SUBMISSION TO THE SENATE INQUIRY INTO AUSTRALIA'S SOVEREIGN NAVAL SHIPBUILDING CAPABILITY

Professionals Australia

Part of the Australian Shipbuilding Federation of Unions

About Professionals Australia

Professionals Australia (formerly the Association of Professional Engineers, Scientists and Managers, Australia) is an organisation registered under the Fair Work Act 2009 representing over 23,000 professionals including professional engineers, scientists, veterinarians, surveyors, architects, pharmacists, information technology professionals, managers, transport industry professionals and translators and interpreters throughout Australia.

For over 100 years we have worked with our members to deliver safe and high-quality capability to the Australian Government and Defence Forces.

Professionals Australia's engineering members are employed across all sectors of the Australian economy. Engineering-based industries are worth $479 billion or 32 per cent of national gross value added and exports from engineering-based industries excluding mining totalled $92 billion or 29 per cent of total exports. This figure swells to $249 billion or 78 per cent of exports if mining is included. Engineers perform design, scoping and project management roles in a diverse range of industries throughout the private and public sectors including Defence, roads, rail, water, electricity, information technology, telecommunications, construction, mining, oil and gas exploration, shipbuilding and manufacturing. The contribution of our engineers and their ability to develop solutions to complex challenges will be fundamental to building a competitive Defence industry and protecting our national security.

Professionals Australia's scientist members work each day in areas as diverse as they are critical to our future. Our scientists are engaged in a range of roles in industry - and are just as likely to be working on the latest cybersecurity challenge or latest technology enhancement of a submarine guidance system as on-site in a hi-vis vest checking water contamination, system configuration or at the laboratory bench. Our members deploy the skills they gained in their undergraduate and post-graduate science degrees in roles as diverse as quality assurance officers, software developers, health and safety officers, science communicators, sustainability coordinators, technical officers and advisors, policy-makers and regulators, web-developers, directors and CEOs and of course, in the Defence industry in roles from manufacturing designer to biosecurity officers to technical advisors.

Professionals Australia represents ICT professionals across the full spectrum of industries and specialisations. Our members work in a wide variety of roles including ICT trainers, ICT sales,
business and systems analysts, multimedia specialists, web developers, software and applications programmers, database and systems administration, ICT security, ICT support, test engineers,
telecommunications and ICT management.

As part of a comprehensive range of services, Professionals Australia advocates for members in workforce and employment-related areas with the aim of positively impacting their operating environment and ensuring their interests are represented at the policy and decision-making level. This includes advocating for ways to ensure proper workforce development in particular industries including Defence.

We are a not-for profit organisation owned by our members.

About this submission

Professionals Australia is a member of the Australian Shipbuilding Federation of Unions (ASFU) and endorses the submission and reccomendations made by the ASFU to this inquiry.

This submission is intended to be read in conjunction with the submission from the ASFU, and will focus on specific areas of discussion pertaining to the professions in the Naval Shipbuilding Enterprise represented by Professionals Australia.

This submission aims to highlight issues related to technical integrity impacting the management, oversight and delivery of the Naval Shipbuilding Enterprise, and workforce capacity in STEM professions.

In particular we address Terms of Reference:

b. progress of the design, management and implementation of naval shipbuilding and submarine Defence procurement projects in Australia;

c. progress of the Naval Shipbuilding College in building workforce capability, and developing the required skills and infrastructure to design, build, maintain, sustain and upgrade current and future naval fleet.

The importance of STEM capacity to the Defence Mission

Australia's modern Defence capability depends on its technological edge, yet technology alone cannot achieve our nation's security. It is the people, their knowledge and what they create, that shapes the development, operation and future of our Defence capability.

The responsiveness and capacity of the Australian Defence Force (ADF) is fundamentally underpinned by the knowledge and expertise of the engineering, science and technical workforce - the people who develop, select, integrate, maintain and operate our modern Defence effort.

A considerable, but not insurmountable, barrier is that intellectual capital in the Department of Defence has been run down to dangerous levels after long years without bipartisan, long-term strategic policy stability, and resultant peaks and troughs in work performed by industry.

When the HMAS Kanimbla broke down in Sydney Harbour and was, together with sister ship HMAS Manoora, subsequently decommissioned early at a cost to taxpayers of $500 million, the Rizzo Review attributed the disaster to shortcuts in maintenance and the loss of engineering capability in Defence. For years since then, internal Defence Department engineering capability has been eroded further by Governments intent on making savings by cutting staff, rather than understanding the fundamental link between our Defence capability, and the technical integrity which underpins it.

Long term vision

Professionals Australia has a long history of advocating for the de-politicization of Defence acquisition, and for the acquisition process to be driven by professionals with expertise in the relevant field to ensure Government remains an informed purchaser and avoids unnecessary waste from poor project scoping.
We believe that to provide a workforce capable of designing, building, operating and maintaining Australia's Defence materiel we must enhance our STEM capacity, both in the Defence Department and in industry. This requires bipartisan political leadership with a committed long-term vision.

The capability needs of the Royal Australian Navy are unique. For Australian STEM professionals to have the skills and expertise required to scope, design and sustain that Defence capability, they require study, training and development over many years; such skills can't be turned on and off like a tap, and they can't be purchased off the shelf. This is one reason why stable leadership from Government and long-term planning in Defence acquisition is vital. The Defence Department and industry must also invest in the development of the next generation of the engineering profession and technical professions through the development of world leading, best practice graduate programs.

Political posturing and disagreements between political decision makers has previously created peaks and troughs of work for STEM professionals in Defence and Defence industry, creating so-called 'valleys of death', where we lose skilled workers, which subsequently degrades our STEM capacity. A stable long-term pipeline of work will allow STEM professionals to develop into experts, the type needed to ensure Australia has world leading Defence capability.

This does however create its own issues. The current pipeline of work will see a number of concurrent ship builds being managed by different prime contractors, each of which will require their own skilled professional STEM workforce. This pipeline of Defence shipbuilding work is also ramping up at the same time as major infrastructure projects across the rest of Australia. There is a great risk that the Naval Shipbuilding Industry could cannibalise itself in competition for a limited pool of engineers. Such competition will likely result in price escalation and potential budget blowouts. There must be effective long term guidance from the Government linking together employers in industry, the education sector and unions to ensure a steady supply of STEM skills to the industry, and ensure that collective agreements are struck to create a standard floor across the industry to ensure cannibalisation doesn't happen through competition on wages and conditions.

Graduate programs

The Naval Shipbuilding Industry requires world leading, best practice graduate development programs to train and develop the STEM workforce we need. There needs to be adequate numbers of graduates employed in these programs, together with broad exposure to a range of different areas and settings to build their skill base. A comprehensive graduate program with rotations through different specialties in the industry will ensure the development of well-rounded graduates, capable of delivering high quality outcomes. Appointment to a permanent position following conclusion of any graduate program is essential to ensure that there is a continuation of skills and development for the individual and for the organisation. The employment of skilled and developed graduates will benefit the business for the cost of investing in them, and internal development of the workforce also helps address price escalation and the potential for budget blowouts.

Best practice programs should be identified and shared, and organisations should be incentivised to form partnerships to develop world-best programs for graduates. For example, procurement models such as alliancing increase the opportunity for skill exchange. Partnerships should involve rotations across organisations, and opportunities to learn and understand practical STEM applications across different organisations and settings. Graduate programs should provide a pathway towards registration and build a range of competencies. Ongoing professional development should be supported so STEM professionals maintain their skills at the highest level, keeping up with contemporary practice.

Politicisation

The current bipartisanship around the important role of Defence acquisition is relatively new. Professionals Australia members still remember a time, not so long ago, when STEM experts in Defence industry were told that they couldn't be trusted "to build a canoe". Civilians working in the Defence Department and industry have previously faced numerous slights at the hands of figures pursuing political ends. It must be understood that STEM professionals and other workers in Defence and Defence industry work within policy constraints and directives set by Government and bureaucracy situated well above them.

There must be bipartisan acknowledgement that Government creates the settings within which public servant operate, and public servants are tasked with following the policy directive of the Government of the day. The Government therefore determine if Australia has the STEM skills we need to scope, design and sustain our Defence capability, so that we do not repeat the political mistakes of the past.

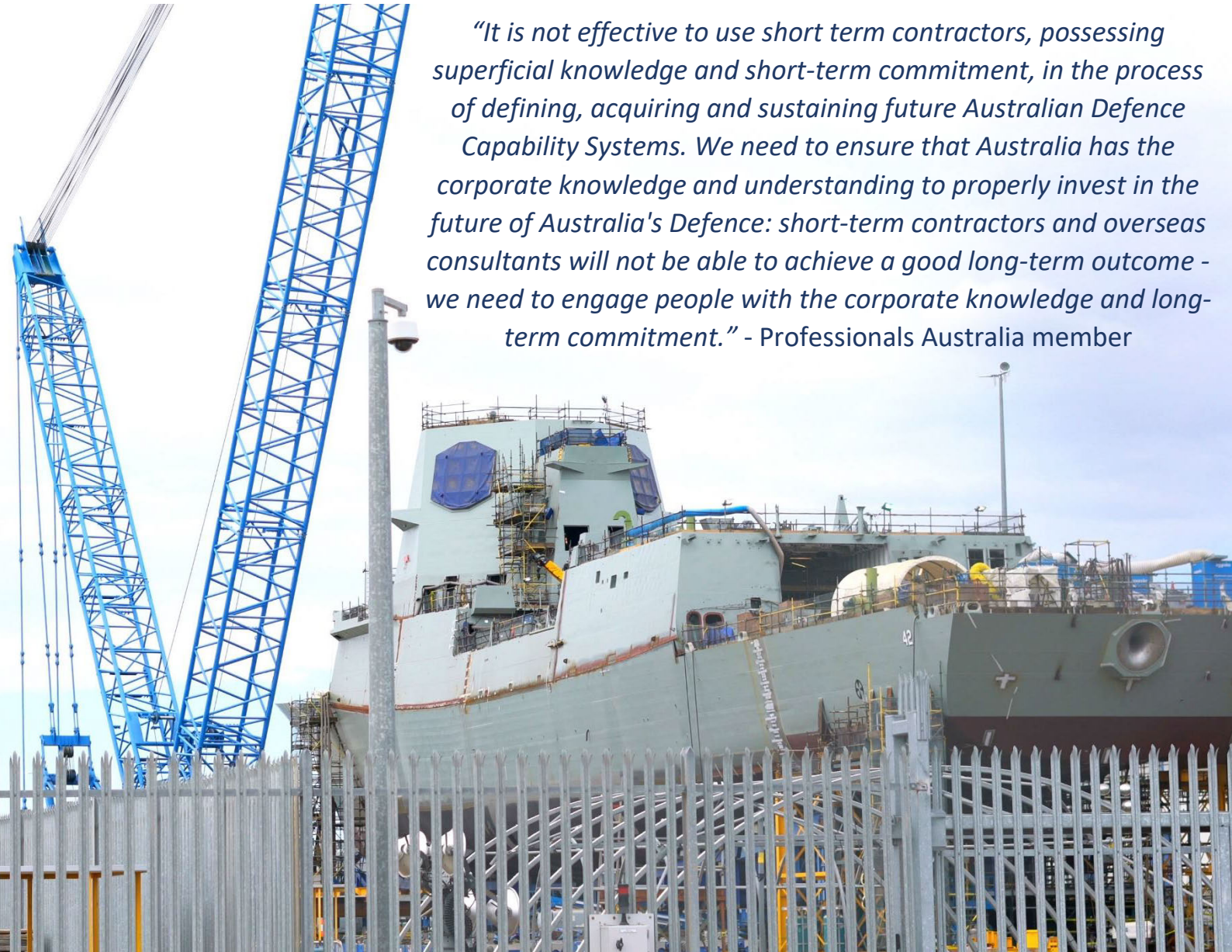
Big capacity issues to overcome in the Department

In 2012, Professionals Australia and the Chiefs of Army, Navy, Airforce, the (then) Defence Materiel Organisation and the Department of Defence committed to work together to improve, "Defence's required engineering and technical capability." despite this however, still we see the Defence workforce facing untargeted staff cuts. Defence officials acknowledge that we are already at the point of no longer being an informed purchased of STEM services and have little ability to recruit the specialists needed to improve the situation.

The Federal Government's Average Staffing Level (ASL) cap currently restricts the number of APS jobs in Defence. At the same time Defence remains under significant pressure to deliver projects, maintain service provision and meet operational requirements. STEM work is currently either intensified among a shrinking pool of professionals, or groups in Defence are driven to the use of contractors and external consultants just to get the job done.

Under the ASL cap there has been an explosion in the use of contractors within the Defence Department, while APS employed staff are reduced. Defence is losing its internal skills, capacity and technical integrity. Without enough APS employed STEM professionals to provide adequate oversight of projects, Government has no way to be sure that they're getting value for money.

This is not said to diminish the importance of Defence industry in achieving the Defence mission, it is vital for the Defence Department and STEM leaders in Defence industry to collaborate closely. However, the balance must be struck to ensure that Australia retains its own expertise in Defence, particularly in Defence science, Defence engineering, cyber and ITC; which is vital for national security.



"It is not effective to use short term contractors, possessing superficial knowledge and short-term commitment, in the process of defining, acquiring and sustaining future Australian Defence Capability Systems. We need to ensure that Australia has the corporate knowledge and understanding to properly invest in the future of Australia's Defence: short-term contractors and overseas consultants will not be able to achieve a good long-term outcome - we need to engage people with the corporate knowledge and long-term commitment." - Professionals Australia member

Workforce Planning

A comprehensive engineering workforce plan within every organisation from the Defence Department and throughout the supply chain is necessary to ensure that organisations have:

1. A plan to develop and maintain a skilled workforce of engineers
2. A minimum level of internal engineering capacity
3. Salaries and conditions which attract and retain quality engineers
4. Processes and funding to support professional development
5. A best-practice graduate program to train future engineers

A strategic workforce plan must also enable the Defence Department to rebuild its STEM capacity, remove the staffing cap and enable Defence to build the STEM workforce it needs, to do the job it has to do. Core STEM work and technical oversight needs to be done by in house professionals to ensure that Australia owns our own technical skills and maintains a sovereign STEM capacity.

Gender Diversity

It's almost 2020 and women are still only 12% of the engineering workforce. Women represent one of the largest under-represented pools of talent in engineering. We know that a 4% increase in the participation rate of women over the next decade would add $25 billion dollars to the economy. If the Naval Shipbuilding industry gets the gender balance right, it'll ensure improved organisational performance, stronger governance, less groupthink and a better bottom line.

"Put simply, there's little question that the Defence industry has a problem with the under-representation of STEM-qualified professional women both across the industry and in its senior ranks. Comprehensively addressing this under-representation must be part of any plan to develop a diverse and sustainable Defence workforce for the future.

A workforce development strategy that goes beyond simply increasing the supply of engineering, science and tech professionals - that includes increasing the participation, development, promotion and retention of women at the workplace level in Defence industry organisations - has to be part of any effective long-term plan to ensure a strong Defence capability into the future.
If we don't address the factors that contribute to women's attrition from the Defence workforce, any chance of increasing participation rates and addressing under-representation over the long-term will be lost and we'll be looking back in another ten years still wondering why we haven't managed to do what's needed to ensure employers have access to the broadest pool of high-quality talent in Defence"

- Chris Walton, Professionals Australia CEO

Addressing the underrepresentation of women in science, technology, engineering and maths (STEM) is a workforce development strategy that must play a major part in ensuring the capability of the Naval Shipbuilding Enterprise.

While the Defence industry has grown an annualised 5.6 per cent over the last five years, there are crystal clear signs showing the under-representation of women in Defence industry:

- Less than 1 in 5 Defence industry employees are women, compared to a national average of one in 2.
- 1 in 7 managers in Defence industry companies are women, compared to a national average of 1 in 3.
- 1 in 5 new graduates in Defence industry companies are women.
- Women are leaving their roles in Defence industry companies at higher rates than men.

There is no doubt that the current focus on encouraging greater numbers of women and girls to undertake STEM subjects at secondary school and STEM courses at university is vital to improving the participation of women in STEM - the problem is that this approach belies the complexity of the factors contributing to the underrepresentation of women in STEM once they experience the workforce, and is at best only half the story.

Addressing the attrition of women from the STEM workforce is the vital second half of the equation. Removing the obstacles, barriers and biases which operate as disincentives for women to remain in these positions is just as fundamental as increasing the participation of women and girls in STEM education.

So, as well as efforts to encourage women and girls into STEM positions, an effective long-term solution will require addressing the complex range of factors that operate to disadvantage women in employment generally, as well as the factors particular to the STEM workforce that create disadvantage and lead to the attrition of women from the profession:

- Gender and equality awareness training;
- Improvements to flexible workplace arrangements;
- Improvements to primary and secondary care giver leave following the birth, including still birth, or adoption of a child; and
- Improvements to ensure employers remain engaged with primary and secondary care givers whilst on leave following the birth or adoption of a child.
- Improving work life balance policies and procedures
- Ability to access part time work or time share arrangements

Engineer Registration

Businesses and Governments often view technical skill as a cost to be minimised, and we now see engineering decisions increasingly being made by non-engineers, with accounting rather than technical engineering expertise driving decision making. The Naval Shipbuilding Enterprise is not immune from this trend.

The Naval Shipbuilding industry is far too important to allow one dimensional viewpoints to dictate the quality of engineering work. Engineers have the skills and training to ensure that risks are minimised while benefits are maximised, and these skills are not easily replaced. The standard of professionalism among engineers must be high to ensure competent practice, ethical conduct, maximum economic benefit and, most importantly, the safety of the community and Navy personnel.

Compulsory engineer registration schemes are being written into law around Australia. Registration requires that those people delivering engineering services are either themselves a registered engineer, or under the direct supervision of a registered engineer. To become registered an engineer must hold a degree which meets the Washington Accord, have at least five years of relevant post graduate experience, have provided references who can confirm their engineer practice, and maintain continual professional development.

The registration of professional engineers upholds the integrity of the profession and maintains an exceptional standard of practice within professionalism. Engineering work in the Naval Shipbuilding Industry must be conducted by qualified and registered professional engineers.

Recommendations

Professionals Australia endorse the recommendations of the ASFU to the Senate Inquiry. In addition, we recommend:

1. Government must amend the staffing restrictions placed on the Department of Defence, so the Department can recruit and retain the professional workforce to scope and oversight projects in the Naval Shipbuilding Industry and ensure proper management of contracts and local content input.

2. Professional bodies and The Naval Shipbuilding College's Engineering Needs Analysis must be consulted in developing engineer and STEM professional workforce plans, which address cannibalisation, price escalation and the under engagement of women.

3. Stability and certainty of long-term careers is vital to encourage and retain a workforce with the required skills. Peaks and troughs in employment will damage workforce confidence, drive skilled employees from the industry and drive up costs. Government must avoid making decisions which fundamentally alter employment prospect in the industry during the life of projects.

4. Cadetships, best practice graduate development, ongoing professional development and support to attain registration must improve across the Naval Shipbuilding Enterprise to support the development of sovereign capability.

Contact

Professionals Australia
[redacted]
[redacted]
[redacted]
www.professionalsaustralia.org.au

Professionals Australia