

Island Australia: improving resilience in a rapidly-changing region

The New South Wales Defence industry strategy and resilience



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Much of the resilience of the Australian Defence Force (ADF) comes from the support provided by Australian Defence industry which provides some operational maintenance and almost all deeper maintenance of Defence platforms and equipment. Sovereign Defence industry is a critical input to the manufacture and sustainment of many Defence capabilities across all the warfare domains – air, land, sea, space and cyber. New South Wales (NSW)-based Defence industry has been, and will continue to be instrumental in delivering the capabilities described in the latest Defence Update and the \$270B Force Structure Plan 2020. The NSW Government, in particular Investment NSW and Defence and Aerospace NSW, is supporting NSW Defence industry through a variety of programs and activities that are being delivered in accordance with the NSW Defence and Industry Strategic Plan. Supply-chain and workforce issues will continue to be key challenges for sovereign Defence industry.

Key words: Defence industry; New South Wales; priorities; strategy; supply chain; resilience; work force.

Defence industry is a key force multiplier and Defence has come to rely on Defence industry as an integral part of the 'One Defence Team'. The Air Commander earlier outlined the capabilities of his forces (Iervasi 2022) and how with a modest sized number of military personnel, the Air Force has recently sent Air Task Forces around the world for operations and very effectively responded to requests for humanitarian and disaster relief support. Sovereign Defence industry has been a key contributor to ADF resilience and this high level of operational performance.

When I joined the Air Force in the 1970s, the Air Force had about twice the number of personnel – 27,000 in 1977 compared with the current strength of about 14,500 - but was far less capable in the 1970s in the way it could respond to threats and deploy its air capabilities. The difference is largely due to the increasing role of Australian-based Defence industry, which has taken over many support and maintenance functions that were previously performed by uniformed staff and allowed the RAAF to achieve far greater levels of preparedness and resilience as a result. The same applies to the other Services, and also to the emerging domains of space and cyber.

Australia's Defence industry has a larger workforce than any of the individual armed services, and consists of about 40,000 people spread Australia-wide, with 26,000 or so in New South Wales. Sovereign Defence industry specifically supports national resilience and the resilience of Defence capabilities in ways which I will expand upon in the ensuing sections.

Firstly, it sustains the ADF; and Australian Defence industry is critical to maintaining the seaworthiness, airworthiness and land effectiveness of the various ADF military platforms. It is many decades since uniformed military technicians performed most of the deeper

maintenance on ADF platforms. By way of example, it is NSW-based Defence industry that provides the advanced aerospace deeper maintenance support for leading edge capabilities such as the F-35 Joint Strike Fighter or the Hawk lead-in fighter. This trend can be expected to continue with an increasing amount of direct support to ADF military platforms being conducted on-shore in Australia.

Secondly, Australian Defence industry contributes significantly to the Australian economy through an increasing number of exports. While the pandemic has resulted in some supply chain issues that has resulted in a drop-off in overall Defence industry exports in the last two years, the current annual value of Australian Defence exports is still well above the pre-2018 figures and is expected to continue to increase into the future. It is interesting to note that Canada, with a similar size population and Defence force size as Australia, produces about four times the Defence industry revenue of Australia and so there is definitely further potential for an increase in Australian Defence exports.

Thirdly, the Australian Defence industry workforce is growing and developing key skillsets across areas such as systems engineering, project management, cyber, space and software development that enable an increasing amount of Defence capabilities to be developed onshore and sustainment to be repatriated to Australia. The expanding workforce and the upskilling further promote innovation and the development of sovereign intellectual property within Australia that Defence will seek to leverage as a technological advantage.

New South Wales Defence and Industry Strategy

The NSW Defence and Industry Strategy (Strategy) outlines the priorities, programs and activities that the

NSW Government has and will pursue to assist NSW Defence industry to support all the Defence capabilities and platforms. The Strategy, while first published in 2017, is still relevant but is currently being revised to provide more detail on some recently announced Defence capability initiatives – such as the Guided Weapons Explosive Ordnance Enterprise and the recent decision to establish a nuclear-powered submarine capability and a submarine base on the East coast of Australia.

While some have commented during this seminar that some other States are more publicly vocal about their Defence industry than NSW, the reality is that NSW has a significantly larger Defence industrial base than other States and Territories in most key areas of Defence, including aerospace, weapons, space and cyber. The NSW Government is quite clear in both its Strategy and actions that it is seeking good Defence industrial outcomes to strengthen the ADF's capabilities and resilience.

To foster stronger relationships with Defence, the NSW Government has fostered and funded regional Defence industry groups and the establishment of various Defence-related precincts across the State. For example, the Shoalhaven Defence Industry Group promotes the Defence industry capabilities of various companies that support the RAN bases and Fleet Air Arm operations along the South coast of NSW. Similarly, Defence industry groups in the Riverina-Murray, Hunter-Newcastle area and other locations are being supported by the NSW Government. Dedicated Defence industry precincts are being established in several locations across the State including Western Sydney and near RAAF Williamtown. The aim of the precincts is to provide the presence of larger Defence industry companies to act as a centre of gravity around which smaller medium enterprises and companies that make up the supply chain can cluster to create a vibrant 'Defence-related support eco-system'.

At Williamtown, BAE Systems-Australia provides this centre of gravity as the company selected by the International Joint Strike Fighter (JSF) Program Office to provide the regional deeper maintenance capability for the F-35. Many companies that also support the F-35, including Lockheed Martin, Martin Baker and others are also establishing themselves close to their key customer – Defence at RAAF Williamtown. In the case of the F-35 and other advanced aerospace capabilities, this 'eco-system' needs to be near the aircraft operators for supply chain resilience reasons, and not hundreds of kilometres away. I know Commander Air Combat Group and all other operational ADF commanders would like to be able to interact closely with the companies and their staff who are providing the direct support that underpins the resilience of their military platforms.

Examples of NSW Industry Support to Defence Resilience

Defence has nominated 14 sovereign industrial capability priorities (SICPs) which clearly articulate those areas where Defence will look to Australian industry to develop sovereign manufacture and sustainment industrial capabilities. Investment NSW and Defence and

Aerospace NSW pay heed to these SICPs and are working closely with NSW Defence industry and the various Defence/technology precincts and networks to respond to these priorities.

One of those SICPs is underwater warfare technologies which includes nuclear power for submarines. NSW is not only the home of the only Australian nuclear reactor but also has several tertiary institutions that offer advanced qualifications in nuclear physics and nuclear engineering. NSW stands poised to greatly contribute to the skilling of the workforce that will manage the proposed nuclear powered submarine force in the future. Also, NSW could potentially provide a suitable location for an East Coast Submarine Base that Defence is looking to establish in the future.

The research and development activities that were flagged in the Australia, United Kingdom and United States (AUKUS) Defence technology exchange announcement on 16 September 2021, also offer opportunities for NSW companies to support Defence. While the nuclear submarine element of the announcement was widely reported, the AUKUS agreement also encompassed announcement in the media; less widely reported was the agreement for Australia, US and UK to collaborate in the areas of artificial intelligence, cyber capabilities, quantum computing, long range and hypersonic missiles, and underwater systems. These are areas in which New South Wales Defence industry and tertiary institutions has extensive expertise and capability.

Another priority industrial capability for Defence is space. Defence is establishing a space division under Air Vice-Marshal Cath Roberts from early 2022. NSW has many more space-related companies and workers than any other Australian State or Territory and so has a critical role to play in advancing the Defence Space capability, as highlighted in the 2020 New South Wales Space Industry Development Strategy. Of course, there is considerable 'cross-over' between commercial and Defence interests in space, and much Defence resilience in space will come from access to commercially available space technology.

A further priority is Guided Weapons and Explosive Ordnance (GWEO). The Commonwealth Government and Defence seek to develop a sovereign advanced GWEO enterprise. In the past, the ADF has procured almost all advanced GWEO through foreign military sales from the United States or through similar supply chains in other countries. This initiative does not mean that all GWEO will be made in Australia. The GWEO Strategy should use various measures, such as stockpiling of some weapons, making some components, and contributing to global supply chains, to gain a greater assurance of the supply of advanced GWEO for the ADF.

NSW is well placed to contribute here. The Orchard Hills Defence Establishment (in western Sydney) has provided GWEO storage and maintenance for many decades. The Mulwala Propellant Facility in southern NSW makes explosives materials that can be used in GWEO, while Lithgow (west of Sydney) makes hardware for some types of ammunition. Further, there are many companies considering setting up manufacture and support facilities in NSW under the GWEO enterprise.

The final priority is Integrated Air and Missile Defence (IAMD). The critical sovereign industry capability that enhances resilience in IAMD is not the missiles, which for the foreseeable future are likely to be sourced through established international supply chains. The key challenge that Australian industry would need to rise to for an effective IAMD capability is the systems integration component and software development of the IAMD system. In the past, Defence has generally contracted with a major international prime for the systems integration for major programs. For example, with the F-35 joint strike fighter all the systems integration was conducted by Lockheed Martin in the US. With the AIR 6500 IAMD program, Australia will have the opportunity to establish an Australian major Defence systems integration capability. This could provide a sovereign capability, where Australia and Defence could conduct its own major systems integration without relying on overseas capability. We can expect significant involvement by NSW-based companies in the IAMD program.

Challenges for Defence Industry

There are a couple of key challenges for Australian Defence industry, and the first is supply-chain resilience. Australian companies learned a lot during the pandemic lockdowns about the challenges of impacted freight arrangements, of changing priorities for sourcing and supply, and of having large portions of their workforce non-effective for extended periods. Australian and NSW Defence companies are thinking about the resilience of their supply chains. This is not all about trying to only use sovereign sub-contractors and sources of raw materials, but about focusing on all the different ways of getting greater assurance in their supply chains. Of course, the US and other international Defence primes are also considering how to improve their supply chain resilience and Australian companies will need to convince the international primes they support that they can deliver with a high level of assurance.

The second challenge is the Defence industry workforce – probably the greatest challenge ahead, not just for NSW industry, but for Defence industry across Australia. Australia is on its 9th straight year of real growth in Defence spending: \$44.6 billion this year increasing to \$75 billion by the end of this decade. The ADF military equipment spend over the past year, despite the pandemic lock-down, went up by a third. In 2020-21, \$3.5 billion was spent in Australia, compared with \$2.25 billion the year before and a further increase is planned for 2021-22. This spending increase necessitates an increased Defence industry workforce which will need to expand by about 10% a year for the foreseeable future to enable the sovereign components of Defence programs foreshadowed under FSP 2020 and other initiatives to be delivered.

To address the skills shortage, we need to get on the radar screen of potential candidates for Defence industry. We need to continue to promote Defence industry as an exciting career that offers the opportunity to work in leading-edge technologies that are critical to the future security of the nation. The NSW Government, through

many programs and activities, is promoting NSW in global forums as a great place for Defence companies and entities to set up. Defence industry also has an ageing workforce and increasing efforts will be needed to attract and retain younger professional and technical staff.

There are a number of NSW Government programs seeking to support expansion of Defence industry jobs, such as the 'Jobs+' program which provides payroll tax relief, training support and other financial benefits if the company meets certain job creation criteria. Science, technology, engineering and mathematics (STEM) programs are a key part of attracting the interest of younger cohorts in the community into Defence industry. There are several programs at the Commonwealth and State level that provide STEM activities for high school students that may generate an eventual interest in a career in Defence industry.

Conclusion

Defence industry is a critical enabler for the ADF and a fundamental input to all Defence capabilities. The ADF is no longer able to support all its capabilities using uniformed personnel and will increasingly rely on sovereign Defence industry for the manufacture, sustainment and resilience of its capabilities.

We need to focus on expanding the Defence industry workforce, both in NSW and nationally, as it represents a potential limiting factor going forward. As a society, we need to think about getting younger people into Defence industry. Government, Defence, Defence industry and organisations like the Royal United Services Institute for Defence and Security Studies all have a role in promoting Defence industry as not only a great place to forge a career but also as a way to make an important personal contribution to Australia's national and Defence resilience.

The Author

Kym Osley has over 45 years' of Defence experience and has served as the senior Defence representative in the US and led the Australian F-35 Program. In recent years, he has been a Managing Director in PwC and supported Defence with Force Design and development of Space Command. Kym is the NSW Defence Advocate where he supports NSW Defence industry engagement with Defence.

References

- lervasi, Joe (2022). *Island Australia: improving resilience in a rapidly changing region: the contribution of the Royal Australian Air Force to improving resilience. United Service* **73** (1), 22 – 24.
- Industry (2017). *New South Wales: strong, smart and connected. The NSW Government defence and industry strategy 2017* (NSW Department of Industry: Parramatta, NSW).
- Treasury (2020). *NSW space industry development strategy 2020* (NSW Treasury: Sydney).

