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SeaHow

2013 Report on China's Shipbuilding and Offshore Industries:

Translating Crisis into Opportunities

Presented by SeaHow Consulting

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1. Preface

The unprecedented growth and development of China's shipbuilding and offshore industries has earned it a position at the centre of the current and future global shipbuilding and offshore industries. As a result, China is always squarely at the forefront of the minds of global executives in the whole industrial ecosystem, spanning from shipbuilding, marine equipment supply, offshore oil and gas, shipping and rule regulators to finance and law sectors.

Until now however, there hasn't been a single unifying report available in English, which analyze and report of unfolding events and the dynamics and in which direction China is heading in an authoritative and in-depth manner.

Based on this obvious demand, the industry insider Bob Li of SeaHow Consulting decided to lead a team to prepare exactly that: A substantive report on China's shipbuilding and offshore industries based on hundreds of visits and meetings with yards, owners, suppliers and designers and the in-depth knowledge of the inner workings of the industry that over 20 years of industry experience brings.

Bob Li is a seasoned expert on the Chinese shipbuilding and offshore industries, having worked for a number of well respected foreign companies including global top 500 companies headquartered in USA and Europe and among other honors served as chairman of the All China LNG Shipbuilding Conference 2013. Additionally he is a frequent keynote speaker at international symposiums on the worldwide shipbuilding and offshore industry circles.

This 2013 report on China's shipbuilding and offshore industries is the result of countless time spent on yards and by visiting agencies and industry heavyweights. It describes, analyzes and comments the inner workings and industry value chain of the industry, focusing in particular on ship builders, designers, offshore constructors and foreign ship owners. It serves as a guidebook for better understanding and navigating the Chinese market.

The major objectives of this report are thus: to develop an accurate big picture of the current issues and challenges that China is facing and to examine what opportunities or potentials the growth in China's shipbuilding area creates. The purpose is not to give

a detailed plan on when and how steps should proceed to tackle certain specific issues – this could be undertaken in a following project, should industry readers express interest in further analysis and recommendations.

2. General Introduction-How to Benefit from China’s Growth

2.1 The current conditions in China’s shipbuilding and offshore industries

China’s shipbuilding industry is characterized by cyclic growth and has been experiencing roll-coaster’s ups and downs since 1990s. The industry enjoyed a boom period from 2003-2008, and was then hit heavily by the industry’s weak demand in 2009 rippled from 2008’s global economic crises.

In 1990, China selected shipbuilding as a strategic industry and since then has been extensively promoting the industry development. The boom in expectations to future profits made a large number of Chinese entrepreneurs, some with no experience at all, rush into shipbuilding industry. Most of them came from real estate with a large capital. Overnight numerous of shipyards 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.

Before, 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 2003, top 10 Chinese yards generated over 70% share of total building output. But with the increase in the numbers of shipbuilders up to 4,000 new sites popped up, nearly 50% of the total 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, operation flexibility, openness to new approach and management efficiency as well as business innovation. Some private

yards even built vessels without orders, they build for stock just based on their market predictions and could make more profit when ship owners bought these ready-made vessels on their stock piles. This building first and selling second model surprised many experts.

In 2008, before expected, China had overtaken Japan as the world's second largest shipbuilder, China's shipbuilding industry reaped a good harvest with the annual output hitting a record high over 28 million DWT (dead weight tonnage) while seeing profits 50% up by average.

In 2010, thanks to the government support to ease the finance assistance, help prevent delivery delays and contract cancellations, Chinese shipyards could deliver 18.65 million compensated gross tons (CGT) of vessels in 2010, up 48.5 percent over the previous year, surpassing Korea's 15.85 million CGT. China's shipbuilding industry became the global leader in new order receipts, backlog orders and vessel delivery. Although there were negative signs of the over expansion and weak competitiveness in high end shipbuilding sector compared to Korea. As Chinese shipbuilder's have a tendency to focus on new orders for low-priced vessels (more business were for building bulk carriers), Chinese shipyards were lagging behind their Korean counterparts in the value of new orders. China's new order receipts surpassed Korea's by 37.1 percent in terms of volume in 2010, but the total value of the orders was $1.5 billion less than Korea ($30.3 billion vs. $31.8 billion).

In 2011, According to the global shipping services provider Clarkson's, China accounted for around 41% of the global shipbuilding share in dead weight tons, while South Korea had 33%, Japan 20%, and Europe only 2%. Meanwhile, the global shipbuilding industry fallen further into the doldrums, most Chinese yards suffered a heavy blow, especially impacted by higher steel prices, increased labor cost, overcapacity and very low shipbuilding price. Some Chinese yards could not transform to the new market and a number of Chinese yards went bankrupt.

In 2012, according to statistics published recently by the Ministry of Industry and Information Technology, the completion volume of China's shipbuilding was 60.21 million DWT, down 21.4 % year on year, and new shipbuilding orders quantity was 20.41 million DWT, down 43.6 percent year on year.

Situation deteriorated in 2012, according to the China Association of the National

Shipbuilding Industry (CANSI) 2012 annual report released in Jan 2013, China completed shipbuilding volume of 60.21m dwt, a drop of 21.4% year-on-year, and received new orders of a total volume of 20.41m dwt, a 43.6% decrease year-on-year. This reflects the difficulty of the shipbuilding industry in 2012.

Table 2.1.1 Global big 3’s shipbuilding major indicators

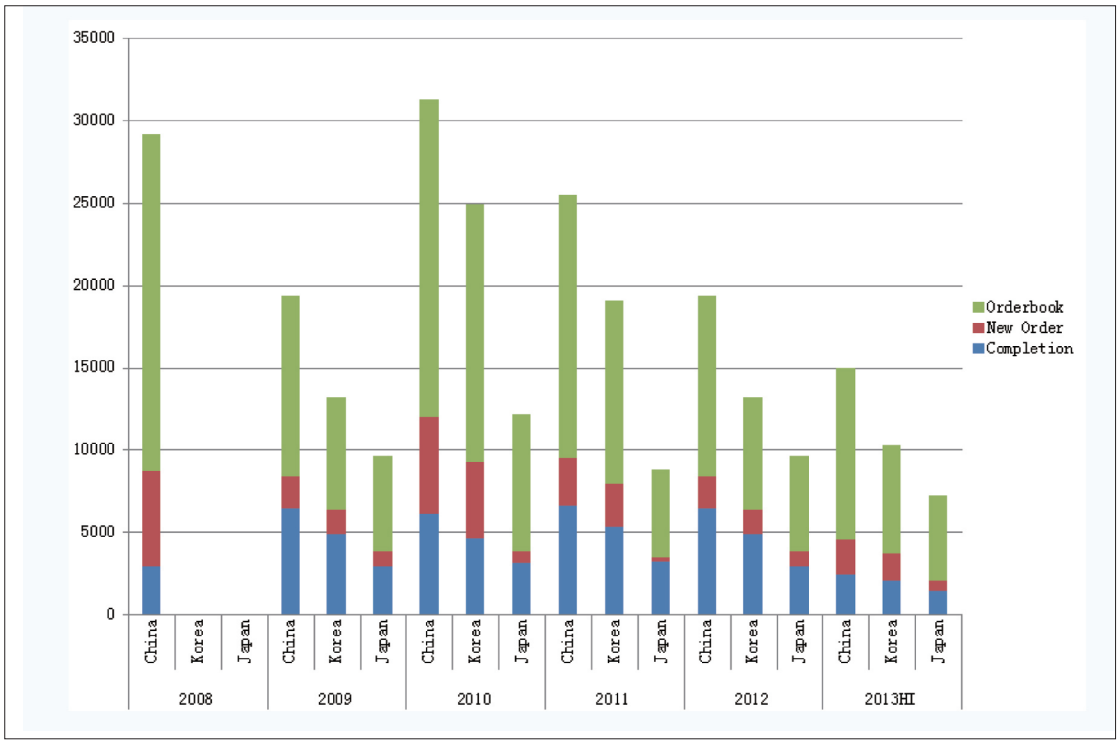
Index/Country		World	China	Korea	Japan
2013, H1 Completion	10k DWT	6215	2432	2044	1376
	Percentage	100	39.1	32.9	22.1
	10k CGT	1973	676	693	377
	Percentage	100	34.3	35.1	19.1
2013, H1 New Order	10k DWT	4803	2121	1661	671
	Percentage	100	44.2	34.6	14.0
	10k CGT	1666	657	600	214
	Percentage	100	39.5	36.0	12.8
2013, H1 Orderbook	10k DWT	24082	10390	6531	5130
	Percentage	100	43.1	27.1	21.3
	10k CGT	9018	3308	2832	1441
	Percentage	100	36.7	31.4	16.0

Sources: CANSI, Clarkson and SeaHow

Only the offshore construction market gained steady growth in 2012, and made several breakthroughs in R&D, design and construction. According to preliminary statistics, the international market share of China’s offshore products increased from less than 10% in 2011 to more than 15% in 2012. CANSI predicts the international shipping market will improve slightly in 2013 and the shipbuilding industry in China will remain in the doldrums, however, the offshore market will remain active, especially the markets of floating offshore sector and Offshore supporting vessles. CANSI suggests that the Chinese shipyards should accelerate transformation, strengthen risk

control abilities and international cooperation, and diversify business models in order to ease financial pressures.

Table 2.1.2 Global big 3's shipbuilding major indicators chart by history



Sources: CANSI, Clarkson and SeaHow

In the first half of 2013, according to the latest statistics released by CANSI, China's shipbuilders completed 24.32 million deadweight tons, accounting for nearly 40 percent of the global shipbuilding volume, while the volume of new orders reached about 21.21 million deadweight tons, accounting for 44.2 percent of the total volume of new orders, and the order book holds 103,90 million deadweight tons, accounting for over 43 percent of the global share. It seems that there is improving sign to be cautiously optimistic for China's shipbuilding industry.

It shows that light seen at the end of tunnel as global shipbuilding industry experiencing an uptrend in newbuilding orders against last year and China also experienced the increase in orders. According to CANSI, Chinese yards won newbuilding orders of a combined 38.06m dwt for the first nine months of 2013, up by 147.1% year-on-year. Meanwhile, Chinese yards delivered a total of 30.61m

dwt newbuildings, which represents a 26.4% year-on-year decline. As of the end of September, Chinese shipbuilding industry was standing on 113.97m dwt amount of orderbook, down by 5.7% from the corresponding period a year ago but up by 6.6% against the end of 2012. In this year to September, Chinese yards inked 35.47m dwt ships for export, greatly increasing by 195% from the same period a year ago, while having delivered 25.80m dwt ships for export.

More and more Chinese shipbuilders have moved into the offshore industry, given the dried-up conventional shipbuilding orders and higher margin of offshore constructions reaching up to 30% profitability, though this sector requires much more technical design, skillful engineering and knowhow. With ever-increasing yards foraying into this industry, some experts expressed the concerns for another wave of overcapacity in offshore construction besides currently shipbuilding.

China gained 15 per cent of the global offshore engineering market by 2012 and is maintaining the momentum in offshore construction development.

The latest guidelines issued by the Chinese government require that Chinese yards should build 25% of high-tech ships and 20% of offshore units output globally by 2015, in terms of value.

2.2 China’s position in the global industry’s landscape

The center of gravity for the global shipbuilding industry transferred from Europe to Japan, to Korea and is now shifting to China. China has become the world’s largest shipbuilding nation.

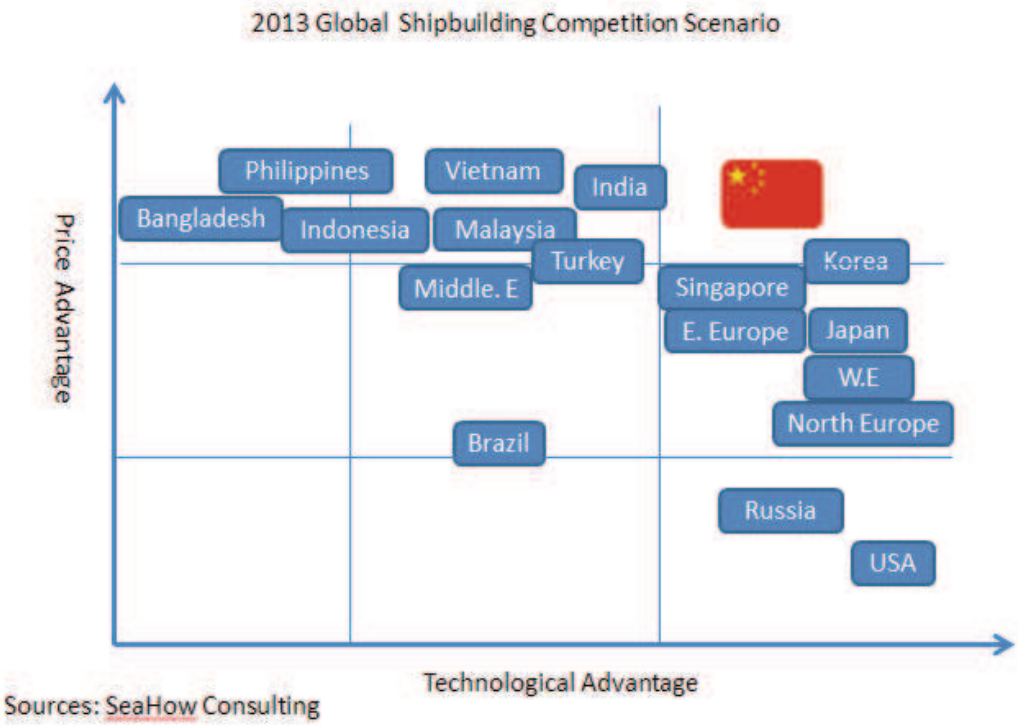
As Table 2.3.1 shows, Chinese shipbuilding enjoys a good position in the global industry landscape.

In horizontal reference, measured by technological advantage, China is ahead of many countries like India, Brazil, Vietnam, Turkey, and the Philippines, nearly same level or a bit ahead of Singapore and East European countries, but lags behind Western Europe, Korea, Japan and the USA. Traditional shipbuilding countries in Europe is downsizing their shipbuilding capacity and moving into other areas such as R& D, futuristic ship design, special vessels’ building and key marine equipment making.

In vertical reference, measured by price advantage, China is quite competitive, nearly same level as the countries as India, Vietnam, Indonesia and the Philippines, much cheaper than the USA and the European countries and also cheaper Korea and Japan.

Generally, China's shipbuilding is rather cost effective. The next step in China's development is to accelerate its technological development and increase the value-adding in shipbuilding and offshore industries.

Table 2.3.1 Global Shipbuilding Competition Scenario



Sources: CANSI, Clarkson and SeaHow

Regarding China's industrial development, the terms of the shipbuilding completion, new order in-take and order books is shown in the table below.

Table 2.3.2 shipbuilding completions comparison (China, Korea, Japan and Europe)

Year	China		Korea		Japan		Cesa		World	
	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%
2012	19,331	40.3	13,391	27.9	8,350	17.4	1,800	3.8	47,918	100.0
2011	19,198	37.6	15,797	30.9	9,160	17.9	2,167	4.2	51,044	100.0
2010	18,800	36.6	14,906	28.8	9,820	19.0	4,588	8.8	51,664	100.0
2009	12,387	28.4	14,466	33.1	9,608	22.0	3,535	8.1	43,692	100.0
2008	9,065	22.1	14,509	35.4	9,759	23.8	4,835	11.8	41,019	100.0
2007	6,795	19.6	11,277	32.5	8,913	25.7	4,800	13.8	34,670	100.0
2006	5,274	15.5	11,940	35.0	9,458	27.8	4,859	14.3	34,066	100.0
2005	4,237	14.6	10,093	34.8	8,511	29.4	3,826	13.2	28,967	100.0
2004	3,090	12.5	8,319	33.6	7,971	32.2	4,235	17.1	24,774	100.0
2003	2,569	11.4	7,175	32.0	6,809	30.3	4,022	17.9	22,454	100.0
2002	1,572	7.3	6,688	31.3	6,656	31.1	4,610	21.6	32,392	100.0

In the shipbuilding completion by CGT (compensated gross tons)

• China’s share was less than 8 % in 2002 and have jumped to over 40% in 2012;

• Europe’s (CESA) share fell from 21.6 % in 2002 to less than 4 % in 2012;

• Japan’s share fell from 48% in 2002 to 17.4 % in 2012;

• Korea’s share was 31.3 in 2002, peaked with a share of 35.4 % in 2008 and was down to 27.9 % in 2012;

Table 2.3.3 shipbuilding new orders comparison (China, Korea, Japan and Europe)

Year	China		Korea		Japan		Cesa		World	
	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%
2012	8,110	33.2	6,823	27.9	4,318	17.7	1,385	5.7	21,421	100.0
2011	8,224	26.7	13,550	43.9	4,073	13.2	1,618	5.2	30,846	100.0
2010	16,083	41.6	11,172	28.9	5,373	13.9	2,226	5.7	38,625	100.0
2009	6,987	42.1	3,443	20.8	3,895	23.5	406	2.4	16,580	100.0
2008	13,148	31.8	15,833	38.3	6,525	15.8	2,109	5.1	41,386	100.0
2007	31,382	36.0	32,861	37.6	10,017	11.5	5,802	6.6	87,288	100.0
2006	15,805	25.9	22,010	36.0	11,865	19.4	6,366	10.4	61,091	100.0
2005	6,606	15.8	13,571	32.4	9,446	22.6	7,403	17.7	41,983	100.0
2004	6,765	14.3	15,732	33.2	14,280	30.2	7,041	14.9	47,359	100.0
2003	6,107	13.9	18,810	42.9	12,335	28.1	3,875	8.8	43,828	100.0
2002	2,112	11.2	5,611	29.6	6,999	37.0	1,744	9.2	18,931	100.0

About new order in-taking by CGT

• China's share rose from 11.2 % in 2002 to over 33% in 2012.

• Europe's (CESA) share fell from 9.2 % in 2002 to less than 6 % in 2012;

• Japan's share fell from 37% 2002 to 17.4 % in 2012;

• Korea's share fell from 29.6 in 2002, peaked by 43.9 % in 2011 and was down at 27.9 % in 2012.

Table 2.3.4 shipbuilding order books comparison (China, Korea, Japan and Europe)

Year	China		Korea		Japan		Cesa		World	
	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%
2012	29,361	33.1	24,164	27.3	12,223	13.8	3,401	3.8	88,674	100.0
2011	38,872	34.9	33,066	29.7	15,829	14.2	4,050	3.6	111,442	100.0
2010	48,922	38.2	39,145	30.5	19,835	15.4	5,634	4.4	128,013	100.0
2009	54,357	35.8	47,576	31.3	24,460	16.0	8,480	5.6	151,952	100.0
2008	62,001	23.6	64,357	33.8	30,649	16.1	13,743	7.2	190,266	100.0
2007	53,101	29.3	64,575	35.6	31,355	17.3	16,753	9.2	181,449	100.0
2006	28,645	21.0	47,994	35.2	30,676	22.5	18,129	13.3	136,238	100.0
2005	16,643	15.8	37,595	35.6	27,952	26.2	15,924	15.1	105,635	100.0
2004	13,483	14.8	33,968	37.3	25,683	28.2	12,302	13.5	91,077	100.0
2003	9,543	13.5	26,623	37.7	19,255	27.3	8,613	12.2	70,555	100.0
2002	6,064	12.3	15,098	30.7	13,620	27.7	8,705	17.7	49,159	100.0

About the shipbuilding order books by CGT

• China’s share rose from 12.3 % in 2002 to over 33% in 2012.

• Europe’s (CESA) share fell from 17.7 % in 2002 to less than 4 % in 2012.

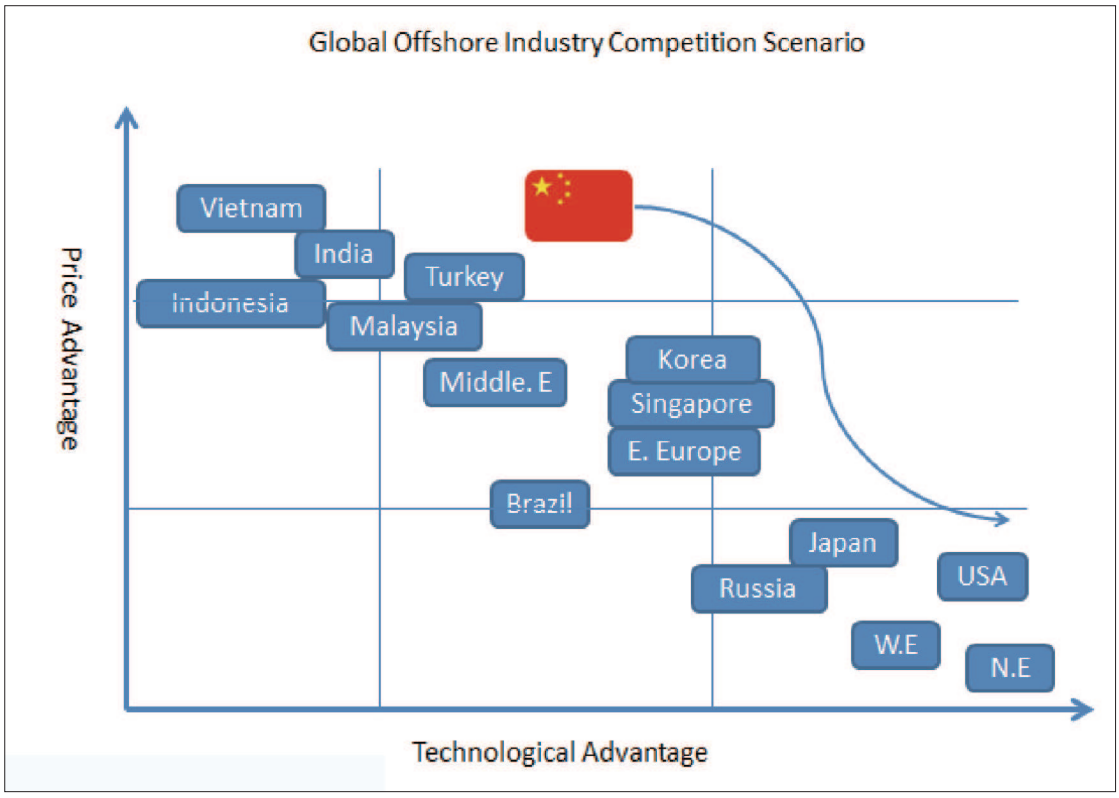
• Japan’s share fell 37% in 2002 to 17.4 % in 2012.

• Korea’s share fell from 30.7 in 2002, peaked by 37.7 % in 2003 and down at 27.3 % in 2012.

In general, China, Korea and Japan are currently the world's top three shipbuilders measured by shipbuilding completion, new order in-takings and order books.

When it comes to global offshore construction industry, the story is different.

Table 2.3.5 Global Offshore Industry Competition Scenario



Sources: CANSI, Clarkson and SeaHow

As Table 2.3.5 shows, China's offshore industry is still in a developing stage compared to the global industry landscape.

In horizontal reference, measured by technological advantage, China is ahead of some countries like India, Vietnam, Turkey, and indonesia, nearly same level or a bit ahead Brazil but lags behind Western Europe, USA, Korea, Japan and Singapore. Europe and USA dominate offshore industry's R& D, design and key equipment making.

In vertical reference, measured by price advantage, China is quite competitive, much lower than USA and the European countries and lower than Korea and Japan.

In total, China’s offshore industry is still in a developing stage. The top priority for China’s development is to try to shorten the technological learning curve and accumulate construction experience. In the long term, China’s offshore industry should aim high and achieve high by catching up with the most advanced rivals in design and construction. With the standard of Europe and USA, at Chinese price (increasing at a reasonable level).

16 Acknowledgements

There are many people and organizations to whom I owe thanks for the completion of this report. Without their input, contribution, advice and support it never would have been completed.

I would like to thank Mr. Rasmus Langfeldt and Mr. Mikkel Bøgebjerg Laursen of Danish Industry-Asia Base Business Services Ltd. Both gentlemen have spent time on corrections, comments, and recommendations throughout the writing process.

I would also like to express my gratitude to Mr. Glen Mikkelsen, GM of Danish Industry-Asia Base Business Services Ltd. He has offered advice and comments on key milestones during preparation of this report.

I would also like to thank Mr. Zhou Changjiang, GM of the publishing center of China offshore and shipbuilding industries, for his help and understanding in making the printing of this report possible.

I would also like to thank Mr. Collen Chen, Ms. Li Zhang and Miss Xu Hailin of the publishing center of China offshore and shipbuilding industries for their tireless efforts and contributions.

A report like this cannot possibly be completed without many friends standing in the wings and offering support. I would like to thank Mr. Michael Zhang, GM of Shanghai Knowhow Marine Equipment (website: http://www.khmarine.com/en/index/) and Mr. Tommy Liang, VGM of Shanghai Knowhow Marine Equipment. Their friendship and support will be forever cherished.

I would like to express my gratitude to the organizers of industry events: SMM, Sea Asia, OSEA, Kormarine, OTC and Norship as well as IBC Asia Pte (S) Ltd, The Oriental Pro-Energy Consulting Organization (Topco) and

I would also like to express my gratitude to the famous industry-related media in China:

Websites: www.chinaoffshore.com.cn; www.coi.com.cn ; www.imarine.cn; www.cnss.com.cn; and others.

Magazines: Offshore Industry, China Ship News, Ship Designer, and others.

Finally, I would like to thank Mr. Alex Chen and Mr. Peter Li, my colleagues at Seahow Consulting, on their continuous inputs and assistance for the completion of this report.

Bob Li, GM of SeaHow Consulting

17 China Offshore Website’s brief introduction

China Offshore Website www.chinaoffshore.com.cn is one of the fastest growing ship and offshore engineering website in china, and it has more than 100 enterprise members. It engages in shipbuilding and offshore engineering consulting, modern enterprise management, media promotion, international maritime exchanges, etc. Since the website was founded, it has established a long-term and stable cooperative partnership with Economic Research Center of CSIC, Shanghai Marine Equipment Research Institute of CSIC, Marine Design & Research Institute of China, Shanghai Shipbuilding Technology Research Institute of CSSC, China Shipbuilding Industry Comprehensive Technical and Economic Research Institute, No.21 Research Institute of China Electronics Technology Group Corporation, Shanghai Bestway Marine Engineering Design Company, China Ports&Harbours Association, The Chinese Society of Naval Architects and Marine Engineers, China Ocean Engineering Society, DNV-GL, BV, Germany Harbour Press, Shanghai Jiao Tong University Press.

We work with China Shipbuilding Industry Comprehensive Technical and Economic Research Institute and Standardized Research Center of CSIC, and provide enterprise quality management and standardized service. This has enhanced the shipping enterprise scientific management and technological innovation ability.

The publishing center of China Offshore Website www.chinaoffshore.com.cn collaborates with Shanghai Jiao Tong University Press has been included in the "twelfth five-year" national key book publishing project. In the next five years, we plans to publish 50 kinds of ship and offshore engineering books for ship and offshore engineering industry.

The industry magazines we are working are as follows:《Shipbuilding of China》,《Ship Engineering》,《Ship Designers》,《Ship Standardization Engineer》,《World Ships & Boats》,《Ship & Boat》,《China Ports》,《Navigation》,《Yacht Fashion》,《The Ocean Engineering》and 《Offshore Installation》.

We have more than 20 kinds of media resources such as shipping industry BBS, seminars and ship standardization meetings, etc.

We sincerely look forward to working with the industry companies home and abroad in the long term.

Membership service hotline: 4008-670-886 Postcode: 200444

Add.: Room 902-903, Building 13, Lvdilinghai, Lane 555, Chengyin Road, Shanghai.

18 SeaHow Consulting's brief introduction

SeaHow Consulting (SHC), a division of SeaHow Technologies (Group) Co., Ltd., is an independent consultancy that carries out industry research, sales training, market analysis, and business development proposals for the Chinese market. Their current focus is on marine/offshore industry, oil and gas, hi-tech, finance, and manufacturing sectors.

SHC is Shanghai-based and covers the entire greater China region, which includes Mainland China, Hong Kong, Taiwan, Macao, and Singapore - as well as other Chinese minorities in other countries.

SHC has been building and maintaining a strategic cooperation with most major media companies as well as some key business players in China.

Moreover, SHC's consultants are frequently invited to many famous industry conferences and seminars as the keynote speakers.

If in need of special reports or industry surveys, please don't hesitate to contact us on shlbk@vip.sina.com or china@seahow.cn

For more information about SeaHow Technologies Group and SeaHow Consulting, please visit www.seahow.cn