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Engineering the nation's defence

As a project manager at DSTA, Mr Desmond Phang Tee Liang gets to grow his career while contributing to Singapore's national security

HAZEL TAN

MR DESMOND Phang Tee Liang went from remote control cars to delivering cutting-edge defence systems on board the remotely operated vessels from the Republic of Singapore Navy (RSN).

The project manager at Defence Science and Technology Agency's (DSTA) Naval Systems Programme Centre leads the development of the RSN's Venus-class unmanned sur-

face vessels (USV) for mine counter-measure operations.

"I was an inquisitive child who had a knack for taking things such as remote-control cars apart and fixing them back again.

"I also took an interest in defence-related news and war movies — in particular, how technology has played a critical role in military operations," recalls Mr Phang, 33, whose fascination with engineering stretches back to his childhood days.

He joined DSTA in 2007 after graduating with a bachelor's degree in mechanical engineering from Nanyang Technological University.

In his role, Mr Phang is responsible for managing the acquisition and integration of naval systems for the RSN and helping DSTA provide leading-edge technological solutions for the Singapore Armed Forces (SAF).

"Operated remotely, the USV will allow the RSN to deploy its manpower more efficiently and enable specific operations to be conducted from shore or platforms at sea.

"The USV could be used to perform hazardous tasks such as detecting and destroying underwater mines, thus reducing risk of injuries to humans," he explains.

Dynamic and engaging

Mr Phang has worked on various naval projects in the eight years he has been with DSTA.

He was first at the Systems Management Programme Centre, which manages and maintains the SAF's networked systems and guided weapons, and subsequently at the Naval Systems Programme Centre, which acquires and integrates advanced surface and underwater naval systems for the RSN.

Describing his work as dynamic, challenging and engaging, Mr Phang divides his time between the office and site visits.

"Some days are spent at the naval bases and shipyards conducting tests and trials. Other days are spent in the office reviewing technical documents and contracts, as well as holding project and technical meetings," he says.

"When conducting test and trials for systems on board the USV, the team has to work with contractors to ensure that requisite procedures are put in place, the systems tested thoroughly and results analysed accurately.

"Post-trial, we need to liaise with our RSN partners on the technical outcomes and put forth our recommendations for future trial scenarios," he adds.

These measures ensure that DSTA delivers systems and capabilities that do not compromise on safety or

performance.

One of Mr Phang's proudest moments was witnessing the USV successfully complete a simulated underwater mine detection operation at an exercise in November last year.

"Prior to the exercise, we worked closely with the RSN to conduct feasibility studies and technical assessments for the underwater search system.

"It was very fulfilling to see the efforts we made in the studies and assessments of the USV's capabilities actually being validated at sea," he says.

Avenues for growth

Working at DSTA provides exposure to many engineering domains, which has broadened Mr Phang's experience significantly.

DSTA has given him a fulfilling career and the opportunity to grow professionally within a nurturing environment that encourages sharing and communication.

"DSTA has in place a systematic personalised career development plan, where staff are empowered to chart their individual career plans, taking into consideration one's aspirations, experiences and competencies, as well as the organisation's goals and requirements," he says.

An employee's development is taken seriously, and the DSTA Academy regularly conducts in-house courses to further hone employees'

skillsets in a structured and holistic manner.

Courses that Mr Phang has attended to build up his engineering competencies cover a broad spectrum that includes systems engineering, systems architecting and design innovation.

DSTA also places a strong emphasis on technical and leadership development and has sent employees overseas for training and exposure.

Last year, Mr Phang attended a conference organised by the Association of Unmanned Vehicle Systems International in the United States.

"It was a fruitful experience as I was able to gain valuable insights into the latest trends, industry practices and available platforms in the unmanned field for maritime applications.

"I also got to interact and learn from key industry players and fellow professionals," he says.

Mr Phang believes a defence engineer needs to have strong project management and sharp analytical skills, as well as stay abreast of latest developments in the field of defence engineering and technology.

He says: "It is also important to possess integrity and professionalism in our work, as well as to be motivated and driven in pursuing the best engineering solutions that are cost-effective, without compromising on safety and performance, for the SAF and Singapore's defence."



Mr Phang has thrived in DSTA where a systematic personalised career development plan enables employees to chart their individual career plans. PHOTO: DSTA