

Appendix 6

**Extract containing a summary of main issues and points
for discussion from a discussion paper published by the
committee on 25 August 2006**

Discussion paper

Work in progress

Australia's Naval shipbuilding and repair industry

Summaries and discussion points

Introduction

Summary

Today's modern military forces rely on new and high technology to build greater defence capability—they want qualitative efficiency based on advanced technology rather than quantitative force based on manpower.

The increasing pressure for more highly sophisticated and expensive systems, coupled with dwindling demand for ships has created major challenges for the naval shipbuilding industry worldwide. Advancing technology and the increasing costs associated with the design and development of state-of-the-art communication and combat systems in particular, has meant that few countries or companies on their own can produce such sophisticated systems. These challenges have also influenced the business approach. For example, the department of Industry, Tourism and Resources referred to the emergence of 'globally integrated production systems'.¹ Some witnesses spoke of the requirement for Australia to establish a 'consortium of shipbuilders and designers who can pool their capabilities and develop the interaction and specializations needed'.

A critical issue for Australia, which must rely on overseas companies for vital components of its naval ships, is ensuring that Defence has the necessary access to, and sovereignty over, intellectual property.

Advances in technology have influenced the way ships are constructed most notably with the trend toward building ships in modules. Integration of modules and systems has become a key element of shipbuilding. It means that only one major site is needed to assemble the various parts of the ship that have been constructed elsewhere. Thus, a wide network of sites for construction of ship modules, which according to AIDN accounts for 60 to 80 per cent of fit outs, is now involved.

A growing synergy in technologies is also occurring which is influencing the industrial base of naval shipbuilding. Although the industry is highly specialised, there are strong parallels with the infrastructure needs of the oil and gas sector and more generally the resources sector. A new approach to manage these synergies is required not only by the prime contractors but by governments who must have a wider appreciation of Australia's heavy engineering sectors.

The quest for advanced technology and need for integrated systems has also linked naval shipbuilding directly into the information technology market. In effect, naval shipbuilding can no longer be viewed as a discrete industry sector with capacity and

1 *Committee Hansard*, 3 July 2006, p. 70.

productivity assessed on the basis of individual shipyards. Shipbuilding in the new technology era is part of the emerging heavy engineering sector.

The changes occurring in the naval shipbuilding and repair industry as outlined above present a particular challenge for Australian naval shipbuilders who need high order technological as well as managerial skills and for Defence which requires the expertise to oversee all the complexities involved in a major acquisition. Defence faces a particular challenge in managing the reconfiguration of the business model which now involves a complex web of relationships between the prime contractor, which may be a consortium, and the many sub contractors, a number of which have key roles in the integration of complex systems and may themselves be joint ventures. To manage a project effectively and properly, Defence requires not only strong technological and managerial skills but an approach that ensures transparency and accountability.

It also requires Defence to consider demand flows and their implications for the Australian workforce. A number of the matters touched on in this introduction will be covered in the paper.

1. The capacity of the Australian industrial base to construct large naval vessels over the long term and on a sustainable basis

The capacity of Australia's industrial base to construct large naval vessels depends on the integration of four main elements: Australian shipbuilders willing and able to undertake major naval projects; the network of enterprises supporting the industry; the infrastructure necessary for modern naval shipbuilding; and the available skills base and workforce.

The Australian prime contractors

Summary

The four prime contractors in the Australian naval shipbuilding market are proven competitors and capable and willing to invest in Defence's demanding future workload. There are heavy demands placed on prime contractors, especially the increasing pressure for complex ships with highly sophisticated and expensive systems and the rising costs associated with the continuing search for improved capability. The committee is aware of mixed views about whether the Australian naval shipbuilding sector can support four primes and that some rationalisation of the industry may be required.

Discussion

The committee welcomes opinions on:

- how Australia's major shipbuilders, servicing a relatively small market, can keep pace with the rapid advances in technology and the increasing demand for improved capability (e.g. joint ventures);
- the benefits and risks of foreign ownership of prime contractors operating in Australia; and
- whether industry rationalisation is inevitable in Australia.

The supply chain

Summary

Overall, it would appear that Australia's network of suppliers together with the contribution of major overseas companies who have established a presence in Australia provide an adequate supply chain to sustain Australia's naval shipbuilding and repair industry.

Discussion

The committee is interested in views on the capability of Australian firms to support the shipbuilding industry in Australia, especially:

- whether their capabilities are being effectively tapped and developed and how actively Defence encourages them to engage in the Defence industry;
- measures that could be taken to increase the capability of Australian firms to support the naval shipbuilding industry and to extend the local supply network beyond that already servicing the industry; and
- the adequacy of incentives to entice Australian companies to conduct research and development in the naval defence industry.

The committee also invites comment on Australia's reliance on overseas subsidiaries to supply some of the high technology systems. In particular:

- although subsidiaries are located in Australia, whether their ties to an overseas parent company undermine or weaken the ability of Australia to sustain a modern and effective shipbuilding industry; and
- the steps needed to ensure that Australia has access to the necessary resources and expertise to support the vessels through life. For example, the Allen Consulting Group surmised that 'unless Australian industry has the capacity to repair AEGIS, the benefits of a local build of the AWDs in terms of providing the capacity to sustain self-reliance must be questioned'.²

2 Allen Consulting Group, 'Future of Naval Shipbuilding in Australia', May 2005, p. 46.

Infrastructure

Summary

Overall, it would appear that Australia has the infrastructure necessary to sustain a naval shipbuilding industry but that further investment would be required to manage the proposed LHD project. This additional investment is required even though a number of witnesses suggested that some existing facilities are underutilised.

Discussion

The committee invites views on:

- the claims that facilities in Australian shipyards are underutilised, particularly in light of the proposed further investment in Western Australia and South Australia; and
- the wisdom of investing in infrastructure required to accommodate the LHDs, which according to some witnesses is a one in 40 year project.

Cooperation between the states in meeting infrastructure needs

Summary

The Western Australian and South Australian governments have entered into an MoU regarding the AWD and LHD tenders.

Discussion

The committee welcomes opinions on cooperation and competition between the states and how this may influence Australia's capability to sustain a naval shipbuilding and repair sector. It is particularly interested in the significance of the MoU between SA and WA.

Workforce and skills

Summary

It is generally recognised that Australia has a well skilled, productive labour base to draw on for naval shipbuilding but that skilled labour shortages represent a challenge for the industry. Views differ as to the extent of the challenge and whether skilled labour shortages present a risk to upcoming projects.

There was general agreement that it is important for Australia to retain an element of design capability to enable designs to be modified to Australia's specific requirements and for through life support, but views differ as how best to retain such capability.

Discussion

The committee invites view on whether:

- current government and industry skills initiatives are adequate to mitigate risks to upcoming naval construction project costs and schedules;
- a temporary skilled migration program is a satisfactory way to address shortfalls in the workforce;
- design and systems integration skills can be sufficiently fostered without indigenous design and construction, in order to maintain autonomy in ship maintenance, repair and upgrade; and
- strategies to retain required skill sets for through life support are sufficient. Is a more strategic, overarching approach required? Can critical skill sets be identified and policies developed and implemented to ensure these skills are retained in Australia?

Intellectual property

Summary

In the new era of shipbuilding, access and control over intellectual property is a key determinant of shipbuilding and repair capacity. Sovereignty over IP facilitates growth and access to export markets. Without ownership or access to IP, Australia is left dependent on system providers' developments and upgrades.

Control over IP is an element of shipbuilding where Australia's capacity is vulnerable. Australia is largely reliant on overseas ship designs and weapons systems. The ability to negotiate and manage contracts guaranteeing access to IP has therefore become a key criterion for successful naval shipbuilding.

Discussion

The committee is interested in views and experiences in the following areas:

- whether access to and control over IP is given sufficient focus in the negotiation of naval acquisition contracts;
- given that modern shipbuilding involves complex contractual arrangements between multiple parties, who carries responsibility for ensuring satisfactory IP outcomes;
- whether Australia, as a relatively small power, has sufficient leverage to negotiate the IP outcomes it requires for sovereignty over fleet maintenance and repair; and
- whether there is sufficient investment in research and development to facilitate the generation of Australian IP.

2. The comparative economic productivity of the Australian shipbuilding industrial base and associated activity with other shipbuilding nations

Summary

There is no available data that would allow a comparative analysis of the productivity of Australian shipyards against overseas yards. The committee therefore finds difficulty in making a definite determination about the comparative economic productivity of the Australian shipbuilding industrial base with other shipbuilding nations. Evidence, however, suggesting that Australia may not be as productive as overseas producers included:

- some projects in Australia such as the ANZACs are believed to have attracted a local build premium;
- Australia is a relatively small market and the demand for naval vessels is not as large as for some overseas producers—Australia does not have the economies of scale enjoyed by some of its potential competitors; and
- Australia cannot compete with countries such as Japan, China and South Korea in the production of larger and less complex steel ships such as tankers and carriers.

Evidence suggesting that Australia may be as productive as overseas producers in constructing naval vessels include:

- the naval shipbuilding industry in overseas countries is subsidised or protected in some way by government; (removing or discounting such barriers may show that Australian producers can match the productivity of overseas producers);
- the success of Incat and Austal in producing very fast vessels;
- the bench-marking studies carried out for Tenix and Raytheon Australia;
- greater efficiencies when it comes to modifying or customising a ship in Australia for Australian conditions; and
- the acknowledged world class standing of Australian welders, engineers and technicians.

This summary looked purely at the matter of the cost to the Australian Government of building a ship in Australia as against a ship purchased from overseas. To this stage, it has not considered the wider advantages or benefits that accrue to the country when a major ship project is undertaken in Australia.

Discussion

The committee invites comment on whether, without taking account of other considerations such as wider economic benefits and national security, it is safe to assume that:

- Australia does not have a significant competitive edge in the construction of major naval vessels, with economies of scale a major impediment; and
- the naval shipbuilding industry is highly protected in most naval shipbuilding countries which narrows the opportunities for a country such as Australia to compete internationally.

The committee would be interested to learn of any studies that would help it obtain a better understanding of the productivity of the Australian naval shipbuilding and repair sector compared to overseas producers.

The committee is also interested in views regarding the opportunities for increasing exports in the NSR sector.

3. The comparative economic costs of maintaining, repairing and refitting large naval vessels throughout their useful lives when constructed in Australia vice overseas

Summary

The committee underlines the following points on the issue of comparative economic costs of through life support (TLS).

- There is a lack of data which reflects the difficulty in making a direct comparison.
- ACIL Tasman has estimated that annual TLS costs could be twice as high if foreign supplies had sourced the ANZAC Ship Project. This is due to shorter repair turn around times and lower stocks of spares from local sources of supply. However, the Department of Industry, Tourism and Resources (DITR) has cautioned that local equipment can be used for an overseas build, thereby avoiding the higher costs associated with repairing overseas-built ships in-country. The department argued that the ACIL Tasman TLS estimate must be discounted by the proportion of equipment that could be sent overseas to support an offshore build of the same vessel.
- The committee's evidence is unanimous in the view that building warships in-country will deliver greater TLS savings than from an offshore build—Defence added the qualification that TLS savings from an in-country build depends on the complexity of the ship. It used the example of the less complex LHDs, stating 'there could be relatively few savings in whole-of-life cost from choosing to build locally'.³
- The TLS productivity saving from an in-country build derives mainly from developing the skills and knowledge during the construction phase needed for TLS.

3 Department of Defence, answers to questions on notice, p. 2.

- Personnel, however, can be posted offshore to participate in the build in order to develop the in-country skills and knowledge for repair and maintenance.⁴

Discussion

The committee invites discussion on the following issues:

- the findings of the ACIL Tasman study with regard to TLS and whether they can be usefully applied to current or future projects;
- Defence's statement that 'there could be relatively few savings in whole-of-life cost from choosing to build the LHD locally'. It expected that the greatest savings over the life of the ship will come from full access to and use of ship design and intellectual property across the entire capability.⁵
- the contention that posting personnel overseas during an offshore build is an effective way to develop the skills and knowledge required for TLS; and
- the contention that there is difficulty in sustaining in-country skills once the ship transitions from the construction phase into naval service.

4. The broader economic development and associated benefits accrued from undertaking the construction of large naval vessels

Summary

Numerous witnesses identified economic benefits that they consider accrue from naval shipbuilding. The committee's research identified two major studies, relating to the ANZAC and Minehunter projects, which sought to quantify the flow of economic benefits from the construction of naval vessels. The extent of the economic benefits identified in these studies depended on the model used. The more conservative figures, resulting from general equilibrium analysis, indicated a contribution to GDP of up to \$887 million for the Minehunter and \$3,000 million for the ANZAC project.

Defence and DITR recommended caution in interpreting the findings of the above studies. DITR noted that the results are specific to the projects assessed and the assumptions made about the productivity gains produced by those projects. Defence presented Treasury advice which stated that not only are multiplier effects difficult to quantify, but the effects can be negative if resources are displaced from more productive to less productive sectors of the economy.

It should be noted that Defence explained that technology transfer and access to IP form part of the evaluation process but that other benefits:

such as potential spin-offs to industry at large and wider benefits to the economy, such as increased employment, may be recognised but play little

4 See also *ASC submission P17*, p. 19.

5 Department of Defence, answers to questions on notice, p. 2.

or no part in the numerical evaluation. Such benefits will be noted in advice to Government.⁶

Discussion

The committee invites comment on the following issues:

- whether any general conclusions can be safely drawn about the broader economic benefits of naval shipbuilding, given that the available quantitative analysis is confined to two specific projects;
- the likelihood that, in reality, negative multiplier effects would arise from a high technology industry such as naval shipbuilding; and
- whether and to what extent, wider economic benefits should be taken into account in naval shipbuilding acquisition decisions;
- who argues or should argue the case for the wider economic benefits that accrue to a local build in advice to government.

Strategic considerations

Summary

Without exception, all witnesses accepted that national security concerns are central to any consideration about whether Australia should have a naval shipbuilding industry. On strategic grounds, the argument for self-sufficiency in maintaining and repairing naval vessels was strong, especially when it came to the ability to respond to urgent operational requirements. Several witnesses went further suggesting that in order to have this capability it was important for the ships to be constructed in Australia.

The government, however, noted that practical and economic circumstances place limitations on the extent to which Australia can be self-sufficient in the construction of naval vessels. Even with the ship repair industry, the government argued that there could be exceptions.

It is beyond the means of any country to retain absolute control over all aspects of its defence capability. The argument for self-sufficiency in a particular capability turns largely on an interpretation of what constitutes a strategically important capability. According to DITR, based on import replacement policies, the objectives are being driven toward 'a new conception of operational sovereignty as the objective, with economic 'make or buy' decisions determining the cheapest way to achieve *operational sovereignty*'.⁷

6 Department of Defence, answers to questions on notice, question 52, p. 48.

7 DITR, *Submission 38*, p. 1.

Discussion 1—definition of strategic capability

The committee is having difficulty using general concepts about self-sufficiency, core strategic capabilities, value for money and the need for in country construction to arrive at definite conclusions about the connection between national security, defence capability, the requirement for self-sufficiency and cost effectiveness. For example, it is unclear about DITR's statement that global economics is changing military self-reliance objectives and the concept of 'operational sovereignty'.

It invites comments on:

- whether DMO's definition of a strategically important industry capability is satisfactory or indeed relevant to today's debate about self-sufficiency;⁸ and
- the significance, as mentioned by DITR, of the new concept of operational sovereignty as the objective, with economic 'make or buy' decisions determining the cheapest way to achieve operational sovereignty.

The committee would like some guidance or assistance in identifying the circumstances under which it is appropriate for Australia to relinquish its control over the design or construction of a major naval defence acquisition or component of an acquisition to an overseas supplier. For example, are there principles governing national security and the acquisition of a naval defence capability that should be strictly observed? If so, what are they and how should they be articulated to industry?

The committee understands that in some cases Australia simply cannot afford or attain the level of skill, knowledge or technological expertise in a particular critical defence capability. It is seeking advice on the steps that should be taken to ensure Australia maintains a level of capability that would not compromise national security.

Discussion 2—strategic capability and value for money

The committee would like to gain a better understanding of:

- the difficulties applying an acquisition policy that places a high priority on retaining self-sufficiency in identified core strategic capabilities, but at the same time emphasises value for money; and
- what the term 'value for money' means in the broader context of naval shipbuilding and national security'.

8 DMO's 2002 strategic plan defined a strategically important industry capability and/or skill-set as one, which, 'if not readily available, would inhibit the performance and execution of ADF capability and operations, and, if denied, may not be able to be obtained within the required operational time-frame'. This definition is given in the main text of this paper.

5. The role of Defence in Australia's naval shipbuilding and repair industry

Assisting industry improve productivity

Strategic planning and policy on Australian industry involvement

Summary

Defence's long term capability requirements and objectives are articulated through the Defence Update, the Defence Capability Strategy and the Defence Capability Plan (DCP). Some witnesses raised concerns about the adequacies of the current documentation that Defence makes available to industry on its future strategic plans and, indeed, on what appears to be weaknesses in the planning process.

The committee notes that the recent Defence Capability Plan identified on a project-by-project basis the areas of expertise that Australian industry could currently supply.

There appears to be a lack of certainty in how Defence applies its policy on local involvement in the naval shipbuilding industry. There is no uniform level of AII specified for each project. On the one hand, a 'bidder's failure to satisfy all of the Australian industry involvement outcomes may... potentially disqualify the bidder from contention'. At the same time, Defence 'retains the right to select a bidder whose approach may not satisfy all Australian industry involvement outcomes set out in the RFT if other aspects of its approach provide offsetting benefits'.⁹

Defence stated that proposals for local industry involvement are evaluated on the basis of value for money and tenderers are required to show how cost-effective involvement in the project by Australian industry has been maximised.¹⁰ According to Defence, 'This does not always mean that goods and services sourced from local industry must be cheaper than those available from overseas. There may be instances where paying more for a local source of supply yields offsetting strategic or other benefits which mean that value for money has been achieved'.¹¹

Some witnesses have suggested that the AII program lacks a clearly articulated strategic approach. In 2003 the ANAO found that:

- the lack of specific guidance as to what defence industry capabilities are required is a significant omission from Defence industry policy and makes it difficult to determine how well the strategic objectives of the Program are being met; and
- there was no evidence of a systematic endeavour to gain synergies by linking the AII plans of one capital equipment project with those of any other project.

9 Department of Defence, answers to questions on notice, p. 7.

10 Department of Defence, answers to questions on notice, pp. 47–48.

11 Department of Defence, answers to questions on notice, p. 7.

The committee is aware that Defence is currently undertaking a review of Defence's procurement policy.

Discussion

The committee notes the call for Defence to develop a long term strategic plan for Australia's naval shipbuilding industry. It would like some guidance from industry on the key matters that it believes should be included in such planning and the preferred level of detail.

The committee also invites views on:

- how Defence can make its priorities clearer and provide a better understanding of its intentions when using vague terms such as 'value for money' and 'sustaining key strategic capabilities'; and
- the project-by-project approach and whether it hinders the development of a coherent and overarching policy designed to best use Australian industry to ensure that Australia sustains key strategic capabilities.

The committee welcomes comment on:

- the effectiveness of the AII Program in the NSR sector;
- the need for greater rigour in assessing the performance of the AII Program;
- whether a Strategic Plan for the NSR sector that identifies core in-country capabilities could give the AII Program more focus; and
- suggestions that Defence should develop key performance indicators for the AII program.

Smoothing demand

Summary

Australian demand for naval vessels has historically been uneven and significant peaks and troughs are projected for the coming build programs. Numerous submitters called for smoother Defence demand to help alleviate costs and secure the sustainability of the industry base in the longer term.

Defence considered that it is industry's responsibility to manage cyclical demand. It outlined that scheduling major acquisitions is complex, involving consideration of the budget implications of other major projects and the interdependence of some capabilities with others. Ultimately, the scheduling of naval construction work reflects Defence's capability needs not the perceived needs of the industry.

Discussion

As noted above, the committee notes the call for Defence to develop a long term strategic plan for Australia's naval shipbuilding industry and would like some guidance on what this plan should encompass.

The committee invites views on the difficulties cited by Defence in smoothing the demand flow.

Industry—informed provider

Reviews of past projects and premiums for local builds

Summary

The committee notes the absence of meaningful data that would help to inform industry about the factors that shape or influence major acquisition decisions, especially analysis of past projects and premiums offered to Australian companies.

Commercial-in-confidence concerns may well prevent some information from being available. Even so, regular and frank analysis of the successes and failures of projects and the extent of assistance given to a project (local premium) could assist industry. This knowledge would help keep industry better informed about the performance of particular projects and also make Defence more accountable for its decisions and the way in which it manages major projects. Indeed, Mr John O'Callaghan, Head of the Australian Industry Group Defence Council, thought that Defence needs to be 'a bit more mature about putting on the table' some of the lessons from experiences such as the problems with the modernisation of the FFGs and the Collins Class submarine. In his view, such an approach might help industry avoid the sort of problems that have arisen.

Discussion

The committee would welcome opinions on the suggestion that, in order to have a well-informed industry and an accountable buyer, Defence publicise information such as analysis of past projects or on the policies governing local premiums. It would be interested to learn of major impediments to implementing such a proposal.

The need for local premiums and preference for local involvement touches on matters such as the tension that exists between capability and affordability, previously raised in the discussion of strategic considerations.

Defence—an informed and skilled purchaser

Informed buyer

Summary

A few submitters questioned whether Defence has the appropriate level of experience and expertise to carry out effectively an acquisition program involving complex naval ships. Defence is aware of the need to have qualified personnel in-house and is taking steps to recruit such staff. It also has access to outside experts to assist it in its acquisition program and processes.

Tendering and contracting

Summary

DMO has undertaken steps to improve its tendering and contracting procedures and practices. Industry's response appears to be positive. Even so, this paper has highlighted the growing complexities in managing major naval acquisitions especially with the complicated network of relationships and partnerships involved in the project. The paper has also commented on the absence of meaningful data and information especially on the successes and failures of past projects. This is most notable in the discussion of local premiums. Clearly, Defence must develop and adhere to high standards on probity and accountability in its procurement practices.

Discussion

The committee would be interested to learn if there are, in industry's view, areas of weaknesses in DMO's NSR tendering and contracting procedures that could be strengthened.

The committee also invites comment on the probity and accountability aspects of Defences procurement practices and procedures.

Government's intervention in the market place

Competition

Summary

According to Defence, it wants 'a vibrant and competitive Australian maritime industrial capacity' that enables it 'to maintain or enhance the capability baselines of the Naval ships so that they are fully capable to meet the mission requirements in the context of the evolving threat environment and strategic requirements'.¹² It also wants value for money and looks to competition to stimulate managerial innovation, drive innovation and the development of new technologies and promote general cost consciousness among defence contractors. A competitive environment acts as a check on excessive monopoly pricing and helps to drive down cost premiums.¹³

The demand for naval ships in Australia, however, is relatively small and Defence is the only buyer. It faces the challenge of meeting its need to sustain key naval capabilities in country cost effectively but in a market with few suppliers. This raises questions about the extent to which government or Defence should intervene in the market place to create a competitive framework.

12 Department of Defence, answers to questions on notice, pp. 21–22.

13 John O'Callaghan, Australian Industry Group Defence Council, *Committee Hansard*, 28 June 2006, p. 23.

Discussion

The committee invites comment on how Defence best manages a market with only one buyer and few suppliers. For example:

- the usefulness of contract management tools—fixed price contracts, alliance contracting, open book accounting, close monitoring of rates of return, greater use of benchmarking, stricter specification of AII;
- whether Defence should be directly intervening in the market (e.g. awarding particular projects to specific companies with a view to maintaining future competition);
- the extent of sole sourcing in naval shipbuilding contracts and the opportunities for Defence to introduce greater competition in these contracts; and
- the role of competitive teaming.

