



Stuart Whiley, ASC Managing Director and CEO

Why ASC has become a STEM champion

The world is on the cusp of the next industrial revolution, with significant technological advances expected to drive innovations within the high end manufacturing and engineering sectors - and Science, Technology, Engineering and Mathematics (STEM) skills will be key to this revolution.

This rapid technological change is creating opportunities within the defence industry, with growth areas such as cybersecurity and drone technology influencing the traditional naval shipbuilding sector. However, the current challenge for the defence industry is how can we tap into the innate curiosity of young people and encourage them to obtain formal skills in STEM and join the defence workforce of the future.

Multi-billion-dollar commitments by the Federal Government to build new ships and submarines over the coming decades, including the Offshore Patrol Vessels, Future Frigates and the Future Submarines program, is great news for those considering a career in the Defence sector.

The pipeline of work that will be created by these major defence projects will make it more important than ever to attract and retain people with STEM skills and ensure that Australia's defence industry remains at the leading edge.

To encourage greater participation in STEM subjects it is important for industry, government, defence and the education sector to work together to ensure young people are propelled onto future career pathways that both excite and challenge them. The STEM jobs of the future will require new levels of problem-solving, innovation, creative thinking and digital skills. An early focus on STEM in schools will ensure these next-generation workers can think critically and adapt to new opportunities in a rapidly changing world.

Our future workforce will be drawn from a generation currently studying in schools and tertiary institutions, and these potential defence industry workers of tomorrow are already growing up in a fast-paced digital world. As they progress into the workforce in the coming decades it is the responsibility of ASC and others in industry and government to support and guide them.

A complex and increasingly diverse Defence environment will offer new and exciting opportunities for these students. The focus in the future will not be limited to academic ability only. Agility and intelligence in the digital and ergonomic space is also coming to the fore. Rather than a blinkered focus on exam results, we will also need people who can deliver innovative solutions to complex problems and look to the technological horizon to identify opportunities.

This is why ASC has adopted a number of strategies to bolster our talent pool and enhance the perception and attractiveness of STEM careers.

For more than a decade, ASC Shipbuilding has funded TAFE SA's 'Defence Industry Pathways Program', that provides Year 10 and 11 students the chance to develop vocational skills in a SACE-accredited course, with a particular focus on Advanced Manufacturing.

Students develop knowledge and skills in Computer Aided Design and 3D printing technologies, with a program highlight being a shipyard tour designed to bridge the gap between a classroom environment and the real-world application of their studies. Each student is tasked with building a 3D model of an Air Warfare Destroyer and Collins Class submarine to support their theory-based learning and go on to obtain an accredited SACE Stage 1 Design and Technology certificate and ten points towards their SACE studies.

Integrating game-changing technology like virtual 3D modelling into our planning and operational focus has allowed ASC users to see a range of equipment in a virtual environment and develop a first-hand understanding of submarine and warship equipment that are required to be either removed, installed or maintained. STEM-skilled and enabled employees will help take these types of innovative developments to the next level, resulting in increased productivity and reliability for ASC.

Another initiative by ASC to foster interest in STEM

opportunities involves running a yearly engineering undergraduate internship program that provides hands-on experience to future engineers, held in collaboration with universities to help shape and influence the next generation of submarine and shipbuilders.

Our shipbuilders and submarine experts also shape the future defence industry workers by advising and lecturing graduate students enrolled in the Masters of Marine Engineering program at the University of Adelaide; a collaboration that started 10 years ago and which allows ASC to pass on its learning to the next generation.

ASC is a financial and mentoring supporter of the 'Subs in Schools' program, run by Re-Engineering Australia, which is a national schools competition tasking teams to build, operate and market submersible vehicles and submarines. It is yet another way that we help promote STEM learning and are investing in our future workforce by pairing school students with ASC subject matter experts.

Most recently, we worked with more than 80 South Australian high school students to put their own-design robots through their paces via the inaugural ASC Robot Rumble at our submarine deep maintenance site in Osborne, South Australia. We were delighted to see a sizeable turn-out for this event and it was a perfect opportunity to partner ASC graduate engineers and apprentices with local students to identify any last-minute technical and design adjustments before the students headed to the national stage of one of the world's biggest robotics competitions.

These shared initiatives ensure that a range of students see the first-hand application of ASC's technologies in the workplace, the importance of problem solving and the range of career opportunities on offer.

The importance of recognising diversity and inclusion is also a core part of any agenda to attract and retain the workforce of the future, and to ensure that ASC isn't excluding itself from as wide a group of talented people as possible.

ASC is committed to offering an inclusive, welcoming and supportive workplace that values individual and group differences and enables us to embrace a diversity of backgrounds and perspectives. This approach increases ASC's overall pool of talent, innovation, creativity and contributions.

As ASC is responsible for the maintenance, sustainment and upgrade of the Collins Class submarine fleet well into the 2040s (as part of the Australian Submarine Enterprise), as well supporting the expansion of Australia's submarine sector in support of the Future Submarine program, our achievements in fostering STEM education will support Australia's future success in deploying a two-class submarine fleets from the 2030s.