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Australia's Future Amphibious Requirement

Background

3.1 In February 2003 the Minister for Defence released *Australia's National Security: A Defence Update 2003*. The review canvassed the implications of the changed strategic environment for Australia's defence posture. The review found that the threat of direct military attack on Australia had decreased but in other ways certainty and predictability had decreased.[1] As a result the update called for an increased emphasis on readiness and mobility, interoperability, the development and enhancement of new capabilities, and in some cases a reduced emphasis on some less important capabilities. In particular, the Government paper reinforced the requirement to undertake offshore deployments when it stated:

> The changed global strategic environment and the likelihood that Australian national interests could be affected by events outside of Australia's immediate neighbourhood mean that ADF involvement in coalition operations further afield is somewhat more likely than in the recent past. … These new circumstances indicate a need for some rebalancing of capabilities ... changes which will ensure a more flexible and mobile force, with sufficient levels of readiness and sustainability ...[2]

3.2 Defence responded to this requirement by re-examining its capabilities during the period of this annual report. They have sought to ensure the Defence Capability Plan (DCP) reflects Australia's capability requirements

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1 Department of Defence, *Australia's National Security: A Defence Update 2003*, p 9.

2 Department of Defence, *Australia's National Security: A Defence Update 2003*, p 24

directed in *Australia's National Security: A Defence Update 2003*. The revised plan was endorsed by Government in November 2003.[3]

3.3 Subsequent Government decisions approved the acquisition of M1A1 Abrams tanks, two additional airborne early warning and control aircraft, five air-to-air refuelling aircraft, and an auxiliary oiler to replace HMAS Westralia. Government also approved the 'commencement of a risk reduction study into the procurement of two large amphibious ships to replace HMAS *Tobruk* and one of the two amphibious landing ships.'[4]

Discussion

3.4 In the period since the Defence Capability Review, most comment has focussed on two outcomes of the process. The decision to purchase US M1A1 Abrams Tanks to increase protection and firepower for the Army (a decision considered in detail and supported by the committee during its review of the *2002-03 Defence Annual Report*) and the decision by Defence to procure two large amphibious ships.

3.5 The aim of this Chapter is to review the decision making process within the Department of Defence which determined which types and designs of ships would be taken forward to the final phase of consideration before selection.

Defence Requirement

3.6 A specific type of vessel was not described at the time of the November 2003 review of the Defence Capability Plan. However, during the public hearing into the *Defence Annual Report 2003-04* Defence gave a detailed description of its amphibious capability requirement. The characteristics of the platform selected are based on the need to lift a combined arms battle-group consisting of armour, artillery, engineers, infantry and aviation elements. The mixture of these elements required to be embarked on the amphibious ships is task-dependent but is expected to be sufficiently similar for such operations as evacuation or peace enforcement operations to allow for the development of specific ship requirements. Defence stated:

> Lifting this force drives the size and the characteristics of the amphibious lift capability. The amphibious capability sought in the two ships under the current project is to provide the desired

3 Department of Defence, *Defence Annual Report 2003-04*, Nov 2004, p. 19.

4 Department of Defence, *Defence Annual Report 2003-04*, Nov 2004, p. 26.

> effect as follows: firstly, carriage in addition to the amphibious ships' crew of approximately 1,200 personnel in the landing force with a further 800 personnel providing helicopter operations support, logistics command, intelligence and other support—a total of about 2,000 personnel—space and a deck strength sufficient to carry about 100 armoured vehicles, including M1A1 tanks, and 260 other vehicles and of approximately 2,400 lane metres; hangarage for at least 12 helicopters and an equal number of landing spots to allow a company group to be simultaneously lodged to provide sustainment, medical, rotary air and operational maintenance and repair support to the forces while ashore for 10 days; command and control of the land, sea and air elements of a joint task force; and the conduct of simultaneous helicopter and watercraft operations in conditions up to and including sea-state four.[5]

3.7 This combination of airmobile forces and heavier forces moved ashore on watercraft is essential to the success of the Defence Manoeuvre in the Littoral Environment (MOLE) concept. Airmobile forces are rapid, agile and have the ability to range deep inland but lack the combat weight or endurance to fight more substantial forces or enter contested complex terrain such as cities or large towns. Heavier land forces bring the necessary combat weight, endurance and protection to fight but are slower to build up to combat strength and are harder to conceal and thus achieve surprise.

3.8 The Government has announced that Defence has settled in principle on the capability requirements for the new amphibious ships, which will replace the heavy-lift ship HMAS Tobruk and one of the Landing Platforms Amphibious (LPAs):

> They will need to be able to embark, sustain and transport by sea an amphibious combined arms battle group together with their equipment and supplies. The force needs to be able to train and rest while en route to operations. The ships will need the capability to carry and tactically deploy several hundred vehicles, including armour, plus trailers. They will also need the ability to airlift simultaneously an air mobile combat team from 12 helicopter launch spots between the two ships. They will each have hangar space for at least 12 helicopters and at least four conventional landing craft that are capable of carrying our new tanks. The ships must also be capable of providing the necessary

5 LTGEN David Hurley, Chief Capability Development Group, Department of Defence, *Transcript*, p. 21.

> command, control and communications to direct the battle group's amphibious landing and follow-on forces. Of course, given the prospect of Australian and US forces continuing to work closely in the future, the ships will need to be interoperable with our coalition partners. [6]

3.9 Defence has issued a request for information to two international ship builders – the Spanish company IZAR and the French conglomerate Armaris – concerning their respective new Landing-ship Helicopter Dock (LHD) designs. This will help inform the decision on a preferred design. Characteristics of the two Defence options, compared with the existing ships *Manoora* and *Kanimbla*, are listed in Table 3.1.

Table 3.1 Comparison of Navy Amphibious Ship Options

Ship	Displacement (tons)	Range (nm)	Crew	Troops	Vehicles (sq m)	Helicopters	Landing craft
Existing LPA	8,500	14,000	210	450	700	4 (2 spots)	2LCM8
French PCS	24,000	11,000	177	1000	1000	16 (6 spots)	4LCM
Spanish SPS	27,000	9,000	240	1100	2000	11 (6 spots)	4LCM

Source: ASPI Strategic Insight Paper 8, Capability of First Resort? Australia's Future Amphibious Requirement, July 2004, p. 6.

Selection Debate

3.10 Opinion regarding the Defence decision about the type of ships selected for further consideration is divided. The Australian Strategic Policy Institute (ASPI) agrees with the Chief of Defence Force's (CDF) description of the current ADF amphibious capability as the 'capability of first report'.[7] Given the critical nature of the capability and the likely longevity of the selected capability solution, ASPI recommends further scrutiny of the ADF decision regarding the type of ship required to meet the capability gap. ASPI recommend that since a final decision on the choice of ship, which was to be made in June 2004, has been delayed until the end of 2005, an opportunity exists to 'properly assess what type and how many ships will best meet the ADF requirement.' [8]

3.11 ASPI does not agree with the Defence decision to procure two large ships. They argue 'that our capability requirements cannot be satisfied by just

6 Senator the Hon Robert Hill, Keynote Address ADM 2004, 24 February 2004.

7 ASPI Strategic Insight Paper 8, *Capability of First Resort? Australia's Future Amphibious Requirement*, July 2004, p. 2.

8 ASPI Strategic Insight Paper 8, *Capability of First Resort? Australia's Future Amphibious Requirement*, July 2004, p. 2.

two ships, no matter how large and capable they actually are.'[9] Instead ASPI propose that a larger number of smaller ships, displacing in the order of 12,000 tons, would be a more appropriate response.

3.12 The ASPI proposal is based on the following perceived advantages:

- operating smaller ships gives greater flexibility in being able to access a wider range of regional ports;
- the proposed four smaller ships would provide greater docking capacity than the two larger ships; and
- a larger number of ships increases operational flexibility, meaning that the tasking or maintenance of a single asset reduces the overall capability by a smaller percentage.

3.13 On the other hand the Australia Defence Association (ADA) strongly supports the Defence decision. The ADA argue that 'medium sized LHDs offering the best compromise among the key factors, such as sustainability, preserving the effectiveness of embarked forces, overall load capacity, offload and force movement to objective by air and surface craft, affordability and crew numbers.'[10] They continue by countering the ASPI argument in favour of up to four smaller ships by stating that 'all in all, four smaller ships would be a lesser capability than the two medium sized ships but would cost markedly more, both to acquire, and through their 30 year life of type.'[11]

Defence Response

3.14 During the public hearing Defence confirmed they had considered the smaller 12 000 tonne Landing Platform Dock (LPD) amphibious ships. They indicated that in order to meet the requirement to insert an airmobile rifle company, the smallest force able to manoeuvre and protect itself on a complex, modern battlefield, 12 medium helicopters were required. Defence used this requirement to analyse the option of achieving the capability requirement with smaller ships:

> The LPD type ships were looked at, but if you go back to our requirement to do a simultaneous company lift of at least 12 helicopters, you need 12 spots. If you do not get those on two ships you need to buy a lot of smaller ships. When you look at the

9 ASPI Strategic Insight Paper 8, *Capability of First Resort? Australia's Future Amphibious Requirement*, July 2004, pp. 11-12.

10 Australia Defence Association, *Defender Vol XXI No. 3*, p. 30.

11 Australia Defence Association, *Defender Vol XXI No. 3*, p. 32.

> acquisition and through-life support cost simply to put that together, it is more efficient to go the way we have gone.[12]

3.15 It is important to note that Defence have avoided limiting their analysis of the airmobile element of the amphibious force to a single helicopter type. It could be argued that with a larger helicopter, such as the MRH 90, less than 12 aircraft might be needed to lift the required rifle company. On the other hand the increasing range of weapon systems available to protect light infantry, such as the Javelin Anti-Tank Guided Weapon (ATGW) and the 40mm Automatic Grenade Launcher (AGL), will quickly consume the additional space available in these larger helicopters.

3.16 During the public hearing Defence was asked by the committee to respond to ASPI's concerns about access to regional ports. Defence stated:

> If we look at it purely by the draught of the ships, the two classes of ships we are looking at, the Spanish and the French, have about a seven-metre draught. Our current LPAs are about 5.86 metres and the *Tobruk* is about four metres, but they are designed to be beached. So we are looking at a one-metre difference in draught between the types of ships, so entry to ports is not going to be a problem.[13]

3.17 The committee was also concerned about ASPI's assertion that limiting the capability to two ships would limit operational flexibility, particularly when considered against the likely requirement for one ship to be in port at a given time. Defence countered that this issue had been a factor in the type of vessels selected for further consideration. Defence has selected vessels built to commercial standards, with corresponding commercial rates of availability. Defence stated:

> One of the fundamentals that we are looking at in the acquisition of these is to follow very closely commercial principles in the construction of the vessels. Both the recently renamed Novantia, which was previously the Izar, and the Amaris, which is a French ship, are designed very much around commercial principles with a component of militarisation. Commercial vessels of this size have an operational availability of 345 days a year at sea. Because we are looking at commercial vessels and that style of operation, we are expecting that the operational availability will be extraordinarily high, as opposed to a military vessel, which has a

12 LTGEN David Hurley, Chief Capability Development Group, Department of Defence, *Transcript*, p. 23

13 LTGEN David Hurley, Chief Capability Development Group, Department of Defence, *Transcript*, p. 23

> much lower operational availability because of the nature of the design and the construction.[14]

3.18 Finally the committee questioned whether Defence had identified a single individual to be responsible for the critical amphibious capability. ASPI has argued that the amphibious capability has suffered because no one organisation or group has determined its capability development priorities. In response Defence stated:

> The Chief of Navy has been appointed as responsible for the overall development of amphibious capability. In terms of the employment of the capability, the chief of joint operations and the subordinate headquarters under him are going to determine how on a particular operation the capability will be put together. We have a project of major exercise activities each year which more often than not centre around putting this capability together and giving people practice in delivering it. We have a training regime in place. We have a head appointed who is responsible for oversight of the capability and we have an operational command and control element that is experienced in employing it.[15]

Possible Inclusion of JSF

3.19 Media and Public discussion about the impending decision to procure the Joint Strike Fighter (JSF) has carried over into discussion of the future amphibious ships. In particular the Short Take-off and Vertical Landing (STOVL) version of the JSF, to be procured by the US Marine Corps and the UK Airforce and Navy, has been discussed in the context of future inclusion in the suite of capabilities able to be embarked on the future Australian ships. Defence has confirmed that one of the two ships in consideration for the Australian contract is capable of operating the STOVL JSF, 'the Spanish variant is designed with a ski jump on the front of it and is capable of the STOVL, but the French ship is not.'[16] However Defence made it very clear that the STOVL JSF is not being considered by the ADF for inclusion as part of the amphibious capability, or any other. Defence stated:

> No we are not looking to put the STOVL onto these ships…There are some basing flexibilities that the STOVL—short takeoff and

14 Mr Kim Gillis, Program Manager, Amphibious Deployment and Sustainment Program, Department of Defence, *Transcript*, p. 23

15 LTGEN David Hurley, Chief Capability Development Group, Department of Defence, *Transcript*, p. 29

16 Mr Kim Gillis, Program Manager, Amphibious Deployment and Sustainment Program, Department of Defence, *Transcript*, p. 25

> vertical landing—aircraft might give you, but, in terms of its performance in comparison with the conventional takeoff and landing aircraft, they are realms apart and we think we can meet all our essential criteria with the conventional takeoff and landing aircraft.[17]

Conclusion

3.20 During the public hearing the committee received a detailed briefing from Defence regarding the criteria used to select the two ships short-listed for the future amphibious capability. The committee was impressed by Defence's comprehensive decision-making process and notes the decision to select two large ships to meet the requirement, rather than a larger number of smaller vessels. The committee notes that both operational requirements and efficiencies in both cost and manpower were the key drivers in this decision. The committee also notes that Defence has acted on earlier concerns that the amphibious capability was an orphan, not developed by a single agency. Chief of Navy now has carriage of the capability but developments have been informed by unprecedented levels of analysis and cooperation with Army Headquarters and DSTO.

3.21 The committee continues to have some concerns regarding the design risks that remain in the project. The decision to select a design that may not be completely interoperable with our traditional alliance partners is of some concern to the committee, particularly the selection of major capability elements such as propulsion systems. For example the committee would be critical of a situation in which an Australian LHD was unable to achieve the speed or range necessary to operate with a coalition convoy.

3.22 The committee also notes that the ships will be built to the standards required of the commercial shipping industry, bringing significant efficiencies and cost savings during manufacture and operation. However the committee is also aware that these efficiencies also mean that the levels of system redundancy and survivability built into the ships will be significantly less than that of a traditional warship. This decision reflects current ADF doctrine regarding amphibious lodgement, during which the ADF will seek to manoeuvre to avoid any areas of resistance when selecting lodgement sites. The committee seeks to ensure these limitations

17 LTGEN David Hurley, Chief Capability Development Group, Department of Defence, *Transcript*, p. 25

remain at the forefront of the minds of Government and defence planners through the life of the capability.

3.23 The committee also notes that Defence is not planning to include a STOVL JSF in the suite of capabilities to be embarked on the future amphibious ships based on the premise that such an addition would significantly increase the cost and complexity of the project with only a limited increase to capability. However the committee has previously considered the STOVL JSF in a broader context, against the increasing likelihood that the amphibious force will need organic close air-support for operations in the broader region.

3.24 STOVL aircraft have a significantly reduced range and payload compared with conventional take-off aircraft. On the other hand they are also the most flexible fighter aircraft, able to deploy forward into the Area of Operation and operate from significantly less developed infrastructure. Similar US Marine aircraft, deployed in this manner, either fly from amphibious ships or from hastily prepared airfields close to ground combat forces. They have the sole purpose of providing organic support to the deployed force, unlike conventional aircraft operated from further afield whose tasking is more likely to include a mix of roles, including air superiority and protection of the approaches to Australia.

3.25 In its review of the Maritime Strategy in June 2004 the committee considered the utility of the STOVL aircraft in this broader context and recommended that:

> If in 2006 the Government confirms that it will purchase the Joint Strike Fighter (F-35) then it should consider purchasing some short take off and vertical landing (STOVL) F-35 variants for the provision of organic air cover as part of regional operations.[18]

3.26 The committee acknowledges that a conventional take-off fighter with a greater range, a wider menu of munitions and supported by airborne refuelling and AEWC aircraft, will have a significantly greater impact on the future battle-space than a small number of ship or land-based STOVL aircraft and should form the backbone of Australia's next air-combat capability . However the committee stands by its earlier recommendation that should the STOVL F-35 meet its design specifications the Government should consider developing an organic close air-support capability for the amphibious force.

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18 Joint Standing Committee on Foreign Affairs, Defence and Trade, Parliament of Australia, *Australia's Maritime Strategy*, p.95