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The Defence White Paper and Capability Issues

The White Paper and Defence Update

5.1 The *2000 White Paper* sets out Australia's key strategic interests and objectives in order of importance. These strategic objectives, shown below, aim to:

- ensure the Defence of Australia and its direct approaches;
- foster the security of our immediate neighbourhood;
- work with others to promote stability and cooperation in Southeast Asia;
- contribute in appropriate ways to maintaining strategic stability in the wider Asia Pacific region, and
- support Global Security.[1]

5.2 These strategic objectives are in turn supported by Australian military strategy. The *2000 White Paper* identifies four priority tasks for the ADF:

- the defence of Australia, as stated in the *2000 White Paper*, is shaped by three principles:
  - ⇒ we must be able to defend Australia without relying on the combat forces of other countries – self-reliance;
  - ⇒ Australia needs to be able to control the air and sea approaches to our continent – a maritime strategy; and

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1 *Defence 2000, Our Future Defence Force,* 2000, p. X.

- ⇒ although Australia's strategic posture is defensive, we would seek to attack hostile forces as far from our shores as possible – proactive operations;
- the second priority for the ADF is contributing to the security of our immediate neighbourhood;
- the third priority for Australian forces is supporting Australia's wider interests and objectives by being able to contribute effectively to international coalitions of forces to meet crises beyond our immediate neighbourhood; and
- in addition to these core tasks in support of Australia's strategic objectives, the ADF will also be called upon to undertake a number of regular or occasional tasks in support of peacetime national tasks.[2]

5.3 In March 2003 the Government released an update on the Defence *2000 White Paper*. The 2003 Update concluded that 'while the principles set out in the Defence *2000 White Paper* remain sound, some rebalancing of capability and expenditure will be necessary to take account of changes in Australia's strategic environment.'[3]

5.4 The key focus of the 2003 Update was the rise of global terrorism and the spread of weapons of mass destruction (WMD) which 'have emerged to new prominence and create renewed strategic uncertainty.'[4] In addition, the Defence Update examined some of the key challenges faced by certain countries in our region.[5]

5.5 The Defence Update noted that for the present, 'the prospect of a conventional attack on Australian territory has diminished'. However, the Defence Update identified major challenges in our region:

> Southeast Asia and the South Pacific face major challenges due to political weakness, decline in governance, difficulty in grappling with terrorism and the economic effects of terrorism. If these trends continue, there may be increased calls on the ADF for operations in Australia's immediate neighbourhood.[6]

5.6 In relation to capabilities, the Defence Update commented that 'these new circumstances indicate a need for some rebalancing of capabilities and priorities to take account of the new strategic environment, changes which

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2 *Defence 2000, Our Future Defence Force*, 2000, pp. XI-XII.

3 *Australia's National Security, A Defence Update*, March 2003, pp. 5-6.

4 *Australia's National Security, A Defence Update*, March 2003, p. 7.

5 *Australia's National Security, A Defence Update*, March 2003, pp. 18-22.

6 Department of Defence, *Australia's National Security, A Defence Update*, 2003, p. 23.

will ensure a more flexible and mobile force, with sufficient levels of readiness and sustainability to achieve outcomes in the national interest.'[7]

The Defence Capability Plan and funding measures

5.7 A key feature of the *2000 White Paper* was the provision of a 10 year costed plan, with long term goals to provide for capability. The Defence Capability Plan (DCP), in particular, provided, 'for the first time, Defence funding commitments covering the whole of the coming decade matched to a planned set of capability enhancements.'[8] The *2000 White Paper* stated:

> To fund the program of development for Australia's armed forces that is set out in the Defence Capability Plan, the Government estimates that defence spending will need to grow by an average of about three per cent per annum in real terms over the next decade
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> The Government is committed to meeting this funding requirement, and it has directed Defence to plan within that budget.[9]

5.8 Professor Dibb suggested that the 'Defence Capability Plan is not deliverable at three per cent real growth.'[10] Professor Dibb warned that budgetary pressures are becoming more serious with growing reliance on ageing platforms such as the F-111, high operational tempo and simultaneous deployments. He concluded that there was 'a coming train smash in the defence budget.'[11]

5.9 In relation to the DCP, the Australian Strategic Policy Institute (ASPI) had similar doubts about its achievability commenting that 'as it stands, the DCP is undeliverable, unaffordable, and uncertain.'[12]

5.10 On 7 November 2003 the Government released details of its Defence Capability Review (DCR). The Defence Minister stated:

> We developed this project on a budget neutral basis, recognising that we're receiving that three per cent real increase per year. Because only seven years of the 10 years remain, we've taken it out an extra three years. So the new DCP when it's released will be for

7 Department of Defence, *Australia's National Security, A Defence Update*, 2003, p. 24.

8 Department of Defence, *Defence 2000, Our Future Defence Force*, 2000, p. 77.

9 Department of Defence, *Defence 2000, Our Future Defence Force*, 2000, p. 117.

10 Professor Paul Dibb, *Transcript*, p. 49.

11 Professor Paul Dibb, *Transcript*, p. 49.

12 Australian Strategic Policy Institute, Sinews of War, *The Defence Budget in 2003 and How We Got There*, An ASPI Policy Report, 2003, p. 4.

> a 10-year block again basically starting from this year. And with the savings that we we're able to make and with some movement of projects that – and that's some of the detail that we're settling at the moment – it's obviously our view that we can achieve these outcomes within that budget.
>
> Beyond that, there are other cost pressures. As I've said before there's no secret in that. There are some pressures on personnel costs, some pressures on logistics, some pressures on management of the Defence estate. … each of those issues is being developed further through the whole of government budget process. So it's not – they are not affected by any decisions that we've made this week. And we are not having, we have separated them in terms of the process that we've adopted for update of the DCP.[13]

5.11 On 4 February 2004 the Government released the public version of the *Defence Capability Plan 2004-2014*. The Defence Minister noted that the DCP outlines 64 projects with 116 phases currently valued at about $50 billion.[14] The new fighter aircraft and air warfare destroyer between them will absorb 43 per cent of the value of the plan.[15]

Land forces – main battle tanks

5.12 The key objective for land forces is to ensure that they have the capability to 'respond swiftly and effectively to any credible armed lodgement on Australian territory and provide forces for more likely types of operations in our immediate neighbourhood.'[16]

5.13 The *2000 White Paper* was developed after and using the experiences gained through the East Timor operation of 1999. This and other overseas deployments possibly influenced some of the findings in the *2000 White Paper*. The *2000 White Paper,* for example, commented that Australia's land forces need to 'reflect a new balance between the demands of operations on Australian territory and the demands of deployments offshore, especially in our immediate neighbourhood.'[17]

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13 Minister for Defence, Senator the Hon Robert Hill, *Press Conference*, 7 November 2003, p. 4.

14 Minister for Defence, Senator the Hon Robert Hill, *Media Release*, Launch of the Defence Capability Plan 2004-2014, 4 February 2004.

15 Woolner, D. 'DCP: More Money, but can defence handled it?' *Asia-Pacific Defence Reporter* – March / April 2004, p. 10.

16 Department of Defence, *Defence 2000, Our Future Defence Force*, 2000, pp. 79-79.

17 Department of Defence, *Defence 2000, Our Future Defence Force*, 2000, p. 79.

5.14 In relation to heavy armour, the *2000 White Paper* commented that 'we have decided against the development of heavy armoured forces suitable for contributions to coalition forces.' The *2000 White Paper* concluded that 'these forces would be expensive, and are most unlikely to be needed in defence of Australia or in our immediate region.'[18] Operations in support of wider global interests have seen Australian forces involved in operations in Afghanistan and Iraq during 2002-2003.

5.15 The DCR of November 2003 declared that the ageing Leopard 1 tank will be replaced with a modern main battle tank (MBT). On 10 March 2004 the Government announced the purchase of 59 refurbished United States M1A1 Abrams Integrated Management main battle tanks at a projected cost of $550 million.[19]

5.16 The DCR noted that 'the Army and Navy have advised that the deployment requirements of the *2000 White Paper* would require greater lift capacity than that envisaged in the current DCP.'[20] The DCR stated:

> As a result, the Government proposes to enhance Navy's amphibious capability by replacing HMAS Tobruk with a larger amphibious vessel in 2010 and successively replacing the two LPA's HMA Ships Manoora and Kanimbla with a second larger amphibious ship and a sea lift ship.
>
> To help offset the costs of larger amphibious ships, the fleet oiler HMAS Westralia will be replaced through the acquisition of another operating but environmentally sustainable oiler which will be refitted in Australia. The substitute oiler, which is expected to be in service in 2006, is a less ambitious replacement than that envisaged by the *2000 White Paper*.[21]

5.17 The Government's proposal to acquire new MBTs for the Army has been heavily debated within the Defence community. The Australia Defence Association (ADA) defends the decision to purchase new MBTs. The ADA stated:

> More modern tanks are needed to at least keep up with other countries in the region. When we bought our Leopard 1s in 1978 their regional equivalent was the Soviet T55/T62 and its Chinese derivatives. The regional equivalents are now in the T72 and up

18 Department of Defence, *Defence 2000, Our Future Defence Force*, 2000, p. 79.

19 Senator the Hon Robert Hill, Minister for Defence, *Media Release*, M1 Abrams Chosen as Australian Army's Replacement Tank, 10 March 2004.

20 Senator the Hon Robert Hill, Minister for Defence, *Media Release*, Defence Capability Plan, 7 November 2003.

21 Senator the Hon Robert Hill, Minister for Defence, *Media Release*, Defence Capability Plan, 7 November 2003.

> range…as our numerous and detailed experiences with using tanks in a range of high intensity to low intensity combat in New Guinea, Bougainville, Borneo and Vietnam has clearly shown, tanks are needed to save infantry lives. This is especially so in the integrated combined-arms teams used in modern combat.[22]

5.18 The ADA responded to critics that suggested that the tank could not be deployed within the region citing historical examples where Japanese tanks had been deployed in Malaya during WWII. The ADA, however, refuted views that the modernisation of tanks was for the purpose of sending 'armoured formations to far-off trouble spots for tank on tank battles.'[23]

5.19 In contrast to the ADA, Mr Hugh White argues that the DCR should have more effectively responded to the new security threats arising from terrorism and the threat of weapons of mass destruction. To meet these threats, he argues that 'we need defence forces that are lighter and more agile' and we need more troops 'because while conventional war is capital intensive, lower level unconventional operations can be very labour intensive.'[24] Mr White stated:

> Each new tank will be more capable, but smaller numbers of heavier tanks means less flexibility and bigger support demands. That does not seem like a smart response to the unconventional threats that are our new priority. Better to keep and upgrade our present tanks and spend the money on more soldiers.[25]

5.20 The Information Research Service (IRS) of the Parliamentary Library raised a series of questions about the decision to purchase new MBTs. While the IRS notes that tanks are an integral part of combined arms team in high intensity combat, tanks were not needed in East Timor, Afghanistan or the Solomon Islands. In addition, if Australia was intending to use tanks then it would need mechanised infantry to accompany them. The IRS states that Australia's 'current mechanised infantry vehicles do not have comparable mobility or protection to these tanks.'[26]

5.21 A further issue raised by the IRS relates to the logistics required to shift the tanks within and outside Australia. The IRS comments that as

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22 Bulletin of the Australia Defence Association, *Defence Brief*, Number 101, November 2003.

23 Bulletin of the Australia Defence Association, *Defence Brief*, Number 101, November 2003.

24 Mr Hugh White, Director, ASPI, *The Age*, 24 November 2003, p. 13.

25 Mr Hugh White, Director, ASPI, *The Age*, 24 November 2003, p. 13.

26 Department of the Parliamentary Library, *Research Note*, 'Australia's New Main Battle Tanks', No. 19 24 November 2003.

Australia's new amphibious ships will not be delivered until about 2010, then 'why buy tanks in 2004?'[27] The IRS stated:

> The Australian Navy currently has three old amphibious ships, but they would have significant problems putting tanks ashore, for example, in the South West Pacific. Contracting transport ships may not be possible in a crisis now that global merchant fleets have shrunk and become much more specialised. None of the transport aircraft of the RAAF can lift a Leopard AS1, so there is no hope of moving new MBTs with the air force.[28]

5.22 In relation to operating costs, the IRS questions whether logistic support arrangements, increased fuel and component parts has been factored into the expected purchase price of about $600 million. The Defence Minister stated:

> …the Abrams, with an approximate combat weight of 63 tonnes, was only around 500kg heavier than its competitors. It can be deployed throughout the region using existing naval vessels and infrastructure. The introduction of new amphibious ships from 2010 will give the Army unprecedented mobility and deployability throughout our region and beyond.
>
> In addition to the tanks, extra refuelling, recovery and transport support vehicles, training simulators and an integrated logistic support package will be acquired from the United States. All these elements of the capability are included in the purchase price. Australian industry is expected to be involved in the provision of through-life support for the Abrams.[29]

5.23 During the hearing, Defence explained the rationale behind the decision for new MBTs, and responded to criticisms about the decision to purchase new tanks. Defence indicated that armour is a key part of a combined arms approach to land warfare. Defence stated:

> That is part of this combined arms group that we have been talking about recently. It is something the Army has been doing for many years, but we still see it as the centrepiece of the way that we will fight—that is, you put a grouping into the field that is matched for the task and invariably it will consist of infantry, artillery, armour, engineers and sufficient logistics support.

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27 Department of the Parliamentary Library, *Research Note*, 'Australia's New Main Battle Tanks', No. 19 24 November 2003.

28 Department of the Parliamentary Library, *Research Note*, 'Australia's New Main Battle Tanks', No. 19 24 November 2003.

29 Senator the Hon Robert Hill, Minister for Defence, *Media Release*, M1 Abrams Chosen as Australian Army's Replacement Tank, 10 March 2004.

> Increasingly, we are going to have air as part of that package as well, whether it be provided by the Royal Australian Air Force, the Black Hawks or the armed reconnaissance helicopters when they come into place. So what we are talking about here is a tank that can operate in concert with the rest of the Army in the sorts of environments that the Army will find itself in.[30]

5.24 A further reason given for acquiring new tanks relates to the proliferation of modern and effective anti-tank weapons. Defence commented that the new tanks it is assessing 'would probably provide better protection to the crew, and, through that, to the force that they are protecting, than the Leopard tank can provide.'[31]

5.25 Some defence analysts have raised questions about where and in what type of situation the proposed tanks would be used. Defence argued that the tanks would be used in support of the broad objective of supporting Australia and its interests. Defence stated:

> The tank can be used anywhere, but fundamentally we start by saying that we exist to defend Australia. We defend Australia obviously on our sovereign territory, and we defend Australia where our national interests are vitally and inescapably engaged. Plainly, that also means that from time to time in our region our interests will be engaged and the government may decide that, in some form of assistance mission or some form of help to a neighbour, we will be involved. We structure the force to do those fundamental things—defence of Australia and also defence in the region. Spin-offs that allow for deployments to pursue national interests in more remote areas are just that.[32]

5.26 In relation to the criticism that the new tanks present a significant logistical problem, Defence broadly argued that the challenges will be no greater than with existing Leopard 1 tanks. Defence argued that in relation to fuel and ammunition supply it may be easier to support the new tanks. Defence stated:

> The more modern the tank you get, the easier—you could argue—it is to support because people have thought through these issues of the cost of ammunition, the cost of fuel or whatever it might be.[33]

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30 Major General Frank Roberts, Deputy Chief of Army, *Transcript*, p. 63.

31 Major General Frank Roberts, Deputy Chief of Army, *Transcript*, p. 64.

32 General Peter Cosgrove, Chief of Defence Force, Department of Defence, *Transcript*, p. 13.

33 Major General Frank Roberts, Deputy Chief of Army, *Transcript*, p. 65.

5.27 During the hearing, Defence was asked how many of the current Leopard Tanks could be transported in the Navy's amphibious craft. Defence indicated that there are four types of amphibious craft capable of carrying Leopard Tanks. These craft and there carrying capacities are shown in Table 5.1.

Table 5.1 ADF Amphibious craft capable of carrying Leopard Tanks

Amphibious Craft	Capacity
HMA Ships Kanimbla and Manoora (amphibious transport ships)	21 tanks each
HMAS Tobruk (amphibious heavy lift ships)	18
Balikpapan class heavy landing craft	3 tanks in each of 6 platforms with a total of 18
Medium landing craft (62 tonne craft carried on amphibious transport ships and HMAS Tobruk)	1 tank in each of 15 craft in the inventory, although only six would normally be deployed in a task force at any one time

Source Department of Defence, Submission 1, Question 12.

Conclusions

5.28 The Government's decision to purchase new main battle tanks (MBTs) has received support but also criticism from a range of defence analysts. Some of the criticisms focus on why Australia needs a new MBT when the strategic environment is calling for more mobile and flexible forces designed to respond to terrorist activity and the proliferation of weapons of mass destruction. The Australian Strategic Policy Institute (ASPI) argued that Australia needs more troops to deal with growing unconventional conflict.

5.29 The Information Research Service of the Parliamentary Library brought attention to the logistical challenges and operating costs associated with maintaining new MBTs. Defence responded to these issues and argued that from a combined arms approach there was a clear rationale and need for new MBTs.

5.30 The committee notes the concerns directed at the purchase of MBTs. In particular, there seems cogent reasons why the ADF should be seeking to expand its troop numbers so that it can respond to a wider range of demands associated with terrorist, the proliferation of WMD and the need to support the continuing need for peacekeeping operations.

5.31 The committee, however, does not consider the choice is an either or situation. New MBTs will provide a positive addition to the Army and the ADF's broader objectives. At the same time, Defence will have to give

urgent attention to the growing pressures of high operational tempo, new strategic challenges and the impact these are having on ADF personnel, particularly Army.

5.32 The committee's 2000 report, *From Phantom to Force, Towards a More Efficient and Effective Army*, exposed some of the shortcomings in Army personnel management, and the existence of 'hollow' or non-existent units. The committee concludes that if the proposed tank purchase is to have any merit, Defence must, at the same time, ensure that Army's personnel shortfalls are addressed.

5.33 The committee will continue to monitor how Defence manages its personnel and whether it is achieving its performance outcomes.

5.34 The committee's report entitled *Australia's Maritime Strategy* commented on the need for an effective Army Sustainability model and more information on the role and function of the Army Reserves.

Air Combat and strike

5.35 The *2000 White Paper* states that 'air combat is the most important single capability for the defence of Australia, because control of the air over our territory and maritime approaches is critical to all other types of operation in the defence of Australia.'[34] Australia's air combat capability is based on a fleet of 71 F/A-18 aircraft.

5.36 Within the next decade, Australia will need to procure a platform capable of securing control of the air over Australian forces and territory. The *2000 White Paper* stated in relation to key initiatives:

- …we will proceed now to acquire four Airborne Early Warning and Control (AEW&C) aircraft, with the possibility of acquiring a further three aircraft later in the decade. The AEW&C will make a major contribution to many aspects of air combat capability, significantly multiplying the combat power of the upgraded F/A-18 fleet (as part of the 2004-05 Budget, the Government announced that it intends to purchase an additional two AEW&C bringing the total purchase to six platforms);
- …we have scheduled a major project to replace and upgrade our AAR capability. This project will acquire up to five new-generation AAR aircraft, which would have the capacity to refuel not only our F/A-18 aircraft but also our F-111 and AEW&C aircraft over a wide area of

34 Department of Defence, *Defence 2000, Our Future Defence Force*, 2000, pp. 84-85.

operations. These aircraft will also provide a substantial air cargo capability, and are planned to enter service around 2006;

- …the Government will examine options for acquiring new combat aircraft to follow the F/A-18 and potentially also the F-111. Provision has been made in the Defence Capability Plan for a project to acquire up to 100 new combat aircraft to replace both the F/A-18 and F-111 fleets. Acquisition is planned to start in 2006-07, with the first aircraft entering service in 2012.[35]

5.37 The DCR confirmed Air Force's plans for the 'Joint Strike Fighter (JSF) aircraft, new Airborne Early Warning and Control (AEW&C) aircraft which are in production, and air-to-air refuelling aircraft which are out to tender.[36] It should be noted that a final decision to purchase the JSF has not been made and is not due until 2006.

5.38 On 16 April 2004 the Government announced that the Military Transport Division of the European Aeronautic Defence and Space Company (EADS) teamed with Qantas Defence Services has been selected as the preferred tenderer for the Royal Australian Air Force's fleet of five new air-to-air refuelling aircraft. The EADS A330 Multi-Role Tanker Transport Aircraft was selected to replace the RAAF's ageing Boeing 707 aircraft in an approximate $2 billion project.[37]

5.39 'Strike power' is about Australia's capabilities that enable it to attack hostile forces in their territory, in forward operating bases or in the approaches to Australia. This is the Air Force's key contribution to Australia's maritime strategy. Australia's key strike weapon is the F-111. The *2000 White Paper* commented that the 'Government's aim in the development of our strike capability is to contribute to the defence of Australia by attacking military targets within a wide radius of Australia, against credible levels of air defences, at an acceptably low level of risk to aircraft and crew.'[38]

5.40 The *2000 White Paper* concluded that the Government has 'considered the future of our strike capability after the F-111 leaves service, expected to be between 2015 and 2020.'[39] The DCR revised down this projected in-service termination date to 2010.

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35 Department of Defence, *Defence 2000, Our Future Defence Force*, 2000, pp. 86-87.

36 Senator the Hon Robert Hill, Minister for Defence, *Media Release*, Defence Capability Plan, 7 November 2003.

37 Senator the Hon Robert Hill, Minister for Defence, *Media Release*, EADS/QANTAS Wins $2 Billion Air-to-Air Refuelling Competition, 16 April 2004.

38 Department of Defence, *Defence 2000, Our Future Defence Force*, 2000, p. 92.

39 Department of Defence, *Defence 2000, Our Future Defence Force*, 2000, p. 93.

5.41 During public hearings, Defence was heavily examined on the decision to retire the F-111 early, and the implications arising from this decision, including:

- the accuracy of claims that the F-111 is becoming more difficult to maintain as it ages and, as a result, cost pressures will increase significantly;
- the adequacy of both the F/A-18 Hornet, with upgrades, and the AP3C to perform the strike role until the F-35 is delivered;
- the challenge of maintaining capability in the period between the retirement of the F-111 and the acquisition of the proposed F-35 multirole fighter; and
- the capabilities of the F-35 to perform its proposed multirole task in a region where advanced Russian made Su-30 series multirole fighters are proliferating.

Defence rationale for retiring the F-111 in 2010

5.42 Defence noted that its studies suggest that beyond 2010, the F-111 'will be a very high cost platform to maintain and there's also a risk of losing the capability altogether through ageing aircraft factors.'[40] ASPI commented that the decision to retire the F-111s early 'makes some sense', and the 'money being used to maintain the F-111s in service and upgrade them further can probably be better spent elsewhere.'[41]

5.43 There are conflicting views as to whether new aircraft will be less costly to maintain than ageing aircraft. In February 2003, as part of the review of the 2001-02 Defence Annual Report, Defence stated that 'we anticipate that the costs of operating the joint strike fighter, the F35, will be in the order of 50 per cent of what it costs to operate the current fleet.'[42] ASPI, however, suggested that maintenance costs for software intensive platforms could be expensive. In response to Defences' claim that maintenance costs for the F-35 could be less than current platforms, ASPI stated:

> While this may eventually be demonstrated, the opposite can also occur, with new aircraft being more expensive to maintain in service than those they replace. For example, twelve new C-130J Hercules transport aircraft were bought in the late 1990s to replace twelve older C-130E Hercules originally bought in 1966-67.

40 Air Marshal Angus Houston, Chief of Air Force, Department of Defence, *Press Conference*, 7 November 2003.

41 ASPI, *The Defence Capability Review 2003, A Modest and Incomplete Review*, December 2003, p. 10.

42 Air Marshal Angus Houston, Chief of Air Force, 27 February 2003, *Transcript*, p. 48.

> The 2003-04 Defence budget had an allocation for additional expenditure on C-130J logistics funding of some $40.7 million per year over the next five years. Defence stated that the increased complexity of the aircraft, especially its software costs, were the major cost drivers. The J model is a very software-intensive aircraft, while the preceding E and H models were not....
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> As is the case of the C-130J, the F-35 is very software intensive compared with the aircraft it is to replace. While the F/A-18 uses some five million lines of software code, the JSF uses 15 million lines.[43]

5.44 Defence reiterated its position at the hearing noting that ageing factors associated with the F-111 will increase risks and result in increased maintenance costs. Defence stated:

> I think the F111 is a very capable platform right now. It is going great guns at the moment. But about 18 months ago I was seriously concerned about its future. We had had a wing breakage, a fuel tank implosion and major fuel leaks. We are having all the symptoms of an ageing aircraft and, as a sole operator, there are some considerable challenges for Australia to maintain that capability in service. So we have had a very good look at all the factors that are at play here, and we assess that the risk of loss of capability goes up from what it is now—medium—to high at the end of the decade.[44]

5.45 The statement above was made on 15 December 2003. About 18 months previously on 3 June 2002, Defence, during Budget Estimates, was much more positive about the capabilities and longevity of the F-111. Defence stated during that hearing:

> The prognosis is that we will be able to remediate the wing problem very easily and relatively cheaply. While we are doing this, we are continuing to maintain a very good level of operational capability. Indeed, we will fly almost the same rate of effort this year as we flew last year, with the remaining aircraft that still have life in the wings. We recently participated in the exercise up in Malaysia—the air defence exercise run by the headquarters integrated area defence system as part of the Five Power Defence Arrangements. The three aircraft that went there flew 110 hours over two weeks and maintained outstanding

43 Australian Strategic Policy Institute, *A Big Deal, Australia's future air combat capability*, February 2004, p. 23.

44 Air Marshal Angus Houston, Chief of Air Force, *Transcript*, p. 50.

> serviceability. We are also running a conversion course. I am very content with where we sit right now with the F111.[45]

5.46 Kopp and Goon suggest that some of the issues raised by Defence during the hearing on 15 December 2003 were overstated. For example, the 'wing breakage' occurred during testing and 'as a result of test article breakage, all RAAF F-111s were retrofitted with low time wings recovered from mothballed US F-111s.'[46] Kopp and Goon indicate that there are around 200 mothballed US F-111s which 'provide a large collection of structural spares permitting significant structural life extensions.'[47] Defence during Budget Estimates on 3 June 2002, in relation to the acquisition of short wings stated that 'the short wings have a much longer life than the long wings and they will take us through to whatever withdrawal date the government requires.'[48]

5.47 On 4 June 2004 DSTO indicated that it was less optimistic about the replacement wings because United States Air Force data showed heavy usage. Defence stated:

> We are testing an F-model wing to see what we can make of the USAF history of usage. At the time, we believed that those wings would provide us with excellent solutions for the outer wing region, and we believed that they had had such limited service that the inner wing would not be a problem. As of the last few months we now know, of course, that the USAF data was not all that clear. When we assessed it further, we found that those wings have in fact been used very heavily and the inner wing is not as strong in life as we had hoped. We are now addressing that with a further test. At the moment, we are operating the wings. We have a basis for operating the wings. Contingent on that test and other developments in DSTO, we should be able to push those wings out, we hope, with good results, to 2010. If we want to push them further, and again subject to satisfactory resolution of these emerging issues on usage, then we will need another program. DSTO's position is: if that is needed, we can do it.[49]

5.48 Kopp and Goon suggest that the fuel tank explosion (not implosion) resulted from insulation breakdown in an original fuel tank wiring

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45 Air Marshal Angus Houston, Chief of Air Force, Senate Foreign Affairs, Defence and Trade Committee, *Consideration of Budget Estimates*, 3 June 2002, *Transcript*, p. 153.

46 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 23.

47 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 23.

48 Air Marshal Angus Houston, Chief of Air Force, Senate Foreign Affairs, Defence and Trade Committee, *Consideration of Budget Estimates*, 3 June 2002, *Transcript*, p. 154.

49 Dr Graham Clark, Research Leader, DSTO, Department of Defence, *Transcript*, 4 June p. 10.

harness. They argue, however, that 'most of the wiring in the F-111s has been replaced over the last decade' and it is unclear why wiring of such age was left in the particular craft that suffered the explosion.[50] In relation to the fuel tank leaks, Kopp and Goon claim that the F-111 has had a history of fuel tank leaks which indicates that the problem is not age related.[51]

5.49 In relation to airframe fatigue, Kopp and Goon suggest that there are inconsistencies in the evidence provided by Defence. For example, on 8 May 2002 before this committee, the then Vice Chief of the Defence Force, Lt General Des Mueller commented that the DSTO 'are of the opinion that at this point the airframe could be managed through to the period 2015-2020.' Mueller concluded 'that is not to say, however, - as is often the case with ageing aircraft – that there will not be surprises.'[52]

5.50 On 4 June 2004 Defence reported that 'on the advice of DSTO, we believe that the risk of capability breakdown will increase past 2010.'[53] During the hearing, Defence was asked if it would provide the date of DSTO advice to Defence that was relied on to conclude that the 'risk of capability breakdown will increase past 2010' and which ultimately would have contributed to the F-111 retirement being brought forward to 2010. Defence concluded that 'I do not think you have advice from DSTO on a decision to withdraw.'[54] It appears from the Defence response that no specific information was sought from DSTO on this matter.

5.51 In relation to the cost of supporting the F-111, Defence commented that 'the other factor that is really important here is that, if we look back over the last few years, the F-111 has cost us an extra six per cent per year over the last few years.'[55] In addition, Defence claimed that the costs will grow commenting that 'we are working on five per cent compounded, which is probably a fairly conservative estimate.'[56]

5.52 Kopp and Goon question the cost projections provided by Defence, and suggest that it is using an inappropriate model to determine future F-111 operating costs. They comment that the 'compounding cost method for projecting the operating costs of ageing aircraft is mostly used for estimating the costs of commercial airliner aircraft, which typically are not subjected to systems and propulsion upgrades, and 'ageing aircraft

50 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 23.

51 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 24.

52 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 24.

53 Air Marshal Angus Houston, Chief of Air Force, *Transcript*, p. 79.

54 Air Vice Marshal John Monaghan, Department of Defence, *Transcript*, p. 87.

55 Air Marshal Angus Houston, Chief of Air Force, *Transcript*, p. 50.

56 Air Marshal Angus Houston, Chief of Air Force, *Transcript*, p. 50.

program' structural and system repairs.'[57] Kopp and Goon suggest that a precondition of the compounding cost method is a period of several years in which no modifications are performed so as to establish a costing baseline for the method. In contrast, the F-111 upgrade program has resulted in a series of upgrades during the previous three years. Kopp and Goon state:

> The use of a compounding cost model is thus unsuitable, and it was employed using an inappropriate baseline cost. Therefore any results it would produce would overstate actual future operating costs.[58]

5.53 In relation to the F-111s maintenance costs Kopp and Goon point out that the last time the Defence Annual Report provided an individual cost for 'air strike/reconnaissance was in 1999-2000. At that time, air strike/reconnaissance accounted for $787.1 million which was 17.3% of Air Force capabilities. Kopp and Goon note that 'in relation to the price to government and, therefore, to the Australian tax payer, the capability represented by the F 111 cost less than all other airborne platform based capabilities operated by the RAAF.'[59] Part of the complexity in examining cost implications is that cost information shifts from platform cost to capability cost. The committee did not have sufficient opportunity to explore this area.

5.54 Kopp and Goon are critical that subsequent Defence Annual Reports did not provide this level of detail relating to the cost of air strike/reconnaissance. The 2003-04 Portfolio Budget Statements amalgamate the costs for air strike and air combat so it is not possible to determine cost variations, over time, in relation to supporting the F-111s.

5.55 During the hearing, Defence was asked if it had conducted any studies into the impact on industry, particularly at Amberley, from the decision to retire the F-111s in 2010. Defence indicated that this had not been undertaken.[60] Kopp and Goon note that the Amberley based Weapons Systems Business Unit (WSBU) operated under contract by Boeing is the largest systems integration facility in Australia, and employs several hundred highly skilled personnel including software engineers, hardware engineers, technicians and maintainers.'[61] Kopp and Goon stated:

> Without the F-111 the WSBU could not sustain its existing skills base and would experience a rapid collapse in capabilities. As a

57 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 25.

58 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 25.

59 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 45.

60 Air Marshal Angus Houston, Chief of Air Force, *Transcript*, p. 59.

61 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 41.

result Australia would lose a unique and very expensive to develop capability.[62]

5.56 The WSBU is responsible for a series of upgrades to the F-111's systems, termed the Block Upgrade Program (BUP). The current upgrades for the F-111 are shown below:

Block C2

- ALE-40 CMDS (Countermeasures dispensing set)
- ALR-62 RWR (Radar warning receiver)
- ALR-2002 (FSED Trial on 1 aircraft)
- A8-132 Prototype Baseline Project (US modified plane baselined to AUP standard to match the fleet)

Block C3

- EWMS (ALE-47 / ALQ -213) (Countermeasures set)
- VADR (Voice & data recorder system)
- ECMPOD Jammer (Electronic countermeasure pod jammer)
- DFCS (Digital flight control system)

Block C4

- SOW (AGM-142) / 1760 (Statement of work)
- ANDVT (KY-100) Secure Voice[63]

5.57 The DCP released on 4 February 2004 confirmed that a number of upgrades to the F-111, including AIR 5404 Phase 2 and AIR 5421 Phase 1, have been cancelled. The saving arising from these cancellations is shown in Table 5.2.

Table 5.2 F-111 Defence Capability Programs – cancelled

DCP Number	Name	Cost ($m)
Air 5404 Phase 2	F-111 Strike Capability Enhancement	250-350
Air 5421 Phase 1	Tactical Reconnaissance and Strike Support Capability	250-350

Source *ASPI, Strategic Insights, No. 3 Reviewing the Defence Capability Plan 2004-2014, The good, the bad and the ugly, February 2004, p. 7.*

62 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 41.

63 Boeing Australia Website: http://www.boeing.com.au/DIVAerospaceSupport/ASf111.htm

5.58 The DCP has retained, although on a smaller scale, AIR 5416 which seeks to provide electronic warfare self protection. ASPI noted that this 'project seeks to upgrade the radar warning systems on the F-111 at a cost of $30-50 million with an in-service delivery of 2006-08, down from $150-200 million provided by the 2001 DCP.'[64]

5.59 In relation to AIR 5416 Phase 3, the DCP stated that there 'are limited opportunities for Australian industry to become involved in the project as the majority of the existing F-111 Electronic Warfare Self Protection (ESWP) systems acquired are from overseas suppliers'.[65] ASPI discussed some of the reasons for the continuation of the project:

> It might have something to do with the amount of sunk costs already invested in the project. But it could also reflect a concern that the F/A-18 may not be able to replace the F-111 by 2010 and forms part of the RAAF's contingency planning should that happen.[66]

F/A-18 Hornet and AP-3C proposed strike capability

5.60 The F-35, if it is chosen by the Government in 2006, is expected to be delivered in 2012. This aircraft is expected to perform a multi-role function replacing both the F/A-18 and F-111. In view of the early retirement of the F-111, Defence plan to fulfil the strike capability provided by the F-111 with the F/A-18 and AP3-C Orion until the F-35s are delivered. The DCR stated:

> …the Air Force has advised that by 2010 – with full introduction of the AEW&C aircraft, the new air-to-air refuellers, completion of the F/A-18 Hornet upgrade programs including the bombs improvement program and the successful integration of a stand-off strike weapon on the F/A-18s and AP-3C – the F-111 could be withdrawn from service. In other words, by that time the Air Force will have a strong and effective land and maritime strike capability. This will enable withdrawing the F-111 a few years earlier than envisaged in the *2000 White Paper*.[67]

5.61 Defence was examined on the suitability of the F/A-18 and the AP3-C to adequately perform strike missions. First, Defence was asked about the

64 ASPI, Strategic Insights, No. 3, *Reviewing the Defence Capability Plan 2004-2014, The good, the bad and the ugly*, February 2004, p. 8.

65 Department of Defence, *Defence Capability Plan, Public Version, 2004-2014*, 2004, p. 31.

66 ASPI, Strategic Insights, No. 3, *Reviewing the Defence Capability Plan 2004-2014, The good, the bad and the ugly*, February 2004, p. 8.

67 Senator the Hon Robert Hill, Minister for Defence, *Media Release*, Defence Capability Plan, 7 November 2003.

survivability and ultimately effectiveness of using the AP3-C as a strike platform fitted with stand-off weapons. Defence indicated that 'we would not be putting an aircraft that may carry some form of weapon into a situation where, of itself, it was vulnerable immediately to an aggressor combat aircraft or missile.'[68] Defence noted that the AP3-C currently can carry Harpoon missiles.

5.62 Kopp and Goon noted that the AGM-84 Harpoon is carried for anti-shipping strikes, 'in a region where hostile warships are not defended by jet fighters.'[69] However, they argue that if the AP3-C was used for land or littoral strike then it could be subject to enemy fighter patrols. Kopp and Goon concluded, therefore, that if the AP3-C 'is not to be flown into such airspace, then it has no significant utility as a land or littoral strike asset.'[70]

5.63 Defence indicated that the F/A-18 will achieve its strike capability through a range of planned upgrades and once the new air-to-air refuellers and AEW&C are delivered, Defence claims that 'we will maintain the same or superior air combat capability and strike capability by the end of all these improvements.'[71] Defence was confident that the upgrades would lead to superior outcomes:

> Obviously part of that upgrading is to give it Link 16, a full suite of weapons including a follow-on stand-off weapon and also satellite guided munitions. It will also have the latest short-range and medium-range air-to-air missiles. Supported by Wedgetail and air-to-air refuelling, we will have a better air combat system than the one we have now. We will be able to deliver more weapons on target, engage more targets and provide a much better stand-off capability. We will have more precision and obviously we will have much improved networking.[72]

5.64 Defence noted that the F-111's capability is decreasing as new capabilities enter the region. Defence also noted that a' refuelled F/A-18 with a precision stand-off weapon, is a very comparable strike platform to the F-111.'[73] Defence acknowledged that while the F-111 will carry more bombs, 'we are moving rapidly from quantity to the precision and the discrimination of the weapon.'[74]

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68 General Peter Cosgrove, Chief of Defence Force, Department of Defence, *Transcript*, p. 13.

69 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 13

70 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 13.

71 General Peter Cosgrove, Chief of Defence Force, Department of Defence, *Transcript*, p. 16.

72 Air Marshal Angus Houston, Chief of Air Force, *Transcript*, p. 80.

73 General Peter Cosgrove, Chief of Defence Force, Department of Defence, *Transcript*, p. 16.

74 General Peter Cosgrove, Chief of Defence Force, Department of Defence, *Transcript*, p. 16.

5.65 Kopp and Goon disputed Defence's conclusions about the decreasing capability of the F-111 and the potential for the F/A-18 to provide a superior strike platform. Kopp and Goon acknowledge that the F-111 does need further assistance than would have been needed 10 years ago, but this is a feature of all non stealthy strike fighters since 1986 which are provided with defensive fighter escorts. [75] Kopp and Goon point out that F/A-18s performing a strike role will themselves need fighter escort. They argue that an F-111, because of its superior speed to an F/A-18, will need less fighter escort than an F/A-18 because it 'can penetrate and egress hostile airspace much faster than an F/A-18 tasked with strike.'[76]

5.66 Defence claimed that the F/A-18, unlike the F-111, would be self escorting. Defence pointed to the experience of its F/A-18s operating in the Middle East where they performed ground and air roles. However, there was minimal if any opposition combat aircraft to deal with in that environment. In contrast to this scenario, Defence was questioned if it would send in F/A-18s, in strike configuration, against an AEW&C backed force of Su-30s. In this scenario, Defence was asked if it would provide fighter escorts. Defence stated:

> Yes—not against an AEW&C backed force, but I do not think we see that at the moment. Our advantage will be that we will have the best AEW&C system in the world in two years time. That will give the F/A-18 force a significant advantage.[77]

5.67 In relation to a question about the survivability of the F/A-18 against aircraft such as the Su-30, Defence raised the importance of pilot skills. Defence stated:

> The Sukhoi 30 is a very capable aircraft, but obviously the weapons it carries are the crucial thing. The other thing that is important is how well they are employed, how well they are supported and how well the pilots are trained. I think our pilots are world's best standard in terms of training, and I think they will continue to be a good match for anybody.'[78]

5.68 Kopp and Goon acknowledged that while it is true that RAAF pilots remain the most competent in the broader region, it should not be assumed that pilot skill can make up for inadequacies in aircraft performance.'[79]

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75 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 14.

76 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 14.

77 Group Captain Geoffrey Brown, Department of Defence, *Transcript*, p. 91.

78 Air Marshal Angus Houston, Chief of Air Force, *Transcript*, p. 50.

79 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 26.

5.69 Kopp and Goon expressed a view that the Su-30MKs are equipped with larger radar than the F/A-18, with Hornet Upgrade (HUG) Radar APG-73, and, therefore, the Su-30MK can 'outrange the F/A-18A in the crucial Beyond Visual Range combat regime.'[80] In addition, Kopp and Goon report that a number of long range air-to-air missiles are being utilised on the Su-30 which 'significantly outrange the AIM-120 AMRAAM carried by the F/A-18A (HUG). They conclude that it would be dangerous for Australian officials to downplay the capabilities of opposing aircraft and rely on the superiority of Australian aircrew. Kopp and Goon state:

> It is a reasonable prospect that AEW&C and tanker aircraft will be widely used across the region by the end of this decade, while the Su-30 will become the defacto 'standard' fighter across the region…
>
> There is no historical precedent to support the case that superior pilot skills and platform networking can nullify the impact of superiority in fighter and missile capabilities, and parity in AEW&C and tanker capabilities.[81]

Defence capability prior to the acquisition of the F-35?

5.70 The 2010 retirement date for the F-111 is subject to successful completion of all upgrades and enabling capabilities. Defence reported that if 'any of the enhancements to the F/A-18 and the enabling capabilities do not arrive by 2010, we will extend the F111 through to 2012.'[82] If the F-35 is not delivered on time, Defence indicated that it would keep the F/A-18 in service longer than planned. Defence stated:

> We have a hedging strategy in place, with funding identified for the modification of the Hornet for 43 centre barrel replacements; that is a replacement to the centre fuselage of the F/A-18, which will enable it to be kept going beyond 2015.[83]

5.71 Mr Goon noted that in many cases the 'wind down' period of an aircraft commences about two years before the planned retirement date. He claimed that the 'wind down' on the F-111 has already started and, therefore, if there was a decision to extend the F-111 past 2010 it would be difficult. Mr Goon concluded that ' a review would need to be done on the current planned program for wind back on the servicing maintenance and

80 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 26.

81 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 28.

82 Air Marshal Angus Houston, Chief of Air Force, *Transcript*, p. 81.

83 Air Marshal Angus Houston, Chief of Air Force, *Transcript*, p. 81.

spare support to ensure that, if we do get to 2010 and there is a need decided by the Air Force to extend it, that can in fact happen.'[84]

5.72 Australia plans to introduce the F-35 from 2012 onwards. Defence commented that 'the project is going quite well at the moment and we are pleased with the way it is progressing.'[85] Figure 3 in Defence's submission of 4 June 2004, together with evidence from the 2 August 2004 public hearing, confirms that the F-35 will be delivered in 2013 with transition to operational status commencing around 2014.[86]

5.73 Kopp and Goon cautioned against placing too much certainty on the 2012 introduction date. Kopp and Goon state:

> Historically Initial Operational Capability (IOC) dates for modern fighters usually lag behind targets by several years, this aside from the issue of whether it is wise to opt for early production aircraft which often experience teething problems. These recent developments in the Joint Strike Fighter are tangible evidence that the risk factors in this program are genuine, and many are likely to further impact the program. Schedule delays are of particular concern for the RAAF as they extend the duration of developing capability gaps, while resulting cost increases present difficulties with funding the intended complete block replacement of both the F/A-18A and F-111 fleets within the short timeframe planned for.[87]

5.74 ASPI suggested that the reason to retire the F-111s early and upgrade the F/A-18s to a strike role reflects 'a view that the JSF's won't arrive by 2012 after all.'[88] ASPI stated:

> …there remains uncertainty that the upgrade to the F/A-18s which are intended to enhance their strike capability will be completed before the F-111s retire. Even if they are successful, Australia's strike capability will have fallen well below the levels planned for in the 2000 White Paper. If the F/A-18 upgrades run into trouble, we could face a serious strike capability gap. This could be reduced if the Government had decided to buy two extra AEW&C. An option to purchase the extra two AEW&C aircraft expires in mid 2004.[89]

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84 Mr Peter Goon, *Transcript*, p. 104.

85 Air Marshal Angus Houston, Chief of Air Force, *Transcript*, p. 49.

86 Department of Defence (Royal Australian Air Force), *Submission 4*, p. 10.

87 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 18.

88 ASPI, *The Defence Capability Review 2003, A Modest and Incomplete Review*, December 2003, p. 9.

89 ASPI, *The Defence Capability Review 2003, A Modest and Incomplete Review*, December 2003, p. 10.

5.75 During the hearing on 15 December 2003 Defence was asked what contingencies it had in place to deal with the time gap between the retirement of the F-111 and the arrival of the F-35. Defence stated:

> We will not be retiring the F111s unless we have successfully got through a number of other steps, which entail optimising what we might call the air combat package—FA18s with upgraded weaponry, upgraded sensors and any fundamental maintenance-for-life extension—which incorporates air-to-air refuelling and uses all the sensors that we have for aerial combat; for example, the AWACS and the Jindalee. We would see that as a total package. If any of those programs for any reason are slowed down or do not work, which would be very unexpected to us, we still have options with the F111. But at this stage the intent is that, having done all these things—acquired modern air-to-air refuellers and the Wedgetails, and having them in service—we would be in a totally different position. So, from our point of view, we will maintain the same or superior air combat capability and strike capability by the end of all these improvements.[90]

5.76 Figure 3 in Defence's submission of 4 June 2004 shows the level of precision strike capability over time. [91] Precision strike capability is the ability to deliver weapons at 1000 nautical miles. The period between 2007 and 2010 shows a rise in strike capability because F/A-18s, upgraded to a strike configuration and supported by new air-to-air refuellers (AARs) and AEW&C, are added to the total strike capability. So in this period, strike capability is the sum of F-111s and strike configured F/A-18s supported by AARs and AEW&Cs.

5.77 The removal of the F-111 in 2010 produces a substantial drop in capability to deliver laser guided bombs (LGBs) to a distance of 1000 nautical miles, and a lesser drop in the capability to deliver stand off-weapons (SOWs) to 1000 nautical miles. Had the F-111 weapon upgrade program set out in the 2000 Defence White Paper been implemented then the drop in SOWs in 2010 would be greater.

5.78 However, the combined capability in 2011 will be greater than in the period 2004-07. In the case of LGBs there is a small rise in capability. In the case of SOW, there is a more significant increase in capability in 2010 compared with 2004-07 due to the upgrade of the F/A-18, AAR and AEW&C.

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90 General Peter Cosgrove, Chief of Defence Force, Department of Defence, *Transcript*, p. 16.

91 Royal Australian Air Force, *Submission 4*, p. 10.

5.79 In response to questions from some members of the committee, Defence has undertaken to provide further information showing strike capability had the weapons upgrades for the F-111, as planned in the 2000 Defence White Paper, not been cancelled.

The comparative capability of the F-35?

5.80 During the hearing, the debate about the early retirement of the F-111 extended to include the comparative capabilities of the F-35 when and if it is finally introduced into service. It is the stated intention of Defence to use the F-35 in a 'multi-role' capacity performing both strike and air combat missions. The F-35 will be operating in a region which is proliferating with highly capable, albeit less stealthy, Russian made Su-30 series aircraft. Defence is confident that the F-35 will be highly effective in performing its multi-role tasking, although some Defence analysts are less confident. Defence commented that 'we have a very good idea that the United States future combat aircraft, the F-35 will be exceptionally good.'[92] Defence stated:

> There is a whole raft of things, I consider: its stealth technology; its sensor suite; its capacity to carry a wide range of ordnance; its ability to network with other aircraft, particularly our AWACS Wedgetail aircraft; its ability to virtually be a broadcaster of sensor information to many other platforms; and its aerodynamic characteristics—it is going to be a very flyable aeroplane. All of these mean that it is very superior to its competitors.[93]

5.81 One of the claimed attributes of the F-35 is that, as a fifth generation aircraft, along with the F/A-22A, it has significant stealth capabilities. Defence stated:

> One of the important things that both those aircraft have over all the others is a stealth capability. Stealth gives you an enormous advantage in the air combat environment. We are looking at all the candidates and, by virtue of the combination of the fifth generation technology that was going to be available—stealth, better situational awareness for the pilots, improved sensors—when we did the staff work initially it was quite clear that the joint strike fighter stood out as the aircraft for us.[94]

5.82 Kopp and Goon are less confident about the claimed advantages of the F-35. The F-35 while it has stealth capabilities does not have the same level

92 General Peter Cosgrove, Chief of Defence Force, Department of Defence, *Transcript*, p. 10.

93 General Peter Cosgrove, Chief of Defence Force, Department of Defence, *Transcript*, p. 11.

94 Air Marshal Angus Houston, Chief of Air Force, *Transcript*, p. 49.

of stealth as an F/A-22A especially in the 'aft fuselage and engine nozzle design.'[95] Kopp and Goon state:

> The F/A-22A was designed with 'all aspect' stealth capability to impair hostile radar detection from any direction, across a wide range of radar wavelengths. The Joint Strike Fighter uses 'economy stealth' which is optimised to reduce aircraft cost by compromising stealth performance of the rear sector of this aircraft.[96]

5.83 Defence indicated that it was preparing a paper comparing the capabilities of the F-22 and the F-35 which would be available in August 2004. Defence noted its optimism about the F-35:

> …the F35 is the way to go, because everything that I have learnt about the aircraft to date excites me. I think it will give us the capability we need to do all the missions that will be required for the defence of Australia in the future.[97]

5.84 In relation to the sharing of Defence industrial secrets, Kopp and Goon claim that the US Congress has refused to approve the export of full software capabilities and of full stealth capabilities to Australia.[98]

5.85 Defence claimed that the F-35 will be 'very superior to its competitors.' This view is not accepted by Kopp and Goon. As indicated above, they have downplayed the F-35s claimed stealth advantages which an F-35 would be heavily reliant on in a combat engagement with an Su-30 series aircraft.

5.86 The two types of aerial combat include Beyond Visual Range (BVR) and Within Visual Range (WVR). Essentially, an F-35 would need to rely on its stealth during BVR combat with an approaching Su-30 and get off the first shot and hopefully destroy the Su-30. However, in a situation where an F-35 closes to WVR, Kopp and Goon suggest that an F-35 would be seriously tested in close in air combat with an Su-30 series aircraft. Kopp and Goon state:

> The assertion that 'the Joint Strike Fighter will cover the whole spectrum of air combat and will cover it very well' overstates the Joint Strike Fighter's supersonic performance, its manoeuvring agility and its radar detection range performance. In air combat the Joint Strike Fighter's best capability lies in its stealth which

95 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 18.

96 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 16.

97 Air Marshal Angus Houston, Chief of the Air Force, Department of Defence, *Transcript*, 4 June p. 3.

98 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 8.

> provides a good advantage in Beyond Visual Range combat - if that stealth capability is compromised the Joint Strike Fighter is likely to be marginally better than an F/A-18A in air combat. The Joint Strike Fighter is not an F/A-22A.[99]

5.87 Defence maintains that the future air combat environment is all about BVR. The Chief of Air Force, as part of a Defence Watch Seminar, on 14 May 2004 stated:

> …the future air combat environment is all about beyond visual range engagement. The days of, one on one dog fighting, if you get down to that, you're in a really difficult situation. Such is the agility of modern weapons. And we are now fielding the Advanced medium air to air missile, and also the advanced short-range air to air missile, and both of those are the state of the air missiles in their class, and the agility of the short-range one, ASRAAM is almost beyond belief.
>
> So if you are into visual range, in most cases, with two reasonably equally matched combatants, it's probably mutually assured destruction. So we believe you need to be out there engaging beyond visual range.[100]

5.88 Kopp and Goon argue that an Su-30 series will outperform an F/A-18 'across the board' because the Su-30 was designed to compete with the F/15E. Kopp and Goon claim that the F-35s aerodynamic characteristics are similar to the F/A-18A and therefore they conclude that an F-35 will not be competitive, in close in air combat, with an Su-30.[101]

Conclusions

5.89 It is not the role of the committee to adjudicate over disputes about technical level matters. The main objective in this scrutiny process is to ensure that Defence has adequately justified the policy of retiring the F-111 early, and provide reassurances that Australia's superiority in air combat capability within the region is maintained. In the following discussion, the committee sets out a number of requirements to ensure that Defence provides more detailed reasoning in support of the policy. One of the key dates in this process is 2006 when the Government will decide if it will purchase the F-35. The timeframes involved ensure that the committee will scrutinise this matter over a number of years.

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99 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 31.

100 Air Marshal Angus Houston, Chief of Air Force, Defence Watch Seminar, 14 May 2004.

101 Dr Carlo Kopp & Mr Peter Goon, *Submission 1*, p. 10 & 26.

5.90 Whilst the committee received varying opinions about the F-35, the F/A-22 Raptor, and the F-111, some committee members noted that the usual processes within Defence for evaluating options for the acquisition of major defence platforms are not being followed in determining a replacement platform or platforms for the current F-111 and F/A-18 aircraft.

5.91 One of the most notable decisions arising from the Defence Capability Review announced on 7 November 2003 was the plan to retire the F-111s in about 2010. Previous estimates suggested by Defence put the retirement date between 2015 and 2020.

5.92 At the hearing on 15 December 2003 Defence argued that due to a range of ageing aircraft factors, the F-111 should be retired early. Defence stated:

> …about 18 months ago I was seriously concerned about its future. We had had a wing breakage, a fuel tank implosion and major fuel leaks. We are having all the symptoms of an ageing aircraft…[102]

5.93 The committee's examination of the decision to retire the F-111 early focused on the adequacy of alternative strike platforms, and the challenge of maintaining capability prior to the acquisition of the F-35 if it is selected in 2006. The committee's views on each of these matters is dealt with in more detail in the following discussion.

5.94 Defence claimed that the F-111 'will be a very high cost platform to maintain and there is a risk of losing the capacity altogether through ageing aircraft factors.' In particular, attention was drawn to wing breakage, a fuel tank explosion and major fuel leaks. Alternative evidence provided to the committee suggested that these concerns were well known and not by themselves sufficient to warrant early retirement. For example, in relation to fuel tank leaks, the committee heard that the F-111 has always had a history of fuel tank leaks which 'indicates that the problem is not age related.'

5.95 In relation to the industry support base for the F-111, Defence indicated that it had not conducted any studies into the implications of early retirement. Industry is essential for the continuing support and maintenance of the F-111. The committee heard that the Amberley based Weapons Systems Business Unit (WSBU) under contract by Boeing could face severe pressure with the decision to retire the F-111 early. Defence commented that 'we will not be retiring the F-111s unless we have successfully got through a number of other steps.' If previously planned F-111 upgrades are cancelled and the WSBU scales back then,

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102 Air Marshal Angus Houston, Chief of the Air Force, Department of Defence, *Transcript*, p. 50.

notwithstanding this, Defence must be able to ensure that the F-111 is fully effective up to 2010.

5.96 The decision to retire the F-111 early is made on the basis that the F-35 will be delivered on time in 2012. Strike capability between 2010 and 2012 is meant to be offset through additional tasks assigned to the F/A-18 and the AP-3C Orion with force multiplier elements including AEW&Cs and air-to-air refuellers. It is essential, therefore, that the replacement combat aircraft be delivered on time.

5.97 A decision to purchase the F-35 is not required until 2006. The committee recommends that in 2006, the Government should make a statement focusing on:

- the most accurate delivery date for the replacement combat aircraft;
- the implications this date will have on the decision to retire the F-111 in 2010;
- the need to ensure that key upgrades and deep maintenance on the F-111 continues through to 2010 with the possibility of extending the lifespan should the need arise; and
- the measures the Government will take to ensure air superiority in the region is maintained.

5.98 The committee believes that it is essential for the Government to have reliable information on the delivery date of the replacement combat aircraft. If the Government selects the F-35 then it must be certain of the delivery date. This information will be essential to manage the phase out of existing air combat and strike platforms and ensure that air capability is maintained. If delivery of the new airframe is not expected until after 2012 then the Government must explain how it will address any potential shortfalls in capability. This is a theme that the committee has raised in previous reports, and will continue to do so because of the importance of this defence capability.

5.99 The statement that the Government makes in 2006 about the issues raised above will be critical to the committee's determinations on the F-111 early retirement plan. In the interim, the committee will conduct ongoing scrutiny of the early retirement plan culminating in more detailed scrutiny in 2006. In fulfilling this objective, the committee proposes that the Defence Minister, in the next parliament, should refer a reference to the committee for it to conduct an inquiry focusing on the Australian Defence Force's ability to maintain air superiority in our region to 2020.

5.100 The committee notes that while it received a lengthy submission from Dr Carlo Kopp and Mr Peter Goon it was unable to test their views against the view of others including Defence. A full and open inquiry in the 41st

Parliament would provide an opportunity to test a range of views on the issue of air superiority.

Recommendation 3

5.101 **The committee recommends that, at the start of the next Parliament, the Minister for Defence requests the committee to conduct an inquiry into the ability of the Australian Defence Force to maintain air superiority in our region to 2020.**

Recommendation 4

5.102 **The committee recommends that, in 2006, the Government should make a statement focusing on:**

- **the most accurate delivery date for the replacement combat aircraft;**
- **the implications this date will have on the decision to retire the F-111 in 2010;**
- **the need to ensure that key upgrades and deep maintenance on the F-111 continues through to 2010 with the possibility of extending the lifespan should the need arise; and**
- **the measures the Government will take to ensure that Australia's superiority in air combat capability in the region is maintained.**