Chapter 4

Capacity

4.1 The shipbuilding industry is capital intensive and requires substantial and expensive infrastructure. When the Minister for Defence announced the government's intention to conduct a limited tender for the supply ships, he rejected the notion that the decision reflected the government's lack of confidence in Australian industry. In response to a question about the restricted tender for the replacement of the two replenishment ships, the Minister stated that a 20,000 tonne or a 26,000 tonne replenishment ship would be 'far too large for us to build here in Australia'.[1] He noted the large size of the ships and suggested that:

> …there is very limited capacity for us to build a 20,000 tonne replenishment ship or a 26,000 tonne replenishment ship.[2]

4.2 In his view, both of the potential competitors for the tender—Navantia and Daewoo—build a very successful replenishment ship.[3] In this chapter, the committee considers the capacity of Australian shipyards to build in full or partially the proposed supply ships.

Australian prime contractors and shipyards

4.3 The five largest defence shipbuilding prime contractors currently operating in Australia are:

BAE systems—prime contractor for the two 27,000 tonne Canberra Class Landing Helicopter Dock (LHD) vessels: it is undertaking the construction of the superstructure and consolidation of the hulls (the hulls, including the majority of the fit-out were built by Navantia in Spain).[4] The first ship has been delivered and is currently undergoing contractor sea trials: the second ship is expected to be delivered to the Navy in mid 2015.[5]

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1 'Minister for Defence—Transcript—Naval shipbuilding announcement', CEA Technologies, Canberra', 6 June 2014, p. 4, http://www.minister.defence.gov.au/2014/06/06/minister-for-defence-transcript-naval-shipbuilding-announcement/ (accessed 6 August 2014).

2 'Minister for Defence—Transcript—Naval shipbuilding announcement, CAE Technologies, Canberra', 6 June 2014, p. 4.

3 'Minister for Defence—Transcript—Naval shipbuilding announcement, CAE Technologies, Canberra', 6 June 2014, p. 4.

4 Australian National Audit Office, Report No.15 2012–13, Assurance Report, *2011–12 Major Projects Report*, pp. 260–261, http://www.defence.gov.au/dmo/Multimedia/201213%20Audit%20Report%20No%2015_DMO.pdf (accessed 8 August 2014).

5 Department of Defence, answer to question on notice No. 10.

- ***Thales Australia***—has operated the Navy's major east coast refit, repair and maintenance facilities at Garden Island for over 20 years, where it provides dock operations and ship repair, maintenance and support for eleven major RAN ships presently home ported in Sydney.[6]
- ***Forgacs***—has shipyards at Tomago and Cairncross and specialises in modular construction for the naval sector. It is a major supplier of marine engineering to Australian and overseas navies.
- ***Austal***, a global defence prime contractor, has designed and built multi-mission combatants, including the Littoral Combat Ship (LCS) for the United States Navy and military high speed vessels for transport and humanitarian relief, such as the Joint High Speed Vessel (JHSV) for the United States Navy and High Speed Support Vessel (HSSV) for the Royal Navy of Oman. Austal also 'designs, constructs, integrates and maintains an extensive range of patrol and auxiliary vessels for government agencies globally'. They include the Cape Class Patrol Boat Program for Australian Customs and Border Protection. Defence vessels are designed and constructed in Mobile, Alabama and in Henderson, Western Australia.[7] Austal built the RAN's 14 Armidale Class Patrol boats at its shipyard in Western Australia.[8]
- ***ASC***—in 1987, the newly formed Australian Submarine Corporation (now ASC Pty Ltd.) began designing and building the Collins Class submarine (The submarines' design was based on the Type 471 design from Swedish shipbuilder Kockums.) ASC now maintains the submarine fleet with the majority of maintenance work undertaken at ASC North in Osborne, South Australia, by way of full cycle dockings (major refits). Other shorter term submarine maintenance activities are carried out at ASC West in Henderson, Western Australia, where the submarines are based.

  In 2005, the government selected ASC AWD Pty Ltd as the shipbuilder for the AWD Program and determined that the ships should be built in Adelaide. Due to difficulties encountered with the engineering and construction of some of the first AWD hull blocks, block work was reallocated between BAE, Forgacs and Navantia.[9]

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6 Thales Australia website, 'Thales to continue operating Sydney's Garden Island', 21 July 2014, https://www.thalesgroup.com/en/australia/press-release/thales-continue-operating-sydneys-garden-island (accessed 6 August 2014).

7 Austal website, Overview, http://www.austal.com/en/about-austal/Overview.aspx (accessed 6 August 2014).

8 'Armidale Class Patrol Boat, Australia', www.naval-technology.com/projects/armidaleclass/ and see Department of Defence, *Future Submarine Industry Skills Plan*, A Plan for the Naval Shipbuilding Industry, p. 85, http://www.defence.gov.au/dmo/Multimedia/FSISPWEB-9-4506.pdf (accessed 6 August 2014).

9 ASC website, http://www.asc.com.au/ (accessed 6 August 2014).

4.4 There are six major shipbuilding sites of relevance to the RAN:

- ***Henderson in Western Australia***—the Maritime Precinct is approximately 35 hectares in area extending from the Common User Facility in the South to the Recreation Boating Facility in the North. The Shipbuilding Precinct was developed to accommodate a growing shipbuilding industry, and is currently home to five primary shipbuilders and many other smaller companies producing vessels in the 15 to 130 metre range.[10]
- ***Osborne in South Australia***—located approximately 25 kilometres north-west of Adelaide, ASC South is adjacent to ASC's submarine maintenance facilities.[11] The shipyard is a part of Techport Australia, Australia's largest naval shipbuilding hub incorporating 'a critical mass of world class warship design and construction skills'. According to ASC, the new shipbuilding facility at Osborne is 'a $120 million investment' in the building of Australia's AWDs and future naval capability.[12]
- ***BAE Systems Williamstown in Victoria***—located in the northern part of Port Philip Bay, adjacent to Port of Melbourne commercial operations. The shipyard has been the 'birthplace of many vessels, including the Royal Australian Navy's ANZAC Class Ships and the Royal New Zealand Navy's Offshore Patrol Vessels'.[13]
- ***Garden Island in New South Wales***—located on the southern foreshore of Sydney Harbour. The shipyard is one of two primary Navy repair and refit locations in Australia (the other being south of Perth) and is of 'strategic significance in both berthing and supporting the Navy Fleet and associated regional defence activities'. Its primary role is to support and maintain the major RAN ships based in Sydney, plus visiting RAN and foreign warships. It provides a vital range of fleet base facilities that are fundamental to mounting and supporting maritime operational capability. Thales Australia

10 Australian Marine Complex, Western Australia, http://www.australianmarinecomplex.com.au/Facilities-&-Precincts/Maritime/ (accessed 6 August 2014).

11 Defence SA, 'South Australia the Defence State: Techport Australia', http://www.defencesa.com/precincts/techport-austra (accessed 6 August 2014).

12 ASC website, http://www.asc.com.au/en/About-Us/Facilities/South-Australia/ (accessed 6 August 2014).

13 BAE Systems Australia website, 'Williamstown Shipyard', http://www.baesystems.com/page/search?sparam=williamstown&_afrLoop=65813366367000&_afrWindowMode=0&_afrWindowId=64p4ape2l_1#%40%3Fsparam%3Dwilliamstown%26_afrWindowId%3D64p4ape2l_1%26_afrLoop%3D65813366367000%26_afrWindowMode%3D0%26_adf.ctrl-state%3D64p4ape2l_85 (accessed 6 August 2014).

manages and operates a graving dock (dry dock), a floating dock and a range of ship engineering and maintenance facilities at Garden Island.[14]

- ***Forgacs, site at Tomago in New South Wales***—located 14 kilometres from the Port of Newcastle, NSW on the Hunter River. The 16 hectare site has 535 metres of river frontage with two ship basins. Tomago is Forgacs' key site for construction of AWD modules. Projects at the shipyard include a range of commercial vessels, including an ice breaker, cargo ships, tugs, ferries and luxury cruisers. Naval vessel, HMAS *Tobruk*, was built at Tomago along with modules for the ANZAC and Collins Class Submarine programs.[15]
- ***Forgacs, additional site at Cairncross in Queensland***—a 15 hectare facility with one of the largest graving docks in Australasia, a 267 x 35 metre graving dock.[16] *Lloyds List Australia* reported on 10 July 2014 that there would be no further dry-dockings, ship repair or engineering works to be undertaken on the site.[17]

Capacity of Australian shipyards

4.5 In March 2013, Defence published its *Future Submarine Industry Skills Plan*, which was the result of a study on the current state of naval shipbuilding in Australia, undertaken by an expert industry panel chaired by Mr David Mortimer. The panel assessed the capacity of Australia's major shipyard to deliver the ships in the DCP. In respect of the capacity to build the supply ships, the Industry Skills Plan provided information drawn from an analysis prepared in late 2012 by First Marine International (FMI), a consultancy group from the United Kingdom that provides specialist services to the marine industry.

4.6 The FMI found that the four major Australian shipyards had the capacity to build the ships outlined in the White Paper and DCP, 'with some investment required to develop launch facilities for the largest supply ships'.[18] For example, it noted that the ASC's site at Osborne had the main construction, launch and wet berth facilities capable of accommodating all vessels in the DCP except the largest

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14 Department of Defence, *Landing Helicopter Dock Ship Sustainment Facilities*, Garden Island Defence Precinct and Randwick Barracks, Sydney, New South Wales, Statement of Evidence to the Parliamentary Standing Committee on Public Works, March 2013, p. 7. See also 'The Garden Island complex', http://www.gardenisland.info/1-00-000.html (accessed 8 August 2014).

15 Forgacs website, http://www.forgacs.com.au/locations/tomago/ (accessed 6 August 2014).

16 Forgacs website, http://www.forgacs.com.au/locations/brisbane/ (accessed 6 August 2014).

17 *Lloyd's List Australia*, 'Local: Report, reaction & analysis—Forgacs closes Cairncross shipyard', http://www.lloydslistdcn.com.au/archive/2014/07-july/10/report-reaction-analysis-forgacs-closes-cairncross-shipyard (accessed 8 August 2014).

18 See Department of Defence, *Future Submarine Industry Skills Plan*, A Plan for the Naval Shipbuilding Industry, p. 82, http://www.defence.gov.au/dmo/Multimedia/FSISPWEB-9-4506.pdf (accessed 7 August 2014).

supply ships. It noted, however, that the shiplift had been designed with expansion in mind, and could be lengthened to carry the larger supply and LHD ships.[19] Defence provided additional information on the shipyard's capacity to build the supply ship taken from the 2010 review by FMI, which assessed the ASC single shipyard as:

> Current capacity is zero as a suitable build position is not available. Potential capacity is zero as a suitable build position cannot be developed without significant capital investment.[20]

4.7 Defence informed the committee that, at this stage, it has not undertaken an in-depth analysis of the costs involved in infrastructure upgrades.[21]

4.8 In respect of BAE's site at Williamstown, FMI found that the shipyard's main construction point was an inclined berth, which, in its view, was not optimal in the context of modern ship construction. It stated:

> The slipway could be modified to accommodate the wider beams (18 metres) of the large vessels. If this were done, with the exception of the submarine and the supply ship, all vessels in the Defence Capability Plan could be constructed on the inclined ways. However, there would be a productivity penalty when compared to a more modern approach to construction where hulls are consolidated and systems integrated on a level surface before launch.[22]

4.9 The FMI also noted that with some investment in facilities, the Tomago shipyard could potentially be used for the integration of icebreakers, heavy landing craft and supply ships. There are no wet berths but a shipping berth provides block load out capability for all vessel types. Finally, the FMI commented on Cairncross and observed that it has potential for construction of a number of ship types including the larger supply ship. Overall, FMI determined that the collective shipyard facilities assessed in its report have:

> …the capability to build each of the vessel types in the Defence Capability Plan. This is subject to a suitable launch position being developed for the large supply ship, for example through upgrading facilities at Adelaide, Melbourne or Newcastle, and assumes that some specialist equipment is purchased and that some aspects of production are subcontracted.[23]

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19 See Department of Defence, *Future Submarine Industry Skills Plan*, A Plan for the Naval Shipbuilding Industry, p. 84.

20 Department of Defence, answer to question on notice No. 11.

21 Department of Defence, answer to question on notice No. 11.

22 See Department of Defence, *Future Submarine Industry Skills Plan*, A Plan for the Naval Shipbuilding Industry, p. 86, http://www.defence.gov.au/dmo/Multimedia/FSISPWEB-9-4506.pdf (accessed 7 August 2014).

23 See Department of Defence, *Future Submarine Industry Skills Plan*, A Plan for the Naval Shipbuilding Industry, p. 89.

4.10 Mr King informed the committee that Australia had facilities that could handle up to about an 18-metre to 20-metre module and its accompanying weight. He suggested that some modules in the really efficient yards could manage up to 900 tonnes. He explained that to achieve a productive module-building and shipbuilding organisation, three things would be needed:

- the lift and a docking facility to take the big modules;
- halls big enough and with the significant span required to handle a wide module; and
- cranage to rotate the modules and then put them in place when they are finally brought together.[24]

4.11 Thus, while he recognised the impressive infrastructure at the Common User Facility, Techport precinct, and the facilities and surface combatant building at ASC, he stated:

> …it is not simply a matter of building a syncrolift large enough to be able to take the displacement. That is only a necessary precursor to be able to build and launch. The point…is that your total infrastructure environment, including all the shedding, paint and blast, cranage all has to be upgraded to take these much larger modules that would exist on the AOR.[25]

4.12 Mr King also thought that an upgrade to the facility at the Techport precinct would require 'a bit of dredging work as well and access is a bit difficult'.[26] He then noted that:

> We are currently obviously in the force structure review white paper process and these matters will also be reconsidered again then—strategic needs. On balance, certainly at the moment we have enough of that strategic capability relative to our needs, but the whole industrial capacity issue will be re-evaluated in the white paper and the outcomes from that, including the defence industry policy statement.[27]

4.13 He also noted that should a decision be made to go down the path of building the future frigates based on the AWD, you would not want to have one-off very large ships significantly diverting and diminishing the country's ability to become a world-leading surface combatant builder.[28]

> So I would not like to see investment in one or two ships or investment in infrastructure, which we will never use again in the foreseeable future—

24 *Committee Hansard*, 21 July 2014, p. 14.

25 *Committee Hansard*, 21 July 2014, p. 26.

26 *Committee Hansard*, 21 July 2014, p. 27.

27 *Committee Hansard*, 21 July 2014, p. 27.

28 *Committee Hansard*, 21 July 2014, p. 26.

> 30 years—compared to that attention and investment of any amount in trying to become a really good surface combatant builder.[29]

4.14 Mr King noted that you can always have the capability; it is whether it is a feasible course of action.[30]

4.15 A recent Australian Manufacturing Workers' Union (AMWU) paper noted the size of the proposed supply ships, which, in its view, limited the options for a construction site. It referred to an observation in the Future Submarine Industry Skills Plan that no shipyard in Australia had 'the immediate ability to launch ships of this size'.[31] Even so, it argued:

> …with some investment in facilities, the common user facilities in Adelaide and Perth are modern construction site options. The graving dock at Cairncross in Brisbane is also an option, but the shipyard would require more investment in infrastructure.[32]

4.16 Consistent with this argument, Mr Glenn Thompson, AMWU, did not accept the contention that Australia was not able to produce the ships. He also cited the common user facilities at Osborne South Australia and Henderson in Western Australia; BAE in Melbourne and Forgacs shipyards in Newcastle and Brisbane. In the union's view, some of these sites have the capacity to build and launch the proposed supply ships—in particular those in South Australia and Western Australia.[33] The AMWU acknowledged that some investment would be required to modify the facilities but that this requirement should not 'affect the project start'.[34]

4.17 In this regard, it should be noted that, in its submission to the committee, Forgacs stated that its Brisbane facility was 'the largest graving dock in Australia' and, with appropriate site development, would be capable of handling the full build and fit-out of the replacement supply ships.[35]

4.18 Likewise, Defence SA, suggested that with a small investment in the Techport Australia Common User Facility, it would be feasible to launch ships of this size. At the public hearing, Mr Andrew Fletcher, Defence SA, took the opportunity

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29 *Committee Hansard*, 21 July 2014, p. 26.

30 *Committee Hansard*, 21 July 2014, p. 17.

31 See Department of Defence, *Future Submarine Industry Skills Plan*, A Plan for the Naval Shipbuilding Industry, pp. 82 and 103, http://www.defence.gov.au/dmo/Multimedia/FSISPWEB-9-4506.pdf (accessed 7 August 2014).

32 AMWU, *Australian Naval Shipbuilding, Design, Build & Maintain our Ships here,* AMWU Paper on Australian Naval Shipbuilding,14 November 2013, p. 9.

33 *Committee Hansard*, 21 July 2014, p. 34.

34 *Committee Hansard*, 21 July 2014, p. 34.

35 *Submission 1*.

to comment on the advice given to the Defence Minister that, 'without the expenditure of millions and possibly billions of dollars to existing facilities', Australia lacked the necessary infrastructure to handle the construction of the supply ship. He rejected the notion that the shipyard lacked the capacity to contribute to the construction of the supply ships, arguing that with minimal expenditure it could deliver on what was required to lift and support the supply ships if they were fabricated in Australia.[36] Mr Fletcher emphasized the fact that Techport and the Common User Facility at Techport had been designed for expansion and flexibility for the future. Indeed, he drew attention to the memorandum of understanding with the Commonwealth government whereby land around the Common User Facility has been reserved to cope with multiple projects with multiple prime contractors.[37] He explained:

> In relation to the actual ship lift capacity, there seems to be some confusion on the numbers. The reality is that the existing ship lift in terms of lifting ships such as supply ships is capable of lifting 13½ thousand tonnes. The new ships being considered have a nominated weight of 20,000 tonnes and 26,000 tonnes. But, the reality is, the docking weight of the two designs reduce significantly to 9,400 tonnes and 14,000 tonnes, respectively. Based on the information that is available to us at the moment, we believe that, with expenditure of just $20 million, we could provide a lift capacity at the Common User Facility at Techport to cope with the dry weight of these ships. With expenditure of a further $30 million—that is, a total of $50 million—we could also increase the length of the ship lift by another 15 metres, which would significantly increase the capacity and handling ability of the Common User Facility.[38]

4.19 Mr Fletcher also referred to the time it would take to complete the upgrade:

> With the design and implementation, if it was the $20 million upgrade it would be done within 12 to 18 months. If it was the $50 million upgrade it might run out to two years. But it would generally be the same sort of time if we were building these ships in Australia to build modules and assemble the ship. So, it would not be on the critical path for an Australian build.[39]

4.20 Defence SA also informed the committee that expansion works could be completed well before supply block fabrication was complete. It stated:

> From a national capacity perspective, block fabrication could be undertaken in the Melbourne and/or Newcastle shipyards, with the ships consolidated and launched at Techport Australia.[40]

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36 *Committee Hansard*, 21 July 2014, p. 49.

37 *Committee Hansard*, 21 July 2014, p. 48.

38 *Committee Hansard*, 21 July 2014, p. 49.

39 *Committee Hansard*, 21 July 2014, p. 50.

40 *Submission 5*, p. [2].

4.21 BAE Systems similarly indicated that the Australian shipbuilding industry had the capacity, capability and experience to carry out in part or in full the replacement program for the two supply ships. It should also be noted that BAE Systems informed the committee that it had submitted an unsolicited proposal to government in September 2012 setting out a hybrid build program, with part of the ship built overseas and part of the ship built in Australia—a model similar to the LHD Program.[41] Mr Hamilton-Smith informed the committee that the LHD model involved 80 per cent of the work undertaken overseas and 20 per cent in Australia.[42] BAE explained that if the ships were constructed based on its proposed hybrid approach, there would be 'no major capital investment required': that the investments made for the LHD and AWD would be sufficient.[43]

4.22 The Government of Victoria vouched for BAE's ability to take on such a major ship build. The government had provided significant financial assistance to assist BAE modernise the Williamstown shipyard, its equipment and facilities so it could meet the requirements of today's naval shipbuilding and integration projects.[44] In the view of the Victorian government, BAE Systems at Williamstown had:

> …demonstrated its capability to succeed in the highly competitive shipbuilding market. Its recognised leadership in Australian shipbuilding rendered it an obvious candidate to carry out the replacement program for HMAS *Success* and HMAS *Sirius*.[45]

4.23 ASC also made a similar proposal involving a hybrid model.[46]

4.24 In this context of a hybrid build, the AMWU recognised that a 'build requires infrastructure to consolidate and launch. A hybrid build requires the capacity to fit these vessels out'.[47] Also, while the Australian Business Defence Industry recognised the current infrastructure limitations, it thought that the hybrid proposal could provide a solution. It stated:

> …the construction offshore of the Landing Helicopter Dock (LHD) ships and the fit-out within Australia does provide a model to suggest that the fit-out option might have been employed successfully by local industry. Other options where the superstructure was constructed in Australia and shipped to an offshore shipbuilder for integration may also have been possible.[48]

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41 *Submission 9*, p. 1.

42 See Mr Hamilton-Smith, *Committee Hansard*, 21 July 2014, p. 48.

43 *Submission 9*, p. 2.

44 *Submission 13*, p. 4.

45 *Submission 13*, p. 3.

46 See Mr Christopher Burns, *Committee Hansard*, 21 July 2014, pp. 40 and 42 and the Hon Martin Hamilton-Smith, *Committee Hansard*, 21 July 2014, p. 50.

47 *Committee Hansard*, 21 July 2014, p. 37.

48 *Submission 2*, p. [1].

4.25 The Navy League of Australia agreed with the view of some witnesses that if the decision were taken to build the two replenishment ships in Australia, there were two locations that, with modifications, appeared possible. It cited the Common User Facility south of Perth:

> The floating dock at the facility would need to be extended to accommodate the new ships. The facility and local resources are at present heavily committed to the off-shore industry.[49]

4.26 It also referred to the ASC at Techport in Adelaide but noted that the ship lift would probably need to be lengthened and possibly strengthened. The League commented on ASC's suggestion that one of the two ships be built at Techport. In its view, however, experience had shown that 'the construction in Australia of a single ship of the complexity of a modern naval replenishment ship to a foreign design could be a risky and expensive exercise'. Overall, it concluded that:

> Extending facilities at great cost and harnessing resources to build a limited number of ships of considerable size is likely to be an expensive and time consuming exercise of little benefit to the long-term industry capability objective. The decision to construct the hulls of the two 28,000 tonne LHDs in Spain therefore made sense.[50]

4.27 Broadly, the evidence presented to the committee is consistent with the assessments of the Australian shipyards in the Future Submarine Industry Skills Plan. There are a number of Australian shipyards that with some investment would be able to build an AOR as proposed in the DCP. The committee notes, however, that Defence has not undertaken an in-depth analysis of the costs involved in upgrading the facilities.[51]

Investment in infrastructure

4.28 A number of submitters noted the importance of considering through life support for the vessels and how the initial costs to upgrade the facilities should be appreciated as a long-term investment. For example, Mr Fletcher suggested to the committee that the amount of expenditure against a project cost of $1.8 billion would be 'a significant and sensible investment in the future of our infrastructure for supporting our Naval shipbuilding industry'. Indeed, in his view: 'you could look at $20 million or $50 million in relation to a $1.8 billion spend and it is not a lot of money in the overall scheme of things. If you take it over the full 30-year life of these things, it is insignificant'.[52]

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49 *Submission 12*, p. [2].

50 *Submission 12*, p. [2].

51 Department of Defence, answer to question on notice No. 11.

52 *Committee Hansard*, 21 July 2014, p. 49.

4.29 In respect of the $20 million investment in the ship-lifting capacity and its contribution to through-life support, Mr Fletcher argued that the upgrade would benefit sustainment because 'being able to lift a ship out of the water and put it on the hard stand significantly reduces the sustainment work costs'. He explained their rule of thumb—'if anything built as a model in a shed costs $1, it costs $4 on the hard stand and $8 in the water'. He suggested that in the future, the improvements 'would provide an opportunity to offset the overheads of the facility by taking in not only naval ships but larger non-naval ships for maintenance'.[53] He underlined the point that:

> …what we are talking about here is providing sustainment capability, upgrade capability, on an enduring basis for a very limited amount of money, for a facility which has already had $300 million of state government investment in it. We are preserving land for this sort of project around the site. We have an MOU with the Commonwealth to do that. What is this about? It is not necessarily regularity of use of the infrastructure but more maintaining the capability of the workforce to deliver naval shipbuilding and sustainment going forward for the next 30 years.[54]

4.30 Similarly, the South Australian Minister for Defence Industries, the Hon Mr Martin Hamilton-Smith, argued that the investment in infrastructure should be appreciated for the benefits it could bring in the future:

> Given the considerable financial investment by the South Australian government in the Techport facility, the ongoing expansion of Techport to support current and future projects is an enabler to enhancing our naval shipbuilding capabilities and should be used as a basis upon which to build ships like the two supply ships. Further enhancement of the Techport facility would have been possible to support the build of these ships and future sustainment through life support, had adequate notice been given and arrangements made. The ramp down of shipbuilding during 2019 would leave South Australia in a position where Techport would be effectively mothballed without substantial future projects.[55]

4.31 Both submitters argued that the infrastructure becomes a critical Defence asset maintaining the capacity of Australian shipyards to sustain and support Navy's fleet—a fundamental input to capability.[56] Defence SA informed the committee that the Commonwealth has:

> …designated ship dry docking facilities and common user facilities as a Priority Industry Capability [PIC]. The 2011 PIC 'Health Check' of these facilities reported them to be 'healthy' however much has changed since,

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53 *Committee Hansard*, 21 July 2014, p. 52.

54 *Committee Hansard*, 21 July 2014, p. 49.

55 *Committee Hansard*, 21 July 2014, p. 47.

56 See for example, Defence SA, *Submission 5*, p. [2].

> including the closure of Forgacs' Cairncross dock (Brisbane) and disposal of its floating dock (Newcastle).
>
> There is now a shortage of docking capacity in Australia for supply ship and larger-sized vessels. Garden Island's Captain Cook Graving Dock (Sydney) is the only facility capable of docking supply ships. However, with constant high Navy and commercial demand for the facility it is not suitable for construction, and is not always readily available for unscheduled and/or emergency dockings of vessels this size.[57]

4.32 Indeed, Mr Fletcher noted that:

> …at the moment there is only one piece of infrastructure which can handle the dry-docking of the LHDs and that is Garden Island in Sydney, which is under pressure from a lot of regions. With the closure of Forgacs facility at Cairncross in Brisbane, the LHDs could also be lifted at Techport—Techport has been designed for that—but it would require the expenditure of $175 million. Then we would be able to cope with any ship and any arrangement in the Australian Navy.[58]

4.33 In this regard, Mr Hamilton-Smith suggested that Australia may well be in a position where its inability 'to sustain these supply ships for one reason or another, including the ship lift capability, ultimately causes us grief during a future conflict'. He asked:

> How can we lift those supply ships out of the water and repair them and sustain them during a period of tension or a conflict if we do not have a ship lift capable of doing that?…for a very small investment we would have had not only an industry gain but a defence capability gain. I think this is an argument that needs to be tested against those who would say that an up-front saving gives us a capability and then we can walk away and forget it. If you cannot maintain it, if you cannot sustain it, you do not have an ability to fight a naval conflict.[59]
>
> …
>
> What will happen with the LHD or other larger ships with regard to lifting them out of the water should they need work? Do we have any commitments with any of our suppliers? Will there be other commercial opportunities that emerge whether linked to naval shipbuilding or to other ships?[60]
>
> We have an extended ship-lift capability at Techport—the nation gains a capability. How that might be required to be used in the future, whether it is only for the two supply ships or perhaps for other naval ships we may purchase at some future point or for commercial shipping, or some other

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57 *Submission 5*, p. [2].

58 *Committee Hansard*, 21 July 2014, p. 53.

59 *Committee Hansard*, 21 July 2014, p. 52.

60 *Committee Hansard*, 21 July 2014, p. 53.

> opportunity which might come up in the mine or energy space, they are questions that are yet to be answered. It is a case almost of building infrastructure and at least you have created the industry opportunity, should it arise.[61]

4.34 The committee understands the importance of considering any investment in major infrastructure from a long term perspective, which includes Australia's ability to sustain and maintain its naval Fleet. The savings generated by having the infrastructure available for the maintenance, repair and upgrade of these vessels should be a major consideration.

Designs

4.35 Aside from the current perceived deficiencies in infrastructure, Mr King also noted the difficulties with the available designs able to meet Australia's requirements. In his view, an open tender would be suitable if there were 'multiple suppliers with access to multiple designs who could make an offer'. But according to Mr King, one of the reasons for having a limited tender was the lack of options when it came to designs. He argued that the decision of a company to tender would be 'true and simple if there were tens of these designs lying around the world and tens of companies in Australia that could compete for it. Mr King argued, however, that Defence operated in 'a very fine world market with very few designs that could meet the need'. He noted:

> The accessible market is not just full of designs that you can access. First of all, say you are going to do a complete onshore build. The last time we did a complete onshore build of a ship of this size, it took 11½ years. In fact, it was *Success*. It took 11½ years and was four times over budget. Instead of buying two ships, we bought one. One might argue that we have learnt a little bit.[62]

4.36 In addition, Defence noted that the production drawings for any ship design are specific to the yard in which the ship is being built. It explained that, therefore:

> …a hybrid build would require either significant re-engineering of production methods, to allow for the much smaller facilities and reduced crane-lifting capacities currently available in Australian yards, or a significant investment in Australian shipbuilding facilities and capabilities, including new block-building halls, paint and blast facilities and new cranes.[63]

4.37 In this regard, Mr King noted that the designs sought by Defence were built by shipyards that own the designs and suggested that for practical reasons there were

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61 *Committee Hansard*, 21 July 2014, p. 53.

62 *Committee Hansard*, 21 July 2014, p. 16.

63 Department of Defence, answer to question on notice No. 8.

two that would meet Defence's needs.[64] Furthermore, he underscored the fact that the ships were 'supersize structures' and explained that each shipyard has to go about building a design a different way:

> You can imagine this in a car plant, where you have robots set up to build a certain car. What is also important in these designs is, because you want to bring these modules together, you actually have to design your module and your construction technique against the way you are going to build it. So, just because the design exists and that ship exists—has been built before, for example—if you are going to build it in a new shipyard that has never built it before, you may have to re-engineer, as they call it, that whole ship in order to be able to build that ship in that new facility, which has different spaces…[65]

4.38 Along similar lines, the Australian Division of the Royal Institution of Naval Architects understood that no Australian shipbuilder was presently equipped to either design or build the replacement supply vessels 'without drawing on foreign design and/or shipbuilding resources'. It acknowledged that it may be possible for Australian industry 'to complete the fit-out of such vessels'. Even so, it suggested that:

> …given the integration of fit-out with construction in modern shipyards, it would most likely be inordinately expensive and time-consuming to develop a domestic capability for building just two vessels of this size and type compared with what might be available off-the-shelf from existing shipbuilders in Spain or South Korea or elsewhere.[66]

4.39 In regard to the experience with building from the preferred designs, Mr Thompson, AMWU, noted that the Spanish commissioned one of the vessels in 2010 and understood that the South Koreans 'cut steel only last month for a vessel that had been ordered for the UK Navy'.[67] He would not assume that:

> …these builders are not going to have the same difficulties as we would in relation to building these vessels. They are not as complex as the vessels that we are building now. We are of the view that the government should have allowed these builders on their merits to tender for these projects.[68]

4.40 Mr Graeme Dunk, Australian Business Defence Industry, was of the view that ThyssenKrupp Marine Systems had a replenishment ship which, to his knowledge, could be suitable for Australia.[69] He understood that this provided another example of

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64 *Committee Hansard*, 21 July 2014, p. 24.

65 *Committee Hansard*, 21 July 2014, p. 14.

66 *Submission 6*, p. [2].

67 *Committee Hansard*, 21 July 2014, p. 36.

68 *Committee Hansard*, 21 July 2014, p. 36.

69 *Committee Hansard*, 21 July 2014, p. 42.

a company that may be willing to respond to a tender should they be given the opportunity.[70]

Conclusion

4.41 While there are currently shortfalls in the capacity of Australian shipyards to construct a large AOR as contemplated in the DCP, the deficiencies are not insurmountable. With some investment, local major shipyards could be upgraded to meet the challenge. Furthermore, the initial upfront costs for the improvements should not be considered in isolation but with a view to the long term benefits, especially when such infrastructure could be regarded as a fundamental input to capability.

4.42 The committee has heard a number of assumptions made about the investment that would be required to support the construction in Australia of large vessels such as the supply ships and the long term dividends that would result from such investment but little hard analysis. An open tender would have allowed these matters, including the amount of investment required to upgrade current facilities and the long-term benefits of this investment, to be fully explored and contested.

4.43 It should be noted that investment in infrastructure in Australian shipyards becomes a permanent asset and builds on the considerable infrastructure already existing. It may well be time for Defence in collaboration with industry to undertake a complete and thorough audit or stocktake of Australia's shipyard infrastructure and incorporate the findings into a strategic plan for future naval shipbuilding.

70 *Committee Hansard*, 21 July 2014, p. 45.