

## Current Capability Planning

### Introduction

- 3.1 In order for the ADF to effectively deliver the capability required to support the achievement of national interests and objectives, it must be underpinned by a planning process designed to ensure the correct and appropriate mix of platforms, systems, weapons and trained personnel. The strategic guidance given to the ADF by Government determines the manner in which this appropriate force mix is achieved.
- 3.2 As mentioned in Chapter 1, the foundation document from which ADF force planning and capability development decisions are made is the *Defence 2000 – Our Future Defence Force*. Strategic planning cannot remain static, because the world environment does not remain static. Accordingly, the *Defence 2000 – Our Future Defence Force* has been further developed and built on by the *Defence Update 2003* and the *Defence Update 2005*. These updates incorporated guidance informed by the prevailing threats and challenges and sought to ensure that the ADF remained a force capable of meeting future military challenges.
- 3.3 This chapter will examine the strategic guidance that underpins the capability development processes for the ADF as well as the current capability plan and the Hornet Upgrade (HUG) program. Issues involving the F-111 will be discussed in the next chapter.

## White Paper overview

- 3.4 The *Defence 2000 – Our Future Defence Force* outlines Australia's strategic interests and objectives:
- ensure the defence of Australia and its direct approaches;
  - foster the security of our immediate neighbourhood;
  - promote stability and cooperation in Southeast Asia;
  - support strategic stability in the wider Asia Pacific region; and
  - support global security.<sup>1</sup>
- 3.5 Furthermore, the White Paper sets out the capability priorities for the ADF to achieve the strategic tasks above. Specifically, Australia needs a balanced and integrated force able to deliver two key sets of capabilities:
- Maritime – mostly air and naval forces; and
  - Land – including the air and naval assets needed to deploy and protect them.
- 3.6 Government decisions with regard to ADF capability development are guided by the following principles:
- operational flexibility – ensuring capability that is broad enough to meet a range of scenarios across a spectrum of credible situations;
  - integrated capability – optimising all the elements of capability: personnel, training, support, maintenance, logistics, intelligence, doctrine, platforms, etc;
  - interoperability – across the ADF and with allies and coalition partners;
  - fully developed capability – ensuring that the required level of capability exists across the ADF to achieve key tasks;
  - capability edge – more than just platforms and systems, rather the effective use of people, technology, training, doctrine, organisation and logistics;
  - operational concurrency – the ability to undertake more than one task at a time;
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1 Department of Defence, *Defence 2000 – Our Future Defence Force*, December 2000, pp. 29–31.

- sustainability – underpinned by an effective approach to long-term recruitment and retention and a capability industry base to draw on for support;
  - technology focus – maximising and exploiting the opportunities offered by the information technology revolution; and
  - cost-effectiveness – to achieve the maximum capability at the lowest possible cost.<sup>2</sup>
- 3.7 The White Paper stated that ‘air combat is the most important single capability for the defence of Australia’ and added that the Government’s aim was to:
- ... maintain the air-combat capability at a level at least comparable qualitatively to any in the region, and with a sufficient margin of superiority to provide an acceptable likelihood of success in combat.<sup>3</sup>
- 3.8 As briefly outlined in Chapter 1, the White Paper identified three major challenges facing the ADF in meeting this capability goal:
- first, the growth of the air combat capabilities of regional Defence Forces was assessed as eventually seeing the F/A-18 aircraft ‘outclassed’ and that this emerging deficiency would have to be addressed;
  - second, an AAR capability was critical to optimise range and endurance of the air combat fleet, to support not only an air superiority task, but also for air support to surface ship deployments and deployed land forces; and
  - third, the future of Australia’s air combat capability after the F/A-18 reached the end of its service life between 2012 and 2015 had to be addressed.<sup>4</sup>
- 3.9 In order to meet the strategic interests and objectives of the White Paper, to ensure that stated capability priorities are achieved, and that Australia’s air combat capability is maintained given the challenges outlined above, the Government planned the following:
- continuation of the upgrade program for the F/A-18 aircraft;
  - acquisition of AEW&C aircraft;

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2 Department of Defence, *Defence 2000 – Our Future Defence Force*, December 2000, pp. 53–7.

3 Department of Defence, *Defence 2000 – Our Future Defence Force*, December 2000, p. 85.

4 Department of Defence, *Defence 2000 – Our Future Defence Force*, December 2000, pp. 85–6.

- acquisition of aircraft to upgrade the AAR capability with the platforms also capable of providing an additional airlift capability; and
- examination of options for acquiring new air combat aircraft to replace the F-111 and F/A-18 fleets with provision being made in the *Defence Capability Plan* for a project to acquire up to 100 new combat aircraft.<sup>5,6</sup>

## Defence Updates 2003 and 2005

- 3.10 The *Defence Update 2003* and the *Defence Update 2005* further developed and built on the *Defence 2000 – Our Future Defence Force*. These updates provided strategic, capability and force structure guidance that was informed by the prevailing threats and challenges and sought to ensure that the ADF remained a force capable of meeting future military challenges. However, the fundamentals of the White Paper remain ‘sound and well-grounded.’<sup>7</sup>
- 3.11 The evolutionary nature of structuring and optimising the capability delivered by the ADF is such that some of the challenges identified in 2000 have been addressed. Since that time, a range of projects have commenced, or been announced, to expand and enhance the air power capability of the Air Force. For example:
- upgrades to the AP-3C Orion maritime patrol aircraft;
  - phases 2 and 3 of the HUG program;
  - acquisition of new generation AAR aircraft i.e. the MRTT aircraft;
  - acquisition of AEW&C aircraft and supporting systems i.e. simulator;
  - development and installation of Electronic Warfare Self Protection (EWSP) systems;
  - weapons upgrades for selected platforms;
  - acquisition of a heavy lift capability; and

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5 Department of Defence, *Defence 2000 – Our Future Defence Force*, December 2000, pp. 86–7.

6 This project became AIR 6000 – New Aerospace Combat Capability.

7 Department of Defence, *Australia’s National Security – A Defence Update 2005*, December 2005, p. v.

- establishment of Project AIR 6000 – New Aerospace Combat Capability (NACC).
- 3.12 The *Defence Update 2005* acknowledges that the growth of regional military capabilities remains a challenge for Australia and the ADF just as it did in 2000. Accordingly, Government force planning and capability decisions will continue to be informed by such regional factors in conjunction with the broader issues of retaining an ADF sufficiently flexible to meet a range of contingencies:
- In developing future capability the Government seeks to shape a security environment favourable to Australia’s interests ... It means retaining a technological edge. It also means ensuring that the Government has the widest range of options available to respond to possible threats.<sup>8</sup>
- 3.13 Notwithstanding the projects planned and underway to enhance Australia’s air power, or the position stated in the *Defence Update 2005* in relation to managing the regional air superiority balance, submissions to this inquiry have expressed concern that the current force planning is ‘wholly unrealistic given the developing strategic environment, and regional capabilities.’<sup>9</sup> The strategic environment and the key political, resource and national interest drivers in relation to Defence capability planning were discussed in more detail in Chapter 2.
- 3.14 Strategic imperatives, the guiding principles outlined above, examination and analysis of the challenges identified and future roles and responsibilities of the Air Force, combined with the necessity of maintaining a balanced and flexible ADF, have informed Government decision-making in relation to Australian’s future air combat capability requirements.

## Current planning

- 3.15 The current *Defence Capability Plan (DCP 2006-2016)*<sup>10</sup> is the guiding document with regard to the future capability requirements of the

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8 Department of Defence, *Australia’s National Security – A Defence Update 2005*, December 2005, p. 12.

9 Air Power Australia, *Submission No. 20, Sub. Vol. 2*, p. 162.

10 Department of Defence, *2006–2016 Defence Capability Plan: Public Version (DCP 2006–16)*, June 2006.

ADF. *The Defence Update 2005* fed into the capability review process and largely influenced the *DCP 2006-2016*. This DCP is intended to bring the ADF's 'equipment acquisition and capability development strategy over the next decade into line with [the] increasingly complex security situation.'<sup>11</sup>

3.16 The *DCP 2006-2016* addresses a range of aerospace related projects, all of which contribute to achieving a capable and joint ADF. For a nation like Australia, with a vast land mass, extensive borders, a relatively small population and limited resources, 'capability decisions will continue to emphasise the importance of joint warfighting and of the ADF developing as a fully networked force.'<sup>12</sup> There were divergent submissions to this inquiry in relation to the priority that is placed on the pursuit of 'jointness' and the faith in a 'networked force' as the answer to success in future warfighting.

3.17 In their submission, Dr Kopp and Mr Goon advised the following:

In strategic terms Australia's small population base and small industrial base, by regional standards, makes it imperative that Australia retain the capability to achieve and maintain air superiority over any regional opponent ... Australia can afford to compromise in its Army and Navy capabilities, but it cannot afford to compromise in Air Force capabilities.<sup>13</sup>

3.18 Further, Dr Kopp advised the Committee that 'Defence have misunderstood the relationship between capability and networking'<sup>14</sup> and that the force structure 'model that Defence are proposing cannot deliver what they believe it can deliver.'<sup>15</sup>

3.19 The main projects in relation to maintaining Australia's air superiority are:

- AIR 5376 Phases 2 and 3 – ongoing systems and structural upgrades and enhancements to the F/A-18 as part of the HUG;<sup>16</sup>

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11 Minister for Defence Media Release 097/2006, *\$51 Billion Defence Capability Plan for 2006-2016*, 20 June 2006.

12 Department of Defence, *Australia's National Security – A Defence Update 2005*, December 2005, p. 20.

13 Air Power Australia, *Submission No. 20, Sub. Vol. 1*, p. 175.

14 Dr Carlo Kopp, *Transcript 31 March 2006*, p. 5.

15 Dr Carlo Kopp, *Transcript 31 March 2006*, p. 6.

16 Department of Defence, *2004-2014 Defence Capability Plan: Public Version (DCP 2004-14)*, November 2003, p. 24.

- AIR 5409 – Bomb Improvement Program – acquisition of a system to provide all-weather and improved accuracy delivery of MK-80 and BLU-109 series bombs;<sup>17,18</sup>
- AIR 5418 – Follow-on Stand-off Weapon Capability – acquisition of a long range stand-off air to surface weapon to improve the ADF’s strike capability against fixed and relocatable targets on land and in the littoral environment;<sup>19,20</sup> and
- AIR 6000 – NACC – this project was established in 1999 in order to ‘identify and acquire a NACC to replace the air dominance and strike capabilities currently provided by the F/A-18 and F-111 aircraft fleets.’<sup>21</sup>

3.20 The remainder of this Chapter, and Chapters 4 and 5, address various projects, pre-conditions and planned activities to progress the transition to Australia’s future air combat capability.

## Hornet Upgrade program

3.21 Australia’s F/A-18 Hornet fleet is being upgraded to ensure the continuation of an effective air combat capability as the ADF transitions to the new air combat aircraft. The AIR 5376 upgrade and enhancement program for the Hornet fleet has been underway since the late 1990s and will continue until around 2014 by at which time the fleet will have been upgraded. Defence believes that once the Hornet upgrades have been completed, the aircraft will:

... provide a similar avionics capability to the new Super Hornet [and] when combined with new all-weather precision and stand-off weapons and supported by the new Airborne Early Warning and Control aircraft and multi-role tanker transport, will provide us with a formidable networked air

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17 Department of Defence, *2004–2014 Defence Capability Plan: Public Version* (DCP 2004–14), November 2003, p. 29.

18 In October 2005, the Boeing Joint Direct Attack Munition (JDAM) solution was selected as the preferred tenderer for this capability.

19 Department of Defence, *2004–2014 Defence Capability Plan: Public Version* (DCP 2004–14), November 2003, p. 35.

20 In February 2006, the Lockheed Martin Joint Air-to-Surface Stand-off Missile (JASSM) was selected to deliver this capability.

21 Department of Defence, *2001–2010 Defence Capability Plan: Public Version* (DCP 2001–10), June 2001, p. 57.

superiority system of systems that is, without doubt, second to none in the region.<sup>22</sup>

3.22 A brief overview of the HUG phases follows:

- Phase 1 has been completed and involved: enhancement of the aircraft's communication anti-jamming capability, upgrade of the mission computers, installation of an additional data bus, improvement in target identification and improvement in navigation and situational awareness.
  - ⇒ Phase 1 also implemented upgrades to the associated F/A-18 maintenance, software and training support infrastructures.
- Phase 2 seeks to incorporate advanced avionics and weapon systems and includes the following sub-phases:
  - ⇒ Phase 2.1 (completed) – replacement of the Fire Control Radar and introduction of an Enhanced Interference Blanking Unit.
  - ⇒ Phase 2.2 (approved) – incorporation of a secure jamming-resistant Link 16 Data Transfer System, a full colour Display Upgrade, a Digital (Moving) Map System, the Joint Helmet Mounted Cueing System, and the upgrade of the Counter Measures Dispensing System (CMDS).
  - ⇒ Phase 2.3 (approved with the exception of the complementary radio frequency jammer) – upgrade of Electronic Warfare Self-Protection (EWSP), including replacement of the Radar Warning Receivers and further upgrades to the CMDS.
  - ⇒ Phase 2.3C – procurement of a complementary radio frequency jammer to finalise the EWSP capability upgrade for the aircraft.
  - ⇒ Phase 2.4 (approved) – improvement to detection, identification, precision targeting and damage assessment phases of counter air, strike and offensive air support operations currently supported by the AN/AAS-38 Nite Hawk targeting Forward Looking Infra-Red pod.
- Phase 3 seeks to restore the structural life of the aircraft airframe to enable transition to the NACC. This phase comprises structural refurbishment programs as follows:
  - ⇒ Phase 3.1 (approved) – the design, development and installation of minor structural modifications and inspections required half way through the fatigue life of the aircraft. This phase will

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22 Air Marshal Geoff Shepherd, *Transcript 31 March 2006*, p. 39.



address the most immediate deficiencies and ensure structural integrity through to Phase 3.2.

- ⇒ Phase 3.2B (approved) – involves a program featuring the replacement of a number of discrete structural components and all preparatory activity to conduct an aircraft centre barrel replacement program.
- ⇒ Phase 3.2C – involves the procurement and installation of centre barrel modification kits to provide sufficient aircraft structural life to transition the air combat capability from F/A-18 to the NACC.<sup>23</sup>

3.23 In addition to the HUG program, the Hornet aircraft will have their power projection capabilities enhanced through the acquisition of new and improved weapons, as discussed earlier in this chapter. Specifically, acquisition of the Joint Direct Attack Munition (JDAM) will equip Hornets with:

... new 'smart' bombs that will provide a state-of-the-art weapon capability that can be accurately fired during the day or night and all weather conditions.<sup>24</sup>

3.24 The acquisition of the Joint Air-to-Surface Stand-off Missile (JASSM) will provide the F/A-18 fleet with a new long-range air-to-surface missile. The acquisition of the JASSM ensures that 'Australia retains its strike capability so Australian objectives can be met whilst maintaining the safety of aircraft and crews.'<sup>25</sup>

3.25 Dr Kopp and Mr Goon believe that:

The planning model devised for the interim F/A-18A capability is not viable as the return on investment in capability and the additional service life is very poor, while incurring significant risk.<sup>26</sup>

3.26 It has also been suggested that the funding allocated to the Hornet upgrade could achieve a better outcome for Australia if it was directed towards keeping the F-111 in service. Dr Kopp and Mr Goon note that 'early retirement of the F-111 and the resulting diversion of

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23 Department of Defence, *2006–2016 Defence Capability Plan: Public Version* (DCP 2006–16), June 2006, p. 19.

24 Minister for Defence Media Release 174/2005, *New 'Smart' Bombs for Australia's F/A-18 Aircraft*, 19 October 2005.

25 Minister for Defence Media Release 019/2006, *New Missiles for the Australian Defence Force*, 28 February 2006.

26 Air Power Australia, *Submission No. 20, Sub. Vol. 1*, p. 207.

F-111 funding to the F/A-18 is probably a blunder of multi-billion dollar proportions.’<sup>27</sup>

- 3.27 Nonetheless, Defence remains confident that upgrading the Hornet is the best approach to ensure Australia’s air superiority until the NACC is in service. This position, including the proposed transition plan to the NACC, while maintaining a viable air power capability, was previously advised to the Committee during the review of the *Defence Annual Report 2002–03*.<sup>28</sup> For example, Defence advised the Committee that:

The reason we planned those upgrades to the F/A-18 was to cater for exactly the sorts of developments that we are now seeing in the region ... Once we have those upgrades I think we will be more than a match for the opposition, particularly when supported by AEW&C, air-to-air refuelling tankers ...<sup>29</sup>

- 3.28 Given the strong differing positions between Defence and Dr Kopp and Mr Goon in relation to the Hornet upgrades, associated costs and the regional strategic viability of an upgraded Hornet, the Committee chose to seek comments from other witnesses about the issue.

- 3.29 Dr Alan Stephens accepted that the HUG program was an expensive undertaking and that there was uncertainty in relation to operating the upgraded Hornet should the introduction of the NACC be delayed, nonetheless, he told the Committee:

Unlike the F-111 which has no legitimate control of the air role – a very marginal role – the F/A-18 will at least provide us with control of the air, strike and a whole range of options. The addition of the JASSM – which is stealthy and with a range of ... about 400 kilometres – is not to be lightly dismissed. It would capture the attention of the people whose attention we want to capture.<sup>30</sup>

- 3.30 Professor Ross Babbage advised the Committee that he supported the logic of the Hornet upgrade, including the centre-barrel replacements, for a range of reasons:

The costs of running the F-111 longer are very much more substantial [than the Hornet] and provide a lesser return, in

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27 Dr Carlo Kopp, *Transcript 31 March 2006*, p. 3.

28 Department of Defence, *Supplementary Submission No. 4, Defence Annual Report 2002-03, Air Combat Capability*, June 2004.

29 Air Marshal Angus Houston, *Transcript 15 December 2003*, p. 51.

30 Dr Alan Stephens, *Transcript 31 March 2006*, pp. 22-3.

my view, than a rebarreling option ... The advantage of that is that not only do you get a fighter-bomber aircraft that can sustain itself reasonably well through the whole crossover phase of JSF introduction ... but you also have the opportunity of, if you wish, expanding, by strapping other weapons on it ... It seems to me that that is a better payoff.<sup>31</sup>

## Committee comment

- 3.31 Current planning for Australia's future air combat capability has been underpinned by Government strategic guidance with the cost effective delivery of capability, as well as balance across the ADF, as key drivers.
- 3.32 The HUG program, and the introduction into service of the enabling capabilities to support the retirement of the F-111 and the transition to the JSF, is a highly complex undertaking. The many interdependent activities associated with this transition, including the management of a potential 'capability gap', are all aspects of managing the risks associated with the successful maintenance of Australia's regional air superiority.

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31 Professor Ross Babbage, *Transcript 31 March 2006*, p. 29.

