# Engineering Singapore's Defence

**Siying contributes to the defence and security of Singapore through developing effective engineering solutions for the Singapore Armed Forces.**

During my final year in university, I visited the DSTA booth at a career fair where I spoke to DSTA engineers and learnt about their roles in providing technological solutions for Singapore's defence and security. That stoked my interest in a career in defence engineering and DSTA as it matched my aspirations for a career that would allow me to contribute directly to society.

My first project in DSTA involved working on the surveillance of large-calibre ammunitions, where I worked with a team to ensure that the munitions are safe and serviceable. I also had the opportunity to collaborate with technical experts from NATO to formulate international standards for Energetic Materials (Explosives) Surveillance and Life Assessment, and to travel to overseas test ranges to conduct ammunition tests.

## About my job

As a system manager, I am responsible for the operational readiness of the RSAF's SPYDER, which is a surface-to-air missile system to protect against a range of aerial threats.

The SPYDER is a system networked with sensors that are paired with missile launchers. To ensure that the system is performance-ready and safe for operation, I need to keep abreast of the latest developments in defence technology.

Knowledge of the SAF's concept of operations is also important to ensure that the system is engineered to meet requirements and to address their challenges. As such, I work closely with operators of the SPYDER and participate in field exercises and trainings to gain a better understanding of their operations.

> "AS A DEFENCE ENGINEER, IT IS IMPORTANT TO POSSESS DEEP TECHNICAL KNOWLEDGE, GOOD COMMUNICATION SKILLS, AND THE CURIOUSITY TO UNDERSTAND THE NEEDS OF OUR SOLDIERS AND SYSTEM OPERATORS. "

## Overcoming challenges

While my studies provided me a good foundation, it was a steep learning curve at first to apply the theories learnt in school to work. I also had to quickly pick up knowledge on the SAF's operations and procedures. To overcome these challenges, I frequently engaged my SAF partners to understand how their systems are operated and the reasons behind their requirements.

I am grateful that my experienced colleagues are always willing to share their knowledge and experiences with me, as well as for the opportunities to attend in-house training programmes catered to develop us in our specific areas of expertise, such as the Guided Weapons & Armaments Induction Training Course which I attended in 2009.

**Chen Siying** is a System Manager (Systems Management) in DSTA.

**2015** Appointed as system manager to manage the Republic of Singapore Air Force's (RSAF) Surface-to-Air PYthon and DERby-Short Range ground-based air defence system (SPYDER)

**2013** Completed and delivered first acquisition project for 120mm mortar bombs

**2010** Represented DSTA as an observer in a North Atlantic Treaty Organisation (NATO) Sub-Group meeting

**2009** Joined DSTA as an engineer in the Systems Management Programme Centre

## My biggest achievement

In 2013, we successfully executed an overseas test firing for the 120mm mortar bomb. It was also the first acquisition project that I managed from front end planning to testing and final delivery. Working closely with partners from the Singapore Army, we formulated test plans to ensure that the mortar bombs could be qualified and validated thoroughly. This is so that we could deliver safe and serviceable ammunitions to our SAF partners.

## Key qualities

As a defence engineer, it is important to possess deep technical knowledge, good communication skills, and the curiosity to understand the needs of our soldiers and system operators. This is so that we can develop effective engineering solutions that fit the requirements of our SAF partners, and strengthen our nation's defence.