Technical Visit to the Royal Malaysian Navy Base at Kota Kinabalu (Sepanggar Bay), Sabah

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SEPANGAR is a sub-district of Kota Kinabalu in Sabah. The Royal Malaysian Navy (RMN) has a submarine base there which is the Navy's first and principal base throughout Malaysia. Sepanggar is currently experiencing a surge in development due to the expansion of Kota Kinabalu. The main campus for University Malaysia Sabah (UMS) and the Kota Kinabalu Industrial Park are situated there as well.

The Institute of Engineers Malaysia (IEM) Project Management Technical Division (PMTD) got approval from the office of the Chief of the RMN to pay a visit, which includes two lectures on project management by JKR and RMN. The dates of the planned visit to the submarine base at Sepangar Bay was from 26 to 28 February 2010. A total of 18 IEM members from Peninsular Malaysia and Sarawak, as well as 48 members from Sabah took part in the visit.

THE VISIT

This visit was the first of its kind approved by the RMN for IEM. It was designed not only to expose the IEM members to the newest asset of the RMN, which is the submarine KD Tunku Abdul Rahman, but also to allow them a chance to grasp the extent of the project management that goes into the development of both the base and the submarine.

The itinerary of the visit was divided into two days. The first day consisted of a visit to the marine park at Manukan Island of which only 18 IEM members from Peninsular Malaysia and Sarawak participated. This excursion was to demonstrate the nation's interests in preserving nature and the eco-system, maintaining a green environment and how engineering can be applied in this context.

On the second day, all 66 members of the group visited the Sepangar Bay RMN Submarine Base. The delegation arrived at the naval base at 8.30 a.m. and were warmly welcomed by the Chief of Staff Kepten Yusri, who represented First Admiral Dato' Anuwi bin Hassan, the Commanding Naval Region II. The group was then ushered to the auditorium for talks on the project management of the SCORPENE Submarine and the Sepangar Bay Submarine Base.

The talk on the project management for the SCORPENE Submarine was presented by Cdr Kamarul Azlan bin Abd Samad TLDM, who covered aspects of the formation of the Submarine Force and the submarine building project both in France and Spain. He showed a slide presentation on the initial design and fabrication to the final finished product of the submarine. This work was undertaken by French shipbuilder DCNS and its Spanish partner shipbuilder Navantia, and is valued at in excess of RM1 billion.

The submarine was built is separate modules, *i.e.* at the Navantia shipyard in Cartagena, Spain, and the DCNS yard in Cherboug, France, before the hulls were joined and launched for the first submarine. The second submarine was joined in Spain. The submarine is armed with Blackshark wire-guided torpedoes and EXOCET SM-39 Sub-launched anti-ship missiles. The submarine has a crew of 32 men and officers.

The next talk on project management of the submarine base was given by Ir. Abdul Alam bin Mat Yusoff, a JKR Principal Senior Construction Manager who led the JKR site management team. His presentation was followed by a Q&A session. According to Ir. Abdul Alam, the objective of the project is to add an additional component to the present Royal Malaysian Naval Base that includes the submarine

Figure 1: On top of the KD Tunku Abdul Rahman

Figure 2: A group photograph with the management and technical team of Markas TLDM, Teluk Sepanggar, Sabah

Figure 3: Dato' Ir. Ahmad Murad receiving a memento from the Naval Base Commander

base complete with the administrative, operational and maintenance facilities for the SCOPENE submarines that were procured by the RMN. The project was awarded to Trans Resources Corporation Sdn Bhd as the Design & Built Contractor with the following Design & Built Key Consultants:

- Naval Base Advisory Team: KOCKS Consult GMBH
- Architect: AF Consultant Architect
- C&S Engineer: KTA (s) Sdn Bhd
- Breakwater Pontoon: Hashim & Neh (S) Sdn Bhd
- M&E Kuasa Tenaga Sdn Bhd
- M&E Contractor: R.E Morris
- Umblical Services Specialist: DCNS

A number of JKR Check Consultants were also appointed and they are:

- Architect: HML Consultancy Sdn Bhd
- Civil & Structure: HML Consultancy Sdn Bhd
- Marine Structure: ARSEA Consulting Engineers
- Mechanical: SIGMA Jelas Engineers
- Electrical: ABENA Consultants

He also mentioned that the practical completion date was on 31 July 2009 and the project handover date was on 17 August 2009 with the final cost figure of RM420 million. The project started in July 2007. He applied and practised the nine areas of knowledge on project management which were:

- Scope and variations
- Schedule-development and schedule
- Budget and cost
- Quality aims and achievements
- Risk management and containment
- Resourcing-skills, availability and training
- Communications
- Procurement
- Integration

The interesting part of the presentation was risk management and containment whereby the presenter pointed out the identified risks such as:

- Power supply problem
- Completion of facilities on time
- Access to site
- Hijacking of imported equipment

The presentation ended at 11.00 a.m. and the members adjourned for a group photograph session followed by a technical visit of the submarine which was berthed at the jetty. The chief engineer for the SCOPENE submarine held a briefing and mentioned that 40 naval engineers from the RMN were involved and deployed on this project.

Next, the group toured the base complex before having lunch with the RMN personnel at the RMN Base Officers Mess. After a sumptuous lunch, the Chairman of PMTD Dato' Ir. Ahmad Murad presented mementos to the distinguished speakers and the Chief of Staff.

This was followed by a visit to the RMN Patrol Vessel KD KEDAH. The group was welcomed onboard by the officers and crew who were under the command of Cdr Mohd Ruzelme TLDM. We watched a slide and video presentation on the history and operational function of the ship. After that, we were divided into smaller groups to tour the ship. The following is the ship's specification:

1)	Overall Length	:	91.10m
2)	Waterline	:	82.90m
3)	1st Deck Beam	:	12.85m
4)	Waterline Beam	:	11.80m
5)	Draught	:	3.4m
6)	Displacement	:	1650 tonnes
7)	Speed	:	> 22 knots
8)	Crew	:	68 including officers
9)	Speed Endurance	:	21 days
10)	Distance	:	> 6,000 knots @ 12 knots

Out of the 68 crew members onboard the ship, about 10 officers are from various engineering disciplines. After the tour, the delegation left for their hotel. At the hotel, the Sabah IEM members left the group. At night, the IEM members from Peninsular Malaysia and Sarawak went for a seafood dinner.

CONCLUSION

The visit to the Sepangar Bay RMN Submarine Base was very interesting and educational. From the visit to Manukan Island, we learned that the eight islands, including Manukan, were once one big island with lots of fauna and flora. Due to seabed movement, the island broke up and many of the fauna and flora have since disappeared.

The visit to the naval base to see the submarine base where the Submarine Tuanku Abdul Rahman was docked showed the intricacies and difficulties that the authorities had in building a base for the submarine.

The visit to KD KEDAH showed the type of naval vessel that is required to patrol the vast shorelines of Malaysia for the safety of the nation and the engineering applications that goes into the operation of such vessels. ■