

## Audit Report No. 8, 2000-2001

# Amphibious Transport Ship Project

## Department of Defence

### Introduction

- 2.1 In 1993, Defence proposed that the then Government acquire a new ship for \$494 million to support amphibious operations and provide at-sea training to Navy personnel. The Government rejected the proposal as too costly but gave permission for Defence to investigate less expensive options.
- 2.2 In 1994, a Defence Inspection Team examined four ships the US Navy was about to decommission and recommended two ships for purchase. Defence purchased the two ships for \$61 million in August 1994. They were then commissioned as HMAS *Manoora* and HMAS *Kanimbla*.
- 2.3 Since Defence acquired these two ships, there has been extensive maintenance work and numerous capability upgrades performed on *Manoora* and *Kanimbla*. Defence had originally expected the project would cost \$125 million in total and take 14 months to complete. This has since increased to \$395.1 million and may now take 44 months. The main items of expenditure are:
  - \$31.5 million for maintenance;
  - \$203.8 million for modification and refit; and

- \$35.2 million for increased capability.<sup>1</sup>
- 2.4 A decision to further increase the capability of the ships is planned for 2004–05. If the decision is made to proceed, it is expected to cost between \$50m–\$100 million. This will increase the total project cost to \$445 million.
- 2.5 In February 2000 the then Minister for Defence issued a press release which was highly critical of the acquisition process. The Minister instructed the Defence Secretary to ‘recommend to me improvements in the management of the Department to ensure the experience of the [*Manoora* and *Kanimbla*] is not repeated in current and future acquisition projects. The entire Department should learn from this unfortunate, costly experience.’<sup>2</sup>
- 2.6 It was soon after the issue of the Minister’s press release that the ANAO decided to conduct a preliminary study which subsequently became a performance audit. The findings were recorded in Audit Report No. 8, *Amphibious Transport Ship Project*, tabled on 7 September 2000.

## ANAO audit objectives and findings

- 2.7 The objective of the ANAO audit was to assess the efficiency and effectiveness of Defence’s management of the acquisition and modification of the ships with the main focus being on the modification contract. The ANAO estimated the cost of conducting the audit was \$149 000.<sup>3</sup>
- 2.8 The ANAO noted that in 1998 and 1999, Defence conducted two internal audits of the project. The 1998 report focused on the acquisition of the ships while the 1999 report commented on the modification and refit of the ships. Both reports raised issues of serious concern, highlighting a series of inadequacies and deficiencies. Neither of the reports was reviewed by Defence’s Audit Committee.<sup>4</sup> Defence did not respond to its internal audit 1998 report recommendations and only limited action was taken in response to the 1999 report’s recommendations. The ANAO

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1 ANAO, Report No. 8, 2000-2001, p. 11.

2 ANAO, Report No. 8, 2000-2001, p. 83.

3 ANAO, Report No. 8, 2000-2001, p. 24.

4 ANAO, Report No. 8, 2000-2001, p. 77.

believed that it ‘would have been in Defence’s interest had closer consideration been given to the reports and their recommendations’.<sup>5</sup>

- 2.9 Defence had originally envisaged that the project was to cost \$125 million and take 14 months to complete. The ANAO reported that this has since increased to \$395.1 million and may now take 44 months. While the primary reason for the cost increase and time delay was the unplanned additional repair and refit and an upgrade in capability, other factors included ‘an underestimation in the complexity of the design phase, Defence delays in delivering Government Furnished Equipment and no provision for certain work in the original funding proposal’.<sup>6</sup>
- 2.10 The ANAO found Defence did not properly assess the condition of the ships before purchasing them. This led to greater than expected costs in repair and refit to bring them into service. Defence also had not previously developed detailed guidance on its capability requirements. The ANAO reported ‘the capability development process has effectively occurred in reverse on this project, with detailed capability guidance being developed only after modification work on the ship had begun’.<sup>7</sup>
- 2.11 Navy used a ‘firm price contract’ for the repairs and refit of the two ships. The benefit of these types of contracts is that it places the risk of schedule delays and cost overruns with the contractor. However, Defence knew before it signed the contracts that there would be ‘extensive growth work’.<sup>8</sup> Consequently, the changes and increasing scope of the contracts nullified the benefits of a fixed price contract.
- 2.12 The ANAO has identified eight major lessons to be learnt for Defence. These are:
- Major Defence capital acquisitions, especially ‘opportunity buys’, should only be made after military capability needs have been clearly defined, costed and budgeted.
  - To avoid the need for additional funding during projects, a ‘whole-of-capability’ approach should be taken during the

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5 ANAO, Report No. 8, 2000-2001, p. 78.

6 ANAO, Report No. 8, 2000-2001, p. 14.

7 ANAO, Report No. 8, 2000-2001, p. 14.

8 ANAO, Report No. 8, 2000-2001, p. 60.

capability development process, particularly for capabilities of a joint Service nature.

- Life-cycle costing analysis is important in the early stages of the capability development process by assisting in decisions on the most cost-effective capability option.
  - ⇒ It is also important in the later stages, as it allows known costs to be refined and new costs to be identified and adequately budgeted.
- To provide adequate focus on management of major projects, new military capabilities should be funded from Defence's major capital equipment funds rather than from its repair and refit funds.
- The risks inherent in the purchase of a second-hand ship call for qualified and experienced personnel to make a detailed examination of its condition.
  - ⇒ The examination requires sufficient time, full access to the ship and a dry dock examination of its hull.
- Prior to the placement of any additional work after contract signature, the work should be closely examined for its overall cost effectiveness and its likely impact on budget and schedule.
- Given the high design and production risks associated with ship modifications that include repair and refit, there needs to be adequate provision for contingencies (for both general and emergent work).
- A high-level risk assessment needs to be undertaken by experienced personnel at key stages of the capability development process and any significant risks identified should be appropriately treated and closely monitored.<sup>9</sup>

2.13 The ANAO made five recommendations aimed at improving the management of this and subsequent acquisition projects. The Department agreed to all recommendations, one with qualification.

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<sup>9</sup> ANAO, Report No. 8, 2000-2001, p. 18.

## Committee Objectives

- 2.14 The ANAO audit report provided the Committee with an opportunity to review Defence's acquisition and modification on HMAS *Manoora* and HMAS *Kanimbla*. The Committee focused on:
- acquisition and maintenance of the ships;
  - value for money considerations; and
  - gaps in military capability.

## Acquisition and maintenance

- 2.15 In 1994, a Defence Inspection Team surveyed four ships the US Navy were about to decommission and recommended two ships for purchase. The Defence Inspection Team of two Navy officers engaged a commercial surveyor from the US to assist them with the task.
- 2.16 The ANAO reported several problems with the pre-acquisition surveys. These included:
- Over-reliance on information provided by US Navy on the condition and maintenance history of the ships;
  - Pressures on the Inspection Team because of the availability of surplus funds in 1993-94 and other countries' interest in acquiring US Navy ships;
  - Inability to conduct closer examination of the ships' hulls and have access to key areas of the ship because the ships were still in US Navy service at the time of the survey; and
  - Inability to conduct effective sea trials and test the ships because of equipment failure.<sup>10</sup>
- 2.17 The Committee heard that Defence discovered substantial problems after the purchase of the ships. In evidence to the Committee, Defence stated:
- Upon arrival in Australia, we understand these ships underwent considerable repair and refit work at ADI, survey work and preliminary modifications. Considerable

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10 ANAO, Report No. 8, 2000-2001, p. 48.

emergent work was found as cladding was removed and previous inaccessible spaces were opened up for survey, revealing extensive areas of corrosion.<sup>11</sup>

- 2.18 In view of the problems with the acquisition and, in particular, inadequacies with the ship survey, the Committee asked if any disciplinary action against RAN personnel and against the contractors had been undertaken. Defence indicated that the survey team could not inspect about 80 per cent of the tanks as the ships were in a fully operational state for the trials and handover. Consequently, the major areas of corrosion repaired during the modification period were mainly in the water areas and water ballast tanks, 'with some also in decks and bulkheads that was not exposed until the deck tiles and insulation had been removed'.<sup>12</sup>
- 2.19 In view of this, Defence concluded that no 'disciplinary action was taken because the report, noting its caveats, was not sufficiently inconsistent with the subsequent findings of surveys to warrant consideration of legal action'.<sup>13</sup> Defence informed the Committee that the two Australian naval officers involved in the original survey team are no longer serving with the RAN or the Department of Defence.<sup>14</sup>
- 2.20 Defence originally allowed \$8.7 million for refits and repairs, based on US experience of what they had been spending in their typical refits for the ships for the last two refits. Actual expenditure on the total repair of equipment and hull was \$142 million. The ANAO reported that Defence had to use funds 'set aside for the repair and refit of other RAN ships. Navy acknowledges that this will have a detrimental, and as yet unquantified, impact on the maintenance levels of the remainder of the fleet and therefore its future reliability.'<sup>15</sup>
- 2.21 When questioned by the Committee on action Defence took after discovering the problem, Defence stated that 'Navy used its ship repair funding to effect [the] repairs'.<sup>16</sup> Furthermore, 'the deputy chief started a series of roundtable gatherings. We brought many of the internal Defence stakeholders, people who were involved in

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11 C. Neumann, *Transcript*, 2 March 2000, p. 37.

12 Defence, Submission no. 8, p. 1.

13 Defence, Submission no. 8, p. 1.

14 Defence, Submission no. 8, p.2.

15 ANAO, Report No. 8 2000-2001, p. 47.

16 T. Ruting, *Transcript*, 2 March 2000, p. 37.

the activity, together to try to get a better understanding of what was the likely direction that this activity would proceed in.’<sup>17</sup>

- 2.22 Defence has acknowledged the shortcomings in the acquisition phase of the project and the blow-out in maintenance costs. Defence attributed these failures to a split of authority and a lack of coherent high level management of the project.

Part of the problem was, we thought, because senior level oversight of the project outcomes was rather limited to functional areas of responsibility. A number of organisations were involved, which was a problem. It was organisation bases, so again people just did what they thought in their own particular areas. There were no higher level management arrangements enabling effective control and authority to be exercised.<sup>18</sup>

- 2.23 In evidence to the Committee, Defence gave assurances that it has taken several measures designed to prevent any re-occurrence of this problem.

One of the critical reasons for this project going bad was that there were four different players in it. It is now clearly understood within the department that there will be one player and that will be the Defence Material Organisation. It will have both through life support and contact people working on the acquisition.<sup>19</sup>

- 2.24 Defence also acknowledged the need to have fully agreed functional requirements before proceeding with an acquisition and having adequate allowances for repair of older vessels.

- 2.25 In audit recommendation 1, the ANAO proposed that Defence undertake life-cycle costing analysis so that all costs associated with an operation are known and are budgeted for at an early stage. Defence agreed with this recommendation. In evidence to the Committee, Defence stated that it has ‘started gathering that data for a more accurate life cycle cost assessment, and are fitting an asset management and planning information system on board the ships—for our routine operation of them—that will allow us to more accurately gather a lot of this information.’<sup>20</sup>

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17 Ruting, *Transcript*, 2 March 2000, p. 38.

18 Neumann, *Transcript*, 2 March 2000, p. 38.

19 M Roche, *Transcript*, 2 March 2000, p. 45.

20 T Ruting, *Transcript*, 2 March 2000, p. 39.

## Value for money

- 2.26 The ANAO reported that a value for money judgement would need to take into account a range of factors including:
- Time frame and cost required to acquire and modify *Manoora* and *Kanimbla* relative to those required to build a large new ship;
  - Number of personnel required to crew *Manoora* and *Kanimbla* relative to that required of a large new ship;
  - Operating costs of *Manoora* and *Kanimbla* compared with those of a newly built ship;
  - Value placed upon the operational flexibility and reduced combat risk offered by two ships with equivalent capability compared to that of a single new ship; and
  - Expected service-life from each of the options.<sup>21</sup>
- 2.27 The audit report concluded that any ‘value-for-money advantage apparently provided by [*Manoora* and *Kanimbla*] over the acquisition of a new ship has been dissipated, or at least significantly eroded.’<sup>22</sup>
- 2.28 The Committee heard the difficulties inherent in trying to assess the relative advantages and disadvantages of building a new ship as opposed to acquiring the two older vessels. Defence claims that having two ships enhances Defence’s capabilities because it is able to operate in two different locations at the same time. This has allowed Defence to increase its flexibility of operations.

The reality is that since the decision was made to buy these things, the actual need has been to operate in two discrete operational areas. We had *Manoora* in the Solomons three times and we had to replace her with a frigate or *Tobruk* when she has not been there—neither of which is as capable—and, of course, we had the Timor exercise on the other side. The availability of two will, in fact, work out well.<sup>23</sup>

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21 ANAO, Report No. 8, 2000-2001, p. 45.

22 ANAO, Report No. 8, 2000-2001, p. 45

23 Roche, *Transcript*, 2 March 2000, p. 48.



- 2.29 These advantages are modified by the life expectancy and maintenance cost of the vessels. The ANAO noted that Defence expects to retire *Manoora* and *Kanimbla* by 2015. During this time, a significant risk to the ADF is 'block obsolescence'. This is a term used to describe the 'problem arising from between 2005 and 2020 when a large proportion of ADF equipment becomes obsolete in terms of its inability to be maintained or its inability to match potential threats'.<sup>24</sup> Defence estimates that, in contrast, a new build would have lasted until 2030.<sup>25</sup>
- 2.30 Defence was asked if, after purchasing *Manoora* and *Kanimbla*, it had undertaken a cost benefit analysis against the option of purchasing a new ship. Defence's broad response was that instead of having a new ship for 30 years, Navy got two reconditioned ships for 15 years each. Defence stated:
- It was done at the time, a couple of years ago. The view was that at the current budget cost these vessels have come in at around half the cost of a new vessel and around half the life of a new vessel. We are budgeting on a 15-year life for them. They are in the white paper to be replaced in 2015. So the equation in terms of cost per ship years is fairly close to in balance. There will obviously be increased maintenance costs—and I think that is what the chairman is getting at as they get closer to the end of their life. We are going to have to keep a very close eye on that and make sure that we manage it very carefully.<sup>26</sup>
- 2.31 Defence expects that the maintenance cost will increase. *Manoora* and *Kanimbla* will be 44 years old when their service life expires in 2015. Defence stated that towards the end of the life of the ships the 'maintenance costs are going to provide us with a bit of a challenge because the cost of maintaining a 45-year-old ship is quite different from maintaining a two or three-year-old ship'.<sup>27</sup>
- 2.32 In conclusion, Defence conceded that, had it known the full costs of bringing *Manoora* and *Kanimbla* into service, it would probably not have purchased them. It admitted that 'if we actually knew the full costs of buying the two ships in the States, for whatever reasons, would we have actually done it? I think the answer is

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24 ANAO, Report No. 8, 2000-2001, p. 45.

25 ANAO, Report No. 8, 2000-2001, p. 45.

26 Roche, *Transcript*, 2 March 2000, p. 40.

27 Roche, *Transcript*, 2 March 2000, p. 41.

probably not, given that a single new ship was actually cancelled on cost grounds.<sup>28</sup>

- 2.33 The Committee noted the evidence from Defence and ANAO that after the repair and refit of *Manoora* and *Kanimbla*, the ships have proved capable and have added to Defence's flexibility. However, the management and administration of the project have been deficient in important respects. The failings and oversights of the project should form the basis of lessons learnt to prevent any future occurrences.

## Gaps in military capability

- 2.34 Defence originally estimated it would take 14 months to bring *Manoora* and *Kanimbla* into service. Instead it took 44 months, exceeding the original estimate by two and a half years. Defence has had several large projects which it has failed to deliver on time and within budget. These include the Collins class submarines and the Jindalee Over-the-Horizon Radar Project (JORN). The Committee has concerns about the effects of these prolonged project delays on Australia's strategic and military capabilities.

- 2.35 The Committee sought Defence's response to ANAO findings that *Manoora*'s capabilities do not fully meet those specified in the Joint Detailed Operational Requirement. The ANAO reported that:

Key deficiencies relate to the strength of the forward deck and stern door (that is, the ability to move heavy vehicles over them); heating and cooling capacity of the ship; the ability to produce sufficient amounts of potable water and transfer it ashore; and handling and stowage of watercraft in certain sea states.<sup>29</sup>

- 2.36 Defence responded:

The strength aspects are now being investigated using an external classification society to review these. We have certainly moved a number of relatively heavy cargoes on the forward deck and the stowage arrangements for watercraft have been clarified there. There are seven deficiencies overall against the joint detailed operational

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28 Neumann, *Transcript*, 2 March 2000, p. 48.

29 ANAO, Report No.8, 2000-2001, p. 40.

requirement. It was always recognised that that was the final capability we would aspire to. It has not been funded or approved necessarily to achieve all of that at the outset. In terms of the potable water situation we have upgraded the capacity of the plant in both of the ships. *Kanimbla*, being the second completed, has a more capable system, and we are now working on some improvements to *Manoora's* at this point in time.<sup>30</sup>

- 2.37 The Committee notes that phase 3 of the project involves additional capability upgrades. This phase is yet to be approved but a decision is planned in 2004–05. The expected cost of this phase is between \$50 to \$100 million.
- 2.38 In audit recommendation 4, the ANAO proposes that ‘prior to commencement of Phase 3 of the project, Defence assess the design risks associated with this Phase and consider the costs and benefits of letting separate contracts for design and production’.<sup>31</sup> Defence gave qualified agreement to this recommendation. When questioned why, Defence responded:
- We believe that, while it is possible we may do it [split the contracts between design and production]—and we will certainly look at the possibility of independent design for this when we get to stage 3—at the end of the day we might elect to put the responsibly in one place.<sup>32</sup>
- 2.39 The ANAO responded it ‘had no difficulty with the Defence response. It is important that they do assess the risk, but if the risk of putting them separately is too high then clearly they should go together.’<sup>33</sup>
- 2.40 Should a decision be made to proceed with Phase 3, it is important that Defence properly manages the process and delivers the ships on time and within budget. Given the experiences of the past and the associated blow-out in costs and delays in time, there should be fertile grounds for Defence to apply lessons learnt to ensure that Australia does not have gaps in its military capabilities.
- 2.41 While the Audit identified certain capability deficiencies, the Committee is also concerned about the aspect of ‘capability creep’.

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30 Ruting, *Transcript*, 2 March 2000, p. 41.

31 ANAO, Report No. 8, 2000-2001, p. 55.

32 Roche, *Transcript*, 2 March 2000, p. 42.

33 I. McPhee, *Transcript*, 2 March 2000, p. 42.

This refers to the approach by Defence to add more capabilities to the ships than was originally planned thus adding to the cost of the refit. For example, in the original specification only one ship was to be fitted with a hospital. Defence stated:

...one ship was going to have the hospital and the other ship was going to have the crane as a way of really only spending as much money as was available at that time. However, the need for amphibious activities in the region has changed over time, and the relative priorities of that have warranted the government making decisions to install the capabilities on both ships. So we have now two ships with basically the same capabilities. It has considerably increased the flexibility of operations to government through having those two ships, plus HMAS *Tobruk* that has subsequently being retained, as identified in the Defence white paper.<sup>34</sup>

## Conclusion

- 2.42 The effective management of asset acquisitions and Defence's ability to adequately assess all the costs involved in major modifications on existing assets are fundamental to Government decisions about Australia's future military and strategic capabilities. The involvement of significant amounts of public monies makes it especially important for Defence to be rigorous in identifying and addressing risks and be vigilant about possible time delays and cost overruns.
- 2.43 The ANAO has correctly focused on this matter by examining the historical context and the efficiency and effectiveness of Defence's management of the acquisition and modification of *Manoora* and *Kanimbla*.
- 2.44 The Committee finds that Defence should have been more rigorous in its pre-acquisition survey. The lack of a comprehensive survey of the ships has led to a blow-out of 1632 per cent in repair and maintenance costs and delayed the project by two and a half years. This is an unacceptable margin of error.
- 2.45 Defence should have paid closer attention to its own internal audit reports in 1998 and 1999. The ANAO report stated:

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34 Ruting, *Transcript*, 2 March 2000, p. 44.

The Finance Minister's Orders made under the *Financial Management and Accountability Act 1997* require each Commonwealth agency's audit committee to review audit reports involving matters of concern to senior management and to provide advice to the Chief Executive on action to be taken on matters of concern in such reports. The two [internal audit] reports on the Project were not, however, reviewed by Defence's audit committee.<sup>35</sup>

- 2.46 In relation to 'capability creep', the Committee is not generally opposed to adding new capabilities provided the costs and benefits are fully considered. The danger, however, of upgrading reconditioned ships of limited life is over capitalisation. In these types of cases, there must be a more strategic approach to developing additional capabilities. It is essential that military needs are identified first, and then military capabilities are developed to meet those needs.

### Recommendation 1

- 2.47 **The Committee recommends that the Department of Defence put in place appropriate reporting structures to ensure that all internal audits are reviewed by the Defence Audit Committee and provided to relevant internal stakeholders in a timely fashion.**
- 2.48 In terms of value for money, the Committee heard that having two ships has increased Australia's military flexibility. The benefit of this flexibility is negated by the extra maintenance costs and shorter life expectancy of the ships. Defence has acknowledged that the maintenance costs will be a challenge towards the end of the life of the ships. The Committee notes that the retirement of *Manoora* and *Kanimbla* coincides with a period of 'block obsolescence'. This will be a significant challenge for Defence to manage Australia's military capabilities during this period.
- 2.49 Finally, the Committee cautions Defence to learn from the *Manoora* and *Kanimbla* experience. The Minister for Defence and the ANAO have listed a range of lessons to be learnt which Defence cannot

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35 ANAO, Report No. 8, 2000-2001, p. 77.

ignore. It is essential that all proposed acquisitions of ageing Defence capital defence equipment be assessed on the basis of a rigorous risk assessment, and a thorough cost benefit analysis. Project officers involved in capital acquisitions must be experienced, and knowledge of the history behind the purchase of *Manoora* and *Kanimbla* should be required.