Up periscope for future job creation

The defence industry and governments are driving SA’s ambition to become a maritime smart state with a skilled talent pool while also unearthing some early achievers, writes Valerina Changarathil

High school students in SA are becoming “more employable” through direct learning and training experiences with future potential employers. Edinburgh North-based St Patrick’s Technical College students are working with companies like PMB Defence, a subs part supplier, and AWD supplier Century Engineering via school-based apprenticeships.

St Patrick’s, in partnership with TAFE SA, is the state’s first P-Tech (Pathways in Technology) school — part of a $5.1 million federal pilot to provide high schoolers with an industry-supported pathway to a science, technology, engineering and mathematics-related diploma, advanced diploma or associate degree.

A new information technology course will be on offer next year, supported by defence company SAAB Australia, and there is interest from WA shipbuilder Austal and BAE Systems Australia to get on board the programs offered by the school. “About 60 per cent of our 230 students across seven courses have gone on to apprenticeships, showing how employable the students are,” says St Patrick’s business development manager Patrick Kelly. “Through the specific electro-technology and engineering programs, the industry partners also have a chance of getting their first pick of recruits, so it’s a successful model of collaboration,” he says.

Austral human resources head Lisa Breen is impressed with what she has seen at the school. “If we are successful on the frigates and offshore vessels, that’s who we are looking to partner with in SA as a first pass,” she says.

Other schools upping the ante on the skills front include the Le Fevre High School at Semaphore, which has a maritime industry pathway program and the SUBS in Schools program, supported by Adelaide shipbuilder ASC.

The SUBS in Schools challenge — funded by the Defence Materiel Organisation and run by Re-Engineering Australia — has also unearthed budding engineers at St Peters Girls School, Brighton Secondary and Prince Alfred College.

Four 12-year-olds from PAC will travel to the UK next month to attend the SUBS in Schools Technology Challenge in London after winning the national gong for designing and manufacturing a remotely-operated underwater vehicle. But more needs to be done to build awareness about the mass employment, “cool jobs”, international experience opportunities and as-yet unknown future spin-outs from an $89 billion rolling shipbuilding program.

Australia is building 12 offshore patrol boats ($3-4 billion), nine frigates ($35 billion) and 12 submarines ($50 billion) over the next few decades — and most of the work will flow to SA and WA. Austal and ASC have teamed up to work with the chosen future frigates designer; UK’s BAE, Italy’s Fincantieri and Spain’s Navantia have been short-listed with a decision expected soon. Naval Group (formerly DCNS) is delivering the submarines, which will be built in SA.

Linked to all of the bids is an extensive range of offers — mostly directed at training and development of the workforce, including through school and university learning. BAE Systems Australia has promised it will offer 1000 apprenticeships if it wins the future frigates work. It is also contributing up to $10 million over 10 years towards a Joint Open Innovation Network — with University of Adelaide and University of South Australia — to support new university engineering scholarships, internship and undergraduate industry placements.

TAFE SA is consulting with its nationwide network of TAFE institutes, and universities on developing a nation-
al approach to building the skilled workforce needed to support the industry. A steady stream of engineers from University of South Australia are already making inroads with Navantia. “We have on-the-job training programs in Spain where our engineers contribute on actual projects and they feel part of a larger defence business,” says Navantia Australia managing director Donato Martínez Pérez de Rojas. “We offer student placement, scholarships and internships to support the universities and assist us to identify good talent. This is the classic win-win program.

“We expect that the company growth will allow for much more junior engineers coming from the three state universities.”

Navantia Australia’s largest team is located in SA — growing from three staff in 2014 to more than 80 people today split across its Osborne and Mawson Lakes offices. It has been working with ASC and Raytheon to jointly deliver the AWD Program.

UniSA Chancellor Jim McDowell says the real challenge for SA is to build a community that is “fit-for-purpose”. “This is about considering how we leverage the money that will come into the state because of defence industries,” he says.

SAAB Australia, which has developed combat management systems for the Navy, and UniSA are setting up a Defence Institute at Mawson Lakes, which will offer degrees, courses, internships and also oversee joint research between UniSA researchers and SAAB engineers.

Flinders University has a research collaboration with Fincantieri and an agreement with the University of Genoa, one of the largest in Italy, to collaborate on staff and student exchanges, research collaboration and the sharing of experience in using hi-tech equipment.

It also has a research co-operation agreement with four French research institutions, linked to Naval Group’s delivery of the submarines.

Flinders University PhD student Rowan Pivetta is developing hexapod (spider) robot technology to allow ships’ ballast tanks to be inspected safely — a partnership project between the university, ASC and the University of Wollongong. Flinders’ professor Karl Sammut, Rowan’s research supervisor, says the work has the potential to significantly improve safety on large ships worldwide.

“The work is an excellent example of Flinders University’s maritime engineering capability,” he says.

Adelaide Uni’s defence and industry director Professor Michael Webb says close ties with ASC and Naval Group already exist and the university is also bidding (with other companies) to manage the proposed Naval Shipbuilding College at Osborne. He says other joint programs like JOIN and alliances like Defence Industry Education and Skills Consortium (DIESC) and Defence Innovation Partnership will help build a better planned workforce.

PARTNERSHIPS OLD & NEW

**UNIVERSITY-LEVEL**

- Joint Open Innovation Network
  BAE Systems, University of Adelaide, UniSA and Flinders University.
- Defence Industry Education and Skills Consortium (DIESC)
  Multiple universities (across states) and the Defence Teaming Centre.
- Defence Innovation Partnership (Defence SA)
  State Government, Federal Defence Science and Technology Group, Adelaide University, Flinders University and the University of South Australia.

**IN THE CLASSROOM**

- P-TECH pilot program
  — St Patrick's College.
- SUBS in Schools challenge
  — St Peters Girls School, Lefevre School, Brighton High School, Prince Alfred College, among others.

**COMING UP**

- Proposed Defence Institute College at Mawson Lakes
  $40 million collaboration between UniSA and SAAB Australia.
- Maritime Technical College at Osborne
  $25 million federal investment to be run by selected provider/s from 2018.
- 12 shipbuilding scholarships valued at $10,000 each from 2018
  Defence Teaming Centre, Luerssen Australia, ASC Shipbuilding, and Civmec/Forgacs.
FULL STEAM AHEAD

Main opposite: All girls team from St Peter’s Sophie-Louise Shearwood, Fiona Dawson, Emily Keough and Grace Dawson won the SUBS in Schools national competition in Sydney. Inset opposite: Austal human resources head Lisa Breen. Top: Lefevre High School students Lachlan Mann, Ellie Borke and Mitchell Lunnay are also part of the SUBS in Schools program. Inset: Flinders University PhD student Rowan Pivetta. Below: Prince Alfred College students Jake Hamood, Eric McCauley, Mason Ross and Griffin Bierlein with a remote operated vehicle.