

Navy Combat Capability

Introduction

- 4.1 The Royal Australian Navy (RAN) supports the ADF through its provision of maritime force to perform maritime patrol and response, protect trade, shipping and offshore territories and resources, collect and evaluate intelligence, conduct hydrographic and oceanographic operations and escort duties, and perform humanitarian assistance, disaster relief and maritime search and rescue.¹
- 4.2 For the 2012–13 financial year, the *Defence Annual Report 2012–13* notes that the RAN effectively satisfied the preparedness, sustainment and leadership of assigned forces requirements through improvements in the availability of amphibious units and submarines.²

Submarine Capability

The Coles Report (November 2012)

- 4.3 As part of continued efforts to improve the performance, availability and maintenance of Australia's submarine capability, former Defence Minister the Hon Stephen Smith MP launched an independent review of Australia's Collins Class Submarines in 2011. Led by Mr John Coles, the ensuing *Study into the business of sustaining Australia's strategic Collins Class submarine capability* (the Coles report) was released in December 2012.³

1 *Defence Annual Report 2012–13*, p. 41.

2 *Defence Annual Report 2012–13*, p. 41.

3 *Defence Annual Report 2012–13*, p. 42.

Key Recommendations from the Coles report

- 4.4 Defence accepted all of the recommendations from the Coles Report.⁴ Key recommendations included:
- Accepting that sustainment of the Collins Class had fallen far short of what was required due to systemic failures attributable to logistic support arrangements not being put in place initially, or through life of type;
 - Setting realistic performance targets that will progressively improve performance over the next three years;
 - Clearly defining roles, responsibilities and authority in submarine sustainment; and
 - Moving quickly to bed-down the new In Service Support Contract between the Defence Materiel Organisation (DMO) and ASC Pty Ltd (ASC) to deliver more efficient and effective sustainment.⁵
- 4.5 The *Defence Annual Report 2012–13* states that a number of recommendations from the Coles report have been implemented. To ensure Australia's submarine availability is at optimal capacity, the *Defence Annual Report 2012–13* notes that the RAN will continue to work closely with the DMO and ASC (formerly Australian Submarine Corporation).⁶

Current status

- 4.6 Defence informed the Committee that since the release of the Coles report in 2012, Australia's submarine capability has improved significantly. Defence supported this claim by referring to Mr Coles' forwarding letter from his final report:

It has been an enormous pleasure to observe the astonishing turnaround of a seriously failing project to one that should, within just two years, achieve or better International Benchmark performance. This has been achieved with decisive leadership that has provided a clear direction of travel, clarity of roles and responsibilities, and empowered those charged within Industry and the Commonwealth to deliver the program. They have all

4 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 41.

5 *Coles Report: Study into the business of sustaining Australia's strategic Collins Class submarine capability*, November 2012, Report issued by Mr John Coles (Review team: John Coles, Paul Greenfield and Arthur Fisher) p. 112.

6 *Defence Annual Report 2012–13*, p. 42.

risen to and above the challenge, releasing the latent talent and dormant energy and directing it to achieve the common goal.⁷

- 4.7 While acknowledging the positive outcomes arising from this review, Defence is aware that there are still significant challenges to be addressed. There still remains more than a routine level of risk to ensure that Defence is able to satisfy the benchmark performance indicators for 2016–17.⁸

Implementation update of the Coles report recommendations

- 4.8 Defence informed the Committee that appropriate action has been taken to address all 25 recommendations contained with the Coles report:

There are 11 which are completed and 13 which are underway. And a lot of those are underway because they are continuing activities, like implementing a new usage and upkeep cycle—it does not actually have an end; it has a start date, but it goes on for the life of the submarine. Some of these things will be on a continuing basis for as long as we have the submarines.⁹

- 4.9 The Committee requested an update on the implementation of recommendations 7, 12, 21 and 25.

Recommendation 7 – Co-ordinate existing initiatives, accept recommendations from the Phase 3 Report and co-ordinate implementation according to the Implementation Strategy

- 4.10 The Committee noted that recommendation 7 addresses the advice and initiatives presented in the Phase 3 Report of the Coles review. The Phase 3 Report considered the international benchmarking standards of comparator navies, the Collins service life evaluation program and details of initiative programs of the RAN, DMO and ASC.

- 4.11 The Report identified a number of recommendations and initiatives concerning the Collins Class submarines that had not been completed or had not started.

- 4.12 The Committee questioned the status of those recommendations and if there were any that Defence did not support. Defence responded by saying:

We accept all of the recommendations. There is one which I will come to ...where, on an agreed basis, we have changed the recommendation slightly, but the spirit is still there. It is to do with how you deal with the defects which arise during the testing period after a docking. That is because John Coles'

7 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 36.

8 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 36.

9 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 41.

recommendation was based on the way in which the UK contracts for these things, which is not the way in which we do it here. We had to adapt it slightly.¹⁰

Recommendation 12 – Develop an asset management strategy for sustainment

4.13 The Committee requested an update on the asset management strategy for sustainment.

4.14 Defence informed the Committee of the sustainment strategy breakdown:

The strategy is at the high level in Navy and DMO, but the actual detailed plan to manage the asset is really in the hands of ASC because they are the ones who have to manage the upkeep cycle to make sure the two-year and the one-year docking periods actually work and actually deliver the submarines that they are supposed to deliver.¹¹

4.15 Defence also explained that the Chief of Navy is responsible for the verification of the safety of the submarines and the safety of the outputs from those docking periods.

Recommendation 21 – Develop and implement a workforce strategy to specifically address skills shortages at the management level

4.16 The Committee was concerned that little had been done to mitigate the risk associated with the strategic workforce plan of DMO.

4.17 Defence refuted this claim by stating that it has begun to address this issue. However, Defence acknowledged that it is likely to remain a long-term challenge for the Department:

Tactically, we are dealing with individual roles and people. Strategically, we do still have that work to do. It will involve a different mix of people between industry, Navy and DMO, and also a different way of managing those people through careers in the future. That is going to be quite a challenge.¹²

Recommendation 25 – Develop a cost baseline/model and supporting processes for the sustainment program

4.18 The Committee requested an update on the status of recommendation 25, which refers to the development of a cost-baseline model and supporting processes for the sustainment program, in regards to an identifiable owner and assurer of the cost model moving forward.

10 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 41.

11 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 41.

12 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 40.

- 4.19 Defence confirmed that the Financial Advisor to the General Manager Submarines in DMO is the owner and assurer of the cost model.¹³
- 4.20 The Committee enquired about the level of detail sought in terms of the ongoing assurance of the submarine enterprise. Having identified an orphan process, the Committee wanted to know if Defence has looked across the broader enterprise to ensure that there is an advocate, an owner or an accountable person for each element.
- 4.21 Defence assured the Committee that they have responded to Mr Coles' observation that the model has been established and codified, but not populated:
- If you go back into the phase 3 report from John Coles, there was the 'value chain' which identified the correct distribution of roles and defined them across DMO, Navy, ASC and the rest of industry. That has been populated. I am now in the process of verifying that those roles are properly populated right across the board. I believe they are, but we now have a specific person in there to make sure that is the case.¹⁴
- 4.22 Defence noted that the main problem is developing strategies to ensure that the right people are in the right places in those roles. That is the next task Defence will have to attend to.¹⁵

Progress with 'actual conduct' of Collins Class submarine capability

Full-cycle docking

- 4.23 The Committee requested an update on the status of progress on the full-cycle docking (FCD).
- 4.24 In the phase 3 report, Mr Coles recommended that, in order to get the time down on the FCD, there should be a staged process. Defence noted:
- We went from a three-year, to a two-and-a-half year, to a two-point-three, to a two... [John Coles] did not have a lot of data available. That was just his feeling that that would be the right way to do it.¹⁶
- 4.25 Defence explained the time constraints which still remain for the six submarines:
- We have got to the point where we have started the first of the two-year full-cycle dockings, and that is a very good achievement

13 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 40.

14 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 40.

15 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 40.

16 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 42.

to have that happen on time and on schedule, but keeping to that schedule will be tough, because we have never done one in two years before.¹⁷

- 4.26 Defence advised that it has found a less risky way of doing the FCD; to switch the order in which the submarines were being docked. This conclusion was reached through an inspection of the submarines in their current state. The ASC also looked carefully at their workforce and skills planning in order to reach this decision.¹⁸
- 4.27 Defence brought HMAS Farncomb in, as the first submarine to do a FCD, and went straight to the two-year docking with that boat.
- 4.28 Defence also used Collins to carry out procedural tests that would be used in a two-year FCD, in particular:
- Replacing subsystems from a pool of ready items rather than taking the subsystems off each submarine, refurbishing off the submarine and then putting them back on, which obviously makes the subsystem refurbishment, potentially, the critical path item.¹⁹
- 4.29 When Mr Coles went back to review the progress made, Defence noted he was content the Department had developed a 'good plan'.²⁰

Hull cut for Collins

- 4.30 In terms of the actual hull cut for Collins, the Committee asked Defence if it had reached its own benchmark standards.
- 4.31 Defence stated that it had decided to shift away from the original recommendations presented by Mr Coles and implement its own strategy for hull cut:

When you talk to the welders and the metallurgists about hull cuts they are very confident, whether they come from Barrow, Cherbourg or indeed Adelaide. They know what they are doing. I have seen the first hull cut which is the one above the diesels and what they have done is pretty impressive. They have braced the structure so it does not distort while the top section is away, which is a good technique, and they are about to do the circumferential cut at the back of the boat... The submarine is designed with that in mind; we just had not done it. I think you can typify it:

17 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 37.

18 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 42.

19 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 42.

20 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 42.

countries that have to make hull cuts do and some countries have such reliable equipment, they do not have to.²¹

International benchmark performance

4.32 Since the RAN implemented the recommendations contained within the Coles report the performance of the Collins Class program has improved against the international benchmark performance (IBP) set by the Coles study, including submarine availability.²²

4.33 Defence noted the 'astonishing turnaround of a seriously failing project to one that should, within just two years, achieve or better International Benchmark Performance.'²³

4.34 Further, Defence highlighted the efforts behind this major turnaround:

This has been achieved with decisive leadership that has provided a clear direction of travel, clarity of roles and responsibilities, and empowered those charged within Industry and the Commonwealth to deliver the program. They have all risen to and above the challenge, releasing the latent talent and dormant energy and directing it to achieve the common goal.²⁴

4.35 However, Defence also informed the Committee of the pressure and difficulty in getting all six submarines up to the same standard:

We have a lot of work to do on HMAS Collins herself, because we need six boats operational at the same standard to have the resilience to guarantee that we can achieve benchmark performance over a long period of time. And of course we have the normal routine maintenance, reliability and obsolescence management to go through.²⁵

Availability

4.36 The Committee asked what is still required in order to reach IBP and was informed that:

The fundamental requirement is to have the right number of available assets. The benchmark is based on what you should be able to achieve from a fleet of six submarines. If most of those

21 Mr King, Department of Defence, *Transcript*, 6 June 2014, p. 42.

22 *Defence Annual Report 2012-13*, p. 42.

23 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 36.

24 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 36.

25 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 36.

submarines, or half of those submarines, are in dry dock or some such almost all of the time, you cannot get there.²⁶

- 4.37 In order to have three submarines routinely available, Defence stated that it must have a functioning two-year FCD to ensure the Collins are in a deployable state:

That then gives you the potential – and we have seen this when we have had brief periods of that – to actually get a good, regular output in terms of available submarines.²⁷

- 4.38 Defence identified the need to fundamentally change the usage and upkeep cycle of the submarines so that, on the whole, there is one submarine planned to be in full-cycle dock at any one time:

That means getting it down to two years, if you do the arithmetic: six 10 -year cycles, two submarines – you have to do it that way. One is in a mid-cycle dock – basically being recertified for the next five-year part of the cycle; then you have a third doing some kind of planned maintenance at the time.²⁸

'Availability' is not the same as 'Deployability'

- 4.39 The Committee asked if Defence was aware of any fleets that manage to achieve half of fleet availability at one time.

- 4.40 Defence responded that the benchmark fleets were in the Netherlands, France and Germany – which it was claimed achieve this standard.²⁹

- 4.41 Defence noted, however, that the meaning of 'availability' can be misunderstood:

You have to be a bit careful about what people mean by 'availability' because you get a bit of confusion about availability and deployability – they are not the same thing. If you are deploying at distance, having something deployed doing useful work, the third might be a better benchmark. But that is not the same as it being available – including for things like crew training. I always come back to continuous at-sea deterrence for the UK – you need four boats. You may need the fourth one for two per cent of the time, but to absolutely guarantee it, you need four.³⁰

- 4.42 The Chief of Navy noted a general rule:

26 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 38.

27 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 38.

28 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 38.

29 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 39.

30 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 39.

If you want a submarine on station all the time, it is four to one. That is the ratio.³¹

Reliability

4.43 Defence advised that the second key requirement to achieve IBP is improved reliability. Defence advised the steps that are being take to achieve this:

We are going through a systematic process of looking at the failure modes of the key subsystems in the submarine to see whether we need to revise the maintenance in some way, or to make some modification to them to improve reliability when the submarines are actually in service.³²

Upgrade

4.44 A third key requirement relates to upgrading of parts and systems as they become obsolete:

[T]he third thing is upgrade. There is inherent obsolescence in the submarines and we are managing that item-by-item. There are various techniques, as I am sure you will understand, to deal with obsolescence – you can replace, you can life-of-type buy, you can find analogous items and so forth. There is also a certain degree of upgrade; particularly, for example, in submarine communications, where we need to insert new technology and new capability into the submarine simply to keep its equivalent capability up to where it needs to be, because things change over time.³³

Future focus

4.45 Defence highlighted the three main areas they ‘need to focus on in the next two years as well as just doing the first two-year full-cycle docking,’ in order to reach international benchmark performance.³⁴

4.46 The first of the three focus areas is ‘the resilience of the manpower and the skills in the overall enterprise.’³⁵ Defence explained this in detail:

If I can reflect for a moment, John Coles is a man of enormous experience in all aspects of submarine and surface competent design, build and maintenance. And in his day we were able to

31 Vice Adm Griggs, Department of Defence, *Transcript*, 6 June 2014, p. 39.

32 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 38.

33 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, pp. 38, 39.

34 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 36.

35 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 36.

produce someone like that in a single organisation because you had single organisation that did all of those things. We no longer have that. So we actually have to work out how we can produce what John Coles did and people down the chain in the future without having a single organisation within which to do it. We will need to move people around in industry and through the Public Service and they need to get the experience and detailed understanding of what they are doing.³⁶

4.47 The second focus area is 'the information systems that support the submarine enterprise.'³⁷ Defence noted the reasons for this direction:

We are not going to embark on a new all-singing, all-dancing, bespoke brand-new IT system to do that, because, in my experience, that is a pretty good way of ensuring that you do not achieve the outcome. What we will do is network together the existing systems and make sure that, in each system, there is a single set of standards for the data for each system, so we do not have conflicting standards in there and we bring them together so that they are networked. That is planned and will be underway.³⁸

4.48 The third focus area is the skill sets and experience of 'public sector people.'³⁹ Defence explained:

We will always need people on the Commonwealth side who really do understand the systems they are working on because they have to take the high-level decisions on what to do when problems arise in the future. So we will need some new models to do that. We already are doing that in the SEA 1000 program where the bulk of our internal expertise on new submarine design actually is coming from the private sector. We will need new models on bringing private sector expertise in to what we do and also cycling public sector people through the private sector parts of the supply chain to give them the experience and understanding for the future. That is probably the biggest challenge we have in actually seeing this thing through to success.⁴⁰

36 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 37.

37 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 36.

38 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 37.

39 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 37.

40 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 37.

Next generation submarines

- 4.49 The Committee asked if the Chinese aircraft carriers would have any impact on the choice for the next generation of submarines.⁴¹
- 4.50 According to Defence, it would not necessarily effect the decision:
The size of Chinese aircraft carriers and the like would not necessarily be at the forefront of our minds in terms of looking at our own submarine capabilities.⁴²
- 4.51 Defence elaborated, by clarifying that the:
Speed and choke points are relevant regardless of who might have what, and are relevant regardless of size of aircraft carrier... Speed of surface vessels and speed of submarines – I am sure all of that is taken into account in looking at capability needs.⁴³
- 4.52 As to the status of the submarine replacement, Defence advised that it is still examining the options, but that:
... announcements were made last year in terms of where off-the-shelf and modified off-the-shelf were parked. It was announced that the work going forward would be evolve Collins and an entirely new design. That work has continued. Of course, it is on the public record that we have also been talking with the Japanese.⁴⁴

Assurance of capability and delivery

Independent review

- 4.53 The Committee queried how Defence will prevent a future decline in capability and whether there is a role for an independent expert review on a regular basis, rather than when there is a collapse in a capability.
- 4.54 Dr Thomson, from the Australian Strategic Policy Institute (ASPI), highlighted the oversight and management issues on a number of capabilities, such as submarines and the amphibious and afloat support capability. These issues resulted in needing to have an external body

41 South China Morning Post, 'Work under way on China's second aircraft carrier at Dalian yard,' 19 January 2014, <<http://www.scmp.com/news/china/article/1408728/work-under-way-chinas-second-aircraft-carrier-dalian-yard>> viewed 29 July 2014.

42 Mr Richardson, Department of Defence, *Transcript*, 6 June 2014, p. 39.

43 Mr Richardson, Department of Defence, *Transcript*, 6 June 2014, p. 39.

44 Mr Richardson, Department of Defence, *Transcript*, 6 June 2014, p. 40.

conduct an independent expert review and give recommendations on the way forward.⁴⁵

- 4.55 Dr Thomson highlighted the reason Mr Coles was brought in to review the submarine capability:

We have had a capability which has been more or less moribund for a period of years, if not a decade or more. We had to bring in someone from outside to kick the tyres and tell us to do the obvious, and I think this reflects some underlying problems with the management and oversight of Defence. Probably the same sorts of comments could be made about the amphibious and afloat support capability within Navy, where once again someone had to be brought in from the outside to tell people to do the obvious.

- 4.56 Dr Thomson also noted the underlying issues with oversight and management of this navy capability:

I think it is fair to say that there have been some very encouraging developments, at least in terms of the reporting that has come out from the government and from the department. What I think is interesting about it is that they reflect not so much surmounting previous insurmountable technical problems, but rather fundamental issues with the management of what I think is recognised as a very important capability for Australia. I think it is hard to be charitable looking back at the situation we have now.⁴⁶

- 4.57 On a similar note, QinetiQ submitted that the assurance of capability and delivery could benefit from a single independent review process that spans the capability upkeep cycle, commencing from project start-up to system disposal.⁴⁷

- 4.58 In response to this proposal, Mr Gould said:

My personal view is that having a sort of permanent reviewer, more people looking over your shoulder, is not actually the right way to do this. The right way to do it is to make sure you have good performance management systems embedded in what you do. You certainly do need and we shall need outside expertise to help us with specific problems, but really we should be making sure that the performance management system we have across the enterprise, so the same performance management metrics for the industry side and ourselves and all of us looking at that, is actually the right way to do this. I cannot speak for what was in place

45 Dr Thomson, Australian Strategic Policy Institute, *Transcript*, 6 June 2014, p. 1.

46 Dr Thomson, Australian Strategic Policy Institute, *Transcript*, 6 June 2014, p. 1.

47 QinetiQ Australia, *Submission No. 1*, p. 2.

before I arrived here, but certainly my own experience in working in all kinds of areas of equipment support in previous jobs has been that the key to it is making sure you have good metrics, good performance management measurement systems and good predictive techniques in there in the future.⁴⁸

Performance management system

4.59 The Committee asked Defence how it would be possible to integrate the different elements of performance management into a single reporting system, noting the role of the Department of Finance in overseeing ASC.

4.60 Defence responded by explaining:

Department of Finance is part of the enterprise, so when we do the enterprise board meeting, Department of Finance, as the owner of ASC, is there so that they are not separated from that overall review as things stand today. ...the challenge for us is to look further down into the supply chain so that we do not just have a common set of performance metrics with ASC as to what we are doing, but also some of the key subsystem suppliers who are in there for the sonar and the combat system are also involved in that process. I think that is where the challenge lies for this.⁴⁹

4.61 Vice Admiral Griggs went on to clarify the part taken in the improvement of the submarine capability support mechanism by the Seaworthiness Management System:

It was not the seaworthiness board that did it, it was the Seaworthiness Management System. I think that is a very important distinction because the seaworthiness board is part of the overall assurance process and for me that is in part an independent reviewer. Yes, it is an internal one but it does give me great confidence in the material state of capability and the overall seaworthiness of the capability.⁵⁰

4.62 Defence explained the importance in the development of the Seaworthiness Management System, to both Navy and DMO, has been:

The fact that we now own the running system and if you look at the initial seaworthiness boards before we had the Seaworthiness Management System in place they were trying to solve world poverty on their own. Once they saw that there was a running system developing they changed their focus more towards where

48 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 37.

49 Mr Gould, Department of Defence, *Transcript*, 6 June 2014, p. 37.

50 Vice Adm Griggs, Department of Defence, *Transcript*, 6 June 2014, p. 38.

the mature airworthiness board would be focusing: how are you ensuring us the system is working? I think that was what was missing before. There was no running system. We did not own the system in the same way that we do now and really in only a couple of years I think it has developed very well and we have taken a lot of lessons from the Airworthiness Management System and tried to accelerate as much of the learning that we could from that, down to having seaworthiness convocations and things like that.⁵¹

- 4.63 The Chief of Navy went on to highlight the benefits that have stemmed from the Seaworthiness Management System:

I feel much more comfortable about the state of the capability. I feel much more comfortable about the level of information that I get. I get much more regular information from DMO than I did three years ago and Mr King and I have worked on that extensively over the last couple of years. I think the Rizzo process was very useful in terms of getting that asset management total lifecycle focus back into the capability managers area, not just thinking that was DMO issue. And the other key feature is the head of naval engineering as the Naval Flag Authority, again us taking back some decision making. If you look at some of the third-party organisations, like class societies, there had been a view that, 'Oh well, the classification society will handle that,' when in fact that is not what they were doing. And again, we are now owning those decisions.⁵²

- 4.64 The Committee noted progress made, but highlighted a point from Mr Coles' report that it is a fragile recovery path if the appropriate reporting mechanisms are not put in place.

Air Warfare Destroyer

- 4.65 The Committee requested an update on the Air-Warfare Destroyer (AWD) program, including comment on its current cost schedule.

- 4.66 Defence provided the following information on the AWD program:

It is an \$8 billion project. It is conducted under an alliance based arrangement. I stress that because there is a bit of confusion. It is not a pure alliance; the three parties – ASC, who lead shipbuilding,

51 Vice Adm Griggs, Department of Defence, *Transcript*, 6 June 2014, p. 38.

52 Vice Adm Griggs, Department of Defence, *Transcript*, 6 June 2014, p. 38.

Raytheon, who lead combat system integration, and DMO – work collaboratively in this arrangement. Very clearly under that arrangement the industry participants are to deliver the goods and services for what is called the 'target cost' price, or 'target cost estimate'. The good news is that Aegis, being supplied by DMO from the USN, is on budget and on schedule. The combat system element at this time is on budget and on schedule. That is probably more than half the ship value, so it is not a trivial thing to just say that. It is not like a stick-on.⁵³

- 4.67 Defence is conscious that the AWD program is currently running over budget. The shipbuilding element of the program alone is approximately \$360 million over the target cost estimate. While this has not been ideal for the long-term development of the AWD, Defence stated that this should not be considered a project 'blow-out' as is sometimes perceived. The Chief Executive Officer of DMO, Warren King, explained:

Under the alliance based arrangements, for every dollar we overspend above the target cost estimate, industry forgo 50 cents of profit and DMO puts in 50 cents towards those costs. When I sign off on a project I have to sign off that we have covered the contingent liability that government may face in any contract we have entered into – the unexpected. I was the project manager at the time that this achieved second pass, and knowing that to be the case I did a number of risk assessments at the time and put in adequate contingency to cover this case. I am not saying it is good, but what I am saying is that the approved budget for the project covers this eventuality.⁵⁴

- 4.68 Defence identified a number of contributing factors to explain why the AWD program is running over budget:

One is that we underestimated the extent to which shipbuilding capability had run down so quickly after the completion of the ANZAC ship project. It was not that many years previously that we were building ANZAC ships using world's best practice. In fact, we were building them as cheaply as you could buy them anywhere in the world. That points to the fact that there is no structural reason why we cannot have a competitive shipbuilding industry. There are a lot of reasons why we may not, but there is no structural reason. If you look around the world you will see that, for example, labour rates are not significantly different. The

53 Mr King, Department of Defence, *Transcript*, 6 June 2014, p. 48.

54 Mr King, Department of Defence, *Transcript*, 6 June 2014, p. 48.

investment in the infrastructure that we have is quite good. The infrastructure in Adelaide, particularly, but also in Melbourne and Newcastle, to a lesser extent, is good and suitable. In fact, some yards around the world are nowhere near as well equipped.

So it is not a labour rates thing. It comes down to production efficiency. Some of the things that contribute to that are start-up – in other words, the skills have dissipated. I am not talking about specific welding skills or running cables, or something like that. I am talking about the skills that allow you to do that efficiently in a shipyard, because it is different – supervisory skills, work planning skills, material availability skills. So we had the rundown in that.⁵⁵

- 4.69 Mr King refuted claims that DMO underestimated the cost and schedule of the AWD program. It was acknowledged, however, that Defence paid industry partners \$255 million from the first to second pass approval phases to evaluate the costing and schedule of either a new AWD design or the re-use of the F100 design:

We allowed more budget and more schedule than any of those projects. So my response to that is: I clearly did not allow enough because we have this cost, but should I have allowed anymore?

That is my position; it is not necessarily supported by everybody.⁵⁶

- 4.70 Defence offered further comment on the construction of the AWD in Australia and identified some factors that hindered the full capacity of productivity:

We also had a distributed block build program, which means that we put blocks for construction in New South Wales and Victoria, some blocks in Adelaide and then the consolidation of the ship in Adelaide. In hindsight I would say that that probably was one site more than we should have had. While distributing it shares the work and shares the risk of that, it also means that you have an increased management – where you have to provide drawings, provide oversight and QA. I think all of that led to it. But, at the end of the day, the shipbuilding enterprise is not anywhere near as productive as it should be or could be, even given all those factors.

We have a company called First Marine International that I contracted. It is an internationally renowned company that benchmarks shipyards around the world, including the US Navy. Since 2010, annually I have had them review each yard and

55 Mr King, Department of Defence, *Transcript*, 6 June 2014, p. 48.

56 Mr King, Department of Defence, *Transcript*, 6 June 2014, p. 48.

provide to each yard a review of their productivity – which is falling – and a review of their processes, what they achieving and what they call ‘observations’. For productivity, they compared a measure against what is called ‘compensated gross tonnage’. That is a way of comparing the number of man hours that go into building a tonne of the ship, but recognising that a tonne of a frigate is much more complicated than a tonne of a supertanker. So you balance that out. A tonne of the submarine is even more complicated.⁵⁷

Committee Comment

- 4.71 The Committee was encouraged to see the Progress Review update of the Coles report in March this year. The Committee notes, however, that ongoing effort and oversight will be required to stay on this recovery path.
- 4.72 The Committee notes with concern that despite the statement that all recommendations had been accepted, the *Defence Annual Report 2012–13* did not clearly indicate the incomplete implementation of the recommendations and initiatives. The Committee is of the view that this should have been highlighted to readers of the Report.
- 4.73 The Committee applauds Defence on the positive step taken to develop a Seaworthiness System, including oversight by an independent board, which is anticipated to provide valuable insight into the management of Defence’s naval capabilities.
- 4.74 The Committee is keen to see that Defence learns from the experiences with the Collins Class submarine for future major builds or projects. The use of the independent review by Mr Coles has clearly been an invaluable aspect of the recovery of Australia’s submarine capability and the development of an effective and robust through life support program. For this reason, the Committee is persuaded that the incorporation of independent subject matter experts into a system of Gate Reviews, starting with project conception in CDG and continuing through life of type as part of the Seaworthiness System, warrants close consideration.

57 Mr King, Department of Defence, *Transcript*, 6 June 2014, p. 48.

Recommendation 3

The Committee recommends that the Department of Defence consider utilising independent subject matter experts in a system of Gate Reviews, starting with project conception in the Capability Development Group and continuing through life of type, as part of the Seaworthiness System.

Recommendation 4

The Committee recommends that the Department of Defence provide the Committee with a specific update on the implementation of each Coles review recommendation prior to the tabling of the Department's next Annual Report.