

Australian defence industry development

Introduction

- 7.1 Defence 2000 describes Australian industry as ‘a vital component of Defence capability, both through its direct contribution to the development and acquisition of new capabilities and through its role in the national support base.’¹ The Government’s objective is ‘to have a sustainable and competitive defence industry base, with efficient, innovative and durable industries, able to support a technologically advanced [Australian Defence Force] ADF.’²
- 7.2 The then Minister for Defence, the Hon John Moore, MP, further clarified the Government’s approach to Australian Defence industry when he stated:
- Government would continue with its policy of extracting the best possible outcomes for Australian taxpayers. We will not limit the ADF to purchases from Australian industry alone, nor will we pay unreasonable premiums for domestically produced equipment and services. However, a significant amount – at least half – of new investment is expected to be spent in Australia.³
- 7.3 The Government has made it clear, therefore, that Australia’s defence industry must do more than survive. It must also be efficient and cost competitive.

1 Commonwealth of Australia, *Defence 2000 – Our Future Defence Force*, 2000, p. 98.

2 Commonwealth of Australia, *Defence 2000 – Our Future Defence Force*, 2000, p. XV.

3 Hon John Moore, MP, Minister for Defence, *Media Release, New Opportunities for Australian Industry*, 6 December 2000.

7.4 Submissions to the inquiry supported the need for a strong and vibrant Australian defence industry. They have also noted that maintaining this industry is increasingly difficult, given the relatively small size of the ADF and thus the Australian domestic market. It is broadly agreed that our close strategic relationship with the US should give Australian companies better access to the US military market, allowing them to achieve economies of scale not possible in Australia alone. This chapter will review access and impediments to the US defence market and use the Joint Strike Fighter (JSF) as a case study of current progress.

Australian Industry Capability Requirements

7.5 The Australian market for defence equipment is not large enough to sustain a fully self sufficient suite of Defence industry capabilities. Defence policy for Australian industry therefore encourages the development and maintenance of critical industry capabilities that meet Australia's strategic priorities for the longer-term development and support of Australian defence capability and military self-reliance.

7.6 Defence described the current priority for the development of Defence industry as follows:

Recognising that Australian demand is insufficient to maintain a full suite of defence industry capabilities, the support requirement is focussed on:

- the capacity to repair and maintain equipment, including the ability to handle the additional maintenance requirements which would arise in conflict;
- the capacity to modify and adapt equipment to meet the demands of Australia's environment and strategic circumstances, and to upgrade those assets throughout their service lives; and
- the capacity to assist in the development of new capabilities.⁴

7.7 Defence continued:

When it is feasible, competitive, and cost effective over the life cycle of the equipment – or when it is necessary for operational or strategic reasons (such as insuring reliable supply) – Defence does acquire Australian designed, developed and/or produced equipment and systems. The acquisition of such equipment and systems contributes to Australia's defence industry skills' base.⁵

4 Defence, *Submission 20*, p. 16.

5 Defence, *Submission 20*, p. 16.

Access to the US defence market

7.8 While the Australian market for Defence equipment is insufficient to develop and maintain a complete suite of industry capabilities, the US market operates at the other end of the sales spectrum.

7.9 The US defence market is significant. The Department of Industry, Tourism and Resources (DITR) reported that the US is 'poised to spend more on defence in 2003 than the next 15-20 biggest spenders combined.'⁶

7.10 However the Department went on to describe the realities of the market as they relate to potential Australian exporters when it stated:

This perspective indicates that the US military market is large, suggesting great opportunities for exporters, but also that this market is well supplied with domestic suppliers underpinned by very significant R&D [Research and Development] expenditures, indicating that exporters should not be complacent about the difficulties of entering the market.⁷

7.11 In addition to these market forces Defence described a range of regulatory impediments to Australian industry participation. Defence stated:

US export controls operate within a strictly enforced legislative and regulatory framework provided by the US Arms Export Control Act and the International Traffic in Arms Regulations (ITAR) for defence goods and services; and the Export Administration Act and the Export Administration Regulations (EAR) for dual-use and some commercial goods. Under this legislative and regulatory framework, US export control processes are applied equally to all export destinations independent of government to government relationships.⁸

7.12 Australian companies can access the US military market in two ways: through direct sales to the US Government, or by selling to US firms as part of their global supply chain. Australian companies have been successful in both cases. In recent years we have seen penetration of the 'direct to Government' sales route by the Australian manufacturers of fast catamaran transport ships and penetration of supply chains by a number of companies gaining selection for JSF contracts.

6 Department of Industry, Tourism and Resources, *Submission 14*, p. 2.

7 Department of Industry, Tourism and Resources, *Submission 14*, p. 2.

8 Department of Defence, *Submission 20*, p. 15.

Impediments to access

7.13 While our close strategic relationship with the US is a significant asset, the challenges to participation in the US defence market should not be underestimated. DITR state:

The challenges to participation in the US defence market include the US export licensing process and normal commercial difficulties of international business, such as physical distance, time differences, information costs, risk perceptions and overcoming incumbency advantages.⁹

7.14 The majority of these impediments can and are being overcome by determined Australian companies in a range of trade areas. However the US export licensing process is a specific impediment to Australian industry seeking opportunities in defence related industries and projects. The export licensing process 'controls the export of information from US companies to foreign companies'¹⁰ for national security reasons.

7.15 Submissions did, however, acknowledge the US right to maintain its strategic position by making security decisions in its national interest. Defence stated:

If you went to the absolute point of integration then the United States would treat the Australians as Americans and provide them with access to everything. It is reasonable to assume that the United States also wants to retain some element of its strategic edge—that is the way it has become and the way it maintains its status as a superpower. Our challenge is to be as close as we can be—to be right up next to that and as linked in as we can, either treated in exactly the same way or developing a system which allows us to have access to most of the data.¹¹

7.16 US protection of defence technology has two components. The first of the two components seeks to ensure US forces never have to face technology developed by US companies. Defence acknowledges the importance of this component when they stated:

The US of course develops this technology and does not want it spread worldwide where other people could use it or counter it. Hence, it has legislation that protects how it shares that information and to whom it provides that information. Being a

9 Department of Industry, Tourism and Resources, *Submission 14*, p. 7.

10 Department of Industry, Tourism and Resources, *Submission 14*, p. 7.

11 Mr Shane Carmody, Deputy Secretary, Department of Defence, 26 March 2004, *Transcript*, pp. 13-14.

close ally of the US, we of course seek access to that technology, but it is not always available.¹²

- 7.17 Defence identified this type of intellectual property as being of significant importance to Australia as well as the US. In some cases it is necessary for Australia to customise US equipment for Australian conditions or threat profiles. Defence stated:

I would add that there are a couple of areas where we are particularly aggressive in our relationship with the US, and this is one part of it. It is not that we need access to all source code. That is not what we are on about here. But we do need access to those components which are particularly important to our specific way of war fighting. An example of that is electronic warfare self-protection, where we want to modify the US systems to operate more effectively in our areas of operation against the sorts of systems that we might see in our region. We have been successful in gaining sufficient access to make those changes for our own purpose.¹³

- 7.18 The second element of protection seeks to ensure the success of companies and capabilities deemed essential to US national interest, such as ship building capacity. The US Government Jones Act, for example, is intended to protect strategic industries. Defence describes the impact of this type of legislation:

Ships are excluded from coverage of the free trade agreement. You are correct that the US has legislation that prevents the US Defense Department buying ships that are not US built. However, this does not preclude our involvement. In the case of Incat and Austal, they form alliances with US companies and provide the technology transfer, but the ships can be built in the US if the US wishes.¹⁴

- 7.19 The other specific example of restrictive US licensing processes quoted in submissions to the inquiry relate to the International Traffic in Arms Regulations (ITAR). These regulations control access to such things as the design of a relevant aircraft part, which an Australian company might need if it was to make a successful bid to produce that part for a US company. DITR explained the impact of ITAR:

12 Mr Edwin Ho, Acting Director General Industry Policy, Department of Defence, 26 March 2004, *Transcript*, p. 13.

13 Air Vice Marshal Kerry Clark, Head Capability Systems Division, Department of Defence, 26 March 2004, *Transcript*, p. 13.

14 Mr Edwin Ho, Acting Director General Industry Policy, Department of Defence, 26 March 2004, *Transcript*, p. 17.

There is the additional problem of the ITAR export licensing arrangement, which is a sort of regulatory barrier. Developmental projects are not extremely well planned with a clear and unchangeable plan. Things change and opportunities crop up, and the ITAR process might prevent us from taking advantage of those opportunities, so it is an extremely tough game. So far a bunch of companies have got small contracts. Most of them think that they are going to be able to work those through to the next phase.¹⁵

7.20 DITR explained that procedurally ITAR required significant adjustment and effort by Australian companies. DITR stated:

Another level of this sort of export licensing arrangement is that the international trade in arms regulations of the United States are quite cumbersome. They impose a requirement for firms to have a so-called technical assistance agreement so that if they want information about a part that they want to bid on they need to be cleared to be able to get the design for that part. That requires that the United States company puts this technical assistance agreement process through the US government. That means the Australian company needs to provide information. So there has been a large learning experience by the Australian companies in what sort of information they need to provide and how they need to make sure of that.¹⁶

7.21 Australia is in the process of seeking a treaty level ITAR exemption from the US. Defence described progress on this issue when they stated:

Nevertheless, the closeness of Australia's relationship with the Executive level of the US Government is reflected in a number of important US export control initiatives. In mid 2000, Australia and the UK were offered an exemption from the requirement for US licenses that are normally required for certain unclassified US defence exports. Canada is the only country to currently enjoy the benefits of such an exemption. Although agreements to underpin this exemption have been held up in the Congress since 2003, the Congress recently included a requirement in the 2005 National Defense Authorization Act that the State Department should expedite defence export licenses for Australia (and the UK). We

15 Mr Mike Lawson, General Manager Industries Branch, Department of Industry Tourism and Resources, 2 April 2004, p. 5.

16 Mr Mike Lawson, General Manager Industries Branch, Department of Industry Tourism and Resources, 2 April 2004, p. 3.

understand the State Department is working to define the Congress' requirements and how they might be met.¹⁷

- 7.22 DITR explained that 'the Canadian experience suggests that an ITAR exemption does not apply to developmental aircraft such as the JSF.'¹⁸

Recommendation 6

The Committee recommends that the Australian Government make every effort to obtain exemption from ITAR from the United States Government in respect of defence goods and services purchased from the United States for Australian Defence Force purposes.

A case study – the JSF program

- 7.23 The US JSF program is expected to result in the production of between 2,000 and 5,000 aircraft for use by the US military and a number of allies, including Australia. Dr Rod Lyon and Ms Lesley Seebeck regard the JSF project as 'an indication of the likely future direction of major platform development.' They stated:

That project, thus far, has been characterised by lean manufacturing technologies, networked development and burden sharing, and a multi user paradigm...Burden sharing with allies helps lower the unit cost to the US, but also buys a network of allies with similar capability. Those allies receive an advanced capability they could not otherwise hope for, interoperability with the US, and R&D [Research and Development] and technical opportunities for their own economies.¹⁹

- 7.24 Australian companies are actively pursuing engagement in this program. Where in the past they may have sought to supply Australian aircraft with components they are now seeking niche capabilities in the broader production program. DITR commented that 'this project has been welcomed by the [Australian] industry as providing unprecedented access to business opportunities in the US defence field.'²⁰

17 Department of Defence, *Submission 20*, p. 15.

18 Department of Industry, Tourism and Resources, *Submission 14*, p. 7.

19 Dr Rod Lyon and Ms Lesley Seebeck, University of Queensland, *Submission 4*, p. 8.

20 Department of Industry, Tourism and Resources, *Submission 14*, p. 9.

- 7.25 The Committee delegation to the US visited Lockheed Martin, prime contractor for the JSF, and was briefed on Australian Industry participation in the program by Mr Abhay Paranjape, the JSF International Program Manager. Mr Paranjape briefed the delegation that the allied industry participation program was a significant opportunity for the aerospace industry in all partner countries. He explained, however, that the program did not involve any automatic industry offsets based on national participation. Each business competing for work on the program must win the work on merit in a competitive process.
- 7.26 The Australian Government decided in 2002 to participate in the System Development and Demonstration (SDD) phase of the JSF program, having identified the aircraft as a potential replacement for the FA18 and the F111. The \$AUD 200 million Australian Government contribution to the program meant that Australia was regarded as a Tier 3 partner. The Tier 1 partners are the US and UK, responsible for the majority of the main assemblies that comprise the aircraft, and the largest potential operators of the JSF. Tier 2 partners include Italy and Holland, each able to bid for significant sub-systems. Industries from Tier 3 partner countries are able to bid on contracts for the sub systems that comprise the Tier 1 and 2 assemblies.
- 7.27 Australian companies have been very successful in winning business in this very competitive environment. Lockheed Martin briefed the Committee delegation that current Australian business, in the prototyping or low rate production phase amounts to \$US 210 million. The Minister for Defence announced that this business is currently being shared by 18 Australian companies. Senator Hill stated:
- Since the first Australian JSF contract was announced in June 2003, a total of 18 Australian companies have won work that is expected to lead to substantial opportunities in the production, sustainment and follow-on development phases of the program.²¹
- 7.28 If the Australian firms continue to perform at their current high level and Australia commits to purchasing the aircraft, Lockheed Martin expects these contracts to expand significantly in the Production, Sustainment and Follow-on Development (PSFD) phase of the project in which up to 4000 aircraft are expected to be made. The Australian Government has announced that it is progressing toward a decision about whether Australia will purchase up to 100 of these aircraft. Senator Hill stated:

21 Minister for Defence Media Release, *Early Success Leads to More JSF Work for Australian Companies*, 15 March 2005.

...negotiations were expected to lead to a cooperative agreement in late 2006 with the Government to make a decision in aircraft purchases in 2008.²²

7.29 Lockheed Martin reported to the Committee delegation that they have been particularly impressed by the innovation and quality of the Australian companies who have now been granted access to contribute to the digital design of the aircraft. They have also been impressed by the collaborative or team Australia approach used by the Australian Government to group like companies as allies rather than enemies on the project. As a result Australian companies have a very high take up rate on bids when compared with peer nations. Of the \$US 846 million in projects available to Tier 3 partners Australian companies have had the ability to bid against \$US 433 million in opportunities. Lockheed Martin briefed the delegation that the \$US 210 million achieved against the opportunities available has been the highest amongst contributing countries.

7.30 One of the most innovative aspects of Australia's involvement in the program is participation in the state of the art digital design and manufacturing systems used on JSF. The multi-national team building the aircraft, including a number of Australian companies, share a digital design data-base for the aircraft. Collaborative design takes place in this virtual or internet based 'design room', allowing precise input from all agencies as the aircraft takes shape. This 24 hour process, called 'follow-the-sun' engineering, includes Australian design inputs during the Australian working day which are then built upon during US based considerations the following day. Melbourne based GKN Aerospace Engineering is one of the Australian companies doing JSF design works using the design room concept.

7.31 A significant outcome of this digital design function has been the increased accuracy of the manufacturing process. Assembly time has more than halved and error rates in fabrication are also less than half of that achieved on legacy aircraft. These results are projected to allow the manufacturers to meet affordability expectations and may accelerate delivery schedules once production of service aircraft commences. Projected production costs are expected to be approximately equal to the current cost of the F16. The Minister for Defence stated:

Lockheed Martin is reporting 'huge' efficiency gains in their manufacturing results on the first aircraft compared to current-generation aircraft programs, citing an 86% reduction in assembly non-conformances, a 44% reduction in manufacturing defects and

22 Minister for Defence Media Release, *New Opportunities for Australian Industry with New Phase of JSF Program*, 16 May 2005.

a 22% improvement in manufacturing time for composite components.²³

7.32 The Minister continued:

Importantly, Australian companies are playing a significant part in achieving these results. Almost 1000 parts on this ... aircraft were designed in Australia by Melbourne-based GKN Aerospace Engineering which equates to approximately 20% of all structural parts on the aircraft.²⁴

7.33 Australian access to the JSF program appears to reflect Australia's strong strategic relationship with the US. DITR stated:

As a potential JSF customer, the Australian Government has been able to open doors for Australian companies. A number of SMEs [Small to Medium Enterprises], as well as larger companies, have indicated that they have gained considerably more access than previously to senior people and to opportunities through Government facilitation, and this has been vital to winning work.²⁵

7.34 In addition, coordination and facilitation by Government Departments appears to be generating benefits. DITR stated:

The creation of Industry Capability Teams (ICTs), facilitated by staff from the Defence Materiel Organisation (DMO) and the DITR, has promoted a "Team Australia" approach that has enabled firms to understand their major competition is overseas rather than down the road. The ICTs have facilitated various teaming arrangements amongst SMEs and between SMEs and larger Australian companies that have allowed firms to win work that they would not otherwise have won.²⁶

7.35 Unfortunately, the Australian defence industry involvement in the JSF program is not always a positive experience. Despite having a pre-eminent place amongst US allies, Australian companies still face political pressures competing in the US. ASPI stated:

The US is an extremely tough market for defence industries. Even very good companies with world beating products—and there is one just across the border—find it incredibly hard to sell into the US market. It is a fact of life that this is not, if you like, a

23 Minister for Defence Media Release, *Power On the first JSF Aircraft*, 8 September 2005.

24 Minister for Defence Media Release, *Power On the first JSF Aircraft*, 8 September 2005.

25 Department of Industry, Tourism and Resources, *Submission 14*, p. 9.

26 Department of Industry, Tourism and Resources, *Submission 14*, p. 9.

commercial or even a technological or even a military level playing field.²⁷

- 7.36 Finally despite all the discussion of the JSF project as a leading innovator in the type of global cooperation sought by Australian companies it is not clear that the prime contractor is overly supportive of this approach. DITR stated:

While the top management of Lockheed Martin are aware that it is important to engage with competitive companies in the international partner countries, such as Australia, the people tasked with the job of actually producing the aircraft under an extremely tight schedule are less convinced of the benefits. There are significant challenges for them to engage with foreign companies, including Australian companies.²⁸

Conclusion

- 7.37 Evidence to the inquiry has been supportive of the need to maintain an Australian defence industry as a vital component of defence capability. There has been no disagreement with the Government view that these companies must also be efficient and cost competitive. Almost all submissions have agreed that, in order to survive, Australian companies require access to the US military market, the largest in the world.
- 7.38 The JSF program, one of the largest military procurement projects in history, serves both as an example of what can be achieved by Australian industry in the face of the most rigorous competition, and also of the restrictions and frustrations that industry may face along the way. The collaborative approach encouraged by the Department of Defence has been recognised in Australia and by the US prime contractor as a particular strength. This type of cooperation between the Defence Materiel Organisation and Australian industry is to be commended.
- 7.39 Impediments to access to the US Defence market, larger than the Defence markets in the next 15 to 20 countries combined, are significant. Some are the market pressures faced by all Australian companies seeking to do business in the US – such as transport costs, distance, time differences and overcoming incumbency advantages – while others are imposed by US Legislation. US Legislation is intended primarily to protect US security by ensuring the US does not end up having to fight against its own technology when it leaks or is sold to third parties. Most submissions

27 Mr Hugh White, Director, Australian Strategic Policy Institute, *Transcript*, p. 66.

28 Department of Industry, Tourism and Resources, *Submission 14*, p. 9.

acknowledge this US right to protect its security by guarding access to military technology and information.

7.40 However other US Legislation appears to be designed to protect inefficient US industries, an obvious example of which is the US ship building industry. Innovative Australian companies, like Austal Ships of Western Australia or Incat of Tasmania, face significant hurdles in reaching their customers in the US military.

7.41 The consensus in the evidence to the Committee appears to be that Australia's long term status as a key US ally should entitle the removal of all but the most important of these restrictions. This view appears to be shared by both the US military and the US Executive Government, many of whom have indicated they are delighted with superior products including Australian fast ferry designs and the Bushmaster vehicles. More, however, needs to be done to influence the US Congress to encourage the removal of impediments to Australian companies seeking to sell their products to the US military. To put the current position in perspective Mr Shane Carmody from Defence stated:

We operate at the highest level with the United States. I think Australia, the United Kingdom and the United States are operating at the highest levels of war fighting that are possible. We will not get everything from the United States, and we do not expect to, but we do think that we are further ahead than anyone else.²⁹

7.42 The Committee notes that it is currently undertaking three other inquiries which also examine regional strategic implications for Australia's defence capability. The first is an inquiry into Australian Defence Force regional air superiority. The second is an inquiry into the economic, social and strategic trends in Australia's region and the consequences for our defence requirements. The third is an inquiry into Australia's relationship with India as an emerging world power, with particular reference to the defence relationship and the strategic possibilities for both nations resulting from increasing globalisation and regional imperatives. Further information on these inquiries can be obtained from the Committee's website.³⁰

29 Mr Shane Carmody, Department of Defence, *Transcript 9 September 2005*, p. 33

30 <http://www.aph.gov.au/house/committee/jfadt/index.htm>

Senator Alan Ferguson

Chairman

