

Executive summary

International naval shipbuilding industry

1. Over recent decades, the global naval shipbuilding industry has faced major challenges with dwindling demand for ships but increased pressure for more highly sophisticated and expensive systems and weaponry. Advances in technology are continually expanding the capability edge which countries seek for their defence. To accommodate these shifts, the naval shipbuilding industry worldwide has undergone a period of transition marked by consolidation with fewer major producers. Furthermore, these remaining producers are increasingly looking to form alliances or cooperative arrangements to meet the demands of constructing a modern warship.

2. Broader heavy engineering capacity has also developed based on modular cad/cam design and manufacturing techniques which have rendered more traditional ship yard facilities obsolete and inefficient.

3. Maritime countries across the globe face a common difficulty in finding the most cost-effective way to maintain an up-to-date naval shipbuilding capability. They must address issues created by the falling demand for ships, the escalating costs of construction and of keeping pace with advances in technology, as well as the need to develop and retain skilled workers in buoyant economies. In light of these challenges, the governments of countries keen to maintain their naval shipbuilding capability are under pressure to review their approach to the industry. Recent studies conducted into the U.S. and the UK naval shipbuilding industries highlighted the important role that governments have in assisting the industry to adjust and succeed.

The Australian naval shipbuilding industry

4. As a nation with an established but diverse naval shipbuilding industry, Australia confronts similar challenges as overseas countries in sustaining the industry albeit more serious due to more limited demand, lower economies of scale, and poor continuity for investment purposes.

5. The report considered in detail the four main components of Australia's naval shipbuilding industry.

Australian Primes

6. Australia has prime contractors that are capable and willing to invest in complex build and repair projects. This capability has been developed through their involvement in key RAN projects over the past 20 years. With few exceptions, the primes have shown their ability to undertake technologically and managerially complex projects. They have done so through investing in contract and project management skills, modernising construction and assembly processes and connecting with suppliers up and down the supply chain.

7. Australia's major naval shipbuilders face the challenges of their counterparts worldwide. Project management skills are crucial to ensure that schedules are maintained, costs and risks controlled, resources are readily available, subcontractors are well-managed and the key overseas technologies are introduced and applied. Shipbuilding is no longer a discrete industry. It is part of an increasingly sophisticated and flexible heavy engineering industry, though still dependent on highly specialised design skills which are difficult to establish and retain in periods of low and unpredictable demand. More likely than not shipbuilding now entails modular design and construction within a contestable fabrication market, but centrally assembled.

8. Australia's prime contractors have demonstrated these abilities. The committee believes that Government has a key role in harnessing the experience and ability of the primes through support for local construction of major acquisitions.

SMEs

9. Australia has an extensive and widespread chain of suppliers who have supported, and are looking forward to continuing their involvement in, Australia's shipbuilding industry. They not only deliver a particular good or service but add value to the shipbuilding industry. The industrial base in Tasmania, for example, although small and remote from the major shipbuilding centres, demonstrates the scope and extent of the nation's capability, notwithstanding the small ship market it supplies. The committee has no doubt that SMEs in Australia have the skills, knowledge, experience and drive to provide a solid base upon which to build Australia's naval shipbuilding program. Some are at the cutting edge of world class developments and are contributing to innovation and driving advances in technology. In some cases, a Defence contract was the catalyst that set the company on its successful trajectory.

10. It is important that the wealth of local talent residing in Australia is properly harnessed and nurtured. The committee believes that Defence has a key role in developing this network and that considerations such as how best to nurture local SMEs should be part of Defence's overall strategic planning.

11. Overseas companies fill capability gaps left by Australian companies. Without doubt the Australian subsidiaries of large overseas companies are working side by side with local firms to provide the shipbuilding industry with an extensive, reliable and capable network of enterprises supporting the construction of naval ships.

12. The committee believes that it is important for government to ensure that the Australian industry is able to take full advantage of the presence of these companies in the country. They must be part of the growth and development of Australia's industrial base.

Infrastructure

13. Although a small industry by global standards, Australia has important shipbuilding infrastructure as a result of investment over many years. Two major naval acquisition projects, the Air Warfare Destroyer (AWD) and amphibious Landing Helicopter Dock (LHD), are currently underway in Australia and formed the

context for much of the evidence to the inquiry. Although most witnesses agreed that Australia does have, or could develop if required, the infrastructure needed to undertake the construction of large naval vessels, the project to build LHDs would require additional infrastructure. Estimates differed, however, on the amount of infrastructure investment needed to accommodate the LHDs. A study commissioned by the Defence Materiel Organisation (DMO) suggested that the cost estimates for improvements to satisfy an LHD build range from \$100 million to \$300 million.

14. It should be noted that any initial investment in infrastructure becomes a permanent asset and builds on the considerable infrastructure already existing in Australian shipyards. Some of this could become superseded and redundant.

15. Australia's naval shipbuilding and repair industry dates back to the mid-nineteenth century. Since then it has evolved and, in many ways, is a product of its history. Some submitters, led by the state governments of Western Australia, South Australia and Victoria, suggested that the present state of the industry reflects a legacy of an ad hoc approach to investment over many years. The lack of strategic coherence to the pattern of infrastructure development in Australian shipyards has created inefficiencies. They agreed with the view that a national strategic plan could result in a better and more efficient use of resources.¹

16. The role of governments in planning for, and investing in, the industry is particularly important to ensure that future developments complement existing facilities and are compatible with a long term strategic plan. Certainty regarding government support for local construction is important to facilitate state and industry investment in infrastructure.

Workforce and skills

17. Australia has a quality skilled labour base, with skills required for naval shipbuilding distributed throughout various sectors of the economy. It is clear that there are skilled labour shortages in a number of occupations required for naval shipbuilding. The committee received different views as to whether labour shortages are so significant as to adversely affect the successful delivery of upcoming build programs. Many witnesses were confident that the workforce could be expanded, through training, movement between sectors and immigration, to meet the challenges associated with both the AWD and LHD builds. Other submitters, including Defence, were more circumspect.

18. The committee recognises the cautious approach by some submitters towards meeting the increased labour demands. For example, they are concerned that mobilising labour for naval shipbuilding could sacrifice the capacity for repair, maintenance and upgrade of the current fleet, or adversely impact on other profitable industry sectors.

1 See chapter 6, paragraphs 6.64–6.73.

19. However, the committee also recognises the opportunities a naval shipbuilding industry provides as a catalyst for skills development and workforce growth. Forecast labour shortages are an incentive for innovation and industry investment in training and skills development. Government investment in naval shipbuilding programs in the past has strongly contributed to the workforce capacity that exists today. This resource, particularly highly specialised skill sets, will atrophy without further on-shore construction projects.

20. The committee considers that current skills shortages provide a significant but not insurmountable challenge for local construction of both the AWD and LHD platforms. The committee sees critical roles for industry, Defence and government in addressing the challenge. If Australian industry is to benefit from substantial federal funding, in the form of local construction of naval acquisitions, industry must show that it has innovative responses and solutions to skills challenges. The committee is encouraged by Australian and state government and industry investment in relevant training and skilling initiatives.

21. In the current era of advanced technology shipbuilding, access to and control over intellectual property (IP) is an important element of a nation's shipbuilding and repair capacity. This is an area where Australia's capacity is vulnerable. Australia largely sources ship designs from overseas and, except in niche areas, is reliant on overseas designed weapons and other systems. In selected areas Australia's research and development has produced cutting edge technology and generated important indigenous IP. However, as a relatively small market Australia will inevitably need to continue to access the technological advances made in the larger defence markets of Europe and the U.S.

22. The ability to negotiate and manage contracts guaranteeing access to IP is therefore vital to Australia's capacity for naval shipbuilding and repair. Without control over IP, Australia is unable to maintain operational sovereignty. Where IP is secured, there is potential for growth, development and export. Australia's capacity in this area is therefore largely reliant on the ability of DMO to negotiate contract outcomes effectively. The committee therefore notes the importance of DMO having the necessary skills and abilities to provide this important outcome.

Summary

23. The committee has highlighted how the main components of Australia's naval shipbuilding industry are making significant contributions to the industry's viability. The evidence was clear cut—Australia's naval shipbuilding base is well-established, and in recent years has become more efficient, motivated and highly skilled. It has produced a number of outstanding world-class vessels that showcase the capability of Australia's naval industrial base. In assessing the four major components of Australia's naval industrial base, the committee found:

- Australian primes have an improved track record;
- SMEs and international subsidiaries form a vibrant, innovative and competitive network of suppliers;

- past and current investment in heavy engineering infrastructure outside the traditional ship building yards places the industry on a sound but flexible footing to meet future demand; and
- Australia has an impressive skills base and initiatives by both the public and private sector are tackling the problem of skills shortages to ensure that Australia has the knowledge and skills to support the industry.

24. Despite the healthy state of the industry, a number of participants to this inquiry were of the view that greater efficiencies were to be achieved through a more coherent, strategic approach to planning. The committee agrees with their view and recommends that the government and Defence take note of the call for a more strategic approach by the Commonwealth to planning.

Comparative analysis

25. The lack of suitable data prevented any sensible or accurate comparative analysis of the productivity of Australian shipyards against overseas yards. Despite repeated requests for quantitative data or analysis from Defence on the price premium attributed to local construction, no such information was provided. The committee was therefore unable to determine the relative cost advantages or disadvantages of local construction.

26. Given that overseas countries are unlikely to remove the various forms of assistance and protection given to their local naval shipbuilding industry, Australia's builders of large naval ships must compete on an 'unlevel playing field' to some extent. The committee however, believes that whenever non commercial considerations are made, such as the need to be self reliant in defence support industries, where there are direct or hidden subsidies, or where broader economic benefits not considered in commercial cost benefit analysis are included, there will be added costs which need to be quantified. Such costs must be known for otherwise there will never be a true measure of actual competitive design and construction costs, nor of those costs properly attributed to non economic or political motives. The committee believes that if this work has not already been done it must be done as a priority for all future projects. If it has been done, but not provided to the committee, it should continue to be as part of a whole of project costing through life for future benchmarking purposes.

27. Therefore, given the absence of any credible quantitative data to the contrary, the committee would like to believe that a revitalised Australian ship building industry may well hold its own when compared with overseas naval shipbuilders, particularly if the value of ships' through-life support, is considered. No categorical assertion however, could be made on the basis of current evidence available.

28. Many submitters produced strong and credible arguments that savings accrue to the repair and maintenance costs if the ship is constructed in-country. They include savings generated by the substantial reductions in repair turnaround times and the more efficient through-life support that results from familiarity and experience with the ships and its systems.

29. The committee looked beyond the narrow costs of building and repairing a large naval ship in Australia compared with overseas. It noted a range of considerations that underscore the advantages of building naval vessels in Australia including the broader economic gains that benefit the Australian economy and the security reasons for building in Australia. For example, when weighing up the advantages of building naval vessels in Australia, the substantial risks associated with an overseas build should also be considered.

30. Naval shipbuilding is not exclusively an economic activity—it is a Defence activity with national security its foremost concern. Without exception, all witnesses agreed that national security concerns are central to any consideration about whether Australia should have a naval shipbuilding industry. The committee is of the view that to protect the nation's security interests, Australia must have the capability to maintain, repair and upgrade its naval vessels. While always present, this requirement becomes urgent and critical when the country's security is under threat. Furthermore, the committee is persuaded by the evidence that there is a strong connection between Australian involvement in the construction of a naval vessel and the acquisition of the knowledge, skills, experience and resources necessary to support effectively that vessel throughout its life.

31. The significant benefits that accrue from the construction of naval vessels in Australia are many and impressive. The range of benefits include, but are not limited to:

- strategic self reliance for the repair and maintenance of the navy fleet and commercial shipping;
- greater self reliance and independence for national strategic defence capability;
- improved assurance of dependability and flexibility flowing from domestic capacity for ship modification or customisation for Australian conditions, and the development of innovative solutions for any of the Navy's unique requirements which might be considered appropriate and practical;
- increased gross domestic product from capital investment;
- reduced pressure on the balance of payments;
- enhancement of the labour market;
- expanded indigenous research and development (R&D), design, production and management capabilities;
- the acquisition and development of valuable new skills, manufacturing techniques and processes;
- extensive technology transfer across a broad spectrum of activities;
- a strengthening belief in Australia's own capabilities and confidence in its own ability to exploit opportunities;
- enhanced potential for exporting;

- the maintenance of capability to support vessels throughout their operational lives, shorter turn around for repairs with in-service support; and
- greater foreign investment.

Summary

32. When taking account of the broad range of factors that are to be considered when acquiring a naval vessel, the committee believes that it is in Australia's national interest to maintain a viable naval shipbuilding and repair industry in Australia.

33. This requires a commitment by the government to have Australia's naval vessels constructed in Australia and for the government and Defence to adopt measures that would ensure the industry remains efficient, innovative and competitive. This however, must be measurable and transparent, based on detailed analysis on the best benchmarks available.

34. This means that government should not allow itself to be captured by overly dependent and uncompetitive suppliers. The trade off between the benefits of self reliance and self sufficiency must be carefully measured against the best possible international benchmarks so as to avoid debilitating subsidisation of inefficient practices, but at the same time promoting improved productivity.

35. In some cases, an Australian build premium may be involved. Such assistance to the local industry would be consistent with overseas practices. The committee has noted on a number of occasions the range of direct and indirect subsidies given by overseas governments to support their domestic shipbuilding industry. Furthermore, a premium should be viewed as an investment that will pay dividends not only to Australia's shipbuilding industry but the economy as a whole as well as safeguarding Australia's national security. The committee believes that the capability in Australia's shipbuilding industry, built up over many years, should not be eroded.

36. Even so, as noted earlier, the committee believes that the costs must be quantified in order to provide a true measure of actual competitive design and construction costs as well as the costs properly attributed to non-economic or political motives.

37. While the committee supports in country builds for its naval vessels, it does not necessarily believe that premiums should be paid for commercial-type ships such as the oiler *Delos*, the replacement ship for HMAS *Westralia*. *Delos* is a tanker specially equipped and rigged for replenishing other ships at sea. The committee does endorse, however, the decision to have the modifications done in Australia to convert the ship to its military role as an auxiliary oiler.

38. The committee believes that it is imperative that government develop longer term naval defence strategies from which economies of scale and continuity of demand can be derived, without which industry will continue to suffer.

Recommendation 1

39. The committee recommends that the government make a public commitment to maintain Australia's naval shipbuilding and repair industry. This commitment to be supported by improved long-term planning of naval shipping needs in order to maximise economies of scale and provide continuity for the broad but specialised design and construction skills required for a healthy industry over the long term.

40. Having come to this conclusion, the committee considered the scope and opportunities for Australia's shipbuilding and repair industry.

Scope and opportunities

41. As the sole purchaser of naval vessels in Australia, the Australian government exerts considerable influence on the performance and viability of the domestic naval shipbuilding industry. Indeed, the committee has noted more than once that Defence cannot be a disinterested bystander of the national shipbuilding and repair industries and should have 'a strong and enduring interest in the industry's success'.²

42. The committee notes the absence of meaningful data that would help to inform industry about the factors that shape or influence major acquisition decisions. The most notable areas where little information was available included analysis on the performance of past projects, especially where there have been scheduling or budget problems, assessments at important milestones as a project moves through its various stages, the policies underpinning local industry involvement including the application of those policies and on government subsidies for local builds. Such information would generate debate and promote critical analysis by those interested in the industry. They would gain a better appreciation of the factors that shape or influence major acquisition decisions. It would also assist the industry better appreciate how the industry is performing and enhance the accountability and transparency of naval acquisitions.

43. The committee sees a need for Defence to make information available that would enable the analysis of major projects and to release the results of their own studies on the performance of projects. In particular, the committee identified a need for continuous monitoring that would increase transparency and improve accountability of how a project is being managed. Clearly, Defence must develop and adhere to high standards of probity and accountability in its procurement practices. The committee accepts that commercial-in-confidence requirements would prevent the disclosure of some information but this should not be used as an excuse for withholding data that could be placed on the public record.

2 Notion taken from comments made in ASC, *Submission 17*, p. 10.

Recommendation 2

44. The Committee recommends that the government establish a thorough detailed model, subject to audit by a body such as the ANAO, for the establishment of through life design, construction and maintenance costs of each naval ship building project in the future by class and by individual ship. The model would contain sufficient detail to enable benchmarking to be done on an international basis, providing total budget accountability, assessment of domestic industry competitiveness, including all administrative overheads, with industry compliance to be mandated in all contracts.

45. The committee recommends further that Defence commission an independent assessment of the progress of major projects against the model as it attains set milestones providing explanations for any departures from the costings and other projections contained in the model. The reports to be provided to the Minister for Defence to be tabled within 3 months of being submitted to the Minister.

46. The committee noted the valuable contribution that domestic companies make to Australia's naval shipbuilding and repair industries. Local industry needs certainty to have the confidence to continue to invest and participate in the industry. The committee was not satisfied that Defence offers that certainty or guidance. From the quality of evidence provided by Defence to the committee, which was inconsistent and poorly articulated to say the least, the committee sees a definite need for Defence to articulate far more clearly its policy on involving Australian industry in its major projects and how this policy sits within the broader government policy on Australian involvement.

Recommendation 3

47. The committee recommends that Defence clearly articulate its policy on Australian industry involvement in naval shipbuilding and repair.

Recommendation 4

48. The committee recommends that Defence at the earliest phase of a major naval acquisition issue a statement on the measures it intends to take to maximise Australian industry involvement in that project and how they fit within Defence's broader acquisition program and the whole of government approach to support local industry.

Recommendation 5

49. The committee recommends that in tender documentation, Defence provide detailed information on the value placed on, and the weight given to, Australian industry involvement.

Recommendation 6

50. The committee recommends that as a benchmarking exercise, Defence on completion of a project, report on the measures it had undertaken to involve Australian industry in the project and the results of those measures. The report is to be provided to the Minister for Defence for tabling in the parliament.

51. The committee suggests that because of Defence's dominance in the market place, it should recognise and use its influence to assist industry gain greater efficiencies and to perform better. Strategic planning is central to Defence achieving this objective.

52. The committee has not received sufficient evidence to recommend in detail the specific nature of a strategic plan. It has received strong evidence, however, that there is a need for Defence to take a more coherent and strategic approach to planning. Furthermore that such planning should take account of how better:

- to encourage and use Australian SMEs and overseas subsidiaries;
- to build on existing infrastructure and guide future investment to ensure the Australian shipyards are used to their capacity; and
- moderate fluctuations in demand.

The plan should be developed within the context of Australia's broad national security strategy.

53. Demand flow was a particular concern. The committee accepts that the naval shipbuilding industry is subject to cyclical flows in demand that to a degree characterise that industry. However, it considers that as naval shipbuilding is a monopsony market, the circumstances of industry players are substantially different to many other cyclical industry sectors. It is concerned that if Australian companies cannot survive and grow through peak and trough demand cycles, the capacity to meet defence's capability needs into the future will be reduced.

54. The committee rejects the notion that measures cannot be taken to moderate demand peaks and troughs more effectively without adversely affecting Defence capability. Clearly, long-term strategic planning is required to address this problem.

55. Strategic planning relies not only on a thorough knowledge of the industry but on an understanding of how it fits into the broader industrial landscape. The committee has noted the merging of technologies and the opportunities for the industry to gain greater efficiencies. In Western Australia for example, the naval shipbuilding industry and the oil and gas sector are taking advantage of the growing similarities in their requirements. The Common User Facility at Henderson is expected to service the oil and gas, resources, marine and defence industries. Transferability of skills between sectors is also considered important for addressing labour demands. Similar opportunities may well exist for the naval shipbuilding and the commercial shipbuilding industries.

Recommendation 7

56. The committee recommends that Defence conduct a full analysis of, and identify, how the naval shipbuilding industry and the commercial shipbuilding industry and heavy engineering activities can better integrate to produce increased efficiencies and productivity gains for these sectors.

57. The committee supports the call for a strategic plan and considers that it should address the factors listed above including Australia's broad national security strategy. The committee further considers that the Defence Capability Plan can be improved as a document to reflect Defence's more strategic approach.

58. The committee assessed the value of Defence's Capability Plan as an informative and instructive means of keeping industry abreast of current and future developments in the industry. It found the need for Defence to improve its Defence Capability Plan so that industry has clearer guidance on Defence's long-term objectives for Australia's shipbuilding and repair industry and the intentions underpinning its acquisition program. In brief, the committee believes that the DCP is inadequate as a means of informing the industry, parliament and the public about Defence's future plans and intentions regarding its acquisition program.

Recommendation 8

59. The committee recommends that Defence make their DCP a document that provides industry with a much clearer sense of Defence's future plans and intentions. In particular, it recommends that the DCP provide:

- **a statement on the way the DCP accords with Australia's broad national security strategy including the nation's strategic priorities;**
- **a discussion about the nation's future strategic capability requirements that identifies the industrial capabilities deemed to be strategically important;**
- **an assessment of the nation's existing shipbuilding and repair facilities and future investment needs;**
- **a comprehensive statement providing accurate and reliable information on Defence's future plans for its naval acquisition program that goes beyond ten year projections;**
- **a clear indication of the government's policy on Australian industry involvement in government projects and how Defence would apply this policy to its acquisition program; and**
- **a detailed explanation on the acquisition schedule indicating the reasoning behind it and how Defence has taken into account demand flows.**

60. While the committee is asking Defence to provide more detail in their DCP and include information that provides a much clearer indication of Defence's future acquisition program, it accepts that the document can only be as good as the quality of the strategic planning it represents.

Defence as an informed buyer

61. The complexity of building warships in the current advanced technology, global industry increases the demands on Defence to function as an informed buyer. Some submitters questioned whether Defence has the appropriate level of experience and technical expertise to carry out its naval ship acquisition program effectively. Defence and DMO are aware of the need to have qualified personnel in-house and are taking steps to recruit such staff and to train existing employees. Industry's response appears to be positive. A number of submitters commented on the improvements coming from the Kinnaird reforms and DMO's new professional approach. Industry players especially welcomed earlier engagement with DMO.

62. In light of the absence of meaningful data and information, as noted earlier, especially on the successes and failures of past projects, the committee considers it imperative that such information is systematically gathered and assessed as Defence progresses through coming major acquisitions. Such information is important for assessing how the Kinnaird process is operating in practice, and whether DMO's investments in staff development and innovative contracting arrangements are yielding results.

63. Throughout the committee's inquiry Defence gave repeated assurances that it has the capacity to act as an informed buyer, that it is able to conduct rigorous tender assessment and manage complex contracts. The recommendations contained in this report provide the basis for objective evidence, enabling these assurances to be tested, successes flagged and weaknesses documented for assessment and improvement.