

## CHAPTER 1

### INTRODUCTION

For nearly a decade the Australian Defence Force's operational tempo has remained high. Currently, some 4000 personnel – about 8% of the permanent ADF – are serving on operations within Australia, in our region and around the globe. Defence activity therefore features prominently in Australian public discourse.

At the same time, Defence absorbs over 9% of Australian government outlays. The Australian community in general, and its Parliamentary representatives in particular, are therefore concerned to ensure that those entrusted with such a large proportion of the nation's resources manage them efficiently and effectively.

This part of the volume explains how Australia manages its defence business with this background in mind. The Australian part of the volume has been written by Associate Professor Stephan Markowski, Mr Bob Wylie and Mr Antony Trentini of The University of New South Wales at the Australian Defence Force Academy. While these authors have drawn heavily on official material, they are responsible for the accuracy of the material presented and for the views they express. The Australian Defence Department is not responsible for, nor does it endorse, the views expressed in this volume.

Having said this, however, the following chapters provide a thorough examination of the Australian Defence Organisation (ADO). The authors have endeavored to make them informative and, throughout, references have been given to guide and facilitate those with interest in the details of the ADO in further reading and research.

Australian defence business is managed as an integral part of wider Australian government activity. Hence *Chapter 2* explains the relationship between Parliament and the executive arm of government, of which the Defence portfolio is one part. The last twenty years have seen major changes in Australian public sector management. Those changes that have directly affected Defence are also summarized in Chapter 2.

Australian governments have also responded to Australian community demands for a broad explanation of Australia's strategic circumstances – if only to justify the annual diversion of some 9-10% of government outlays from health, education and other national priorities to defence. A convenient point from which to begin tracing this response is US President Richard Nixon's announcement (on 25 July 1969 during a press conference in Guam) that America henceforth expected its allies and partners to accept primary responsibility for their own defence. Since then, successive Australian Governments have published comprehensive Defence White Papers in 1976, 1987, 1994 and 2000. In addition to these White Papers, Australian Governments released unclassified strategic updates in 1989, 1993, 1997, 2003, 2004 and 2005. In *Chapter 3* we draw on this rich vein of unclassified strategic guidance in outlining the current strategic context within which Australian defence policy is formulated and defence business is managed.

Up until the mid-1970s the Australian defence function was dispersed among separate Departments of Defence, Navy, Army, Air and Supply. Reorganisation of these five separate departments of state into one Australian Department of Defence was completed in 1976. Since then, successive Australian Governments have sought to fashion a Defence organization that enabled the Minister for Defence to supervise effectively the management of defence resources and the exercise of military command, and to ensure that both these functions conformed to the policies for which the Minister is accountable to Parliament. In response to this imperative – transmitted from the Government of the day to the Defence Organisation by a succession of external reviews - the Australian Defence Organisation has evolved continuously. *Chapter 4* describes how the current organizational structure reconciles the predominantly civilian-legal functions and the predominantly military-strategic functions in developing and implementing defence policy. In particular, Chapter 4 explains the existing organisational structures and associated processes for managing the development of defence capability. This provides both the framework for the discussion of the acquisition process and a general description of its workings.

The conduct of defence business is a subset of defence capability development that focuses on the supply and support of major capital equipment. The management of defence business has been both affected by, and a driver of, wider Australian Defence organizational arrangements already mentioned. In particular, a series of external reviews have prompted major reforms of Australian Defence procurement institutions since the last comparison of defence acquisition systems in Kausal and Markowski (2000). *Chapter 5* therefore explains the rationale of the various defence business reviews and describes their impact on current defence-business related organisational structures and processes.

The annual defence budget not only reflects the Australian Government's defence business priorities. It also provides a window into the practical workings of those institutions responsible for the conduct of defence business. *Chapter 6* summarises the 2006-07 Defence Budget from this perspective.

The Defence Materiel Organisation (DMO) has been the institutional focus of much – though not all – of Australian defence business reforms over the last decade. The DMO is charged with managing, within a framework of Government approvals, Defence demand for future investment in capital equipment and for sustainment of the existing materiel inventory. *Chapter 7* therefore picks up where Chapters 5 and 6 left off and analyses the structure and management of DMO in terms of how it manages the demand side of defence business.

Turning to the supply side of the market for defence goods and services, Australian Governments have long recognized that total defence self sufficiency is impractical for a country of Australia's size and that we have no choice but to rely on foreign sources for items like aircraft, artillery, tanks and precision munitions. So Australia has to make strategic choices about when it is prudent to rely on foreign sources of supply and when it

is necessary to maintain industry capabilities in-country. Such choices are complicated by the rising cost and technical complexity of weapons systems which render domestic industry capabilities increasingly challenging and expensive to maintain. Against this background *Chapter 8* describes Australian industry's capacity to supply and support defence business systems; defence information capability; Navy's ships, boats and submarines; Army land-based manoeuvre; defence munitions; and military aviation.

An effective defence industry policy has long eluded Australian defence policy makers. The defence industry sector plans developed by the Defence Department in 2002-2004 were never endorsed by the Government and have since been discarded. In March 2007, in attempt to fill this void, the Australian Government promulgated its Defence and Industry Policy Statement. While the Statement is the tenth attempt to promulgate an effective policy in the last two decades, it contains some potentially significant advances. The new defence industry policy is also analysed in *Chapter 8*.

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## **CHAPTER 2**

# **THE GOVERNMENT OF AUSTRALIA**

This chapter will serve two purposes. First, to broadly examine the Parliament and government of Australia, in order to highlight the constitutional and legal framework in which the Australian Defence Organisation (ADO) operates, and second, to examine how broader issues in government and the Australian public sector are impacting on the ADO, especially the civilian elements of the organisation.

### **The Government of Australia**

There are three distinct elements to Australia's national government – the Legislature, the Executive and the Judiciary. It is only the first and second of these that are directly relevant to defence, and so the third, the Judiciary, will not be covered, suffice to say that it rules on the constitutionality or otherwise of the laws that the Parliament passes, and that its rulings bind the Parliament.

The Australian governmental system is a combination of both the British Westminster system and the American Federal system. Accordingly, Australia's governmental system is sometimes called the 'Washminster' system. Most importantly, the Senate model, federal system, explicit constitution, and committee structure of Parliament is largely drawn from the United States governmental model, whilst the internal structure of the parliamentary houses, the prime-ministerial/cabinet system, the processes of Parliament and government, and the subordination of Parliament to the separate, royal head of state is drawn largely from the Westminster system.

As mentioned above, the executive and the legislature are, by far, the two most important elements to defence in Australia, and it is to an examination of them and how they operate that this chapter now turns.

### **The Federal System and the Federal Parliament**

Separating the executive and legislative bodies of government in Australia is difficult due to their intertwined nature - essentially, the executive draws its members exclusively from the legislature, and the executive depends upon the legislature for its power. Accordingly, this section will cover both of these functions.

Australia is a federal polity, composed of six states and two territories (similar to states, but with different powers of governance). These states maintain their own governance structures, the details of which are irrelevant to this chapter. The states have no purview or powers over defence, and contribute no finance directly towards defence. Largely, they provide their individual populations with basic goods and services like healthcare, education, policing and infrastructure, and are legally removed from the authority of the federal government. However, in reality, where conflict exists between state and federal governments, the matter is usually placed before the High Court, where the federal government's position has largely prevailed for the last century. Furthermore, federal government laws bind state governments, but state government laws cannot bind the federal government. As such, for the

purposes of Defence acquisitions, defence, and international affairs more broadly, it is the federal government that is Australia's sole representative. Having said this, however, for the broader view of national security, each state and territory government maintains its own police forces. They have no national security mandate as such, but state police forces would be critical elements to any federal government response to a terrorist incident.

Exercising federal, or national control over Australia, is the Federal Parliament. The Parliament consists of two houses, the House of Representatives and the Senate.

Each member of the House of Representatives is elected to represent a discrete geographical area, or electorate. Electorates are mapped out in order that they all possess approximately the same number of registered voters. Members are elected for a maximum term of three years, although the government may choose to call elections whenever it wishes, and so terms may be shorter. Whichever political party has a simple majority of members in the House of Representatives will form government.

The Senate is somewhat different to the House of Representatives. Its members are elected to represent the states and territories of the federation in Parliament, and not electorates. Each state, regardless of its size or population, is represented in the Senate by 12 Senators. Each territory is represented by two Senators. Senators are elected for a maximum term of six years. Elections for the Senate are staggered, and this ensures that half of the Senate is elected every three years, at the same time the members of the House of Representatives are elected.

The party that forms government decides, according to their own internal party processes, who will be the Prime Minister and ministers. The ministers and Prime Minister are presented to the Governor-General, who then officially appoints them as such. Whilst these ministers 'serve at the Governor-General's pleasure', in practice, the Governor-General's appointment of ministers is a 'rubber stamping' function only. Ministers can be drawn from the members of either house, but it is convention that the Prime Minister will be a member of the House of Representatives.

The operation of the Federal Parliament is relatively simple. Bills are proposed by members, and are voted into law first by a majority of the House of Representatives after the bill has been 'read', or examined before Parliament, three times, and been examined by a committee. After passing a vote in this house, the bill is sent to the Senate. If, after being read three times and put before a committee, the bill is passed by a majority of Senators, it becomes an Act of Parliament. It is then passed to the Governor-General for the vice-regent's assent. If assent is granted by the Governor-General, the Act becomes law. Bills may be put forward in either house of Parliament, but require the assent of the other house before becoming an Act of Parliament. However, only the House of Representatives may propose 'bills of supply', or bills that authorise the expenditure of public funds (see also Chapter 6).

Unlike the members of the American Congress, Australian Parliamentarians rigidly adhere to party lines, and as such, votes are almost always only procedural. The two-party nature of the Australia political system, where the Liberal Party/National Party coalition and the Labor Party are the dominant political parties, further helps to polarise decisions, and thus ensure party loyalty.

The rigidity of voting in Parliament explains why the government is formed by the party who holds a majority in the House of Representatives - because this House holds a monopoly over 'supply', the party that holds a majority here, because of the rigid party system, would be the only party in the entire Parliamentary system able to originate bills to authorise expenditure. Accordingly, they hold the essential power to conduct government, and so it is logical that they should thus lead the country.

Because the government party rarely holds a majority in the Senate, the Senate traditionally has acted as a check on the government's power by demanding amendments to government bills if they consider them too extreme, or prejudicial to their voters. The Senate also provides an opportunity for minority parties to influence the political process. If the Senate is closely divided between the two major parties, minority senators can tip the balance one way or the other, and thus are in a position of power from which they can negotiate amendments to various bills before they consent to their passage. Furthermore, the Senate can block bills from passage, and thus their promulgation as law. If the government party holds a majority in both the House of Representatives and the Senate there is little the Parliament can do to amend or change government legislation.

If a bill is blocked twice by the Senate, there exists a deadlock, and the government has grounds to call a 'double dissolution election', whereby all members of both houses of parliament must stand for election. If, after a double dissolution, the same bill fails to pass the senate twice more, then a joint sitting of the two houses of Parliament can be held, whereby a simple majority of all the members present is required to pass the bill. In practice, such extraordinary lengths are only gone to when the bill in question is one of supply. Otherwise a compromise between the government and the Senate is reached that both find mutually acceptable.

### **The Prime Minister, Cabinet, Ministers and Departments**

The Ministers of the government, together with the Prime Minister, form the cabinet. Ministers head up government departments, and are the primary instruments of democratic control over the public service and the military, much as the President is in the United States. However, comparisons between the President of the United States and the Prime Minister of Australia are not particularly useful. First, the Prime Minister does not stand above the cabinet, but is rather the 'first among equals'. Unlike the President, the Prime Minister's authority can be sidestepped by the cabinet, as the Prime Minister is bound by the decisions of the majority of the cabinet. Furthermore, unlike the President, the Prime Minister's position is not legally defined in any way, and, finally, he may be deposed from his position at any time by Parliament.

Minister's too, are unlike their counterpart Secretaries in the United States. Ministers are elected representatives, and are members of Parliament. Furthermore, they are answerable to Parliament for their actions, just as the Prime Minister is. Usually, they do not have a professional background in their portfolio of responsibility, and can move between portfolios.

The cabinet is important to the governance of Australia, as it allows senior government ministers to meet approximately once a week and to debate and argue important policy matters. Cabinet generally maintains the interrelated policies of 'cabinet secrecy' and 'collective accountability'. Cabinet secrecy is crucial as it allows ministers to frankly and fearlessly debate policy issues with their peers, discuss classified material openly, and to voice dissent free from the glare of the media and the public eye. Once the ministers have reached a decision by voting, they can then announce it publicly. Collective accountability then ensures that the cabinet maintains a strong, unified front in public regarding their decisions, even if individual Cabinet members happened to disagree, as all cabinet members are expected to publicly defend all cabinet decisions. This ensures the appearance of government unity in public, vital for the trust and confidence of the country, whilst still allowing for a healthy and sometimes heated policy debate in private.

Despite its importance, cabinet is not defined in any law. It is merely a convenient administrative organisation quite independent of Parliament and the Constitution. It still must place all its decisions before Parliament for their approval. However, in practice, the cabinet is recognised as the chief executive body of government, and the Prime Minister is recognised as the most powerful and important figure in the government and in Parliament.

Cabinets members - the ministers - each hold individual responsibility for their portfolios and their respective government departments. Whilst they are technically free to run their departments as they see fit, generally they will bring important decisions regarding their portfolio and department to cabinet, and will then accept and enact the decision that cabinet reaches as a whole. Each Department is administered by the Department's senior bureaucrat, the Secretary. The Secretary is not a political appointment. In fact, the Secretary of a department is explicitly expected to be apolitical, and to offer dispassionate, impartial advice to the minister. The Secretary is furthermore expected to manage the department to enact whatever the minister wishes, regardless of their own personal opinions. The Secretary reports directly to the Minister, but the Minister may place his or her own personally appointed private advisers, who are not public servants, between themselves and the Secretary, if they so wish.

## **Committees**

As mentioned previously, bills before Parliament must generally be referred to the relevant committees. Whilst Members of Parliament can exercise their functions as investigators for- and representatives of- the public during any session of Parliament, most of the occasions when Parliament sits as a whole are mere instances of ritualised combat. Sessions such as 'question time', where Members can ask questions of the government or opposition, are largely used today for the purposes of 'political grandstanding'. It is in the committees of Parliament, free from the pressures of watching media and verbal heckling from other members, that Members of Parliament truly exercise their oversight function. Increasingly, committees are becoming the *only* places where such oversight is, or can be, conducted. As such, committees form a crucial part of Australia's Parliamentary and governmental system, as they are the primary means for Parliament, including the Parliamentary opposition members, to hold the whole of government accountable to the public.

There are two major types of committee: standing committees and select committees. Select committees are formed to scrutinise a particular policy or incident. Once they have delivered their report, they disband. Standing committees, however, stand permanently, regardless of whatever business is before Parliament. Both types of committee draw members either from one of the houses alone, known as House or Senate Standing Committees, or from both houses—known as Joint Standing Committees. Parliamentary committees have the same rights and privileges as Parliament, in that they may compel witnesses to attend committee meetings and conduct enquiries, etc.

The committees most relevant to Defence acquisition are the Joint Standing Committee on Foreign Affairs, Defence and Trade; the Joint Standing Committee for Intelligence and Security; the Senate Committee for Foreign Affairs, Defence and Trade; and the Joint Committee for Public Accounts and Audit.

There are also committees formed within Cabinet, for ministers relevant to major subjects of cabinet business to withdraw and discuss matters, before delivering their considered opinion on the matter to cabinet as a whole, or to simply enact their decisions on behalf of cabinet.

The cabinet committees most relevant to Defence acquisition are the National Security Committee and the Expenditure Review Committee. The Membership of the National Security Committee consists of the Prime Minister, the Deputy Prime Minister, the Treasurer, the Attorney-General and the Ministers for Defence, Foreign Affairs and Trade, and Communications, Information Technology and the Arts.<sup>1</sup> The membership of the Expenditure Review Committee consists of the Prime Minister, the Treasurer, and the Ministers for Trade, Environment and Heritage, Finance and Administration, and Revenue.<sup>2</sup>

### **Australia's Head of State: The British Monarch and the Governor-General**

The position of the Governor-General tends to cause a great deal of confusion amongst people not familiar with the Australian political system. This section, therefore, will clarify the position of the Governor-General.

The official head of State of the Commonwealth of Australia is the ruling British Monarch, which, at the time of writing, is Her Majesty Queen Elizabeth II. The Monarch is represented in Australia by an appointee, the Governor-General, who, as of May 2007, is His Excellency Major General Michael Jeffrey. Whilst the Crown represented by the Governor-General is legally the head of State, in practice, the Governor-General performs only ceremonial duties and acts largely as a 'rubber

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<sup>1</sup> Commonwealth of Australia, *Cabinet National Security Committee*, at <http://www.directory.gov.au/osearch.php?ou%3DNational%20Security%20Committee%2Cou%3DCabinet%20Committees%2Cou%3DCabinet%2Co%3DCommonwealth%20Parliament%2Co%3DCommonwealth%20of%20Australia%2Cc%3DAU&changebase> [accessed 2 May 2007].

<sup>2</sup> Commonwealth of Australia, *Cabinet Expenditure Review Committee*, at <http://www.directory.gov.au/osearch.php?ou%3DExpenditure%20Review%20Committee%2Cou%3DCabinet%20Committees%2Cou%3DCabinet%2Co%3DCommonwealth%20Parliament%2Co%3DCommonwealth%20of%20Australia%2Cc%3DAU&changebase> [accessed 2 May 2007].

stamp'. Furthermore, even though legally the Crown appoints the Governor-General, the appointment is on the advice of the Prime Minister. Again, in practice, the Crown is only a 'rubber stamp' for appointments to the position of Governor-General, and the decision lies, therefore, *de facto* with the Prime Minister of Australia. Whilst the authority of the Governor-General as spelled out in the constitution is absolute, in practice they have almost none, as they will almost always act on advice from the Prime Minister.

Whilst this arrangement makes Australia appear to be, *de jure*, a monarchy under a Governor-General and the British Crown, it is actually a *de facto* democracy under the Prime Minister and Parliament.

### **Broader Issues in the Australian Public Sector**

This section of the chapter will examine the two major issues in the broader Australian public sector that have impacted upon Defence, particularly the civilian side of the organisation. The first of these is public sector reform seeking efficiencies, and the second is public sector reform seeking increased accountability. Whilst these matters of reform will be dealt with in far more detail in further chapters, it is crucial to reference them at this point in order to show their overall place in the evolution of defence in Australia.

#### *Reforms Seeking Accountability*

Reforms seeking increased accountability of the public service to the Parliament have significantly impacted on Defence. Reforms of this nature began to sweep across government from the 1980s onwards, in the wake of the *Coombs Royal Commission into Australian Government Administration* (RC, 1976; pp. 11-27), but the biggest change to affect Defence was the Commonwealth agency-wide reform of the legal and regulatory framework of the public service in 1997. These changes introduced an outcomes/outputs-based management framework, and, together with the introduction of accrual-based budgeting, represented a significant change for defence, which had, until that time, relied upon reporting cash inputs (also see Chapter 6). It was felt that listing cash and other inputs into Defence did not present a useful picture to Parliament, which was then, and is today, centrally concerned about the question of 'value for money'. Whilst largely successful in the adoption of the outcomes/outputs reporting process, Defence has not made the transition without difficulty. Indeed, the 2007 *Proust Report* shows that, even today, some seven or so years since Defence's first systematic employment of these techniques, difficulties remain in ensuring Defence meets the accountability standards that government desires (CoA, 2007; p. 4).

#### *Reforms Seeking Efficiency*

At around the same time that Parliament was directing all government agencies to switch to outcomes/outputs-based reporting and accrual-based budgeting, Defence embarked on a large efficiency program, the *Defence Reform Program*, triggered by the 1996 *Defence Efficiency Review* (also see Chapter 5) This review, which handed down 70 separate recommendations, and the associated reform program, managed to meet about 90% of the efficiency targets it set, according to the national auditors

report (ANAO, 2001; p. 11). Most importantly, the efficiency drive, coupled with the accountability reforms, have fostered a notion of ‘capability’ in defence, as opposed to a platform-centric or service-centric conceptualisation of military strength. The implications of this change will be examined in the chapter regarding the Australian defence organisation.

### **Concluding Comments**

The legal and constitutional framework in which defence in Australia operates demands a high standard of accountability to the Parliament, especially regarding the expenditure of public money. Upon entering office, the current (at the time of writing) Howard government felt that the level of accountability in Defence, and the broader public sector, was insufficient. Accordingly, major reforms reaching deep into Defence to change its culture and practices were launched (see Chapter 5). The way that this desire for accountability, and the reforms necessary to achieve it, have shaped Defence today, will also be seen in Chapter 4.

### **Further Reading**

These two publications provide an excellent review of the government institutions of Australia, how they operate, and their basis in law, along with insightful analysis and commentary on government in Australia:

- Gwynneth Singleton et al, *Australian Political Institutions*, 8<sup>th</sup> Ed., Frenchs Forest: Pearson Education Australia, 2006; and
- John Summers et al (eds.), *Government, Politics, Power and Policy in Australia*, 7<sup>th</sup> Ed., Frenchs Forest: Pearson Education Australia, 2002.

## CHAPTER 3

### AUSTRALIA'S STRATEGIC ENVIRONMENT

Having examined the way in which Australia's governmental system sets the legal and constitutional framework for the Australian Defence Organisation (ADO) - a framework that predominantly sets the imperatives for the *civilian* side of the ADO - this chapter will explore Australia's strategic environment - the environment which predominantly shapes the *military* side of the Defence Organisation.

#### **Strategic Environment**

Australia's strategic environment today is a complex one, and Australia's immediate neighbourhood faces serious problems. Whilst Indonesia and the Pacific Islands have largely embraced democracy, and continue to make great strides, corruption, crime and even terrorism continue to plague them, particularly Indonesia. These forces weaken their institutions, and render them liable to transnational crime, environmental abuse and other such maladies that can, in turn, adversely impact on Australia (CoA, 2003c; pp. 19-20).

In the broader Southeast Asian region, the strategic environment is highly fluid, and extraordinarily dynamic. Unlike Europe, with its strong institutions, solid alliances, and steady progress, Southeast Asia is currently undergoing a period of huge, uneven and volatile economic growth, accompanied by significant purchases of high tech arms, and slow multilateral institutional development. In essence, nations are arming themselves heavily, but there are few measures they can take to reassure each other. The potential for conflict, therefore, whilst not high, must be noted. Australia sees the United States as playing a crucial role throughout the entire Asia-Pacific region by virtue of its strong economic ties with the region, and its strategic primacy (CoA, 2005; p.).

However, before examining Australia's view of this environment, and the government's response to it, it is important to examine how the strategic environment has changed, and how Australia's responses have changed as well.

#### **Strategic Environment and Response: Federation until the end of the Second World War**

From 1901 to 1945, Australia's strategic environment was characterised largely by aggressive Imperial powers dominating weak, technologically unsophisticated regional peoples. For Australia, the most significant instances of such behaviour during this period were the colonial activities of Germany before and during the First World War, and the Imperialist expansion of Japan between Federation and the end of the Second World War.

Australia has, since Federation in 1901, been largely dependant upon external assistance for its defence. Only relatively recently has Australia taken up the task of defending itself using mostly its own resources. The reason for Australia's historical search for external assistance was mainly one of materiel and manpower. Given

Australia's large size, inhospitable terrain and relatively small population, it was believed that Australia simply could not muster sufficient personnel and resources from within to defend itself against the far more populous Asian nations to its north. Whilst legitimate concerns about Japan's aggressive program of expansion during this period were the main source of threat to Australia, a degree of xenophobia also informed such concerns. Indeed, former Prime Minister of Australia, William 'Billy' Hughes, during his 1916 tour of Australia to rally support for conscription, stated that "We have nailed White Australia to the top of the mast ... but we are but a tiny drop in a coloured ocean." (Meaney, 1985; p. 236) In practice, the major power that Australia depended upon for its defence was Great Britain - the most logical, given the historical, political, social and cultural ties the two countries shared.

In return for assurances of defence against hostile Asian countries, most notably Japan, and Imperial predators, like Germany, Australia was to contribute to the defence of the British Empire as a whole. It was this logic that largely lay behind Australia's commitment of forces to the Boer War, Boxer Uprising, First World War and, initially at least, the Second World War. Australia paid a heavy price for this 'defence contract' with Britain: In the First World War alone, Australia suffered 60,000 deaths and 156,000 wounded and prisoners. This is all the more remarkable considering that these casualties were suffered by a force of only 300,000, all of whom were volunteers. Furthermore, this force was drawn from a population of only 5 million (Beaumont, 1995; pp. 1, 29).

Australia's focus on Great Britain and the British Commonwealth shifted dramatically during the Second World War. Before the war, the fortress of Singapore was proclaimed by Britain to be Australia's guarantee of security. However, after heated arguments between Australia and Britain over the return of Australia's troops from the Middle East, and the fall of Singapore to the Japanese, Australia realised that Britain was unwilling and unable to provide the support it felt was necessary to secure itself. In this hour of crisis, facing possible Japanese invasion, Australia turned towards the United States. Prime Minister John Curtin, in December of 1942, dramatically stated in his New Year's address that "Australia looks to America, free of any pang as to our traditional links or kinship with the United Kingdom." (Dennis et al, 1995; p. 193) From that point on, Australia depended upon the United States for its security in the same way that it had looked to Britain before, employing the same logic and expectations.

## **Strategic Environment and Response: Cold War until the Present Day**

### *Cold War*

With Japan vanquished, the immediate threat to Australia had disappeared. However, Australia still felt threatened by a newly invigorated, post-colonial Indonesia, by communist China and, to a lesser extent, by the Soviet Union. Australia's strategic environment during this period was characterised by communist insurgencies, and the broader global democratic/communist battle. The perceived major threat to Australia was still foreign states, motivated now by communism rather than imperialism. Complicating matters, many post-colonial states in the region were affected by weak institutions, insurgencies, corrupt governments, coups and military dictatorships which made diplomacy and cooperation within the region problematic at best.

Given the primacy of state-based threats within Australia's strategic outlook during this period of global standoff, the 'security deal' with a great and powerful friend still had a place. The alliance with America, therefore, was firmly cemented in 1951 with the conclusion of the ANZUS Treaty. Crucially, unlike the much more obligatory NATO treaty, the signatories were only required to act in accordance with 'constitutional processes', i.e., consult their parliaments, and not to immediate and guaranteed action. However, despite this legal weakness, Australia was satisfied that this treaty represented a sufficiently robust guarantee of security assistance from America. In return, Australia sought to assist the United States in its various Cold War foreign policy initiatives, most notably through the commitment of troops to Korea and Vietnam. Australian support for non-military US foreign policy initiatives, such as the Non-Proliferation Treaty, was also strong and consistent during the Cold War.

### *Defence self-reliance*

At the end of the Vietnam War, with American confidence and prestige severely depleted, President Nixon stated as part of his famous 'Guam Doctrine', that Australia, amongst others, was to fend for itself, and that it could no longer rely upon America to defend it (Babbage, 1990; p. 4). Whilst Nixon stated that the US would still honour its treaties, the Australian government was in no doubt that it would need to defend itself with only its own modest resources. This marked the beginning of 'defence self-reliance' in Australia, a relatively new principle, but one which has endured to this day.

After a decade or so of debate on the question of how exactly Australia was to defend itself, Paul Dibb delivered his landmark report, *Review of Australia's Defence Capabilities*, to the government of Australia in 1986. This was quickly followed by the official document representing the adoption of his recommendations, *Defence of Australia 1987*. This seminal body of work outlined the now familiar concept of Australia's defence. Essentially, Dibb argued that the continent of Australia could be defended by using high-tech air and naval forces to dominate Australia's northern air and maritime approaches. This northern maritime area, Dibb argued, was crucial, as any attempt to invade Australia must necessarily proceed through there due to logistical and geographical considerations - there is simply no other way to reasonably approach Australia, as to the East, South and West there is nothing but vast expanses of ocean, and Antarctica. The goal of Dibb's strategy was not to utilise the Army to defend the thousands of kilometres of Australian beaches - a task still too resource intensive for Australia - but rather to utilise agile and flexible maritime forces to defend what was essentially a giant moat to the North, or the 'sea-air gap' as Dibb termed it. Any forces that managed to penetrate this cordon, Dibb argued, would be so depleted, and have such a precarious supply line, that they would be easy prey for Australia's small but highly capable Army. Such an approach became known as the 'Defence of Australia' school, or DoA. This school was immediately engaged in debate with those who continued to advocate 'forward' or 'imperial defence': essentially the deployment of expeditionary forces to support a great and powerful friend who would, in return for Australia's support, defend Australia should the need arise. Given President Nixon's unequivocal rejection of the 'forward defence' idea, Australia's government adopted the DoA approach.

Australia's current military force, therefore, is centred on major items suited for defending the sea-air gap, such as the *Collins* class conventional attack submarines, F/A-18 *Hornet* fighters, and AP-3C *Orion* maritime patrol aircraft. The increasing degradation of the Army, hollowed out for decades to fund capital intensive air and naval programs, is further testament to the government's adherence to the DoA approach. This strategy, ratified in successive policy documents since the Dibb report was released, has enabled Australia to efficiently and effectively defend itself against major conventional threats without prohibitive expenditure. Australia did not achieve *total* defence self-reliance, as Australia still relied substantially upon the US for intelligence, military technology, logistics, and nuclear deterrence. However, short of global thermonuclear conflict, Australia would not have required any combat assistance from US forces should it have fallen under attack, and was, in that regard, self-reliant. A policy of defence self-reliance continues to this day, along with its attendant caveats (CoA, 2000; pp. 35-36).

## **Strategic Environment and Response: Present Day**

### *US Alliance*

With the end of the Cold War, and the 'victory' of democracy and capitalism, Australia was, like many other countries, without any immediate threat. This time of uncertainty, thus far at least, has been characterised primarily by the war on terror, and the commitment of forces to many low intensity tasks. Paradoxically, however, the government has maintained a strong commitment to conventional forces and the defence of Australia from state aggressors, continuing to sustain a combat force sufficient to defend Australia against armed attack on its own.

Within *Defence 2000*, the government stated that it sees its strategic environment as being shaped by two important trends: US strategic primacy and globalisation (ibid.). These two factors will strengthen global peace, interdependence, prosperity and security. However, the government feels that the US may be less willing to bear the burden of marginal tasks in the Asia-Pacific region: Australia's experience in East Timor has clearly evoked this point.

Despite this, and despite Australia's policy of defence self-reliance, Australia today retains a close, strong and robust alliance with the United States. Whilst the benefits of the alliance to Australia are clear, such as access to US technology and US treaty-based defence assurances, the benefits to the United States are often unknown. Most importantly, Australia genuinely shares the burden of intelligence generation with the United States under the UKUSA agreement. Notably, Australian facilities at Pine Gap and North West Cape assist in global collection of SIGINT and communications relay respectively. These are sovereign Australian facilities, and are jointly operated by the personnel of the two nations (Baker and Paul, 2000; pp. 88-89). Australia also provides niche forces to US coalitions that the US itself either does not possess, or has in short supply, such as sophisticated conventional submarines, Special Forces and mine clearance capabilities. These forces are all highly interoperable with US forces, and can integrate easily into US formations. Finally, Australia lends diplomatic legitimacy to American initiatives regionally and globally.

### *Concentric circles perspective*

The government's view of Australia's present day strategic environment has been clearly laid out by the current (at the time of writing) Howard government in the government's key defence policy document *Defence 2000 – Our Future Defence Force* (op. cit.). This document has been updated regularly since its release, with the government releasing *Australia's National Security A Defence Update 2003* (CoA, 2003c) and *Australia's National Security A Defence Update 2005* (CoA, 2005). However, despite important differences between the original paper and the two updates, covered below, *Defence 2000* remains largely representative of government practice today, and represents a clear continuum with the DoA approach, carrying forward that strategy from the government's last major strategic policy document, *Australia's Strategic Policy*, published in 1997. Within *Defence 2000*, Australia's strategic environment is characterised as a series of 'concentric circles' centring on the continent, with Australia's key interests lying close to home, and with strategic interests generally diminishing in importance the further afield from Australia they lie.

The first of these 'circles' is the Australian continent. The government maintains that, despite the improbability of armed attack on Australia, the consequences of such an attack are so dire that it demands the greatest efforts to counter. Accordingly, the ADF has been shaped primarily to repel an attack on Australia by another state, concordant with the DoA strategy.

Within the second 'circle', 'the immediate neighbourhood' as it is termed, lie the countries of Indonesia, East Timor, Papua New Guinea and the island nations of the Pacific. The government identifies its key challenges in this area as the weak nature of state institutions, the propensity for corruption and graft, porous borders and inadequate policing (CoA, 2000; pp. 19-23). The strength and prosperity of these countries represent critical Australian interests because, if weak, these nations can be dangerous to Australia in two major ways: firstly, they are vulnerable to penetration by terrorists and transnational criminal organisations, and secondly, they are vulnerable to coercion and bribery by hostile external powers, who could subsequently use these countries as bases for operations against Australia.

Further from Australia, in the third 'circle', are the nations of Southeast Asia. Together, they represent significant difficulties, but also significant opportunities, for Australia. The stability and continued constructive interaction of these countries is vital for Australia as any conflict in the region would inevitably and adversely affect Australia. Australia's trade links with the region are also growing, increasing both Australia and the region's prosperity. However, with this increased wealth comes increased defence budgets, and the government states that its key challenge in this region is the increasing number of high quality weapons systems, such as the Sukhoi family of fighters, high tech guided weapons and increasingly sophisticated ground forces. These purchases represent a challenge because they are eroding Australia's traditional clear qualitative advantage in the region, which has long enabled Australia to confidently face any possible regional conflict. This increasing erosion of Australia's 'technology edge' has prompted large, knowledge intensive-investments by Australia to maintain its advantage.

Within the fourth ‘circle’, the broader East Asian region, Australia recognises the importance of harmonious relations between the great powers of China, Japan, India, Russia and the United States, not only for Australia and the region’s security, but for global security. Whilst Australia recognises it does not have the authority or weight to shape relations between these powers, the government notes that it must do all it can to ensure these states remain at peace, but also be prepared to meet alliance obligations with America should miscalculations occur between the United States and China over Taiwan.

Finally, the fifth ‘circle’ is global in focus. Within *Defence 2000*, the Australian government recognised that terrorism was perhaps the most serious *common* challenge facing countries across the world. Whilst the government remarked within *Defence 2000* that terrorism was an important challenge, and required action, it did not anticipate the central role that terrorism was to play in future global affairs. Accordingly, the government released *Defence Update 2003* to outline the government’s considered response to the turbulent months and years following the September 11 attacks.

#### *Defence Updates 2003 and 2005*

*Australia’s National Security: A Defence Update 2003* represented a significant break from the previous DoA-centric approach of *Defence 2000*, noting that capabilities for expeditionary operations as part of a coalition are now equally important for Australia (CoA, 2003c; p. 24). Indeed, the then Defence Minister, Senator Robert Hill, stated that “[i]t probably never made sense to conceptualise our security interests as a series of diminishing, concentric circles around our coastline, but it certainly does not now.”<sup>1</sup> Whilst Senator Hill added that the DoA strategy (i.e., the concentric circles, as above) still applied for defence against conventional threats, he argued that such threats are less and less likely to arise in a period marked by a high degree of asymmetric threats, such as terrorism, and that accordingly, Defence priorities should be shifted.

As such, expeditionary capabilities received a higher degree of attention and funding, represented by such purchases as the C-17 Globemasters and two large amphibious assault ships. Expeditionary operations also came to the fore, with Australia’s commitment of forces to Afghanistan, *Operation Slipper*, consuming all of the ADFs attention at the time. Overall, the government generally moved away from the argument that conventional war was the primary threat to Australia, as it had stated in *Defence 2000*, instead arguing that conventional war was less likely given US strategic primacy and increasing regional stability and integration (CoA, 2003c; p. 8-9). The government maintained that terrorism, insurgency and transnational issues were the most important security problems facing Australia. By way of example, within *Defence Update 2003*, the government stated that terrorist networks, weak governance and poor policing in Southeast Asia were its greatest challenges, rather than increasingly sophisticated weapons systems, as it had in *Defence 2000* (ibid.; p. 23, and CoA, 2000; pp. IX-X).

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<sup>1</sup> Senator the Honourable Robert Hill, *Speech*, at <http://www.minister.defence.gov.au/HillSpeechtpl.cfm?CurrentId=1723> [accessed 1 May 2007].

Following some time after Australia's commitment of forces to the Iraq war, the Australian government released *Australia's National Security: A Defence Update 2005*. This document, whilst signalling the government's continued commitment to an increased capability for expeditionary operations, also marked a return to some of the themes of *Defence 2000*. For example, the growth of regional military capabilities was reasserted as an important strategic development, but transnational security issues still featured in equal prominence (CoA, 2005; pp. 5, 7-8). Overall, it marked little difference from the position enunciated in the 2003 update, save a limited emphasis on more conventional military issues, most likely brought about by a concentration of government thinking on such issues due to significant capability decisions like the acquisition of the F-35 JSF.

### **Concluding Comment**

Overall, Australia's strategic environment has clearly undergone significant shifts throughout history, and Australia's response to its strategic environment has undergone similarly large shifts. However, throughout these changes, the Australian government's focus has been on countering symmetrical, state-based threats—primarily invasion of Australia by another country. Whilst this focus remains today, the government has attempted to rebalance its policy to take account of the changed strategic environment brought about by terrorism and globalisation. These policy amendments have been the subject of considerable, evolving debate, and their success or otherwise remains to be seen.<sup>2</sup> Overall, though, the Australian government maintains that its strategic environment necessitates an essentially maritime force, and this has been the predominant basis of the majority of the government's investment in capability. Whilst capability for expeditionary operations has been high on the agenda lately, it remains to be seen whether this approach will solidify into a firm strategic investment policy, as opposed to the current heightened use of capability acquired for DoA in expeditionary roles.

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<sup>2</sup> For example of how this debate is evolving, and moving in new directions, see White (2007), Blaxland (2006), Sheridan (2007) and Paul Monk, 'Defence: The Seamless Challenge', at <http://www.austhink.org/monk/seamless.htm> [accessed 7 May 2007].

## CHAPTER 4

### THE AUSTRALIAN DEFENCE ORGANISATION

Having reviewed the predominant imperatives of the civilian side of the Defence Organisation - the nature of government and Parliament in Australia, along with broader public sector trends, and having also examined the predominant determinant of the military side of the Defence Organisation - Australia's strategic environment, and the government's policy response to that environment, this chapter will examine the defence organisation that has accordingly resulted.

#### Overview

The Australian Defence Organisation falls under the responsibility of the Minister for Defence, who is a senior cabinet member and Parliamentarian. Assisting the Minister are two other Parliamentarians, the Minister Assisting the Minister for Defence and the Parliamentary Secretary. Whilst it operates as a whole, the Australian Defence Organisation (ADO) is the collective title of three separate bodies: The Department of Defence, led by the Secretary of the Department of Defence (SECDEF); The Australian Defence Force (ADF) led by the Chief of the Defence Force (CDF); and the Defence Materiel Organisation (DMO) led by its Chief Executive Officer. Both the Department of Defence and the Australian Defence Forces will be examined here, whilst the Defence Materiel Organisation will be covered in greater detail in Chapter 7.

These organisations, whilst legally distinct, cooperate very closely. The integration of uniformed and civilian personnel is also well developed within the ADO, with uniformed and civilian personnel often serving under and/or for each other. Within the organisation, civilian and uniformed personnel possess an equivalent rank structure. Indeed, civilian personnel are even extended a few of the privileges of their equivalent uniformed rank, such as being allowed to dine in the appropriate military mess.

There exist several small groups that are attached to Defence, and fall under its administrative purview, such as the Judge Advocate General, but which are largely irrelevant to defence acquisition.

Defence also maintains close relationships with external agencies, from which it purchases some goods and services. The major external agencies from which defence procures services are Defence Housing Authority, the Department of Foreign Affairs and Trade, Comcare and the Commonwealth Superannuation Administration.

#### Senior Committee Structure

The senior executives within the ADO exercise their advisory and oversight functions largely through a series of committees known collectively as the Senior Committee Structure. Descriptions of the committees, whose names are rather self-explanatory, as well as an organisation chart showing their relationship to each other, appear in the *Defence Annual Report 2005-2006* (CoA, 2006; pp. 30-32). These committees are all

advisory, with the chair being the sole member of each committee able to exercise executive authority.

## **Structure of the ADO**

The ADO meets its motto - 'Defending Australia and its Interests' - through three main groups of Executives: Output Executives; Support Executives; and Enabling Executives. Their organisational structure is shown in Figure 4-1. These Executive personnel all report directly to the 'diarchy'—the joint professional leadership team of the ADO composed of the CDF and the SECDEF. The diarchy is a uniquely Australian arrangement amongst western defence organisations, and the two members enjoy equal status within the Department. The Secretary and CDF are jointly and severally responsible for the entire military and civilian establishment of the ADO. There is one important exception to this: only the CDF has command over the Defence Forces. The diarchy arrangement allows the Minister to issue single, joint directives to the Department, which are then implemented by the diarchy as they see fit. This reduces the complexity of direction required from the Minister, ensuring the Minister's control and oversight of the ADO is as effective as possible.

The ADO is split into these three groups due to the need to arrange the ADO's constituent bodies around the new, government-wide accountability guidelines mentioned in Chapter 2. Essentially, these major reforms shifted Defence from an inputs-based accounting system to an outcomes/outputs-based accounting system, with 'outcomes' defined as a desired end-state for defence business, and 'outputs' defined as products and services that Defence 'produces' to achieve the desired outcomes (ibid. p.80). Because of the functional, outcomes-oriented nature of the Executive personnel and their responsibilities, each Executive may not necessarily head up a discreet body of people. Rather, they may, in some instances, control various elements of several different organisations.

### *Output Executives*

The Output Executives are those personnel within the Department that, as their title implies, generate an output necessary for the conduct of the business of Defence. The six Output Executives, and their outcome responsibility(s), are, as of May 2007:

- *Vice-Chief of the Defence Force (VCDF)*. The VCDF heads the Joint Operations Command (JOC), and is responsible for Outcome One: Command of Operations.
- *Chief of Navy (CN)*, who is responsible for Outcome Two: Navy Operations.
- *Chief of Army (CA)*, who is responsible for Outcome Three: Army Operations.
- *Chief of Air Force (CAF)*, who is responsible for Outcome Four: Air Force Operations.
- *Deputy Secretary Intelligence and Security*, who is responsible for Outcome Five: delivering Intelligence for the Defence of Australia and its Interests. As such, the Deputy Secretary controls the Defence Intelligence Organisation (DIO), Defence Signals Directorate (DSD), Defence Imagery

& Geospatial Organisation (DIGO) and the Defence Security Authority (DSA).

- *Deputy Secretary Strategy*, who is responsible for delivering Strategic Policy.

### *Support Executives*

The Support Executives are those personnel who support the work of the entire ADO, in its pursuit of both military and business outcomes. The five Support Executives, and their responsibility(s), are:

- *Chief Capability Development Group* who is responsible for the Major Capital Equipment Program, the Capital Facilities Program, Other Capital Purchases and Capital Receipts, and oversees the Capability Development Executive.
- *Chief Finance Officer* (CFO), who is responsible for ensuring the accuracy and probity of Defence accounts and financial arrangements, and is in charge of the Finance Executive.
- *Chief Defence Scientist*, who is responsible for the management of research and development to help meet Defence outcomes, and is head of the Defence Science and Technology Organisation (DSTO).
- *Head Defence Personnel Executive*. The Head is responsible for people planning, policy and services, and leads the Defence Personnel Executive.
- *Chief Information Officer*. The Chief is responsible for delivering and maintaining Defence's entire information environment, and leads the Chief Information Officer Group.

### *Enabling Executives*

The Enabling Executives are those personnel who enable the other Executives to conduct their business effectively and efficiently. The two Enabling Executives, and their responsibility(s), are:

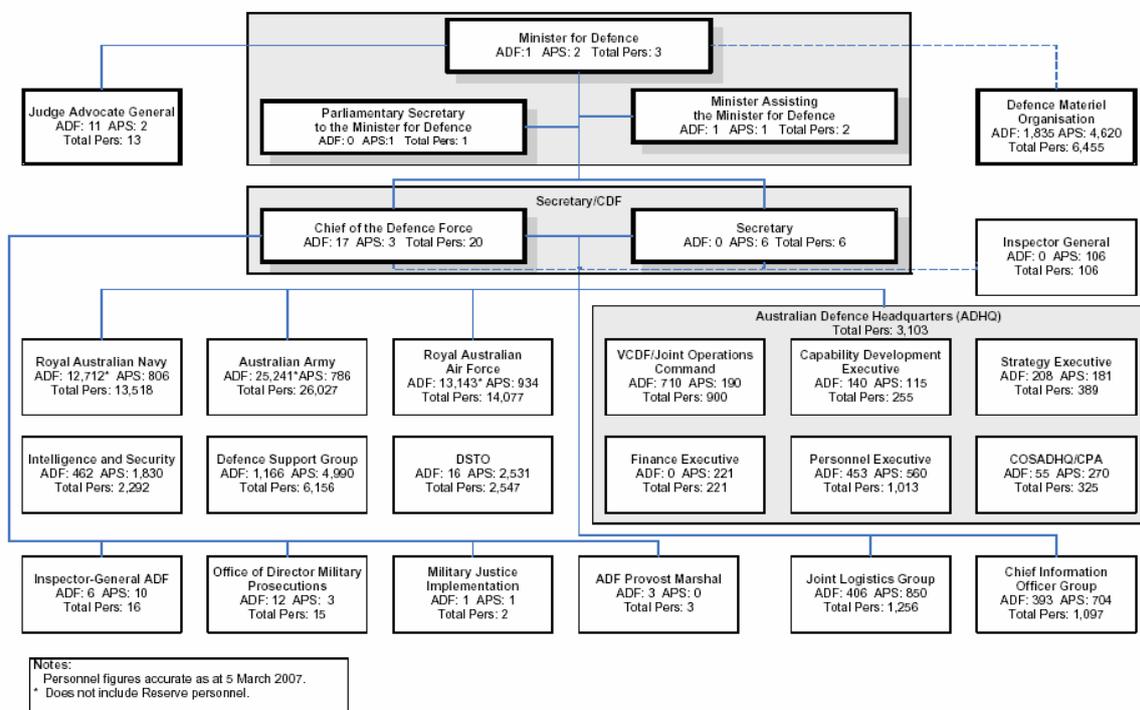
- *Deputy Secretary Defence Support*, who is responsible for miscellaneous business and corporate services support to the ADO, and heads up the Defence Support Group.
- *Chief Executive Officer Defence Materiel Organisation*, who is responsible for the acquisition and through-life support of all military materiel for the ADF, and is the leader of the Defence Materiel Organisation (DMO).

The various outcomes listed here and their attendant outputs are listed in more detail in Chapters 6 and 7.

### **The Transition to Outcomes/Outputs-based Framework**

The transition to the outcomes/outputs-based management and accounting framework, beginning around 1999-00 in Defence, has largely been successful, despite the

enormity of the change that this has wrought on Defence. However, the recently released *Proust Report*, ordered by the current Defence Minister, Dr. Brendan Nelson, in 2006 delivered a somewhat negative finding. Ms. Proust found that the Defence Organisation was still having difficulties adapting to the outcomes/outputs based accounting framework. This is not surprising, however, when one considers the magnitude and reach of these reforms. Whilst critical, Proust does state that, overall, significant progress has been made towards Defence's adoption of this model. Furthermore, the Minister's acceptance of 50 of Proust's 53 recommendations shows that Defence is seriously committed to reforming itself, and meet public sector best practice targets (CoA, 2007; especially pp. 1-5).<sup>1</sup> This is a clear reflection of the broader forces at work in the Australian public sector mentioned earlier, which have been pushing all Commonwealth agencies towards increased accountability to Parliament. Defence's new functional, outcomes-oriented organisational structure and method of business is testament to this.



Source: CoA (2007), Annex A; p. 89.

**Figure 4-1. Australian Defence Organisation Organisational Chart**

### The Australian Defence Force

Just as the civilian side of the defence organisation has been shaped by Australia's legal-constitutional framework and the forces pushing the public service towards greater accountability and efficiency, so too has the Australian Defence Force (ADF)

<sup>1</sup> Also see: Department of Defence, *Defence Response to Defence Management Review*, at [http://www.defence.gov.au/dmr/defence\\_response.pdf](http://www.defence.gov.au/dmr/defence_response.pdf) [accessed 3 May 2007].

been shaped by Australia's strategic environment and its forces for change. The recent increased demand for expeditionary operations from government has caused differing investment priorities, as well as some unit and equipment adjustments. However, the focus of the ADF and government still remains heavily on the development of capabilities primarily suitable for dominating the sea-air gap, but with some residual capability for wider expeditionary operations.

The military capabilities which allow Defence to generate its operational outputs, and thus meet its operational outcomes, are generated by the ADF, comprised of the Australian Army, Royal Australian Navy (RAN) and the Royal Australian Air Force (RAAF).

The ADF is currently experiencing a very high operational tempo, with the commitment of over 3,250 personnel on nine separate operations. The most notable deployments amongst these are *Operation Slipper* in Afghanistan, and *Operation Catalyst* in Iraq, where a combined total of approximately 2,000 Australian personnel are fighting the War on Terror.

The Australian Army is currently undergoing a major expansion and upgrade program, known as the 'Hardening and Networking the Army' (HNA) initiative, which will see its expansion by approximately two battalions, the acquisition of more armoured platforms, and the systematic rollout of better communications and networking equipment.<sup>2</sup> The Australian Army's order of battle is centred around six, soon to be eight, infantry battalions, one of which is mechanised, an armoured regiment, two cavalry regiments, three artillery regiments, three combat engineer regiments, and the Special Air Service Regiment. Its major combat equipment includes M1A1 Abrams MBTs, Australian Light Armoured Vehicles (ASLAVs), M113 APCs, Bushmaster Infantry Mobility Vehicles (IMVs), Tiger Attack Helicopters, and 155mm and 105mm Howitzers.<sup>3</sup>

The Royal Australian Navy currently deploys six *Collins* class conventional attack submarines, eight *ANZAC* class frigates, five *Adelaide* class guided missile frigates, three *Fremantle* class patrol boats, thirteen *Armidale* class patrol boats, two *Kanimbla* class landing ships and six *Huon* class minehunters.<sup>4</sup> The Navy also maintains a squadron each of Seahawk and Seaking helicopters. The Navy plans to acquire three Air Warfare Destroyers, to be equipped with the AEGIS combat system, by 2012.

The Royal Australian Air Force currently fields four squadrons of F/A-18 Hornet fighters, two squadrons of F-111 strike aircraft, three squadrons of AP-3C Orion maritime patrol aircraft, one squadron of C-130 Hercules tactical transports, one

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<sup>2</sup> Lieutenant General Peter Leahy, *Speech by the Chief of the Australian Army Lieutenant General P. F. Leahy AO to the Australian Defence Magazine Conference Canberra 15 March 2006*, 15 March 2006, at [http://www.defence.gov.au/ARMY/PUBS/CAspeeches/20060315\\_2.pdf](http://www.defence.gov.au/ARMY/PUBS/CAspeeches/20060315_2.pdf) [accessed 3 May 2007].

<sup>3</sup> For unit quantities, see: CoA (2006), pp. 120-126. For major equipment, see: CoA (2003a); pp. 16-23. (Note that unit quantities listed in this document are outdated, refer to CoA, 2006 for quantities, as mentioned above.)

<sup>4</sup> Royal Australian Navy, *Alphabetical Ship List*, at <http://www.navy.gov.au/ships/#list> [accessed 3 May 2007].

squadron of C-17 Globemaster heavy transports and one squadron of Boeing-707 Aerial Refuellers.<sup>5</sup>

Six Boeing Wedgetail AEW&C aircraft are due to enter service in 2009, which will represent a new capability for the RAAF, and will significantly boost its operational effectiveness.<sup>6</sup> The F/A-18 and F-111 are due to be replaced by the F-35 Joint Strike Fighter around 2012.<sup>7</sup> An interim order of 24 F/A-18F Super Hornets is due to enter service before the retirement of the F-111 in 2010 to ensure that no strike 'capability gap' emerges.<sup>8</sup>

### **The Notion of 'Capability'**

The *Collins* class submarines - excellent submarines today - had a long and torturous history (see Chapter 5). The subsequent *Kinnaird Review*, commissioned by the then Minister for Defence, Senator Robert Hill, recommended the separation of the DMO from Defence (see CoA, 2003b and Chapter 7). The *Kinnaird Review's* recommendations, and their adoption, were instrumental in *institutionalising* the notion of 'capability' within the defence organisation, as it created the conditions for the acquisition, maintenance, and support of all defence equipment to reside with one organisation. Combined with the outcomes/outputs-based accountability and reporting frameworks adopted in 1999-00 by Defence, a notion of 'capability', which had been present for some time in the Defence Organisation, was fully enshrined in new institutional structures that allowed greater focus and control of the entire spectrum of capability constituents.<sup>9</sup> For example, whilst an infantry battalion had for a long time been seen as more than a simple group of rifleman - and had been seen as a 'capability for infantry operations' that included the riflemen, plus all the food, fuel, ammunition, transport, communications infrastructure, and command and administrative arrangements they required to fight and win - the control of each of those constituents was decentralised and difficult to coordinate. With the formation of the DMO, and the implementation of outputs/outcomes based accounting arrangements, the centralisation of control and oversight of all of those elements into one place was achieved.

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<sup>5</sup> Royal Australian Air Force, *F/A-18 Hornet fighter*, at <http://www.raaf.gov.au/aircraft/hornet.htm> [accessed 3 May 2007]; Royal Australian Air Force, *F-111 strike aircraft*, at <http://www.raaf.gov.au/aircraft/f111.htm> [accessed 3 May 2007]; Royal Australian Air Force, *Units on Base*, at [http://www.raaf.gov.au/organisation/info\\_on/bases/edinburgh/units.htm](http://www.raaf.gov.au/organisation/info_on/bases/edinburgh/units.htm), [accessed 3 May 2007]; Royal Australian Air Force, *C-17 Globemaster heavy transport*, at <http://www.raaf.gov.au/aircraft/globemaster.htm> [accessed 3 May 2007]; Royal Australian Air Force, *C-130 Hercules medium transport*, at <http://www.raaf.gov.au/aircraft/hercules.htm> [accessed 3 May 2007]; and Royal Australian Air Force, *Boeing-707 tanker transport*, at <http://www.raaf.gov.au/aircraft/b707.htm> [accessed 3 May 2007].

<sup>6</sup> Royal Australian Air Force, *Wedgetail airborne early warning and control (AEW&C) aircraft*, at <http://www.raaf.gov.au/aircraft/wedgetail.htm> [accessed 3 May 2007].

<sup>7</sup> Royal Australian Air Force, *Joint Strike Fighter F-35 Lightning II*, at <http://www.raaf.gov.au/aircraft/jsf.htm> [accessed 3 May 2007].

<sup>8</sup> Royal Australian Air Force, *F/A-18F Super Hornet fighter*, at <http://www.raaf.gov.au/aircraft/superhornet.htm> [accessed 3 May 2007].

<sup>9</sup> For example, capability in the terms it is described here was explicitly defined as such in publicly available planning documents well over a decade ago in CoA(1992), ch. 5; Para. 5.1.

Similarly, with the delivery of the *Defence Efficiency Review*, and the resultant *Defence Reform Program*, the ADF underwent a formalised shift in mindset from platform- and service-centric notions to one of capability (see Chapter 5). This was embodied in the clearer delineation of the responsibilities around this time of the most senior military officers in the ADF: namely the Chief of the Defence Force, the Vice-Chief of the Defence Force, and the three individual Service Chiefs. The Service Chiefs were no longer to be involved in the planning and conduct of operations. Instead, they were to raise, train and sustain forces for the joint operations commander, the VCDF, to draw upon to create tailored task forces for military operations.

### **Acquiring capability: Defence Institutional Arrangements**

Since the Tange reorganisation in the mid-1970s (see Chapter 5), the ADO has evolved the internal institutional arrangements required to identify defence capability requirements, adjudicate priorities in a resource-constrained environment, specify capability solutions and acquire the capabilities so specified in accordance with wider government procurement policies. These internal institutional arrangements have also adapted to changes in Defence's external administrative environment, including ministerial insistence on greater direct control of Defence activities, increasingly informed scrutiny by Parliament and – in recent years – greater involvement by central coordinating agencies, particularly the Department of Finance.

Below, the key features of Defence's institutional arrangements for managing capability are analysed in terms of:

- the capability life cycle;
- the key organisational elements involved in capability development and acquisition; and
- the processes by which they interact.

This discussion draws heavily on DoD (2006).

#### *Capability Life Cycle*

The ADO envisages a capability life cycle that begins with identification of a need to address a current or prospective *capability gap*. That needs to be progressively translated into a working capability system that is operated and supported until it is eventually withdrawn from service and disposed of. Defence divides this capability life cycle into the following phases:

- the *needs phase*, in which Defence identifies capability gaps through consideration of current strategic guidance, current and future operational concepts, and future technology and obtains government agreement to address the gaps so identified through the inclusion of a project with an indicative budget and procurement schedule in the Defence Capability Plan;
- the *requirements phase* in which each capability need endorsed by government is refined into a costed defined solution to that need and approved by government with a schedule for acquisition and budgetary provision for both the capability solution and through life personnel and operating costs;

- the *acquisition* phase, involving the acquisition and introduction into service of an approved solution;
- the *in-service phase* in which the individual elements of the acquired capability (e.g., personnel, platforms, facilities) are operated, supported, modified as necessary; and
- the *disposal phase*, in which the capability as a whole is withdrawn from service and disposed of (in the case of a platform) or redeployed (in the case of personnel).

The *needs phase* of the capability life cycle involves identification of strategic priorities, the identification and evaluation of operational concepts of how the future force might fight, the articulation of capability goals (which seek to describe in specific and measurable terms the operational effects the ADF would need to generate to meet its highest priority contingencies), assessment of the performance of the current force and that expected of a planned force, including the identification and analysis of capability gaps and the development of programs and plans for the development of defence capability. Deputy Secretary Strategy and the Strategy Executive are responsible for development and articulation of the strategic guidance and military strategic priorities that are the genesis of the needs analysis. The Chief Capability Development Group draws on the guidance provided by the Strategy Group and input from Capability Managers (usually the Service Chiefs) in conducting the ‘gap analysis’ from which a statement of capability needs, consistent with guidance as to the resources available, is developed for consideration by government.

During the *requirements phase* Defence undertakes the detailed planning required to convert the capability needs previously identified by Defence and accepted by government into an integrated set of changes. It is for government to decide what military capabilities to acquire, how much should be spent on acquiring, operating and sustaining them and how and when these capabilities should be acquired. In the Requirements phase, the Chief Capability Development Group presents Government with the decision-making information needed to assess specific investment proposals and to make high level choices about progressing particular options where that is required. To this end, the Chief Capability Development Group develops, in consultation with a wide range of stakeholders, options for major capital equipment acquisitions that meet the defined strategic need. Chief Capability Development Group also explores the non-equipment aspects of capability development and sponsors submission of the options for consideration by government.

A key output of the requirements phase is the *Defence Capability Plan (DCP)*, which sets out a ten-year program of major capital equipment projects. The Chief Capability Development Group sponsors development of the DCP for approval by the National Security Committee of Cabinet. In order to inform both Defence planners and Industry suppliers, the DCP is published in both classified and unclassified versions and contains:

- project descriptions and scope information, including interrelationships with other phases or projects;
- opportunities for industry involvement in both acquisition and in-service support;
- indicative information about decision timing and expected delivery dates;

- indicative cost estimates and budgetary data; and
- points of contact in the Capability Development Group and the Defence Materiel Organisation.

The Chief Executive Officer of the Defence Materiel Organisation (CEO DMO) has primary responsibility for the *acquisition phase* of the capability life cycle. During the acquisition phase, the CEO DMO works in close consultation with the Capability Managers (mostly the Service Chiefs, who must accept major capital equipment into service) and Chief Capability Development Group (as capability sponsor). *Materiel Acquisition Agreements* between the CEO DMO and the Chief Capability Development Group are a key aspect of the acquisition phase.

The CEO DMO and Chief Capability Development Group conclude Materiel Acquisition Agreements for each project. The Agreements provide for monthly reporting of *key project performance measures* as indicators of a project's overall health. The performance measures relate to project costs and budgets, schedule, key capability measures/measures of effectiveness and customer furnished supplies (for example the provision of a military unit for test and evaluation).

Responsibility for the *in-service phase* of the capability life cycle is shared among Capability Managers (who actually operate the major capital equipment), the CEO DMO, Commander Joint Logistics and other agencies responsible for various aspects of sustainment and support and the Chief Capability Development Group who sponsors major upgrade programs as required. *Materiel Sustainment Agreements* between the CEO DMO and Capability Managers are a key feature of the in-service phase.

The CEO DMO concludes one Materiel Sustainment Agreement with each Capability Manager. These Agreements cover approximately 100 products, including, for example, repairs, maintenance, the purchase of fuel and the management of explosive ordnance.

The Capability Managers and the CEO DMO share responsibility for the *disposal phase*.

The above capability development and acquisition process hinges on the provision of investment advice to government. As discussed in greater detail in Chapter 5, the current process by which Defence provides such advice is relatively recent, stemming from government acceptance of the recommendations of the *Kinnaird Review* in 2003.

In essence, the Australian Government directs the capability decision-making process in two stages, adapted from the UK procurement model and designated:

- *First Pass approval*, at which the government considers alternatives and approves a capability development option(s) to proceed to more detailed analysis and costing as the basis of subsequent approval of a specific capability; and

- *Second Pass approval*, at which government agrees to fund the acquisition of a specific capability system with a well-defined budget and schedule and to fund future through-life support.

Additional government decision-making may be necessary, depending on the strategic importance, political sensitivity or complexity of the project involved. The Head Capability Development Group is responsible for managing submissions to Government for both first and second pass approval.

### **Concluding Comments**

The ADO is currently in a state of great change. Whilst the *Proust Report* revealed that much progress had been made in the transition to public sector best practice within Defence, it did highlight some flaws that need to be rectified. Defence is also still coming to grips with major changes that have also been largely completed, such as the formation of the Defence Materiel Organisation, and the separation of the acquisition and support function from the Department. These large, concurrent changes place Australia at the fore of Defence procurement system reform, and Australia's experience may prove to be a useful test bed for other countries to examine.

The ADF is also undergoing great change, transitioning to Network Centric Warfare operational methods, whilst phasing out a lot of its capital equipment in favour of newer, more knowledge-intensive systems like the JSF, M1A1 Abrams and AWDs. At the same time, the ADF, unlike many other forces, is expanding, and the Army is 'hardening', in order to become a medium weight force, whilst other military organisations around the world have been cutting numbers, and switching to lighter forces. This will put Australia's new capability formation process to the test.

## CHAPTER 5

### AUSTRALIAN DEFENCE: INSTITUTIONAL REFORM

As explained elsewhere in the Australian section of this publication, US President Richard Nixon's announcement (on 25 July 1969 during a press conference in Guam) that America henceforth expected its allies and partners to accept primary responsibility for their own defence prompted far reaching changes in Australian strategic thinking. These changes lead, in turn, to major adjustments in the institutions by which the Australian government develops and implements defence policy. In December 1972, as part of such adjustments, the Australian government of the day commissioned a report by Sir Arthur Tange, then Secretary of the Department of Defence, on how the government might consolidate the Australian defence functions then dispersed among separate Departments of Defence, Navy, Army Air and Supply (Tange, 1973; p. 1, para 2).

Tange focused on "how to provide effective ministerial supervision of the management of resources and of the exercise of command in the Services, and how to ensure that both conform to the policies for which the Minister is accountable to Parliament" (ibid.; p. 13). The government accepted Tange's recommendation that the five separate departments be subsumed into a single Department of Defence, the management of which would be supported by, among other arrangements:

- a 'diarchy' comprising a Secretary of Defence operating as principal civilian advisor to the Minister for Defence and discharging certain public service and financial management responsibilities defined in legislation and a Chief of Defence Force Staff responsible for overall command, discipline and personnel management of the separate Navy, Army and Air Forces and principal military adviser to the Minister for Defence;
- a series of major policy and management committees, including one for advising on Defence force structure and another for advising on the Defence five year forward procurement program and on the annual budget estimates;
- specialist organisations responsible for, respectively, research, development, test and evaluation and for intelligence;
- a departmental organisation responsible for strategic policy and force development;
- a single supply and support organisation; and
- a departmental resources and financial programs organisation.

The Commonwealth legislation implementing Tange's Report took effect in February 1976 but such far-reaching reforms took years to bed down. For present purposes, the post-1976 initiatives can be analysed under the following headings:

- improving defence efficiency and effectiveness;
- clarification of accountability; and
- strategic leveraging of the defence dollar.

## **Improving Defence Efficiency and Effectiveness**

Post-Tange efforts by the Australian Defence Organisation to improve its efficiency and effectiveness (including the quality of its advice to government) have been punctuated by the following major reviews:

- The Defence Efficiency Review, completed in March 1997;
- The Report of the Defence Procurement Review, completed in August 2003; and
- The Report of the Defence Management Review, completed in March 2007.

### *Improving efficiency and effectiveness: The Defence Efficiency Review*

The 1997 *Defence Efficiency Review* (DER) sought to:

- shape Defence management practices and organisational arrangements to fit Defence for future challenges;
- forge closer links with Australian industry (in all its forms) so as ensure the national ability to adapt, expand, and sustain the Australian Defence Force in time of need; and
- through these processes and other efficiencies, free up resources for further development of combat power.

Of these DER objectives, that relating to Defence management practices and organisational arrangements is most relevant for present purposes. The DER reaffirmed that the twenty year old diarchy established as part of the Tange reforms remained appropriate for Australia. The DER found, however, that confusion over the responsibilities of the Chief of the Defence Force and the Chiefs of Navy, Army and Air Force was sufficient to prejudice ADF unity of command.

To clarify the relationship between the CDF and the Service Chiefs, the DER recommended, and the government agreed, that the CDF should issue the Directives to the Service Chiefs clarifying their responsibility for raising, training and sustaining forces suitable for assignment to joint commanders as circumstances require. This clarification has had major implications for management of ADF preparedness via the CDF Preparedness Directive (see below).

The DER proposed a number of reforms to reduce duplication across the three services and the civilian element of the Department with a view to releasing resources through efficiencies and budget savings. The financial and personnel resources so released were to be reinvested in ADF capability and to enable ADF personnel to concentrate on combat and combat-related functions. To this end, the DER advocated joint performance of such support functions as provision of personnel, education and training, health, legal, logistics, facilities, information technology and administrative support services.

According to the Australian National Audit Office, the centralised purchasing and delivery of these shared services enabled Defence to make net recurrent savings of

A\$457 million by 1999-2000 and a total of A\$77 million in one-off savings (ANAO, 2001; para 2.19). But inherent in the functional centralisation required to achieve these savings was reduced responsiveness to clients like the Services and other operational defence elements. As the DER team acknowledged at the time:

“Predominantly, we have recommended the creation of strong cross-Service structures to force efficiencies and effectiveness improvements. We are ourselves uncomfortable with the apparently centralised nature of some of the arrangements we have proposed, and we accordingly regard them as temporary.” (MacIntosh et al, 1997; p. 55)

When Ms Elisabeth Proust and her team reviewed Defence management ten years later, she found that the DER’s concerns had been realised and that Defence clients of these shared service organisations had become concerned about their lack of accountability and their unresponsiveness. Before exploring these concerns, however, we need to understand fundamental changes to the defence procurement process introduced six years after the DER.

### *The Defence Procurement Review*

In the 1990s, Defence management of, for example, the *Collins* Class submarine project, Sea Sprite helicopters for the ANZAC frigates, and the Jindalee over-the-horizon radar was widely criticised and had become a political issue. In 2002, the Government appointed Mr Malcolm Kinnaird to head a small team “to assist with a range of issues associated with major Defence acquisitions to ensure we continue to spend taxpayers money wisely and maintain public confidence in the procurement process”.<sup>1</sup>

Kinnaird submitted his report in August 2003. He realised that Defence’s well publicised difficulties downstream in defence procurement stemmed largely from the lack of rigour and discipline upstream in capability definition and assessment (CoA, 2003b; p. 9). Accordingly, Kinnaird recommended appointing a three star officer (military or civilian) responsible and accountable for managing capability definition and assessment.

Thirty years earlier, Tange had established a civilian organisation (modelled on the US Pentagon’s Program Analysis and Evaluation organisation and called Force Development and Analysis Division - FDA) to establish this link and to adjudicate Service capability development proposals. The civilian FDA had been the focal point of the contest between civil and military advisers that characterised the post-Tange Defence Organisation.

By 2003, however, the responsibilities of the Service Chiefs for raising, training and sustaining their respective forces had been clarified, their relationship with the CDF had been settled and the time was ripe to assign a centralised military organisation responsibility for preparation of capability development options for consideration by

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<sup>1</sup> Hill, Robert *Review Team to assist with Defence procurements*, media release MIN749/02 of 12 December 2002, at <http://www.minister.defence.gov.au/Hilltpl.cfm>, accessed 28 November 2006.

government.<sup>2</sup> Accordingly, Kinnaird recommended, and the government agreed, to appoint a military officer as Chief, Capability Development Group – marking an important evolution in Australia’s efforts to capture capability value by improving the link between strategic guidance and force development.<sup>3</sup>

Kinnaird also argued that it was for governments, not officials, to decide which contingencies were most critical; the type, number and mix of equipment to deal with them; and what trade-offs best suited the national interest (CoA, 2003b.; p. 4). In order to reinforce government control of this decision-making process Kinnaird recommended, and the government agreed, to revamp the two-pass system for government approval of capability development and acquisition. Under the two pass approval process that Defence had earlier adapted from the British defence procurement model:

- at first pass, government considers alternatives and approves capability development options to proceed to more detailed analysis and costing with a view to subsequent approval of a specific capability; and
- at second pass, government agrees to fund the acquisition of a specific capability system with a well defined budget and schedule.

To reinvigorate the two pass approval process the Government embedded it in the formal Cabinet procedures. In addition, the government required the Departments of Prime Minister and Cabinet and Finance - the two key coordinating Departments in the Australian government machinery - to participate in the Defence capability development process. This very substantial dilution of the policy autonomy Defence had previously enjoyed enabled Cabinet ministers involved in the two-pass approval process to access more diversified information and judgements.

As already indicated, prior to Kinnaird review the government had already accepted the DER recommendation to form the Defence Materiel Organisation (DMO) designed to capture the synergies between materiel acquisition and support. As a single organisation the DMO was responsible for, respectively, acquiring capital equipment from industry and for arranging support by industry of that equipment once it was accepted into service.

Kinnaird concluded that the DMO’s organisational culture was inimical to development of the commercial focus required to operate in this commercial environment. To remedy this cultural problem, and to give DMO management more commercial-style flexibility in recruiting and rewarding high quality staff and to clarify accountabilities, responsibilities and authority between DMO and the rest of Defence, Kinnaird recommended establishing the DMO as an executive agency within the Defence portfolio (*ibid.*; pp. 33-38).

The DMO achieved prescribed agency status on 1 July 2005. Under these arrangements, the DMO’s Chief Executive Officer is directly accountable to the Minister for Defence for DMO’s performance while remaining accountable to the Secretary and CDF (PBS,

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<sup>2</sup> For a fuller explanation see MacIntosh et al, *op. cit.*; pp.7-15 and Annex E, pp. E1-E2.

<sup>3</sup> For a detailed explanation of the role of the Capability Development Group and of its relationships with Defence Capability Managers see CoA (2006); pp. 9-11. See also Chapter 4.

2006; p. 15). Defence relies on a series of mutually reinforcing governance arrangements to capture capability value under these arrangements (see below and Chapter 7).

### *The Defence Management Review*

In August 2006, a decade after the DER and over three decades after the Tange Reforms, the newly appointed Minister for Defence commissioned Ms Elizabeth Proust and others to examine and assess organisational efficiency and effectiveness in the Defence organisation. Factors prompting the review included the organisational stress generated by the Australian Defence Force's high operational tempo, confused lines of accountability and the erosion of respect for cost and efficiency as a result of ample funding (CoA, 2007; p. 4).

Proust submitted her Report in March 2007 and made 53 recommendations relating to:

- Defence accountability and governance;
- support to Ministers and Government;
- people management; and
- business system reform.

The only recommendation *not accepted* related to greater compartmentalisation of the respective roles of the Secretary and the CDF under the diarchy. Here, the Minister explained that "The Secretary and CDF have advised me that they are of the strong view that the diarchy works best when the two leaders work jointly across Defence responsibilities. I accept and agree with their advice."<sup>4</sup>

Among Proust's numerous recommendations that were *accepted* by the Defence portfolio, however, those relating to improved accountability and responsiveness of shared service organisations are most relevant for present purposes. Proust argued that Defence's internal agreements should be just as rigorous as the contracts Defence concluded with external suppliers. She recommended, and Defence agreed, that where service delivery relationships exist, the associated agreements should:

- include relevant performance metrics, including time, quality cost and demand; and
- specify mutual obligations and arrangements for resolving disputes at the appropriate level (CoA, 2007; p. 23, para 4.35).

Implementing these recommendations will have far reaching implications for the Defence governance arrangements discussed in the next section.

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<sup>4</sup> Minister for Defence media release 030/2007 *Defence Management Review*, Thursday 5 April 2007.

## Clarifying Accountabilities

Changes in Defence governance flow from wider reforms of the legal and regulatory framework for Commonwealth agencies initiated by the Australian Government in 1997, aimed at improving their performance.<sup>5</sup> The reforms involved:

- external or extra-departmental arrangements (for ensuring departments conform with the legal requirements, published standards and community expectations of probity, accountability and openness); and
- internal or intra-departmental arrangements (for holding individuals accountable for a responsibility conferred) (ibid.; pp. 6-8).

### *External governance*

A key aspect of such external arrangements for departmental accountability was the move by all Commonwealth Departments, including Defence, to an accrual-based outcomes/outputs framework for managing resources appropriated by Parliament. This framework was introduced to encourage Commonwealth Departments to manage their resources with an emphasis on measuring performance in terms of what is being produced, what is being achieved and what is the cost of individual goods and services.

Outcomes are long-term in nature and subsume outputs - the actual deliverables agencies produce – which, in the Australian case, are detailed in the annual Portfolio Budget Statements (PBS) (see also Chapter 6). Performance targets for achieving outputs set in the annual PBS constitute one element of external accountability arrangements. A year later the minister responsible for each department tables the department's annual report in Parliament.<sup>6</sup> In their annual reports each Department explains what they actually did with the resources appropriated by Parliament in the last financial year; such annual reports are the second element of external accountability arrangements.

This outcomes/outputs framework was first used in the 1999-00 Defence PBS and then refined in subsequent budget cycles (see also Chapter 6). The Defence PBS explains planned performance and key risks to, and limitations on, achievement of that performance at *outcome* level. These explanations are qualitative. It also specifies performance targets for the assets responsible for generating each military *output*. These output targets are more asset-specific and quantitative: For example, in 2006-07, Military Output 4.3 ('Capability for surveillance and response operations') is generated by, among other assets, nineteen P-3 Orion aircraft operated by Air Force and the performance target for these aircraft is 8,200 flying hours.

The efficacy of the dual PBS/Annual Report arrangements for accountability depends on the two documents presenting budget and performance on a compatible basis. There is an increasingly clear read between Defence PBS and Defence annual reports, so that the

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<sup>5</sup> As for example summarised in ANAO (2003), Vol. 1; pp. 14 - 15.

<sup>6</sup> For details, see Department of Prime Minister and Cabinet "Requirements for Annual Reports", June 2005, on [www.dpmc.gov.au/guidelines/index](http://www.dpmc.gov.au/guidelines/index), [accessed 7 June 2006].

focus of the latter has moved away from simply reporting administrative detail to the provision of more information about actual program performance. At the defence outcome level, for example, the 2004-05 Defence annual report refers back to the two key risks (personnel and logistic support) Army identified in the 2004-05 PBS.<sup>7</sup> At the military capability output level, the report explains why, for example, the RAAF's 24 C-130 aircraft achieved only 84% of their planned flying hours (ibid.; p. 202).

As already indicated, what governments spend on long term force structure development they cannot spend on short term preparedness. In Australia, the Preparedness Directive issued by the Chief of the Defence Force (CDF) reflects the balance struck by Government between investment in development of future military capability outputs and expenditure on the preparedness of existing outputs (see below). The CDF Preparedness Directive underpins the performance targets – C130 flying hours in the above example - for individual military capability outputs set in the annual Defence PBS.

If 'value' is something for which governments, acting on behalf of the Australian community, are prepared to pay, then the degree to which individual military capability outputs achieve performance targets specified by the CDF Preparedness Directive is an important measure of the capability value they generate. Conversely, the degree to which individual military capability outputs fail to achieve performance targets specified in the CDF Preparedness Directive becomes a measure of the capability value lost as a result of that failure.

The same logic applies to investment in development of future military capability outputs. In Australia the annual Defence PBS includes an estimate of the amount of money the Government expects to spend in adjusting a military capability output once the equipment concerned has received second pass approval. As resources are limited, this estimate of project cost becomes a measure of the value Government accords that military capability adjustment relative to alternative uses of the resources involved.

Before explaining the workings of the CDF Preparedness Directive and other capability management arrangements, we need to consider certain aspects of defence internal governance arrangements in greater detail.

### *Internal governance*

In the Australian defence context, the above external accountability arrangements operating at the institutional level are complemented by internal accountability arrangements operating at the level of the individual officer. Defence arrangements for *internal* conformance and accountability start with the Ministerial Directive to the Secretary and Chief of the Defence Force (CDF). The Ministerial Directive renders them accountable for specified results which are cascaded down the Defence organisational chains via subordinate performance charters between the Secretary, CDF, Defence Group Heads and the Service Chiefs.

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<sup>7</sup> *Defence Annual Report 2004-05*, 'Outcome Performance: Outcome Three Army Capabilities', ch. 4, p. 2, on [www.defence.gov.au/budget/04-05/dar/04-05\\_outcome3](http://www.defence.gov.au/budget/04-05/dar/04-05_outcome3) [accessed 6 June 2006].

These personal directives are supplemented by a series of purchaser-provider agreements instituted as part of the prescription of the DMO already described (see also Chapter 7). Of these agreements, the following are of most relevance to the defence value adding chain:

- *Materiel Acquisition Agreements* which cover the services DMO provides Defence for acquisition of both major and minor capital equipment; and
- *Materiel Sustainment Agreements* which cover the sustainment of current capability.

The DMO's Chief Executive Officer (CEO) concludes Materiel Acquisition Agreements with the Chief of the Capability Development Group to cover the acquisition of major capital equipment and with the Chiefs of Army, Navy and Air Force to cover the acquisition of minor capital equipment (see Chapter 7). Each Materiel Acquisition Agreement specifies the scope of the project to be delivered, the schedule for delivery, and the budget approved by Government.

Embedded in each Materiel Acquisition Agreement are key performance indicators: The project scope covers underlying customer specifications and key measures of capability effectiveness as selected by the Capability Manager. The project schedule sets out such key milestones as project start up, contract negotiations and acceptance into service. The project budget information includes, for example, estimates of percentage spent at each schedule milestone, the current expenditure program, and assessments of the adequacy of provision for contingencies.

The CEO DMO concludes Materiel Sustainment Agreements with the Service Chiefs in their capacity as defence capability managers. The level of services DMO provides to Capability Managers under Materiel Sustainment Agreements is linked to the level of capability preparedness those managers are directed to maintain under the CDF's Preparedness Directive already explained. The Materiel Sustainment Agreements between the CEO DMO and the respective Service Chiefs are structured around key platforms (for example, *Collins* Class submarines), fleets (for example Army field vehicles and trailers) or systems (for example surveillance and control systems) supported by the DMO.

The performance of the Chief of the Capability Development Group depends on the effectiveness of the Materiel Acquisition Agreements with the CEO DMO and, by extension, on the performance of industry in supplying the equipment involved. The performance of the Service Chiefs in meeting the CDF's standards of preparedness hinges on the efficacy of the Materiel Sustainment Agreements they have concluded with the CEO DMO and, again by extension, on industry performance (see also Chapter 4).

As already indicated, in her 2006 review of Defence management, Proust found that, while these internal accountability arrangements between the DMO and its Defence clients had made substantial progress, comparable arrangements between other Defence

Groups providing shared services (notably those responsible for corporate support and information technology management) had lagged badly. Overall she noted that:

- service providers lack basic metrics or key performance indicators of timeliness, quality and cost;
- payment is not the prerogative of the customer who has neither visibility of the cost of services nor a meaningful bottom line against which costs could be attributed;
- the impact of demand on supply is poorly understood;
- Defence is reluctant to link measures of performance to sanctions/rewards;
- existing Service Level Agreements are more about roles and responsibilities (which should be dealt with in Charters) than about the business model; and
- in the absence of more effective arrangements, disputes are resolved by reference to senior committees or the Secretary and CDF (CoA, 2007; p. 23, para 4.34).

Defence efforts to remedy these deficiencies will be able to take advantage of separate initiatives intended to secure the maximum strategic return from Australian taxpayers' dollars allocated to Defence.

### **Leveraging the defence dollar**

Attempts by the Australian Defence Organisation to maximise the strategic return from the funds appropriated by Parliament for the nations defence include:

- aligning defence strategic planning and defence business management;
- leveraging commercial support arrangements (noting that developing and implementing defence policy for Australian industry is the subject of a separate chapter); and
- refining the defence business model.

### *Linking defence strategic planning and defence business management*

As indicated elsewhere, the Australian strategic outlook contains significant uncertainties. Australia seeks to manage these uncertainties by orchestrating:

- investment in development of future defence capability; and
- expenditure on the preparedness of the existing force.

In the Australian defence lexicon, military capability is the power to achieve a desired operational effect in a nominated operational environment (land, sea, air) within a specified period and to sustain that effect for a designated period. As such, military capability comprises force structure and preparedness.

'Force structure' is that sub-set of military capability that includes personnel, equipment, facilities and military doctrine required for the effective conduct of military operations.

*Force structure* is relatively fixed in the short term (the force in being or the existing force) but evolves in the longer term through investment in capability development.

‘Preparedness’, the second sub-set of military capability, is more flexible and dynamic in the shorter term. An existing force can only be sustained at high levels of preparedness for a limited period and then at the expense of longer term force structure development. In Australian usage, “preparedness” is a combination of “readiness” and “sustainability”. *Readiness* is the ability of a military force to undertake specified operations within a designated time. *Sustainability* is the ability of a military force to continue operations for a specified period and depends on the level of maintenance and the availability of consumables like ammunition, spare parts and petroleum, oil and lubricants.

The Australian Defence Organisation continues to refine and develop its Strategy Planning Framework with a view to providing strategic-level guidance and processes that are sufficiently congruent, coherent and comprehensive to enable informed and balanced decision making in managing the preparedness of the existing force and developing the future force<sup>8</sup>. To this end the framework now comprises:

- Strategy development;
- Capability development;
- Deliberate planning for operations.

#### Strategy development and planning guidance

Strategy development in Defence involves analysing Australia’s strategic environment and subsequently formulating policies and plans for meeting the Government’s current and future national security objectives. The strategy development process generates choices for senior decision makers through a combination of strategic assessments, judgements, policy and responses.

A key output of the strategy development process is Defence planning guidance. The classified *Defence Planning Guidance* articulates the strategic priorities that guide the Australian Defence Organisation in producing the military outcomes sought by government. Aspects of classified defence planning guidance are reflected in unclassified *Defence White Papers* and associated strategic guidance.

In order to inform both deliberate planning for operations and capability development, the Defence Planning Guidance analyses the future strategic environment, identifying the contingencies the might confront Australia 0-5 years out, 10-15 years out and 20 plus years out. Contingencies judged as high priority are developed further into Australian illustrative planning scenarios which are used to test concepts and capabilities. The Defence Planning Guidance establishes the relative priority for a Defence capability to respond to likely contingencies and to shape the future strategic environment.

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<sup>8</sup> This section draws heavily on Pezullo and Hurley (2006).

The Defence Planning Guidance is supported by the classified *Australian Military Strategy* which is intended to describe how Australian military power might be applied to achieve the Government's national security policy objectives within a whole of government framework. To this end the Australian military strategy considers alternative approaches to potential contingencies and evaluates the type of operations the ADF must prosecute to achieve national security objectives. The Australian military strategy articulates:

- military strategic judgements;
- how various military strategies (for example the maritime strategy) will achieve strategic objectives specified in the Defence Planning Guidance;
- the military response options used to guide expenditure on the preparedness of the force in-being and to shape investment in the future force;
- the relative priority for various military effects in the context of strategic objectives; and
- the method of warfare most conducive to achievement of strategies.

#### Capability development

Capability development translates strategic priorities identified in Defence Planning Guidance into military capabilities that can be employed by Defence within resource constraints. Capability Development starts with capability needs identified through the Defence Planning Guidance and associated Australian military strategy processes and:

- articulates capability goals;
- develops programs and plans which show how the ADO will be transformed in the future; and
- assess the performance of the current force and that to be provided by the future force.

The Capability development process turns on the *Defence Capability Strategy* which sets the vision for transformation of the ADF into the future, defines capability goals and explains how those goals will be met from available resources. The Defence Capability Strategy details what capabilities will be acquired, retained or disposed of in future. One of the key outputs of the Defence Capability Strategy is the *Defence Capability Plan* which is the ten year rolling program of investment in new capital equipment. The Defence Capability plan is not a blueprint but is reviewed annually, as part of the defence budget process, to take account of changed strategic circumstances, new technologies and changed priorities (see also Chapters 4 and 6). An unclassified version of the Defence Capability Plan is released to inform industry investment decisions.

#### Deliberate planning for operations

Deliberate planning for operations is about the preparedness of the existing force. It starts with the preparation of:

- for senior decision makers and advisers to government, Defence/military strategic estimates which analyse specific issues, scenarios or contingencies and the issues associated with military responses; and
- for operational planners, Defence/military planning guidance, intended to provide a framework for operational planning by providing the military strategic objectives and end states for situations that may require an ADF response.

Within this planning framework, the principal mechanism for the actual management of preparedness is the *Chief of Defence Force's Preparedness Directive*. As indicated earlier, this key Directive:

- sets preparedness goals and explains how they will be met from within available resources, and includes measures of effectiveness;
- details the role and operational outcome for each ADF element against the contingencies articulated in the Defence Planning Guidance; and
- assigns the Service Chiefs responsibility for maintaining the level of capability, training and resourcing required by their respective Service components to achieve the relevant element of the CDF's preparedness directive.

In Australia, organisations and processes for orchestrating investment the development of the future force and expenditure on preparedness of the existing force have evolved fairly steadily in the thirty years that have elapsed since the seminal Tange Reforms of the Australian Defence Department. These organisations and processes have matured to the point where they provide a basis for development of such enablers as, for example, defence policy for Australian industry.

#### *Commercial support arrangements*

In 1989, the then Minister for Defence, Kim Beazley, commissioned an ex-Defence official, Mr A.K. Wrigley to ascertain, firstly, how the Australian community could play a greater role in strengthening Australian security by broadening the total support base for national defence and, secondly, how to realise the government's policy of eliminating unnecessary duplication of civil and military skills and capabilities exploiting opportunities for military use of capabilities that exist or might be developed in the Australian community.

Wrigley reported in 1990. He argued that defence efficiency had been reduced by "doctrines which emphasise military self sufficiency in a way that is no longer appropriate" (Wrigley, 1990; p. xiii). While the Government subsequently rejected Wrigley's more ambitious proposals for restructuring the defence force, it did pursue selected opportunities for competing in-house service provision with external sources and contracting out where this was more efficient and effective. The Government permitted Defence to retain the savings generated by what became known as the *Commercial Support Program* (CSP), thereby giving the Department an incentive to redirect resources from the support areas to the sharp end of the defence force.

The initial tranche of CSP began in 1991 and resulted in some 2,100 service and 1,100 civilian positions being contracted out – a cautious 7% of the service and civilian personnel then employed in logistic, support and training functions. As already indicated, the 1997 DER subsequently boosted the CSP substantially. It identified over A\$500 million worth of once-off savings and A\$770 million mature annual savings, to be achieved by reducing military staff by 4700 (and transferring the positions involved to the combat force) and reducing civilian staff by 3100; the DER identified a further 7000 military and 5,900 civilian positions to be market tested (McIntosh et al, 1997). The CSP initiative had begun to run its course by 2003, by which time Defence had tested nearly 16,000 positions, with 68% of the contracts involved awarded to commercial suppliers, 27% awarded to defence in-house options and the status quo retained for the balance.<sup>9</sup>

In parallel with the CSP initiative, Defence had begun requiring contractors to compete for defence capital equipment contracts on a through life cost of ownership basis, rather than on the basis of the cost of acquisition alone. This initiative reflected CSP-induced acceptance by Service operators of greater dependence on industry for support and pragmatic recognition of the cost and difficulty of recruiting and retaining sufficient engineering and technical personnel in the Services.

In 1997, for example, BAE Systems won the competition to replace the Macchi aircraft used for fast jet training of Royal Australian Air Force (RAAF) pilots. Defence awarded BAE Systems a contract to supply and support 33 Hawk 127 aircraft. The in service support contract requires BAE Systems to provide deeper maintenance support throughout the Hawk's 25 year life of type under arrangements renewed every 5 years. To this end BAE Systems has established the requisite capacity for engineering, logistics and whole of life supply chain management, delivered through its support facility at RAAF Base Williamtown.<sup>10</sup>

The performance-based business model Defence adopted in procuring the Armidale Class patrol boats in 2004 represents an additional highly prospective development of the defence business model. In this case, Defence eschewed its traditional procurement approach of specifying in detail, for example, the number of vessels it required, their dimensions and construction standards. Instead, Defence invited companies to tender for a patrol boat *system* (which included both construction and through-life support of the patrol boats) able to generate 3000 days of operational availability per year for 15 years, and able to surge to 3600 days per year. The performance stipulated by Defence included, for example, the ability to conduct surveillance and response boarding operations at the top of Sea State 4 (wave heights of 2.5 metres) and to maintain surveillance to the top of Sea State 5 (wave heights of 4 metres).

These major changes in the value added by Australian industry to the nation's defence capability both drove, and were enabled by, other more generic changes in the Defence business model.

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<sup>9</sup> [http://www.defence.gov.au/budget/02-03/dar/04\\_01\\_1csp.htm](http://www.defence.gov.au/budget/02-03/dar/04_01_1csp.htm) [accessed 27 November 2006.]

<sup>10</sup> <http://www.defence.gov.au/dmo/asd/air5367> [accessed 28 November 2006].

## *The Defence Business Model*

In Australia Defence is effectively the sole buyer of military goods and services. Hence local industry capabilities are shaped not only by what Defence buys but also by how it does so. The defence business model is therefore a key element of Australia's arrangements to capture capability value.

The defence business model has evolved considerably from that based on full and open competition that Tange inherited from the Department of Supply in 1973. That evolution has been influenced by a combination of indigenous experiments and overseas experience. The following sections explore Australian experience with:

- the balance between competition and regulation in the quest for value for money;
- the distribution of project risk between customer and supplier; and
- government-to-government collaboration in the development and procurement of platforms and systems.

### Competition vs regulation

The defence business model recognises that competition delivers good value for money in the supply of goods and services that can be bought off the shelf, or when customisation can be specifically identified and paid for. But structural changes in global markets, the overriding advantage accruing to the original equipment manufacturer in upgrading platforms and systems that last longer and the imperatives of network centric warfare impose practical limits on the extent to which competition alone can sustain efficient procurement in the Australian defence market.

Increasingly, therefore, the defence business model relies on a balance of competition and regulation (that is the active structuring and management of acquisition and sustainment programs with the goal of achieving the best outcomes for Defence). The model recognises that the weaker the competitive tensions at work in a given program, the more Defence will need to rely on regulatory instruments to achieve, and be seen to achieve, value for money. But Defence is chronically short of the policy and administrative skills required for effective regulation. Hence competition is likely to remain Defence's primary instrument for achieving value for money.

In the Australian context, this increasingly means competition *for* a market rather than competition *in* a market. Up until the 1980s, for example, Defence sought to obtain maximum value for money by competing the supply of the aircraft and conducting a separate, subsequent, competition for support of that aircraft. During the 1990s, in an attempt to reduce transaction costs and to secure economies of scope, Defence encouraged industry to compete for both initial supply and subsequent support of platforms and systems on a turnkey basis. As already indicated, this approach led to a successful turnkey contract with BAE Systems for supply and support of the lead-in fighter, in turn encouraging Defence to conclude a similar turnkey contract with Australian Aerospace Limited for supply, assembly, test and in-support of the Army's 22 armed reconnaissance helicopters.

Australia's efforts to maintain a 'knowledge edge' are testing the limits of this defence business model. Rapid growth of regional military capabilities has forced Australia to procure platforms and systems at the leading edge of technology. Managing technical risk has therefore been a pervasive concern in Defence project management.

### Sharing risk

In Australia Defence has tended to eschew the kind of cost plus contracts that feature so prominently in, for example, US development projects. At least until very recently, Australia has used competitive pressure to force the supplier to accept fixed price contracts and, hence, most of the technical risk. If, as was often the case, the supplier underestimated and/or underpriced the risk, the record suggests that Defence was prepared to relax the delivery schedule rather than adjust the price. In effect, this meant trading off ADF preparedness for Defence budget integrity.

The initial contract for acquisition of the Jindalee Over-the horizon Radar Network (JORN) in 1986 is an example of where Defence pursued an indigenous development contract within a fixed-price paradigm (see Figure 5-1).

JORN uses radio energy refracted through the ionosphere to detect and track aircraft and surface ships over the horizon at ranges of 1000-3000 KMS. The Australian Government approved acquisition of JORN in 1986 with the aim of:

- providing the Australian Defence force with broad area surveillance of aircraft and surface ships in Australia's northern maritime approaches; and
- developing Australian industry capability to support over-the-horizon operation, maintenance, and evolutionary development.

In 1991, Defence awarded the JORN contract to a consortium based on Telstra (then Australia's publicly-owned telecommunications monopoly). In doing so, Defence used a price ceiling/incentive contract in an attempt to manage the technical risk involved in development and production of JORN. As the Australian National Audit Office (ANAO) later pointed out, the Commonwealth adopted this model because it recognised that if the contractor was required to bear all the risks, either none would bid for the business, or those that did so would charge a price based on a worst case outcome. Accordingly the JORN price ceiling/incentive contract provided for the Commonwealth and the contractor to share the financial risk by:

- negotiating a target price for development and production of JORN;
- setting maximum (ceiling) price payable by the Commonwealth equal to the target price plus 60 per cent of any cost overruns up to a maximum of 10 percent above the target;
- a financial risk share in which Telstra was responsible for 40 per cent of any cost overruns up to the ceiling price, and 100 per cent of all costs that exceeded the ceiling price; and
- a saving share that entitled Telstra to 40 per cent of the savings if it completed JORN for less than the target price.

In the event, both Defence and the contractor underestimated the cost, schedule and technical risk involved and the resulting cost and schedule overruns swamped the above arrangements. In 1997 Telstra engaged RLM Management Pty Ltd to take over management of the JORN Project. RLM is a joint venture between US-owned and operated Lockheed Martin and Tenix (then an Australian owned and operated naval ship builder). In 1999, after undertaking a comprehensive due diligence study, detailed engineering reviews and negotiating a revised contract with Defence, RLM assumed full prime contractor responsibility for the JORN project.

Under the revised contract, Defence agreed to reschedule JORN delivery to 2001 (a slippage of four years from the delivery date originally agreed between Telstra and Defence) and insisted on a firm fixed price equal to the original contract's ceiling price plus \$A20 million. In the event, and despite the engineering reviews it had undertaken, RLM did not complete JORN's development until April 2003 and Defence accepted the system into service in May that year, six years after the original delivery date of June 1997.

Source: ANAO (2006); pp.41-43.

### **Figure 5-1. JORN Project**

Defence has also sought to reduce the risk involved in acquiring the technology it needs to maintain a knowledge edge by accessing not only overseas technological innovation but also overseas management expertise. This requires the conclusion of a 'deal' that goes far beyond the relatively simple verities of a contract. The *Collins* Class submarine project illustrates the challenges Australia encountered in pursuing this kind of 'deal' (see Figure 5-2).

#### International collaboration

Australia's participation in bilateral materiel cooperation programs based on traditional government-to-government understandings has been confined to close friends and allies – for example, the Jindivik pilotless target drone with the UK, the ANZAC ship program with New Zealand and the Nulka anti-ship missile decoy system with the United States. Australia's desire to access overseas innovation at minimal cost suggests, however, that it will be receptive to commercially led proposals for cooperation, particularly with the United States in areas of common operational interest.

For example, under the AUSPAR program, the US and Australian Departments of Defence are sharing the cost of engaging CEA Technologies, an Australian company, to upgrade its existing lower power CEA-FAR active phased array radar without compromising its scalability, light weight and low cost.

At the other end of the spectrum of complexity lie Australian arrangements for participation in the Lockheed Martin F-35 Joint Strike Fighter (JSF). Lockheed Martin initiated the JSF system development and demonstration phase in October 2001 with a view to developing not only the aircraft and its systems but also the associated supply chains. Australia is participating in this phase of the JSF program, along with the US, UK, Canada, Denmark, Norway, Italy, Netherlands and Turkey. Australian industry

participation in the JSF program differs markedly from that in Australia's other military aircraft procurements. Companies compete for participation in the JSF's international supply chain on a best value basis, according to their respective capabilities and competitive advantages. Such participation offers successful companies significant commercial benefits. But it remains to be determined how such participation adds value to the Australian defence value adding chain and how Defence would capture that value.

When it won the contract to design and build the *Collins* Class submarines, the Australian Submarine Corporation (ASC) was owned by a consortium of four organisations, one of which was the Swedish submarine designer, Kockums (who had the controlling interest in ASC). This commercial arrangement represented the outcome of, on one hand, the Commonwealth's efforts to maximise Kockums' incentive to design a submarine that met Defence's demanding requirements and, on the other hand, Kockums' incentive to protect its intellectual property (which the Commonwealth had decided not to buy). At the same time, Kockums retained separate design authority for the *Collins* Class.

These arrangements placed Kockums in a debilitating conflict of interest when the *Collins* Class subsequently encountered widely publicised – and politically embarrassing – design and construction problems. The problems were exacerbated when Defence decided to purchase a US-designed replacement for the troubled *Collins* Class submarine combat system, and (in September 2001) to enter into a strategic alliance with the US Navy on submarine matters, including the future enhancement of the *Collins* Class submarines.

The ensuing political and commercial manoeuvrings led, in late 2000, to the Australian government taking full direct ownership of ASC. In order to restore public confidence in the *Collins* Class submarine project and in ASC's ability to manage it, the government then directed ASC to engage Electric Boat Corporation (EB – the major US submarine builder) as a capability partner.\* Accordingly, in October 2002, ASC and Electric Boat concluded a three-year A\$20 million agreement (with up to four years of annual extensions) for the provision of specialist management and technical advice on the maintenance and on-going support of the *Collins* Class.\*\* Tellingly, EB support was to focus on modernised life cycle support, strategic business planning, work packaging and scheduling, business processes and systems, management practices and on-going engineering support.\*\*\*

Kockums, on the other hand, was unhappy about Australia's embrace of US Navy and US commercial expertise in submarine matters. ASC (still owned by the Australian government) took until 2004 to settle all disputes with Kockums and to obtain perpetual access to Kockums' *Collins* Class intellectual property needed for in-service support.

\* Hill, Robert and Nick Minchin *Australian Submarine Corporation – Engagement of capability partner for a scoping study*, Joint Media Release 134/02 of 9 April 2002.

\*\* Hill, Robert and Nick Minchin *Electric Boat signs as capability partner to Australian Submarine Corporation*, Media Release MIN 536/02 of 3 October 2002.

\*\*\* Electric Boat Corporation *EB lands technical-support contract for Australian submarines*, October 7, 2002 at [www.gdeb.com/news/2002archives.html](http://www.gdeb.com/news/2002archives.html) accessed 4 December 2006.

### Figure 5-2 Collins Class Submarine Project

Wider economic factors (including chronic difficulty in recruiting and retaining skilled personnel) have combined with changes in the defence business model to greatly increase

ADF dependence on contractor support. But Australia has not yet been prepared to go as far as, for example, the US and the UK in utilising contractors in an area of operations. Nor has Australia been prepared to emulate the UK experiment in the private financing of military capability. Both these aspects of the Australian defence business model seem likely to undergo significant development in the near future.

### **Concluding Comments**

Since the end of the Cold War, Australian Governments have repeatedly reaffirmed the uncertainty of Australia's strategic environment. In order to manage the strategic risk inherent in such uncertainty, Australian Governments will continue to adjust Australia's portfolio of military capability outputs in order to provide the nation "with a set of capabilities that will be flexible enough to provide governments with a range of military options across a spectrum of credible situations" (CoA, 2000; p. 54, para 6.33).

If, as seems likely, this uncertainty continues in future, then Australian Governments will continue to invest capabilities that enhance the military options available to them. At the same time wider developments in Australian governance mean that Defence will continue to experiment with different institutional arrangements and Australian Governments seem likely to continue looking to outside expertise for suggestions.

More particularly, Australian Governments will continue to search for ways to synthesise overseas innovations and Australian industry capacity in an effort to preserve the ADF's knowledge edge at minimum risk in cost, schedule and technical terms. This issue is covered in more detail in Chapters 7 and 8.

## CHAPTER 6

### DEFENCE BUDGET AND RESOURCE MANAGEMENT

#### National Security Spending

The provision of national security has always required a whole-of-government approach that involved different government agencies (e.g., Australian Federal Police, Australian Security Intelligence Organisation) as well as Defence. However, the events of 9/11 have prompted most governments to increase spending on national security broadly defined. Over the past few years, a number of government agencies have been involved in the provision of national security in Australia of which Defence is by far the largest. These agencies include (ASPI, 2006a; p. 10):

- Australian Federal Police (AFP)
- Australian Agency for International Development (AusAID)
- Australian Secret Intelligence Service (ASIS)
- Australian Security Intelligence Organisation (ASIO)
- Department of Defence (DOD)
- Department of Foreign Affairs and Trade (DFAT-1)
- Department of Immigration and Multicultural Affairs (DIMA-1)
- Office of National Assessments (ONA).

Figure 6-1 shows Federal national security appropriations in the financial years 2005-06 and 2006-07 (in current Australian dollars) and 5-year increase (%) between 2002-02 and 2005-06.<sup>1</sup>

Agencies	2005-06 A\$ m	2006-07 A\$ m	5-year Increase 2001-02 to 2005-06 %
Defence	17,254	19,001	38.4
AusAID	1,596	1,887	1.8
DIMA-1	907	1,037	25.1
AFP	968	885	69.3
DFAT-1	717	740	12.2
ASIO	187	341	393.6
ASIS	100	131	143.3
ONA	28	28	300.0

Source: ASPI (2006a) Table 1.3.1; p.11

**Figure 6-1. Federal National Security Appropriations 2001-02 to 2005-06**

This chapter will focus on Defence appropriations and spending. In 2007-08, the Defence budget of A\$21,999.1 million represented 2% of Gross Domestic Product (GDP) and 9.3% of Australian Government outlays (PBS, 2007). This also represented an increase of 47% in real terms since 1995-96. Over the past four years, defence spending was about 1.9% of GDP and between 8.6% and 8.9% of Commonwealth (government) outlays (about the same as spending on Education)

<sup>1</sup> The Australian Government's financial year runs from 1 July to 30 June.

(ASPI, 2006b). In 2000, the Government released the Defence White Paper in which it pledged to fund 3% real annual growth in defence spending between 2000-01 and 2010-11. In 2006, it decided to extend this 3% real growth in funding out to 2015-2016 (ibid.).

## **Outcomes and Outputs Framework**

In 1999, the Commonwealth introduced a performance and resource management (outcomes and outputs) framework that applies to all government agencies, including Defence. The main purpose of this framework is to set specific targets of service provision, measure performance and impacts/benefits that the government intends to deliver to the community through the work of a government agency. The Defence budget is set out according to this framework. The purpose of the output-outcome framework is to measure the productivity of Defence and the social relevance of its outputs, that is, not only what it does, given the resources provided for it by the government and, ultimately, the tax payer, but also how it is done and what it actually achieves. The output-outcome framework aims to provide: a better understanding of what Defence is required to produce and how the outputs produced contribute to the achievement of national security and other government (social) objectives; the full cost of defence capabilities; better information for the managers of Defence resources; and better communication lines to the Government and Parliament to report on priorities and achievements. The framework provides a management and accountability system that is underpinned by metrics of effectiveness in output production and input (resource) use, and which is robust enough and transparent enough to apply to large and complex organisations such as Defence.

Figure 6-2 contains a selection of concepts and vocabulary associated with the output/outcome framework.

### *2007-08 Outcomes*

Until the 2003-04 budget, the government had set down only one outcome for Defence: “The defence of Australia and its national interests” (ASPI, 2006a; p.4). In essence, this outcome was Defence’s mission statement. It provided the rationale for the existence of the Australian Defence Force (ADF) and therefore the Defence Organisation. In 2007-08, the government has set down seven outcomes for Defence (PBS, 2007):

1. Command of Operations in Defence of Australia and its Interests;
2. Navy Capability for the Defence of Australia and its Interests;
3. Army Capability for the Defence of Australia and its Interests;
4. Air Force Capability for the Defence of Australia and its Interests;
5. Strategic Policy for the Defence of Australia and its Interests;
6. Intelligence for the Defence of Australia and its Interests; and
7. Superannuation and Housing Support Services for Current and Retired Defence Personnel (mainly superannuation payments for current and former ADF personnel, and housing subsidy provided under the Defence Force (Home Loans Assistance) Act 1990).

The ADF and the Defence Organisation are structured and directed towards achieving these outcomes.

**Outputs** are the products or services that Defence produces on behalf of the government using departmental expenses.

**Outcomes** are the desired results of outputs and administered items, i.e., impacts or benefits that the government intends to deliver to the community through the work of Defence.

**Departmental Items** are resources directly controlled by Defence, including salaries, allowances, military equipment and other costs associated, including out-sourced activities funded and controlled by Defence, with the operation of the Defence Organisation. These resources are used to produce outputs for the government (the Australian community).

**Administered Items** are resources administered by Defence on behalf of the Commonwealth including grants, subsidies and benefits. Such resources may be used to produce outputs by third party organisations.

**Assets** are future economic benefits expected to accrue to Defence as a result of past transactions or other past events. Assets are initially recognised at the cost of acquisition. They are periodically revalued to reflect their written-down current cost and, where appropriate, enhanced value of expected economic benefits.

**Liabilities** are future economic benefits foregone due to Defence's obligations to other entities arising from past transactions or other past events.

**Revenues** are inflows or other enhancements, or savings in outflows, of future economic benefits, in the form of increases in assets or reductions in liabilities of Defence, other than those relating to contributions by the Commonwealth, that result in an increase in equity during the reporting period.

**Expenses** are losses of future economic benefits, in the form of reductions in assets or increases in liabilities of Defence, other than those relating to distributions to the Commonwealth, that result in a decrease in equity during the reporting period.

**Equity Injection** represents the additional contribution to Defence by the Commonwealth as its 'equity owner'. It is determined on the basis of the amount additional to the Departmental Outcome Appropriation required to fund Defence up to the government-agreed level of global funding. The Equity Injection is not tied to any specific capital projects and, within the limits of Defence's resource management discretion, it can be used for any purpose that increases the net assets of Defence. It is planned to use these funds for investment in new/replacement capital equipment or facilities.

Source: ASPI (2006a) and PBS (2007)

## Figure 6-2. The Output-outcome Management Framework: Concepts and Vocabulary

### 2007-08 Outputs

In 2007-08, to deliver the required outcomes, Defence is committed to produce 28 outputs, which are grouped to match the seven outcomes. (The seventh outcome comprises the results of activities/items administered by the Department of Defence on behalf of the Commonwealth, such as military superannuation schemes and the Defence Housing Authority.) Figure 6-3 shows the 2007-08 (budgeted) outputs and outcomes and their *net costs* (in earlier years these were referred to as 'prices').

The costing figures shown in Figure 6-3 provide a snapshot of the planned (budgeted) net cost of designated outputs. This provides a useful indication of relative (resource) importance of different outputs and outcomes. Over time, however, the continuous refinement of the output costing methodology, in particular in 2003-04 and 2004-05, has made it very difficult to interpret costing data between different financial years. This has caused the leading Australian expert on defence budgets to observe:

“Until such time as Defence’s Output costing methodology stabilises and a baseline of information accrues, the Output costs will represent little more than a highly artificial by-product of the Commonwealth’s budgeting framework. So it’s not surprising that, in reality, both Defence and the Department of Finance remain as focused as ever on the cost of inputs like personnel, facilities and logistics, with only scant regard to the notion of the overall cost of outputs” (ASPI, 2006a; p. 46).

<b>Outcome</b>	<b>Output</b>	<b>Cost A\$ m.*</b>
<b>1. Command of Operations in Defence of Australia and its Interests</b>	1.1 Command of Operations	427
	1.2 Defence Force Military Operations and Exercises	1,130
	1.3 Contribution to National Support Tasks	20
	<b>Sub-total</b>	<b>1,577</b>
<b>2. Navy Capability for the Defence of Australia and its Interests</b>	2.1 Capability for Major Surface Combatant Operations	1,902
	2.2 Capability for Naval Aviation Operations	641
	2.3 Capability for Patrol Boat Operations	277
	2.4 Capability for Submarine Operations	816
	2.5 Capability for Afloat Support	264
	2.6 Capability for Mine Warfare	388
	2.7 Capability for Amphibious Lift	425
	2.8 Capability for Hydrographic and Oceanographic Operation	300
	<b>Sub-total</b>	<b>5,013</b>
<b>3. Army Capability for the Defence of Australia and its Interests</b>	3.1 Capability for Special Operations	581
	3.2 Capability for Medium Combined Arms Operations	1,116
	3.3 Capability for Light Combined Arms Operations	1,049
	3.4 Capability for Army Aviation Operations	587
	3.5 Capability for Ground-based Air Defence	126
	3.6 Capability for Combat Support Operations	457
	3.7 Capability for Regional Surveillance	164
	3.8 Capability for Operational Logistic Support to Land Forces	604
	3.9 Capability for Motorised Combined Arms Operations	620
	3.10 Capability for Protective Operations	1,089
	<b>Sub-total</b>	<b>6,393</b>
<b>4. Air Force Capability for the Defence of Australia and its Interests</b>	4.1 Capability for Air Combat Operations	1,843
	4.2 Capability for Combat Support of Air Operations	1,023
	4.3 Strategic Surveillance & Response Operations	1,295
	4.4 Capability for Air Lift Operations	1,165
	<b>Sub-total</b>	<b>5,325</b>
<b>5. Strategic Policy for the Defence of Australia and its Interests</b>	5.1 International Policy, Activities & Engagement	223
	5.2 Strategy Policy and Military Strategy	80
	<b>Sub-total</b>	<b>303</b>
<b>6. Intelligence for the Defence of Australia and its Interests</b>	6.1 Intelligence	559
	<b>Sub-total</b>	<b>559</b>
<b>Net Cost for Defence Departmental Outcomes</b>		<b>19,170</b>
<b>7. Superannuation and Housing Support Services for Current and Retired Defence Personnel</b>	7.1 Superannuation Support Services	2,069
	7.2 Housing Assistance	-64
	7.3 Other Administered Revenues and Expenses	-1
	<b>Sub-total</b>	<b>2,004</b>
<b>Total Cost for Defence Outcomes</b>		<b>21,174</b>
Note: * rounding errors so that sub-totals may not add up to totals		
Source: PBS (2007), Table 5b; pp. 124-126		

**Figure 6-3. Budgeted Defence Outcomes, Outputs and Costs 2007-08**

Also, as the Defence Organisation is structured into Groups, “These Groups and their executives are responsible for spending Defence’s money and doing its business” (ibid.; p.6). A Group may normally contribute to the achievement of more than one outcome (see below).

### Cost of Defence Outcomes and Organisational Structure

At the time of writing (financial year 2006-07), the Defence Organisation is divided into 15 Defence Groups which are combined into three ‘Group Executives’ clusters (ASPI, 2006a):

- **Output Executives Groups** are mainly those that deliver Defence’s outputs to the government as ‘customer’;
- **Owner Support Executives Groups** are “responsible for protecting the government’s interest as the owner of Defence, including ensuring its long-term viability” (p. 7); and
- **Enabling Executives Groups** provide supporting business services to the other two types of groups (e.g., asset management).

Figure 6-4 shows budgeted Defence Groups contribution to the cost of the six Defence outcomes.

	2006-07 (A\$ million)	2006-07 (% of total)
<b>Output Executives</b>		
Command of Operations	367	2.1
Navy	3,145	18.4
Army	3,443	20.2
Air Force	3,277	19.2
Intelligence	362	2.1
Strategic Policy	127	0.7
<b>Sub-total</b>	<b>10,721</b>	<b>62.7</b>
<b>Owner Support Executives</b>		
Defence Personnel Executive	600	3.5
Defence Science and Technology	328	1.9
Capability (VCDF in 2003-04)	48	0.3
Chief Finance Officer	340	2.0
Chief Information Officer	489	2.9
Secretary/CDF Force	32	0.2
Inspector General	13	0.1
<b>Subtotal</b>	<b>1,850</b>	<b>10.9</b>
<b>Enabling Executives</b>		
Defence Materiel Organisation	-	-
Corporate Services and Infrastructure	2,424	14.2
<b>Sub-total</b>	<b>2,424</b>	<b>14.2</b>
Portfolio	2,068	12.1
<b>TOTAL</b>	<b>17,063</b>	<b>100.0</b>

Source: ASPI (2006a), Table 1.2.2; p. 6.

**Figure 6-4. Defence Group contributions to the cost of the Defence Outcomes**

Figure 6-4 also shows that some 12% (A\$2,068 million) of the total budgeted cost of Defence outcomes was retained in a Portfolio fund to be allocated later after the budget day (e.g., to fund future pay rises). In the above representation, the Defence Materiel Organisation (DMO) does not contribute directly to the cost of achieving Defence outcomes, as it is funded via purchaser-provider agreements with other Defence Groups, that is, “the Services now ‘buy’ equipment and sustainment from DMO and are funded to do so” (ibid.; p.6 – also see Chapter 7).

Figure 6-5 shows the simplified and functionally better aligned Defence Group structure in the forthcoming financial year 2007-08. At the time of writing (May 2007), this organisational structure is already operational. Figure 6-5 has been arranged to show that the first four groups (rows in the figure) are functionally self-contained in that they each contribute to only one Defence outcome (All cost cells are located on the downward diagonal). The fifth group, Joint Logistics, supports the three Services and the Command of Operations Group. The next four groups support all Defence outcomes as ‘owner support’ and ‘enabling’ activities. As in Figure 6-4, provisional allocations and payments to the DMO (the operating element) are held at the Portfolio level (see note to Figure 6-5).

### **2007-08 Output-Outcome Framework**

To better align its outcomes and outputs with recent organisational changes, the Minister for Finance and Administration approved revisions to the output-outcome framework within Defence. As of 1 July 2007 (financial year 2007-08), Defence will report against three outcomes and provide 13 output groups and 56 outputs. As a part of the Defence Portfolio but a prescribed agency (see the following chapter), the DMO will separately report against one outcome and provide three outputs. This new framework is shown in Figure 6-6.

### **Defence Budget**

The Defence budget is Defence’s financial plan for the forthcoming financial year and a formal projection (forward estimates) of defence spending for subsequent years. Thus, the Australian 2007-08 Defence budget (see Figure 6-7) shows the planned expenditures for the financial year 2007-08 (Budget Estimate), forward estimates for years 2008-09 to 2010-11, previous forward estimates for 2007-08 (Previous Estimate) and the expected outcome (it is still an estimate) for the current financial year 2006-07 (Estimated Actual).

Under Section 83 of the Australian Constitution, public monies cannot be spent unless authorised by an Act of Parliament, i.e., “under appropriation made by law”. A key role of the Portfolio Budget Statements is to inform Senators and Members of Parliament of the proposed allocation of resources to government outcomes by agencies within the portfolio (PBS, 2007; p. vii). This information serves to provide an explanation and justification for the portfolio budget, to enable Parliament to better understand proposed annual appropriations listed for the portfolio in the major appropriation bills that appear annually before Parliament, namely Appropriation Bills No. 1 and 2. When passed into law, Appropriation Bills No. 1 and 2 authorise expenditure of money on activities annually budgeted by the Government of the day and submitted to Parliament for approval. In essence, Bill No. 1 funds the annual government expenditure (the cost of outputs and outcomes produced for the government by ‘spending’ departments and agencies – *Departmental Items*; and the

cost of items administered by designated agencies on behalf of the government – *Administered Items*). Bill No. 2 funds capital expenditure including grants to the States, that is it comprises annual appropriations for all capital funding such as equity injections (see below) and loans. The Portfolio Budget Statements are Budget related papers that are declared by the Appropriation Acts to be ‘relevant documents’ (op. cit.). Comprehensive information on all government decisions announced in the annual Budget is provided in Budget Paper No. 2 (e.g., Budget Paper No. 2, *Budget Measures 2007-08*). The Portfolio Budget Statements for Defence Portfolio are divided into three sections: Defence, Defence Materiel Organisation, and Defence Housing Australia.

### **Defence Budget 2007-08**

Defence resourcing in 2007-08 Budget is summarised in Figure 6-7. Defence is budgeted to receive A\$24.802 billion in total resourcing in 2007-08 comprising A\$21.999 billion for Departmental funding and A\$2.802 billion for Administered appropriations. Total Departmental Funding (item 7 in the figure) is the most common way of presenting the Defence budget and is consistent with the presentation of the Defence White Paper (PSB, 2007; p.21).

In 2007-08, total departmental funding of \$A21,999.1 million is provided from the following four sources (op. cit.):

- revenue from the Government for Defence outcomes (A\$19,170.1m);
- an equity injection (A\$2,062.8m);
- own-source revenue (A\$709.2m); and
- net capital receipts (A\$56.9m).

The 2007-08 Defence budget of \$21,999.1 million is 10.6% higher than the forecast outcome for 2006-07 of \$19,898.6 million.

Figure 6-7 shows that Defence receives funding in a number of different ways, and pays money back to government in several ways as well. ‘Revenue from Government for Outcomes’ (Output/Outcome Appropriation) represents the ‘price’ the government pays for Defence outcomes and outputs. In 2007–08 the government intends to appropriate A\$19,170 million towards the price of the Defence outcomes and outputs. Defence also receives funds to invest in capital assets. This comes from the government’s ‘Equity Injection’ of A\$2,063 million in 2007–08, which represents what the government intends to appropriate to supplement investment in specialist military equipment and real estate, vehicles and other equipment (op. cit.).

<b>Defence Groups</b>	<b>Outcome One</b> Command of Operations A\$'000	<b>Outcome Two</b> Navy Capability A\$'000	<b>Outcome Three</b> Army Capability A\$'000	<b>Outcome Four</b> Air Force Capability A\$'000	<b>Outcome Five</b> Strategic Policy A\$'000	<b>Outcome Six</b> Intelligence A\$'000	<b>Total Defence Outcomes</b> A\$'000
<b>Navy</b>	-	2,656,103	-	-	-	-	<b>2,656,103</b>
<b>Army</b>	-	-	3,749,717	-	-	-	<b>3,749,717</b>
<b>Air Force</b>	-	-	-	2,988,413	-	-	<b>2,988,413</b>
<b>Intelligence and Security</b>	-	-	-	-	-	430,805	<b>430,805</b>
<b>Joint Logistics Group</b>	3,193	32,266	183,952	38,553	-	-	<b>257,964</b>
<b>Defence Science and Technology Organisation</b>	44,715	95,236	64,650	123,743	25,909	27,204	<b>381,456</b>
<b>Defence Executives</b>	243,162	177,547	343,576	186,236	222,959	37,805	<b>1,211,286</b>
<b>Chief Information Officer</b>	10,714	137,198	284,654	181,438	7,889	10,208	<b>632,101</b>
<b>Defence Support Group</b>	164,758	831,713	919,737	840,870	21,260	40,644	<b>2,818,982</b>
<b>Provisional Allocation /Payments to DMO*</b>	1,110,048	1,082,602	846,719	965,867	25,415	12,649	<b>4,043,299</b>
<b>Net Cost by Outcome</b>	<b>1,576,590</b>	<b>5,012,665</b>	<b>6,393,005</b>	<b>5,325,120</b>	<b>303,430</b>	<b>559,316</b>	<b>19,170,126</b>

**Note:** \* Provisional allocations and payments to the DMO (the operating element) are held at the Portfolio level and then allocated to Defence Groups and the DMO when implementation milestones are reached. Funds are also held centrally for the proposals that have yet to be approved and for pay increases that can be expected in the future. Funds are allocated to Groups when the proposals are approved and from the date of implementation of the pay increases.

Source: PBS (2007) Table 5.e; p.130)

**Figure 6-5. Group Contributions to Defence Outcomes**

<b>Outcome</b>	<b>Defence Output Groups and DMO Outputs</b>	<b>Number of outputs</b>
<b>DEFENCE</b>		
1. Australia's national interests are protected and advanced through the provision of military capabilities and the promotion of security and stability	1.1 Defence Policy and Planning	6
	1.2 Navy Capabilities	11
	1.3 Army Capabilities	9
	1.4 Air Force Capabilities	8
	1.5 Intelligence Capabilities	1
	1.6 Defence Support	6
	1.7 Defence Science and Technology	1
	1.8 Joint Logistics	1
	1.9 Chief Information Officer	1
	1.10 Superannuation and Housing Support Services for Current and Retired Defence Personnel and other Administered Items	3
2. Military operations and other tasks directed by the Government to achieve the desired results	2.1 Operations Contributing to the Security of the Immediate Neighbourhood	2
	2.2 Operations Supporting Wider Interests	2
3. Defence support to the Australian community and civilian authorities to achieve the desired results	3.1 Defence Contribution to National Support Tasks in Australia	5
<b>DMO</b>		
1. Defence capabilities are supported through efficient and effective acquisition and through-life support of materiel	1.1 Management of Capability Acquisition	1
	1.2 Capability Sustainment	1
	1.3 Policy Advice and Management Services	1
Source: PBS (2007), Figure 1.2; pp. 14-15		

**Figure 6-6. Defence Future Output-outcome Framework, 2007-08**

Additional funding for the Outputs comes from Defence's 'Own-source Revenues'. In 2007-08, Defence has budgeted to raise A\$709 million of 'own source' revenue which is made up of sale of goods and services and other revenue (op. cit.). Defence may also raise its own funds to invest in capital assets. This is shown as 'Net Capital Receipts', being the proceeds of sales of existing assets after capital withdrawal by government (ibid.). In 2007-08, Defence has budgeted to receive A\$57 million in capital receipts from the sale of assets (mainly buildings and property). Defence may only retain a proportion of receipts from the sale of assets as the government may take a slice through a capital withdrawal. This is the mechanism through which the government as 'owner' of defence assets takes back some of its equity in Defence and is used when assets like property are sold (ASPI, 2006a).

<b>2006-07 Estimated Actual</b>  <b>A\$'000</b>	<b>Funding Arrangements</b>	<b>2007-08 Previous Estimate</b> <small>(a)</small> <b>A\$'000</b>	<b>2007-08 Budget Estimate</b>  <b>A\$'000</b>	<b>2008-09 Forward Estimate</b>  <b>A\$'000</b>	<b>2009-10 Forward Estimate</b>  <b>A\$'000</b>	<b>2010-11 Forward Estimate</b>  <b>A\$'000</b>
	<b>Departmental</b>					
17,157,664 (b) 1,998,277	1. Revenue from Government for Outcomes 2. Equity Injection	17,885,333 2,211,529	19,170,126 2,062,804	19,065,666 3,403,841	19,286,597 4,430,996	19,707,273 4,550,650
<b>19,155,941</b>	<b>3. Total Revenue from Government (1+2)</b>	<b>20,096,862</b>	<b>21,232,930</b>	<b>22,469,507</b>	<b>23,717,593</b>	<b>24,257,923</b>
685,050 57,603 <b>742,653</b>	4. Own-Source Revenue (c) 5. Net Capital Receipts <b>6. Sub Total (4+5)</b>	648,042 56,919 <b>704,961</b>	709,226 56,919 <b>766,145</b>	726,150 56,221 <b>782,371</b>	742,979 39,011 <b>781,990</b>	763,998 37,658 <b>801,656</b>
<b>19,898,594</b>	<b>7. Total Departmental Funding (3+6)</b>	<b>20,801,823</b>	<b>21,999,075</b>	<b>23,251,878</b>	<b>24,499,583</b>	<b>25,059,579</b>
	<b>Administered</b>					
2,817,000	8. Administered appropriations	2,842,000	2,802,468	2,935,854	3,042,915	3,159,693
<b>22,715,594</b>	<b>Total Defence Resourcing (7+8)</b>	<b>23,643,823</b>	<b>24,801,543</b>	<b>26,187,732</b>	<b>27,542,498</b>	<b>28,219,272</b>
<b>Notes</b>						
a. As reported in the <i>Portfolio Additional Estimates Statements 2006-07</i> .						
b. Excludes A\$63.998m in accrued appropriation revenue.						
c. 'Own-source revenue' excludes revenue from 'assets now recognised', 'net gains from sales of assets' and other gains.						
Source: PBS (2007), Table 2.1, p. 20						

**Figure 6-7. Total Defence Resourcing**

The 2007-08 Defence budget is to be increased by A\$1.8 billion in 2007-08 and A\$7.7 billion over the Budget and Forward Estimates period for new budget measures agreed by the Government (PBS, 2007; pp.21-24). These budget measures include, *inter alia*:

- a package of recruitment and retention initiatives that are designed to increase recruitment intakes and reduce military separation rates;
- an additional funding for Defence operations including the reimbursement of costs incurred in 2006-07 to expand Australia's commitment to operations in Afghanistan, maintain a deployment of about 1,500 ADF personnel in Iraq, maintain the ADF presence in Timor-Leste, and for the continued surveillance of Australia's northern approaches;
- a strengthening of Australia's Defence intelligence and security capabilities; the acquisition of 24 F/A-18F Block II Super Hornet multi role aircraft to ensure that Australia maintains its air combat capability edge during its transition to the F-35 Joint Strike Fighters over the next decade;
- additional logistics sustainment funding to ensure that the Australian Defence Force (ADF) is well prepared and able to respond to contingencies now and in the future;
- the personnel and operating costs of the four C-17 heavy airlift that the Government agreed to acquire in the 2006-07 Budget;
- investment in security measures to protect Defence personnel, key assets, facilities and infrastructure at Defence bases; and so on.

### **Payments to DMO**

The Defence Materiel Organisation (DMO) is responsible for equipping and sustaining the ADF through the acquisition of capital equipment assets and the sustainment of these assets to meet directed levels of preparedness (see Chapter 7). In the Portfolio Budget Statements, the DMO is represented as a budgetary entity separated but not entirely separate from Defence. That is, its budget is presented separately as Section Two of Defence PBS. However, given the purchaser-provider relationship between Defence and the DMO, Defence also budgets payments to the DMO. It is these payments that are considered below.

In 2007-08, Defence has budgeted to pay the DMO A\$9.442 billion for the procurement of capital equipment (A\$4.820 billion) and the sustainment of equipment (A\$4.622 billion). Funding for procurement of capital equipment is provided under a suite of Materiel Acquisition Agreements (one agreement for each project) together with a service fee which covers the DMO project staffing including Professional Service Providers and associated overheads (PBS, 2007; p.48). Payments for sustainment of existing assets is provided under a suite of Materiel Sustainment Agreements (one agreement with each Capability Manager covering approximately 100 individual products), together with an associated service fee which covers systems program office staffing costs and associated overheads (*ibid.*; p. 48).

Figure 6-8 provides a summary of budgeted payments to the DMO in 2007-08 and over the Forward Estimates period. The DMO will be discussed in greater detail in the following chapter.

<b>Group/Item Description</b>	<b>Budget Estimate 2007-08</b>	<b>Forward Estimate 2008-09</b>	<b>Forward Estimate 2009-10</b>	<b>Forward Estimate 2010-11</b>
	<b>A\$m</b>	<b>A\$m</b>	<b>A\$m</b>	<b>A\$m</b>
a. Major Capital Projects	4,295.6	5,566.9	6,135.2	5,973.2
b. Acquisition Service Fee	348.0	375.3	397.1	405.9
1. Sub Total Major Capital Investment Projects	4,643.6	5,942.2	6,532.3	6,379.1
c. Navy Minor Projects	33.5	31.0	31.8	31.5
d. Army Minor Projects	62.2	68.2	70.4	71.4
e. Air Force Minor Projects	47.1	43.0	43.0	43.0
f. Chief Information Officer Minor Projects	12.9	13.0	13.6	13.9
g. Joint Logistics Minor Projects	20.8	20.9	21.2	21.7
2. Sub Total Minor Projects (c+d+e+f+g) (a)	176.5	176.1	180.0	181.5
<b>3. Total Acquisition (DMO Output 1) (1+2)</b>	<b>4,820.1</b>	<b>6,118.3</b>	<b>6,712.3</b>	<b>6,560.6</b>
h. Enhanced Land Force Sustainment Element	100.8	33.8	19.3	44.3
i. Navy Sustainment	1,330.3	1,222.1	1,191.7	1,217.4
j. Army Sustainment	1,273.2	1,059.4	902.1	875.8
k. Air Force Sustainment	1,099.4	1,010.2	988.2	931.6
l. Chief Information Officer Sustainment	43.1	40.7	44.2	46.1
m. Operating costs for DCP (NPOC)	175.4	274.6	445.5	496.9
n. Super Hornets (Operating Costs)	42.5	59.4	120.7	159.2
o. Operating Costs for the C-17s	54.7	92.5	101.2	107.3
p. Additional funding for Lead In Fighter	29.0	23.6	25.1	28.0
q. Logistics Supplementation (new Budget Measure)	109.1	294.1	238.0	245.0
<b>4. Sub Total Sustainment Products (h+i+j+k+l+m+n+o+p+q)</b>	<b>4,257.5</b>	<b>4,110.4</b>	<b>4,076.0</b>	<b>4,151.6</b>
5. Sustainment Service Fee	364.0	370.2	374.3	382.6
<b>6. Total Sustainment (DMO Output 2) (4+5)</b>	<b>4,621.5</b>	<b>4,480.6</b>	<b>4,450.3</b>	<b>4,534.2</b>
<b>7. Total Planned Payments to DMO (3+6) (b)</b>	<b>9,441.6</b>	<b>10,598.9</b>	<b>11,162.6</b>	<b>11,094.8</b>

Notes: a. Cross reference to Table 3.10

b. Cross reference to Section Two, Defence Material Organisation.

Source: PBS (2007), Table 2.15; p.49

**Figure 6-8. Total Payments to the DMO in 2007-08 and Forward Estimates**

## Defence Workforce

In 2007-8, the total Defence workforce, excluding the DMO, is forecast to be 87, 864 (PBS, 2007; p. 109). This total comprises:

- Permanent Forces of
  - 12,899 Navy personnel
  - 26,126 Army personnel

- 13,480 Air Force personnel;
- Reserve Forces of 19,530;
- Australian Public Service (APS) civilian staff of 14,658; and
- Professional Service Providers - 1,171.

In 2007-08, the total (including allowances and various on-costs) military employee expenses are forecasted to be A\$6,021.3 million and civilian employee expenses A\$1,283.3 million. The combined total is expected to reach A\$7,304.6 million. This is expected to grow to reach A\$8,666.0 in the 2010-11 Forward Estimate (PBS, 2007, Table 4.6; p.114).

Given the small population of Australia and the booming job market in the mid-2000s, Defence has experienced recruitment problems in recent years. To address this issue, an additional A\$1,016 million was allocated over 11 years in the 2006-07 Budget. A further A\$2,071 million is allocated in 2007-08 Defence Budget over 10 years to stabilise, grow and maintain the Defence Force.

### **Capital Investment Program**

The Capital Investment Program is comprised of four elements (PBS, 2007; p 67):

- the *Major Capital equipment Program* which is also referred to as the *Defence Capability Plan*, which includes
  - Unapproved Major Capital Equipment Program managed by the Chief of the Capability development Executive, and
  - Approved Major Capital Equipment Program also managed by the Chief of the Capability development Executive;
- the *Capital Facilities Program* managed by the Deputy Secretary Defence Support Group;
- *Other Capital Purchases* that are managed by the Service Chiefs and Defence Group Heads; and
- *Capital Receipts*, which are also managed by the Service Chiefs and Defence Group Heads.

The Defence Capital Investment Program comprises both capital and operating funds. This is because it includes expenditure that is classified as capital (i.e., asset purchases) and operating costs which are incurred in developing and managing projects (PBS, 2006; 43). Figure 6-9 shows the 2007-08 Capital Investment Program including forward estimates.

### **Concluding Comments**

As noted earlier, recent Defence budgets have produced significant real increases in Defence spending and the trend is expected to continue. This is a clear departure from the financial situation of the late 1990s when Defence allowed its commitments for new major capital equipment to accumulate to a level which was 160 per cent higher than the corresponding appropriations, placing defence in a financial situation which then Secretary of the Department, Dr Allan Hawke, described as “parlous” (Kausal and Markowski, 2000; p.I-31).

The last three financial years have also seen significant progress in making Defence more financially accountable, and much better at physical resource management within the Organisation. The new output/outcome framework is better aligned with the organisational structure. It also provides a much more robust basis for decision making and resource allocation and re-allocation as government priorities change. It also offers more flexibility to accommodate the changing tempo of defence activity – a characteristic highly specific to Defence. These reforms will continue, and the financial framework of Defence will continue to mature in order to support its output production, the formation of new capabilities, and the sustainment and preparedness (readiness) of existing capabilities.

Group/Item Description	Budget	Forward	Forward	Forward	Total
	Estimate	Estimates	Estimate	Estimate	
	2007-08	2008-09	2009-10	2010-11	
	A\$m	A\$m	A\$m	A\$m	A\$m
Capital	467.2	1,320.1	2,314.7	3,648.4	7,750.4
Operating	45.3	61.6	301.5	250.4	658.8
<b>Unapproved Major Capital Equipment Program</b>	<b>512.5</b>	<b>1,381.7</b>	<b>2,616.2</b>	<b>3,898.8</b>	<b>8,409.2</b>
Capital	3,790.4	4,258.8	3,962.9	2,776.5	14,788.6
Operating	504.5	500.4	265.0	195.6	1,465.5
<b>Approved Major Capital Equipment Program</b>	<b>4,294.9</b>	<b>4,759.2</b>	<b>4,227.9</b>	<b>2,972.1</b>	<b>16,254.1</b>
<b>Sub total Major Capital Equipment</b>	<b>4,807.4</b>	<b>6,140.9</b>	<b>6,844.1</b>	<b>6,870.9</b>	<b>24,663.3</b>
Capital	540.6	673.6	916.2	870.8	3,001.2
Operating	103.0	72.2	44.8	48.5	268.5
<b>Sub total Capital Facilities</b>	<b>643.6</b>	<b>745.8</b>	<b>961.0</b>	<b>919.3</b>	<b>3,269.7</b>
Other Capital	768.8	694.0	671.9	537.7	2,672.4
<b>Total Capital Component</b>	<b>5,567.0</b>	<b>6,946.5</b>	<b>7,865.7</b>	<b>7,833.4</b>	<b>28,212.6</b>
Total Operating Component	652.8	634.2	611.3	494.5	2,392.8
<b>Total Capital Investment Program</b>	<b>6,219.8</b>	<b>7,580.7</b>	<b>8,477.0</b>	<b>8,327.9</b>	<b>30,605.4</b>
<b>Net Capital Receipts</b>	<b>-56.9</b>	<b>-56.2</b>	<b>-39.0</b>	<b>-37.7</b>	<b>-189.8</b>
<b>Total Capital</b>	<b>6,162.9</b>	<b>7,524.5</b>	<b>8,438.0</b>	<b>8,290.2</b>	<b>30,415.6</b>

Source: PBS (2007), Table 3.1; p.68

**Figure 6-9. 2007-08 Capital Investment Program and Forward Estimates**

## CHAPTER 7

# THE DEFENCE MATERIEL ORGANISATION

### Background

As noted in Chapter 5, prior to *Kinnaird Review* the Government had already accepted the Defence Efficiency Review recommendation to form the ‘Defence Procurement Agency’ designed to capture the synergies between materiel acquisition and support. As a single organisation the Agency was to be responsible for, respectively, acquiring capital equipment from industry and for arranging support by industry of that equipment once it was accepted into service. *Kinnaird Review* recommended the establishment of the Defence Materiel Organisation (DMO) but concluded that if it were an organisational element of Defence its organisational culture would be inimical to development of the business focus it required if it was to operate in commercial environment. As noted, to remedy this problem, to give DMO management more commercial-style flexibility and to clarify accountabilities, responsibilities and authority between DMO and Defence, Kinnaird recommended establishing the DMO as an executive (prescribed) agency within the Defence Portfolio (DoD, 2003).

The idea of a procurement agency separate from Defence is not new as in the past supplies to the ADF were the responsibility of other departments such as the Department of Supply (see Chapter 5). However, in the past the government was also the owner of various defence-related factories and shipyards and the management of these industrial capabilities was not the core competence of Defence. Since then, most of these enterprises have been privatised (see Chapter 8). The concept of a procurement agency that has emerged over the past few years and which was institutionalised in *Kinnaird Review* is essentially that of an intermediary between Industry and Defence and a provider of professional acquisition, through-life support and policy-related services. It is the combination of acquisition and through-life support for systems that is the essence of the prescribed agency as recommended by *Kinnaird Review*. The purchaser-provider business model that has also been adopted in this context is an element of the broader approach to the management of procurement risks which is discussed below.

### Governance<sup>1</sup>

#### *Prescribed Agency*

The Defence Materiel Organisation (DMO) was established as a *Prescribed Agency* under the *Financial Management and Accountability Act 1997* on 1 July 2005. Prescription has clarified and strengthened the separate accountabilities of both Defence and the DMO. Upon prescription of the DMO as an Agency, the Chief Executive Officer of the DMO (CEO DMO) became directly responsible for managing the affairs of the

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<sup>1</sup> This section draws heavily on CoA (2006), Vol. 2, ch.3 and 6.

DMO in a way that promotes proper use of the Commonwealth resources for which the DMO is responsible (ibid.; p.62).

### *Relationship with Defence and the Government*

The relationship with Defence is managed under a variety of directives and agreements, including (ibid.; p.64):

- a directive from the Minister for Defence to the CEO DMO;
- a Memorandum of Arrangements between the Secretary and the Chief of the Defence Force and the CEO DMO, which outlines the overall relationship between Defence and the DMO. It covers principles, intent, business model, and subordinate agreements;
- a military staffing policy agreed by the Services and signed by the Minister for Defence;
- *Materiel Acquisition and Sustainment Agreements* (see below), outlining the ‘prices’ for products to be delivered under each Agreement and the responsibilities and accountabilities of each party; and
- other service and Free-of-Charge Agreements, covering such things as information technology, banking, payroll, shopfront and contracting. During 2005–06, Free-of-Charge Agreements were re-named as *Shared Services Agreements*.

In short, the DMO has been formed as

“a professional service delivery organisation, principally driven by the defence policies and objectives set by the Australian Government and the requirements of the ADF. It is also subject to other government directions such as competition policy, industry development, self-reliance, and support to regional Australia” (PBS, 2007; p. 241).

### *Defence Procurement Advisory Board*

The Defence Procurement Advisory Board provides advice and support to the Secretary of Defence and the CEO DMO on strategic issues relating to the direction and management of the DMO. The Board is accountable to the Minister for Defence and the Minister for Finance and Administration, and reports to the government on the implementation of all *Defence Procurement Review* recommendations (*Kinnaird Review* – see DoD, 2003). The Board consists of four private sector members (one of which is the chair), the Secretaries of Defence, Finance and Treasury, and the Chief of the Defence Force. The CEO DMO attends as an *ex officio* member of the Board and a senior representative from the Department of the Prime Minister and Cabinet is present at all meetings (ibid.; p. 67).

## **DMO Business Model**

### *Scope of activity*

The DMO is underpinned by a business model and associated funding arrangements agreed by the government. These arrangements in turn defined the accounting approach to be applied to the DMO, including the allocation of assets and liabilities between Defence and the DMO (ibid.; p. 96).

The DMO has three main areas of business:

- *Acquisition of Materiel* - arranging for purchase, construction or modification of equipment and systems for the ADF;
- *Sustainment of Materiel* - arranging maintenance support for existing Defence Force equipment and systems; and
- *Policy Advice* - providing policy advice to the government in areas like contracting and defence industry development.

These three business areas are aligned with the DMO outputs (see below).

### *Funding arrangements*

In the first two areas of business, which account for over 99 percent of the DMO's annual expenditure, funding comes not as a direct appropriation by the Parliament but as a payment from Defence with some small supplementary amounts derived from the sale of goods and services to other government agencies, and to foreign governments (see Chapter 6). The third business area is largely funded as a direct appropriation by the Parliament to the DMO.<sup>2</sup>

The funding from Defence for acquisition and sustainment is provided in two parts - a 'contracted' component and a 'service fee' component (ibid.; p. 96). The former represents the cost of the goods (construction and procurement activity) and services the DMO will deliver to Defence. The service fee represents the cost of DMO operations - staff costs, business systems, office requisites, travel and training. The service fee covers the cost of both civilian and military staff, but the military staff is considered to be 'owned' by Defence. Thus, the DMO pays a fee (reported in the DMO accounts as 'suppliers expenses') for those military staff that Defence provides - similar to the funding arrangements for contractor staff from the private sector. However, Defence, not the DMO, is liable for the payment of employee entitlements to military staff. The CEO DMO has full discretion over allocation of the service fee, but the contracted component must be spent in accordance with the outcomes agreed with Defence in signed agency agreements.

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<sup>2</sup> "The DMO acquisition business is akin to a construction contractor in the private sector, who receives cash from a client to construct a product to the client's specifications. The sustainment business is akin to the 'local garage' in the private sector, with payments received for servicing a customer's assets to achieve an agreed level of performance" (ibid; p. 96).

The DMO receives funding from Defence as a cash advance (mainly at the start of the financial year, but topped up periodically as Defence raises new or amended requirements and as the government approves new projects from the Defence Capability Plan). The cash is initially held on the DMO balance sheet, but with an offsetting liability - unearned revenue - which reflects that the DMO has an obligation to provide Defence with goods and services in accordance with agreed outcomes.<sup>3</sup> Through the year, both amounts (cash advance and unearned revenue liability) will decline as the DMO delivers goods and services to Defence, thereby 'earning' the cash advance. By the end of the financial year, the DMO will normally hold only a small amount of cash, as the government requires cash advances to be drawn 'just-in-time', and a small 'unearned revenue', representing any residual work yet to be delivered or performed that will carry over to the next financial year (ibid.; p. 97).

### *Contracts with industry*

The DMO enters into contracts with industry to deliver the goods and services required by Defence under the agency agreements signed between Defence and the DMO. Many of these DMO contracts with industry are large in value (by Australian standards) and long lasting - up to a decade or two, or more in some cases (see Figure 7-1). In many cases, the DMO will agree in the contracts to make cash advance payments to a supplier at certain defined milestones. These cash payments are reported in the DMO financial accounts as 'prepayments'.<sup>4</sup> Such payments are agreed in DMO contracts only where they are judged to represent value for money for the Commonwealth in *net present value terms* - for example, where it results in a net reduction in contract price because a prepayment allows a supplier to avoid borrowing capital at rates higher than are available to the Government (ibid.; p.97). These prepayments to industry are reflected on the DMO balance sheet as an asset. This is because they are underpinned by a contractual obligation from supplier to deliver goods and services to the DMO of that value.<sup>5</sup>

The business model provides for symmetry between the Defence and the DMO financial statements. For example, cash payments between agencies are visible on both sides with 'unearned revenue' to the DMO seen by Defence as a 'prepayment asset' (see Chapter 6).

### **DMO Financial Model**

In accordance with the *Financial Management and Accountability Act 1997*, the DMO is required to present financial statements prepared in accordance with Australian Accounting Standards and the requirements of the Finance Minister's Orders (ibid.; p. 97).

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<sup>3</sup> Thus, the DMO financial statements include a combination of cash held at bank and an appropriation receivable, representing the undrawn component of the cash advance from Defence, offset by an unearned revenue liability (ibid.; p. 97).

<sup>4</sup> This is similar to deposits commonly paid to retailers or suppliers when ordering goods and/or services.

<sup>5</sup> "When work associated with a prepayment is completed, the DMO will recognise that it has earned revenue, and will advise of the recognition of any assets to Defence and reduce both the DMO prepayment and unearned revenue liability accordingly" (ibid.; p.97).

For example, the A\$6 billion Air Warfare Destroyer project, which at the time of writing going through its design phase, with production expected to start in 2009, has been in planning for eight years and will not be complete until about 2018, 20 years in all. These ships will serve with our Navy for 30–35 years, eventually paying off in about 2050. During that time, the DMO will maintain the three ships and upgrade their weapons systems probably once a decade. Overall, it is a fifty-year responsibility that is hugely technologically challenging for the DMO and Australian industry alike.

Source: DoD (2003, Vol. 2; p. 3)

**Figure 7-1 Long-term Commitments**

### *Income Statement*

The DMO receives an agreed level of funding for its service fee and its Output 1.3 policy work (about A\$640m in 2005–06 financial year).

As a non-profit agency, the DMO prepares its budget on a revenue-neutral. Any variation between the budget and actual expenses through the year will result in an *unplanned* operating loss or profit. “The contracted component of the payment to the DMO is funded on a no-win, no-loss basis, with revenue recognised as expenses occur, so that revenue and expenses will always be equal for the contracted part of the business. In light of this, the DMO operating result will be determined solely by performance against the service fee and Output 1.3” (ibid.; pp. 97-98). Thus, the business model for the DMO, established by the government, does not require the DMO to earn a profit margin on activity or to pay dividends. For the DMO, the measure of success is to manage deliveries of its services commensurate with funding provided. Ideally, this should produce a zero operating result. For 2005–06, the DMO operating result represented 0.1 per cent of total revenue, which indicates that the DMO is more than meeting in net terms the overall milestones and deliverables targeted in the budget (being slightly behind on sustainment, due to operations not requiring all available sustainment funding, but well ahead on acquisition) (ibid.; p. 98). However, some level of cash and ‘unearned revenue’ should normally reside at year end for regular business to be conducted.<sup>6</sup>

Although the contracted part of the DMO’s business (about 90% of total expenditure) will not result in an operating profit or loss, a comparison between budget and actual expenditure gives an indication of the DMO’s performance. For example, if the actual expenditure is less than the budgeted amount, it is indicative of slower than planned deliverables, with any ‘unspent cash’ funding being held at the end of the year and offset by ‘unearned revenue’. (In 2005–06, the DMO’s actual expenditure was overall slightly ahead of the budgeted expenditure - which Defence provided additional funds late in the year) (ibid.; p. 98).

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<sup>6</sup> For example, commercial firms often hold up to a month of payments as ‘cash at bank’, and for the DMO this would represent over A\$600m.

The DMO receives many services from Defence free-of-charge (e.g., things like communications and information systems, accommodation, and human resources services). Under the Australian Accounting Standards, the DMO is required to report the value of these services in its financial statements.<sup>7</sup>

### *Balance Sheet*

As Defence provides the cash for the DMO to construct or purchase the equipment and other assets under the agency agreements, Defence will subsequently own the assets as progressively delivered. These assets in use or under construction will appear on the Defence balance sheet.<sup>8</sup> Thus, virtually all physical assets, including ‘assets under construction’, reside with Defence. Those assets that are held by the DMO include some business systems and minor plant and equipment specific to the DMO’s management.

### *Cash flows*

As the DMO has few physical assets, its business is predominantly cash-based (for further details see CoA, 2006, Vol. 2; p. 99). It has a small balance sheet with equity of around A\$100m (compared with Defence holdings of many tens of billions of dollars). However, it has a very large income statement, with annual revenue and expenses that represent over 40 per cent of Defence expenditure, and a much larger proportion of expenditure when employees costs are removed (ibid.; p. 99).

## **Resources and Risk Mitigation**

### *Resources*

In 2005–06, the total expenses for the DMO were A\$7,592m, including A\$60m to provide policy advice and management services to the Government. With projects under management valued at over A\$60 billion, the DMO is one of the biggest contracting organisations in the country. It is involved in many of the largest and most demanding projects in Australia (CoA, 2006, Vol. 2, ch. 1). At the time of writing, the DMO manages over 200 major capital equipment projects, and over 100 minor projects (PBS, 2007; p. 241).

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<sup>7</sup> This reporting does not appear in the cash flow statement or balance sheet, but is shown as both an expense and revenue item on the income statement—and as these are equal it has no impact on the net operating result.

<sup>8</sup> However, when the 2005–06 budget was prepared, it was assumed that the existing stocks of spare parts and other inventory would be owned by the DMO, and this was reflected in the large value of assets on the DMO balance sheet predicted in the Portfolio Budget Statements 2005–06. It was subsequently agreed that ownership of inventory should reside with Defence, and this was reflected in the balance sheets for Defence and the DMO in the Portfolio Additional Estimates Statements 2005–06. Also, ‘Assets under Construction’ (elements of a materiel construction product delivered to date but not yet forming the final complete product) were expected to be held on the DMO balance sheet. It was subsequently agreed that these assets should reside on the Defence balance sheet, consistent with the notion of ‘control’ under the accounting standards (ibid.; pp. 98-99).

The DMO is also the *manager* (as opposed to owner) of one of the largest inventories of physical assets in the country, with A\$23.2 billion of in-use specialised military assets, A\$8.8 billion of asset under construction, A\$1.8 billion of general stores and fuel, and over A\$2.1 billion of explosive ordnance (ibid.; p. 241). At the time of writing, it is projected that the demands of the Defence Capability Plan will require an increase of over 20% in the new project work rate of the DMO and industry over the five year period 2007-08 to 2011-12. It is also expected that the DMO will manage about A\$100 billion worth of acquisitions and sustainment services over the next decade, with about 65-70% to be spent in Australia (ibid.).

As of June 2006, the DMO had 6,416 personnel, comprising 4,952 civilians and 1,464 military in approximately 50 locations throughout Australia and overseas, including in direct support of ADF operations world-wide. In 2007, it is employing about 6,800 personnel and is Australia's largest project management and engineering services organisation. It also works directly with over 20,000 personnel in Australian and international industry (ibid.).

### *Risk mitigation*

As a procurement agency, the DMO is engaged in a complex and high-risk business activity that involves acquiring, modifying and sustaining high technology capabilities and complex systems. In many cases, this involves managing leading-edge technologies and highly complex systems integration. Thus, the DMO is exposed to the risk of supplier failure (failure to provide the required deliverables as specified) and various 'external' events impacting on supplier businesses and the broader supply environment. As the DMO operates in several international jurisdictions, its business may also be affected by the actions and decisions of numerous domestic and international factors related to foreign companies and governments (ibid.; p.11). Thus, the DMO has to identify, mitigate and manage the vast array of engineering, operational, commercial, financial, regulatory, sovereign and other risks.

Both the *Defence Annual Report 2005-06* (CoA, 2006, Vol. 2) and the PBS (2007) emphasize that, as a procurer of complex, high technology defence systems the DMO entails the acceptance and management of a high level of risk. A part of that risk that is related to the procurement process *per se* could be mitigated by significantly increasing project cost, delivery extending schedules and accepting poor quality of deliverables. While this would ensure that the DMO would nearly always meet its deliverables with minimal risk of schedule slippage or cost overruns, it would have an adverse impact on the Defence Capability Plan and new capability formation. Nor, it is argued, is it feasible for Defence to take a conservative approach by acquiring only tested and fielded technologies and platforms. The purpose of many acquisitions is to meet the Government's policy requirement of maintaining a technology edge within ADF capability (ibid.; p. 11). Also, a more conservative approach is often risky in that it changes the nature of risk and shifts it to users of obsolete or sub-standard equipment.

“Inevitably, in some circumstances, the DMO or industry will fail to meet fully Defence's plans and targets. The DMO's task is to minimise such shortfalls, pick up

problems early and effectively manage risk-related issues as they arise. If there were no shortfalls, the DMO might rightly be criticised for having an insufficient risk appetite. It must therefore manage the challenges, maximise the successes and continue to improve outputs and productivity” (p.12).

The recognition of the risky nature of the DMO’s deliverables is in itself a novel approach to the management of Defence acquisitions:

“...the Government and Defence expect the DMO to manage a high level of risk - prudent, not reckless risk; risk accepted only after calculated and sensible assessments, mitigated where practicable, and in all cases, carefully monitored and intensively managed” (p.11).

In the light of the much-publicised poor performance of several major defence projects in the 1990s, the formation of the DMO as a prescribed agency was in itself an element of the broader approach to the management of risks inherent in Defence procurement. It was recognised the management of supply-related risks should be the core competency of a specialised procurement agency rather than Defence. The purchaser-provider business model with the associated agency agreements was intended to discipline the acquisition process and create a chain of back-to-back contractual arrangements between suppliers, DMO and Defence ‘customers’. Thus, many risks can be transferred along the chain to those or are best equipped to manage and mitigate them (e.g., risks of production scheduling should best be managed by manufacturers). However, while this provides a better framework for risk mitigation and the transfer of various risks from Defence to Industry, many risks inherent in the acquisition process have to be borne by the Commonwealth. That is, for many risks associated with cutting edge technologies, product complexity and the fast-changing nature of military capabilities, the Commonwealth is the ‘natural’ and the most efficient risk taker. Thus, the formation of the DMO as a prescribed agency should not be taken to imply that all risks inherent in Defence procurement can now be mitigated and shifted away from the taxpayer.

### **Organisational Structure**

The DMO is structured around ‘domains’, ‘operations’ and ‘major programs’. In 2005–06, the new position of Materiel Advocate was created to concentrate on assisting Defence exporters.

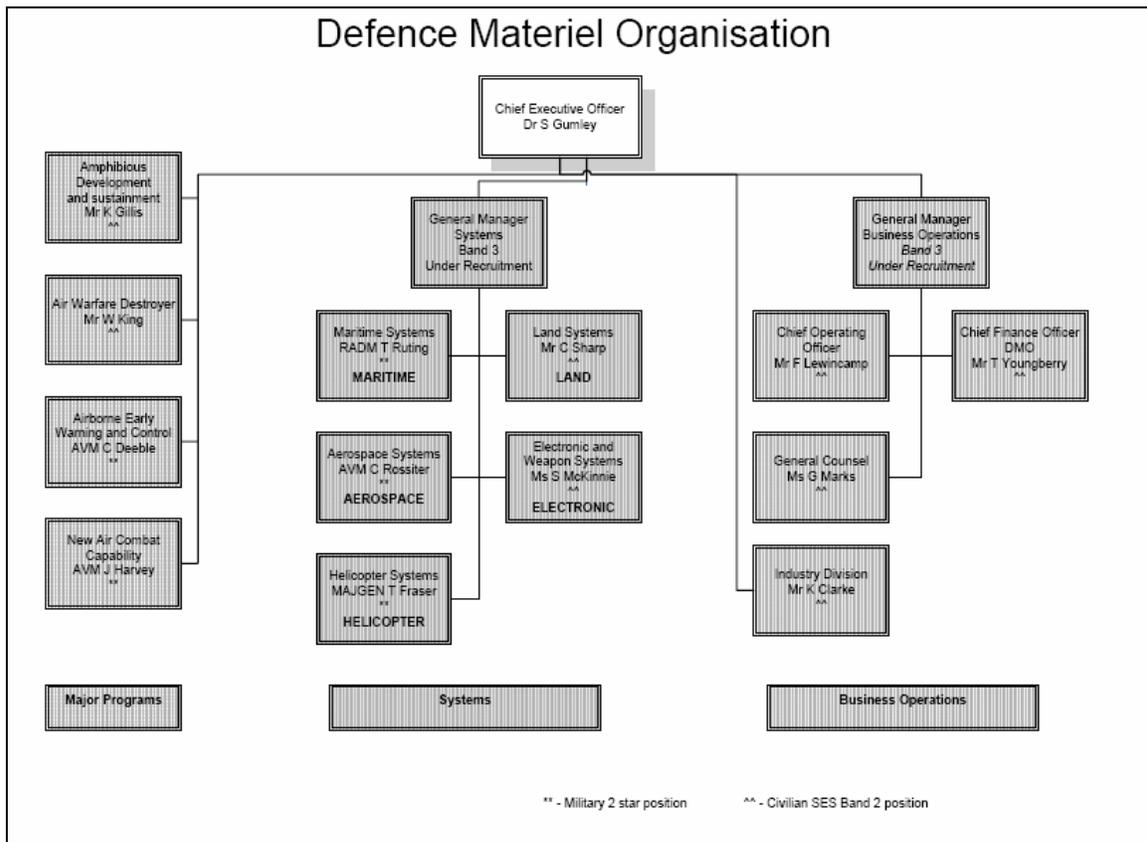
The term ‘*domain*’ is used to describe acquisition and sustainment activity related to a specific environment. The ‘domains’ are Aerospace Systems, Helicopter Systems, Maritime Systems, Land Systems and Electronic and Weapon Systems. System Program Offices (SPOs) exist within each domain and are the focal point for the procurement, delivery and sustainment of equipment. Each SPO is responsible for one or more fleets of equipment (ibid.; p. 6).

The ‘*operations*’ divisions are responsible for corporate or business services. The Chief Operating Officer provides information technology, strategic communications, corporate governance, and personnel services. Contracting services, financial services and industry

relations are managed, respectively, by General Counsel, the Chief Finance Officer and Industry Division.

The term ‘*major programs*’ is used to describe activities associated with the acquisition of specific high-value-high-profile capabilities. At the time of writing, these include the Air Warfare Destroyer (AWD), Amphibious Deployment and Sustainment Capability (ADAS), New Air Combat Capability (NACC), Land vehicle Systems (Overlander), and Airborne Early Warning and Control (AEW&C).

Figure 7-2 shows the DMO organisational structure at the time of writing.



Source: PBS (2007), Section 2, Figure 1.1; p. 245.

**Figure 7-2 DMO Organisational Structure as at 1 May 2007**

### DMO Outcomes and Outputs

The DMO’s outcome describes the results that the government seeks from the DMO, and is achieved through the delivery of outputs, to the standards set in the *Portfolio Budget Statements* (PBS) and, where applicable, revised in the *Portfolio Additional Estimates Statements* (see Chapter 6). The *Defence Annual Report* reports the DMO’s achievements against these targets, in both financial and non-financial terms. The DMO’s outcome is to

ensure that Defence capabilities are supported through efficient and effective acquisition and through-life support of materiel (see Chapter 6). Two of the DMO's outputs reflect the DMO's role in capability acquisition and support and the third reflects its role as a provider of policy advice to the government (CoA, 2006; p.18).

### *DMO Outputs*

#### Output 1.1 - Management of capability acquisition

This output involves the delivery of specialist military equipment and associated items to Defence and the associated acquisition process, including all pre-approval activities for major and minor capital investments. All DMO Divisions contribute to this output. In 2005–06, Output 1.1 represented about 52% of the DMO's expenses.

#### Output 1.2 – Capability sustainment

This output involves the provision of support for specialist military equipment and associated items to Defence. It includes the maintenance of equipment and purchasing of inventory (e.g., explosive ordnance, fuel, stores and spare parts). All DMO Divisions contribute to this output. In 2005–06, Output 1.2 represented over 47% of the DMO's expenses.

#### Output 1.3 – Policy advice and management services

This output delivers procurement and industry policy and advice to both Defence and the government. Corporate functions that would exist regardless of the scale or nature of the DMO's business ('overhead activities') are also covered by this output. In 2005–06, Output 1.3 represented less than 1% of the DMO's expenses.

Outputs 1.1 and 1.2 are funded by payments from Defence for goods and services provided, as set out in *Materiel Acquisition Agreements* and *Materiel Sustainment Agreements*. These agreements were established between Defence and the DMO in 2005–06. Funding for these outputs represents over 99 per cent of the DMO's funding requirements. As noted earlier, Output 1.3 is funded largely through a direct appropriation. In 2005-06, it amounted to A\$59.9m and delivered: procurement and contracting policy and/or advice to Defence; industry policy and advice to Defence and the government; and corporate governance and reporting to meet government requirements (ibid.; p.59).

### *Major and Minor Projects*

As a provider of Output 1.1, the DMO manages the Approved Major Capital Equipment Program as well as a Program of Minor Projects. The *Approved Major Capital Equipment Program* comprises projects and/or project elements which are funded from the Defence Capability Plan and are transferred to the DMO following approval (see Chapter 4). Approved Major Capital Equipment Program projects are generally those that cost A\$20m or more, although individual project phases within the Defence Capability Plan such as studies, or pre-second pass elements, can cost less (CoA, 2006, Vol. 2; p. 20). The *program of minor projects* comprises projects that are funded from outside the

Defence Capability Plan (they are funded from within capability managers' operating allocations) and which normally cost less than A\$20m and are part of the Other Capital Purchases category. Minor capital projects are undertaken to address emerging requirements (e.g., to enhance or replace existing capability, or develop or acquire new capability of relatively low cost). In 2005-06, there were about 200 such projects with an average amount of less than A\$5m and the total value of A\$138m. Like major projects, the funds are transferred to the DMO through a Materiel Acquisition Agreement (op. cit.; p. 49). Figure 7-3 provides an example of a major acquisition project.

**Sea 1444 Phase One** (This project contributes to **Navy Capability**.)

**Prime contractor:** Defence Maritime Services (ships being built by Austal Ships)

This project is to deliver 14 Armidale-class patrol boats, and 15 years of support for each vessel, to replace the Fremantle-class patrol boats. The new patrol boats will be an element of coastal surveillance and enforcement capability. The new boat is larger than the Fremantle-class and capable of operating in higher sea states.

The contract was signed in December 2003, and is to provide a capability for the Navy to achieve up to 3,000 available days per year for Coastwatch and ADF support to operations, plus a surge capacity of up to 600 additional available days per year. The first vessel was commissioned as HMAS Armidale in June 2005. Additional funding, in line with the Government agreeing to an extra two vessels to patrol the North West Shelf, has been endorsed and the contract change proposal has now been signed by both parties. These extra vessels will be built after the current 12 boats, with delivery commencing mid-2007, and will provide an additional 500 available days per year, bringing the total fleet availability to 3,500 days plus a surge capacity of 600 days.

Five vessels were delivered by the end of June 2006. At the time of writing, the first six vessels have either already entered or are completing ship and crew work-ups to enter operational service during 2006-07. The remaining eight vessels are to be delivered by November 2007. Upgrades to facilities in Darwin and Cairns to accommodate the new vessels are expected to be completed by July 2007.

Actual expenditure was lower than the revised estimate due to a transfer of funding for facilities upgrades not occurring when expected, the minor slippage of some significant milestones for boats 6 and 7, and delays in the purchase of primary weapons systems for boats 13 and 14 due to the later than expected approval of the contract change proposal for the extra two vessels. This slippage was somewhat offset by the early achievement of boat 10 milestones.

Source CoA (2006), Vol. 2; pp. 27-28.

**Figure 7-3 An Example of a Major Acquisition Project**

As a provider of output 1.2, the DMO is involved in the management and provision of services and products needed to meet the capability, preparedness and performance requirements of a materiel system in use. Typical services include maintenance, engineering, supply, configuration management, replenishment of consumable items and disposal action. Common products include spares, technical data, support and test equipment, training equipment and materials (ibid.; p. 50). The sustainment services to Defence, and the price the DMO receives for these services, is described in Materiel Sustainment Agreements between the DMO and Defence capability managers. In 2005-06, there were 93 Materiel Sustainment Agreements. Sustainment agreements are based around the DMO 'sustainment products', which products are designed around key platforms, systems or fleets supported by the DMO (e.g., key products include sustainment of F/A-18 Hornet aircraft, replenishment and sustainment of explosive ordnance, sustainment of Collins-class submarines).

### *Budget 2007-08*

The DMO's key priorities set in the 2007-08 Budget are:

- a standardised approach to schedule management to reduce slippage in major projects;
- improved cost estimation and budget forecasting through the development of robust analytical, predictive and modelling tools;
- enhanced internal and external contract management;
- integrated workforce planning, including more effective management of the workforce as a whole and a review of military staffing policy; and
- broadened workforce professionalisation (PBS, 2007; p. 243).

Total resourcing budgeted for the DMO in 2007-08 is A\$9,615.5 million with revenue to be received from Defence for deliverables estimated at A\$9,487.3 million. The latter includes funds for procurement of capital equipment (A\$4,827.5m) and sustainment of existing capability (A\$4,650.2m). The DMO will also deliver industry and procurement policy and other advice to Defence and government as part of its direct appropriation from the Parliament (A\$93.4m). The balance is revenue from provision of other goods and services (A\$34.8m) (ibid.; p.246). The bulk of the total resourcing is provided by Defence as a cash payment of \$9,441.6m into DMO's Special Account (see also Chapter 6).

### **Concluding Comments**

In many respects, the DMO has been the embodiment of management and administrative reforms that have been triggered by the public criticism of a number of major Defence acquisitions in the 1990s. By combining acquisitions with through-life support services and contracting and industry expertise, the DMO is well placed to benefit from scope-related efficiencies. It is also well placed to become a repository of market-, product- and industry-related expertise which could be used to support the whole of Defence.

Much emphasis has been placed on the DMO business and financial models as a means of operationalising the purchaser-provider relationship between the prescribed

agency and Defence on the one hand and the agency and Industry on the other. The use of agency agreements should sharpen management and administrative practices and procedures as it requires transparency and good alignment in the allocation of authority and responsibility between various elements of the Defence Organisation. However, the quasi-contractually framework within which these agency agreements are arranged has a basic limitation. Ultimately, both defence and the DMO are government agencies and, in the event of contractual default by either side, it is the government that will bear the cost of failure.

As noted, much effort has been made to explain the nature of risks handled by the DMO and the limitations of risk mitigation that it can provide. This in itself is a major step forward although it is yet to mature from recognition of risks inherent in DMO activities to a risk management system based on clear recognition that the value of services provided must always be weighted by risk factors. The real challenge though is that of organisational culture. Over the past two decades, governments have been determined to project the image of good stewardship of public resources and have been very intolerant of failure. On the one hand, this has been a welcome development as the tolerance of failure is normally associated with high incidence of poor performance. On the other hand though, the risky nature of many Defence projects means that failures will inevitably occur and will have to be managed. What is particularly important is that the management process itself should not be an amplifier of failure. That is, it is important that the signs of impending technological or commercial failure are picked up and dealt with early so that a localized failure is remedied before it becomes a multiple systemic failure (e.g., the management of the Collins Class or the JORN projects described in Chapter 5). In this respect, the political culture has to come to terms with the inevitable limitations of technology development and diffusion, risky commercial arrangements and sovereign risks inherent in import and export transactions. The risk mitigation processes will only work if potential failure is recognised and dealt with rather than regarded as a reputational threat and buried as 'bad news'. This sentiment is echoed in the following chapter.

## CHAPTER 8

### AUSTRALIA'S DEFENCE INDUSTRY AND RELATED POLICIES

Australia's current defence industry is the product of diverse influences. Since at least the Second World War, Australian defence policy makers have debated the role of Australian industry in supplying and supporting the Australian Defence Force and how best to ensure local industry was capable of playing that role. As an integral part of Australia's wider manufacturing and service industry base, defence industry has been intimately affected by developments at both macro and micro levels of the Australian economy. Defence industry policy has similarly been influenced by wider debates about the role of the Australian government in Australian economic development. Finally, and critically, Australia's defence industry is a legacy of past defence procurements which have embodied important shifts in defence governance.

Against this background, this chapter:

- defines and scopes Australian defence industry;
- summarises the enduring features of defence demand of industry;
- describes Australian defence industry currently does;
- analyses the most recent iteration of defence industry policy; and
- concludes by suggesting possible future trends in the development of Australian defence industry and related policies.

#### **Australian Defence Industry**

*What is Australian Defence Industry?*

For present purposes, the term 'defence industry' denotes those industries domiciled in Australia that are actually or potentially involved in supplying Australian Defence Force capability and which are influenced by Defence business policies or purchasing decisions. This definition *includes* selected defence-oriented elements of the manufacturing sector (including shipbuilding, aerospace, automotive, chemicals, electrical and electronic equipment, other fabricated metal products and machinery and equipment). The definition *excludes* those industries supplying goods or services which, while perhaps critical to ADF functionality (e.g., petroleum, oil and lubricants; civil roads, harbours and airports; commercial information technology), are not significantly affected by Defence policy or purchasing. The definition *includes*, in addition to selected elements of the technical and business services sector, service providers who now provide garrison support and other services under the Defence Commercial Support Program (see Chapter 5).

Finally, Defence – like the Australian Government generally – has long welcomed foreign investment in local defence industry. Accordingly, and to paraphrase the UK's

recent statement of defence industrial policy, the notion of the *Australian defence industry embraces all suppliers that create value, employment, technology or intellectual assets in Australia. This includes both Australian and foreign-owned companies* (Bach and Johnson, 2002; p. 4).

### *How Big Is Australian Defence Industry?*

ACIL Tasman, an Australian economic consulting firm, has attempted to estimate the size of Australian defence industry in preparing a profile of defence industry (Wylie, 2004; pp. 8-9). The following analysis draws heavily on the ACIL Tasman report.

Defence industry comprises a relatively stable 'core' of large, medium and small companies who devote all or part of their capacity to defence or defence-related business on a long term basis. This core is supplemented by a large number of mainly small and medium sized companies who enter or leave the defence market on a contract-by-contract basis. Estimating the size of such a fluid element of the Australian economy poses important methodological challenges. ACIL Tasman estimated that the Australian defence industry employed some 13,000 people and generated some A\$4.7 billion turnover in 2002-03. Limitations in the survey data mean that this estimate should be treated cautiously and is probably conservative.

The largest ten companies in the industry generated a defence-related turnover of over A\$3 billion. Most of these companies are prime contractors for the supply of defence capital equipment but service providers constitute a large and growing minority (see below).

Prime contractors play a key role in marshalling the resources of numerous sub-contractors (an estimated 1300 in the ANZAC ship project alone). Estimating the number of small and medium enterprises (SMEs) *permanently* involved in the defence industry requires some important assumptions. ACIL Tasman's very conservative estimate of the number of such SMEs is 200-250. State government officials have suggested that the true number is probably twice that.

Arguably, the more important point is that the size of the defence industry depends on the business in hand and how it is managed. The flexibility of sub-contractors in entering and leaving the Australian defence market helps the defence industry as whole adjust to inevitable shifts in defence expenditure among different defence capabilities; and between short term preparedness and long term force structure development.

### *What does Defence want from Australian defence industry?*

Since at least the 1970s, Australian governments have acknowledged that complete self-sufficiency in the supply and support of defence materiel was neither a realistic nor a desirable policy objective. As a well-regarded member of the Western strategic community and a close ally of the United States, Australia could – at least in principle - choose those goods and services it supplied itself and those it imported.

There are strong continuities in the choices Australia has made on this basis. According to the Australian government's *2007 Defence and Industry Policy Statement*, for example, "The ADF needs ready access to repair and maintenance services that, for practical reasons, can only be delivered by in-country providers. The ADF also needs in-country industry to adapt, modify and, where necessary, manufacture equipment that is suited to Australia's unique operating environment and military doctrine" (DoD, 2007; p.1).

This language echoes that used to describe Australian defence industrial policy thirty years earlier in the seminal 1976 Australian defence white paper (Killen, 1976; p. 51 paras 28-30). In the last ten years, however, and as the Australian Defence Force has focused on network enable operations, Australian strategic guidance has emphasised the following priorities for Australian defence industry capabilities:

- combat and systems software and support;
- data management and signal processing including for information gathering and surveillance;
- command, control and communication systems;
- systems integration;
- repair, maintenance and upgrades of major weapons and surveillance platforms; and
- provision of services to support peacetime and operational requirements of the ADF.

These priorities provide a benchmark for evaluating Australian defence industry's current capacity.

#### *What does the Australian Defence Industry do?*

Successive statements of Australian defence industry policy have reaffirmed that the Australian defence industry is an important element of Australian military capability. In the Australian defence lexicon, *Military capability* is the power to achieve a desired operational effect in a nominated operational environment (land, sea or air) within a specified period and to sustain that effect for a designated period. Military capability results from developing a force structure appropriately prepared for operations (DoD, 2006, pp. 4-7).

*Force structure* is a sub-set of military capability and comprises the personnel, equipment, facilities and military doctrine required to conduct military operations effectively. This section describes the choices between local and overseas sources made by Defence and the Australian government in supplying and supporting the equipment element of Australia's defence force structure as it evolves over the longer term.

*Preparedness*, the second component of military capability, is more flexible and dynamic in the shorter term. As Betts (1995) has explained, an existing force can only be

maintained at high levels of preparedness for a limited period and then at the expense of longer term force structure development. Hence the level of preparedness of the Australian Defence Force is a second important area of choice for Defence and government. This section also addresses a related area of choice between Australian Defence Force in-house arrangements for support and outsourcing that support to industry.

Preparedness is combination of 'readiness' and 'sustainability'. *Readiness* is the ability of a military force to undertake specified military operations within a designated time. Australian industry supports Australian defence force readiness by upgrading equipment in order to retain its military competitiveness. *Sustainability* is the ability of a military force to continue operations for a specified period and depends on the level of maintenance and the availability of consumables like ammunition and spare parts. Australian industry supports Australian defence force sustainability by repairing and maintaining its equipment and by supplying consumables like ammunition.

### **Supply and Support of Australian Defence Capability**

Against the above background, the following section describes the role of Australian defence industry in supply and support of:

- non-combat elements of military capability;
- Defence information capability;
- naval ships, boats and submarines;
- Army land-based manoeuvre;
- Defence munitions; and
- military aviation.

The following analysis draws on commercial data about Australia's top forty defence contractors gathered by Australian Defence Magazine in 2005 (ADM 2006, pp. 15-28).

#### *Provision of non-combat support*

Defence contracts out a broad range of non-combat related services in order to release scarce and expensively trained military personnel for concentration on core combat and combat-related tasks. The process began with the Commercial Support Plan in the mid-1980s, followed by the Defence Efficiency Review in 1997 (see Chapter 5).

This form of contracting out constitutes a major innovation by Defence in response to enduring financial constraints and skill shortages (see below). By contracting out non-combat services, Defence has shifted the balance of defence industry activities away from manufacturing towards service provision, thereby encouraging established defence suppliers to change their business portfolios and new entrants to defence industry.

ADI Limited (turnover: A\$656 million; employees: 2513) undertakes a broad spectrum of defence business, including the manufacture of ammunition and explosives for the

Australian Defence Force. As a logical extension of munitions manufacture, ADI manages the storage, maintenance and distribution of the ADF's explosive ordnance. Similarly, BAE Systems (turnover: A\$525 million; employees: 2600) operates the ADF Basic Flying Training School as part of a diversified portfolio of defence manufacturing and service business.

The Spotless Group is Australia's seventh largest defence contractor (turnover: A\$328 million; defence business employees: 3000). It provides garrison support to military units throughout Australia and New Zealand. Serco Sodexo Defence Services Pty Ltd (turnover: A\$136 million; employees: 2300) also provides garrison support to units in the Northern Territory, North Queensland and the Sydney Region.

The Joint Logistic Command of the Defence Materiel Organisation is conducting an ambitious experiment in the commercial provision of logistic support through the following contracts:

- the Defence Integrated Distribution System (DIDS), awarded to Tenix Toll Defence Logistics (Tenix Toll) in December 2003; and
- Albury-Wodonga Military Area Project, awarded to Tenix Defence Land Division in December 1997 under the Commercial Support Program.

Tenix Toll is a joint venture between Tenix Defence Pty Ltd, Australia's second largest defence company (turnover: A\$650 million; employees: 2800), and Toll Holding (Australia's largest logistic and distribution company). Under the DIDS contract, Tenix Toll provides Defence's national warehousing and distribution services and maintains selected land materiel and electronic equipment. The DIDS contract is for ten years and is worth up to A\$920 million. Defence expects the DIDS to reduce costs otherwise incurred by A\$40 million and to enable reassignment of some 500 military personnel to higher priority activities, (Hill, 2003).

The Albury Wodonga Military Area (AWMA) Project complements the DIDS contract and also involves the provision of materiel maintenance, warehousing and domestic services for Defence customers in the Albury Wodonga area and nationwide. According to Tenix, the materiel maintenance element of the AWMA contract covers all equipment fleets managed by Joint Logistic Command (including armoured fighting vehicles, general service vehicles, engineer plant, artillery, small arms, guided weapons, electronic, radio and optical equipment and radioactive stores test equipment).

To deliver these services, Tenix uses Commonwealth-owned/Government Furnished Facilities, Government Furnished Equipment and Government-owned Information Technology provided free-in-aid under the AWMA Project. In return, Tenix provides these services at highly concessional labour rates – A\$25 per hour in the late 1990s (Auditor General, 2005; p. 17).

### *Supply and support of defence information capabilities*

In order to maintain a competitive military capability Australia relies heavily on effective use of information (CoA, 2000; pp. 77-97). Because information capabilities are so important in the competition for military advantage, they have driven innovation on both demand and supply sides of the defence market. As a result, Australian industry supplies and supports a broad spectrum of defence information capabilities ranging from strategic level systems-of-systems through operational level systems (mostly embedded in platforms) to business information systems that improve defence productivity.

The Jindalee Over-the-horizon radar (JORN) system provides a broad area surveillance capability linked to aircraft, ships and land platforms used to monitor Australia's northern maritime approaches. JORN illustrates Australian industry involvement in the system-of-systems end of the information capability spectrum (see Chapter 5).

While Australia's strategic level information capabilities are Government-owned, many are operated and supported commercially. For example, Boeing Australia Limited (turnover: A\$375 million; workforce: 3,400) supports Australian defence satellite communication stations in Darwin and Geraldton and Naval Communication Stations in Canberra, Darwin and North West Cape.

In the middle of the spectrum are those information capabilities embedded in military platforms. When linked to weapon systems, these embedded information capabilities largely determine the military competitiveness of the platforms that host them. Radars and other sensors and associated data handling and signal processing systems illustrate the operational level information capabilities in the middle of the spectrum.

In Australia, CEA Technologies (turnover: A\$28.3 million; employees: 215) has pioneered the application of active phased array technology in maritime surveillance and anti-ship missile defence. CEA Technologies has developed low power, light weight but scalable active phased array radar systems that can be adapted to varying performance/platform requirements. In 2005, the Australian government selected CEA's fixed face, active phased array radar and active phased array target illuminator for inclusion in the Anti-ship Missile Defence Upgrade of the ANZAC frigates. CEA is also the prime contractor for the Australia-United States Phased Array Radar (AUSPAR) program. Under AUSPAR the US and Australian Departments of Defence are collaborating in the development of CEA's existing CEAFAR technology to achieve higher power transmission capability without prejudicing CEAFAR's scaleability, light weight and low cost. This represents a substantial departure from the government-to-government arrangements that dominated, for example, collaboration in JORN.

Also in the middle of the information capability spectrum are those niche products developed to meet unique Australian requirements or where the Australian innovation system has pioneered a solution to a common problem. Such products include, for example, the laser airborne depth sounder and mine sweeping system developed by DSTO and licensed to Australian companies.

At the other end of the spectrum are logistic information systems and other defence business systems. It is the efficiency and effectiveness of these defence business systems that largely determine the productivity of the overall Defence organisation and of its constituent elements.

Defence is by far the largest buyer of non-military information and communication technology in the Australian government. Defence dominance of government ICT business has receded but, in 2004-05, Defence still accounted for 22% by value and 27% by number of Australian government ICT contracts.

Defence tends to follow commercial best practice at the business systems end of the information capability spectrum. This business is strategically and commercially significant: For example, Defence's spares inventory comprises some 1.6 million categories of stores, valued at some A\$1.9 billion (ANAO 2004, p. 5). Vigorous competition for this business enables Defence to benefit from commercially driven innovation in, for example, improving its management of financial and personnel data. As part of the Defence Supply System Redevelopment Project, for example, MINCOM adapted inventory management software developed for the mining industry and applied it to Defence logistic management. Defence and MINCOM encountered widely publicised problems in upgrading and standardising Defence's logistic information systems. The Auditor General, while recognising MINCOM's difficulty in solving certain technical problems, attributed most of the problems to Defence's failure to manage the project as a strategic procurement activity (ibid.; pp. 5-7).

Australian public and private resources were marshalled more successfully in meeting defence requirements for a device that allow users of secure computers to access insecure networks such as the Internet without compromising their own security. To meet this requirement, DSTO developed the Starlight suite of products which it licensed to Tenix in 1988. These products can be used in almost any networked computing environment where secure access to two different networks of different security classifications is required from the one workstation. The Australian Departments of Defence and of Foreign Affairs and Trade use some 5000 Starlight units. In order to transfer the Starlight technology to Tenix, DSTO staff worked closely with the company during the entire development process. The two parties set out to develop an industry capability rather than just a product. This enabled Tenix to establish an overall capability in information security rather than merely establish a capacity to supply and support a single product. DSTO and Tenix continue to collaborate in development of the next generation of Starlight technology.

The development of information capabilities will dominate Australian military innovation for the foreseeable future. Adapting to the needs of knowledge intensive military operations by the Australian Defence Force will pose a major challenge for the Australian defence industry in supplying and supporting such key Australian defence force information capability developments as:

- military satellite communications (estimated to cost A\$1,000-1,500m);
- ADF joint command support (estimated to cost A\$350-500m);
- Defence-wide area communications (estimated to cost A\$250-350m);
- land battlespace communication system (estimated to cost A\$850-1,100m); and
- modernisation of the maritime command system (estimated to cost A\$200-250m.).

### *Supply and support of Navy ships boats and submarines*

A fundamentally maritime strategy for defending Australia is a logical consequence of Australia's strategic geography, its relatively small population and its comparative advantage in a range of technologies. (CoA, 2000; p. 47). A credible Australian maritime strategy needs more than sufficient numbers of naval vessels suitably configured and equipped for operations in the Australian environment (force structure). Those vessels must also be ready to undertake operations after a given period of notice and be able to sustain operations for a given period of time (preparedness). To this end those vessels must be maintained on a routine basis, repaired if they are damaged, upgraded so as to remain militarily competitive and adapted to meet the requirements of specific missions.

Australian industry's current capacity to support the existing Navy's preparedness derives largely from choices made some 20 years ago. In 1987, the government awarded the A\$5 billion *Collins* Class submarine contract to the Australian Submarine Corporation (ASC), then a new entrant to the naval shipbuilding business operating a purpose built facility at Outer Harbour in South Australia. Subsequently, in 1989, the Government awarded the A\$7 billion ANZAC ship contract to what is now Tenix operating the newly privatised Williamstown Dockyard in Victoria. As Australia does not design naval combatants, obtaining access to the requisite overseas intellectual property was a critical feature of these commercial arrangements.

These decisions initiated a naval shipbuilding cycle that ended with the delivery of the last of ten ANZAC ships in 2006. While this cycle was dominated by the ANZAC ship and *Collins* Class submarine projects, it also included the construction of oceanographic ships by North Queensland Engineers and Agents; the construction of six Mine Hunter Coastal vessels by ADI; the conversion of HMA ships MANOURA and KANIMBLA by Forgacs; and the capability upgrade of Australia's guided missile frigates by ADI.

The subsequent naval shipbuilding cycle started, arguably, with the award of the contract for Armidale Class patrol boats to Defence Maritime Services Pty Ltd in 2004. This next cycle will be driven primarily by the construction of three air warfare destroyers (to cost between A\$4.5 billion and A\$6 billion) and, subject to decisions yet to be made, of two amphibious support ships (to cost between A\$1.5 billion and A\$ 2 billion).

In 2005, the government selected ASC (turnover: \$229.3 million; employees: 1020) to build the air warfare destroyers. These destroyers will provide a critical element in the ADF's layered joint air and missile defence capability (also see below).

In August 2005, the government announced the two candidate overseas designs for the amphibious support ships and foreshadowed an invitation to Australian shipbuilders to tender for their construction. The government reiterated its preference for building the ships in Australia, provided Australian industry demonstrates it can deliver the project at a competitive price.<sup>1</sup> Assuming that the government does in fact decide to build both air warfare destroyers and the amphibious support ships locally, this next cycle would still entail a lower level of expenditure compressed into a shorter time frame than the previous cycle. It would begin winding down with the delivery of the second amphibious support ship in 2013.

The *Collins* Class submarine and ANZAC ship programs demonstrate how local construction fosters local industry's capacity to repair and maintain naval ships (thereby helping them sustain operations for as long as necessary) and to modify and adapt naval ships (so that they remain militarily competitive and interoperable with friends and allies) (see also Chapter 5). In 2003, ASC signed a 25 year \$3.5 billion contract for the through life support of the *Collins* Class. ASC's capacity to support the *Collins* class derives from its access to Kockums' intellectual property about the design, from the detailed engineering knowledge about the platform and its systems accumulated by ASC in the course of constructing the submarines and from the tacit knowledge accumulated by the ASC workforce. ASC can now undertake full cycle dockings of the submarines at Outer Harbour in South Australia and Intermediate Dockings of the submarines at the Australian Marine Complex, Henderson, Western Australia. The latter facility is close to where the submarines are home-ported at HMAS STIRLING and enables both ASC and Navy to harvest 'learning by doing' and 'learning by using'. ASC's capacity did not come easily: ASC and its sub-contractors encountered widely publicized technical and engineering problems in constructing the submarines and developing its combat system (see Chapter 5).

Tenix and its main sub-contractors have also transitioned the expertise they accumulated during construction of the ANZAC ships to in-service support of those vessels. Routine in-service support (including *ad hoc* repair) crucial to the preparedness of the ANZAC ships is provided through contracts between the Commonwealth and Tenix (for hulls, hull machinery and ship systems) and SAAB Systems (turnover: A\$177 million; workforce: 300). The latter is responsible for ANZAC combat systems and weapon systems. The Department of Defence, Tenix Defence Systems and SAAB Systems signed the *ANZAC Ship Alliance* in 2001. The alliance is a significant innovation in Defence business practices. It aims to reduce the cost of transactions among Defence (responsible for formulating change requirements as a result of operational experience with the ANZACs), Tenix (responsible for platform in-service support, drawing on its knowledge

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<sup>1</sup> Spain's Navantir and France's Armaris are competing for the design and construction of Australia's amphibious support ships. These ships would displace between 22,000 tonnes (the Armaris design) and 27,000 tonnes (the Navantir design), be able to transport up to 1000 personnel and equipment, operate a mix of troop lift and armed reconnaissance helicopters, transport up to 150 vehicles, including the M1A1 Abrams tanks and armoured vehicles.

of the ANZAC ship supply chain) and SAAB (responsible for in-service support of the ANZAC combat system which it developed, integrated and set to work).

The contract for provision of Armidale Class patrol boats is an important experiment in the search for more efficient and effective ways to support Navy preparedness. In procuring Navy ships (and other materiel) Defence traditionally specifies in detail, for example, the number of vessels it requires, their length and other dimensions and the standards to which they are to be constructed. The acquisition strategy for the Armidale Class patrol boats departed from this traditional model in favour of a 'performance-based' model (see Chapter 7). This culminated in the award in December 2004 of a A\$553 million contract to Defence Maritime Services Pty Ltd for the design, construction and in-service support of 12 Armidale class patrol boats. The innovative Armidale Class business model changed the structure of Australia's naval shipbuilding industry by enabling Austal ships (turnover: A\$65 million; employees: 1100) to enter the Australian defence market. Austal's US subsidiary is also drawing on Austal's expertise in building large fast aluminium ferries to construct a prototype of the US Navy's littoral combat ship.

As already indicated the next naval shipbuilding cycle will be driven primarily by construction of three air warfare destroyers and two amphibious support ships. The air warfare destroyers are currently one of Australia's largest and most technically complex defence projects. The air warfare destroyer project entails two fundamental challenges for Australian industry:

- construction and fit out of the hulls based on one of two competing but already extant designs, with the design activity intended to mitigate cost and schedule risk in the construction phase; and
- integration of sub-systems into the air warfare destroyers' core Aegis combat system being acquired under Foreign Military Sales arrangements from the US Government – this risk is being managed by access to a broad range of sub-systems already integrated into different Aegis configurations by the United States, Japan, Spain, Norway and Korea.

In its submission to a recent enquiry by the Australian senate into the future of the Australian naval shipbuilding industry, Defence considered that, in an economy currently running at close to full capacity, local construction of both air warfare destroyers and amphibious support ships constituted a major challenge for the Australian maritime sector. Defence noted that:

“Any expansion necessary to meet the construction demand would need to occur in an environment where there is already high demand for skilled engineering resources across Australia. Defence industry is already having difficulty in maintaining its skilled workforce as the demands for skilled personnel necessary in the ship construction areas competes directly with the demands of the mining and construction sectors. Skilled

labour in Australia is only partially mobile and this further limits the ability of industry to adapt its workforce to the fluctuating demand.”<sup>2</sup>

The Australian government is scheduled to choose a design for the amphibious support ships and to decide whether to build that design in Australia or overseas in 2007.

#### *Supply and Support of Army Land-based Manoeuvre*

The role of Australian defence industry in the supply and support of Army land-based manoeuvre capability is illustrated by its involvement in the following projects:

- Leopard tank replacement project;
- supply and support of Australian light armoured vehicles;
- upgrade of M113 armoured personnel carriers; and
- acquisition of field vehicles and trailers and of infantry mobility vehicles.

*Defence is replacing the Leopard tanks with 59 ex-US Army Abrams tanks purchased from the US government under US Foreign Military Sales arrangements at an estimated total project cost of A\$534 million. Australian industry will not be involved in the supply of these tanks which are being refurbished in the United States. Australian industry involvement in support of the tanks could involve:*

- supplying and managing the inventory of spares, including warehousing support;
- provision of engineering support;
- configuration management;
- maintenance support;
- packaging, handling, storage and transport support;
- technical data and publications support; and
- provision of special tools and test equipment.

In order to provide interim through life support of the Abrams tanks, Defence concluded a Cooperative Logistic Supply and Support Agreement (CLSSA) with the US government, thereby taking advantage of much larger US Army purchases to obtain lower prices. Defence is seeking to finalise Australia-based support arrangements by 2008. Such arrangements are likely to involve a combination of support by:

- Army technical personnel in-house (constrained by the difficulties Army is experiencing in attracting and retaining technical personnel);
- contractors located either in Darwin close to where most of the tanks are based or in Adelaide at the other end of the Alice Springs-Darwin railway (entailing higher labour costs but reduced transport costs and greater tank availability); and

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<sup>2</sup> Defence Submission to the Senate Inquiry into naval shipbuilding, 2006, p. 24 para 4.3, at [http://www.apl.gov.au/Senate/comittee/fadt\\_cmtee/shipping/submission/sublist.htm](http://www.apl.gov.au/Senate/comittee/fadt_cmtee/shipping/submission/sublist.htm) [accessed 15 May 2007].

- Tenix under AWMA auspices (thereby taking advantage of lower labour costs but at the expense of much higher transport costs and much reduced tank availability).

*The Australian light armoured vehicle (ASLAV)* is an eight-wheeled amphibious vehicle designed for reconnaissance and surveillance operations. Army has operated ASLAV for some ten years, including deployments to East Timor and the Middle East. After evaluating the vehicles, Defence procured ASLAV from what is now General Dynamics Land Systems Australia (GDLS-A) in several phases, each of which has involved significant engineering changes to meet Australian requirements. These changes (for example, the addition of a commander's turret) were undertaken by GDLS-A at the company's facility in Pooraka, South Australia.

The current phase involves procurement of additional vehicles and the standardisation of the total fleet (of 257 vehicles) at an estimated total project cost of \$672 million. Agreed industry objectives for the project included:

- co-production of components for the parent company's production line;
- design, manufacture and fitment of role-specific equipment for Australian vehicles such as communication equipment, vehicle work stations, and surveillance equipment;
- establishment of maintenance capabilities for repair and adaptation of equipment;
- local sourcing of spares and other consumables; and
- development of technological and supply/support capabilities for longer term defence needs through technical publications, enhanced through life support and exports.

In 1999, Army deployed the vehicles at short notice to East Timor. The above through-life support capability resulted in a high level of vehicle availability (albeit with reliance on imports of high value spares). In 2004, Defence committed ASLAV to operations in Iraq. This required improved levels of protection and firepower which, by virtue of its involvement in earlier supply and support, Australian industry was able to complete at short notice. The upshot of all this is that the ASLAV deployed in Iraq today is the best-equipped and most capable light armoured vehicle in its class.<sup>3</sup>

*Army has operated M113 armoured personnel carriers* since the 1960s. In 2002 Defence accepted a proposal by Tenix Defence Land Division and awarded it the prime contract for upgrading 350 M113s at an estimated total project cost of \$672 million. The upgrade is intended to improve infantry protection, firepower, and mobility. It involves replacing most of the vehicle, retaining only the hull, hatches, rear door and communication systems. In order to take advantage of overseas technological innovation, Tenix has teamed with FFG, a German company with extensive experience in upgrading German

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<sup>3</sup> The stabilised turreted 25 mm cannon and remote weapon station 12.7 mm machine gun system have day and night sights and integrated laser range finders. The ASLAV bar armour systems assist in the defeat of rockets, its ballistic steel armour is enhanced with the addition of spall liner both to reduce rocket effect and to improve protection against blast and bullet.

and Danish M113s. Nevertheless, the project encountered widely publicised difficulties that were analysed by the Auditor General in 2005. Resolution of these difficulties has delayed vehicle development and led to an unrecoverable delay of six months, with the last vehicle now likely to be delivered in 2011. Tenix Land Division is undertaking:

- design and production of demonstration vehicles and initial production vehicles;
- design and production of the one man turret and external fuel tank to be fitted to the upgraded vehicles;
- development and proof of tooling and preparation of production process instructions;
- development of integrated logistic support arrangements; and
- full scale production of the upgraded vehicles at its facilities in Bandiana (see earlier discussion of AWMA contract).

*Army's current field vehicle and trailer (FV&T) fleet* comprises some 7,700 vehicles (distributed among five vehicle types and 40 different variants classified into light, medium and heavy mobility categories). It also includes some 3100 trailers, 750 motorcycles and all terrain vehicles. Defence is replacing this fleet at an estimated project cost of A\$2.4 billion - A\$3.1 billion. While the project seeks to simplify and rationalise the composition of the FV&T fleet, the latter will still involve a complex inventory comprising six generic fleet ranges incorporating over 80 variants. As military trucks are a relatively mature technology whose production is characterised by large scale economies, Defence has decided that, because there is no strategic or operational justification for paying a premium for local production of trucks, it will import military-off-the-shelf vehicles.<sup>4</sup>

In a significant innovation in defence business practice, the Defence Materiel Organisation (DMO) has moved from contracting separately for the acquisition and in-service support of major platforms and systems. The DMO now requires the Prime Contractor not only to supply major platforms and systems but also to provide their in-service support. As a result, overseas truck suppliers competing for the LAND 121 contract are teaming with local companies who would provide in-country support. That support will in turn be provided by a combination of in-house and commercial arrangements. Army seeks to retain in-house unit level, or first line maintenance (that is work requiring up to ten hours for completion and undertaken by deployed units on continuous operations). It will also seek to maintain significant capacity in-house for field maintenance and repair but will rely on contractors in the rear support area to undertake repairs requiring 100 hours or more.

In addition to procuring unprotected field vehicles, Army is also procuring, at an estimated project cost of A\$361 million, *infantry mobility vehicles* that provide better personnel protection during land operations but greater range and mobility than the armoured vehicles already in Army's inventory. ADI/Thales Limited won the Defence

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<sup>4</sup> In this Defence is no different to Australian civil truck operators who imported 99% of the 284,000 light, medium and heavy trucks sold on the Australian domestic truck market in 2002.

competition for this requirement with its Bushmaster infantry mobility vehicle. Bushmaster development and production entailed substantial cost overruns and delays but, according to Defence, yielded a vehicle providing levels of protection against mines, mortar splinters and small arms fire unmatched by any comparable vehicle in operation world-wide.

Under the current contract, ADI/Thales is delivering 300 vehicles in six variants (troop, command, assault pioneer, mortar, direct fire weapon and ambulance). In July 2006 the government approved the rapid acquisition of 44 protected weapon stations to further enhance the level of protection provided by those vehicles currently deployed on operations. The fitting of the stations to deployed vehicles by ADI/Thales commenced in February 2007 and is planned to be complete by mid-2007. In December 2006, and after the vehicle performed well during deployment in the Middle East, the government approved the purchase of an additional 143 Bushmasters.

### *Supply and support of defence munitions*

The Australian Defence Force uses a combination of ballistic weapons and munitions; and precision and guided munitions. This section analyses Defence choice of munitions supply arrangements across this spectrum.

Production of ballistic weapons involves relatively mature technologies characterised by large economies of scale. ADI Limited is the only Australian producer of ballistic weapons. To this end ADI operates a mixed portfolio of government-owned and ex-government factories and a purpose built facility at Benalla. The production of munitions is managed under the Strategic Agreement for Munitions Supply (SAMS) between ADI and Defence. This agreement, signed by the Commonwealth and ADI in 1998, provides for the supply of munitions to the ADF until 2015 with options for further extension. The agreement is unique in Australian defence industry in requiring ADI to establish and maintain a strategic capability for munitions manufacture in Australia and the Commonwealth to guarantee ADI a return on that investment.

The facility producing propellant and high explosive (HE) for use in ADF munitions is not commercially viable and is therefore owned by the Commonwealth but leased to ADI. Defence pays ADI an annual capability payment to maintain its workforce, industrial competencies and systems to agreed levels. The facility takes two months to produce the ADF's annual requirement for HE and propellant. For the balance of the year, ADI markets the surplus output to other interests both nationally and internationally and shares the profits earned with the Commonwealth.

ADI designed its Benalla facility to produce selected natures of ammunition on a small scale commensurate with the ADF's requirements. The ADF will generally purchase and consume Benalla's total annual output of ordnance. The Benalla workforce generally works to a single 8 hour shift. Under this arrangement Benalla produces, for example, hand grenades, some 24 million rounds of 5.56mm rifle ammunition and 2 million rounds of 12.7mm machine gun ammunition. It also produces a mix of 105mm howitzer

ammunition, Navy 5 inch gun rounds and 81mm mortars totalling up to 50,000 rounds annually.

ADI's Bendigo facility specialises in heavy engineering for maritime and land vehicles manufacture, maintenance, repair, refurbishment and support. It recently signed a contract to supply High Mobility Engineering Vehicles to the US Army. It is currently upgrading the Otto Malara Naval gun and manufacturing the Commanders Weapon Station for the ASLAV Program. Another ADI's small arms factory at Lithgow has manufactured 90,000 5.56mm Steyr AUG Assault Rifles for the ADF, 8,000 Minimi Light support Weapons, 50 calibre Quick Change Barrel Machine Guns. It is currently manufacturing the Aerodynamic Control Fin for the Evolved Sea Sparrow Missile, .22 calibre Steyr AUG training rifles for the ADF, Phalanx penetrator assembly and handcuffs.

Conventional projectiles can also be improved by the addition of a GPS guidance capability and aerodynamic surfaces for guidance. Such enhanced projectiles are then programmed with a grid reference for the target and after firing deploy aerodynamic surfaces which guide the projectile to the reference. An example of such enhancement is the conversion by Hawker de Havilland (HdH) of a conventional MK 82 iron bomb into an air launched stand-off weapon – the Joint Direct Attack Munition Extended Range (JDAM-ER). HdH, a subsidiary of Boeing Holdings Australia, has drawn on prior DSTO development of a strap-on wing kit to enable the MK 82 bomb to glide unaided from point of release to its target. HdH has added a cheap, reliable GPS-based inertial guidance system linked to removable tail fins for directional control and the resulting system has more than three times the range of a baseline Joint Direct Attack Munition. The JDAM-ER system was tested successfully in August 2006.

Guided munitions constitute a fourth stage of improvement. This category of terminally guided missiles includes the Evolved Sea Sparrow missile (ESSM) with which Australia is upgrading the ANZAC ships' defence against anti-ship missiles. Australia, Canada, Denmark, Greece, The Netherlands, Norway, Spain Turkey and the United States are collaborating in order to share the cost and risk inherent in ESSM development and production. BAE Systems Australia and other Australian companies are contributing to development of, for example, the missile's guidance section, thrust vector controller, and certain control surfaces to be incorporated in all ESSM produced.

Another munition 'enhancement' involves missiles that self-sense potential targets and discriminate among them. The efficacy of these missiles is increasingly dependent on the technology required to integrate and interpret data from a variety of sensors (i.e., 'sensor fusion'). The development of precision guided weapons and of 'smart' ballistic munitions is increasingly blurring the distinction between munitions and wider defence information capabilities. The software which determines guided missile capability requires upgrading in response to the development and deployment of countermeasures or to exploit improved target detection, tracking, discrimination, and aim point selection. Such software must be modified for Australian circumstances and when the missiles are integrated into new platforms.

Missile software development and management is a skill-intensive and knowledge-intensive activity. Australian industry has to date played little part in supply and support of the ADF's precision and guided weapons inventory. In pursuing the advantages of precision and guided weapons, Australia's choices are constrained by the cost and high technical risk involved.

Australia imports its high capability/high cost precision and guided munitions like Harpoon anti-ship missiles. The United States will only release to Australia on a government-to-government basis the software required to manage the Harpoon. Defence therefore manages the Harpoon and similar weapons via DSTO and the Joint Ammunition Logistic Organisation and returns the weapons to the Original Equipment Manufacturer for deeper maintenance - a process which can take up to 18 months.

#### *Supply and support of military aviation*

Defence is likely to spend A\$29 billion on supply and support of military aviation between 2003 and 2014. Some 40-50% of this projected expenditure will be devoted to further development of Australia's military aviation force structure by acquisition of, for example, airborne early warning and control aircraft and, later in the decade, of joint strike fighters to replace the F/A-18 Hornets. Australia will import all of these aircraft, with about 25% of the acquisition expenditure incurred in Australia.

About 20-30% of projected expenditure on military aviation over the next decade will be devoted to maintaining the readiness of the existing military aviation force structure. This will entail major upgrades of, for example, F/A-18 Hornet fighter aircraft, C-130 H transport aircraft, Orion P3 long range maritime patrol aircraft and Sea Hawk and Black Hawk helicopters. Defence has contracted the Original Equipment Manufacturers (OEMs) to upgrade Australian Defence Force aircraft because they control the requisite intellectual property. As a result, only about 10% of Defence expenditure on the upgrade of military aircraft is undertaken in Australian industry.

Provision of the Through-Life Support (TLS), to enable the existing force to sustain operations, accounts for the remaining 30% of projected expenditure of A\$29 billion. Some 65% of Defence's expenditure on TLS of military aircraft will be incurred in Australia. Australian industry has had mixed success in the provision of TLS of Australian military aircraft. This mixed record reflects important shifts in the way Defence has managed TLS of military aircraft. This shift can be traced through the F/A-18, Hawk lead in fighter, armed reconnaissance helicopter and joint strike fighter programs.

Australia announced its selection of the F/A-18 Hornet aircraft to replace the RAAF's Mirage aircraft in October 1981. Procurement of the F/A-18 was completed in May 1990. The F/A-18 project entailed extensive Australian industry involvement, primarily in order to "provide in industry the capability to undertake required engineering, maintenance and spares provision support for the aircraft, its systems, equipment and

support facilities, during the service life of the aircraft.” (F/A-18 Industry Program Review, 1994; p. 36). In the event, the RAAF supported the F/A-18 largely in house and made little use of the capacity established in industry (ibid.; pp. 38-39).

Defence subsequently changed its aircraft procurement business model. In the case of the Hawk lead-in fighter, for example, BAE Systems was contracted not only to supply 33 Hawk aircraft but also to provide their in-service support. To this end, BAE Systems established the facilities and recruited and trained the workforce required to assemble the aircraft at Williamtown, where the aircraft are based. After completing delivery of the 33 aircraft, BAE Systems then converted the facilities and workforce over to TLS of the aircraft. Similarly, Defence awarded Australian Aerospace Ltd a contract for supply, assembly, test and in-service support of Army’s 22 armed reconnaissance helicopters.

This approach to fostering in-country TLS capacity has important limitations. According to a recent audit of the Wedgetail Airborne Early Warning and Control project, denial of US government export licenses has precluded Australian industry from undertaking, for example:

- design and development of Wedgetail sensors, mission systems, communication systems, electronic warfare systems, electronic support systems and tactical intelligence sub-systems;
- the range of system integration tasks required for Australian support of Wedgetail systems and associated test and support systems; and
- full Wedgetail TLS, including software and systems integration, test and evaluation and operational and logistic support. (ANAO, 2004; p. 28).

Arrangements for Australian participation in the Lockheed Martin F-35 Joint Strike Fighter (JSF) program will influence the development of Australia’s defence aerospace industry capacity. Lockheed Martin initiated the JSF system development and demonstration (SDD) phase with a view to developing not only the aircraft and its systems but also the associated supply chains. Australia is participating in the SDD phase, along with the United States, United Kingdom, Canada, Denmark, Norway, Italy, Netherlands and Turkey.

Arrangements for Australian industry participation in the JSF program constitute a sharp departure from the pattern established in previous military aircraft acquisitions. The JSF program has no ‘guaranteed work-share’ arrangements and companies will compete for participation in the JSF’s international supply chain on a “best value” basis, according to their capabilities and competitive advantages. This approach has important limitations. The record suggests that Australia - like other non-US participants in the JSF program - will have difficulty securing access to the full range of software required to maintain the aircraft in Australia.

Subject to how Defence manages the business involved, however, Defence procurement of unmanned aerial vehicles (UAV) may offer greater scope for Australian industry participation in supply and support of the platforms and systems involved. At the

strategic end of the capability spectrum, Defence is exploring the potential of the Global Hawke long endurance unmanned aerial vehicle. At the tactical end of the spectrum, the Defence Capability Plan 2006-16 provides for the acquisition at an estimated cost of A\$200-250 million of an upgraded tactical UAV system capable of providing airborne surveillance, reconnaissance, and target acquisition to support land operations.

### **Supplying and Supporting Current Defence Priorities**

The above overview of Australian defence industry activity was preceded by a summary of current Defence industry capability priorities. The overview suggests that Australian defence and related industries have:

- contributed significantly to defence productivity by supply and support of a broad range of defence business systems;
- contributed to overall ADF capability through supply and support of operational level C4ISR systems;
- through prior involvement in the construction of Navy ships and submarines and through such innovations as laser airborne depth sounders, contributed significantly to Navy preparedness;
- through extensive involvement in supply and support of the vehicles underpinning Army land-based manoeuvre, contributed significantly to Army preparedness;
- enhanced Air Force preparedness through involvement in repair, maintenance and, to a lesser extent, adaptation of imported military aircraft; and
- supported the preparedness of all three services through supply and support of a comprehensive range of ballistic munitions and through limited support of mainly imported precision weapons.

At issue is local defence industry's capacity to help sustain network enabled operations by the ADF through supply and support of defence information capability at the systems-of-systems level. Also, at issue is Australian industry's capacity to supply and support software intensive systems embedded in platforms like the Joint Strike Fighter and air warfare destroyers.

The next section addresses Australian government policy initiatives aimed at addressing these issues.

### **Supplying and Supporting Future Defence priorities**

An effective defence industry policy has long eluded Australian defence policy makers. Including the now discarded defence industry sector plans developed 2002-2004, the Australian government's latest, at the time of writing, *Defence and Industry Policy Statement 2007* is the tenth attempt to promulgate an effective policy in the last two decades. According to the 2007 statement, "The Government's primary goal for defence industry policy is to ensure *the cost effective delivery of equipment and support of the ADF in line with Australia's strategic circumstances*" (DoD, 2007; pp. 3 and 17 -

emphasis in the original). This policy goal has much in common with previous iterations of the policy.

There are three key tests of the efficacy of the new policy:

- its success in prompting refinement and amplification of existing statements of priority industry capabilities;
- the efficacy of the strategies proposed to such refined goals; and
- the resources allocated to the task.

To implement the 2007 Defence Industry Policy Statement, the Australian Government envisages adopting a strategic approach to equipping and sustaining the ADF; maintaining priority local industry capabilities; securing value for money through best practice procurement; creating opportunities for Australian firms and encouraging small and medium enterprises; supporting the development of skills in defence industry and facilitating defence exports; driving innovation in defence technology and enabling Defence and industry to work together better (ibid.; p. 3). Of these nine strategies for implementing Australia's 2007 Defence industry policy the following warrant closer examination in the present context:

- a strategic approach to equipping and sustaining the ADF;
- maintaining priority local industry capabilities;
- securing value for money through best practice procurement;
- driving innovation in defence technology; and
- those strategies relating to provision of the resources required to implement the policy.

#### *A strategic approach to defence industry development*

The proposed strategic approach to equipping and sustaining the ADF is the key to the 2007 defence industry policy's efforts to refine and amplify established priorities for defence industry capabilities. The approach turns on development of a new *Defence Industry Self-reliance Plan* (ibid.; p.10) by:

- identifying those industry capabilities that confer an essential national security and strategic advantage by being resident in-country;
- developing, in consultation with industry, a strategy to foster priority industry capabilities now and into the future; and
- promulgating the priority local industry capabilities so identified in the public version of the Defence Capability Plan (see Chapters 4 and 5).

In order to identify those industry capabilities that confer an essential national security and strategic advantage by being resident in-country the new Defence Industry Self Reliance Plan will be embedded in the defence strategic planning process and derived from the following defence strategic planning outputs:

- with respect to supply and support of the *future* force, the comprehensive guidance Defence generates for capability managers regarding priorities for and balance between particular goals for future development of military capabilities having regard to available resources (in Australian parlance, the *Defence Capability Strategy*, one output of which is the cyclical Defence Capability Plan for procurement of major capital equipment); and
- with respect to supply and support of the *present* force, guidance on readiness of the Australian defence force in-being for operations and on its ability to sustain those operations for a specified period as promulgated in the Chief of Defence Force Preparedness Directive (see also Chapters 4 and 5).

This methodology for identifying defence industry priorities takes advantage of the very significant maturation of Australian processes for defence capability development and preparedness management that has occurred in the last decade or so. The new Defence Industry Self-reliance plan will therefore be classified – an impediment to access by industry to the Plan. Defence proposes to manage this by embedding a declassified version of the plan in the public version of the Defence Capability Plan for acquisition of new major capital equipment. It is premature to judge the efficacy of this strategy but, *prima facie*, it represents a substantial – and highly prospective - departure from previous efforts to develop defence industry policy at the unclassified level.

#### *Maintaining priority local industry capabilities*

Defence plans to monitor the health and sustainability of the priority defence industry capabilities so identified and, where necessary, to take action to maintain them. Such action is likely to hinge on use of the defence procurement by, for example, rescheduling demand, bundling projects and using restricted or sole source tendering (*ibid.*; p12-13).

These are familiar prescriptions for remedying defence industry ills: they were mentioned in, for example, the Defence Efficiency Review (see Chapter 5) and figured prominently in the defence industry strategic sector plans. Yet, Defence seems to have made limited use of such remedies to date. This is probably because rescheduling demand and bundling projects is not cost free: Such action can directly affect the ten year program of new major capital equipment promulgated in the rolling Defence Capability Plan and the *Defence Management and Finance Plan* which underpins the Australian Defence Organisation's budgeting system (see Chapter 6).

Similarly, restricted or sole source tendering demand high levels of contracting and project management skills if the resulting monopolies are to continue generating value for money. That said, sole sourcing can account for as much as 50% of Australian Defence contract outlays and, as noted earlier) Defence and industry are learning to manage the

requisite partnering through such arrangements as the ANZAC Ship Alliance between the Commonwealth and Tenix (shipbuilder) and SAAB (combat system supplier).<sup>5</sup>

#### *Best practice procurement*

The 2007 Defence and Industry Policy Statement marks a potentially important advance in committing Defence to adopt a more commercial approach to risk management, noting that

“The efficient management of complex programs is impeded by a culture that shows little tolerance for risk. For this reason, a better public understanding of defence projects and the risks they entail is needed. In the future Defence will clearly set out the level of risk in projects in routine reporting and explain why this risk is necessary” (ibid.).

Australia’s Parliament is a key audience for such explanations. However, Australia’s adversarial political culture is inimical to the kind of learning and experimentation required to realise the potentially high returns that justify embarking on complex, high risk development projects in the public sector. In these circumstances, routine Defence project reporting must not only explain the level of risk involved and why those risks are necessary but also convince Ministers and Parliament about the value Australia stands to gain if the experiment succeeds (see also Chapter 7). The onus is on Defence to foster the Australian public sector’s appetite for risk and, hence, its capacity and willingness to innovate, always recognising that:

“The handling of risk is at heart about judgement. Judgement in the context of government decision making can, and should, be supported by formal analytical tools which themselves need enhancing. But these cannot substitute for the act of judgement itself.”<sup>6</sup>

#### *Innovation in defence technology*

The 2007 Defence and Industry Policy Statement announced several initiatives to foster innovation in defence technology. Two particularly significant initiatives are:

- at the strategic planning end of the spectrum, defence experimentation aimed at fostering a shared understanding of the requirements, merits and likely outcomes of competing solutions to operational problems with the objective of improving concept and capability development; and
- at the application end of the spectrum, the Rapid Prototyping, Development and Evaluation (RPDE) program aimed at truncating the traditional process for procurement of capabilities for network enabled operations through defence-industry collaboration.

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<sup>5</sup> Nelson, Brendan Dr the Hon, Defence Industry Policy Review: 2006 Discussion Paper, June 2006; p. 23, para 6.8.

<sup>6</sup> Strategy Unit, UK Cabinet Office: *Risk: Improving government’s ability to handle risk and uncertainty*, November 2002; p. 6 at [www.strategy.gov.uk](http://www.strategy.gov.uk).

The introduction of formalised Defence experimentation resulted from the Government's acceptance of the recommendation by the 1997 Defence Efficiency Review (DER) that Defence improve the capability development process through more advanced modelling and simulation. The DER envisaged this ranging from basic technical models of, say, radar or sonar signatures over the full range of possible operating conditions and weapons effects feeding into the performance of complete weapons systems and, in turn, into complete battle field simulations (McIntosh et al, op. cit.; pp. 23 and E-4).

Defence experimentation uses wargaming and simulation, lessons learned from operations, studies from operations research and history and military judgement to help link strategic guidance to capability development. When applied to defence industry policy, defence experimentation tools and techniques provide a structured and increasingly mature vehicle for assessing the consequences of a foreign supplier limiting or withholding support in a contingency for, say, political reasons.

At the other end of the spectrum the Rapid Prototyping Development and Evaluation (RPDE) is a particularly interesting and timely organisational experiment aimed at enhancing ADF capacity to conduct network centric operations. To this end the organisation is designed to enable Defence and Industry to work collaboratively on Defence-directed problems. The intention is to generate sufficient information to enable Defence to make expedited decisions about enhancing ADF network centric warfare capacity.<sup>7</sup> RPDE does this by scoping and bounding problems identified by ADF stakeholders. It then develops options for solving the problems, evaluates a selection of the solution options using a rigorous analytical and/or experimentation approach leading to evidence-based recommendations for selecting one of those options for solving the problem. The final RPDE output is a plan showing how the recommended solution would change ADF warfighting. If Defence adopts the recommended solution, RPDE supports ADF implementation.

The RPDE experiment is represents a potentially radical departure from the conventional defence business model for technological innovation. Participants work in a paid collaborative environment based on Defence funding of some A\$60 million over 2007-2010 and involving secondees (including the RPDE General Manager) from over 80 companies and academic bodies covering the full spectrum of small/medium enterprises, prime contractors, and service providers in equal proportions.

#### *Providing the requisite resources*

The 2007 Defence and Industry Policy Statement addressed the means available for implementing defence industry policy under the following headings:

- creating opportunities for Australian firms;
- encouraging small and medium enterprises; and
- supporting the development of skills in defence industry.

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<sup>7</sup> See <http://www.rpde.org.au/defence> for more details.

Of these, initiatives for creating opportunities for Australian firms and fostering the defence industry skill base are the most relevant for present purposes. The Statement reaffirmed the conventional wisdom that “Defence’s procurement program is the only concrete tool available to shape Australia’s defence industrial base” (op. cit.; p. 12). As a means of implementing defence industry policy, Defence procurement is not only concrete but also substantial: in 2006-07, for example, the Defence Materiel Organisation is scheduled to spend A\$5,017.6 million on the procurement of capital equipment and A\$3,652 million on the sustainment of existing capability (PBS, 2007; p. 250 – also see Chapters 6 and 7). Looking ahead, the government is presently scheduled to spend a total of \$51.3 billion on about 100 unapproved capital equipment projects over the period 2006-2016 (Thomson, 2006, Table 8; p.32). At issue is the means by which this current and future expenditure is harnessed to develop defence industry capability.

In order to create opportunities for Australian firms, the 2007 Defence and Industry Policy Statement requires bidders for large defence contracts to show how they have explored the potential for cost-effective Australian industry participation and to propose an Australian Industry Capability Plan. The latter is to identify any additional costs generated by the Plan and a mechanism for independent audit of compliance with that plan.

The *Australian Industry Capability Plan* is a variation of the Australian Industry Involvement (AII) Program created in 1986 to replace the Australian Industry Participation (AIP) Program. The AII program was described as the “key tool for maximising the involvement of Australian industry in Defence acquisition projects and for ensuring that in-country capacity exists to provide through-life support for ADF capabilities” (Ryan, 2001; p. 1-1). In 2003, the Auditor General reviewed the AII Program and concluded that “In the absence of quantitative and/or qualitative performance measures for the AII Program as a whole, it was not practicable for Defence to demonstrate whether, over the many years of its existence, the AII program has been making real progress, or is losing ground, in seeking to meet its objectives” (AG, 2003; p.14).

The 2007 Statement does not explain how the Australian Industry Capability Plan will be an improvement over the AII program in terms of meeting defence objectives. Nor does the Statement explain how, if at all, Defence will take into account competing bidders’ Australian Industry Capability Plans in ranking tenders for supply and support of Defence capital equipment. This analysis suggests that Defence has some distance to go in establishing practical links between refined priority defence industry capabilities and defence procurement of capital equipment. Equally important, there is no indication of how Defence proposes to explain to Ministers or to Parliament the performance it expects of industry involved in supply and support of capital equipment and how it will measure that performance.

At the time of writing, the Australian economy has grown continuously for 15 years and the unemployment rate has fallen to a 30-year low. This has created a shortage of

professional, technical and trade skills in Australian defence industry. This shortage could prejudice the successful delivery and sustainment of ADF capabilities, either because competition for skills is so strong that defence firms risk being capacity limited or because labour costs are increasing faster than elsewhere in the economy, resulting in higher costs being passed onto Defence.

The Defence and Industry Policy Statement points out that the rising defence demand foreshadowed in the Defence Capability Plan for procurement of major capital equipment will be exacerbate these risks. According to the Statement, procurement of major capital equipment alone is planned to increase by almost 30% over the next decade. In this period Defence will spend an estimated A\$50 billion on ADF materiel, of which new acquisitions will account for some A\$20 billion and sustainment of existing equipment will absorb some A\$30 billion.

This spending will combine with continuing permanent departures from Defence industry to generate demand for some 12,000 new defence industry employees over the next decade. Of these new personnel, about 25% will need to be engineering or tertiary qualified project managers and about 75% are required in trades. The Australian government has initiated a series of training and other initiatives to alleviate the national skills shortage. In 2005, Defence decided to allocate 0.5% of planned spending on major defence capital equipment projects (equivalent to some A\$215 million over ten years) to help defence suppliers up-skill their workforces - the *Skilling Australia's Defence Industry* (SADI) program. SADI funding is provided for the additional activities or initiatives that companies propose, over and above those they already carry out in the normal course of business. It is structured as a reimbursement program where companies commit to a program of skilling activities with outcomes and costs agreed in advance. SADI Agreements include:

- individual company agreements that are tailored to suit the nature and size of both company and the initiatives involved; and
- one combined agreement whereby a group of companies is represented by one organisation or a third party like an education provider.

Defence has also recognised that in many areas Defence and industry are competing for a limited pool of available skilled personnel and prospective trainees. Defence and defence industry have therefore formed a training task force to explore the possibility of pooled and joint apprenticeship and graduate training where ADF and industry skill requirements overlap.

### **Concluding Comments**

Elsewhere in the Australian Section of this publication we have explained important improvements in defence internal and external governance arrangements. These improvements are aimed at improving Defence organisational performance by, among other things:

- clarifying the accountability of individual officials for discharging responsibilities assigned to them; and
- setting clear targets for the organisation and monitoring the organisation's progress in achieving them.

Industry performance underpins the performance agreements between, for example, the DMO's Chief Executive and the Minister and the purchaser-provider arrangements between the DMO and, respectively, the Capability planners and the Service Chiefs. In future iterations of the policy, we are therefore likely to see more explicit linkage to defence *internal* accountability arrangements (see Chapter 7).

Industry performance is nearly always critical to Defence's ability to achieve the performance targets for military capability outputs specified in the annual defence portfolio budget statements. Defence *external* accountability arrangements are therefore likely to feature more explicit discussion of industry's contribution to achievement of force structure and preparedness targets in the annual defence budget documentation and of industry performance – at least in aggregate terms - in the associated defence annual reports to Parliament. The 2007 Defence and Industry Policy Statement is the tenth iteration of defence industry policy since the 1980s and while it represents good progress, there is more to be done.

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