

ROYAL AUSTRALIAN NAVY

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WHEN DISASTER STRIKES

Assessing the Royal Australian Navy's Preparedness for Humanitarian Assistance & Disaster Relief

A report drafted for
the Sea Power Centre – Australia

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Executive Summary

This report analyses the Royal Australian Navy (RAN)'s material preparedness to meet its future Humanitarian Assistance and Disaster Relief (HADR) obligations: if the Navy has enough assets (ships and aircraft) and if those assets have suitable capabilities to perform disaster relief. As climate change increases the incidence of cyclones, earthquakes, and tsunamis in the Pacific and Indian Oceans, Australia as a regional power will be expected to aid affected populations. The RAN must, therefore, be prepared for HADR, and its ability to sealift aid will become one of its most important non-warfighting functions. Particularly important for the RAN is to prepare for complex 'concurrency pressures' identified by the 2018 Parliamentary Hearing on Climate Change and National Security, where the RAN will have to respond to either a chain of natural disasters striking abroad or a simultaneous domestic and foreign need for HADR.

This report finds that the RAN should be cautiously optimistic about its overall HADR preparedness. The RAN's acquisition of two new *Canberra* class Landing Helicopter Dock (LHD) ships – amphibious vessels with greater capacity for personnel and helicopters than any previous asset – has enhanced its abilities to deliver aid and to coordinate complex HADR operations from the sea. However, the RAN's HADR operations from 2005-2017 also highlight that technical problem in its assets, the strain of handling concurrency pressures, and the increased need to deploy on disaster relief that will divert it from the core task of warfighting: all ongoing concerns that could diminish its HADR readiness.

To bolster its HADR readiness, the RAN should consider two policy options. First, it should expand regional HADR cooperation with other navies, which will build coordination in the event of an actual natural disaster and mitigate the increased HADR burden its ships will face with climate change. Second, it should conduct a force review to analyse the performance of its assets under climate change, including formally assessing the time and resources it will need to spend on future HADR pressures and ensuring that its amphibious elements will be capable of performing both warfighting and HADR missions. If implemented within the next five to ten years, these steps will reduce the risk that the RAN is caught unprepared for its long-term, future HADR obligations.

This report proceeds in six sections. The Introduction first presents the reasons why the RAN needs to be prepared for HADR, including why the Navy performs disaster relief and its increased need to do so



as climate change accelerates. Section 1 provides a brief background and literature review of the RAN's participation in HADR, outlining some of its doctrine on HADR and its past humanitarian operations. Section 2 presents two key findings of the current state of the RAN's HADR preparedness, analysing how the Canberra-class LHDs bolster its preparedness while technical issues in its assets diminish it. Section 3 tries to forecast the RAN's performance in the two 'concurrency' scenarios described above, using examples from its historical HADR operations. Section 4 lays out two policy recommendations for the RAN in bolstering its HADR performance, and suggests that it should seek to expand multilateral disaster cooperation and to review its force readiness in light of climate change. Finally, the Conclusion summarises overall lessons learned for the RAN and the report's overall findings.



List of Abbreviations

ADF – Australian Defence Force

AMD – Australian Maritime Doctrine

ANAO – Australian National Audit Office

ASEAN – Association of Southeast Asian Nations

ASPI – Australian Strategic Policy Institute

FRANZ – France, Australia, and New Zealand Agreement

HADR – Humanitarian Assistance and Disaster Relief

HMAS – Her Majesty's Australian Ship

LHD – Landing Helicopter Dock

LPA – Landing Platform Amphibious

RAN – Royal Australian Navy



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Introduction: Why Must the RAN Be Prepared for HADR?

The Royal Australian Navy performs more tasks than just warfighting. As conceptualised by the RAN’s *Australian Maritime Doctrine* (2010), the ‘span of maritime tasks’ includes ‘operations other than war,’ such as ‘diplomatic’ and ‘constabulary’ operations focused on foreign policy and policing.ⁱ



Figure 1.1: The span of maritime tasksⁱⁱ

Foremost among such operations is the RAN’s role in Humanitarian Assistance and Disaster Relief (HADR): providing aid to affected populations after a natural disaster. Given Australia’s ‘middle power’ status in the Pacific – one of the world’s most disaster-prone areas – it is expected to take a leading role in disaster response and must do so frequently.ⁱⁱⁱ The RAN’s ability to sealift bulk supplies such as food and medical aid across vast distances means it plays a uniquely important role in disaster



relief.^{iv} Much of the task burden in a HADR scenario, therefore, falls on the Navy's shoulders, and it is often called upon by the Australian government as a 'first responder' to disaster.^v

This burden will only grow heavier as climate change increases the rate and severity of natural disasters. Storms, flooding, and especially cyclones in the Indo-Pacific, which has 90% of the world's exposure to them, will all hit harder as climate change disrupts weather patterns.^{vi} Particularly affected will be Pacific Island nations, whose low-lying geography means that their average of 12 natural disasters per year will increase.^{vii} Countries like Fiji and Vanuatu are also subject to additional disaster risks from earthquakes and volcanic eruptions, and climate change means that cyclones could strike areas in the Pacific that have never experienced them before.^{viii}

Another new risk from climate change will be 'concurrency pressures', where the RAN will have to simultaneously respond to either a chain of two or more natural disasters abroad, or a domestic and foreign disaster at the same time.^{ix} For the RAN, more frequent and concurrent regional deployments in disaster response could stretch its resources and divert it from its core task of warfighting.^x

Given these projected strains, it is necessary to consider the RAN's preparedness to continue fulfilling its HADR obligations. This report takes on this task, analysing 'preparedness' through the lens of material capability: considering if the Navy has sufficient and suitably equipped 'major systems' for HADR, which '...include ships, aircraft and other major equipment systems that are the *core elements of capability*.'^{xi}

Background and Literature Review

The Australian Agency for International Development defines humanitarian assistance as actions to 'save lives, alleviate suffering and enhance human dignity during and in the aftermath of natural disasters and human-induced crises.'^{xii} This involves 'helping developing countries prepare for, respond to and recover from humanitarian crises,' including disasters such as floods, cyclones, and earthquakes.^{xiii} This post-disaster recovery assistance is the focus of this report.

The RAN's significant responsibility for such assistance is shown by the size of the Australian Defence Force's area of operations: at 65 million square kilometres, it stretches across one-twelfth of the world's surface area.^{xiv} Accordingly, the RAN has been deployed as far as the Philippines and Indonesia in the north, for Typhoon Haiyan in 2013 and the Indian Ocean tsunami and earthquakes in 2004-2005; to Fiji



and Vanuatu in the east for various operations;^{xv} and domestically, as seen by the deployment of HMAS *Choules* to aid Queensland after Cyclone Debbie struck in 2017.^{xvi} Table 1 lists some of the RAN's recent HADR deployments.

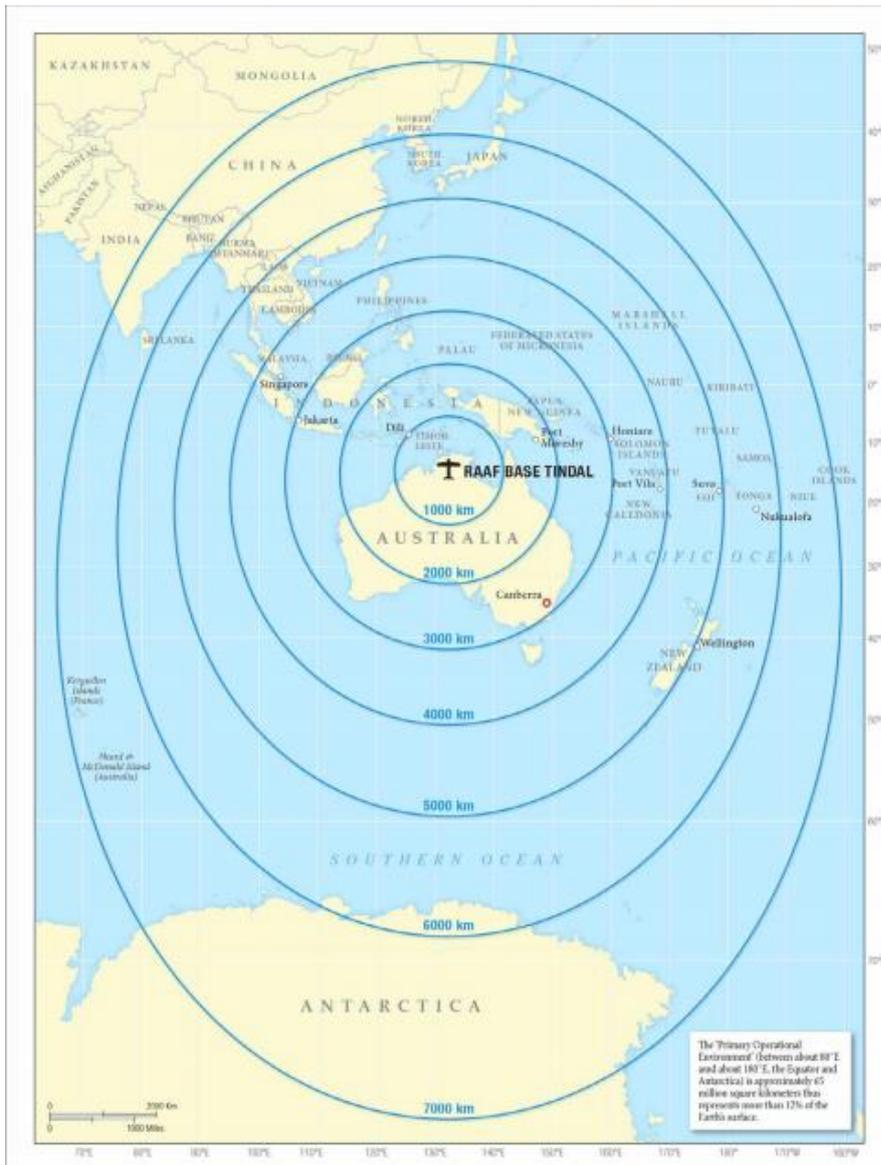


Figure 1.2: Primary operating environment of the ADF^{xvii}



Year	Disaster	Affected nation(s)	RAN Assets Deployed
2004	Boxing Day tsunami	Indonesia	HMAS <i>Kanimbla</i> , Sea King helicopters (x2) ^{xviii}
2005	Banda Aceh earthquake	Indonesia	HMAS <i>Kanimbla</i> , Sea King helicopters (x2) ^{xix}
2009	Padang earthquake	Indonesia	HMAS <i>Kanimbla</i> , Sea King helicopters (x2) ^{xx}
2009	Earthquake and tsunami	Samoa, Tonga	HMAS <i>Tobruk</i> ^{xxi}
2013	Typhoon Haiyan	Philippines	HMAS <i>Tobruk</i> ^{xxii}
2015	Cyclone Pam	Vanuatu	HMAS <i>Tobruk</i> , MRH-90 helicopter (x1) ^{xxiii}
2016	Cyclone Winston	Fiji	HMAS <i>Canberra</i> , MRH-90 helicopters (x3) ^{xxiv}
2017	Cyclone Debbie	Australia	HMAS <i>Choules</i> ^{xxv}
2017	Vanuatu volcanic activity	Vanuatu	HMAS <i>Choules</i> , MRH-90 helicopter (x1) ^{xxvi}

Table 1: Recent major HADR operations by the RAN

Reflecting its role in HADR, the Royal Australian Navy has incorporated disaster relief into its doctrine. *Australian Maritime Doctrine* (2010), the guiding publication on RAN strategic thinking, classifies HADR as a ‘diplomatic operation’ and notes the RAN’s role in supporting Indonesia after the 2004 Indian Ocean tsunami.^{xxvii} *Australian Maritime Operations* (2017) continues this classification and while it labels HADR a benign maritime task, it shows more war-focused thinking in noting that ‘power projection’ – deploying forces across great distances – and the ability to operate in the littoral are crucial to disaster relief operations.^{xxviii}

The 2016 Defence White Paper similarly recognises the importance of naval capabilities for HADR in declaring that ‘Our surface vessels...must also contribute to a wide range of whole-of-government priorities, including...humanitarian assistance and disaster relief.’^{xxix} However, there has been little deeper, Navy-specific analysis expanding on this concept. The latest analysis of HADR readiness – now



out-dated and not addressing climate change – seems to be RAN Commodore Peter Leschen’s 2010 analysis of 2009 aid to Indonesia and Samoa, which also considered how the then new Landing Helicopter Dock ships set for the acquisition would bolster the Navy’s HADR performance.^{xxx}

A final point is that the operational complexity of HADR missions increases the importance of RAN preparedness for them. Before a ship departs, appropriate supplies such as medical aid, food and water, and tents must be loaded on, not to mention weeks of provisions for Australian personnel. After arrival at the host country, a typical operation involves units such as hydrographic teams to survey the coastline, finding suitable landing sites for vehicles and assessing damage; medical teams working onshore and on-ship to treat injuries; engineers to rebuild destroyed infrastructure onshore and most importantly RAN and ADF personnel constantly operating helicopters and landing craft to air- and sea- lift aid, and to evacuate civilians.^{xxxi}

The State of RAN HADR Preparedness

This chapter presents two findings of the current state of RAN HADR preparedness, based on two case studies: RAN aid to Fiji in 2016, and domestic HADR after Cyclones Yasi and Debbie struck Queensland in 2011 and 2017, respectively. The fact that these operations were conducted recently suggests that they provide an accurate snapshot of current HADR readiness.

Key Finding 1

The RAN’s acquisition of two new amphibious *Canberra* class LHD ships significantly enhances its HADR preparedness.

In light of increased Australian presence in the Indo-Pacific, the RAN acquired HMAS *Canberra* and *Adelaide* to bolster its amphibious capability: the ability to land forces across vast maritime distances, projecting military power.^{xxxii} These LHDs represent a significant upgrade in capability from their predecessors, Landing Platform Amphibious (LPA) ships HMAS *Manoora* and *Kanimbla*. They boast a 1000 troop capacity instead of the LPAs’ 450, an 18 helicopter capacity instead of three, space for four landing craft instead of just two, and a tonnage of 30,000 instead of just 8,000.^{xxxiii}

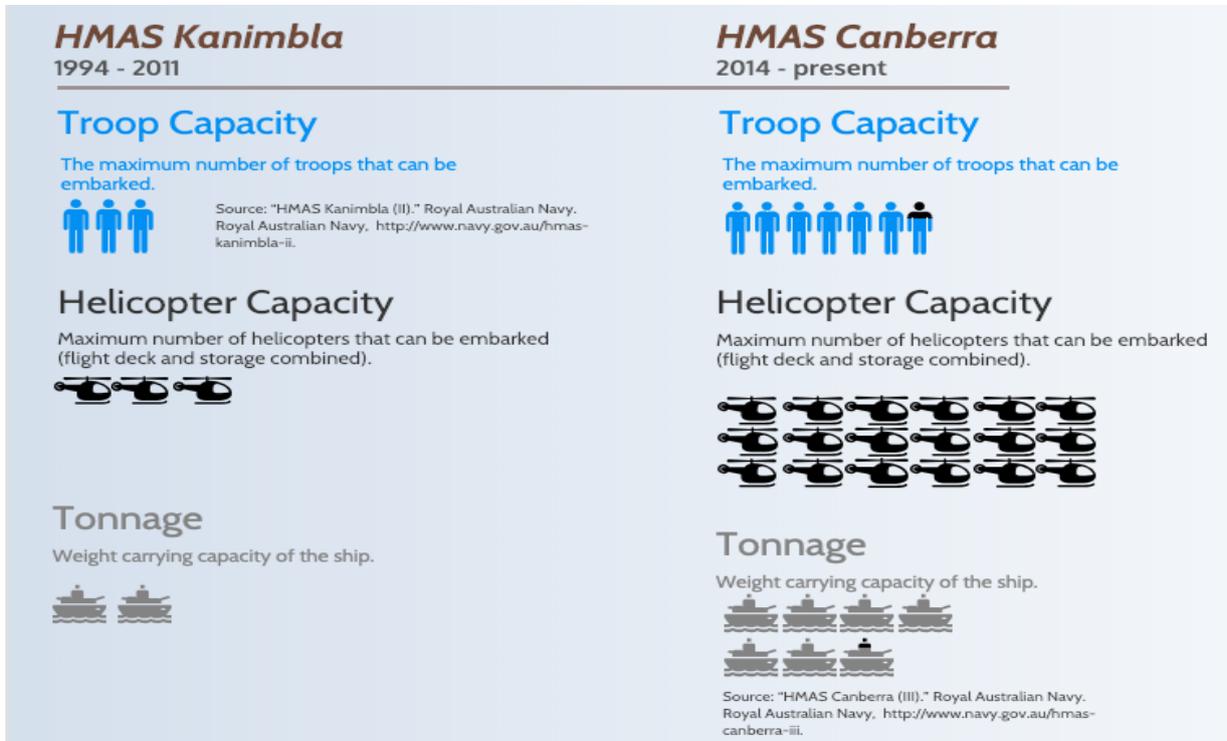


Figure 2.1: LPA-LHD Comparison

This upgrade means the RAN can now mount larger and more effective HADR operations. The LHDs' increased troop capacity and tonnage mean they can carry more of the diverse personnel necessary to aid the host country. Also, more helicopters and landing craft on the LHDs improve the RAN's transport capabilities, meaning that supplies such as food and water can get onshore quicker; more civilians can be evacuated to other areas in the host country or the hospitals on board *Canberra* and *Adelaide*; all while personnel are being delivered onshore to help rebuild.^{xxxiv}

These improved abilities were confirmed in HMAS *Canberra*'s first deployment, responding in 2016 after Cyclone Winston struck Fiji.^{xxxv} Despite the challenges of responding to the worst cyclone in Fijian history, with 62% of the population affected,^{xxxvi} the Department of Defence emphasises *Canberra* was able to:

- Deliver more than 114 tonnes of aid (food, tents, medical supplies) via landing craft;^{xxxvii}
- Deliver more than 140 tonnes of aid via helicopter;^{xxxviii}



- Facilitate repairs to nine schools, three medical centres, five community centres and four churches.^{xxxix}

As even multiple independent analysts pointed out in the aftermath,^{xi} the scope of Operation FIJI ASSIST was unprecedented and validates Defence's assessment that the LHDs have massively improved Australia's HADR capability:

New amphibious ships, coupled with an existing strategic airlift capability, mean Defence can now deliver aid supplies, personnel and equipment more efficiently and effectively across the region.^{xli}

More importantly, the RAN should keep in mind 'hidden benefits' that the LHDs offer for HADR, benefits that go beyond the ability to physically deliver more aid. For instance, *Canberra's* increased size meant that during FIJI ASSIST, it effectively served as a self-sustaining, sea-based command centre.^{xliii} This had the benefit of not needing to rely on the Fijian government for supplies while keeping Australian military presence minimal and only based at sea.^{xliiii} This marks a significant improvement from an era where LPAs were the primary ships deployed on HADR. In aiding Indonesia after the 2004 tsunami, for instance, the small size of HMAS *Kanimbla* meant the ADF's task force was forced to set up headquarters onshore, not only forcing commanding officers to constantly shuttle between land and sea, but also creating a large footprint onshore, politically sensitive given the Indonesian government's concerns about maintaining its sovereign control over response efforts.^{xliv} *Canberra's* 2016 performance thus validates RAN Commodore Leschen's 2010 analysis, where he suggested the then not-yet-built LHDs would offer both a greater ability to physically deliver aid and these greater command-and-control benefits.^{xlv}

Key Finding 2

Technical issues faced by RAN assets have prevented effective HADR response in the past, and remain a challenge for current preparedness.

The most high-profile example of this issue was when the RAN was unable to assist Queensland after Cyclone Yasi struck in February 2011, due to technical problems on all of its amphibious ships, the LPAs HMAS *Kanimbla* and *Manoora*, and the Landing Ship Heavy HMAS *Tobruk*. *Manoora* had irreparable issues with corrosion and its gearbox, forcing it by late 2010 to start being decommissioned; her sister ship *Kanimbla* was undergoing 18-month extended maintenance and also unable to respond.^{xlvi} Meanwhile, *Tobruk* was supposed to be on call to respond within 48 hours, but in reality, was



undergoing urgent repairs for corrosion that left parts of the hull only 2mm thick.^{xlvii} The RAN's failure to respond had real consequences for the 10,000 Queenslanders and 300 medical patients who needed to be evacuated,^{xlviii} as an amphibious sealift capability would have been perfectly suited for such 'non-combatant evacuation.'^{xlix}

Numerous voices have since confirmed that the RAN's mismanagement in maintaining its assets was the biggest factor behind this failure. The formal review commissioned in the aftermath of Yasi found a 'can-do, make-do' culture in the RAN that prioritised a high tempo of operations for the LPAs, explaining why both 40-year old ships were strained and suffered the problems they did by the time Yasi struck.¹ More recently, Admiral Chris Barrie explained to Parliament in 2018 that there was 'a failure to take preparedness seriously,' and that '[the RAN] dropped the ball on this.'ⁱⁱ

Technical problems once more became an issue in 2017, when both LHDs could not assist with Cyclone Debbie.ⁱⁱⁱ A propulsion issue aboard *Canberra* led to both ships being docked in Sydney for inspection.ⁱⁱⁱⁱ However, unlike Yasi, these problems did not arise because of decades of maintenance neglect, and it was purely by chance that they coincided with Debbie.^{liv} The precaution taken in docking both ships shows an improvement by the RAN of taking seaworthiness seriously.^{lv} As Andrew Davies, of the Australian Strategic Policy Institute noted, 'They [navy leadership] could also regard themselves as unlucky that an unforeseen technical problem came just at the wrong time.'^{lvi} Nevertheless, the lesson remains for the RAN that these unforeseen technical problems with bad timing can prevent it from deploying assets urgently needed for HADR.

While the Navy was able to deploy its other amphibious vessel HMAS *Choules* to assist, the LHDs would have offered greater capabilities than *Choules*, which can only operate two helicopters and only has a troop capacity of 400.^{lvii} This highlights that the RAN's future HADR response could be less sizable and efficient than fully possible in a repeat of the events of Cyclone Debbie.

Even more recently in July 2019, the ADF was forced to ground its entire fleet of MRH-90 helicopter, the primary aircraft used by the RAN for HADR, after problems were detected in the tail rotor.^{lviii} While the RAN did not have any HADR obligations as the helicopters were taken offline, their grounding comes uncomfortably close to the November to April period when it must be on disaster standby.^{lix} Furthermore, the Australian National Audit Office has labelled the MRH-90s as a 'project of concern' since 2011: with technical problems and cost overruns meaning that the helicopters have not yet reached full operational status as of 2018.^{lx} These ongoing concerns with the MRH-90s increase the risk that



they face technical problems as they are needed for HADR; in such a case the RAN would completely lose its ability to airlift aid, a devastating blow for any HADR operation.

Concurrency Pressures and the RAN's Future HADR Performance

This chapter explores the RAN's preparedness for future 'concurrency pressures,' defined by the 2018 Parliamentary Hearing on Climate Change and National Security as 'a combination of disasters or military missions requiring responses simultaneously.'^{lxi} With climate change intensifying natural disasters in the Pacific, such simultaneous operations will become more needed and will divert military resources, in the case of the RAN, its personnel and large ships.^{lxii}

This analysis considers two concurrency scenarios in the literature: first, responding to a chain of disasters in the region that affect other countries other than Australia; and second, responding to a regional disaster while also having HADR needs at home.^{lxiii}

Scenario 1: Chain of Natural Disasters Abroad

First, the RAN must prepare for two or more natural disasters striking at the same time abroad. Such a scenario has happened before: the RAN provided simultaneous aid to Indonesia after an earthquake struck in September 2009, and to Samoa after an earthquake and tsunami on the same day.^{lxiv} A more high-profile example, and the focus of this analysis, was when the RAN deployed HMAS *Kanimbla* to aid Indonesia on Operation SUMATRA ASSIST after an earthquake in March 2005, just five days after the ship had finished HADR operations in Indonesia in the aftermath of the 2004 Boxing Day tsunami and earthquake.^{lxv}

In a modern-day repeat of SUMATRA ASSIST, the RAN would likely deploy an LHD. The better sea-based, self-sustaining capabilities of the LHDs means that compared to 2005, the RAN is better equipped for performing two HADR missions in quick succession. Despite this, SUMATRA ASSIST shows that the RAN should be prepared for operational strains in handling a chain of natural disasters, particularly as the short timeframe between both HADR operations in Indonesia bore fatal consequences. This came in the 2 April 2005 crash on Nias Island of a RAN Sea King helicopter being used to deliver aid, leading to the deaths of 9 ADF personnel.^{lxvi} As the Board of Inquiry into the tragedy concluded, the malfunction of the flight control system which caused the disaster occurred because of improper maintenance, including the failure to perform safety inspections while rushing *Kanimbla* to



respond to the second earthquake.^{lxvii} As Commander James Tobin, who oversaw the Sea King's parent squadron noted: '36 hours is never enough time to put two aircraft and 30 people and a flat-bed truck's worth of stores onboard a ship.'^{lxviii} Such operational demands from compressed timeframes will strain even the more capable LHDs.^{lxix} More frequent deployments under climate change – with shorter rest periods in between – increases the risk of safety procedures slipping, especially given the previously described technical problems. Even though the Navy has improved its maintenance culture, concurrency pressures from climate change are greater than 2005 and offset this. Thus, even though the Sea King crash likely represents a worst-case scenario for the RAN, it should keep in mind that smaller-scale incidents could take place if it does not prepare for concurrency pressures.



Figure 3.1: Sea King helicopter similar to the one lost on Nias Island.^{lxx}

In short, with the LHDs the RAN is more prepared for this scenario than in 2005: validating Defence's testimony to Parliament that stressed its impressive 'range of capabilities' for HADR. At the same time, the RAN still faces the same, if not increased, operational challenges as those faced in 2005, adding



urgency to the statements of analysts such as Dr Anthony Bergin of ASPI and Defence itself that concurrency could start straining even these improved assets by 2025.^{lxxi}

Scenario 2: Domestic and Foreign Disaster

While it is harder to find an example of simultaneous foreign and domestic HADR, the Centre for Policy Development notes that this could emerge under climate change:

One scenario is the ADF needing to respond to a regional request for a large-scale HADR deployment in the aftermath of a severe tropical storm, whilst also responding to a natural disaster domestically.^{lxxii} In this case, the RAN would likely deploy both LHDs: one for the domestic disaster, and one abroad. The examples of Cyclones Yasi and Debbie prove that at least one amphibious ship would be necessary domestically, and the cases of Fiji and Indonesia show that an LHD would likely be deployed regionally.

However, this could serve as a source of strain for the RAN, as its concept of operations mostly anticipates only one LHD on disaster standby during cyclone season, pre-loaded with emergency supplies and on 48-hour deployment notice.^{lxxiii} In deploying this LHD the RAN would ultimately prioritise the domestic disaster but then would have to rush another LHD or *Choules* to be ready to assist the foreign nation. This would pose challenges if that ship was not currently in Australia, but deployed overseas: such as in 2017 when *Choules* was diverted from an exercise with New Zealand to aid Vanuatu after the threat of an active volcano.^{lxxiv} While *Choules* did not need to embark additional supplies as its purpose in Vanuatu was evacuating the local population rather than delivering supplies there could be a future scenario where a ship would need to return to Australia to embark supplies and equipment. As Andrew Davies sums up, the challenge for this scenario is that even with three large ships, ‘they will rarely be in the right place at the right time.’^{lxxv}

The RAN’s ability to respond would depend on the relative size of the two disasters, but it could not completely ignore the foreign disaster: as established in the introduction, Australia, as a regional power, would be expected to respond. The worst-case scenario for the Navy would then be a large domestic disaster, such as when it needed 13 ships to assist Darwin after the city was almost destroyed by Cyclone Tracy in 1974.^{lxxvi} In a repeat of such an event, RAN aircraft and possibly both LHDs could be tied up in responding, limiting its ability to send assets overseas.

To summarise, the lack of historical precedent and the fact that at least two *Canberra* class ships would be required means that this scenario should be a concern for the RAN in its future HADR preparedness: more pressing than the first, where the RAN has operational experience.



Policy Recommendations

With the outlook for the RAN discussed in the last two chapters, this chapter now lays out two policy recommendations for the Navy. These recommendations attempt to balance the RAN's secondary mission of HADR with its primary mission of warfighting, seeking solutions that enhance its HADR abilities without sacrificing military preparedness.

Recommendation 1

The RAN should seek to expand regional multilateral HADR cooperation, particularly with navies in the Indo-Pacific. This involves conducting joint HADR military exercises with new partners, to enhance interoperability between navies and generate knowledge transfers.

The context behind this recommendation is that Australia needs more regional HADR partners. More partners mean more countries that Australia can call on for assistance in handling a future concurrency scenario, with their naval assets able to mitigate some future strain on the LHDs. Adding to this is that France and New Zealand – Australia's traditional HADR partners since 1992 under the FRANZ Agreement^{lxxvii} – face the future with decreased HADR ability. Despite ongoing biennial HADR exercises like Croix du Sud,^{lxxviii} French analysis notes that its regional military, through New Caledonia, only maintains two 30-year old patrol boats and aircraft not suited for evacuation operations, forces insufficient for increased HADR needs under climate change.^{lxxix} Meanwhile, Joanne Wallis observes that 'New Zealand's defence capabilities are at odds with the challenges facing the Pacific', including HADR, as a result of defence spending that is one-third that of Australia's.^{lxxx}

There are several benefits of greater multilateral cooperation agreements. First, no HADR operation is ever only unilateral. FIJI ASSIST, for instance, was supported by the assets of all three FRANZ nations in addition to those of the US, India, and Indonesia.^{lxxxii} Greater efforts to exercise RAN assets with other navies bolsters its ability to work with those navies in an actual disaster scenario. Second, cooperation over the 'low-hanging fruit' of HADR - the 'soft' end of naval cooperation - could create trust for expanding 'harder' military ties that expand Australia's security cooperation.^{lxxxiii}

In seeking partners, the RAN should seek to formalise cooperation with the other nations of the 'Quad' – the US, India, and Japan. These countries are natural partners for Australia, as the very idea of the 'Quad' was born from cooperation after the 2004 Indian Ocean tsunami.^{lxxxiii} Despite this, the RAN has



only maintained HADR cooperation with each on a bilateral basis: working with the US and Japanese medical teams in the US-led PACIFIC PARTNERSHIP exercise,^{lxxxiv} and practising disasters scenarios with India in the AUSINDEX exercise since 2015.^{lxxxv} As David Brewster argues, Australia should move beyond these bilateral ties and towards a formal trilateral or quadrilateral Indian Ocean disaster response framework, modelled on FRANZ.^{lxxxvi} As a first step the RAN can seek participation or observer status in the India-Japan-US trilateral MALABAR naval exercise, which includes a HADR component.^{lxxxvii} The Quad would ease the geographical strain that Australia faces in Indian Ocean HADR, allowing a greater focus on the South Pacific.

Issues such as a shared fear of China perceiving the Quad as threatening,^{lxxxviii} the distance between the countries involved,^{lxxxix} and constantly changing political will in the US that affects HADR funding remain potential barriers for the Quad,^{xc} but the RAN has other options for formal cooperation. In exploring a multilateral framework, the RAN could tap into existing cooperation with Indonesia, Singapore, and the Philippines, participants in RAN HADR simulations such as Exercise KAKADU 2018,^{xcii} and Indo-Pacific Endeavour 2019.^{xciii} This would be in line with the Defence White Paper 2016, which in multiple instances names Indonesia and ASEAN countries as offering opportunities for HADR cooperation.^{xciii}

As a final note, the RAN should use the LHDs as platforms for cooperation: their sizable amphibious capabilities allow Australia to claim a leading role in multilateral HADR and to practice naval interoperability. The smaller *Choules* has already demonstrated this, having hosted 300 troops and vehicles from not only Australia but also France, Tonga, and Vanuatu during the HADR exercise Croix du Sud in 2018.^{xciv}

Recommendation 2

The RAN should conduct a review of its HADR readiness, as part of a broader force review in the context of climate change. First, this means examining the increased HADR deployment needs of the LHDs under climate change. As both climate change's impact on HADR and the acquisition of the LHDs have been relatively recent developments, studying the interaction between the two has not been on Defence's agenda.^{xcv} A priority for the RAN should then be commissioning a study on the additional costs, personnel requirements, and operational needs of *Canberra* and *Adelaide* as they are diverted more frequently from combat for HADR, something that will also reveal information about its warfighting preparedness.



To further address concurrency pressures, the RAN should implement the recommendation of Dr Anthony Bergin in his 2018 Parliamentary testimony to ‘test our military systems,’ simulating their performance in a complex disaster scenario.^{xcvi} For the RAN, this could involve practising concurrency scenarios in independent or multilateral HADR exercises.

Resolving technical problems in its assets under the auspices of a force review and would greatly enhance the RAN’s HADR and warfighting preparedness. In this regard, the RAN should follow the recommendations of the Australian National Audit Office. For the LHDs, the ANAO recommends that the RAN should ensure ‘sufficient qualified and experienced staff’ are continuing tests to resolve issues such as the propulsion that caused problems in 2017.^{xcvii} The Navy should build on the momentum of its August 2019 completion of sea trials for another project that attracted ANAO’s concern, the LHD landing craft.^{xcviii} For the MRH-90, however, a significant redesign of systems such as its rappelling, aero-medical evacuation, and cargo hook is needed.^{xcix}

Finally, reviewing its force readiness means the RAN should continue developing its amphibious capability within the ADF, including continuing to ensure a HADR component in joint exercises with the Army. Such a capability is fundamental for managing the joint, sea-based nature of HADR missions, exemplified by FIJI ASSIST, where HMAS *Canberra* did not just host RAN personnel but also the Army’s 16th Aviation Brigade and its MRH-90 helicopters.^c

It is critical for the RAN to build joint amphibious operational experience with the Army, ensuring that Army personnel can be smoothly embarked on the LHDs and can operate the helicopters and landing craft aboard. Continuing military exercises that involve HADR practice is one way to gain such experience. The RAN should continue using exercises such as SEA EXPLORER, which in 2018 included a practice deployment of air and land elements from HMAS *Canberra* in a HADR scenario,^{ci} as a way of practising both ‘high-end’ combat and ‘low-end’ scenarios like HADR, ensuring its readiness across the spectrum of amphibious operations.



Figure 4.1: Flight Deck of HMAS Canberra during Sea Explorer 2018.^{cii}

Conclusion

This report has built a cautiously optimistic picture of overall RAN HADR readiness. With the unprecedented capabilities of its two *Canberra*-class ships, the RAN should be confident in its HADR abilities but should be wary that even the LHDs will be subject to strain from future concurrency pressures. Furthermore, FIJI ASSIST offers a recent snapshot of the RAN's impressive HADR abilities that have made a real difference in the South Pacific. However, it should be noted that the LHDs have yet to be deployed further afield in the Indian Ocean for HADR, or even again in the Pacific. Moreover, the RAN should be cautious of ongoing technical problems in its assets that can slow or prevent disaster response.

This report identified two policy recommendations for the RAN in building HADR readiness: expanding its multilateral disaster cooperation and conducting a review of its disaster relief readiness. Just as the RAN anticipated the need for amphibious capability in 2005^{ciii} - ten years before it was realised with the LHDs - it is similarly important for the RAN to start early on maximising its preparedness. Building multilateral relationships and an amphibious capability inherently take time. The longer the RAN waits, the higher its chances of being caught flat-footed and unable to aid when disaster strikes.



Endnotes

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