

## How I Became a Marine Engineer (Part 2)

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### **Attachment to Jurong Shipyard**

When I joined the Poly, the late Mr. Low Guan Onn was the Chairman of the Board. He was also the MD of Jurong Shipyard. Through him, I got attached (nowadays called “internship”) to his new building yard in Pulau Samulun. To reach the yard on time, it meant catching the first bus from my home (in Kangkar) at 5.45am. I did that on my first day and arrived at the gate at 7.30am to find that I was late! “Yard starts work at 7.30am” meant what it said i.e. you have changed into your overalls and be at your designated spot doing your morning exercise to the accompaniment of the music piped through the public address system! It was not what I assumed i.e. arrive at 7.30, eat breakfast, do my toilet, change and then begin work.

This was my first culture shock in a Japanese-run yard and there are at least 4 good reasons why all companies should copy! As most of us nap during our long bus ride to work, the 5 minutes of simple stretching do wake us up properly thus improving safety. This obvious reason came almost immediately. The other 3 reasons came to me 5 year later, in 1976, when I spent 4 months at IHI Kure Yard. Since each employee has a designated spot, each leader know at a glance who is late or missing without the need for roll call. That same glance ensures that each managers would start work on time too! Starting work together also sends this subtle message, “We are family and we start work together.” To me, the most important benefit is that it provides an opportunity for each leader e.g. the CEO to announce his most important message of the day e.g. “We made money and the bonus for this year is 3.5 months”, “NOL is visiting us today, please give our guests your full cooperation”. Such announcements are more effective and economical than emails, posters, banners and other mass communication devices! Toh Ho Tay saw the good sense of this ritual and implemented the morning exercise at Atlantis Shipyard when he was in charge.

I learned a lot at JSL. Practical knowledge of Freedom vessels machinery systems came from Mr. Chew Yam Puay an engineer and Mr. Huan his foreman. Yam Puay was born in Penang, studied in Taiwan and joined JSL on graduation. He has been with JSL ever since! Huan had some technical education, spoke good Hokkien and poor English but very fluent “engineering”. I also learned that Singapore paid a lot of “tuition” money to the Japanese – royalty fee for the use of the first series of

Freedom vessels and having to buy every item (including nuts and bolts and mattresses) that goes into the ships! I also noted that though the yard was declared “new”, not all the yard facilities and equipment supplied by IHI were new. The lesson learnt is that one should be wary of “aid” given by one country to another.

## **Specializing in Marine Automation**

In the late 60s and early 70s, the in thing in the marine world was to automate ships to the extent that engine rooms could be unmanned. I also saw the need to specialize and decided to focus on marine automation. The first thing was to learn what it was all about. Collecting another paper qualification would not help and I decided against doing another degree or a PhD. I opted to learn through attachments to industry. Funding came from a UNDP/UNESCO scholarship. The Singapore Polytechnic gave me a year off to do it in exchange for a further 2 year bond (my first bond was 5 years).

In September 1972, I began by going to Sidcup in the UK to A.C.E (which does not seem to exist anymore!) to discover how a process could be controlled using pneumatics. I discovered the flapper nozzle mechanism – the “heart” of all pneumatic process control devices! With other bits and pieces like bellows, diaphragms, springs and levers, devices such as sensors, transmitters, controllers, valve positioners and actuators were made. And I was able to make a few devices when I set up the Instrumentation and Control Lab at the Singapore Polytechnic out of scavenged parts. Our Government at that time had very little money! The parts came from equipment scrapped by companies and we are indebted to Mr. Wong Liang Feng in particular. He was the Maintenance Manager at Mobil’s refinery and he went the extra mile to give us what he could. Parts that could not be used were sectioned to reveal the internal mechanisms.

My next stop was to Swan Hunter’s Walker Yard to see the installation of pneumatic control systems on board ships that were being built. I picked up skills in fabricating and running copper tubing. The most valuable lesson learned was during commissioning when the controllers were tuned. I also learned from “Fred” (one of the yard foremen) that Chinese girls are better than English girls. He explained, “The meat nearer the bone is tastier”. The other memory of Walker Yard was being shouted at by a worker, “Hey! Do you still live in trees?” I felt offended and retorted with, “When you were learning how to make fire, we were already eating roast chicken!” Luckily Fred was with me to calm things down before we came to blows.

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