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29th May, 2006

Dr Kathleen Dermody
Committee Secretary
Senate Foreign Affairs, Defence and Trade Committee
Department of the Senate
PO Box 6100
Parliament House
Canberra ACT 2600

Dear Madam Secretary,

Inquiry Into The Scope And Opportunities For Naval Shipbuilding In Australia

On behalf of the Australian shipbuilding and repair industries please find enclosed the Australian Shipbuilders Association submission to the Senate Inquiry into Naval Shipbuilding in Australia.

Yours faithfully,



Craig Clifford
Chairman
Australian Shipbuilders Association



Senate Inquiry into Naval Shipbuilding in Australia

**Australian Shipbuilders Association
Submission**

May 2006

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1. INTRODUCTION

Formed in 1963, the Australian Shipbuilders Association Ltd (ASA) is Australia's officially recognised national shipbuilding industry body representing companies involved in the construction of Defence and commercial vessels. Apart from the shipbuilders, ASA represents stakeholders in the industry, including research and development, design and supply industries. The body has some 75 members, including 13 shipbuilders, 46 businesses involved in supplying and supporting the industry, and 16 Government and Honorary members. This membership represents more than 80% of the industry in terms of revenue and tonnage.

The role of the ASA is to provide professional, independent, impartial representation to assist the shipbuilding industry. The organisation has a notable reputation, ensuring it is well represented within Government, the International Maritime Organisation (IMO), National Marine Safety Committee (NMSC), State and Regional Marine Boards. In summary, ASA provides a forum for issues common to the industry group to be tabled, debated and put on the agenda for Government consideration.

2. THE SHIPBUILDING AND REPAIR INDUSTRY CHARACTERISTICS

The shipbuilding sector has had its good and bad times over the years. From near extinction in the 1970s, it was reinvigorated in the mid 1980s with the Government's decision to build frigates and submarines in Australia. The late '80s and '90s saw a considerable boom in fast ferry construction. The sector concentrates on the construction of commercial and Government vessels over 5 tonnes. In 2004-05, some 150 businesses/enterprises were involved in the sector, employing around 12,000 people and generating some \$2b worth of income. Ownership of the shipbuilding sector is relatively concentrated; with the seven shipbuilders that each employ more than 200 people accounting for some 85% of the sector's income.

Defence shipbuilding and repair and fast ferry construction dominate this industry sector. The four defence companies, ADI, ASC, Forgacs and Tenix between them, employ some 56% of the actual shipbuilding sector's total workforce, with Austal and Incat employing some 29% (i.e. a total of 85%). This data does not include the total workforce from all the businesses and suppliers associated with the sector mentioned above.

Ferries and patrol boats dominate Australia's maritime exports. While such exports reduce the exposure of Australian shipbuilders to cyclical variations in the Australian Defence demand, they are lumpy and correspondingly volatile. Exports in 2004-05 represented some \$362m, including \$210m from Austal.

Despite this overall volatility the two major fast ferry manufacturers have been successful in the naval shipbuilding market:

- In 2000, following the ADFs highly successful use of an Incat catamaran ferry to support UN operations in East Timor, the US Navy and US Marine Corps leased high-speed aluminium ferries from both Austal and Incat for test and evaluation as fast logistic support ships.
- In 2004, the US Navy selected an Austal designed aluminium trimaran derived from a fast ferry being built by Austal as one of two short listed candidates for its Littoral Combat Ship program (which entails building some 60 vessels over 15 years at an estimated cost of \$US14b).

These cases are a good example of where Australian involvement in leading edge commercial shipbuilding (high speed, aluminium vessels) has generated technologies suitable for the defence area.

Apart from the projected growth in the Defence sector, the shipbuilding industry at the present time is experiencing mixed fortunes. Demand from the fishing industry has declined almost to a standstill due to government-induced decreases in domestic ocean and coastal fishing activities. Similarly, there has been a fall in the demand for Australian built commercial steel hulls. For example, whilst there has been a marked increase in the demand for tugs in Australia, almost every new Australian tug acquired over the past two years has been sourced from Asia.

A table showing all the vessels longer than 40 metres produced by Australian shipyards over the past ten years is at Annex B. A similar table listing the vessels of 40 metres and over that are currently on order or under construction at Australian shipyards are at Annex C. Given that there are 22 companies listed in Annex B and only nine in Annex C, this illustrates both the intensively cyclical nature of the sector and a level of consolidation.

The ASA recognises that the Senate Inquiry is primarily interested in the naval shipbuilding sector, and particularly, the stimulus the construction of large naval ships can provide to Australian industry generally.

Defence requirements are, and have been, the most significant determinant of demand for shipbuilding and ship repair and maintenance. The major Defence project over the past 15 years has been the \$7.2b ANZAC Ship Program. Tenix, which delivered the ANZAC ships, was also responsible for building two FFG Frigates, which in essence was the project that restarted Australian naval shipbuilding.

Prior to the commencement of the Submarine Project, there were about 30 companies in Australia that were qualified in the quality credentials necessary for naval shipbuilding. As a result of the project over 200 companies gained ISO qualification, which was significant in both platform and combat system capability areas.

In relation to the ANZAC Project, some 80% of the total project funds was subcontracted to some 3,000 suppliers in Australia and New Zealand i.e., some \$5.8b. The ANZAC Project also resulted in Tenix undertaking significant research and development. Additionally, Tenix invested in 16 man-years of training within the company and subcontractors. Tenix's view is that "we believe our industry is an important and strategic component of Australia's economic strength"¹

3. SUMMARY OF KEY SHIPBUILDING COMPANIES

A brief summary of the key shipbuilding companies is given at Annex A. This includes a summary of the shipbuilding facilities at each site. The companies listed include those specialising in ship repair and major modification work.

A breakdown of these companies in tabular format, separating the major defence and ferry players from the second tier builders is given in Tables 1 and 2.

¹ Senate Foreign Affairs, Defence and Trade References Committee Hearing, 27 April 2006, page 2.

Table 1 – Major Australian Shipbuilders

	Shipbuilding Related Employees	State	Ships on Order (over 40m)
ADI (Naval)	900	NSW	
ASC	1030	SA	3 x AWD
Austal	1200	WA	2 x yacht 4 x ferry 9 x Armidale Class PB 4xNSW Police PB
Forgacs	290	NSW/Qld	
Incat	450	Tas	2 x Ferry
Tenix Defence (Marine)	985	Vic/NSW/WA	1 x multi role vessel 2 x OPV 4 x IPV

Table 2 – Second Tier Australian Shipbuilders

	Shipbuilding Related Employees	State	Ships on Order (over 40m)
Adelaide Ship Construction	50	SA	
Azzura Marine Group	150	NSW/Qld	
Harwood Slipway and Engineering	27	NSW	
Hanseatic Marine	100	WA	2x70m passenger vessels
Northwest Bay Ships	116	Tas	1 x ferry
Richardson Devine Marine	10	Tas	1 x ferry
Strategic Marine	50	WA	2 x pleasure craft 25 x work/security boats
Taylor Brothers	50	Tas	
Viking Industries	300	Qld	2 x luxury yachts (55m & 75m)

4. COMMON USER FACILITY CONCEPT

A new concept that has been introduced into the Australian shipbuilding industry with State Government support is the Common User Facility (CUF). Broadly, State Governments provide a site with state of the art infrastructure; wharfage and ship lift capacity on a lease basis. The availability of such infrastructure allows shipbuilders/repairers to undertake major projects without the barrier to entry of capital infrastructure costs, which might otherwise be incurred. The site can be leased for the duration of the project, reducing cost. A CUF can and is also used by other industries, in particular the resource industry.

There are three CUFs in place or planned in Australia: WA, SA and Queensland. A summary of the facilities available and planned is given in Annex A.

Australian Marine Complex – WA

The Western Australian and Australian Governments established the Australian Maritime Complex - Common User Facility (AMC – CUF) located in Henderson in April 2003. A total of \$180m (\$100m by the State and \$80m from the Commonwealth. Was invested to create the Complex. The CUF is available on an ‘as needed’ basis and can be leased individually or collectively to support user needs. The facility is expected to service the oil and gas, resources, marine and defence industries.

In 2005, the Western Australia Government announced funding of some \$80m for the expansion of CUF. The project will see the installation of a floating dock and rail transfer system to launch and retrieve large ships, and an extension and upgrade of the existing wharves.

Osborne Common User Facility

The South Australian Government will invest \$120 m for common user infrastructure development at Osborne. Adjacent to ASC. This will include a 10,000-ton ship lift, wharf and transfer system. The State Government Plan is to establish the State as the future hub for naval warship construction.

Queensland Planned Common User Facility

The Queensland Government is investigating jointly planning the development of a CUF on the Brisbane River, with leaseholder Viking Industries. This facility will provide the necessary infrastructure for the complete assembly of large ship modules, within 6km of the Cairncross dry dock.

5. IMPACT OF MAJOR DEFENCE SHIP BUILDING PROJECTS ON THE ECONOMY

A number of submissions to the Senate Enquiry have referred to the Tasman Consultants studies on the economic impact of two major shipbuilding projects. These are the only recent studies produced in relation to the impact of major shipbuilding projects in Australia. The results are summarised together with comments on the two reports' findings.

In 1999, Tasman Asia Pacific consultants were commissioned by the Australian Industry Group's Defence Council (AIGDC) to examine the impact of major Defence shipbuilding projects on the Australian economy. After some consideration it was decided that the analysis would use a case study, and chose the ANZAC Ship Project (ASP).

Following the Report on the ASP, a further study was commissioned by the AIGDC to report on the impact of the Huon Class Minehunter Coastal (MHC) Project. This study, undertaken by Tasman Economics, was designed to explore further the results of the first study, and to provide more information on the impact on Australian industry of Defence spending.

The key findings are summarised.

ANZAC Ship Case Study – Key Finding ⁽²⁾

The \$5.6b (in 1999 dollars) ASP with its high level of Australian industry involvement made a substantial contribution to the Australian economy. By constructing the ten frigates in Australia instead of purchasing similar vessels from overseas, it is estimated Australia is:

- Generating between \$200m and \$500m in additional annual GDP. Over the fifteen-year construction phase, this means GDP will grow by at least \$3 b.
- Generating between \$147m and \$300m in additional, annual consumption. (Consumption is a good indicator of the improvement in Australian community's material well being). Over the fifteen-year construction phase, this means consumption in Australia will grow by at least \$2.2b.
- Generating around 7,850 full time equivalent jobs

⁽²⁾ Tasman Asia Pacific, "Impact of Major Defence Projects: A Case Study of the ANZAC Ship Project", Feb 2002.

The growth in economic activity from the ASP arises from a range of factors, which have increased ASP businesses' productivity and competitiveness. Through their participation in the project, companies have:

- Become more innovative through their own research and development, and access to foreign technology;
- Improved their business practices, leading to a culture of continuous improvement;
- Increased their export opportunities; and
- Acquired new defence capabilities enabling them to play a greater role in Australia's national security.

The high level of Australian industry involvement in the ANZAC Ships contracts will lead to similarly high-levels of local participation in the ships' through-life support. In net present value terms, Australia stand to save in the order of \$500m over the service life of ships by being able to obtain support from local suppliers as well as the strategic advantage of being able to provide the TLS domestically rather than rely on offshore facilities, often involving higher costs, longer delays (and the associated risks to defence capability).

Coastal Minehunter Case Study – Key Findings ⁽³⁾

It is estimated that over the nine years of the construction phase, the MHC project will have:

- Contributed up to \$887m to Gross Domestic Product;
- Contributed up to \$492m to Consumption; and
- Directly and indirectly generated (or sustained) an average of more than 1,800 full-time equivalent jobs each year.

The six MHCs were constructed in Newcastle, New South Wales. The construction of the vessels has directly and indirectly (through flow-on effects) generated economic activity and employment for the Newcastle region. For example, over the period of the construction phase the project created at least 3,180 jobs in the Newcastle region.

The opportunity to be involved in a major Defence project, such as the MHC project, has had positive long-term impacts. For example, many participating Australian businesses have:

- Become more productive and competitive as a result of project-related technology transfers;
- Adopted tools that have enhanced productivity and other aspects of performances in order to conform to Defence's stringent risk mitigating requirements; and
- Acquired capabilities, which enhance and extend Australian industry's integral role in the national defence effort.
- Provided the skill base to compete effectively for related Defence work in export markets.

Consultations with key stakeholders also indicated that, at this early stage, the involvement of Australian industry in the ship's in-service support is producing significant benefits including:

⁽³⁾ Tasman Economics "Impact of Major Defence Projects: A Case Study of the Minehunter Coastal Project", Jan 2002.

- Savings in the amount of money and resources Defence needs to outlay on in-service support; and
- Shorter repair turn around times, which in turn flows through to improved operational capability.

Comments on the Report's Findings

The non-defence benefits at the macro or national level given by the Tasman reports may be overstated. Whilst they certainly benefited the state or regional economies, the economic analysis in relation to contribution to GDP, has been questioned by some economists, particularly when the economy (or the relevant part of it) is close to full employment. However, the benefits to the many SMEs involved, which, through participation, raised their level of capability and competitiveness, have been clearly demonstrated. Generated benefits have raised the overall productiveness of the shipbuilding sector (and the level of income generated by those resources). In turn Defence has gained from the skills developed, which has enhanced self-reliance.

Almost 60% of businesses involved with the ASP were exporters. Involvement with the project was a major factor in the export success of these contractors. More than 20% improved their ability to export as a result of participating in the project, and a large number experienced a significant increase in their exports since commencing their involvement. ASP businesses are more than five times more likely to export than other Australian businesses.

Around 47% of respondents to the MHC survey were involved in export activity. This high export propensity is consistent with the findings of the ANZAC study and contrasts markedly with an Australian industry average of 4% and a manufacturing industry average of 13%. One third of MHC businesses reported that involvement with the project had improved current or future export prospects.

Local construction of ships has facilitated 'Australianisation' of these platforms, thereby ensuring that these ships better meet the requirements of the local environment and deliver fleet commonality. 'Australianisation' means that much of a ships fitted plant and equipment is sourced in Australia and tailored to specific Australian circumstances. This results in equipment that is optimised for Australian conditions and requirements and equipment that can be supported locally. It is therefore capable of local evolution as technology advances, threats change and capabilities improve and mature.

Australian defence shipbuilders have expertise in systems adaptation, design refinement and systems integration. Systems integration, in particular, has encouraged shipbuilders to extend into the strategically important areas of data management, signal processing, command, control and communications.

In summary, Australian construction, based on overseas designed vessels, has led to a substantial domestic naval shipbuilding industry. The large ship construction programs improved business practices, made the associated companies more productive and dynamic. Local construction has been the enabler for a diverse range of supporting industries, bringing a transfer of technology, providing employment in regional centres and reinforcing the skills required to support naval vessels through life. The additional shipbuilding activity not only used existing resources but also required significant investment in new capital facilities, the training of the workforce in new shipbuilding skills and a modest inflow of skilled labour from overseas.

6. RESPONSE TO THE TERMS OF REFERENCE

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

- The experience of the ANZAC, Collins and Huon programs clearly demonstrates that Australian industry is capable of successfully building some of the most complex naval vessels. Coupled with this, CUFs are being established in three States (WA, SA and Qld) at a scale suitable for the fabrication and fit-out of large ship-section modules. These facilities can be accessed not only by recognised shipbuilders, but also by regional engineering and fabrication companies having their own labour and associated resources. This significantly augments Australia's overall "shipbuilding" capability through access to an extensive, much broader and geographically spread pool of resources with relevant skills.

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

- The available data suggests that the costs of building most categories of naval vessels in Australia can be comparable with, if not better than, those achieved in foreign countries. Data gathered from the ANZAC Ship and the Huon Class Minehunter programs suggest that, after the initial learning curve, production in each program was efficient and globally competitive. Some countries still maintain industry protection in the form of hidden tariffs and subsidies that provide a false perspective on their efficiency. Australian shipbuilders have demonstrated their world competitiveness as the leading manufacturer and exporter of large fast-ferries. Export successes by the sector generally would re-enforce the comparative economic productivity of the Australian shipbuilding industry. Tenix has advised that a recent benchmarking study undertaken by an international company concluded that in the latter half of the ANZAC Ship Project, Tenix's performance was above average. ⁽⁴⁾

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

- There are economies in maintaining and refitting a vessel if it has been built locally. The detailed analysis of the economic impact of the ANZAC Frigate program concluded that as a result of the ships having been built in Australia maintenance costs were some two to three times less than relying on overseas maintenance. Strategic self-reliance is a cornerstone of Defence policy, with the need to provide priority access to skills and equipments/spares that can only be efficiently derived from the industrial base established during build. This is further recognised by Defence in the move towards "whole of life-cycle" contracting, shifting emphasis from the capital acquisition cost of a vessel by acknowledging the significant costs of maintaining and upgrading naval ships through-life.

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

- The two Tasman consultant's reports discussed earlier have attempted to quantify the economic development and broader benefits of major naval ship construction

⁽⁴⁾ Senate Foreign Affairs, Defence and Trade References Committee Hearing, 27 April 2006, Page 7.

programs. Whilst the exact benefits can be argued, there has been a general economic benefit. In addition, these projects helped to build the innovation and export awareness of the many participating smaller companies and equipped them for follow on work including export opportunities.

7. SKILL AVAILABILITY

During the period 2007 to 2015, as well as the planned Air Warfare Destroyer and Amphibious Ship Projects, there is a range of competing major engineering projects being undertaken in Australia. These include offshore oil and gas, power, and metal extraction and refining activities. This means that the shipbuilding industry will be competing for the limited skilled technical resources as well as professional engineers. The latter capability is exacerbated by the decrease in University graduates.

The Bounty (Ships) Act 1989 introduced a requirement for a ratio of one apprentice to eight skilled tradesmen. The Australian Bounty was paid as a percentage of production cost as opposed to contract value, tending to skew reporting of shipbuilding export value. Payments were often perceived to subsidise only production costs but was also applied to training, including apprentices. Since the termination of the Bounty in June 2004, the shipbuilding industry has seen both a decline in demand and the number of apprentices.

Austal reports that the pressure on the labour resource is restricting the company's ability to undertake new projects. Without a significant increase in the availability of relevant skilled labour, additional pressure on wages and loss of skilled workers may significantly erode the competitive advantage that Australia's aluminium shipbuilding industry currently possesses. ⁽⁵⁾

Tenix, on the other hand has reported that there is a solvable shortage of skilled labour that if rectified could significantly improve our industry's cost competitiveness in the international marketplace. The shortage is modest and manageable. Australia generally has good, highly productive workers in the skilled trades, but the demand for them exceeds supply – driven largely by the booming resource sector, particularly in Western Australia. Existing Government policy provides for skilled immigration in certain circumstances. It is worthwhile considering the need for higher priority to candidates with proven skills applicable to industries such as oil drilling, mining, shipbuilding and steel fabrication. In most cases, the basic skills are similar and transferable between these adjacent industries. The potential immigrants are available now, and if allowed to immigrate under controlled conditions they could easily offset the shortage needed for the AWD and LHD programs. It is worth noting that the number of additional workers needed nationwide to support the major shipbuilding programs are measured in hundreds, not thousands. ⁽⁶⁾

ACIL Tasman ⁽⁷⁾ undertook a study of the skills situation in 2005 and concluded that the picture emerging was that relative to the standard economic forecast for the next few years, undertaking the planned naval ship construction program will require local shipbuilders to engage more people, although the pools of relevant skills should be large enough to allow this to be readily achieved.

There are many companies throughout Australia with relevant skill-sets and resources that are keen to be involved in the forthcoming naval programs as second tier contractors. Many of these have access to offshore High Value Engineering networks

⁽⁵⁾ Austal Ships Submission to the Enquiry, March 2006.

⁽⁶⁾ Tenix Submission to the Enquiry, 31 March 2006.

⁽⁷⁾ ACIL Tasman "Skill Shortage and the Amphibious Ships Project", April 2005.

and existing relationships with regional fabricators. Where insufficient skilled resources are available in Australia when required, it may be prudent to outsource some of the skills needs that are less strategic in terms of the ongoing support of the vessels. Given the modularised build strategy for modern naval vessels, “overflow” steel fabrication could be accomplished offshore at no negative (and indeed even positive) project cost/schedule impact, avoiding the need to take the whole build overseas. This is in fact the technique employed by many European naval (and commercial) shipbuilders, who outsource fabrication to former eastern block countries, which have themselves developed the necessary quality standards.

8. TOWARDS AN INDUSTRY POLICY

The evolution of Defence industry policy has been slow and in the case of the shipbuilding and repair area, has never been well defined. One of the difficulties both Government and industry face is the relatively sporadic demand. However, contracts when let provide significant work over extended periods. Discontinuities in demand drive companies to pursue export opportunities to remain viable. All the major Australian shipbuilders look to export orders to remain in business. Defence should plan to mitigate peak demands.

The 1998 Defence Industry Policy Statement was a major step forward in recognising the role industry has to play and identified that close cooperation between Defence and industry is critical to self-reliance. It committed Defence to maintaining a sustainable and competitive defence industry and recognised that partnering arrangements will become commonplace.

Subsequently, the 2000 White Paper indicated that Defence’s immediate policy focus would be on providing better guidance to industry, developing better business practices in Defence, and building better relationships/partnerships between Defence and industry.

In 2001, Government endorsed a new strategic policy approach to its Defence industry base and its relationship with key Defence companies. This involved a move away from Defence’s current project-by-project acquisition approach to one in which individual acquisition decisions are strategically linked so as to provide sufficient long term demand to sustain clearly defined, key defence industry capabilities.

This policy, although never published, was a major initiative to help resolve the problems in relation to the shipbuilding sector where Defence has traditionally taken a project-by-project approach to major projects and little attempt has been made to use demand strategically to shape and sustain industry capabilities. As the Australian Naval Shipbuilding and Repair Sector Strategic Plan notes over the last 15 years, six major naval projects have been undertaken. These contracts were awarded to five different companies based in five separate locations.⁽⁸⁾

Implementation of this strategic approach by Defence was undertaken through the development of a series of Sector Plans. In the event government never endorsed the Naval Shipbuilding and Repair Sector Plan, produced in 2002, and the policy appears to have evolved back to competition on a project-by-project basis.

Whilst the ASA believes in competition to maximise opportunities for Australian industry, ASA recognises that a more coherent long term policy for naval shipbuilding based on a strategic approach to reduce the peaks and troughs in demand is highly

⁽⁸⁾ Commonwealth of Australia, “The Australian Naval Shipbuilding and Repair Sector Strategic Plan”, 2002 Page 5.

desirable. A strategic plan, apart from helping to smooth demand, would enable industry (and Government) to identify future investment needed in both infrastructure and workforce skills (eg apprentice training). It would also ensure most efficient use of facilities and skills. Greater program certainty should also lead to reduced cost and schedule risk.

ASA supports the need to develop a strategic policy which recognises the importance of maintaining the industry. There needs to be a level of certainty of future work to enable industry to plan and train to manage its work force.

9. CONCLUSION

There are many companies throughout Australia with relevant skill-sets and resources able to contribute to the forthcoming naval programs. Where insufficient skilled resources are available in Australia when required, it may be prudent to outsource some of the skills needs that are less strategic in terms of the ongoing support of the vessels. A level of steel fabrication could be accomplished offshore at no negative (and indeed even positive) project cost/schedule impact.

The advent of the CUF concept means that prospective shipbuilders do not necessarily have to build up the infrastructure and capital base from which to undertake large shipbuilding projects, as has been the case in the past. Such infrastructure centres also serve to stabilise the workforce in the respective areas.

Inevitably there will be a level of offshore influence in the industry, where commercially and technologically sensible. Through life support i.e. repair and maintenance, should continue to be undertaken in Australia for strategic and economic reasons to maintain the workforce and ensure the work is undertaken on a timely basis, noting Australia is cost competitive in this area.

The ASA provides the key network forum for the industry, including second tier service providers and suppliers. It is acknowledged that Australia's general skills shortage, coupled with the current resources boom, provides a significant challenge for ASA members in resourcing the forthcoming naval shipbuilding programs. However with access to a broader industrial resource pool of relevant skills, both nationally and internationally, Australia's core capabilities can be adequately augmented whilst retaining the strategic skills. In this way, a successful, competitive Australian build strategy can be achieved for the naval programs as the basis to deliver cost-effective through life support and enable upgrades to be undertaken locally.

10. RECOMMENDATIONS

It is recommended that Australian shipbuilders be afforded the responsibility for project delivery, maximising the strategic engineering and construction activity in Australia by utilising an extended national network of companies and facilities. Any offshore "overflow" necessitated by resource shortages can be effectively managed through this same network.

ANNEX A

KEY SHIPBUILDING COMPANIES

Adelaide Ship Construction International Pty Ltd

Adelaide Ship Construction International has built 33 vessels (both steel and aluminium) over the past 10 years. They are currently negotiating a 35m-purse seiner-fishing vessel. They hold US military aluminium welding standard. There are five slipways: 1 x 1500t, 3 x 900t and 1 x 300t.

Employees: 50

ADI

ADI, formerly Australian Defence Industries, currently is upgrading the combat systems on the RAN's guided missile frigates (FFG), an AUD\$1b complex systems integration project. ADI has built the RAN's six new amphibious watercraft. ADI also built the six Huon class mine hunters for the RAN at facilities in Newcastle. The company operates the RAN's major east coast refit, repair and maintenance facilities at Garden Island on Sydney Harbour.

Facilities

- 345m long graving dock – one of the largest in the southern hemisphere
- 65m, 1000 ton floating dry dock

Employees: 900

ASC

ASC, formerly the Australian Submarine Corporation, was established in 1985 and was subsequently chosen in 1987 as the prime contractor for the design, manufacture and delivery of the Royal Australian Navy's fleet of six Collins class submarines. The Australian Government now owns ASC.

ASC is located in Osborne, South Australia and now has two facilities: Submarine Maintenance and Upgrade and ASC Shipbuilding. The two facilities are located either side of the SA State CUF.

In December 2003, ASC signed a \$3.5 b contract over 25 years for the through life support of the Collins class submarines. The contract awards ASC with the responsibility for the design, maintenance and enhancement of the Collins class until the end of their operational lives.

In 2005, ASC Shipbuilding was awarded the \$6 b contract to build the RAN Air Warfare Destroyers.

Capabilities and Facilities

ASC Submarine Maintenance and Upgrade facility includes a ship lift, support services and workshop areas on or adjacent to the wharf, warehousing, hardstand area, two side by side construction and assembly halls, laboratory facilities and a paint and blast facility.

ASC Shipbuilding is constructing suitable facilities for AWD construction including a maritime skills centre, steel fabrication workshop, outfitting workshops, blast and paint facility and support office.

Employees: 1030

Austal

Austal commenced operations in 1988 at Henderson, Western Australia and has since designed and built over 150 vessels. The Austal facility is situated near the common user facility at the Australian Marine Complex. Austal has grown to become a significant shipbuilder in Australia with specific capabilities in high-speed aluminium vessels.

Austal listed on the Australian Stock Exchange in December 1998 and has diversified its product base through acquisitions of Image Marine and Oceanfast. Austal established a US shipyard in Mobile, Alabama in 2000.

In 1998 Austal secured an order for eight Bay class patrol boats for the Australian Customs Service. The successful completion of this project led to orders for patrol boats from other Australian and international agencies, including the Royal Australian Navy and the Yemen Government.

In 2001, Austal became the first company to supply the US military with a high-speed theatre support vessel (TSV). In 2005 a consortium, including Austal, was awarded a contract to build the first of a new class of littoral combat ship (LCS) for the US Navy. Austal is the platform designer and shipbuilder. The hull design is based on an Austal commercial ferry.

Facilities

Building halls

Bay 1	82.1 m long x 25.0 m wide x 22.5 m high
Bay 2	120.6 m long x 24.7 m wide x 22.5 m high
Bay 3	92.7 m long x 24.2 m wide x 14.9 m high
Bay 4	93.0 m long x 30.0 m wide x 21.8 m high
Bay 5	97.5 m long x 31.5 m wide x 21.8 m high
Bay 6	97.5 m long x 24.2 m wide x 14.9 m high
Bay 1	59.2 m long x 15.3 m wide x 12.9 m high
Bay 2	59.2 m long x 16.6 m wide x 12.9 m high
Bay 3	63.0 m long x 15.5 m wide x 12.9 m high

<i>Slipways</i>	2,000 tonnes
	1,500 tonnes

<i>Commissioning berths</i>	290 m
	220 m

<i>Pre-fabrication space</i>	4,320 m ²
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<i>Fabrication space</i>	3,823m ²
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<i>Cranage</i>	4x 5.0 tonne gantry
	2x 3.0 tonne gantry
	30x 3.2 tonne monorail
	4x 10.0 tonne gantry
	3x 10.0 tonne gantry

Employees: 1,200

Australian Marine Complex - WA

The Western Australian and Australian Governments established the Australian Maritime Complex - Common User Facility (AMC – CUF) located in Henderson in April 2003. A

total of \$180m (\$100m by the State and \$80m from the Commonwealth. Was invested to create the Complex. The CUFis available on an 'as needed' basis and can be leased individually or collectively to support user needs. The facility is expected to service the oil and gas, resources, marine and defence industries.

In 2005, the Western Australia Government announced funding of some \$80m for the expansion of CUF. The project will see the installation of a floating dock and rail transfer system to launch and retrieve large ships, and an extension and upgrade of the existing wharves.

Facilities

Fabrication Hall 1 80mx60mx42m high,
20 tonne auxiliary overhead crane,
200 tonne capacity portal crane,

Fabrication Hall 2 3,700m² fabrication area,
20 tonne crane

Warehouse, workshops and trade shops

100m² warehouse,
200m² workshop,
500m² trade shop,
10 tonne crane

Project offices: capacity for approximately 70 staff, facility manager's office and amenities building/lunch room/kitchen for 500 persons per shift

Marine service wharf: accommodates vessels up to 200m long

Load out wharf: accommodates vessels up to 200m long

Azzura Marine Group Pty Ltd

The group combines Sydney Yachts located at Nowra NSW with Azzura Yachts located at the Gold Coast Marine Precinct. Sydney Yachts produces sailing yachts while Azzura Yachts construct a range of motor yachts up to 45 metres. The Group are planning a repair and refit site in NSW, which will form the headquarters. The site will also have the capacity to build vessels from 25 to 60 metres within the construction hall.

Employees: 150

Forgacs (Newcastle)

Forgacs provides design and engineering support in areas including reverse osmosis fresh water systems and CHT systems as well as providing office accommodation for two ships crews on-site at the FORGACS Naval Refit Complex.

Forgacs also has a team of some 25 personnel able to undertake repair and maintenance in the Sydney area.

Facilities

- 15,000tlc floating dock,
- 1,000t slipway, and lay-up berths serviced by dockyard cranes.
- 1 x 45,000dwt Panamax Floating Dock - 203m long by 33.5m wide
- 2 x 10t dock cranes
- 2 x dock arms

- 1 x 1,000t slipway with 2 x 6 tonne travelling slipway cranes
- 2 x repair berths

Employees : 55 + 25 (Sydney)

Forgacs Shipyard Tomago

Formally the Carrington Slipways, the shipyard at Tomago includes two construction halls, and construction berths.

-

Employees: 70

Forgacs Cairncross (Brisbane)

Cairncross dockyard is located on the Brisbane River close to the city of Brisbane.

Facilities

- 17 hectares on Brisbane river
- 1 x Panamax 85,000dwt graving dock - 263m x 33.5m
- 2 x dock arms
- 1 x 50t dockside travelling crane
- 2 x 30t wharf travelling cranes
- 1 x 300m fitting out wharf

Employees: 140

Harwood Slipway & Engineering Co

Constructed in 1969, the Harwood Slipway is the largest shipyard between Newcastle and Brisbane. The site covers 16 acres and includes blast and paint facility and 10 tonne overhead crane, a 50m deep water wharf, a 2000 tonne and 200 tonne slipways. The company has built and repaired many vessels ranging from commercial fishing vessels to naval landing craft and patrol boats.

Employees: 27

Hanseatic Marine

Hanseatic Marine, founded in 2002, is located at the AMC–. CUF, WA. The company undertakes both design and construction of vessels and is currently building two 70 m passenger vessels. This is a good example of the value of the common user facility concept.

Employees: 100

Incat

Based in Tasmania, Incat specialises in the construction of large capacity passenger, car and freight high speed Wave Piercing Catamarans. It has been the world leader in the production of High Speed Vessels for commercial applications since pioneering the fast ferry design in the mid 80's. Since then the company has exported more than 35 vessels of over 70 metres in length, representing a large market share for this innovative technology.

The ferries initially revolutionised transport links around the United Kingdom. Now Incat built ships operate in North and South America, Australasia, the Mediterranean, and

throughout Europe. Lightweight aluminium construction, streamlined hull shapes and constant attention to research and development have seen Incat produce a range of Wave Piercing Catamarans. The designs have evolved in size in response to market demands increasing from 74 metres to 98 metres, with an 112m currently under construction. These have all proved capable of operating in extreme weather conditions and harsh environments.

The lease of HMAS *Jervis Bay* to the RAN for operations in East Timor between 1999 and 2001 resulted in consideration by the US of high-speed ferries for military operations. The US military subsequently leased one vessel in 2000 and two more (one US Navy and one US Army), which are deployed as theatre support ships. One saw service in Gulf War II.

Facilities

Incat Tasmania's shipyard is on Prince of Wales Bay at Derwent Park near Hobart, Tasmania.

- More than 50,000 m² of undercover production halls,
- Two dry-dock areas able to accommodate up to six vessels under construction.

Employees: 450

Northwest Bay Ships Pty Ltd

NWBS has since 1998 designed and built a diversified range of aluminium vessels from a 17-hectare waterfront site in Southern Tasmania.

In addition to metal fabricating and welding in both aluminium and steel the company has in house skills in the design, electrical, engineering, fit out and painting phases of its new vessels.

Vessels include ferries, motor yachts and military landing craft.

NWBS introduced trimaran hull form vessels into the commercial fast passenger ferry and motor yacht markets.

Facilities

- Main shipbuilding hall 3500-m² clear spans with reticulated underfloor services, accommodates two multihull vessels to 70 metres, with room for expansion.
- 5 tonne overhead gantries, with 20 metres under hook space.
- Separate fit out and painting facility.
- 500 tonne slipway.
- Deep-water wharf with heavy vehicle access.

Employees: 116

Osborne Common User Facility

The South Australian Government will invest \$120m for common user infrastructure development at Osborne, adjacent to ASC. This will include a 10,000-ton ship lift, wharf and transfer system. The State Government Plan is to establish the State as the future hub for naval warship construction.

Facilities

The South Australian Government has committed to expanding the current facility by:

- Building a new 200 metre long, 25 metre wide wharf capable of supporting mobile cranes of up to 100 tonnes capacity
- Building a new 160 metre long ship lift
- Building a new “transfer system” made up of about 70 bogeys (baby train carriages)
- Dredging to a depth of 10 metres next to the site
- Creating a sub-precinct of up to 30 hectares to allow contractors to set up their offices, workshops and supply depots adjacent to the shipyard.

Queensland Planned Common User Facility

The Queensland Government is investigating jointly planning the development of a Common User Facility (CUF) on the Brisbane River, with leaseholder Viking Industries. This facility will provide the necessary infrastructure for the complete assembly of large ship modules, within 6km of the Cairncross dry dock. It is also suitable for fabrication of modules for the AWD that would then be transported to South Australia. The planned infrastructure developments for the CUF are:

- Heavy lift barge access to Brisbane River for up to 1000 tonne modules
- Hard stand lay down area for up to 1000 tonne modular assemblies
- Undercover facilities with suitable overhead crane capacity
- Electrical services, water reticulation, communication services and drainage collection
- Suitable project management facilities.

Richardson Devine Marine

Richardson Devine Marine Constructions is a privately owned company, which has continually operated from the Hobart waterfront since 1989. RDM are specialists in the construction of high performance aluminium catamaran ferries up to 40 metres in length.

Besides construction of new vessels RDM have performed specialist fit out functions including glass installation, general refit and machinery installation.

Richardson Devine Marine is soon relocating to a specifically built facility. Some features of the new facility will be:

- Approximately 17,00m² undercover clear span building hall capable of building 2 x 40 metre vessels simultaneously.
- Specialist area for painting, fabrication & fitout
- Slipway with 200 tonne capacity
- Limited berthing facility

Employees: 10

Strategic Marine

Strategic Marine evolved from Geraldton Boat Builders, a successful builder that built some 160 vessels since its incorporation in 1984. Since its inception in 2000, Strategic Marine has constructed a wide range of vessels including patrol boats, crew boats, workboats, fishing vessels and kit boats.

Strategic Marine has achieved many export orders with some 40% of its production being delivered internationally. Recognising its international competitiveness, the company has established shipyards offshore in Singapore and Vietnam.

Employees: 50

Taylor Bros (Slipway & Engineering) Pty Ltd

Established in 1936, Taylor Bros specialises in ship repair and has facilities in Hobart and Devonport, Tasmania. Their activities relate mainly to passenger ferries, Antarctic vessels and general commercial shipping.

Employees: 50

Tenix Defence Pty Ltd

The Tenix group employs over 3,000 people in the major groupings of: Tenix Alliance; Tenix Aviation; Tenix Datagate; Tenix Defence; Tenix Solutions; Tenix Projects; with offices in the USA, UK, NZ and Dubai.

Tenix was awarded the contract to construct two FFG7, Oliver Hazard Perry class, frigates for the Royal Australian Navy. It was later awarded the ANZAC ship project contract, for 10 ANZAC class frigates, eight for the Royal Australian Navy and two for the Royal New Zealand Navy. More recently Tenix has been awarded a \$450m contract to supply to seven vessels for the New Zealand Navy under Project Protector. Tenix is also modifying the former tanker Delos to be capable of replenishment at sea and is to be commissioned in mid 2006 as HMAS Sirius.

Design - Tenix Defence Marine has designed, built and delivered more than 200 naval, paramilitary and specialist vessels. The core activities of design, system integration and construction are supported by capabilities including:

- Design, construct, outfit, set-to-work, trial and support major surface combatants
- Systems engineering and integration programs on combat and communication systems for Naval platforms
- Ship repair and dry docking services for defence and commercial ship operators
- Integrated logistics and through life support services
- Marine engineering training and research
- Industry program management

Tenix Defence Marine Division (Victoria)

Tenix operates a naval shipyard at Williamstown, Victoria. Facilities at this location include:

- Two 6000 tonne building berths
- One graving dry dock suitable for vessels up to 145 metres
- Fully serviced outfitting piers
- Mobile crange, including 250 tonne capacity
- Transporters with the capacity to carry up to 400 tonnes
- Fully equipped manufacturing workshops
- Specialist halls for the construction, assembly, blast and paint, and outfit of ship hull modules
- System integration facilities for integrating, installing and supporting combat and communications systems, weapons systems, machinery control and surveillance systems.

Employees: 650

Tenix Defence Marine Division (Western Australia)

Tenix operates a maritime support facility, located at Henderson, south of Perth. The yard is equipped with design offices, fabrication halls and workshop facilities that include:

- Australia's largest ship lift, capable of lifting 8000 tonne vessels up to 150 metres in length and 25 metres in width
- A rotary turntable (Australia's largest) providing access to a second 90 metre dry berth suitable for a Collins Class submarine
- A 170 metre dry berth
- Crawler and wheel cranes, capacity 40, 80 and 210 tonnes
- 5000 m² of workshops including a 75m x 32m x 28m construction and maintenance hall
- Pipe fitting and marine fitting workshops that include laser cutting, metal bending and prefabrication facilities

Employees: 335

Viking Industries – Cairns Slipways

Cairns Slipways (formerly part of NQEA) offers a full complement of marine refit and repair services. Cairns Slipways was originally established to refit predominantly defence and commercial vessels, Cairns Slipways diversified during the 1980's to cater to the luxury yacht market. NQEA constructed Fremantle class patrol boats, tugs, workboats and oceanographic ships for the RAN. It also constructed numerous aluminium fast ferries, yachts and Great Barrier Reef pontoons. It has built bulkers and dredgers in steel.

Facilities

- 6-20 tonne mobile cranes
- 360m wharf
- Graving Dock 60.9m x 11.8m x 3m
- The graving dock can accommodate vessels of up to 55 metres both with and without under cover protection depending on a vessel's requirements and is supported by dockside workshops.
- The sideslip can accommodate vessels of up to 200 tonnes and 40 metres in length.
- Under cover facility: 78m x 23m x 23m

Employees: 100

Viking Industries – Brisbane Marine Industry Park

Located on the Brisbane River at Hemmant on some 40 Hectares, the Brisbane Marine Industry Park is an integrated marine industry development. The site includes fabrication facilities and warehousing.

Employees : 200

ANNEX B

Vessels Built over the past 10 years

Builder	Owner	Vessel type	Price (\$USm)	Delivery
ADI Limited	Royal Australian Navy	Naval - minehunter	122	1998
ADI Limited	Royal Australian Navy	Naval - minehunter	122	2000
ADI Limited	Royal Australian Navy	Naval - minehunter	122	2000
ADI Limited	Royal Australian Navy	Naval - minehunter	122	2001
ADI Limited	Royal Australian Navy	Naval - minehunter	122	2001
ADI Limited	Royal Australian Navy	Naval - minehunter	122	2002
Aluminium & Steel Boats	Wilbar Shipping	Ferry - Ro-Ro	4.5	2002
Austal - Image	L'Express des Iles	Ferry - passenger	13	2005
Austal - Image	L'Express des Iles	Ferry - passenger / vehicle	13	2005
Austal - Image	New World First Ferry Services	Ferry - passenger - catamaran	9	2004
Austal - Image	New World First Travel Services	Cruise - harbour - catamaran	-	2003
Austal - Image	New World First Travel Services	Cruise - harbour - catamaran	-	2003
Austal - Image	North Star Cruises	Cruise - dive / charter	7	2005
Austal - Image	Ofotens og Vesteraalens Dampskibsselskad (OVDS)	Ferry - passenger / cargo - catamaran	6.5	2003
Austal - Image	Ofotens og Vesteraalens Dampskibsselskad (OVDS)	Ferry - passenger / cargo - catamaran	6.5	2003
Austal Ships	Aremiti Cruise	Ferry - passenger / vehicle - catamaran	-	2004
Austal Ships	Austal Ships (BornholmsTrafikken charter)	Ferry - passenger / vehicle catamaran - Auto Express 86	46	2000
Austal Ships	Australia Defence Maritime Services	Patrol - naval	14	2005
Austal Ships	Bora Bora Cruises	Cruise	14	2003
Austal Ships	Bora Bora Cruises	Cruise	14	2003
Austal Ships	Bounty Cruises	Ferry - catamaran	8	1999
Austal Ships	Canadian American Transportation Systems (CATS)	Ferry - passenger / vehicle - catamaran	-	2004
Austal Ships	Ceres Hydrofoil Joint Service	Fast catamaran car ferry	7	1998
Austal Ships	Compagnie Chambon / Les Express des Iles	Fast catamaran car ferry	7	1998
Austal Ships	Compagnie Chambon / Les Express des Iles	Fast catamaran ferry	5.5	1998
Austal Ships	Compagnie Chambon / Rivages Croisieres	Cruise - catamaran	14	1999
Austal Ships	Conferry	Ferry - passenger / vehicle catamaran	42	1999
Austal Ships	Conferry	Ferry - passenger / vehicle - catamaran	40	2002
Austal Ships	Diamond Ferry	Ferry cat	6	1995
Austal Ships	Donguan Humen Lung Wei Passenger Co.	Fast catamaran ferry	4.5	1997
Austal Ships	DSB Rederi	Passenger/car/coach catamaran ferry	30	1996
Austal Ships	El Salam Maritime	Ferry - passenger / vehicle - catamaran - Auto Express	15	2002
Austal Ships	Euroferrys	Ferry - passenger / vehicle - Auto Express 101	40	2001
Austal Ships	First Ferry Macau / New World First Ferry Services	Ferry - passenger - catamaran	7	2002
Austal Ships	First Ferry Macau / New World First Ferry Services	Ferry - passenger - catamaran	7	2002
Austal Ships	First Ferry Macau / New World First Ferry Services	Ferry - passenger - catamaran	7	2002
Austal Ships	First Ferry Macau / New World First Ferry Services	Ferry - passenger - catamaran	7	2004
Austal Ships	First Ferry Macau / New World First Ferry Services	Ferry - passenger - catamaran	7	2004
Austal Ships	Fred Olsen	Ferry - passenger / vehicle - catamaran	-	2003
Austal Ships	Fred Olsen	Ferry - passenger / vehicle - trimaran	66.5	2004
Austal Ships	Hardanger Sunnhordlandske Dampskipsselskap (HSD)	Ferry - catamaran	6.6	1999
Austal Ships	Hardanger Sunnhordlandske Dampskipsselskap (HSD)	Ferry - catamaran	6.6	1999
Austal Ships	Hellas Flying Dolphins	Ferry - passenger / vehicle - catamaran	35	2005
Austal Ships	Hong Kong CKS	Catamaran ferry	5	1996

ANNEX B

Vessels Built over the past 10 years

Builder	Owner	Vessel type	Price (\$USm)	Delivery
Austal Ships	Irish Continental Group	Vehicle passenger catamaran	40	1999
Austal Ships	Istanbul Deniz Otobusleri	Fast catamaran car ferry	22.5	1997
Austal Ships	Istanbul Deniz Otobusleri	Fast catamaran car ferry	22.5	1997
Austal Ships	Istanbul Deniz Otobusleri	Fast catamaran ferry	5.5	1996
Austal Ships	Istanbul Deniz Otobusleri	Fast catamaran ferry	5.5	1996
Austal Ships	Istanbul Deniz Otobusleri (IDO)	Fast vehicle-passenger catamaran	42	1998
Austal Ships	Istanbul Deniz Otobusleri (IDO)	Fast vehicle-passenger cataraman	60	1998
Austal Ships	Kangaroo Island SeaLink	Ferry - passenger / vehicle - catamaran	14	2003
Austal Ships	Minoan Flying Dolphin	Ferry - passenger / vehicle - Auto Express 72	24	2000
Austal Ships	Minoan Flying Dolphin	Ferry - passenger / vehicle - Auto Express 72	24	2000
Austal Ships	Minoan Flying Dolphin	Ferry - passenger / vehicle - Auto Express 92	45	2000
Austal Ships	Nan Hai Ping Gang Passenger Transport	Fast catamaran ferry	4.5	1997
Austal Ships	Polferries	Fast catamaran car ferry	38	1997
Austal Ships	Reederei Norden-Frisia	Ferry - catamaran	20	1999
Austal Ships	Royal Australian Navy	Patrol - naval - Armidale Class	14	2005
Austal Ships	Royal Australian Navy	Patrol - naval - Armidale Class	14	2005
Austal Ships	Star Cruises	Fast catamaran car ferry	38	1997
Austal Ships	Swe ferry	Passenger/car/coach catamaran ferry	38	1996
Austal Ships	TT Line	Passenger/car/coach catamaran ferry	38	1996
Austal Ships	Unknown	Ferry - passenger / vehicle - Auto Express 101	44	2001
Austal Ships	Virtu Ferries	Ferry - passenger / vehicle - catamaran	30	2006
Austal Ships	Zhaoqing Hong Kong Transport Co	Fast catamaran ferry	5	1997
Australian Motor Yachts	Seastar Yachts	Yacht - motor	10	2002
Australian Submarine Corp (ASC)	Royal Australian Navy	Collins class submarine	500	1998
Australian Submarine Corp (ASC)	Royal Australian Navy	Collins class submarine	500	1999
Australian Submarine Corp (ASC)	Royal Australian Navy	Collins class submarine	500	1996
Australian Submarine Corp (ASC)	Royal Australian Navy	Collins class submarine	500	1997
Australian Submarine Corp (ASC)	Royal Australian Navy	Naval - submarine - Collins	500	2000
Australian Submarine Corp (ASC)	Royal Australian Navy	Naval - submarine - Collins	500	2000
Brisbane Shipworks	Unknown	Yacht - motor	15	2003
Brisbane Shipworks	Unknown	Yacht - motor	-	2003
Brisbane Shipworks	Unknown	Yacht - motor	-	2004
Incat Tasmania	Bay Ferries	Ferry - Ro-Pax - catamaran	35	2002
Incat Tasmania	Buquebus	Ferry - Ro-Pax catamaran	33	1995
Incat Tasmania	Buquebus	Ferry - Ro-Pax catamaran	43.5	1998
Incat Tasmania	Buquebus	Ferry - Ro-Pax catamaran	45	1999
Incat Tasmania	Cat-Link Shipping	Ferry - Ro-Pax catamaran	43.5	1998
Incat Tasmania	Condor Pte Ltd (Holyman)	Ferry - Ro-Pax catamaran	40	1996
Incat Tasmania	Dae-A Gosok Ferry	Ferry - Ro-Pax catamaran	20	1995
Incat Tasmania	Del Bene SA	Ferry - Ro-Pax catamaran	35	1996
Incat Tasmania	Del Bene SA	Ferry - Ro-Pax catamaran	35	1996
Incat Tasmania	Fred Olsen	Ferry - Ro-Pax catamaran	45	1999
Incat Tasmania	Fred Olsen	Ferry - Ro-Pax catamaran	45	1999
Incat Tasmania	Fred Olsen	Ferry - Ro-Pax catamaran	45	2000

ANNEX B

Vessels Built over the past 10 years

Builder	Owner	Vessel type	Price (\$USm)	Delivery
Incat Tasmania	Holyman Ferries	Ferry - Ro-Pax catamaran	33.5	1996
Incat Tasmania	Incat Australia	Ferry - Ro-Pax catamaran	41	1997
Incat Tasmania	Incat Australia	Ferry - Ro-Pax catamaran	43.5	1997
Incat Tasmania	Incat Australia	Ferry - Ro-Pax catamaran	-	1998
Incat Tasmania	Incat Offshore	Ferry - Ro-Pax catamaran	45	2000
Incat Tasmania	Mediterranean Shipping Co (MSC) / Del Bene	Ferry - Ro-Pax catamaran	41	1997
Incat Tasmania	Scandlines Cat-Link	Ferry - Ro-Pax catamaran	43.5	1998
Incat Tasmania	SNAV	Ferry - Ro-Pax catamaran	41	1997
Incat Tasmania	Transmediterranea	Ferry - Ro-Pax catamaran	35	2003
Incat Tasmania	Transmediterranea (charter)	Ferry - Ro-Pax catamaran	45	2000
Incat Tasmania	US Navy	Ferry - Ro-Pax catamaran	35	2002
Incat Tasmania	US Navy	Naval - support vessel	40	2003
Norman R. Wright & Sons	Wierig Chemicals	Cargo / passenger landing craft	3	1997
North West Bay Ships	Unknown	Ferry - trimaran	18	2001
North West Bay Ships	Unknown	Yacht - motor - trimaran	8	2005
NQEA Australia	Brisbane Port Authority	Dredger	25	2000
NQEA Australia	Carpentaria Shipping Services	Self-discharging bulk	15	1995
NQEA Australia	Coral Princess Cruises	Cruise	-	2005
NQEA Australia	Hawkins Ferries	Ferry - Ro-ro	-	2004
NQEA Australia	Royal Australian Navy	Hydrographic - naval	74	1999
NQEA Australia	Royal Australian Navy	Hydrographic - naval	74	2000
NQEA Australia	Thomas and Andreasson	Vehicular cable ferry	1	1995
Oceanfast	Brudey Frères	Fast catamaran ferry	5.5	1997
Oceanfast	Carnival Cruises / Captain Cook Cruises	Cruise vessel	9	1998
Oceanfast	Greg Norman	Yacht - motor	25	2003
Oceanfast	Shiftline	Fast luxury motor yacht	20	1997
Oceanfast	Undisclosed	Luxury motor yacht	18	1997
Oceanfast	Undisclosed	Motor yacht	25	1998
Oceanfast	Unknown	Yacht - motor	20	2003
Oceanfast	Unknown	Yacht - motor	25	2004
Oceanfast	Unknown	Yacht - motor	26	2003
Oceanfast	Unknown	Yacht - motor	40	2003
Oceanfast	Valere Le Prado	Ro-Ro ferry	25	1997
Port Lincoln Marine Services	Sarin Fisheries	Fishing - purse seiner	4	2002
SBF Shipbuilders	Geomar Entreprises	Ferry - passenger	3.2	2003
SBF Shipbuilders	Geomar Entreprises	Ferry - passenger	3.2	2003
SBF Shipbuilders	Unknown Greek	Ferry - passenger / vehicle	3.7	2003
SBF Shipbuilders	Unknown Greek	Ferry - passenger / vehicle	3.7	2003
SBF Shipbuilders	Unknown Greek	Ferry - passenger / vehicle	3.7	2003
SBF Shipbuilders	Unknown Greek	Ferry - passenger / vehicle	3.7	2003
South Australian Ships	Yue Qing High Speed Passenger Ship Company	Fast catamaran ferry	7.5	1997
South Pacific Marine	Bahamas Searoad	Ferry - Ro-pax	5	2003
South Pacific Marine	Islands Transport	Ferry - Ro-pax	-	2003
South Pacific Marine	Munson Shipping	Ferry - RoRo	-	2004

ANNEX B

Vessels Built over the past 10 years

Builder	Owner	Vessel type	Price (\$USm)	Delivery
Southern Hemisphere Shipyard	Subritzky Line	Ferry	-	2003
Southern Marine Shiplift	Peninsula Sea Road Transport	Ferry - passenger / vehicle - catamaran	12	2001
Strategic Marine	Borcos	OSV - crewboat	-	2005
Strategic Marine	Borcos	OSV - crewboat	-	2005
Strategic Marine	Lewek Shipping	OSV - crewboat	4	2003
Taylor Bros	CSIRO National Facility	Research	-	2003
Tenix Defence	Royal Australian Navy	Naval - frigate - Anzac	375	1996
Tenix Defence	Royal Australian Navy	Naval - frigate - Anzac	375	1998
Tenix Defence	Royal Australian Navy	Naval - frigate - Anzac	375	2001
Tenix Defence	Royal Australian Navy	Naval - frigate - Anzac	375	2002
Tenix Defence	Royal Australian Navy	Warship - frigate - Anzac	375	2003
Tenix Defence	Royal Australian Navy	Naval - frigate - Anzac	375	2004
Tenix Defence	Royal Australian Navy	Naval - frigate - Anzac	375	2005
Tenix Defence	Royal New Zealand Navy	Fast frigate (Anzac class)	375	1997
Tenix Defence	Royal New Zealand Navy	Fast frigate (Anzac class)	375	1999
Tenix Defence	Fiji	Pacific Patrol Boat	4	1995
Tenix Defence	Fiji	Pacific Patrol Boat	4	1995
Tenix Defence	Palau	Pacific Patrol Boat	4	1995
Tenix Defence	FSM	Pacific Patrol Boat	4	1996
Tenix Defence	Brunei MOD	Landing craft	6	1997
Tenix Defence	Brunei MOD	Landing craft	6	1997
Tenix Defence	Norwest Seafoods	2 x Prawn Trawlers	-	1997
Tenix Defence	Norwest Seafoods	2 x Prawn Trawlers	-	1998
Tenix Defence	Latitude Fisheries	Long line fishing	-	1999
Tenix Defence	Latitude Fisheries	Long line fishing	-	2002
Tenix Defence	Radar Holdings	Long line fishing	-	2002
Tenix Defence	Defence Maritime Services	Navigation training vessel	3	1998
Tenix Defence	Australian Institute of Marine Science	Research vessel	-	2000
Tenix Defence	Department of Fisheries WA	Research vessel	-	2001
Tenix Defence	Betoota	Research vessel	-	2004
Tenix Defence	Kangaroo Island Sealink	Ro-Ro ferry	7.5	1998
Tenix Defence	Philippine Coast Guard	Search and rescue (56m)	19	2001
Tenix Defence	Philippine Coast Guard	Search and rescue (56m)	19	2001
Tenix Defence	Philippines Coast Guard	Search and rescue (56m)	19	2003
Tenix Defence	Philippines Coast Guard	Search and rescue (56m)	19	2004
Tenix Defence	Philippines Coast Guard	Search and rescue (35m)	8	2004
Tenix Defence	Philippines Coast Guard	Search and rescue (35m)	8	2004
Tenix Defence	Philippines Coast Guard	Search and rescue (35m)	8	2004
Tenix Defence	Philippines Coast Guard	Search and rescue (35m)	8	2004
Unknown Australian	PNG Navy	Landing craft	3.5	1998
Warren Yachts	NFP	Yacht - motor	30	2001
WaveMaster International	A.T. Cruises	Catamaran ferry	20	1995
WaveMaster International	Compagnie Maritime des Iles	Fast catamaran ferry	7.8	1998
WaveMaster International	Fuller Group	Catamaran ferry	2.5	1996

ANNEX B

Vessels Built over the past 10 years

Builder	Owner	Vessel type	Price (\$USm)	Delivery
WaveMaster International	Reederie Warrings	Ferry - monohull	7.8	2000
WaveMaster International	Undisclosed African	Fast catamaran ferry	7.8	1998
WaveMaster International	Unknown	Ferry - catamaran	7	2001
WaveMaster International	Valfajr 8	Catamaran ferry	7.5	1996
WaveMaster International	Valfajr 8	Catamaran ferry	7.5	1996

ANNEX C

Vessels on order or under construction

Builder	Owner	Vessel type	Price (\$USm)	Delivery	
ASC	Royal Australian Navy	Air Warfare Destroyer	1,500+	2012 ?	
ASC	Royal Australian Navy	Air Warfare Destroyer	1,500+	2014 ?	
ASC	Royal Australian Navy	Air Warfare Destroyer	1,500+	2016 ?	
Austal - Image	Unknown	Yacht - motor	-	2007	
Austal - Image	Unknown	Yacht - motor	-	2006	less than 40m
Austal - Image	Bermuda Police	Patrol	2	2006	less than 40m
Austal - Image	Government of Oman	Ferry - Ro-Pax	35	2007	
Austal - Image	Government of Oman	Ferry - Ro-Pax	35	2008	
Austal Ships	Istanbul Deniz Otobusleri	Ferry - Ro-Pax	55	2007	
Austal Ships	Istanbul Deniz Otobusleri	Ferry - Ro-Pax	55	2007	
Austal Ships	Royal Australian Navy	Patrol - Armidale Class	14	2006	
Austal Ships	Royal Australian Navy	Patrol - Armidale Class	14	2006	
Austal Ships	Royal Australian Navy	Patrol - Armidale Class	14	2006	
Austal Ships	Royal Australian Navy	Patrol - Armidale Class	14	2006	
Austal Ships	Royal Australian Navy	Patrol - Armidale Class	14	2006	
Austal Ships	Royal Australian Navy	Patrol - Armidale Class	14	2006	
Austal Ships	Royal Australian Navy	Patrol - Armidale Class	14	2007	
Hanseatic Marine	Unknown	70m Passenger Vessel	-	2007	
Hanseatic Marine	Unknown	70m Passenger Vessel	-	2008	
Incat Tasmania	Unknown	Ferry - Ro-Pax	-	2006	
Incat Tasmania	Unknown Japanese	Ferry - Ro-Pax	-	2007	
North West Bay Ships	Unknown Japan	Ferry - passenger trimaran	10	2007	
Richardson Devine Marine	Unknown	Ferry	-	2007	
Strategic Marine	Unknown	2 x Pleasure Craft	-	2007	
Strategic Marine	Unknown	25 x Work/Security Boats	-	2008	
Tenix Defence	Royal New Zealand Navy	Naval - offshore patrol	45	2007	
Tenix Defence	Royal New Zealand Navy	Naval - offshore patrol	45	2007	
Tenix Defence	Royal New Zealand Navy	Naval - inshore patrol	20	2007	
Tenix Defence	Royal New Zealand Navy	Naval - inshore patrol	20	2007	
Tenix Defence	Royal New Zealand Navy	Naval - inshore patrol	20	2007	
Tenix Defence	Royal New Zealand Navy	Naval - inshore patrol	20	2008	
Tenix Defence	Royal Australian Navy	Naval - frigate - Anzac	375	2006	
Viking Industries	Unknown	55m Luxury Yacht	-	2007	