The Prospects of Marine Engineering in Malaysia

by Ms. Reika Kua Kee Eng

ACCORDING to the United Nations Conference on Trade and Development (UNCTAD), the most rapid rise in export share of developing economies has occurred in the field of ship construction. In 2010-2011, ships and floating structures (cruise and cargo ships, barges, and other vessels) built in developing economies grew to 64.7 per cent of the global total (an increase of 37.4 percentage points from 1995-1996). The principal net exporters were the Republic of Korea, China and India. The main destinations were Singapore, China, and Hong Kong (China), as well as "open registry" countries, notably Liberia, the Marshall Islands and Panama.[i] In fact, exports of ships and floating structures from developing countries have grown in each of the past 10 years, even during the global financial crisis of 2008 and 2009. This compensated downturns or stagnation in a number of developed countries.[ii]

Malaysia, a maritime nation with a total boundary stretching 7,344 km (4,563 mi) of which 4,675 km (or 2,905 miles) is coastline,[iii] has recognized the importance of maritime activities and the maritime-related industry which has contributed greatly to our nation's economic growth. Based on the Review of Maritime Transport 2006 released by UNCTAD, Malaysia was ranked as the 20th most important maritime nation in the world, although its position had dropped two places since year 2005, overtaken by Turkey and Iran which assumed the 18th and 19th positions respectively.[iv] Will Malaysia in the coming years be able to improve its ranking, maintain its current position, or continue to slide down out of the top 20 maritime nations?

In order to gain a better insight on Malaysia's prospects as a leading maritime nation as well as to find out more about the key issues related to marine engineering, *JURUTERA* interviewed one of the most prominent personalities in the field of maritime engineering, First Admiral Datuk Ir. Yahya Hashim, the Director of Operations of Boustead Naval Shipyard Sdn. Bhd. (BNSY). Also present at the interview was First Admiral Adjunct Prof. Dato' Ir. Ahmad Murad B. Hj. Omar (Rtd), Chairman of Marine Engineering and Naval Architecture Technical Division, Institution of Engineers, Malaysia (IEM).

THE NEED FOR MORE MARITIME EXPERTS

From Datuk Ir. Yahya's point of view, Malaysia, as a maritime nation, clearly lacks expertise in marine and naval engineering. Even today, only a small number of local universities offer courses in marine engineering or naval architecture. The great demand from the industry for marine engineers and naval architects with the expertise and capability to design and construct naval-type ships has not triggered the desired response from our academic institutions to increase the supply of such graduates in line with the aspirations of the country.

"We hope that our naval architects will be more exposed and will sharpen their expertise in naval shipbuilding. As a stakeholder, we will try and continue to develop our naval architects by giving them the opportunity and avenue to practise their engineering skills in our projects which will directly contribute towards the development of the required expertise in the country. The benefits will be not only for us but also for the entire industry," commented Datuk Ir. Yahya.

He further elaborated, "We are consistently pursuing our strategic intent of developing the expertise for the country. As a maritime nation with a long coastline and vast abundance of resources from the sea, it is significant that we should have the expertise in the various disciplines of marine engineering and naval architecture in order to meet the ever increasing demand from economic activities associated with the maritime industry. This will become increasingly crucial in the future."

First Admiral Datuk Ir. Yahya Hashim,
Director of Operations of Boustead Naval Shipyard Sdn. Bhd. (BNSY)

[i] *http://unctad.org/en/Pages/Statistics.aspx*
[ii] *Ibid*
[iii] *http://www.nationsencyclopedia.com/Asia-and-Oceania/Malaysia-LOCATION-SIZE-AND-EXTENT.html#b*
[iv] *http://www.portsworld.com/news/nst1nov27_06.htm*

"We have prepared the platform to create and nurture the emergence of marine engineers and naval architects. We have embarked on the relevant investment in software and human capital in line with our strategic intent." Datuk Ir. Yahya continued, "We have made the efforts through the Littoral Combatant Ship Project to enable our marine engineers and naval architects to gain the experience in naval shipbuilding. It is our belief that the more our engineers are involved in the design and construction of these vessels, the higher the value and level of competency that will be accrued, thus indirectly contributing benefits to the nation."

Datuk Ir. Yahya also pointed out that there is also an actual need to strengthen our expertise in platform system integration, which is the driven and concentrated role in the management and leadership of any shipbuilding project. "Building a ship is like building a town. However, the scenario is tighter with constraints of limited space and ideal balance. We need to have experts in all areas and systems, not particularly in the hull structure, but also in marine propulsion, piping, and electrical systems. And we do recognise the growing needs and expertise in the field of welding, where highly skilled workers are paramount to the critical success factors in shipbuilding," explained Datuk Ir. Yahya.

COMPETENCY OF YOUNG ENGINEERS

When asked on whether young engineers' attitudes and competency levels were below expectation, Datuk Ir. Yahya Hashim, without hesitation, confirmed the declining trend. He explained, "Nowadays, they lead a simple life and expect everything to be given to them. In order to become good engineers, they must have hands-on experience and this is important for the continuous process of development of skills and knowledge. They must acquire the knowledge of how to apply the theories and to put them into practical use. If they do not want to get their hands dirty, they would not be able to understand the functionality of parts that work as a system. Just like a human body, they need to know the functionality of each part in order to understand and master the knowledge on how the system works."

Further more, according to Datuk Ir. Yahya Hashim who had kick-started his career in marine engineering as a cadet officer in January 1978 in the Navy, the ability to communicate and have the right attitude is essential in the formative years to become a competent engineer. Many of them would have had the opportunity to mix with people from various cultural and ethnic backgrounds, and also to be trained overseas. Thus, he believes that language and communication has never been a barrier to the path of becoming a competent engineer.

"It is the attitude that counts!" exclaimed Datuk Ir. Yahya. He continued, "I would always tell these engineers that I do not require highly intelligent people. I only require the people with the right attitude. This is very important to me. If they are intelligent, then it is a bonus. The right attitude always comes first."

INTIATIVES TO BOOST COMPETENCY OF YOUNG ENGINEERS

Various initiatives have been taken to boost the competency level of young engineers. One of these initiatives is the Young Engineers Scheme (YES), a partially Government-funded programme which spans for a year. "Under the YES programme, we will train the participating trainees. However, we are strict on the selection of candidates and will only choose those with a CGPA score of 3.0 and above," emphasized Datuk Ir. Yahya. He further explained that the YES programme is a non-binding scheme whereby the participants are offered an option as to whether or not they would like to be absorbed into the workforce of BNSY.

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"So far, under the graduating first batch of trainees, we have had 20 participants and all of them have been absorbed either as BNSY employees or engaged by our associate companies in the Group.

"We pay quite a high allowance for these trainees. Under this programme, we have also mentoring sessions with practitioners in the industry, career counseling and motivation courses to improve their competency and adaptation to the real work place. The scheme has been successful and we can see significant improvements in them," he remarked. According to Datuk Ir. Yahya, in the quest for continual improvement, BNSY is constantly head-hunting for potential and qualified engineers and experts in the industry to form part of the team that contributes to sustainable growth of the Company's business.

RENUMERATION ISSUES

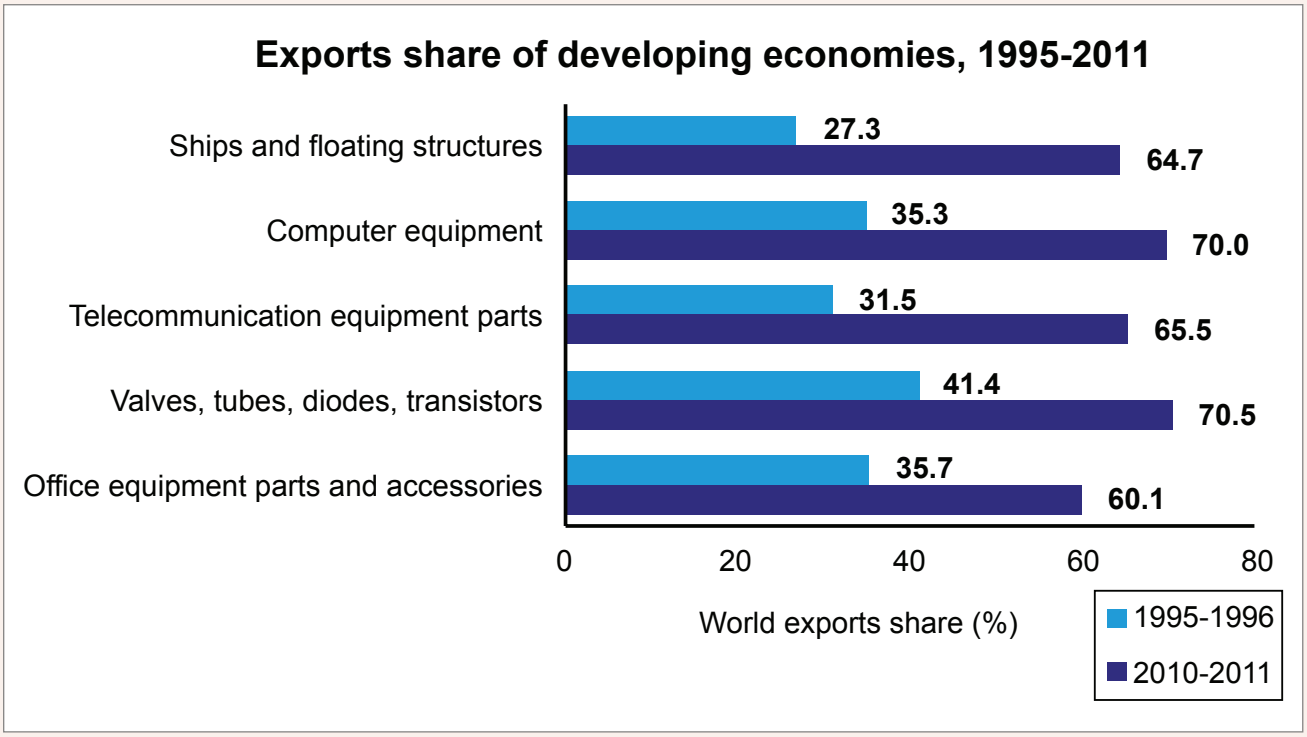
"Why most people do not want to practise engineering is because of the perception that they cannot rise to the highest position of the organisation. In most firms, the CEO normally comes from an accounting, business or economics background. Career development for some engineers therefore tends to get stuck as the technical people appear to be functional as the backbenchers," said Datuk Ir. Yahya. He added half-jokingly, "Only in JKR (Public Works Department) and JPS (Drainage and Irrigation Department) are the bosses themselves engineers, but this does not hold true for other organisations."

As most of the decision makers are non-experts in the field of engineering, it is quite de-motivating for fellow engineers to pursue their careers to become the top leaders of companies. Datuk Ir. Yahya pointed out that being an engineer does not mean that one cannot possess entrepreneurial qualities. He advises, "Actually, engineers only need to upgrade their knowledge about business and management to be capable to assume management positions. We understand the fundamentals about engineering, and if we put our efforts to understand more about business administration, we will be as good as those who come from an accounting or business background."

According to Datuk Ir. Yahya, addressing these lopsided remuneration and promotion issues is vital to increase the interest among qualified engineers to seek prominent roles in the running of the business of companies. The drive will reinforce the continual commitment to enhance and practice engineering. Apart from that, project management should also be included in the curriculum of an engineering course at tertiary institutions. "It is also equally important that we should embark at an early stage of learning to motivate and create excitement among students on the prospects of a career and life in the field of marine engineering," suggested Datuk Ir. Yahya.

FUTURE ASPIRATIONS

According to Datuk Ir. Yahya, currently most of the ships in the naval shipyard are procured from overseas. There is a new strategic intent. "We want to establish a full capacity ship design and engineering centre, so that we can have our own intellectual property, where we can design our ships and sell our design to others. This is what we have set out to do. It is also in line with the Government's aspirations," he added.



Source: UNCTAD secretariat calculations based on UNCTADstat [v]

[v] *http://unctad.org/en/Pages/Statistics.aspx*

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He informed that BNSY intends to set up the ship design and engineering centre in Cyberjaya. "Our marine engineering and design base in Lumut is only to cater for the in-house requirements, just for BN Shipyard. However, it is our aspiration to have an engineering design centre for the country," emphasized Datuk Ir. Yahya. He further elaborated, "This is actually incorporated in our contract in relation to our commitment to supply the Littoral Combatant Ships to the Royal Malaysian Navy (RMN). At the initial stage, we will first collaborate with DCNS, a French company, to make sure that we are capable to design and construct the ships which will all be done locally in Malaysia, except for the integration part."

He said that currently, most shipbuilding services are still outsourced from foreign companies. Hence, there is a need to localise such services. Datuk Ir. Yahya added, "The help from DCNS is for the initial stage, whereas later we will make it totally Malaysian – localising it, not just for the purpose of the defence project, but also for commercial reasons."

However, he also stressed that Malaysia would also need to constantly send our experts overseas not only to acquire more advanced knowledge and skills in shipbuilding and naval architecture, but also to continually keep abreast with technology and practices in other countries. When these engineers are back in Malaysia, they will be able to transfer their knowledge and skills into the local operations and directly contribute to the enhancement of the local maritime industry.

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FUTURE PROSPECTS FOR MARINE ENGINEERING

"In terms of the future prospects for marine engineering and naval architecture, there certainly is a very good potential for rapid growth and expansion. In fact, I believe, the potential is always better than any other fields of engineering, since the driving factor of the industry demand is fundamentally based on transportation by sea. In any circumstances, carriage by ship is cheaper than by air," asserted Datuk Ir. Yahya.

He also pointed out that it is crucial for Malaysia to be prepared and continually enhanced its development of marine engineering and naval architecture so that the nation is able to cope with the increasing demand for vessels, not just for defence purposes but also for commercial use such as freight services to transport industrial goods. "And if our people do not start developing and building our own ships, when the volume gets bigger, not only are we unable to cope with the demand but we will also lose the opportunity and learning experience in order to move towards a higher application of technology and growth," explained Datuk Ir. Yahya.

He added, "Currently we have a lot of potential business in luxury yachts, especially now in Langkawi. We need to build up the local expertise in this area and take advantage of our cost position. To park a yacht at the dock in most ports overseas is very expensive in comparison to a much cheaper rate locally."

Another area of concern is the application of materials in the industry. As sea water can easily cause corrosion, the need for maintenance of ships is high. Certain materials are banned to protect the marine environment from being destroyed. Hence, there has been an increasing need for a constant research and development programme to source for potential materials that can be safely used and is environmentally friendly for the purpose of shipbuilding.

"We take in a lot of vendors with us under the maritime vendor development programme. Under this new scheme, we have set the target of 60% local content for whatever components and labour that we use in shipbuilding, ranging from pumps to cables, equipment and ultimately the work force." He continued, "However, I cannot simply bring foreigners into the naval shipyard, except for specialists from overseas, due to specific ownership of technology of the acquired system. All the lower levels of workforce must be acquired locally."

There has been an increasing trend of more women engineers being employed in the work force. He also mentioned that many of the engineers in the design section comprised women engineers. "Now, I have also women engineers working on board. Even the technicians and some skilled workers are women. The only drawback is that we might be temporarily short of manpower during their absence due to maternity leave. But after that, they could continue working as usual. Hence, gender has never been a major issue."

"We have embarked on so many initiatives including the vendor development programme, Young Engineers Scheme, and so forth. In whatever projects that we venture into, there has always been the involvement of local players. The only right thing to do is to implement it properly, and it is crucial to find the most effective ways to execute it," he emphasized.

According to Datuk Ir. Yahya, all these efforts will eventually lead to the opening of more job opportunities for Malaysians, which will directly contribute to our country moving closer towards becoming a high-income nation. ■