

# The Canberra Class Landing Helicopter Docks (LHDs): A New Maritime Role 2 Enhanced (MR2E) Capability for the ADF

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The Canberra class Landing Helicopter Dock (LHD) ships will replace the LPAs *Manoora* and *Kanimbla*, and the LSH *Tobruk*. Planning for these new ships began in 2000, based on Australia's experience with INTERFET in East Timor. In 2004, invitations for tender were sought from a French company offering the *Mistral* class ships, and the Spanish company Navantia offering what became the *Juan Carlos I* design. The latter was selected in 2007, with Navantia responsible for building the ships from the keel to the flight deck, after which they will be transported to Australia for fitting of the island superstructure, by BAE Systems Australia.<sup>1</sup>

The roles of these ships will include:

- Embarking, transporting and deploying an embarked force (Army in the case of the ADF, but could also be an Allied army or marines), along with their equipment and aviation units, and
- Carrying out and supporting humanitarian aid missions.<sup>2</sup>

The provision of medical support for the LHD embarked force will be crucial to the latter's ability to meet its mission. The aim of this article is to describe some of the medical issues.

## LHD Statistics

The LHDs are 230m long, 32m wide, 7.2m draught and displace nearly 30,000 tonnes. Although Navy has bought larger ships (in particular the tankers *Westralia* and *Sirius*), these are the largest ships ever built for the RAN.

They have a range of 6,000nm at 20 knots, or 9,000nm at 15 knots without refuelling. The flight deck has six spots for Blackhawk, Seahawk or MRH-90s, or four spots for Chinooks. They have two vehicle decks that can carry up to 110 vehicles depending on their size.

The LHDs also have a well dock that can carry up to four Landing Craft Mechanised, or LCM-1Es. They can be deployed up to Sea State Four, and operate over-the-horizon up to 20 nautical miles from their parent LHD.

The LCM-1E incorporates a stern gate, which allows the loading/unloading of vehicles up to 12 tons from LCM-1E to another. Propulsion is supplied by two diesel engines powering one waterjet each, allowing the LCM-1E to reach 22 knots empty, or 13.5 knots loaded. The maximum range at economical speeds is 190 nautical miles.<sup>3</sup>



Figure 1. A Spanish Navy LCM-1E<sup>4</sup>

The LHDs have bunks for 1403 personnel. Of these, about 240 bunks will be for the ship's company, plus about 160 more for the LCM-1E and flight deck crews. The remaining 1000 bunks are for the embarked landing force, aviation assets, HQ staff, and health personnel. The finite bunk space means that additional health staff means fewer non-health embarked personnel, and vice versa.

The size of these new ships can be illustrated by comparing them with the LPAs that many ADF health personnel are familiar with.

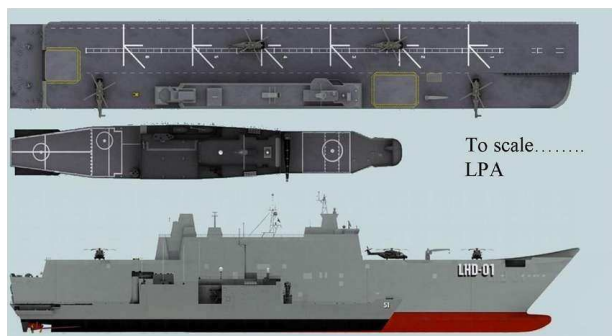


Figure 2. Comparison of LHD with LPA: side elevation<sup>5</sup>

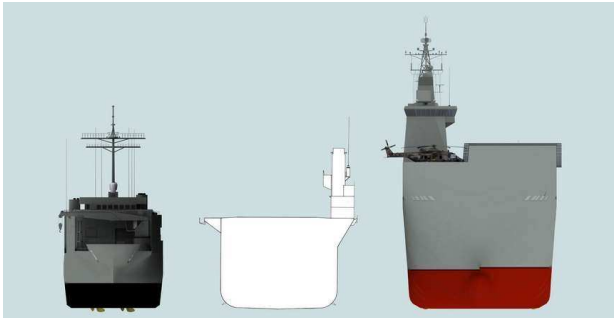


Figure 3. Comparison of LHD with LPA: bow view.<sup>6</sup>

The silhouette between is a cross section of the aircraft carrier HMAS *Melbourne* (II), which decommissioned in 1982. The LHDs are about 50% larger than the old carrier.<sup>7</sup>

Maritime Role 2 Enhanced (MR2E)

The LHD MR2E is located amidships, immediately below the hangar upper vehicle deck and above the

lower vehicle/well deck. Patients enter the MR2E via a dedicated lift, either from the hangar or flight decks above, or the vehicle deck below.

From there they move to a triage/resuscitation area, then to one of two operating theatres, which are supported by a sterilisation area between them and two scrub rooms.

After surgery, casualties are moved to the High Dependency Unit (HDU), then to either the Medium Dependency Unit (MDU) or Low Dependency Unit (LDU). The latter uses the adjacent embarked forces cabins once they have moved ashore, on comparable terms as the troop messes aboard the LPAs.

These facilities are supported by x-ray, laboratory, and pharmacy. Primary health care is provided from a patient administration area, outpatient consulting room, medical office, and dental surgery. There are three medical stores, including a medical gas store.

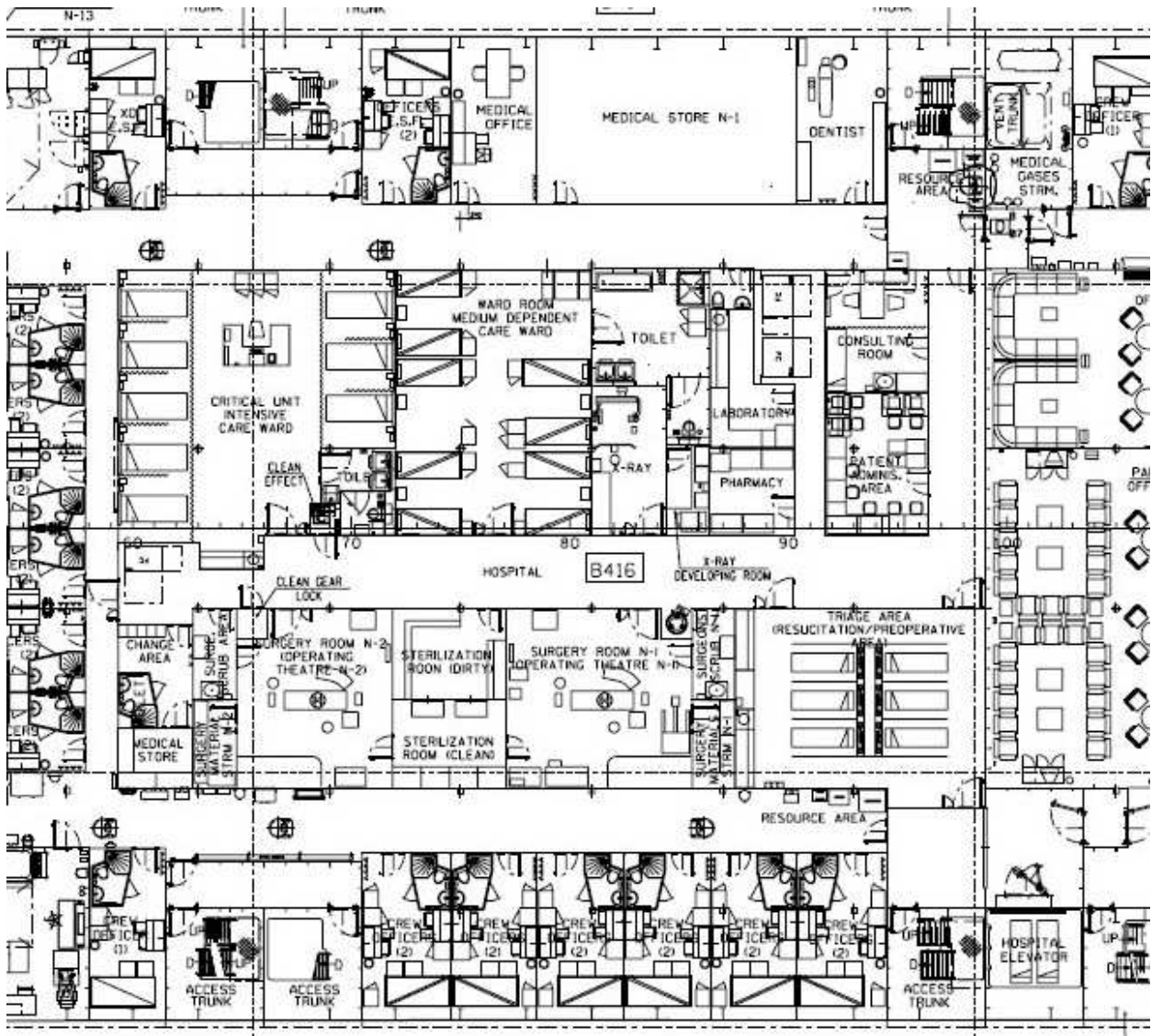


Figure 4. Deck Plan: LHD MR2E<sup>8</sup>

### MR2E Staffing

Navy is required to sustain either one MR2E for an extended period or possibly two MR2Es for shorter periods. The MR2E response will be tailored to the mission, and delivered through capability bricks or elements organised by notice to move at 48 hours, 7 days, 28 days, and 6 months as follows:

- The elements at 48 hours notice will provide a limited MR2E capability. It will be staffed primarily by Permanent Navy personnel, although they may require additional Navy Reserve specialist support.
- The elements at 7 days notice will provide a medium level capability. It will be staffed by Permanent Navy personnel, some of whom will be augmenting garrison health support services when not undertaking MR2E duties as well as Navy Reserve specialist support.
- The elements at 28 days notice will provide a large level capability. It will be staffed by Permanent Navy personnel, some of whom will be posted to Joint Health Command positions with a MR2E obligation when required and Navy Reserve specialists.
- The elements at six month notice will provide the sustainment capability. It will be staffed by a combination of Permanent and Navy Reserve personnel.

The at times very short notice to move means it is necessary to maintain a high level of both clinical and military skills. This will be achieved by a combination of individual and group training at sea when the MR2E is activated for training, civilian hospital clinical placements, and the MR2E Training and Support Facility (TSF), which was established at HMAS PENGUIN in January 2011. The TSF has a medium fidelity simulator for individual and team clinical training.

### LHD Timeframes

First steel was cut for *Canberra* in September 2008 and she was launched on 17 February 2011. She will be delivered to Williamstown in mid-2012, and is due to commence First Of Class Trials (FOCTs) in January 2014.

First steel was cut for *Adelaide* in February 2010. She is due for launch at the end of 2012, delivery to Australia in 2013 and to start FOCTs sometime in 2016.

### HMAS *Choules*

Losing *Manoora* led to the decision to buy Largs Bay (now HMAS *Choules*) from the UK. She first commissioned as a Royal Fleet Auxiliary in 2006, and arrived in Australia in December 2011. She is about half the size of the LHDs, but roughly double that of the LPAs and three times that of *Tobruk*.

*Choules* has a crew of 158 plus 360 troops. She has two flight deck spots for Chinooks, and a docking well for a Landing Craft Utility (LCU) and two Landing Craft Vehicle and Personnel (LCVPs). She can carry 30 tanks or 150 light trucks (a capacity equivalent to that of the LPAs and *Tobruk* combined).<sup>9</sup>

Unlike *Tobruk*, *Choules* has stretcher access between the flight deck and the sick bay. The sick bay has a treatment room, one 6-bed and one 2-bed ward, bathroom, toilet and a medical store/dispensary. In addition, there is a room with one operating table that can be used for surgical cases.

*Choules'* sickbay is therefore similar in size and capability to an enlarged *Tobruk* sickbay, rather than a small LPA MR2E. This will pose some challenges in Navy's ability to provide a MR2E capability until *Canberra* enters service.

### Conclusion

The LHDs offer the ADF a vastly expanded amphibious capability, compared to that provided by the LPAs and *Tobruk*. This particularly refers to the MR2E capability: although the LHD MR2E is generally comparable to the LPA MR2E in terms of theatre capacity (both have/had two operating tables), the on-board LPA medical supporting infrastructure (in particular bed space) is significantly greater.

This in turn poses particular challenges with respect to ensuring that these assets are supported by adequate numbers of appropriately trained and credentialed health staff, so that the MR2E can reach its full potential. The timeframe for decommissioning the LPAs has added to those challenges, as has the limited ability of *Choules* to be used for MR2E training to date, as well as the time now available for these staffing issues to be addressed before *Canberra* enters service.

Nevertheless, the introduction of the MR2E capability for the LHDs is clearly an exciting time for both Permanent and Reserve Navy Health personnel, which will stand them, the Navy and the ADF in good stead for the expected 30-year life of these ships.

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