SEMAPHORE

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# AMPHIBIOUS SHIPS

On 20 June 2007, the Australian Government announced plans for the Royal Australian Navy (RAN) to acquire two amphibious assault ships based on the Spanish Navantia 'Strategic Projection Ship'.[1] Designated as Landing Helicopter Dock (LHD) ships, they will be named *Canberra* and *Adelaide* and are expected to enter service in 2012 and 2014 respectively. They form part of Joint Project 2048 (Amphibious Deployment and Sustainment – ADAS), with a further 'sealift' capability – which is yet to be defined – to be acquired in a later phase of the project. The Tenix Corporation was selected as the preferred tenderer to build the LHDs and, subject to successful contract negotiations, it is expected that the hulls will be constructed in Spain, the equipment fit-out will be completed in Melbourne and the combat system integration will occur in Adelaide.

The LHDs will be amongst the largest ships to serve in the RAN and will be the biggest warships ever built by Australian industry. While some media commentators have focused on their size,[2] the reality is that size brings *flexibility* – and flexibility is the key benefit that the ships will provide to an Australian government. In times of increased strategic uncertainty, the LHDs will be able to respond to a wide variety of situations across the span of maritime operations. They will form the core of Australia's response to natural disasters, humanitarian aid, evacuation operations, peacekeeping tasks and, where necessary, the projection of combat force ashore.

The *Canberra* class will be a major advance on the capabilities provided by the current amphibious transports (LPA), HMA Ships *Kanimbla* and *Manoora*, ships that have proven versatility across a wide range of situations. These vessels have deployed to Iraq, acting as a sealift ship; command and control platform; a forward base for boarding operations (including embarking foreign navy boarding teams and boats); and provider of logistic support to smaller vessels – many of these roles simultaneously. The LPAs have also been deployed to the Solomon Islands, East Timor and Fiji to lead the Australian Defence Force (ADF) response in potential periods of instability as well as participating in humanitarian operations, including after the 2004 Boxing Day tsunami in South East Asia. *Kanimbla* hosted the Sea Combat Commander and his staff during RIMPAC 2006, proving the ship's ability to support a coalition command staff during warfighting exercises and operations. The inherent flexibility in ships of this type means that they are extremely adaptable, and despite not being built for the RAN (they were purchased second-hand from the United States Navy and were modified by Forgacs in Newcastle), *Kanimbla* and *Manoora* have become key components of the RAN's broad capability. The *Canberra* class will build significantly on this already flexible and adaptable capability.

As the 2007 Update to the Defence White Paper states, we must recognise that our interests must often be secured in places distant from Australia.[3] Additionally, as an island nation, any Australian major military activity will need to be deployed across, and supported from, the sea. This reality has driven the need for ADAS and the ability to project land forces in support of Australia's national interests, wherever they may be.[4]

Amphibious ships capitalise on all of the attributes of maritime forces, as articulated in *Australian Maritime Doctrine*.[5] Without the need to negotiate basing and/or overflight rights with other countries, warships are often the only choice available to government to respond to a developing situation and the LHDs will provide unique response options. They will carry a substantial quantity of equipment, stores and personnel and will be fully operational as they enter an area of operations. They do not need any external support or approval to deploy and can physically operate wherever there is enough water to float. The LHDs will be flexible and able to undertake a large range of tasks while exploiting the attributes of Reach, Access, Flexibility, Poise and Persistence.[6]

One of the key roles of maritime forces is power projection. In high-end combat operations, power projection is usually visualised as ordnance fired against land targets – naval gunfire support, land attack missiles and the like. Land forces projected from ships have the advantage of being able to deploy, operate, and be extracted and re-deployed once their job is done. The ability to base and deploy land forces from the sea brings considerable advantages to operations. For example, sea basing reduces the logistics, command and administrative footprint ashore, and consequently the risk of attack against personnel and their equipment and the need for additional force protection personnel and equipment. At the other end of the operational spectrum – such as when providing disaster relief – sea basing means those deployed do not become a burden on an already damaged and fragile infrastructure. A good example of this was the deployment of a naval task group, led by the aircraft carrier HMAS *Melbourne*, to Darwin after Cyclone Tracy in 1974.[7] The sailors deployed ashore provided critical assistance to the city, without drawing on Darwin's very limited relief supplies. The sailors' own needs, such as food and accommodation, were provided by their ships. For similar reasons, many nations sent predominantly maritime forces to assist countries in South East Asia after the Boxing Day 2004 tsunami. Maritime forces are often the only option to reach affected areas when land based infrastructure is destroyed.

While the LHDs will be useful across the full spectrum of operations, their utility derives from the capabilities necessary to conduct combat related amphibious operations. The ability to move forces by sea means that any adversary defending against a possible amphibious operation must spread their resources across their entire coast or concentrate on certain areas, leaving others undefended. The initiative is thus with the maritime-based force that can easily manoeuvre to where the opposition is least.

*Cutaway design (Tenix)*

**Specifications for the *Canberra* class LHD**

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|---|---|
| Complement | 243 (36 additional) |
| Embarked Forces | 978 (146 additional) |
| Accommodation | 1403 |
| Length overall | 230.8 metres |
| Maximum beam | 32 metres |
| Full load displacement | 27851 tonnes |
| Full load | 7.18 metres |
| Maximum speed | 20.5 knots |
| Range | 8000 nm at 15 kt |
| | 9250 nm at 12 kt |
| Propulsion type | Electric drive |
| Pods | 2 x 11 MW |
| Power source | Combined diesel and gas turbine (CODAG) |
| Gas turbines | 1 x GE LM 2500 (17.4 MW) |
| Diesel engines | 2 x 7.2 MW diesels |
| Vehicle capacity | 830 lane metres (3290 $m^2$) |
| | Heavy vehicle deck: 1410 $m^2$ |
| | Light vehicle deck: 1889 $m^2$ |
| | Helo hanger capacity: 990 $m^2$ |
| | Can conduct landing craft operations in Sea State 4 |
| Aviation | 8 x MRH90/Tiger ARH |
| | Can operate Chinook Helicopters |
| Medical Capacity | 2 operating theatres |
| | high/medium/low dependency |

Each of the *Canberra* class will be able to transport and support up to 1000 embarked forces, some of which can be landed ashore via a mix of embarked watercraft and aircraft, to conduct operations. Others will remain onboard the LHD providing command, aviation, medical and logistic support. The mix of those deployed ashore and remaining onboard will vary, depending on the circumstances.

Each ship will carry landing craft that are transported in a well-dock, which can be flooded when they are required. The ship ballasts down to flood the well-dock, allowing the watercraft to float and extract from the dock. This can be done while underway and in conditions up to Sea State 4 – a significant increase on the RAN's current capability. The LHDs will also have six helicopter spots on a large flight deck that can support a range of helicopters. The ability to base aviation facilities afloat is a particular benefit, as it removes the need for maintenance, support facilities and personnel ashore, and allows the airbase to move to wherever it is required.

Of course, the introduction of the LHDs will bring significant challenges to the ADF. Without a dedicated marine force, such as the UK Royal Marines or US Marine Corps, the Australian Army will provide the landing force transported by the LHDs. The Army has a core of amphibious experience; however, the LHDs represent a quantum leap in capability, and one that the ADF must understand fully to maximise their potential. To that end, an RAN-Army 'Joint Amphibious Capability Implementation Team' (JACIT) was established in September 2006 to identify and resolve issues associated with introducing this capability into the ADF. The Chief of Navy is the capability manager for the LHD, but the JACIT is responsive to a wide range of stakeholders involved in delivering ADF amphibious capability.

Work is also underway to identify the necessary port infrastructure required to support LHD operations, in their home port (Sydney), primary ports of Darwin and Townsville, and secondary ports of Brisbane, Gladstone and Adelaide, where they might be expected to operate in support of Army.

The LHDs will be significant national assets. While they will be capable of operating at the high-end of the conflict spectrum, their capabilities and inherent flexibility mean the ships can be used in a wide range of tasks in support of Australia's national interests. They will prove to be incredibly useful in a wide range of military, diplomatic and constabulary operations, and will form the backbone of the ADF's ability to deploy to meet the requirements of the Australian Government.

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1 The 'Strategic Projection Ship' is the term used by the Spanish and highlights the flexibility inherent in the design.

2 See Hugh White 'Big ships: too costly, too cumbersome', *The Sydney Morning Herald*, 12 July 2004. For the contra argument, see B. McLennan and G.P. Gilbert, 'Amphibious Ships – Bigger is Better', *Quadrant*, September 2006, pp. 52-59.

3 Department of Defence, *Australia's National Secrity. A Defence Update 2007,* Defence Publishing Service, Canberra, 2007 pp 29.

4 Importantly, even most ADF operations on the Australian mainland will require forces to be deployed by sea.

5 Royal Australian Navy, *Australian Maritime Doctrine*, Defence Publishing Service, Canberra, 2005, pp. 49-51. These attributes are Mobility in Mass, Readiness, Access, Flexibility, Adaptability, Reach, Poise and Persistence, and Resilience.

6 *Australian Maritime Doctrine*, pp. 49-51.

7 See Brett Mitchell, 'Disaster Relief - Cyclone Tracy and Tasman Bridge' in G.P. Gilbert and R. Davitt, *Australian Maritime Issues 2005: SPC-A Annual*, Sea Power Centre-Australia, Canberra, 2005, pp. 89-94.