

# Chapter 5

## Continuous build

5.1 For many decades, parliamentarians, Defence personnel, representatives from Defence industries, peak professional bodies, such as engineers and naval architects, and subject matter experts, have been calling for a continuous naval shipbuilding program. Yet once again, the naval shipbuilding industry in Australia is experiencing a serious decline. In its first report, the committee raised concerns about an impending hiatus in ship production and, although the so-called 'valley of death' appeared imminent, the committee was not convinced that it was inevitable. Even at this parlous stage for the industry, there were possible solutions.

5.2 But on 31 March 2015, the Minister for Defence noted the gap between the completion of the AWD project and the start of the future frigate project. He announced that the 'valley of death', now could not be avoided and further that no decision the government could make at this stage 'could stop it'.<sup>1</sup>

5.3 In this chapter, the committee examines the impending gap in ship production, whether it is inescapable and/or the extent to which it could be mitigated or overcome. The committee considers the consequences of the downturn in production for Australia's naval shipbuilding workforce and for the future of naval shipbuilding in Australia.

### Warning signs

5.4 In its first report, the committee took evidence showing that Australia's naval shipbuilding industry was entering a period of slowdown in production after reaching a peak involving work on the LHDs and the ramp-up in production for the AWDs. Witnesses spoke of work finishing in three shipyards in 2015: BAE in Melbourne, Forgacs in Newcastle and Austal in Perth. Mr Thompson, AMWU, told the committee in July 2014 that work on the AWD would come to an end in Newcastle and in Melbourne in 2015 and finish in 2016 with the capacity of a number of shipbuilding yards already in decline.<sup>2</sup> He explained:

We have just recently had 110 skilled jobs come out of the Newcastle Tomago yard. Work on the destroyer will end in Adelaide in around 2019–2020 but will taper off dramatically in the years before. Work on the amphibious ship comes to an end in Melbourne in 2016 and production work on the future submarines will not seriously start until the mid-2020s.

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1 Department of Defence Ministers, 'Minister for Defence—Speech—ASPI Australia's Future Surface Fleet Conference', 31 March 2015, <http://www.minister.defence.gov.au/2015/03/31/minister-for-defence-aspi-australias-future-surface-fleet-conference/> (accessed 2 April 2015).

2 *Proof Committee Hansard*, 21 July 2014, p. 33.

But we do not have any details yet about that scheduling. Also we have not seen the new scheduling in relation to the ANZAC frigate replacement. We obviously welcome comments from Mr King [former CEO of DMO] in relation to the need for a rolling build on that project. If this were to be brought forward, it would not seriously start production until the 2020s.

All of that leaves a gap for several years, especially for the production workers who operate in this industry. The gap in Melbourne and Newcastle is from 2016 to 2022 and possibly longer. In Adelaide it will be from 2018 to 2022.<sup>3</sup>

5.5 Since taking evidence on the pessimistic outlook for Australia's naval shipbuilding in 2014, the committee considers recent developments and their implications for the future of the industry.

### Recent developments

5.6 In September 2014, the Department of Defence engaged RAND to undertake a series of materiel studies and analysis of Australia's naval shipbuilding industry. The purpose of this detailed review was to inform the development of an enterprise-level plan for naval shipbuilding for the government's consideration.<sup>4</sup> The government announced the release of this report on 16 April 2015.<sup>5</sup>

5.7 RAND's analysis of the future of Australia's naval shipbuilding industry indicated that a gap would occur between the end of the AWD production and the start of the future frigate program followed by another interlude around 2035, when production of the future frigate was expected to end.<sup>6</sup> It found that:

Without some way to lessen the gap between the end of the AWD program and the start of building the Future Frigate, the industrial base will have to ramp up its workforce from an almost negligible level to 2,700 skilled personnel in approximately eight years.<sup>7</sup>

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3 *Proof Committee Hansard*, 21 July 2014, p. 33.

4 John Birkler, John F. Schank, Mark V. Arena, Edward G. Keating, Joel B. Predd, James Black, Irina Danescu, Dan Jenkins, James G. Kallimani, Gordon T. Lee, Roger Lough, Robert Murphy, David Nicholls, Giacomo Persi Paoli, Deborah Peetz, Brian Perkinson, Jerry M. Sollinger, Shane Tierney and Obaid Younossi, *Australia's Naval Shipbuilding Enterprise: Preparing for the 21st Century*, Santa Monica, CA: RAND Corporation, 2015, [http://www.rand.org/pubs/research\\_reports/RR1093](http://www.rand.org/pubs/research_reports/RR1093) (access 18 May 2015).

5 Kevin Andrews Media Release, 'Minister for Defence—release of the Rand Corporation report', 16 April 2015, <http://www.minister.defence.gov.au/2015/04/16/minister-for-defence-release-of-the-rand-corporation-report/> (accessed 18 May 2015).

6 John Birkler et al, *Australia's Naval Shipbuilding Enterprise: Preparing for the 21st Century*, Santa Monica, CA: RAND Corporation, p. xxvii, 2015, [http://www.rand.org/pubs/research\\_reports/RR1093](http://www.rand.org/pubs/research_reports/RR1093) (access 18 May 2015).

7 John Birkler et al, *Australia's Naval Shipbuilding Enterprise: Preparing for the 21st Century*, Santa Monica, CA: RAND Corporation, p. xxviii, 2015, [http://www.rand.org/pubs/research\\_reports/RR1093](http://www.rand.org/pubs/research_reports/RR1093) (access 18 May 2015).

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### ***Downturn in production***

5.8 The downturn in production in the shipyards and the shedding of workers that had started in 2014 continued into 2015. Mr Saltzer, BAE, referred to statements about the looming valley of death. In his view, the laying off of a number of people in the Williamstown shipyard heralded the potential demise of the industry.<sup>8</sup> In April 2015, he informed the committee:

We have a workforce that consists of subcontractors, fixed term employees, permanent employees and so on. Our objective is to roll off subcontractors first, and we have probably rolled off about 150 over the last few months. We have also rolled off 12–13 permanent employees that we simply had no more work...LHD will be finished later this year and the AWD blocks that we have will be finished in early 2016...Right now I have got over 800 people working on LHD and I have got about 150 people building AWD blocks.<sup>9</sup>

5.9 Mr Saltzer noted that there was nothing on the order books after 2016 for naval shipbuilding and while BAE was still working in sustainment, there was no way it could absorb that type of a roll-off into its existing sustainment activity. According to Mr Saltzer, BAE had reached a point 'where we are making a very serious analysis of the viability of that shipyard'.<sup>10</sup>

5.10 The committee has noted the predicted and actual job losses from some of the primes. But, when considering the consequences of the anticipated downturn in naval shipbuilding activity, it is important not to forget the adverse effects on the critically important supply chain.

### **Supply chain**

5.11 Australia has a robust supply chain currently servicing Australia's major naval shipbuilding projects. Mr Tony Quick, Chairman, Defence Materials Technology Centre (DMTC), underscored the importance of the SMEs that comprise this supply network noting, in particular, that with shipbuilding 'a lot of the productivity is actually in the supply chain'.<sup>11</sup>

5.12 Similarly, Mr Edwards highlighted the importance of having a mature supply chain that supports industry in maintaining its progress and level of productivity. In his view, this network of large and small suppliers was 'pivotal to a complex program

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8 *Proof Committee Hansard*, 14 April 2015, p. 21.

9 *Proof Committee Hansard*, 14 April 2015, p. 21.

10 *Proof Committee Hansard*, 14 April 2015, p. 21.

11 *Proof Committee Hansard*, 6 March 2015, p. 13.

such as the AWD'.<sup>12</sup> Likewise, Mr Saltzer highlighted the critical role of the supply chain as a vital component of Defence industry.<sup>13</sup>

5.13 Importantly, this supply network extends beyond the local region to other states and overseas. A slowdown or cessation in production would have a significant effect on the supply chain.<sup>14</sup> According to the AMWU:

...if the valley of death came in there would be a significant impact on the supply chain...It would be our view that if there were a decision to wind down the industry there would be a direct correlation in the supply chain of companies that rely on Defence.<sup>15</sup>

5.14 But already, with naval shipbuilding activity tapering off, workers in the supply network are being shed. According to Shadbolt Engineering, its workforce has virtually gone from up to 100 people on the site at Williamstown with BAE to now six people.<sup>16</sup> Mr Scott McClymont, Alton Personnel Pty Ltd, had a similar story.<sup>17</sup> He informed the committee that at Williamstown his business had employed a maximum of 180 electricians, which has dropped down to 75.<sup>18</sup>

5.15 Dr Mark Hodge, DMTC, referred to the lumpy nature of Australian shipbuilding in Australia and was concerned about the 'drop-off' because of the loss of ability to have the cash flow that 'industry needs to keep its capability'.<sup>19</sup>

### ***Training and skilling the workforce***

5.16 Many witnesses impressed on the committee the time, energy and expense involved in training workers in the naval shipbuilding industry. They referred to the effort required by workers to acquire the knowledge, understanding and skills needed to effectively start-up production and to improve productivity for subsequent builds. Mr Wardell, Manager of Shadbolt Engineering, described the lengthy recruitment process:

From the time you apply to BAE to the time you actually get a job is about 10 weeks. That is just the process they go through. Being an SME, we take

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12 *Proof Committee Hansard*, 14 April 2015, p. 14.

13 *Proof Committee Hansard*, 14 April 2015, p. 21.

14 *Proof Committee Hansard*, 14 April 2015, p. 4.

15 *Proof Committee Hansard*, 14 April 2015, p. 4.

16 *Proof Committee Hansard*, 6 March 2015, pp. 1 and 3. Shadbolt Engineering has been involved in pipe installation, fabrication, hull components, block construction, fitting out, sheet metal work and mechanical trades and HVAC trades.

17 Alton supplies electrical labour on site and has done so since 1996 across nine of the Anzac frigates to offshore patrol vessels and the two LHDs. It has 80 employees with about 30 engaged full-time on the Defence new building program.

18 *Proof Committee Hansard*, 6 March 2015, p. 3.

19 *Proof Committee Hansard*, 6 March 2015, p. 12.

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a shorter time than that. You have to filter through an awful lot of people. We found this when we first started doing pipe welding on the site. To get nine copper nickel pipe welders, we would have conducted interviews and done welding trials in our factory for about 120 people. That gives you an idea of the sort of filtering you have to go through to get competent people. Obviously in the lower trades—the TAs and things like that—it is different. Once you have got someone then you have to train them to be useful on a shipbuilding site. They have to understand all the safety issues. For them to work on a block construction or on a ship, there are all sorts of rules and regulations and training which have to become second nature to them—things such as fire burning electrical cables with welding leads; those sorts of things. There are myriad things that people have to go through just to become efficient on the vessel.<sup>20</sup>

5.17 Mr Wardell informed the committee that for a company like Shadbolt Engineering, it costs about \$10,000 to have an employee up and running on the job. He noted that just to get the worker 'through the gate costs about \$7,000—just to have standing in overalls, ready to work'. According to Mr Wardell:

...by the time you do inductions, training and all that sort of thing. By the time you put them through a few EWP [elevated work platform] and other training exercises and a month or two of poor productivity because they are learning, and you get to a point where they are made redundant and walking out of the gate, you are seeing an investment of at least \$10,000 a person.<sup>21</sup>

5.18 Also highlighting the care, effort and time that SMEs take to engage and train workers for a shipbuilding project, Mr McClymont observed:

It probably took us five to six months to interview 180 people and get 180 people for BAE. The electrical project on a ship is different from any other project. Even after getting a competent electrician and putting him on a ship, their productivity probably does not get up to 100 per cent for five to six months. It is a long process, and that is evident from LHD1 to LHD2. The LHD1 build program was a lot longer than the LHD2. Electrical installation on LHD2 probably went 50 per cent under budget compared to LHD1.<sup>22</sup>

5.19 Mr McClymont explained further the specialist training involved for people working on naval ships:

For the specialist area that we are in, before anyone is ready to be let loose into a shipyard they really need to be protected in a workshop and looked after for the first 12 months. A shipyard can be a bit daunting for a young guy to be let loose in.<sup>23</sup>

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20 *Proof Committee Hansard*, 6 March 2015, pp. 3–4.

21 *Proof Committee Hansard*, 6 March 2015, p. 2.

22 *Proof Committee Hansard*, 6 March 2015, p. 4.

23 *Proof Committee Hansard*, 6 March 2015, p. 3.

5.20 Those engaged in the industry spoke not only of the time and effort taken to recruit and train workers, but the potential waste of these newly acquired skills. Referring to the estimated \$10,000 to have a worker job ready, Mr Wardell noted the effect on the industry and its workers if naval shipbuilding ceased:

If this industry is allowed to pass and shut down again, this is going to have a dramatic effect on the ability to do it again. It is costing millions—10, 20 and hundreds of millions in lost skill sets and training and opportunities for communities...When you are looking at 45 or 50 people, you are talking about an enormous amount of money. That is what the subcontractors, the supporters, of the likes of BAE are going through. I would hate to think what BAE are going through and what it is costing them.<sup>24</sup>

5.21 According to Mr Wardell, the Australian shipbuilding industry was 'finally getting the talent and the capacity to do world-class ships', but he was seeing it decay very quickly and fall away.<sup>25</sup> He noted the difficulty re-engaging highly skilled workers who leave the industry:

Most of those people will not come back into the industry unless there is some guarantee of continuity in the business. The good people will go and get other jobs. They will not walk away from secure, long-term jobs on the chance that there might be a year or two's work in a shipyard, no matter how much they love the job. This is going to devastate the industry and the capacity to rebuild.<sup>26</sup>

5.22 Mr McClymont captured the frustration and disappointment of those in the supply chain witnessing workers leave the industry, especially after so much effort to train employees:

Ever since October last year, we have been facing the problem that we have trained all of these people up and now they are starting to wander onto other secure jobs. For a company like mine, we are faced with turnover at the end of a project. If I was able to say to these guys 'There's another project coming along,' I would be able to retain them. I cannot retain on a short build program like the one that we have at the moment.<sup>27</sup>

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24 *Proof Committee Hansard*, 6 March 2015, p. 2.

25 *Proof Committee Hansard*, 6 March 2015, p. 2.

26 *Proof Committee Hansard*, 6 March 2015, p. 1.

27 *Proof Committee Hansard*, 6 March 2015, p. 6.

5.23 While noting the detrimental effect on his company if Australian shipbuilding went overseas, Mr Phillip Taylor, Taylor Bros Marine Pty Ltd, referred to the consequences for the wider community.<sup>28</sup> He explained:

This work filters down into areas of industry that are not available to us normally, and so it is really important. For places like Tasmania, which suffer from a lack of investment in all areas of industry, this is really important to us. We are in the ASC; we are about the third biggest contractor to the ASC. So we can see real benefits in continuing that hull build in that shipyard.<sup>29</sup>

5.24 Clearly, companies invest heavily in recruiting and training their workers. While some SMEs are not required to invest in capital equipment and related expenses to participate in a naval shipbuilding project, some do. For example, Mr Wardell explained that:

We have had to invest in equipment, machinery and, I have put in, training of people specific to the task. Just for the Williamstown site we probably purchased somewhere between \$200,000 and \$380,000 worth of stuff to enable us to do the tasks we have done. We have amortised that over the period of the project. That is fine. But as an investment, and what was spent on other suppliers in the Victorian economy, even small Shadbolt Engineering spent probably closer to half a million dollars just on being job ready.<sup>30</sup>

5.25 The committee recognises the contribution of SMEs and the vital role they have in Australia's naval shipbuilding industry. In the committee's view, their commitment to the industry should not be underestimated nor undervalued.

### ***Ramping up after a lull in production—the cold start***

5.26 The industry was equally concerned about the challenges presented when the time came to ramp-up construction after a drop-off.<sup>31</sup> Mr Edwards explained:

If we do not have a mature supply chain, then elements of that will restart as part of the program, similar to what we have had to do with AWD and

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28 Taylor Bros is a third generation family business established in Hobart in 1936 with a long history with defence ship building and ship repair. It specialises in the outfitting, accommodation outfitting, of the entire vessel. Currently, apart from its workshops in Hobart where the company pre-manufacture accommodation sections, Taylor Bros is working in Williamstown, Garden Island and ASC's yard in Osborne with an annual turnover in the defence sector of approximately \$7.5 million which employs around 30 full time employees. Its total contracts to the AWD project total over \$60 million & LHD project \$12 million. See *Proof Committee Hansard*, 6 March 2015, p. 3 and document tabled by Mr Phillip Taylor, 6 March 2015.

29 *Proof Committee Hansard*, 6 March 2015, p. 4.

30 *Proof Committee Hansard*, 6 March 2015, p. 5.

31 See, for example, Dr Mark Hodge, Defence Materials Technology Centre, *Proof Committee Hansard*, 6 March 2015, p. 12.

our block subcontractors and fabrications. We have had to restart those areas and bring their performance up to a level to support the program. That is something we have got to get the right balance on going forward. What we have seen from overseas and other industries is that they try to have a build cycle that will support industry and give it enough work to feed the ongoing build program.<sup>32</sup>

5.27 Mr Saltzer made a similar observation:

If the supply chain is not there to support the effort, then not only will you go through a need to reactivate the shipbuilder but you will need to reactivate the supply chain. And that will cost you even more money.<sup>33</sup>

5.28 But the cost is not only in recruiting and training workers but the lost productivity due to the industry entering a steep learning curve from a low base—management and workers starting from scratch without any momentum and with limited experience and corporate knowledge. For example, the *Future Submarine Industry Skills Plan* referred to international examples of where the erosion of skills between projects resulted in 'some very significant cost overruns on subsequent naval projects'. It then cited the recent Australian experience with the AWD and LHD programs and the detriment to the AWD project from having a 'cold start'.<sup>34</sup> It found:

The problems seen with the current shipbuilding projects in the last few years are the most direct result of having to rebuild Australian shipbuilding given its decline after the ANZAC and Collins projects...shipbuilding projects that start up after any such decline cost more: facilities have to be built or upgraded, and workers have to be recruited and trained. This also leads to schedule delays, cost over-runs, low productivity and issues with production that would have been avoided by an experienced workforce.<sup>35</sup>

5.29 The previous chapter detailed experiences with the AWDs as a most recent example of a naval shipbuilding project commencing from a cold start and the problems that can flow from that.

### **Need for continuity**

5.30 Clearly, from industry's perspective, a continuous build program would address the problems created by the stop-start pattern that has characterised Australia's shipbuilding industry. Indeed, the repeated cycles of feast and famine production have

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32 *Proof Committee Hansard*, 14 April 2015, p. 11.

33 *Proof Committee Hansard*, 14 April 2015, p. 21.

34 Department of Defence, *Future Submarine Industry Skills Plan*, March 2013, pp. 31 and 98.

35 Department of Defence, *Future Submarine Industry Skills Plan*, March 2013, p. 123.

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dogged naval shipbuilding in Australia for years.<sup>36</sup> In this regard, Austal, a global defence prime contractor and designer, argued that the government has a responsibility to create the environment that would 'provide Industry with the best opportunity to be as competitive as possible internationally'.<sup>37</sup> In its view:

A continuous build program would seem to be the simplest and most effective method to ensure efficiencies are achieved across the various build programmes. Not only does it offer productivity advantages, it also provides certainty for industry and hence the market and investors in the case of Australia's only ASX listed ship building company, Austal. Productivity efficiencies can also drive a more competitive Australian offer on a Government build program.<sup>38</sup>

5.31 Likewise, Engineers Australia maintained that continuity of work was 'essential for naval shipbuilding and sustainment costs to become internationally competitive'. In its view:

The importance of specialisation in this work has been seriously underestimated and there is a direct parallel between economies of scale for multiple asset builds and improving the productivity of a skilled work force through continuous work.<sup>39</sup>

5.32 Mr Wardell stressed that continuity was the key to the success of the industry. Acknowledging that other companies would respond positively to the incentives offered by having a constant and certain build program, he referred specifically to Shadbolt Engineering:

...in our case we would continue investment. We would be employing people even on the chance within our existing business for other scoped work so that we could take them into that business. We would build our business in such a way that it would be flexible to be able to go in and out of that industry, knowing we might be successful on various contracts within it.

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36 See for example, Mr Saltzer, BAE Systems, who noted 'Before the Anzac project in the 1990s, the exact same thing happened; the industry was brought down to nothing and then reactivated to build a whole fleet of new ships again. The same thing happened with AWD and LHD; when we started those projects the industry had to rebuild from almost nothing, and productivity was low as a result of that. Now we have gotten to the point where we are productive again because we have been spending the last six years building AWDs and LHDs, and where are we today? Facing the end of all work again'. *Proof Committee Hansard*, 14 April 2015, p. 17.

37 *Submission 28*, p. 1. Austal is a global defence prime contractor and a designer and manufacturer of defence and commercial ships. For more than 25 years, Austal has been a leader in the design, construction and maintenance of revolutionary ships for Governments, Navies and Ferry operators around the world. More than 250 vessels have been delivered in that time. Austal website, <http://www.austal.com/en/about-austal/Overview.aspx> (accessed 25 June 2015).

38 *Submission 28*, p. 2.

39 *Submission 33*, p. 9.

One of the things that I think is missing is sufficient work in that industry, particularly on a continuous basis, to foster good competitive processes. There are not enough Shadbolts, Altons and Taylor Bros out there. Over a 20- to 40-year build program, if you look at the amount of vessels that the government should be buying in the next 40 years, you need another five Shadbolts, two or three Altons and a couple more Taylor Bros to keep the pressure on and to keep standards, quality and performance up. If you do not have that, you are not going to get that competition, and we are not going to invest. Competition breeds innovation and constant improvement. You need to have those market forces driving it. Once off builds do not get it.<sup>40</sup>

5.33 In his view, 'if we want to save money in shipbuilding, we have to work continuously'.<sup>41</sup>

5.34 Moreover, witnesses were of the view that measures could be taken to address the current short-term downturn in naval shipbuilding activity. Mr Thompson, AMWU, stated bluntly that without a continuous build, the Australian shipbuilding industry was 'always playing catch-up' because the progress made 'is lost between projects'.<sup>42</sup> Mr Thompson referred to the minister's speech on 31 March 2015 and his reference to the inevitability of the 'valley of death'. He informed the committee that the AMWU had been urging the government to fill this void with a fourth AWD, as outlined in the 2013 White Paper, by accelerating the Pacific patrol boat tender process; reopening the tender for the Antarctic icebreaker and bringing forward the future frigate build.<sup>43</sup> He cited the list of naval ships to be acquired—the Pacific boats, the supply ships, future frigates and possibly the hydrographic vessels.

5.35 Mr Taylor looked to the future frigates as a solution. He suggested:

If three air warfare destroyers were to get more advanced and become a rapid build program and turn into another eight frigates, that, for Australian industry, would be amazing. Certainly for us it would be beneficial if those 30 people that we employ specifically on that program continued for another eight years beyond the AWD program. That does not seem much. It is only a drop in the ocean of what the whole program is, but for a little company down in Hobart it is quite substantial income, and there are a lot of people that feed off that...<sup>44</sup>

5.36 Raytheon Australia considered that should the government choose not to advance the frigate program, alternative proposals would be required to prevent the

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40 *Proof Committee Hansard*, 6 March 2015, p. 5.

41 *Proof Committee Hansard*, 6 March 2015, p. 2.

42 *Proof Committee Hansard*, 14 April 2015, p. 2.

43 *Proof Committee Hansard*, 14 April 2015, p. 2.

44 *Proof Committee Hansard*, 6 March 2015, p. 5.

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demise of naval shipbuilding and the loss of systems integration skills. It also referred to the acquisition of one or more additional AWDs noting:

...the option of a fourth AWD is not new and has existed since the Second Pass of the AWD program was achieved in 2007. In the absence of advancing the Future Frigate program there could be strong reasons to proceed with an incremental evolution of the AWD design.

Putting aside any workforce considerations, as is appropriate, additional AWD's would ensure that Australia could, with a higher degree of confidence, provide its lightly armed LHD's and other Afloat Support assets with the protection they require in contested environments. Such an evolved AWD design could also undertake an appropriate role in ballistic missile defence should the Australian Government choose to adopt such a requirement in its forthcoming Defence White Paper.<sup>45</sup>

5.37 The South Australian Minister for Defence Industries, the Hon Martin Hamilton-Smith, was of the view that Australia needed both submarine and frigate work to establish 'productive working relationships in a world-competitive shipyard to produce a continuous build of ships over the next 30 years'. He stated:

We need both submarine and frigate work to do that. I think any suggestion that you can, if you like, build frigates alone and have a sustainable shipbuilding industry but feed off the 12 submarines overseas is flawed.<sup>46</sup>

5.38 With regard to the proposed future frigates, the committee noted in its first report Mr Warren King's strong argument in support of an Australian build. Mr King suggested that if Australia structured the program well, 'we would actually be building them in this country at the same price that we could buy them anywhere else'. In his view, it would be a legitimate business, with a real strategic value that needs no additional budget investment to do it: no subsidies or similar assistance. According to Mr King, for the first time since Federation, Australia has 'an opportunity for a truly strategic shipbuilding capability'. He referred to the past 50 years of off and on constructions—Australia built the ANZACS but stopped; built *Success* but stopped; built two FFGs.<sup>47</sup> He stated further that should the government decide to build the future frigates based on the AWD hull, incorporating an Australian-made radar, then potentially the program could start at the point of learning efficiency achieved by the AWDs.<sup>48</sup> In other words, production would start much higher up the learning curve and the work and management practices, improved and refined on the AWD, would flow into the construction of the frigates. For example, as described in chapter 4, ensuring that materials and equipment are in place when a particular phase is ready to start, having a mature supply chain and workers and, importantly, management, job ready.

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45 *Submission 29*, p. 6.

46 *Proof Committee Hansard*, 14 April 2015, p. 25.

47 *Proof Committee Hansard*, 21 July 2014, pp. 23 and 26.

48 *Proof Committee Hansard*, 21 July 2014, p. 23.

5.39 Mr King explained this process of transitioning from the AWD to the future frigate. He noted that the AWD did not deliver when expected, so the last AWD construction was estimated to be sitting in the area of 2019–20. He explained that therefore, it was possible, depending on present and future governments, that the future frigate, if authorised and based on the AWD hull, could pick up and be 'the basis of a proper strategic shipbuilding industry'.<sup>49</sup> In his view, if the future frigate is based on the same hull as the AWD, 'we should be able to get to world's best practice around about ship 3, and with Australian radars and Australian technology in it'. He informed the committee that he had never seen a better opportunity to have 'a real strategic capability that is cost efficient, that no-one has to apologise for' and is of value to the taxpayer.<sup>50</sup>

5.40 In highlighting the importance of continuity in shipbuilding, he again stressed his view that the government's initial decision to look at the feasibility of reusing the AWD's hull with Australian radars and other equipment represented the 'best opportunity to deal with continuity'. He stated:

If decisions are made as it is proposed they will be, we could very much be in that place where we keep the continuity of work and keep those skills.<sup>51</sup>

5.41 The AMWU welcomed DMO's indications that it was looking at the feasibility of using the AWD platform for the replacement frigates. Mr Thompson added, however, that the union would want government to reiterate its position on this. Even so, according to Mr Thompson, the AMWU had concerns about being able to maintain the workforce built up over the life of the AWD project—some 3,800 skilled workers—until such time as a frigate project comes online.<sup>52</sup>

5.42 Mr Graeme Dunk, Australian Business Defence Industry, also noted that conceptually the frigate proposal was 'a good idea':

It is something we needed to have done years ago—actually commit to a long-term, ongoing rolling build of naval vessels of a similar type so that we can get good at it and do it at a globally competitive price.<sup>53</sup>

5.43 In July 2014, Mr Dunk observed, however, that at this stage, there was 'only a commitment to study the early stages of the frigate design'.<sup>54</sup> Mr Burns likewise thought that the future frigate proposal was a 'great solution' at this time and strongly supported it.<sup>55</sup> But he made the point that shipbuilders 'cannot go to the bank with a

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49 *Proof Committee Hansard*, 21 July 2014, p. 28.

50 *Proof Committee Hansard*, 21 July 2014, p. 30.

51 *Proof Committee Hansard*, 21 July 2014, p. 31.

52 *Proof Committee Hansard*, 21 July 2014, p. 35.

53 *Proof Committee Hansard*, 21 July 2014, p. 42.

54 *Proof Committee Hansard*, 21 July 2014, p. 46.

55 *Proof Committee Hansard*, 21 July 2014, p. 42.

prospect', noting also that industry had only heard about 'the prospect of a future frigate build'.<sup>56</sup> He indicated that work was already being lost and in the meantime:

There was no indication of when that future frigate program might commence and when we might see the cutting of steel. The problem for industry is that it has been very hard to go to the bank for the last six years, and time is running out for a lot of the SMEs out there.<sup>57</sup>

5.44 It is worth noting that in July 2014, the Minister for Defence informed defence and industry representatives that he wanted a continuous build but needed their help to fix the AWD and also design a future frigate program that follows on from the AWD with minimal industry disruption.<sup>58</sup> The minister indicated that further decisions on the future frigate would be taken in the context of the 2015 Defence White Paper.<sup>59</sup> It is now June 2015 and the White Paper is yet to be published. Meanwhile, naval shipbuilding companies in Australia and those in the supply chain witness the industry haemorrhage.

5.45 Importantly, as noted earlier, the time lapse between tendering for a project and arriving at construction can be significant. In the committee's view, if the future frigate project is to contain the impending slowdown in naval shipbuilding then decisive action must be taken now to start the project in earnest. The same applies to the Pacific patrol boat project.

5.46 BAE Systems agreed that the industry must be competitive and accountable for achieving competitive levels of productivity on existing and new shipbuilding projects.<sup>60</sup> Mr Saltzer made the point, however, that industry can only produce when the government purchases.<sup>61</sup> He observed:

...the industry cannot be competitive if it has no work, just as an athlete cannot be competitive if they do not practise and play their sport. With continuing work, productivity can continue to improve, and evidence of this abounds.<sup>62</sup>

5.47 Indeed, the committee has an abundance of evidence supporting the contention that Australia's shipbuilding industry needs a constant flow of work that is

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56 *Proof Committee Hansard*, 21 July 2014, p. 42.

57 *Proof Committee Hansard*, 21 July 2014, p. 42.

58 'Minister for Defence—Defence and Industry Conference 2014', Adelaide Convention Centre, 29 July 2014, <http://www.minister.defence.gov.au/2014/07/29/minister-for-defence-defence-and-industry-conference-2014/> (accessed 4 August 2014).

59 'Minister for Defence—Boosting Australia's maritime capabilities', 6 June 2014, <http://www.minister.defence.gov.au/2014/06/06/minister-for-defence-boosting-australias-maritime-capabilities/> (accessed 14 May 2015).

60 *Proof Committee Hansard*, 14 April 2015, p. 16.

61 *Proof Committee Hansard*, 14 April 2015, p. 16.

62 *Proof Committee Hansard*, 14 April 2015, p. 16.

able to sustain a viable naval domestic shipbuilding industry if it is to be competitive and productive. BAE Systems noted that a continuous and efficient production of naval vessels would benefit all parties, especially the Australian taxpayer. In Mr Saltzer's view, the navy would need many new ships and submarines over the coming years.<sup>63</sup> He stated:

A number of them should have been ordered already to replace vessels that are too old and are costing too much to maintain, but the fact that they have not should not be a reason to delay further. It should be a call to action now.<sup>64</sup>

5.48 Mr Quick, Chairman of DMTC, told the committee the issue was not whether Australia could build naval ships but how it could build ships productively. Again, the need for continuity was central to the solution. Mr Quick referred to the increase in productivity and diminishing costs as the construction of ship 2 and 3 proceed. From his perspective, the real challenge was how to start at a higher level of productivity.

What can you actually do with those critical skills that you could start to build up early enough so that those people are already down the learning curve. That practice is well established across a whole lot of industries, but we have not been doing that here. What we have done is we have waited until we have got to the end of the procurement process and then recruited the people, and they are starting at point zero. If we look at the skills that are critical to productivity and start driving those individuals, the supervisory staff, down the productivity learning curve, then we can actually be more productive.<sup>65</sup>

5.49 Noting that Australian shipbuilding was significantly more expensive with slightly longer schedules, the RAND report was of the view that Australian shipbuilding could perform better. Pointedly, it referred to the role of continuous building. For example, it found the production of naval warships in Australia involves a 30 to 40 per cent price premium over the cost of comparable production at shipyards overseas, but this cost could drop over time with 'steady production drumbeats and mature designs'.<sup>66</sup> Indeed, the RAND report suggested that with a constant production program that 'leads to a productive workforce', the premium could be cut by approximately half.<sup>67</sup>

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63 *Proof Committee Hansard*, 14 April 2015, p. 16.

64 *Proof Committee Hansard*, 14 April 2015, p. 16.

65 *Proof Committee Hansard*, 6 March 2015, p. 12.

66 John Birkler et al, *Australia's Naval Shipbuilding Enterprise: Preparing for the 21st Century*, Santa Monica, CA: RAND Corporation, 2015, pp. xxxviii–xxxix, [http://www.rand.org/pubs/research\\_reports/RR1093](http://www.rand.org/pubs/research_reports/RR1093) (access 18 May 2015).

67 John Birkler et al, *Australia's Naval Shipbuilding Enterprise: Preparing for the 21st Century*, Santa Monica, CA: RAND Corporation, 2015, p.149, [http://www.rand.org/pubs/research\\_reports/RR1093](http://www.rand.org/pubs/research_reports/RR1093) (access 18 May 2015).

5.50 The RAND report noted that a sustained build program would help to develop and retain skilled workers, which would improve productivity. In its assessment, a continuous build philosophy avoids the all-too familiar boom-bust cycle for industry, allowing industry to maintain and train a skilled workforce. It reasoned that a continuity of work would also allow 'the shipbuilders to justify investments to achieve better productivity because there is a dependable, long-term cash flow'.<sup>68</sup> According to the RAND report, once productivity improves, schedules are likely to be more competitive as well. It suggested, however, that the needed improvements go beyond just more proficient workers and that many acquisition practices also have to improve. It suggested:

One necessary change is a much more rigorous approach to program execution to avoid the issues seen on the AWD program. These improvements include better integration between designers, builders, and suppliers; a mature design at the start of the build; and control of requirements and design changes once building begins.<sup>69</sup>

5.51 Although, the importance of moderating the peaks and troughs in shipbuilding activity was one of the most significant findings, the problems created by fluctuations in demand are well recognised. According to Mr Saltzer the boom-bust cycle was not a phenomenon unique to Australia. He argued, however, that it was unfortunate that:

...Australia has not learned from the lessons that have occurred in other countries. The US went through this, and over the last 30 years they have been doing continuous production—and that industry is rationalised. The UK went through the same problem. They have done the same thing. They have rationalised down to a level of capability that they have determined is important for their own strategic reasons, and that is where the industry sits—and, when work needs to be put into it, the government puts work into it.<sup>70</sup>

5.52 But, despite the unanimous recognition of the critical importance of maintaining a steady and reliable flow of naval shipbuilding work and the persistent call for a continuous build program, no concrete proposals or commitments have been made that would realise this objective. According to Mr Saltzer, BAE:

At present there are only two active requests for tender for shipbuilding projects, both of which were issued quite recently by DMO. One is for the SEA 1654 phase 3 replenishment ships, which is restricted to competition between one company in Spain and one company in South Korea. The other is for the Pacific patrol boats, which are to be built in Australia, but with a

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68 John Birkler et al, *Australia's Naval Shipbuilding Enterprise: Preparing for the 21st Century*, Santa Monica, CA: RAND Corporation, 2015, p. 132, [http://www.rand.org/pubs/research\\_reports/RR1093](http://www.rand.org/pubs/research_reports/RR1093) (access 18 May 2015).

69 John Birkler et al, *Australia's Naval Shipbuilding Enterprise: Preparing for the 21st Century*, Santa Monica, CA: RAND Corporation, 2015, p. 131, [http://www.rand.org/pubs/research\\_reports/RR1093](http://www.rand.org/pubs/research_reports/RR1093) (access 18 May 2015).

70 *Proof Committee Hansard*, 14 April 2015, p. 20.

projected contract award date of the first quarter of 2017, meaning a production start in late 2017 or even 2018.<sup>71</sup>

5.53 Referring back to the acquisition of the two supply ships, Mr Saltzer stated that there was no reason for not having Australian content in that project: that they were large oilers with a basic combat system and a set of communications. He reminded the committee that BAE was one of the prime naval shipbuilders that made an unsolicited proposal to Defence to do a hybrid build.<sup>72</sup>

5.54 In its first report, the committee noted the argument in favour of a hybrid build in Australia for the new replenishment ships in order to bridge the potential trough in shipbuilding activity. Although Defence was of the view that these ships were to be based on existing designs with minimal modifications to meet Navy's requirements, some witnesses saw opportunities for Australian industry to add value. As noted earlier, BAE had 'very brief discussions' with DMO executives in 2012 about its hybrid proposal which DMO 'never pursued'.<sup>73</sup> Mr Saltzer observed:

Now we are all the way in 2015 and those ships have not been bought yet. There is no contract for those ships yet. They have just issued the tender for it. They spent some time working with a Spanish company and a Korean company on risk reduction studies and they have just issued the tender for it. The only requirement for Australian content that I am aware of in those tenders is for the in-service support after the ships have been delivered.<sup>74</sup>

5.55 In his view, the opportunity was still there to ensure Australian content. He explained:

If the companies that are bidding for that project were given direction in the tender to include Australian content, I believe we could achieve that in some very cost-effective ways. In fact, I have pursued that idea together with Navantia and with a Korean company. We have had meetings with them offering the services we could perform in Australia—things like installation, integration, testing and trials of the combat and communication systems on those ships, which should be done in Australia anyway in my opinion.<sup>75</sup>

5.56 Mr Saltzer accepted that there were projects in the pipeline and talk about bringing forward projects—the supply ships, the patrol boats, the remaining work on the AWDs and the future frigates. While he appreciated comments on the government's intention to bring forward work and the studies going on in Defence on

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71 *Proof Committee Hansard*, 14 April 2015, p. 16.

72 *Proof Committee Hansard*, 14 April 2015, p. 17.

73 *Proof Committee Hansard*, 14 April 2015, p. 17.

74 *Proof Committee Hansard*, 14 April 2015, pp. 17–18.

75 *Proof Committee Hansard*, 14 April 2015, p. 18.

the projects, he observed that, as a leading player in the industry in Australia, BAE did not see any activity that 'benefits our operation at this time'.<sup>76</sup>

### *Committee view*

5.57 One of the most important observations presented to the committee is that industry can only produce when the government purchases—that the industry 'cannot be competitive if it has no work'.<sup>77</sup> The committee understands that Australia's defence industry cannot survive a 'stop-start' order book: that it needs a consistent and reasonably predictable local workload to be sustainable and competitive. In the committee's view, it is unacceptable for the government, as sole customer, to criticise the industry for poor performance when many of the problems originate from a lack of government foresight, and the 'feast and famine' cycles inflicted on industry.

5.58 While the predicted gap in shipbuilding activity, sometimes referred to as the 'Valley of Death', is now closer than it was at the time the committee tabled its first report, the committee remains of the view that the government could and should be doing more to maintain a viable shipbuilding industry in Australia. Witnesses have suggested maximising Australian content in the construction of the new replenishment ships, as well as bringing forward the construction of the Pacific patrol boats and the future frigates.

5.59 The committee understands that the 2015 Defence White Paper will state the government's priorities for major naval acquisitions. The committee, however, believes that important decisions have already been delayed for too long and the government should give clear and certain indications of its intentions to acquire the future frigates, and of maximising Australian content in the new supply ships.

### **Recommendation 4**

**5.60 The committee recommends that the Australian Government take measures immediately to reverse the perilous downturn in Australia's naval shipbuilding industry, reduce the impact of the 'Valley of Death' and enable a program of continuous build by:**

- **mandating a hybrid build for the first Auxiliary Oil Replenishment Ship and an onshore build for the second;**
- **mandating that all 12 of the future submarines be built in Australia;**
- **fast tracking the build of the Pacific patrol boats and the replacement of the Armidale Class patrol boats; and**
- **bringing forward the construction of the future frigates.**

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76 *Proof Committee Hansard*, 14 April 2015, p. 19.

77 Mr William Saltzer, BAE Systems Australia, *Proof Committee Hansard*, 14 April 2015, p. 16.

