

Future Capability Planning

- 5.1 The *Defence 2000 – Our Future Defence Force* addressed Australia's national security requirements in relation to air superiority and the capabilities needed to ensure an effective Air Force over the coming decades. The strategic guidance provided in the White Paper was enhanced and rebalanced in subsequent Defence Updates, as discussed previously, with the primacy of air superiority essentially unchanged.
- 5.2 Accordingly, the AIR 6000 NACC project was established to address Australia's future requirements with regard to acquisition of a platform capable of achieving the air dominance and strike capabilities currently resident in the F/A-18 and F-111 fleets.
- 5.3 On 26 June 2002, the Government announced that Australia would join the System Development and Demonstration (SDD) phase of the international JSF program, as the JSF had been assessed as the most likely aircraft to satisfy Australia's strategic needs with regard to future combat air power.
- 5.4 Joining the JSF program would enable the ADF to access levels of capability and technology that would be a generation ahead of other contemporary aircraft. Further, Australia's participation in the program would ensure that Australian industry would be able to compete for JSF work and would also provide opportunities to participate in the development, production and through-life support phases of the program.¹

¹ *Australian participation in the Joint Strike Fighter Program*, <<http://www.defence.gov.au/jsf/>> (Accessed 8 May 2006).

- 5.5 During the press conference following the announcement that Australia would join the JSF SDD phase, the Minister for Defence advised that the decision had been made in accordance with the White Paper guidelines. He noted that the Government did not believe that there was 'any other alternative that would meet our capability requirements within the costings that we put into the White Paper.'²
- 5.6 During the 31 March 2006 public hearing of this inquiry, Defence informed the Committee that Australia's future air combat capability, currently planned to be the JSF:
- ... will be a highly capable fifth-generation stealthy multi-role air combat aircraft. Defence is confident that this aircraft will cost effectively provide Australia with the most sensible air combat solution, and, when integrated into the networked force of AEW&C and upgraded ground command and control systems, will mature to meet Australia's future air superiority requirements.³
- 5.7 There is public opposition to acquiring the JSF as Australia's NACC. As discussed in Chapter 4, extension of the life of the F-111 is strongly favoured as a more viable strike option for Australia's future, enhanced by the air superiority capability of the Raptor.
- 5.8 A detailed capability comparison between the JSF and the Raptor is provided in Chapter 6.
- 5.9 The JSF is considered by many to 'have limited performance, limited agility and limited stealth compared to the F-22.'⁴ Indeed, Dr Kopp and Mr Goon believe it is 'simply wrong' that the JSF could serve effectively as an air superiority fighter.⁵ They also submit that the aircraft would not be able to 'credibly fill the diversity of roles which the F/A-18 and F-111 performed successfully over recent decades'⁶ nor will it be capable of matching the expanding regional capability.
- 5.10 As the development of the Raptor and JSF aircraft have been run as more or less parallel programs, Defence contends that the JSF is

2 Ministers for Defence and Industry Press Conference, *Australia to Join Joint Strike Fighter Program*, Canberra, 27 June 2002.

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

4 Dr Carlo Kopp, *Transcript 31 March 2006*, p. 2.

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

6 Air Power Australia, *Submission No. 20, Sub. Vol. 1*, p. 192.

potentially a more advanced aircraft than the Raptor. Defence told the Committee that they held this position because:

... a lot of the hard yards have already been done in many of the systems on the F-22 and they are now being adapted and modified for the F-35 [JSF] ... The F-35 is a more advanced aircraft than the F-22 because it will be taking both hardware and software a lot further.⁷

- 5.11 Notwithstanding the Defence support for the future air combat capability, there have been several submissions to this inquiry which have supported the concerns expressed by Dr Kopp and Mr Goon. For example, Dr Jensen MP believes that:

The JSF should be seen as a jack of all trades but master of none.⁸

- 5.12 The former RAAF Air Commander Australia, Air-Vice Marshal Criss (Retd), submits that:

... the F-22, in open literature, is credited with superior performance to the JSF in all respects at near to, or even perhaps at, price parity. The F-22 is even openly acknowledged by the JSF manufacturer and the United States Air Force to be superior and it is already in operational service delivering unsurpassed levels of fighter and strike capability to that nation.⁹

- 5.13 Mr Ken Oaten referred to the acquisition of the JSF as a decision that:

... compromises our defence posture as we will have no means to either sustain a long range strike campaign or to stamp our authority on airspace in time of conflict.¹⁰

- 5.14 In response to criticisms that Defence has not conducted sound test and evaluation as part of the NACC development process, Defence advised the Committee that since the SDD decision was announced, significant resources had been devoted to examining, analysing and evaluating Australia's air combat capability requirements and the manner in which the development of the JSF fitted with these evaluations. Defence stated that personnel from the Defence Materiel Organisation, the Defence Capability Group and the Defence Science

7 Dr Stephen Gumley, *Transcript 31 March 2006*, p. 49.

8 Dr Dennis Jensen MP, *Submission No. 21, Sub. Vol. 2*, p. 249.

9 Air Vice Marshal P.J. Criss (Retd), *Submission No. 38, Sub. Vol. 3*, p. 485.

10 Mr Ken Oaten, *Submission No. 7, Sub. Vol. 1*, p. 34.

and Technology Organisation, as well as ADO members in the United States had been working hard to 'test the decision and not try to justify it.'¹¹

- 5.15 As the debate about the suitability of the JSF continues, and while Defence reports that this aircraft is currently envisaged as the ADF's new air combat aircraft, Australia has not yet committed to purchase it. The first major decision in the acquisition process was joining the SDD phase of the JSF program.
- 5.16 The second decision, known as first-pass approval,¹² was announced by the Minister for Defence on 10 November 2006 when he advised that he planned to sign the JSF Production Sustainment and Follow-on Development (PSFD) Memorandum of Understanding (MoU) in December 2006.¹³ Subsequently, the MoU was signed in Washington D.C. on 12 December 2006.¹⁴
- 5.17 The key remaining decision point in the NACC acquisition process is the second pass decision in 2008. Second pass approval is formal approval by Government of a specific capability solution to an identified capability development need.¹⁵
- 5.18 During the 31 March 2006 public hearing Defence stressed to the Committee that the November 2006 first-pass decision was not the point at which the acquisition approval was granted:
- That call comes in 2008. That is nearly three years to look at the development of the program, to see how it is progressing and to do our risk management approach to see what we are doing with the F/A-18 fleet, the F-111 fleet and the arrival of the F-35.¹⁶
- 5.19 One final element of the current planning, in relation to the NACC, relates to management of the transition from the existing structure to the future force. Defence advised the Committee that the transition from the ADF's legacy fleets to the new air combat capability extends
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11 Lieutenant General David Hurley, *Transcript 31 March 2006*, p. 59.

12 First-pass approval refers to the process whereby Defence gives Government the opportunity to narrow the alternatives being examined by Defence to meet an agreed capability gap. First-pass approval allows a project to be included in the Defence Capability Plan and the Major Capital Investment Program.

13 Minister for Defence Media Release 148/2006, *The Joint Strike Fighter*, 10 November 2006.

14 Minister for Defence Media Release 163/2006, *Australia Enters Next Phase of the JSF Program*, 13 December 2006.

15 Department of Defence, *Defence Capability Development Manual 2006*, p. 30.

16 Lieutenant General David Hurley, *Transcript 31 March 2006*, p. 53.

to more than phasing out and bringing in new platforms, there is the vital aspect of the personnel transition.

- 5.20 In relation to the personnel transition planning, Defence noted the reality of current and future recruiting pressures, and that it is not possible to:

... just go out and recruit another 200 to 400 intelligently-trained pilots and maintainers from the street. It will take time to grow those people.¹⁷

- 5.21 Accordingly, as part of the ADF strategic workforce planning process, the Air Force needs to manage the move of personnel from the F-111, to supporting the NACC. Chief of Air Force noted that the building blocks of the plan are in place. The personnel establishment assigned to the F-111 would move to the JSF environment, but it was unlikely to be a one-for-one establishment shift as there would be savings and efficiencies with the JSF.

- 5.22 The Officer Commanding of No. 82 Wing has the responsibility for operating the RAAF's F-111 fleet and he advised the Committee that the transition process to the future NACC was already underway. By way of example, he noted that equipping the F-111 with AGM142 missiles presents a great learning experience for the Air Force because:

All our electronic warfare development and tactics development is directly transferable to the F/A-18 – and the JSF downstream.¹⁸

- 5.23 He further added that with regard to transitioning to the future, the phased approach to workforce management and training, that is, F-111 retirement, capability delivery through the enhanced F/A-18 and enabling capabilities, and finally, operational service of the NACC, was a sound method to ensure Australia's air superiority was not compromised. Specifically:

The other factor here for me as an operator is that the Hornet provides the better stepping stone to a single [seat] JSF or whatever in terms of our ability to grow the expertise and experience to function in the way we intend to function beyond 2015.¹⁹

17 Air Marshal Geoff Shepherd, *Transcript 31 March 2006*, p. 56.

18 Group Captain Gavin Davies, *Transcript 5 July 2006*, p. 6.

19 Group Captain Gavin Davies, *Transcript 5 July 2006*, p. 29.

- 5.24 There has been little public comment from sources other than Defence with regard to the personnel and training aspect of the current planning for Australia's future air superiority requirements.
- 5.25 Quite apart from the ongoing debate in relation to the following three key themes that have arisen during this inquiry:
- the appropriateness of the JSF decision;
 - the capability of that aircraft; and
 - the proposed F-111/Raptor force structure.

there has also been considerable concern expressed as to the potential for Australia to be without a viable air combat capability if current planning falls short of expectations. However, the Government has addressed the potential risk by its decision to purchase 24 Super Hornet aircraft.

The capability gap issue

- 5.26 The potential for a time-lag between the phasing out of legacy platforms and the introduction of the JSF (as the preferred solution for Australia's air combat requirements), requires careful management to minimise the impact on Australia's national security. There has been media speculation and public commentary as to the ability of the ADF to manage this potential gap. The Committee accordingly pursued the 'gap issue' with questions to Defence and other witnesses at the public hearings.
- 5.27 Defence reiterated its plan in relation to the Hornet upgrade as the means by which the ADF's air superiority would be maintained until the introduction of the JSF. Nonetheless, it acknowledged that the JSF program could slip, but advised the Committee that the nature of the aircraft development was such that the phased, or block, approach provided an element of planning flexibility. The CEO of the Defence Materiel Organisation observed:

I would predict that occasionally a block might get a bit delayed, but we would still have an operating aircraft flying.²⁰

20 Dr Stephen Gumley, *Transcript 31 March 2006*, p. 48.

5.28 Defence added that not only did the 'block' nature of the development program provide planning flexibility, but so did the actual phasing-in of the JSF. In particular, 'there will be at least a five-year overlap between the JSFs ... and the F/A-18.'²¹

5.29 The personnel transition plan is considered by Defence to be an important element of the total planning package associated with the phasing-in of the NACC. The need to train up personnel as the JSF comes into service provides another layer of flexibility to manage any potential gap in capability. Defence advised that:

It also takes time to train pilots, so probably not every capability in the JSF would need to be immediately available on day one, because it just could not be used. So there is a little bit of schedule contingency in there from a practical sense.²²

5.30 Central to Defence's contingency planning is the upgraded capability that will be available to the ADF by the post-HUG F/A-18. The particular phase of the upgrade program that is focused on managing any potential gap scenario is Phase 3.2C, that is, replacement of the aircraft's 'centre barrels' – the central fuselage.

5.31 This particular phase of the HUG program has been part of the Defence strategy to manage any gap for quite some time now. In 2004 during the hearing into the *Review of the Defence Annual Report 2002-03*, the then-Chief of Air Force advised the Committee that the 'hedging strategy' involved replacement of the centre barrels in a number of the F/A-18 aircraft and that a similar program was already underway in Canada.²³

5.32 During the 31 March 2006 public hearing, Defence reiterated that its gap management strategy involved the upgraded Hornet and centre barrel replacements as necessary. It emphasised that by the end of the decade the Hornet upgrades will deliver a 'better capability than the one we currently have with both the standard Hornet and the F-111.'²⁴ The number and timing of the centre barrel replacement program would be linked to the introduction of the JSF:

... the year the JSF comes in will determine how many centre barrels in the Hornet we have to do and how far out we have

21 Air Commodore John Harvey, *Transcript 31 March 2006*, p. 52.

22 Dr Stephen Gumley, *Transcript 31 March 2006*, pp. 48-9.

23 Air Marshal Angus Houston, *Transcript 2 August 2004*, p. 13.

24 Air Marshal Geoff Shepherd, *Transcript 31 March 2006*, p. 51.

to take the Hornet. Nevertheless, we cannot keep the Hornet going for an extra 10 or 20 years. So there is a band of slippage in there that is within our current planning ...²⁵

- 5.33 The Committee sought the opinion of Professor Babbage in relation to the capability gap issue. Professor Babbage advised that in managing a potential capability gap, decision makers would need to balance risks in determining a course of action. Specifically:

If it looked as though the security environment in the region was going to get much worse, maybe we ought to look at the sort of options that we are not at the moment seriously contemplating ... if suddenly we were taken by surprise in 2008, say, and the F-111s were about to go and it looked like we were going to have a gap, it would probably be possible for us to do a short-term leasing arrangement – with some considerable difficulty – as a back up.²⁶

- 5.34 While Professor Babbage proposed a short-term leasing option as a gap solution, he did not believe that it should be planned for at this point in time and that it would not be money well spent. He supported Defence in the utility and appropriateness of the Hornet upgrades including the re-barrelling option.

- 5.35 In their submission to the inquiry, Dr Kopp and Mr Goon highlight a risk to Australia's national defence that could arise in relation to the Hornet upgrade's 'relatively short time window.' Noting the extent and diversity of the activities to be undertaken as part of the upgrade, there is a real potential that aircraft availability will drop with the resultant 'negative effects on defence capabilities.'²⁷

- 5.36 In commenting on specific aspects of the HUG program, and the implications for maintaining Australia's regional air superiority, Dr Kopp and Mr Goon made the following observations:

[HUG is] intended to upgrade and enhance the aircraft's air combat capabilities, endeavouring to address the growing imbalance in regional air superiority and the resulting threats. At the same time, these programs are intended to provide interim, albeit lesser, strike/reconnaissance/surveillance/air vehicle interceptor/close air support capabilities in place of the F-111s which Defence has recommended to be retired

25 Air Marshal Geoff Shepherd, *Transcript 31 March 2006*, p. 52.

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

27 Dr Kopp and Mr Goon, *Submission No. 20, Sub. Vol. 1*, p. 122.

early ... the threat to Australia's long standing position in regional air superiority is further exacerbated by features peculiar to the F/A-18 'Classic' and the Australian variants ...²⁸

5.37 Mr Michael Devlin's submission to the inquiry expressed concern with regard to the viability of upgrading the Hornet as the means by which the Air Force transitions to the JSF and any capability 'gap' is managed. He proposed the acquisition of an interim aircraft — 'at least 100 F/A-18E and F/A-18 Super Hornet aircraft.'²⁹ A fast-tracked acquisition process could see these aircraft in service by 2012, if not earlier, and any 'potential gap in Australia's defences will thus be plugged.'³⁰

5.38 With regard to the acquisition of an interim aircraft to reduce the risk of a capability gap, Defence advised the Committee during the 31 March 2006 public hearing that:

Were we to go to an interim fighter for some strange reason — and we do not expect that to happen — it would cost us more than the JSF, so it [the JSF] is still the best value for money, not just in a fifth generation sense but when comparing it against fourth generation contenders.³¹

5.39 Furthermore, it was emphasised that the retirement of the F-111 was not directly linked to the introduction of the JSF, but formed part of the progressive transition from the current air combat capability to the future environment:

We are not transitioning from F-111 to JSF. We are upgrading from F-111 and current Hornet to an upgraded Hornet and then to JSF. We need that head space, in a constrained system, to be able to do that. We are getting out of the F-111 business not based on when the JSF comes in but on how the increase of the sum total of the risks of the F-111 play out.³²

5.40 In its submission to the inquiry, Defence commented on the complexity of transitioning to the future NACC and the issue of risk and capability management:

28 Dr Kopp and Mr Goon, *Submission No. 20, Sub. Vol. 1*, p. 117.

29 Mr Michael Devlin, *Submission No. 2, Sub. Vol. 1*, p. 16.

30 Mr Michael Devlin, *Submission No. 2, Sub. Vol. 1*, p. 17.

31 Air Marshal Geoff Shepherd, *Transcript 31 March 2006*, p. 54.

32 Air Marshal Geoff Shepherd, *Transcript 31 March 2006*, p. 52.

While Defence has confidence that the JSF will mature to meet the Air Force's future air combat capability requirements, it is clear that cost, schedule and capability risks associated with introduction of the JSF decrease the later we acquire the aircraft. It is also clear that cost, schedule and capability risks associated with the F/A-18 (and the F-111) increase the longer we keep the aircraft in service. From an overall Air Force air combat capability perspective, therefore, it is necessary to balance the two sets of risks: the ultimate aim being to maintain a regionally comparable Air Force air combat capability with manageable risk in the most cost effective way.³³

- 5.41 Subsequent to the public hearings, discussion in relation to the 'gap' and an 'interim aircraft' continued in both the general and specialist media.
- 5.42 The Chief of Air Force was reported in November 2006 as acknowledging the potential for slippage of the JSF which had resulted in the development of contingency plans. These plans included an extension of the life of the F-111 up to around 2012, in lieu of around 2010, and the ongoing Hornet upgrade program. *The Australian* further reported that should the JSF be delayed by five years or more, the RAAF was expected to acquire the Super Hornet as the 'interim aircraft.'³⁴
- 5.43 Indeed, during a media briefing in relation to the JSF program, the Deputy Chief of Air Force was questioned directly as to whether the Super Hornet was the preferred 'interim aircraft' to maintain Australia's regional air superiority. Air-Vice Marshal Blackburn advised the following:
- ... we're confident that ... we shouldn't need an interim solution. However, as with most things in Defence, we're looking at contingency plans ... that's just prudent planning on our part ... We've looked at a range of what is available on the market and what would suit us ... So there's [sic] a variety of options depending on what actually happens with the program.³⁵

33 Department of Defence, *Submission No. 15, Sub. Vol. 1*, p. 6.

34 Patrick Walkers, *RAAF factors in expansion*, *The Weekend Australian*, 25 November 2006, p. 2.

35 Media Conference, *Defence Update Briefing in relation to AIR 6000 Project*, Canberra, 10 October 2006.

- 5.44 Dr Kopp believes that the Super Hornet is not a viable contingency option:

... the Super Hornet's agility, supersonic speed and acceleration performance, critical in air combat, are not better than the earlier model [which Australia currently employs], due to a Congressional mandate during development. With unique engines, radar, airframe and electronic warfare systems, the Super Hornet shares little real commonality with its predecessor, driving up support costs. All it offers is better radar, improved avionics and 36 per cent more internal fuel, at a price tag estimated at \$2.5 billion.³⁶

Bridging the gap

- 5.45 On 6 March 2007, the Government announced its decision to acquire 24 F/A-18F Block II Super Hornet multi role aircraft in order to ensure Australia maintains its air combat capability edge and to complement the transition to the JSF.³⁷
- 5.46 The total program investment is approximately \$6.6 billion over 13 years, which includes acquisition, all support costs, and training for aircrew and maintenance personnel. Personnel will commence training on the platform in 2009 with the Super Hornets to be operational in 2010, coinciding with the withdrawal of the F-111.³⁸

Committee comment

- 5.47 The unique nature of the JSF project, and Australia's decision to join the SDD phase of the program, provides opportunities for Australian industry that would not be available if a more traditional capital acquisition strategy had been undertaken.
- 5.48 Any potential for Australia's regional air superiority to be diminished or in any way undermined because of slippages in the JSF program, (or the acquisition of some other new air combat platform), would be unacceptable.

36 Dr Carlo Kopp, *The Age*, *Flying into trouble*, 30 December 2006.

37 Minister for Defence Media Release 017/2007, *\$6 Billion to maintain Australia's Regional Air Superiority*, 6 March 2007.

38 Minister for Defence Media Release B05/2007, *Super Hornet Bridging Air Combat Capability*, 8 May 2007.

- 5.49 The Committee notes the Government's decision to purchase the Super Hornet to address any potential air combat capability superiority gap during the transition to the JSF.