Ltd. (YRS)**
- 10.15 Jinling Shipyard (JLS)**
- 10.16 Zhejiang Shipbuilding Co., Ltd. (ZSC)**
- 10.17 Guangzhou Wenchong Shipyard Co., Ltd. (GWS)**

- 10.18 Chengxi Shipbuilding Co., Ltd. (CSC)**
- 19 KouAn Shipbuilding Industry Company (KASC)**
- 10.20 Yangfan Group Co., Ltd. (YGCL)**
- 10.21 Jiangsu Eastern Shipbuilding & Heavy Industry Co., Ltd. (JES)**
- 10.22 Cosco (Dalian) Shipyard**
- 10.23 Cosco (Nantong) Shipyard**
- 10.24 Qingshan Shipyard (QS)**
- 10.25 Xiamen Shipbuilding Industry Co., Ltd. (XSI)**
- 10.26 Taizhou Sanfu Ship Engineering Co. Ltd.**
- 10.27 Cosco (Zhoushan) Shipyard**
- 10.28 Wuhu Xinlin Shipbuilding Co. Ltd**
- 10.29 Beihai Shipbuilding Heavy Industry Co., Ltd. (BSHI)**
- 10.30 Jiangsu Hantong Ship Heavy Industry Co., Ltd.**
- 10.31 Mawei Shipyard (MWS)**

- 10.32 Tianjin Xingang Shipyard (TXS)**
- 10.33 Guangzhou Huangpu Shipyard (GHS)**
- 10.34 Zhejiang Ouhua Shipbuilding Co., Ltd. (Ouhua)**
- 10.35 ZSG Zhoushan Wuzhou Ship Repairing & Building Co.**
- 10.36 CIC Jiangsu Shipyard**
- 10.37 Mingde Heavy Industry Co. Ltd.**
- 10.38 Shanhaiguan New Shipbuilding Industry Co., Ltd. (SNSIC)**
- 10.39 Zhejiang Hongguan Shipbuilding Co. Ltd**
- 10.40 CSC Jiangdong Shipyard**

11 Selected Fledgling & Greenfield Shipbuilders

11.1 General

There is huge investment fever in China's shipbuilding industry during recent 5 years and lots of shipyards popping up suddenly. The ownership of the yards could be state-owned or private-owned or joint venture between Chinese and foreign investors. It is better to categorize them into Fledgling and Greenfield shipbuilders as most of are just start-up their building business and may experience a radical change in the coming times

12 Description of the Fledgling & Greenfield Shipyards

This part is for the member's version only and the format is as shown below.

12.1 Zhoushan Jinhaiwan Shipyard Co., Ltd. (JHW)

Description	<p>Zhoushan Jinhaiwan Shipyard Co., Ltd (JHW) is affiliated to Shanghai Zhouji (Group) Co., Ltd. It is a private and sole enterprise with large scale of shipbuilding. The hand-held orders rank top 50 all over the world in shipping industry.</p> <p>JHW locates on Changtu Island to the east of Daishan Penglai Island, which is in the middle of the Zhoushan archipelago, off the edge of Hangzhou Bay, close to Shanghai, Hangzhou, Ningbo etc. and abut Shanghai International Marine Center-Yangshan Deepwater Port. It holds the center of River-and-Sea Coordinated Transport and the Golden Channel of Yangtze River. The company was established in February, 2004, with total 1.25 billion yuan registered capital and put into full operation in July, 2007. Actual investment till now has exceeded 5 billion. JHW is devoted to building enterprise culture of Credibility, Dedication, Coordination, Innovation, with People orientation, effective management, customer service, advancement with the times and scientific development as its marketing logos so as to make economic benefit and social benefit develop harmoniously and pursue to rank the first-level of international shipbuilding industry.</p>	
Production facilities	<p>JHW occupies an area of about 4 million m² with a building area of more than 600 thousand m². Along nearly 11,000-meter coastline, JHW is equipped with 3000-meter outfitting wharf and 4 docks. The biggest of the four has two 800t gantry cranes; and the other three docks respectively outfitted with two 300t cranes; JHW has 100,000 m² of processing workshop, 90,000 m² of outfitting workshop, 200,000 m² of block fabrication workshop, four production lines pretreating raw steel material, 23 plasma cutting machines, advanced ship building machines and large lifting equipments. The overall distribution layout is effective, bringing out smooth and continuous production.</p>	
Products	<p>JHW is capable of building types of large and medium ships such as crude oil tankers, bulk carriers and container ships</p>	
S T A T U S	Ellehammer	
	HJL	
	Ironpump	
	West Diesel	
	DCMS	
Biggest Customers		
Company Size:		
Company Owner:		
Contact information		

12.2 Qingdao Wuchuan Heavy Industry Co. (QWHI)

12.3 Dalian Cosco Shipbuilding Industry Co.,Ltd. (DACOS)

12.4 Jiansu Shenghua Shipbuilding Co., Ltd (JSS)

12.5 Jiangsu Changbo Shipyard Co., Ltd. (JCS)

12.6 Rongcheng Xixiakou Shipyard Co., Ltd. (XXK)

16 Types of Merchant Ship Design institutes in China

There are 5 types of Ship Design Institutes in China:

1. State-Owned
2. Private-Owned
3. Joint Venture
4. Whole-Owned Foreign Enterprises
5. Shipyard owners

17 Key 15 Merchant Ship Design institutes

17.1 Overview

No.	Company
1	Shanghai Merchant Ship Research & Design Institute (SDARI)
2	Marine Design & Research Institute of China (MARIC)
3	Shanghai Bestway Marine Engineering Design Co. (Bestway)
4	China Ship Design & Research Center Co., Ltd. (CSDC)
5	Changjiang Ship Design Institute (CSDI)
6	Shanghai Jingrong Merchant Ship Design Co., Ltd. (CIC)
7	Guangzhou Marine Engineering Corporation (GUMECO)
8	Dalian FKAB Marine Engineering Co., Ltd. (DF-Marine)
9	CONAN WU & Associates (CWA)
10	CS Marine Technology Pte. Ltd. (CSM)
11	Shanghai Odely Marine Engineer Co. Ltd. (ODELY)
12	Jiangsu Ship Design & Research Institute Co. Ltd.
13	Zhejiang Seahead Ship Design & Research Inst. Co. Ltd. (Seahead)
14	Guangzhou XED Ship Design Co. Ltd. (XED)
15	Ningbo Oriental Ship Design Co. (NDF)

18 Description of Ship Design institutes

18.1 Shanghai Merchant Ship Research & Design Institute (SDARI)

Web	www.cssc.net.cn (Specified: www.cssc.net.cn/english/jtcy1-shcbyj-php) www.shipbuilding.com.cn/en www.sdari.com.cn (Chinese website)
Description	Established in June 1964 State owned A comprehensive institute capable of developing and designing modern ships.
Major Ship Designs	Specializes in primarily: <ol style="list-style-type: none"> 1) Design on cargo vessels 2) Engineering ships 3) Harbor work boats 4) Offshore and military support vessels 5) 3500 TEU Containership 6) Bulk Carrier (33,000 and 57,300 DWT) 7) Double Skin Bulk Carrier 8) Big Lake Bulk Carrier 9) Product Oil/Chemical Tanker
Current Business Status with DCMS	
Contact Details	

18.2 Marine Design & Research institute of China (MARIC)

Web	www.maric.com.cn www.cssc.net.cn (Specified: www.cssc.net.cn/english/jtcy1-zgcb.php)
Description	<p>Founded in 1950 Employees : 840 State Owned Mother company of Ship Design Technology National Engineering Research Center (SDT-ERC). High-tech R&D Qualification for State-Class-One achieves Management in Nov. 1996. Certification for GB/T19001-2000 and GJB/Z9001A-2001 Quality System First and largest institution in China undertaking design and research for naval ships, merchant vessels and offshore structures. Mainstay for handling key problems in the development of high-tech ships and offshore structures at the state level Research Divisions:</p> <ol style="list-style-type: none"> 1) Ship Design Technology National Engineering Research Center 2) Offshore Engineering & Work Boat Design Division 3) Coastal & River Ship Design Division 4) Ship Hydrodynamic Laboratory Division 5) Automation & Instrumentation Design Division 6) Water-jet Propulsion Engineering Center 7) Information Service Center 8) Workshop
Major Ship Designs	<p>Major Ship Designs:</p> <ol style="list-style-type: none"> 1) Bulk Cargo Ship (16,500, 27,000 and 51,000 DWT) 2) LPG Carrier/Chemical Tanker 3) Refrigerator Ship 4) Fishing ship/fishery cruiser 5) Air Cushion Craft 6) Tug Boat 7) Passenger Ship & V/P Ferry 8) Oil Tanker 9) Dredger Floating Crane & Salvage 10) Vessel 11) Cable Layout Ship 12) Passenger Traffic Ship 13) 5600 det strait train/truck ferry
Current Business Status with DCMS	
Contact Details	

18.3 Shanghai Bestway Marine Engineering Design Co. (Bestway)

Web	http://www.bestwaysh.com/index.php?id=138
Description	Private owned joint-stock Marine Design and Research Company
Major Ship Designs	<p>Four groups of Ship Designs:</p> <ol style="list-style-type: none"> 1) Dry Cargo Ship 2) Liquid Cargo Ship 3) Engineering Ship 4) Tug <p>Major Ship Designs:</p> <ol style="list-style-type: none"> 1) Bulk carriers (19,500 and 30,000 DWT) 2) Multi-purpose vessel 3) Double Skin Bulk Carrier 4) CBM Asphalt Ship 5) Chemical Tanker (15,999 and 25,000 DWT) 6) 2,942 and 5,200 KW Tug
Current Business Status with DCMS	
Contact Details	

18.4 China Ship Design & Research Center Co., Ltd. (CSDC)

Web	http://www.csdc.csic.com.cn/csdc/encsdsc/about.htm
Description	A joint-stock enterprise sponsored and controlled by China Shipbuilding Industry Corp. (CSIS). CSDC is established jointly by 10 enterprises and institutes and is mainly engaged in: R&D, Design of Commercial Ships and Offshore, Technical consultation and Offshore technology transfer
Major Ship Designs	<p>Optimization of:</p> <ol style="list-style-type: none"> 1) The series tanker of handy size, Panamax, Aframax, Suezmas and VLCC 2) Feeder container tanker (1500 and 1800 TEU) <p>Development of:</p> <ol style="list-style-type: none"> 1) 10,000 TEU Large Container Carrier 2) Ultra-large ore Carrier <p>Research of:</p> <ol style="list-style-type: none"> 1) 3D Ship and Parametric Design Technology <p>Example of Design Project:</p> <ol style="list-style-type: none"> 1) Design for 76,000 DWT product/crude oil tanker
Current Business Status with DCMS	
Contact Details	

18.5 Changjiang Ship Design Institute (CSDI)

Web	http://www.csdi.com.cn/english/index.php
Description	<p>CSDI is the largest ship design and research unit in the communications system, with a history of more than 50 years. CSDI is mainly engaged in R&D of various kinds of ocean and inland civil ships, military auxiliary ships and harbor lifting transportation machinery. Employees: approx. 300 ISO9000 Certification</p>
Major Ship Designs	<p>Specializes in 7 series:</p> <ol style="list-style-type: none"> 1) Dry-Cargo Carrier Container Ship 2) Passenger/Ro-Ro Ship 3) Liquid Cargo Carriers (Oil, LPG, Glycol) 4) Passenger ship (Tour Ships) 5) Push Tug, Fighting Boat and Environmental Protection Ship 6) High-Performance Ships, Work boats 7) Engineering ships, Harbor Machinery
Current Business Status with DCMS	
Contact Details	

18.6 Shanghai Jingrong Ship Design Co., Ltd. (JRSD)

Web	http://www.jingrongship.com.cn/about_en.asp
Description	Private owned Science and Technology Enterprise with core business in Merchant Ship Design and Marine Engineering Subsidiary company to Jingrong (Hong Kong) International Corporation Group Co. Ltd. Employees: approx. 80 designers
Major Ship Designs	Specializes in 8 areas: <ol style="list-style-type: none"> 1) Liquid Cargo Carrier 2) Workship 3) General Cargo Ship 4) Bulk Carrier 5) Floating Dock 6) Passenger Ship 7) Barge 8) Container Ship Hong Kong company: <ol style="list-style-type: none"> 1) Designs floating docks ranging from 4000 tons to 200,000 tons 2) Is the only professional floating dock design company in China
Current Business Status with DCMS	
Contact Details	

18.7 Guangzhou Marine Engineering Corporation (GUMECO)

Web	http://www.gumeco.com/jianjie-e.html
Description	<p>Established in 1974. GUMECO is engaged in marine projects under China State Shipbuilding (CSSC).</p> <p>Employees: approx. 150 (33 senior engineers)</p> <p>Certificates:</p> <p>Class A Ship Design Certificate, Class A Offshore Project Engineering Certificate, Class B Turnkey Contract Project Certificate, Class A Fishery vessels design Certificate and Class A construction supervision Certificate</p>
Major Ship Designs	<p>Primary designs:</p> <ol style="list-style-type: none"> 1) Oil tankers (7000 DWT) 2) AHOS Vessels 3) Fishery administration ships 4) High Speed Patrol Boats 5) Cruisers 6) Tugs 7) Passenger Vessels 8) Ferry and Cargo Ships 9) Crane Ships (500 T) 10) Fire Boats
Current Business Status with DCMS	
Contact Details	

18.8 Dalian FKAB Marine Engineering Co., Ltd (DF-Marine)

Web	http://www.fkab.com
Description	DF-Marine is a Sino-Swedish joint venture and has two offices in China (Shanghai and Dalian). FKAB was established in 1961 and started in Dalian in 2001. FKAB is a full service Naval Architecture and Marine Engineering Consultancy Company. The activities of the company are ranging from conceptual design, basic design and approval drawings as well as production design.
Major Ship Designs	FKAB undertakes all types of Marine Design Work for any type of vessel and has gained connections with many owners and shipyards worldwide. Among others: <ol style="list-style-type: none"> 1) Coastal Ferries and Passenger Vessels 2) Tanks 3) Bulk and General Cargo 4) Small Ships 5) RO/RO 6) Dredging 7) Special Purpose Ships
Current Business Status with DCMS	
Contact Details	

18.9 CONAN WU & ASSOCIATES (CWA)

Web	http://www.cwa.com.sg/index.aspx
Description	<p>CWA is an organization with Naval Architects and Marine Engineers providing technical consultancy services to shipbuilding, ship repairing and related marine services. In 1998 CWA set up a branch office in Shanghai with 22 employees. In total CWA employ 50 technical experts. The company offers services within four main areas:</p> <ol style="list-style-type: none"> 1) Baseline Conceptual/Design and Studies 2) Hull Design and Naval Architecture 3) Mechanical 4) Electrical and Electronics
Major Ship Designs	<p>Among others, the major types of vessels designed by CWA constitutes:</p> <ol style="list-style-type: none"> 1) Bunkering 2) Cargo Vessel 3) Carriers 4) Container vessels 5) Ferries 6) Passenger vessels 7) Tugs 8) Work boats 9) Yachts
Current Business Status with DCMS	
Contact Details	

18.10 CS Marine Technology Pte. Ltd (CSM)

Web	http://www.csmarine.net/en/main.asp
Description	CSM was founded in Singapore in 2000. The company is specialized in marine consulting, designing and engineering for shipbuilding and offshore (with offices in both Singapore and Shanghai). CSM covers complete field of design services from concept definition, feasibility studies and production drawings. CS Marine also supply Project Management and Site Supervision Services.
Major Ship Designs	<p>Among others CSM designs include:</p> <ol style="list-style-type: none"> 1) Product Oil Tanker/Chemical Tanker 2) LPG Carrier 3) Bulk Carrier 4) General Cargo Vessel <p>New projects constitutes:</p> <ol style="list-style-type: none"> 1) 5500 DWT Chemical Tanker IMO II 2) Poseidon Bulk Carrier Series
Current Business Status with DCMS	
Contact Details	

18.11 SHANGHAI ODELY MARINE ENGINEER Co.,Ltd. (ODELY)

Web	http://www.odely.com/
Description	Originally ODELY was a joint venture established in 1994 between: Odely Trading GmbH Germany and Marine Design & Research Institute of China (MARIC) In 2002 ODELY separated from MARIC and became an independent private company. Employees: approx. 30
Major Ship Designs	ODELY work with 6 Series of Design: <ol style="list-style-type: none"> 1) Container Series 2) BC and MPC Series 3) Oil Tankers Series 4) High-tech Series 5) Laker Series 6) Tug and Boat Series <p>A few examples of projects involve:</p> <ol style="list-style-type: none"> 1) Timber Carriers 2) Shallow Water MPC 3) HP Harbor Tug Boats (2600 and 3200 DWT) 4) MPC (10,000, 18,000, 21,000, 25,000 DWT)
Current Business Status with DCMS	
Contact Details	

18.12 Jiangsu Ship Design & Research Institute Co., Ltd. (JSSDRI)

Web	http://www.jssdri.com/cn/gywm.asp (Chinese)
Description Major Ship Designs	<ol style="list-style-type: none"> 1) Chemical Tanker (250 DWT) 2) TEU Container/Bulk Carrier 3) Product Oil Tanker 4) Push Boats 5) Passenger ferries 6) Bucket Wheel Dredgers (120 CBM/h and 4,400 kW)
Current Business Status with DCMS	
Contact Details	

18.13 Zhejiang Seahead Ship Design & Research Inst. Co. Ltd., (Seahead)

Web	http://www.seahead.com.cn/Enindex.asp
Description	<p>Seahead was founded in 1997.</p> <p>The company is a provincial scientific research organization specializing in ship design, superintend and consultation.</p> <p>Certificates: Class A Ship Design Certificate and Double Class A Ship Design.</p>
Major Ship Designs	<p>The Ship List of Seahead includes:</p> <ol style="list-style-type: none"> 1) Cargo Ships 2) Engineering Ships 3) Fishing Vessels 4) Tankers 5) RO/RO Passenger Ferry 6) Official Ships <p>New Ships include:</p> <ol style="list-style-type: none"> 1) 710 TEU Container Ship 2) 5100 DWT Chemical Ship 3) 20000m3 Chemical Tanker 4) 56m Fishing Cranc 5) 5380 DWT Multi-purpose Vessel
Current Business Status with DCMS	
Contact Details	

18.14 Guangzhou XED Ship Design Co.,Ltd (XED)

XED

Web	http://www.xed.com.cn/program/index.php?lang=en
Description	XED was set-up in 1994 and is a registered, private organization. The company offers service of Marine Technology including Research and Design. Employees: Approx. 24
Major Ship Designs	<ol style="list-style-type: none"> 1) River Sea Oil Tanker 2) Double-Hull Oil Tanker 3) Multi-Purpose Cargo Vessels 4) Product Oil/Chemical Tanker
Current Business Status with DCMS	
Contact Details	

18.15 NINGBO ORIENTAL SHIP DESIGN CO (NDF)

Web	http://www.ndf-ship.com/main/about.asp (Partly Chinese)
Description	NDF was established in 1999. The company engages in Ship Designs and Study, Consultation of Service of Ship Technology, Technology Training, Project Construction etc.
Major Ship Designs	<p>Vessels include:</p> <ol style="list-style-type: none"> 1) Cargo Vessels 2) Multi-Purpose Vessels 3) Container Vessels 4) Bulk Carriers 5) Oil Tankers (6,400, 7,000, 8,9000 DWT) <p>Additionally the company has also developed:</p> <ol style="list-style-type: none"> 1) Gas Ships 2) Chill Ships
Current Business Status with DCMS	
Contact Details	

19 Top 25 Ship Owners

China's expanding economy is helping to fuel demand for more ships. Shipping lines worldwide ordered a record 2,077 vessels worth \$77.2 billion in 2004 as traffic to and from China soared.

By the end of 2008, total registered vessels in China reached 250,000 vessels with 96,000,000 dwt shipping capacity. Chinese shipping sector aims for global leadership. As learned the goal of being the world's number 1 is set for 2015.

19.1 Overview

No.	Company
1	COSCO China
2	China Shipping Tankers (China Shipping)
3	CSC Nanjing Tanker Corporation
4	China Merchants Energy Shipping Co., Ltd.
5	Dalian Ocean Shipping Company (COSCO Dalian)
6	China National Offshore Oil Corporation (CNOOC)
7	China National Petroleum Corporation (CNPC)
8	Hebei Ocean Shipping Company (HOSCO)
9	China Shipping Container Lines Company Limited (CSCL)
10	China Petrochemical Corp. (Sinopec)
11	China Shipping Development Co., Ltd. Tramp (CSTRAMP)
12	COSCO Shipping Co., Ltd. (COSCOL)
13	Zhejiang Shipping Co., Ltd.
14	CSC Phoenix Shipping Company (CSCPC)
15	China National Foreign Trade Transportation (Group) (SINOTRANS)
16	COSCO Tianjin (COSFRE Tianjin)
17	China Shipping Haisheng Co., Ltd.
18	Chinese-Polish Joint Stock Shipping Co., Ltd. (Chipolbrok)
19	Jiangsu Ocean Shipping Company (JOSCO)
20	Ningbo Marine Company Limited
21	Cosco Southern Asphalt Shipping Co., Ltd
22	Fujian Shipping Company (FUSCO)
23	Qingdao Ocean Shipping Company (QDCOSCO)
24	Sinochem Corporation
25	Haichang Group (HCG)

20 Description of top 25 Ship owners

This part is for the member's version only and the format is as shown below.

20.1 COSCO China

Description	Founded in 1961, COSCO has grown into a USD 17 billion corporation. COSCO is the world's second largest and China's largest international shipping company. COSCO owns and operates more than 700 modern commercial ships with a total of 46 million DWT.	
Products	Primary business areas are shipping and logistics. Fleet size: 600 + Container ships Bulk carriers Tankers General cargo ships Specialized vessels	
S T A T U S	Ellehammer	
	HJL	
	Ironpump	
	West Diesel	
	DCMS	
Biggest Customers		
Company Size:		
Company Owner:		
Contact information		

- 20.2 China Shipping Tankers (China Shipping)**
- 20.3 CSC Nanjing Tanker Corporation**
- 20.4 China Merchants Energy Shipping Co., Ltd.**
- 20.5 Dalian Ocean Shipping Company (COSCO Dalian)**
- 20.6 China National Offshore Oil Corporation (CNOOC)**
- 20.7 China National Petroleum Corporation (CNPC)**
- 20.8 China Shipping Container Lines Company Limited (CSCL)**
- 20.9 Hebei Ocean Shipping Company (HOSCO)**
- 20.10 China Petrochemical Corp. (Sinopec)**
- 20.11 China Shipping Development Co., Ltd. Tramp (CSTRAMP)**
- 20.12 COSCO Shipping Co., Ltd. (COSCOL)**
- 20.13 Zhejiang Shipping Co., Ltd.**
- 20.14 CSC Phoenix Shipping Company (CSCPC)**
- 20.15 China National Foreign Trade Transportation (Group) (SINOTRANS)**
- 20.16 COSCO Tianjin (COSFRE Tianjin)**
- 20.17 China Shipping Haisheng Co., Ltd.**
- 20.18 Chinese-Polish Joint Stock Shipping Co., Ltd. (Chipolbrok)**

20.19 Jiangsu Ocean Shipping Company (JOSCO)

20.20 Ningbo Marine Company Limited (NBMC)

20.21 Fujian Shipping Company (FUSCO)

20.22 Cosco Southern Asphalt Shipping Co., Ltd

20.23 Qingdao Ocean Shipping Company

20.24 Sinochem Corporation (Sinochem)

20.25 Haichang Group (HCG)

21 Top 12 engine makers (2 stroke low speed type)

21.1. Overview

No.	Company
1	Hudong Heavy Machinery Co. (HHM)
2	Dalian Marine Diesel Engine Works (DMD)
3	Shanghai CSSC Mitsui Marine Diesel Engine Works (CMD)
4	Yichang Marine Diesel Engine Works (YMD)
5	Jiangsu Antai Marine Diesel Engine Works (AMD)
6	Qingdao Qiyao Wartsila MHI Linshan Marine Diesel Co., Ltd. (QMD)
7	Zhenjiang Marine Diesel Works (ZMD)
8	Zhoushan Zhongji Diesel Engines Manufacture Co., Ltd. (Zhongji)
9	Hefei RongAn Power Machinery Co., Ltd (RongAn)
10	Guangzhou CME Co Ltd (GCME)
11	Zhejiang Yungpu Heavy Machinery Co., Ltd(Yungpu)
12	STX (Dalian) Engine Co., Ltd. (STX)

22 Description of top 12 engine makers

This part is for the member's version only.