

Defence Science and Technology Agency

INSPIRING INNOVATION

The key behind strong national defence is the innovative use of cutting-edge technology. Two engineers from the Defence Science and Technology Agency share their experiences of working at the forefront of defence technology.

| by shi tianyun |



The Defence Science and Technology Agency (DSTA) provides leading-edge technological solutions to the Singapore Armed Forces (SAF) by fostering an environment of creativity and innovation for defence applications. Teamwork is essential due to the diverse and multi-disciplinary nature of the work it undertakes.

Meet Engineer (Land Systems), Adeline Yan and Senior Engineer (Systems Management), Loy Chong Keong, both 31, who despite having different work scopes and expertise, have come together to work on the Terrex Infantry Carrier Vehicle (ICV) – a cutting-edge fighting vehicle.

WHAT SPARKED YOUR INTEREST IN ENGINEERING?

Adeline Yan: My secondary school Physics teacher had a part to play in my interest. I was fascinated to learn about the science behind natural phenomena – such as how light and sound are transmitted in the form of waves. During my tertiary studies, I was drawn to the creativity of coming up with new ways to apply scientific principles.

Loy Chong Keong: When I was a kid, I loved to

watch cartoon characters use their technological gadgets in shows like M.A.S.K., Transformers and The Centurions. These cartoons were my early influence and an eye opener on what science and technology can achieve.

WHY DID YOU JOIN DSTA?

Adeline: I first learnt about DSTA's role in developing capabilities for Singapore's defence and security during my university attachment to ST Dynamics Pte Ltd. DSTA was the perfect place for me to pursue my passion in communications engineering through large-scale and cross-disciplinary projects. The diverse learning opportunities help me develop a broad range of technical and project management skills.

Chong Keong: I chanced upon the position of a guided systems engineer with DSTA that had an interesting job scope. Plus, I was able to make use of my experience as an operator of the Spike missile system during my National Service and the engineering skills from university studies, to learn more and contribute towards the development and management of guided weapons for the SAF.

TELL US MORE ABOUT YOUR WORK AT DSTA.

Adeline: I work closely with fellow engineers, global defence contractors and SAF personnel to optimise solutions for our nation's defence and security. I also conduct system training to SAF personnel, provide engineering support for troop exercises and occasionally travel abroad to perform system validation tests in overseas facilities.

Chong Keong: As an engineer in DSTA's Systems Management Programme Centre, I am part of the team that ensures SAF equipment and capabilities are operationally ready, reliable and serviceable by providing systems management support for missile weapon systems.

SHARE WITH US THE ROLE YOU PLAYED UPGRADING THE TERREX ICV.

Adeline: One of my most memorable assignments is to integrate radio capabilities on the Terrex ICV – a fighting vehicle developed to ferry and connect soldiers on the battlefield. Communication capabilities are essential as soldiers and commanders must relay information

to one another quickly and accurately on the battlefield. Along the way, we built closer relationships with the SAF personnel, as a result of our frequent visits to the Army camps to test and integrate the radio systems on the vehicles. It is immensely satisfying to produce an effective solution that enhances our soldiers' ability to network with other combat systems.

As the Terrex ICV is made up of many different systems such as the weapon, command and control and surveillance capabilities, close teamwork and communication are important to ensure that a well-integrated and effective capability is delivered to the SAF.

Chong Keong: Like Adeline, I am a member of the Terrex ICV programme team, where I provide technical support and advice on the integration of the weapon system. My team ensures that the design of the weapon is safe and effective. For instance, we study and assess the effects of missile back blasts to prevent any injury to the crew and damage to the vehicle. Seeing the systems come together and the design on paper materialise is particularly satisfying.

WHAT ARE SOME HIGHLIGHTS OF YOUR CAREER WITH DSTA?

Adeline: In my six years of service, I have had the opportunity to take on many projects as a

communications engineer in the Networked Systems Programme Centre, and now the Land Systems Programme Centre. The diversity of my assignments – ranging from the Bronco All Terrain Tracked Vehicle to the Bionix Armoured Fighting Vehicle – has contributed much to my learning journey through exposure to different engineering challenges.

Chong Keong: Providing engineering support for live-firing is definitely one of the most exciting facets of my work in DSTA. For instance, I have taken part in Exercise Wallaby in Australia on several occasions. My role is to assist the SAF in pre-exercise equipment maintenance preparation, scenario planning, and provide on-site technical support and post-exercise analysis. It is a thrill to see the systems we manage in action, and to watch the missiles hit their targets!

WHAT ARE SOME TRAINING OPPORTUNITIES DSTA PROVIDES?

Adeline: I have benefitted much from the experiences and lessons shared by my colleagues at our regular sharing sessions. To keep up-to-date with defence technology developments, I participate in technology forums and overseas seminars. Last year, I attended the Military Communications Conference held in the US,

which provided valuable insights into how the global defence community is bringing communications engineering to the next level. DSTA also offers postgraduate scholarships to staff to build their professional competencies so that they have the skills and knowledge to take on complex or large-scale projects.

Chong Keong: I have gained much from overseas learning trips like systems testing and technology courses on guided systems that offered invaluable work exposure and networking experiences with experts in the field. I have also built my technical knowledge and management skills over the years through exposure to different challenges in DSTA and with guidance from my superiors and colleagues. Now as a Systems Manager, I have the opportunity to coach and guide team mates, as well as inspire them to understand how our efforts contribute to Singapore's defence and security.

IN ONE SENTENCE, ENCAPSULATE A CAREER WITH DSTA.

Adeline: Working at the frontier of engineering.

Chong Keong: A career that enriches and rewards.▲



Adeline Yan
Engineer,
Land Systems
Programme Centre

B.Eng in Electrical and Electronics
Engineering, Nanyang Technological
University

Loy Chong Keong
Senior Engineer,
Systems Management
Programme Centre

B.Eng in Electrical and Electronics
Engineering, Nanyang Technological
University