Transcript of ISEAS speech_TK Ong

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Speaker:

Mr Ong Tian Khiam has been the Managing Director of PPL Shipyard since November 1997. Prior to that, he held positions as Deputy Managing Director and Managing Director in Sembawang Maritime and Sembawang Bethleham respectively. He was also the President Director of P.T. Karimun Sembawang Shipyard in 1996.

Graduated from the University of Singapore with a bachelor in Mechanical Engineering in 1969, he joined Sembawang Shipyard as a graduate management trainee. He then moved to hold several positions at Far East Livingston Shipbuilding between 1970 and 1979 and at Promet Private Limited between 1978 and 1989 delivering 29 rigs between the late seventies to mid eighties before rejoining the Sembcorp Marine Group.

A veteran in the Singapore Marine industry, he currently spearheads the rig building business in PPL Shipyard and is now actively involved in the construction of 11 rigs to meet the current orderbook.

Abstract:

The rig building sector in the marine industry has seen unprecedented growth in the last few years. Singapore, now THE rig building centre of the world commands a majority percentage of the world rig building order book. More importantly, the rigs built here are premium MADE IN SINGAPORE products. This has been an incredible success story especially when not too long ago, the marine industry as a whole, was labeled a sunset industry.

He will give an insight into how the seed of Singapore's rig building industry was sowed and nurtured from a young sapling to it's current growth phase. He will also give his perception on the current strength of the industry's leading position, its variables and the possible future outcomes.

Introduction: Type of rigs

An oil platform is a large structure used to house workers and machinery needed to drill and then produce oil and natural gas in the ocean

Jack-up Platforms, as the name suggests, are platforms that can be jacked up above the sea with legs than can be lowered like jacks. These platforms, used in depths of up to 500 ft of water, are designed to move from place to place, and then anchor themselves by deploying the jack-like legs.

Semi-submersible Platforms have pontoons of sufficient buoyancy to cause the structure to float, but of weight sufficient to keep the structure upright. Semi-submersible rigs can be moved from place to place; and can be lowered into or raised by altering the amount of flooding in buoyancy tanks; they are generally anchored by cable anchors during drilling operations, though they can also be kept in place by the use of dynamically positioned thrusters. Semi-submersible can be used in depths from 600 to 6,000 feet (180 to 1,800 m).

Drillships, is a maritime vessel that has been fitted with drilling apparatus. It is most often used for exploratory drilling of new oil or gas wells in deep water but can also be used for scientific drilling. It is often built on a modified tanker hull and outfitted with a dynamic positioning system to maintain its position over the well.

The typical jack-up rig can be articulated in several positions, namely:
Jackup up position: With firm footing on the sea bed, the jack up rig is in this position for commencement of drilling.
On wet tow: The jackup is floating for purpose of towage to drilling site
On dry tow: The jackup is ‘piggybacked’ on a large heavy lift vessel for purpose of towage to drilling site
Launching: When the rig slides off from the ground to the sea upon completion of primary construction of the hull.

The Baker Marine Pacific Class 375 Jack Up Rig

The Baker Marine Pacific Class 375 (BMC Pacific 375) Jack-up, a proprietary design of PPL Shipyard, sets new standards in the offshore industry with enhanced performance features. The jack-up is an efficient drilling rig equipped with an advanced drilling package which enables the drilling of high pressure and high temperature wells of 30,000 ft, while operating in 375 ft of water. With a proprietary jacking system designed to withstand storms without the use of a rack-chock system, the rig is also equipped with an extended deck space and large jacking capacity for preload jacking. Since the launch of the BMC Pacific 375 design in 2004, 14 units of similarly designed jack-up rigs have been ordered

Key components of a jackup rig:
Derrick: Load-bearing towerlike framework over an oil/gas well which holds the hoisting and lowering equipment
Drawworks: Hoisting mechanism on a drilling rig which spools off or takes in the drilling line and thus raises or lowers the drill string and bit.

Drill Floor: Foundation on which the derrick and engines sit. Contains space for storage and well control equipment.
Drillpipe: Steel pipe, in approximately 30-foot (9-meter) lengths, screwed together to form a continuous pipe extending from the drilling rig to the drilling bit at the bottom of the hole. Rotation of the drill pipe and bit causes the bit to bore through the rock
Drill String: String of individual joints of pipe that extends from the bit to the kelly and carries the mud down to, and rotates, the bit.
Cantilever: The platform carrying the drill floor and derrick. Skids in and out of rig
Legs: The 3 legs of a jack-up rig are lattice structures made from vertical, horizontal and diagonal tubes. They can move up and down using jacking motors/gears
Living Quarters: Where the crew lives. Up to 120 men onboard
Helipad: For reception of helicopters delivering supplies and change of crew
Hull: Main structure of the rig. Triangular rigid and water-tight
Spud Can: Circular 'shoes' of the legs. Designed to penetrate deep into the seabed for good foothold

Our Maritime History

The early seeds of our marine industry was planted when Singapore was established as a trading post for South East Asia in February 1819 by Sir Stamford Raffles. Trade and shipping were the twin pillars for early economic growth. Coupled with Singapore's convenient location, comparative orderliness and free trade policy, this resulted in our early success. Soon, Singapore replaced Riau as the headquarter for South Sumatra and Bugis and subsequently overshadowed Penang as regional center for commerce. The earliest record of boat-building goes back to 1823, when Hallpike's Boatyard was set up at Boat Quay.

The Marine roots

Due to its location as centre for entreport trade, prominent sailors had berthed and traversed through Keppel harbour waterway (The waterway between Tanjong Pagar and Tanjong Berlayar and Sentosa Island). In 1859, Captain William Cloughton built the 1st Graving Dock (Dock No. 1), joined eight years later by Dock No. 2 followed by Victoria and Albert Docks (under Tanjong Pagar Dock Company which was later known as Singapore Harbour Board (SHB), SHB Dockarm became Keppel Shipyard). In 1869, the opening of the Suez canal sliced the journey between east and west by 6,436 km, accelerating the switch fm sailing ships to steamships and reinforced the economic importance of the Straits of Malacca and Singapore

The Visible Hand of the Singapore Government

The Marine industry owes its current growth to the remarkable foresight of the Singapore Government. Before the independence, early entreport trade associated with Singapore's prosperity offered limited possibilities of expansion due to a restricted domestic market. An Industrialization programme was initiated with inward-oriented manufacturing as key to development before independence The idea was to tap onto the enlarged market of Singapore and Malaya. In an inward-oriented manufacturing model, monopoly-creating measures like tariffs, limits on entry, other restrictions were implemented. Following Singapore's independence this strategy was abandoned against then prevailing external advice to an export strategy. The

Economic Development Board (established in 1961) attracted transnational corporations looking for low labour cost base for global export operations with Government created investment incentives. Pioneer statuses were accorded to foreign companies with tax breaks and other incentives to sink roots and inject capital in Singapore. Following the recommendation of a UN Industrial Survey Mission, shipbuilding and shiprepair being labour intensive, was put forth as an industry to grow as it was good for absorption of thousand of workers. Job creation was one key priority of the government after independence.

To further its commitment, the government through its investment arm, Temasek Holdings, and the Development Bank of Singapore, took equity stake in key marine enterprises e.g. Keppel Shipyard (ex-Harbour Board Dockyard) and Sembawang Shipyard (HM Naval Dockyard). The Swan Hunter Group, the largest ship repair group in the United Kingdom was brought in to organize and manage these two yards and to provide marketing network to attract shipowners. This helped jump start the shipyards with management expertise and track record. Apprentice training schemes were also implemented to create a pool of skilled marine workforce and core group of pioneer management staff, many of whom are key figures in today's marine industry. More foreign investments followed: Ishikawajima-Harima Heavy Industries (IHI), Japan's second largest shipbuilding group incorporated Jurong Shipyard on April 25, 1963, Hitachi Zosen Robin Dockyard in 1970 by Hitachi Zosen Corp and Robin Shipyard and Mitsubishi Singapore Heavy Industries in 1972 by DBS and Mitsubishi.

A strong ship repair cluster was thus established in Singapore with foreign expertise and marketing network to leverage on her position at the crossroads of major sea lanes.

The HM naval Dockyard was converted to Sembawang Shipyard in 1968. The workforce was scaled down and put to work three years before the British withdrew. Naval contracts kept it going in the first two years and helped ensure its commercial viability by the end of the base's run in period. After five years, Sembawang Shipyard was floated on the Singapore Stock Exchange.

Other Foreign yards were invited to invest in Singapore. The Ishikawajima-Harima Heavy Industries (IHI), Japan's second largest shipbuilding group incorporated Jurong Shipyard on April 25, 1963

American rig builders came to Singapore.

In the late 60s, Indonesia and Malaysia invited International oil companies to bid for their offshore concessions. Oil companies signed production sharing contracts with Pertamina and Petronas. International oil service companies followed their customers to set up branches in Singapore. Attracted by proximity to drilling sites, attractive investment environment, and well developed marine related capabilities, two American rig builders Bethlehem Steel and Marathon Letourneau set up rig building yards in Singapore. The third one, Levingston joined Far East shipyard by providing management and technical service. Far East Shipyard then changed its name to Far East Levingston Shipyard

American rig builders brought with them capital, technology and know-how such as jackup designs, project management, engineering, procurement and shipyard management plus their customers, the American Drilling Contractors. In 1975, local shipyard Robin Shipyard diversified into rig building by buying a design from an American consulting firm ETA.

A very significant event took place in 1973 when Keppel took major control of Far East Levingston (In 1978, I joined Promet to spearhead the rig building business). By then 5 rig builders was already established in Singapore, actively pursing rig building.

The Rig Building Big Boom.

In 1974, the Yom Kipo war erupted between Israel and Egypt resulted in an embargo by OPEC. Oil prices quadrupled. In the late 70s, the revolution in Iran resulting in the downfall of the Shah. Oil prices went above US$30 per barrel. The Western world realized that they must look for countries out side OPEC for oil. The drilling contractors seized this golden opportunity to build rigs. With many rig building yards around the world and financial institutions keen to fund new buildings, more than 300 rigs were ordered and completed from late seventies to mid eighties, compared to 119 delivered in the previous 14 years. In Singapore alone, the five yards completed 65 jack-ups

There were more than 80 shipyards capable of building rigs during the 1980s.
In Singapore alone, the five yards completed 65 jack-ups. These yards caught the biggest boom in the history of rig building.

In the period between 1963 to 1977, there were about 12 rig designs with Bethleham and LeTorneau the more popular designs. In the period between 1978 to 1985, more than 22 Rig designs appeared to meet the explosive demand.

Baker Marine design start to gain prominence in that period.

The Bust

In 1985, the world economy collapsed. Oil prices approached US$10 per barrel resulting in a severe cash flow problems with the oil companies. The demand for drilling services greatly reduced causing rig's utilization to fall drastically. Most of the world drilling contractors went bust. For rig building yards with no rigs to build (combined with high overhead), the only solution was to shut down.

There were 82 rig building yards around the world during the boom. Late 80s, only 8 rig building yards were left. In Singapore, Keppel FELS and Promet were not deterred by this blood bath and remained committed to the rig building business

The tough 90s

In Singapore, only KFELS and Promet remained as rig builders. During the mid eighties, our government took the view that the marine industry was a sunset industry. Fortunately all the marine related GLCs did not heed this call but soldiered on by

carving their own niches in the market place and adapted to changing market conditions.

Promet retrenched and kept a group of core people, stayed afloat by doing repair and upgrading of rigs, special fabrication and onshore plants. They managed to survive and in 1996 acquired the Baker jackup design.

In 1997, Dr. Benety Chang did a management buyout of the rig building yard in Singapore and renamed it PPL Shipyard (Benety invited me back to run this yard in Nov. 1997). In 1998, PPL secured a 5th generation semisubmersible rig for Sedco Forex. PPL successfully completed this semi on time & within budget. This success raised PPL's profile prominently. At the same time, PPL started developing a new jack-up design called the Pacific Class 375 based on the successful Baker design

SEMBCORP Marine eyeing rigbuilding

In 2001, PPL shipyard won a major jack-up contract from Santa Fe. SembCorp Marine was keen to get into the rig building business and was looking to build a semi-submersible project from Santa Fe. In 2001, SembCorp Marine bought 50% shareholding in PPL shipyard. The acquisition of PPL shipyard allowed the Sembcorp Marine group to tap into the track record and expertise of the yard and the transfer group best practices. With SembCorp Marine support, PPL won the Santa Fe's semi-submersible contract. In 2003, SembCorp Marine took an additional 35% stake taking its total shareholding to 85% and the rest they say is history.

The purchase of PPL by SembCorp Marine, like what Keppel did to Far East Levingston in 1973 was a very significant event which helps to establish SembCorp Marine as a leading rig building company. In 2004, these two groups help to make Singapore the leading jackup builder of the world

New Boom in 2004.

After the bust in mid eighties, oil companies under invested in the search for new reserves. The major reasons are as follows: 1. low oil prices resulting in low cash flow, 2. new reserves moving towards deeper water and 3. more costly and higher risk. The world, especially the American consumers have long forgotten the high oil prices in the late seventies and are buying bigger cars without any qualm. China economy was also growing at more than 10% per annum. The Chinese car population is also growing exponentially. India is trying to catch up with its economy taking off as well

The demand for crude was rising steadily but E & P expenditure remained low. Potential for oil prices to escalate became very high. The world Jack-up fleet was also aging rapidly with no serious new buildings taking place for many years. Most American drilling contractors were risk averse after the blood bath in the mid eighties.

Entrepreneurial Norwegians seized this golden opportunity and signed rig building contracts very early. KFELS and SembCorp Marine having the proven track record in rigbuilding were the preferred yards for the Norwegians. In 2004, almost all the jack-ups for the Norwegians were secured by KFELS and PPL. To date, a total of 64 jack-

ups have been ordered worldwide, of which KFELS Corp. secured 34 units and SembCorp Marine 15 units – in total 49 units constituting 76% of the jack-up market.

This is an unprecedented achievement for Singapore by any standards

So what were our success factors ? They are namely:
- Our Faith in the emerging rig building need.
- Our very strong rig building foundation especially jack-up rigs (now with more than 30 years experience)
- Our proven designs and impeccable track record.
- Our good rapport with drilling contractors
- Our ability to use financial strength to enhance our competitive edge
- Two strong brands – giving customers a choice and
- Singapore, being good place to do business with it's investor friendly climate and strong supporting infrastructure.

The returns for the marine industry have been nothing short of phenomenal. From a stagnant $40 million in gross turnover in the early 1960's, the marine industry surged past the $100 million mark in 1968, $1 billion in 1978, $2 billion in 1980 and $3 billion in 1991, making it as one of Singapore's top manufacturers. Given its narrow shipowning base, foreign earnings account for over 90 % of the marine industry's revenue.

The industry is also a sizeable employer. From 9,400 in 1960, it has well over 20,000 people on its payroll by the mid 70s, making its largest employer in the private sector. That early success helped break the back of Singapore's unemployment problem.

The Marine Industry today generates revenue of $7.4 Billion (Y2005), a 40% increase from Y2004. All the more remarkable is the fact that it is an extremely tough and robust industry in a highly competitive global market. The recent growth is driven largely by the oil and gas exploration and production boom. The total employment in the year 2004 was 50,000 workers (a 22.3% increase from the year before).

The future

We believe that Singapore can maintain a leading position in rig building due to the following reasons:
- We weathered the worst recession and emerged stronger and more resilient to ride this new wave.
- We have a well established and proven designs and constantly enhance our designs through R&D. This allows our products to stay relevant to our customer's needs.
- We are backed by strong financial strength
- We have the ability to stay relevant by carving niches and adapt to market changes
- We have good availability of NTS workers and subcontractors to keep cost down

The reality of emerging competitors from the Chinese yards (and even in nearby Batam) exists, but their cost advantage is also decreasing. There is also poor transparency in legal and safety system which means greater risks for investors.

The Rig building business is cyclical, but we believe that both KFELS and SembCorp Marine are well diversified to manage this.

We have indeed emerge from sunset to become today's global leaders.

Thank you.

References and acknowledgement:
EDB, ASMI, Sembcorp Marine