Submission to DEFENCE WHITE PAPER 2015

EXECUTIVE SUMMARY

AsiaWorld Shipping Services Pty Ltd (Asiaworld), as a long standing member of the marine industry in Australia and a representative of the Damen Shipyards Group (Damen) in the region, considers the widespread view that Australia should build major warships in Australia is misplaced. The international shipbuilding market is a highly competitive environment where established multi-national organisations have significant experience building highly technical warships and submarines. Damen is a prime example with a demonstrated track record of providing value for money, timely delivery and reliable performance in the Naval shipbuilding market; capitalising on their experience and success in the commercial marine shipbuilding market. By contrast, in the last two decades a succession of complex Australian shipbuilding projects have been significantly delayed, negatively impacting the Navy’s ability to contribute to Government objectives, while simultaneously resulting in massive cost increases.

AsiaWorld considers a prudent approach in Australia is to build new warships overseas to maximise cost and efficiency benefits for the Australian tax payer; and then concentrate on providing innovative through-life support using a limited number of strategically located shipyards. These yards will be responsible for the delivery of a comprehensive system’s engineering approach for all in-service support, all “life-of-type extensions” and warship upgrades. This will ensure the retention of key intellectual property within Australian Government control; provide a defence industry environment aimed at sustained employment; ensure the Royal Australian Navy (RAN) can meet its operational objectives and position Australian industry with the chance to be a world leader using the latest technology to improve warship of availability.

INTRODUCTION

This submission is in response to the Defence Issues Paper 2014 and aims to contribute to the debate concerning the future of Australian Naval shipbuilding as well as assist the authors of the Defence White Paper 2015 with establishing the vision for the future of the RAN. It seeks to demonstrate that the best operational solution for the provision of major warships to the RAN is to build offshore capitalising on the global competitive market while simultaneously benefiting from the economies of scale, technical experience and cheaper labour rates offered by multi-national shipbuilders.

1 Asiaworld was established in 1983 and provides shipbroking, agency and range of maritime services in the Asia-Pacific region. Since 2000, Asiaworld has been the agent for Damen and assisted with sale of over 70 Damen vessels in the region. This includes 12 vessels that provide support to the Royal Australian Navy via the Fleet Marine Services Contract.
FORCE STRUCTURE AND PREPAREDNESS

The force structure of the Australian Defence Force (ADF) needs to be capable of implementing the effect the Government requires. For the RAN, this effect encompasses a wide range of tasks as shown in Figure 1 and requires much flexibility from the limited fleet available. The ships need to be multi-role, technologically advanced and operate globally.

Figure 1: Span of Maritime Tasks

These global tasks need to be supported by a comprehensive and effective Preparedness framework—the ADF Mission cannot be achieved by Force Structure alone. The term “preparedness” can be applied broadly; however, in a Naval sense a “prepared” Navy cannot exist without ships “available” to perform assigned tasks. This availability for each platform is driven by Ship’s Company readiness, planned maintenance activities and the long term reliability of each ship. The achievement of this preparedness is of nationally strategic importance and currently contributes to the long term viability of a number of major maritime companies listed in Table 1 below. The maintenance is performed in a variety of dockyards around the country and this framework provides a competitive environment from which a local and sustainable marine maintenance industry can support RAN ships throughout their operational lives. A well run shipyard can then also horizontally integrate into the commercial marine market capitalising on both economies of scale and scope. This business model has successfully been implemented in a variety of international shipbuilders including the Damen Shipyards Group, Daewoo Shipbuilding & Marine Engineering (DSME) and Fincantieri.

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2 Semaphore: Newsletter of the Sea Power Centre - Australia, Issue 13, November 2004
Table 1: Current Fleet Maintenance Contractors

<table>
<thead>
<tr>
<th>Ship(s)</th>
<th>In-Service Support Contractor</th>
</tr>
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<tbody>
<tr>
<td>ANZAC</td>
<td>Naval Ship Management Australia (JV Babcock/UGL)</td>
</tr>
<tr>
<td>FFG</td>
<td>Thales Australia</td>
</tr>
<tr>
<td>Minehunters</td>
<td>Thales Australia</td>
</tr>
<tr>
<td>Collins Class</td>
<td>ASC</td>
</tr>
<tr>
<td>HMAS Choules</td>
<td>A&amp;P Group</td>
</tr>
<tr>
<td>HMA Ships Canberra and Adelaide</td>
<td>BAE Systems</td>
</tr>
<tr>
<td>Armidale Class Patrol Boats</td>
<td>DMS Maritime (100% owned by Serco Australia)</td>
</tr>
<tr>
<td>Hydrographic Survey</td>
<td>BAE Systems</td>
</tr>
</tbody>
</table>

RECENT HISTORY OF NAVAL SHIPBUILDING IN AUSTRALIA

Notwithstanding the build and commissioning of the Collins Class submarines, only 10 Major Fleet Units (2 x FFG and 10 x Anzac Frigates) have been built in Australia in the last 25 years. The last of the Australian Anzac Class frigates was commissioned in 2005. Other complex vessels built in Australia include 6 Huon Class Mine Hunter Coastal, 2 Leeuwin Class Survey Ships and 14 Armidale Class Patrol Boats. These shipbuilding projects are summarised in Table 2 below.

Table 2: Recent Australian Naval Shipbuilding Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Prime Contractor</th>
<th>Location of Shipyard</th>
<th>Scope</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anzac Class Frigates</td>
<td>Tenix (now BAE Systems)</td>
<td>Williamstown, VIC</td>
<td>8 (+2 NZ) frigates. Based on German MEKO 200 PN design</td>
<td>All vessels delivered to specification, within modified budget and largely on schedule. Ships now in service.</td>
</tr>
<tr>
<td>Collins Class Submarines</td>
<td>ASC Limited</td>
<td>Adelaide, SA</td>
<td>6 submarines based on Swedish Kockums design</td>
<td>Project delayed by 62 months. Vessels required around $1b of remedial work. Fleet has been plagued by mechanical problems and poor availability.</td>
</tr>
<tr>
<td>Huon Class Minehunters</td>
<td>ADI (now Thales Australia)</td>
<td>Newcastle, NSW</td>
<td>6 minehunters based on Italy’s Lerici design</td>
<td>Delivered within budget with a 40 month delay. Ships now in service.</td>
</tr>
<tr>
<td>Air Warfare Destroyer</td>
<td>AWD Alliance (ASC, Raytheon &amp; Defence)</td>
<td>Adelaide, SA, Williamstown, VIC Newcastle, NSW</td>
<td>3 Aegis-equipped AWD based on the Spanish F-100 design</td>
<td>Delayed</td>
</tr>
<tr>
<td>Amphibious Assault Ships</td>
<td>BAE Systems</td>
<td>Spain, Williamstown, VIC</td>
<td>2 vessels built by Navantia in Spain with fit-out in Australia</td>
<td>Delayed</td>
</tr>
<tr>
<td>Armidale Class Patrol Boats</td>
<td>DMS Maritime Pty Ltd (now Serco Australia)</td>
<td>Henderson, WA</td>
<td>14 aluminium vessels built by Austal in Henderson Dockyard, WA.</td>
<td>Build on time and budget. Fleet struggling with reliability, design and structural issues.</td>
</tr>
</tbody>
</table>

3 Australian Strategic Policy Institute (ASPI) paper: Should Australia Build Warships? – An Economic and Strategic Analysis
There is no longitudinal research data available for Australian warship programs with this or another standardised breakdown, but general commentary (not hard data) reflects a rough breakdown of build costs as shown in Figure 2.

Figure 2: Breakdown of Shipbuilding Costs

Recent history suggests that Australian shipbuilding is not price or quality competitive when compared to overseas shipyards. Costs in Australia have historically been high—forced up by the price of importing steel, high labour prices supported by a strong union movement, and a lack of experienced project managers and shipbuilding engineers. This is a result of the boom and bust cycle of the naval shipbuilding industry in Australia and the situation is not likely to improve due to the limited size of the RAN.

Consideration must also be given to the number of man hours per tonne used in standard naval shipbuilding. On 6 June 2014 the Minister of Defence, the Hon David Johnston, stated when discussing the AWD program in Australia:

“the international benchmark is 60 man-hours per tonne, we set the benchmark for that program at 80 man-hours per tonne, currently it is running at 150 man-hours per tonne”

This statistic alone means that the Australian shipyards are in no way competitive in the global market. Overseas yards have more streamlined processes, more experience, can access cheaper labour and have longstanding continuous build programs in place that support both the Naval and commercial maritime markets.
International Shipbuilding Capability

The international shipbuilding market is highly competitive and able to capitalise on international demand in both the commercial and naval sectors. An example of the competitive nature of the market is Damen who build a standardised range of vessels from tugs to high end warships where the design can be adapted for both commercial and naval use.

Damen Schelde Naval Shipbuilding (DSNS). DSNS is the naval shipyard within Damen that specialises in the design and construction of naval vessels and complex commercial vessels. Royal Schelde was founded in the year 1875 and became a member of the Damen Shipyards Group (Damen) in 2000 when acquired from the Dutch Government for only 1 Guilder. In order to be successful Damen had to change the business model from domestic naval-only to an internationally focussed commercial yard building warships and commercial vessels. In order to be successful Damen had to utilise a major yard in Romania to conduct the less complex steel-cutting and construction tasks in a lower cost environment. The complex project management, engineering, outfitting, combat system integration and through-life support tasks have remained in the Netherlands in order to maintain a national skill base and ensure sustained employment.

Damen now consists of more than 38 major shipyards and operating companies around the world, has built more than 4,000 commercial and military vessels, currently employs nearly 8,500 skilled workers and has an annual turnover in excess of €1.7 billion.

As the supplier of naval surface combatants and auxiliaries to the Royal Netherlands Navy, DSNS has carried out over 50 years of continuous frigate and auxiliary vessel development which has resulted in seven generations of frigates and four generations of auxiliary vessels.

Recent deliveries relevant to the Australian defence market have included:

- **RNLN Karel Doorman.** This joint logistics and support ship is one of the first of its type in the world and is currently undergoing sea trials. It is a highly complex ship equipped with the same sensor suite as Holland-class offshore vessels, a strong self defence weapon capability, and has the capability to support all forms of amphibious warfare (landing craft, helicopters, replenishment of fuel, cargo and ammunition, command & control, and medical).

Constructing such a large and complex vessel was a challenge both for the shipyard and key suppliers. Despite a general downturn in the global shipbuilding market in the last five years, the ship was delivered on schedule, on budget, at a cost of US$480m\(^4\). This was only achieved by capitalising on Damen’s inherent shipbuilding experience, existing infrastructure and project management capabilities. The hull was built in a Damen shipyard in Romania and then the more complex out-fitting and technology components were completed in the Netherlands. By applying their shipbuilding experience, utilising

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global procurement strategies, and closely controlling quality at each of the shipyards involved, Damen delivered a product that is destined to be the proud flagship of the Royal Dutch Navy. The experience of this particular ship-build could not be replicated in Australia without decades of investment in people, processes and technology. The comparison with the Australian LHD program is at the least embarrassing.

- **Holland Class Ocean Going Patrol Vessels.** This 105m class of warship carries a full suite of warship sensors, is fitted with a 76mm gun and an organic aviation capability, and is proof of a highly successful international program to build a succession of complex warships in a cost-effective manner. The ship was a winner of the 2012 KNVTS Ship of the Year Award, and each vessel was delivered at approximately US$150m per vessel in 2012 prices. They are currently meeting all operational commitments for the Royal Netherlands Navy.

In comparison, the initial ANZAC Class frigates (with the exception of HMAS PERTH) were built with a similar military capability to the Holland Class, although they are slightly longer at 109m and were fitted with a more powerful 4.5 inch gun. The initial build of the ten ANZAC Class frigates for the RAN/RNZN program cost AUD$4.366 billion at 1988 prices⁵. This roughly equates to AUD$8.9 billion in today’s terms (using CPI) and equates to an average price of approximately US$890m per ship. Clearly not a flattering statistic particularly when the ANZAC Shipbuild Project is considered a success story for Australian industry.

**International Shipbuilders**

A number of other international shipbuilders have also had to focus on both the naval and commercial markets to be a success; however, even with this strategy have often relied upon Government support for continued operations. Examples include:

- **DSME** - is a South Korean company that has a continuous shipbuilding program for large commercial ships and a division supporting the international defence market;
- **Fincantieri** - supported by the Italian Government, focuses on the design and construction of merchant and naval vessels; and
- **Navantia** – a Spanish state-owned company well known to the Australian market as the designer of the Air Warfare Destroyer and Landing Helicopter Dock ships. It has a demonstrated capacity to deliver naval programs around the world. The Spanish Government provides direct support and can openly assist in competitiveness for projects and if financial assistance is required.

The four shipbuilding companies above are a sample of the global competition that any Australian-based company would face into the longer term. They demonstrate a number of key principles:

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the sheer scale of operation required to develop an organic major fleet unit shipbuilding capability;
the massive investment required in infrastructure, skilled labour and technology;
the need in a number of cases for significant financial backing from the national Government aligned to the shipyard; and
the fact that Naval shipbuilding alone is not sustainable – it needs to be combined with a commercial arm as well.

It is clear that for any Australian Naval shipbuilding capability there would need to be significant Government support for both the establishment and long term operation. This cost is conservatively estimated in the tens of billions of dollars.

**Capital Asset Acquisition Program (CAAP)**

A current example of a successful, value-for-money and innovative shipbuilding program for the RAN is the Capital Asset Acquisition Program (CAAP). The CAAP is a framework established to acquire new and replacement support vessels under the Navy’s Fleet Marine Services Contract.

Valued in excess of $200m, the CAAP is based on a tri-partite agreement between the RAN who need the vessels for the RAN Fleet to proceed to sea; the National Australian Bank who act as owner of the vessels; and DMS Maritime Pty Ltd (DMS) as the prime contractor delivering the service with the vessels.

One section of the CAAP has established shipbuilding contracts in place with Damen to deliver 12 new vessels to DMS on the Navy’s behalf. The new vessels include:

- a 91m multi-role aviation training ship
  - ship-build contract signed Sep 14, keel laying following detailed design review in May 15.
- a 93m submarine rescue gear ship
  - on budget, on schedule, launch planned for May 15
- an 83m submarine escape gear ship
  - on budget, on schedule, launched Oct 14, sea trials planned April 15
- five harbour tugs (delivered on time, on budget in 2012-13); and
- four self-propelled fuel/water bunker barges (being delivered 2014).

To date, all the bunker barges and tugs have been delivered on time, on schedule, and are supporting the Fleet fully in accordance with contract requirements. Of particular note is the value for money discussion concerning two of the tugs that are used for ship movements in Sydney Harbour and the provision of support to nuclear powered warship visits to designated Australian ports. The acquisition of these tugs was originally under DMO Project SEA 1351 and in the 2009 Defence Capability Program the cost listed as “less than $100m (towards the upper end of the band)”. By changing the method of acquisition to using the CAAP, two Damen Type ASD 2411 tugs were delivered in 2012 for just over $20m. The savings were clearly considerable.
using a proven commercial design that had been built by Damen on speculation in one of their commercial shipyards in Vietnam.

The Australian shipbuilding community does not currently have the skills or labour environment to build these Damen vessels and will need significant investment in infrastructure and the importation of key skills from overseas shipbuilders to achieve a minimum level of capability. Even if this happened, a conservative estimate for the local build of these tugs would be in the vicinity of $50m—more than twice the price.

Figure 3: Damen Type ASD 2411 Tugs “Waree” and “Elwing”

Two Damen tugs, built overseas in Vietnam, saved the Commonwealth of Australia in excess of $30m.

THROUGH LIFE SUPPORT AND UPGRADES

Numerous articles and presentations have been written addressing the importance of an organic shipbuilding industry in Australia. During a press conference in Adelaide on 9 Sep 14, Australia’s Leader of the Opposition, Mr Bill Shorten, stated that “no-one can predict every threat or future conflict. But we do know that Australia will remain an island nation and submarine and ship building is a strategic asset that we can’t let wither and die.” This was stated with particular reference to the prospect of the Coalition Government examining options to purchase 12 conventional submarines from overseas (leading candidates appear to be Japan and Germany). Further commentary on the same issue suggests that the Australian Government will save $30 billion by acquiring the submarines from an established shipyard and not attempting to build in Australia.6 Both points of view, however, do not take into consideration the importance of providing long term maintenance support and upgrades for the new submarines/ships that are expected to be in Naval service for at least 30 years.

The issue concerning sustained employment is also often misunderstood. Building a ship may take three years but supporting a ship will provide long term employment for the service life which is usually planned to be 30 years. The provision of this through-life support needs a holistic approach that unites multiple engineering disciplines in a coordinated manner to ensure a ship is

available and operationally reliable for the maximum period. This is achieved by applying systems engineering principles to all platforms and includes planned maintenance, defect repair and upgrades. Successfully achieving this support in a cost-effective manner needs the application of the latest technology; the concentration of highly skilled labour across a large number of disciplines; the application of numerous specialty trades; and the execution of advanced levels of project management. If this is successfully applied, the net result is the Navy meeting the Government’s objectives and the warship’s meeting their preparedness targets; while simultaneously the nation will benefit through the long term employment for a skilled workforce and the retention of key intellectual property in a domain of national strategic importance.

A shipbuilding program alone may provide employment to a particular area but that employment is always threatened by the lack of follow-on orders resulting from the competitive market. As shown by the history of the Australian Naval shipbuilding industry, different regions have been provided with selected opportunities following competitive tender; however the Government is unable to guarantee the long term commitment required for follow-on build contracts. This situation is supported by Government policy which aims to ensure value for money for the Australian taxpayer by considering both domestic and international options. Precedence has been set in this regard in other industries with the Coalition Government refusing to bail out struggling Qantas, SPC Ardmona, Ford Australia and General Motors Holden.

**CONCLUSION**

The acquisition of tailored major warships and submarines from offshore shipyards is a significantly better outcome for the Australian taxpayer. The cost will be significantly lower, the build quality will be guaranteed, and the ships will be delivered without delay. A local industry providing through-life support, combat system integration and technical upgrades for the ships will still be required for the long term effective operation of the ships. This will result in sustained employment and the retention of key strategic skills for Australian industry. Looking to the future, using the experience of international shipyards as an example, the knowledge gained supporting the highly technical warships can then be exported into the commercial marine industry and thereby increasing Australia’s shipyard competitiveness on a global scale.

**RECOMMENDATIONS**

1. The Defence White Paper provides guidance to Australian industry stating that any new major warships and submarines will be acquired without any national limitations on the globally competitive shipbuilding market.

2. The Defence White Paper provides guidance to Australian industry to concentrate on the provision of complex through-life support and upgrade programs to ensure the RAN fleet remains at the highest level of availability and capability throughout the life of each vessel.