



DEPARTMENT OF DEFENCE



# THE DEFENCE OF AUSTRALIA



1987

# THE DEFENCE OF AUSTRALIA 1987

Presented to Parliament by the Minister for Defence  
the Honourable Kim C. Beazley, M.P.

March 1987

© Commonwealth of Australia 1987

Printed in Australia by C. J. THOMPSON, Commonwealth Government Printer, Canberra

## CONTENTS

Preface	vii
<b>Chapter one—Australia's defence policy</b>	1
1.5 Self-reliance	1
1.13 Alliances and regional commitments	3
1.13 Australia and the United States	3
1.27 Australia and New Zealand	5
1.34 Australia and the region	6
1.43 Australia's defence capacity and influence	8
<b>Chapter two—Australia's strategic environment and defence interests</b>	10
2.3 Australia and the global balance	10
2.14 Australia and the region	12
2.20 South-East Asia	13
2.41 South-West Pacific	16
2.53 Papua New Guinea	19
2.56 Antarctica	19
2.58 The national strategic setting	19
2.63 Australia's physical environment	20
2.69 National defence interests	22
<b>Chapter three—Priorities for force development</b>	23
3.3 Possible forms of military pressure against Australia	23
3.5 Low level conflict	24
3.9 Escalated low level conflict	24
3.15 More substantial conflict	25
3.26 Threats to Australian trade	27
3.33 Warning and defence preparation	29
3.44 Australia's defence strategy	31
3.51 Requirements for force development	32
<b>Chapter four—The Australian Defence Force and its development</b>	34
4.2 Intelligence and Surveillance	34
4.2 Intelligence	34
4.6 Broad area surveillance	34
4.13 Air surveillance	36
4.17 Maritime surveillance	36
4.20 Anti-submarine surveillance and anti-submarine warfare	38
4.25 Ground surveillance and reconnaissance	38
4.27 Electronic warfare	39
4.30 Mapping, charting, and infrastructure knowledge	40
4.35 Nuclear, biological, and chemical warfare (NBCD)	40
4.37 Strike and interdiction	41
4.38 Strike aircraft	41
4.41 Submarines	41
4.45 Maritime Warfare	43
4.46 Surface combatant force	43



4.50 Submarine force	44
4.52 Maritime air operations	45
4.55 Mine countermeasures force	45
4.59 Amphibious forces	46
4.60 Afloat support	46
4.63 Naval infrastructure	47
4.68 Air Warfare	49
4.69 Air defence and the tactical fighter force	49
4.75 Land based surface-to-air missiles	50
4.78 Strategic transport	51
4.79 Northern airfield infrastructure	51
4.82 Land Warfare	53
4.85 1 Division	53
4.91 Protection of vital assets	55
4.92 Regional Force Surveillance Units	55
4.93 Northern basing	56
4.97 Offensive air support	57
4.98 Battlefield helicopters	57
4.100 Army aviation	57
4.101 M113 light armoured fighting vehicles	59
4.102 Mechanisation	59
4.103 Tanks	59
4.104 Artillery	59
4.106 Rationalisation of the Reserve structure	59
4.108 Tactical air transport	60
4.109 Command, control and communications	60
4.116 Summary—The ADF and its development	62
Command, control and communications	62
Navy	62
Army	63
Air Force	64
<b>Chapter five—Supporting the Defence Force—infrastructure, logistics, science and technology</b>	65
5.2 Infrastructure and logistics	65
5.3 Infrastructure planning	65
5.9 Defence infrastructure and the community	67
5.13 Logistics	67
5.19 External logistic support	68
5.22 Science and technology	69
5.24 Technology and the Defence Force	69
5.32 The Defence Science and Technology Organisation	70
5.36 The technology base	71
5.38 DSTO program	71
5.42 Technology transfer to industry	73
5.44 International collaboration	73
5.46 Government review of DSTO	73
5.50 Self-reliance and support of the ADF	74
<b>Chapter six—Defence and Australian industry</b>	75
6.2 Industry and defence	75
6.8 Industry involvement and levels of conflict	76

6.9 Low level conflict	76
6.11 Higher level conflict	76
6.15 Reviews	77
6.16 Priorities for local sourcing	77
6.23 Defence assistance to industry	78
6.26 Defence purchasing	79
6.34 Australian industry involvement	80
6.39 Exports	81
6.42 International collaboration	81
6.45 Defence industry structure policies	82
6.46 Competition for defence contracts	82
6.48 Ownership of machinery and facilities	82
6.50 Australian ownership control and influence	82
6.52 Government factories and dockyards	83
6.58 Industry and some major procurements	84
6.60 Indigenous design and development projects	84
6.67 Local development and production programs	86
6.76 Local production of overseas designs	87
6.85 Defence work in Australian industry	89
<b>Chapter seven—Defence personnel</b>	90
7.3 The regular component of the ADF	91
7.5 Women in the ADF	91
7.8 Reserve Forces	92
7.10 Civilians in defence	93
7.12 Pressures on the defence personnel resource	93
7.14 A personnel resource strategy	94
7.17 Retention	94
7.21 Conditions of service	96
7.21 Defence Force Remuneration Tribunal	96
7.24 Defence Force Advocate	96
7.25 Superannuation and Defence Force Retirement and Death Benefits	97
7.27 Defence housing	97
7.29 Supporting service families	97
<b>Chapter eight—Resources and programming</b>	99
8.4 Wider economic consideration in defence funding	99
8.8 Defence spending overseas	102
8.12 The Five Year Defence Program	102
8.15 Recent trends in Defence expenditure	103
8.19 The years ahead	105
8.20 Capital equipment	105
8.22 Capital facilities	105
8.24 Personnel	105
8.27 Operating costs	109
<b>Chapter nine—Conclusions</b>	110



## Preface

The Australian people expect that Australia shall be able to defend itself. The Australian Government accepts its duty to provide Australia with defence forces able to meet that expectation. This Paper sets the course for a decade of development towards self-reliance in the defence and security of Australia.

For Australia, defence self-reliance must be set firmly within the framework of our alliances and regional associations. The support they give us makes self-reliance achievable. They, in turn, will draw added support from a self-reliant Australia, which will be better able to discharge its responsibilities in the vast strategic region to which we belong.

Beyond our strategic region—itself an area covering one-quarter of the Earth's surface—defence self-reliance is based firmly upon Australia's place as a respected and self-respecting member of the Western community.

Self-reliance as a goal is based on a realistic assessment of our strengths, as well as on a rigorous appraisal of our weaknesses and deficiencies. It draws on the skilful mobilisation of Australia's resources—physical, financial and human.

The Australian Government's policy of self-reliance in defence requires both a coherent defence strategy and an enhanced defence capacity. This Paper defines the strategy and details the program to increase our capacity.

This program is the largest defence capital investment in Australia's peacetime history. Over 33 per cent of the defence budget is now devoted to long term investment—a major increase since the early 1980s. This share will continue to be high throughout the decade.

The first aim of defence self-reliance is to give Australia the military capability to prevent an aggressor attacking us successfully in our sea and air approaches, gaining a foothold on any part of our territory, or extracting concessions from Australia through the use or threat of military force.

This wider concept of self-reliance rejects the narrow concept of 'continental' defence. The strategy on which self-reliance is based establishes an extensive zone of direct military interest.

Self-reliance means defence in depth. It gives priority to meeting any credible level of threat in Australia's area of direct military interest. It means that any potential adversaries know that they will be faced with a comprehensive array of military capabilities, both defensive and offensive.

To be self-reliant the Australian Defence Force must be able to mount operations to defeat hostile forces in our area of direct military interest. To do that we must have forces able to track and target an adversary and able to mount sea and air operations throughout the area. It means having a



comprehensive range of defensive capabilities, including air defence, mine countermeasures and the protection of coastal trade. We must have mobile land forces able to meet and defeat armed incursions at remote locations.

Clearly, any hostile force must attempt to advance in ships or aircraft. Accordingly, the program gives priority to the air and sea defences in our area of direct military interest. Australia is now establishing a multilayered detection system which will transform our defence strategy.

We have developed in Australia the world's most advanced long range radar, the Jindalee Over-the-Horizon Radar. A system of up to three new stations is being planned to allow around the clock surveillance of Australia's vast northern approaches.

Early detection of threats allows an early response. Australia's long range strike capabilities are being developed to respond—quickly and lethally—to early warnings far from Australia's shores. These include both air and naval forces.

Australia's surface and submarine naval forces are undergoing the most dramatic expansion in peacetime history.

The Navy's fleet of major surface combat ships will be expanded from twelve to sixteen or seventeen by developing and building a new class of warship with the range and armament to operate throughout our area of direct military interest and beyond. Eight of these ships will be built over the next ten years, to serve with the destroyers and frigates now with the fleet or being built. Australia will also acquire six new submarines, with the most advanced underwater combat systems in the world.

The Royal Australian Navy will be established as a two ocean Navy. For the first time in peacetime a major portion of the Navy's surface and submarine fleet will be based in Western Australia.

In the air our long range strike forces will comprise squadrons of F-111 long range bombers and F/A-18 multirole aircraft, and our P3C Orions. In all, over one hundred of these aircraft will be armed with the Harpoon anti-ship missile, and our multirole F/A-18 aircraft will carry the Sidewinder and Sparrow air-to-air missile and a range of other smart weapons.

The effectiveness of the F/A-18s for long range missions is being greatly enhanced by the Government's decision to provide aerial refuelling. We are also completing a comprehensive network of air bases in the north to support these operations.

One squadron of F/A-18s will be based permanently at a major airbase being built at Tindal, inland from Darwin. A bare airbase exists at Learmonth, Western Australia, another is being built at Derby in north-west Western Australia, and a third is planned on the Cape York Peninsula.

Australia's long range forces are also capable of striking land targets such as enemy bases and force concentrations. The F-111s are a central element of our landstrike forces, and the Government is examining a major upgrade of these aircraft to improve their capabilities. Submarines, F/A-18s and surface ships also have the potential to mount long range strikes.

Our formidable long range detection and strike capabilities would make it difficult to land major forces on Australia's shores. But should any hostile forces land on Australian territory they would be met by a highly mobile army.

The Army's Operational Deployment Force, based at Townsville, can deploy rapidly across northern Australia to meet any land incursion. Its mobility and capability will be greatly enhanced by large numbers of state-of-the-art Blackhawk helicopters.

Even more importantly, the Government has decided—for the first time in peacetime—to strengthen our northern defences by basing major elements of the Australian Army permanently in northern Australia. A fast-moving cavalry regiment of 340 men and associated vehicles is being based in the Darwin area, and eventually the Army presence may grow to a full brigade.

The Army is studying innovative solutions to the military challenges which these units will face in our north, including new-generation armoured fighting vehicles suited to Australia's huge distances and harsh conditions.

The Army will be deployed to meet any landing in the north, wherever it should occur. Other forces will secure key military, economic and civilian areas with Reserves playing a major role.

Development of the Defence Force to include all these capabilities is planned for the next ten to twenty years. It will significantly enhance our ability to meet any threat capable of being mounted with little warning in our region.

In this way, Australia's combined air, land and sea forces can secure our continent against any possible aggressor. Equally, those forces will have the capacity to support regional security too. They will be well-suited to supporting Australia's regional role. Long range ships, submarines and aircraft, and highly mobile ground forces, will enable us to play our proper role in the region, and, if necessary, beyond it.

Thus self-reliance achieves the four fundamental objectives of Australia's national and international defence policy.

It maintains and develops our capacity for the independent defence of Australia and its interests. It promotes strategic stability and security in our region. It strengthens our ability to meet the mutual obligations we share with our chief allies, the United States and New Zealand. It enhances our ability, as a member of the Western association of nations, to contribute to strategic stability at the global level.

Self-reliance is a task involving the whole nation. Australia's greatest resource is the skill of its people.

Recognising the vital role played by the men and women in Australia's Defence Force, increasing attention is being given to improving personnel management practices, recruitment and training policies, living and working conditions, and to sustaining conditions of service and superannuation benefits in keeping with community standards.

As part of the new relationship with industry, information on defence



requirements will be provided to industry at an early stage. Wherever possible Australian firms will be prime contractors on major projects and Australian industry involvement will be a major factor in selecting new equipment.

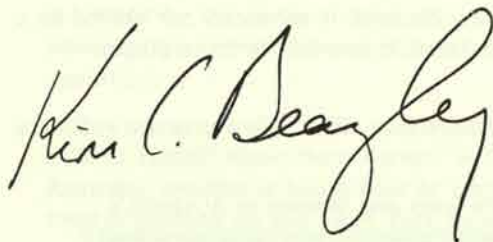
Australian industry will be called upon to involve itself more intensively in the support, maintenance and development of Australia's Defence Force. Benefits to industry in peace will be returned as increased capability in time of hostility.

One major beneficiary will be the shipbuilding industry. Over the next ten years, Australian companies will be offered leading roles in the largest naval shipbuilding program in Australia's peacetime history, valued at over \$7 billion. Beyond the shipbuilding industry, all Australians will benefit from the balance of payment gains of building our own ships rather than importing them.

It must be emphasised that self-reliance does not mean self-sufficiency. Australia's access to the highest level of technology remains one of the most important benefits of our alliance with the United States. Nevertheless, this Paper sets out a comprehensive program to enable Australian industry to make a direct contribution to our defence self-reliance.

Self-reliance was foreshadowed in the last policy information paper on defence published ten years ago. The 1976 White Paper, however, failed to give substance or direction to the concept. This Policy Information Paper does so. It sets clear goals for the Australian Government, its defence advisers and planners and for the Australian Defence Force itself.

This Paper provides the comprehensive overall approach to Australian security that will be the basis for responsible defence planning in future years. It sets out, step by step, how this self-reliance will be achieved. The concept of self-reliance can now become a reality.



KIM C. BEAZLEY

March 1987

## Chapter one

# Australia's defence policy

1.1 This Government's policy of defence self-reliance gives priority to the ability to defend ourselves with our own resources. Australia must have the military capability to prevent an enemy from attacking us successfully in our sea and air approaches, gaining a foothold on our territory, or extracting political concessions from us through the use of military force. These are uniquely Australian interests and Australia must have the independent military capability to defend them.

1.2 This policy of defence self-reliance is pursued within a framework of alliances and agreements. The most significant of these is with the United States. We share a defence relationship with New Zealand which is of basic importance. We have other important arrangements with Papua New Guinea and with the United Kingdom, New Zealand, Malaysia and Singapore in the Five Power Defence Arrangements. Whilst not the subject of any specific security undertakings, important defence activities take place with other nations in the South-West Pacific and South-East Asia.

1.3 These arrangements, particularly those with the United States, enhance self-reliance by improving our technological capabilities, by providing training opportunities for our armed services, and by giving Australia access to vital military and political intelligence. The security provisions of our alliance agreements also oblige a potential enemy to contemplate the prospect of an allied effort against it should it choose to attack Australia. These arrangements emphasise Australia's membership of the Western strategic community, and they enhance regional stability. The interests of Australia's allies and regional associates are advanced by Australia's ability to provide for its own defence.

1.4 That aspect of Government defence policy which establishes a relationship between defence self-reliance, alliance obligations and regional commitments is set out in this chapter.

## Self-reliance

1.5 Australians have a right to expect that their nation is able to defend itself. That is at the core of nationhood, and has long been an Australian aspiration. The exercise of authority over our continent and off-shore territories, our territorial sea and resource zones, and airspace, and the ability to protect our maritime and air approaches, is fundamental to our sovereignty and security.

1.6 In Australia's case this is a daunting task, considering the vastness and harshness of our territory, the length of our coastline, the size of our fishing and resource zones, the distance from the mainland of our off-shore territories,



the great expanses of water that surround us, and the disproportionately small size of our population.

1.7 The Government's defence policy is to develop self-reliant solutions to our unique strategic circumstances. These are set out in this Paper. They are the product of rigorous and disciplined analysis of the force structure requirements needed to defend ourselves from direct threats to our sovereignty and vital national interests.

1.8 Self-reliance is not a new theme in Australian defence planning. It has been a central tenet of our defence posture since the end of our Vietnam commitment. And it was identified as a primary requirement in the last policy information paper on defence, the 1976 White Paper, where it was stated that:

In our contemporary circumstances we no longer base our policy on the expectation that Australia's Navy or Army or Air Force will be sent abroad to fight as part of some other nation's force, supported by it. We do not rule out an Australian contribution to operations elsewhere if the requirement arose and we felt that our presence would be effective, and if our forces could be spared from their national tasks. But we believe that any operations are much more likely to be in our own neighbourhood than in some distant or forward theatre, and that our Armed Services would be conducting joint operations together as the Australian Defence Force.

1.9 These judgements remain valid. But despite agreement on these basic issues over the last decade, a clear definition of Australia's real defence needs in an era of self-reliance did not emerge. Therefore this Government commissioned the *Review of Australia's defence capabilities* in 1985. The review established the comprehensive approach needed to implement the principle of defence self-reliance. It drew together all the separate considerations of self-reliance over the last decade or more and proposed an achievable and cost-effective approach to force structure planning. Its main recommendations for developing a self-reliant force structure form the basis of this Policy Information Paper and the Government's defence policy.

1.10 In developing a defence force capable of maintaining a self-reliant defence posture, priority is given to those capabilities which are needed for the defence of Australia and its direct interests. This requires a force-in-being to defeat any challenge to our sovereignty and specific capabilities designed to respond effectively to attacks within our area of direct military interest.<sup>1</sup>

1.11 This area stretches over 7 000 kilometres from the Cocos Islands to New Zealand and the islands of the South-West Pacific, and over 5 000 kilometres from the archipelago and island chain in the north to the Southern Ocean. It constitutes about 10 per cent of the earth's surface.

The area of direct military interest is of fundamental importance in defining and developing a self-reliant defence force. It does not, however, mark the limits of our strategic interests nor of our military capabilities.

Our broader strategic interests extend beyond the area of direct military interest to include South-East Asia, Indochina, the eastern Indian Ocean and the South-West Pacific. Australia's security could be directly affected by

<sup>1</sup> The area of direct military interest includes Australia, its territories and proximate ocean areas, Indonesia, Papua New Guinea, New Zealand and other nearby countries of the South-West Pacific.

developments in these areas, and our broader defence policy must be responsive to such developments.

1.12 The physical characteristics of our area of direct military interest demand a defence force with range, endurance, and mobility, and independent logistic support. The Government gives priority to this area in contingency planning for the Australian Defence Force (ADF). The activities of the ADF will continue to focus on this area to develop its familiarity with potential areas for military operations.

## Alliances and regional commitments

### Australia and the United States

1.13 Australia is part of the Western community of nations. Australia therefore supports the ability of the United States to retain an effective strategic balance with the Soviet Union. A redistribution of power in favour of the Soviet Union in the central balance, or an extension of Soviet influence in our region at the expense of the United States, would be a matter of fundamental concern to Australia, and would be contrary to our national interests.

1.14 Australia's alliances with the United States and other nations impose upon us the obligation to provide for our own defence. This obligation is spelled out in Article II of the ANZUS Treaty, and American expectations in this regard have been stressed by US administrations since the late 1960s.

1.15 This Government considers that basic self-reliance is the minimum that any self-respecting country should contribute to an alliance. Australia can scarcely pretend to contribute to the defence of broader Western interests if it cannot defend itself.

1.16 In the remote contingency of global conflict Australia would have regard in the first instance to the situation in our immediate region. Our responsibilities would include those associated with the Radford—Collins Agreement for the protection and control of shipping (see Chapter 3). Subject to priority requirements in our own area the Australian Government would then consider contributions further afield.

1.17 Options will always be available to Australian governments for assistance to allies, even though such assistance of itself will not be a force structure determinant. The type of Australian force structure required to protect our interests in our area of military interest entails substantial capabilities for operations further afield. For example, our guided missile frigates (FFGs) equipped with Seahawk helicopters are capable of effective participation in a US carrier battle group well distant from Australia's shores.

1.18 Defence co-operation will continue to be sustained with the United States in peacetime. There is already an extensive system of regular high level consultations on defence and security issues, including the annual Australia/US



Ministerial Talks, the Australian/US Military Representatives Meeting comprising the defence force chiefs of each country, and the Defence/Defense talks between senior officials, and annual political/military discussions and arms control talks. The web of regular formal meetings is buttressed by direct consultations between the Australian Minister for Defence and the US Secretary of Defense, and by a very wide range of working level discussions, as well as military-to-military links and combined exercises. Consultations between the two countries facilitate extensive co-operative activities including military training and exercises, intelligence exchanges, defence science and technology, communications and logistics co-operation.

**1.19** The practical benefits Australia and the United States gain from our alliance during peacetime need to be clearly understood. This Government's review of the ANZUS Treaty in 1983 confirmed the substantial day-to-day benefits of the alliance, as well as identifying its deterrent value. For example, port visits by US warships provide opportunities for ADF combined exercises with advanced technology vessels while at the same time providing rest and recreation facilities for US naval deployments in our region. Similarly, arrangements permitting USAF B-52 and KC-135 aircraft to operate over northern Australia enable the RAAF to exercise and train with these aircraft.

**1.20** The United States gains information important to its global maritime intelligence system from Australian surveillance and intelligence gathering activities in an area extending from the eastern Indian Ocean to the South-West Pacific. At the same time Australia has access to the extensive US intelligence resources. This information is not confined to global superpower competition; it also complements Australia's information on political and military developments in our own region.

**1.21** Australia also receives preferred status in military equipment purchasing, access to US training courses and doctrine and operational procedures, and opportunities for honing skills in combined exercises. Our agreements with the United States also provide for the supply of munitions and equipment in an emergency, alleviating the need for large-scale stockpiling by the ADF. To this end and to facilitate mutual assistance in war or emergency, our forces will continue to develop their interoperability with those of the United States.

**1.22** Privileged access to the highest level of US defence technology helps us develop our own technical capabilities for control of the approaches to our continent. The value of this co-operation is demonstrated by Australia's development of over-the-horizon radar. Australia's scientists have built on access to US technology to produce a radar system which, for the first time in our history, holds out the prospect of broad area surveillance of our approaches.

**1.23** This Government is developing a more mature working relationship with the United States in technology transfer. One example is Project Nulka, an agreement concerning a defensive system for warships.

**1.24** The defence relationship with the United States gives confidence that in the event of a fundamental threat to Australia's security, US military support

would be forthcoming. Short of this major, and less likely situation, we could face a range of other threats that we should expect to handle independently. It is not this Government's policy to rely on combat assistance from the United States in all circumstances. Our alliance with the United States does not free us from the responsibility to make appropriate provision for our own security.

**1.25** While it is prudent for our planning to assume that the threshold for direct United States combat aid to Australia could be quite high in some circumstances, it would be unwise for an adversary to base its planning on the same assumption. Allowing for the possibility that the threshold for direct combat assistance could be relatively high does not, in any case, preclude the possibility of other forms of assistance. US intelligence and logistic support would markedly enhance our operational effectiveness, while political and economic pressures could weaken an opponent's resolve.

**1.26** Australia's alliance with the United States is and should remain a genuinely equal partnership. Benefits accrue to both of us from our enhancement of the general Western security position. Australia benefits from the deterrent effect of the alliance and our enhanced self-reliant military capability. The United States benefits from the value of the joint facilities to the central balance, the intelligence exchange, and Australia's support for American military activities in our area. The development of our independent military capabilities and our defence activities in the region are also beneficial to US security concerns.

## Australia and New Zealand

**1.27** Australia and New Zealand share a defence relationship which is of basic importance to the security of both countries, because of our common history and traditions, our proximity, and our shared strategic concerns.

**1.28** New Zealand has an important role in the South-West Pacific, where it has strong political, economic and military ties—in some cases more substantial than our own. Defence co-operation with New Zealand covers a very wide range, including assistance to the island states, maritime surveillance, combined exercises and training programs, exchanges of technical and operational information, and co-operation in intelligence, defence science and logistics.

**1.29** It is important that Australian and New Zealand forces maintain and develop their ability to operate together. We will continue to promote defence co-operation and operational compatibility with New Zealand, reflecting the considerable potential for strengthening our defence relationship.

**1.30** The extent to which this potential can be realised will depend, among other things, on the compatibility of the equipment and capabilities of the two forces. Priority must therefore be given to co-ordinating our policies on these matters.

**1.31** The dispute between New Zealand and the United States over visits by ships and aircraft has seriously damaged the defence relationship between our two allies. Australia is not a party to the dispute. It accepts, however, that



access within reasonable environmental constraints for ships and aircraft is a normal part of an alliance relationship. Australia regrets that New Zealand policy detracts from that relationship.

**1.32** This Government's policy has been directed to preserving our important bilateral defence relationships with both the United States and New Zealand, and ensuring as much as possible that the underlying framework of the trilateral relationship under ANZUS is maintained so that full co-operation can be resumed should current New Zealand policies on warship visits change.

**1.33** These goals have been achieved. The ANZUS Treaty remains in place, and the mutual obligations under it between Australia and the United States and between Australia and New Zealand are preserved. This includes the security commitments embodied in the treaty.

## Australia and the region

**1.34** This Government believes that an Australian defence force able to deal effectively with the most credible challenges to the nation's sovereignty is the best contribution we can make to the continued stability of our region. Meeting our requirements for the defence of Australia will provide the Government with practical options for use of elements of the Defence Force in tasks beyond our area of direct military interest in support of regional friends and allies. It is therefore not necessary that such contingencies should themselves constitute force structure determinants.

**1.35** This Government has sought to strengthen the commonality of strategic interests between Australia and the countries of South-East Asia and the South-West Pacific. We share a common concern with these countries to strengthen regional stability and to limit the potential for external powers to introduce tension or conflict. This Government is concerned to sustain a favourable regional strategic environment for Australia. In the years ahead, our capacity for security co-operation in the South-West Pacific and South-East Asia will expand because the numbers of major naval vessels in our fleet will increase, our Air Force will have an in-flight refuelling capability, our Army will be more mobile and deployable, and the Defence Force generally will have a better surveillance and patrol capacity.

**1.36** Australia is a major power in the South-West Pacific. We have the capability now to deploy significant forces there. The current substantial capacity of Australian forces to contribute to security in the South-West Pacific will be further enhanced by the Government's decision to increase our air and naval deployments to the region and to provide practical assistance in such fields as maritime surveillance and patrol and hydrography. In the event of a regional conflict, the forces we are developing for our own defence would have direct utility in the South-West Pacific.

**1.37** Our regional responsibilities have been formalised in the Five Power Defence Arrangements (FPDA) in South-East Asia and in our Defence Arrangements with Papua New Guinea.

**1.38** Under the FPDA, Australia, New Zealand and the United Kingdom co-operate to support the security of Singapore and Malaysia. A squadron of RAAF Mirage fighters stationed at Butterworth in Malaysia is our primary contribution to the Integrated Air Defence System which operates under the FPDA. This contribution will be maintained after the F/A-18s replace the Mirages by rotational deployments of F/A-18s to Butterworth and Singapore, supplemented by F-111s.



*One of Australia's new front line aircraft the F/A-18 pictured over Malaysia during a goodwill tour to Indonesia, Singapore and Malaysia to demonstrate its capabilities.*

**1.39** Australia will also continue to deploy an Army rifle company to Malaysia under the FPDA, and to operate Orion long range maritime patrol aircraft from Butterworth to maintain surveillance over the South China Sea and north-east Indian Ocean. Consistent with developing policies of Malaysia and Singapore, our South-East Asian FPDA partners, the Government believes that there is a scope for increased emphasis on logistic arrangements in regional military co-operation. Regional countries are increasingly providing for their own combat capabilities.

**1.40** Our close defence relationship with Papua New Guinea is formalised by an agreement which commits us to consultation and co-operation on the full range of defence issues. Our historical ties give Australia a strong interest in the security of Papua New Guinea, and this is reinforced by Papua New Guinea's



geographic location which makes its security a major factor in our own strategic outlook.

**1.41** Beyond these formal obligations, Australia recognises its responsibility to contribute to regional security through bilateral defence relationships with all the countries in our region. These relationships are described in detail in Chapter 2.

**1.42** All of our defence relationships, formal and informal, impose responsibilities on Australia. Our self-reliant defence posture encompasses the capability to meet these responsibilities for regional security.

## **Australia's defence capacity and influence**

**1.43** We have dealt with the need for Australia's defence capabilities to give priority to our own national security tasks. A requirement has also been identified for Australia's defence policy to take account both of developments in the South-West Pacific and South-East Asia—our region of primary strategic interest—and to be capable of reacting positively to calls for military support further afield from our allies and friends, should we judge that our interests require it. The Government believes that Australia can deal with both, but to do so we must be alert to priorities, for the range of potential circumstances which bear on our security is very wide.

**1.44** There are limits to our defence capacity and influence. As a nation of only 16 million people, Australia's ability to influence the state of world security is limited. We are remote from traditional allies and from situations important to them. These factors, on balance, favour our security. But they also impose considerable constraints on our ability to influence distant events through our defence activity. Even if Australia were prepared to spend much more on defence, we could not aspire to match the military power or influence of major powers.

**1.45** There must be a realistic attitude to our defence capacity and influence. Our international political concerns and interests will always be more far reaching than our defence capabilities. There are no current or prospective situations beyond our own region where Australia's direct strategic interests require a significant defence role or local circumstances offer scope for one. Proposals for Australian defence involvement beyond our region of primary strategic concern will be considered on their merits.

**1.46** Clearly the possibility of deployments beyond our region should not determine the structure and capabilities of the ADF. Should the Government wish to respond to developments in areas other than our own, the capabilities being developed for our national defence will, subject to national requirements at the time, give a range of practical options.

**1.47** Australia can also usefully contribute to peacekeeping operations. They

allow Australia to contribute to wider Western interests on a scale appropriate to our circumstances. Development of the Defence Force for national security provides the Government with the capability for such contributions. It is not necessary to develop forces especially for peacekeeping. Like contributions to allied efforts, such contributions can be mounted from the force-in-being.

**1.48** It is, however, in our own region where we have the most realistic prospect of substantial defence influence and involvement. Australia is the largest military power in the South-West Pacific. And in South-East Asia Australia's power projection capabilities, especially for strike and interdiction, are considerable by regional standards. It is these considerations that have an important bearing on the Government's decisions about the day-to-day activities and operations of the Defence Force. They relate to Australia's military posture in its own region and to its political standing there.



## Chapter two

# Australia's strategic environment and defence interests

2.1 The Government's approach to defence is to seek to reinforce the positive aspects of Australia's strategic environment and to provide an appropriate measure of insurance against future uncertainty. The fundamental elements of that approach are based on:

- maintaining and developing capabilities for the independent defence of Australia and its interests;
- promoting strategic stability and security in our region; and
- as a member of the Western strategic community working for a reduction in the level of tension between the superpowers and limiting the spread of influences in our region inimical to Western interests.

2.2 Australia's defence policy has regard to an area of primary strategic interest, covering South-East Asia, the eastern Indian Ocean, and the South-West Pacific. Our defence policy in this area is supported by high level visits and consultations on strategic matters, military exercises and naval visits, maintenance of effective defence co-operation programs, and by showing our competence and capability in the operation of modern military equipment.

## Australia and the global balance

2.3 The Government reaffirms Australia's natural association with the Western community of nations and our attendant defence interests and obligations.

2.4 Australia's security, like that of all nations, ultimately depends on preserving stability in the superpower relationship and avoiding war between them, above all nuclear war. The continuing expansion and refinement of nuclear arsenals poses a challenge to the maintenance of stable deterrence. Thus, the Government attaches importance to the achievement in both the nuclear and conventional fields of verifiable arms control agreements that provide for more stable deterrence at the lowest possible level of armaments, particularly nuclear armaments. Australia is actively engaged in international efforts to enhance global and regional security through such agreements. We recognise that progress in achieving agreements is slow. In the interim the Government considers it important to maintain a stable strategic balance to support mutual deterrence and as a basis for substantive arms control and disarmament negotiations.

2.5 The joint Australia/United States defence facilities each have an

important role in helping to maintain stability in the strategic relationship between the superpowers and in helping to deter war. While Australia might appear remote from the areas of the globe where any nuclear war would be fought, it would inevitably be profoundly affected by such a conflict. The North West Cape Naval Communication Station supports our interest in the avoidance of nuclear conflict by contributing to United States confidence, and Soviet awareness, that in the event of the United States being attacked, it would still be able to communicate with its ships and submarines in the Indian Ocean and Western Pacific, and make use of their retaliatory capabilities.

2.6 United States strategy is to deter war. Australia supports the concept of deterrence. The United States considers that deterrence of the Soviet Union depends, in part, upon the credibility of the US capability for nuclear retaliation in the event of major Soviet attack upon the United States or its allies. The United States maintains a range of nuclear forces for this purpose. But ultimately deterrence rests on the possession by the United States of strategic nuclear forces which would be secure from destruction in any Soviet first strike and in these circumstances be able to inflict massive retaliatory damage. Relative to other elements of US strategic nuclear forces, the US ballistic missile submarines are the most survivable and for this reason among others will remain second strike retaliatory weapons. In view of the strategic importance of the security of the US submarine force and the advantages of very low frequency (VLF) communications for security, such vessels will continue to rely on the US VLF network of which North West Cape is a part.

2.7 There is now greater duplication in the US VLF communications network, and in other systems used to communicate with submarines such as the TACAMO airborne VLF relay system, than when the station at North West Cape was established. As a consequence of this redundancy no one component of the US VLF network is vital, but North West Cape remains an important element in the US military communications network, and so continues to support deterrence of war.

2.8 North West Cape is also available to relay VLF or HF (high frequency) communications to United States and Australian surface ships and submarines whenever they are operating in its area of reliable coverage. The support available from North West Cape to conventional forces in our region further supports deterrence of war by assisting the United States to counter Soviet conventional capabilities. Enhancement of US conventional capabilities, by increasing the range of US conventional options, can reduce the risks of escalation to the nuclear level should conflict occur. It thus represents a disincentive to the initiation of conventional or nuclear war by the Soviet Union against Australia, the United States, or other US allies.

2.9 The facilities at Pine Gap and Nurrungar enhance stability by contributing to verification of arms limitation measures of the United States and the Soviet Union and to timely United States and Australian knowledge of developments that have military significance—including early warning of ballistic missile attack on the United States or its allies. New communications links are being established with the headquarters of the ADF in Canberra to give the Government and its advisers access to data from the facilities immediately.



**2.10** The most important part of the US early warning system with which we are involved is known as the Defence Support Program. This program would provide the United States with its earliest warning of intercontinental ballistic missile attack. The additional warning time assists in minimising the risk of nuclear conflict arising through accident or miscalculation, and so supports stability in the superpower strategic relationship. It complements the warning provided by ground radars, and contributes to the reliability of the US early warning function. The Soviet Union also operates a system comparable to the Defence Support Program.

**2.11** The benefits and costs for Australia in co-operating with the United States in the joint defence facilities have been carefully evaluated by the Government. The operations of the joint facilities do not involve derogation from our sovereignty. They serve Australian and US interests. They are jointly managed and operated by the Australian and United States Governments and their operation is governed by a set of principles designed to protect Australian sovereignty and interests. All their functions and activities require, and have, the full knowledge and concurrence of the Australian Government. Australian personnel are fully involved in all aspects of the operations of Pine Gap and Nurrungar, and they have access to all of the product. The presence in Australia of these facilities carries with it a risk that, in the event of superpower conflict, the facilities might be attacked by the Soviet Union. However, the risk that such conflict might occur, either deliberately or as a result of some accident, is very low and the functions carried out by the joint defence facilities help to ensure that this remains the case. Were Australia to cease our co-operation in the joint defence facilities there would only be adverse consequences for international security and higher risk of global war. This would neither serve Australia's interests nor those of the international community generally.

**2.12** The ability of the Defence Force to provide security for Australia in a nuclear war would be very limited and cannot be a determinant of our planning. However, we should maintain an ability to follow developments in and provide basic training for defensive and protective measures against nuclear attack.

**2.13** Nuclear conflict between the superpowers is a remote possibility but if such a conflict were nevertheless to occur, the joint defence facilities could come under attack. Accordingly, there is a need for the appropriate government bodies at various levels to undertake basic civil defence planning for the protection of the population in the areas concerned.

## Australia and the region

**2.14** As already mentioned Australia's region of primary strategic interest lies in South-East Asia, the South-West Pacific and the East Indian Ocean. Political, economic and military developments in this area are of fundamental concern to Australia.

**2.15** Successive Australian governments have underscored the region's importance to us. Whilst Australia's interests in the area are primarily advanced

by diplomatic and economic activity a security component in Australia's relationship is appropriate. This conforms to local expectations, advances Australia's other interests and enhances the mutual interest of Australia and the countries in the region in regional strategic stability.

**2.16** Australia's military co-operation with South-East Asia is modest. Local defence capabilities have increased over recent decades as regional countries meet the objective of ensuring that threats to their own security can be met from their own resources. In the South-West Pacific our defence influence is much more substantial.

**2.17** In general, Australia's strategic environment is favourable. The development of regional armed forces is oriented toward capabilities appropriate to national defence and internal security. The Government acknowledges nevertheless that, as with the capabilities being introduced for our national defence, contemporary weapons systems are likely to provide modest force projection capabilities particularly in maritime and air assets. Such developments in the region must always be a matter for careful consideration by the Government.

**2.18** Without affecting the relatively favourable nature of the region's strategic environment, there have been a number of political and economic developments with the potential to affect regional stability and security. Of particular concern is the possibility for interference by external powers in regional affairs.

**2.19** Whilst the remainder of this chapter focuses on Australia's area of primary strategic interest and area of direct military interest it should not be thought that the Government is indifferent to military developments elsewhere in the Indian Ocean and Pacific areas. The situation of major trading partners such as Japan, an understanding of all the interests pursued by the United States in the Pacific, and our own developing relations with China are all matters of substantial interest to the Government. The ADF participates in exercise activities and goodwill visits in this broader area. It is, however, well beyond our capacity to extend to this area the defence co-operation programs that are maintained in our region of primary strategic interest. Support for the positions of allies and friends in this region must be predominantly diplomatic.

## South-East Asia

**2.20** Major changes in regional relationships or internal instability in individual countries in South-East Asia could introduce or expand uncertainties in Australia's strategic prospects, even though developments may not be directly threatening to us. Tensions between nations in South-East Asia could provide opportunities for increased involvement in the region by unfriendly or contending powers.

**2.21** There is a need for continuous review and evaluation of strategic developments affecting the region. It is in respect of the potential impact of developments in the region upon Australia's area of direct military interest, that



is, the area in which developments can most directly affect our security, that Australia's defence interests are primarily engaged.

**2.22** The development of our role in support of regional security is sustained by the history of our co-operation with the nations of South-East Asia since the Second World War. Over that period our strategic perspectives in relation to the region have undergone a marked change. In the 1950s and 1960s, Australia's defence policy was influenced by strong anxiety about the ability of the newly independent countries of South-East Asia to withstand domestic insurgencies and external pressures. Our assessments now depict a regional situation with underlying strengths, albeit with many uncertainties.

**2.23** The formation and consolidation of the Association of South-East Asian Nations (ASEAN)<sup>1</sup> has not only benefited those nations but has also been of strategic benefit to Australia. It has reinforced the ability of each member to withstand external pressure and has fostered the development of a broad political and strategic consensus which supports Australia's long-term security prospects.

#### **Prospects for change**

**2.24** Uncertainties in South-East Asia relate principally to:

- economic and political problems in the Philippines;
- the unresolved question of the political future of Cambodia and the pressures that arise out of the military and political situation there on Thailand and on relations between Vietnam and ASEAN members;
- the establishment of the Soviet military presence at Cam Ranh Bay.

**2.25** The Philippines continues to face serious economic and political problems. Much remains to be done before the Philippines can be confident of stability and prosperity.

**2.26** Two issues in the Philippines are directly relevant to Australia's strategic outlook. The first is the insurgency of the New People's Army, which not only threatens the long-term prospects for moderate reforming governments, but also raises the possibility that unwelcome external powers could become involved.

**2.27** Secondly, the Philippines makes a significant contribution to regional security by hosting the major US military presence at the Subic Bay and Clarke Field bases which support the US presence throughout our region.

**2.28** The situation in Cambodia remains unresolved. Whilst the Vietnamese military presence persists and armed resistance continues in Cambodia the potential for military clashes between Thailand and Vietnam remains. An additional significant element of the conflict is the close interest of China and the Soviet Union. Although a major extension of the conflict is unlikely, its continuation is of concern to the Australian Government, not least because of the potential for more extensive involvement by external powers as the conflict persists.

<sup>1</sup> The ASEAN members are Indonesia, Malaysia, Singapore, Thailand, the Philippines, and Brunei. ASEAN is based on political, economic and social links and is not a defence pact. However its success as a cohesive grouping has added substantially to the strategic stability of our region.

**2.29** The continued Soviet naval and air force presence at Cam Ranh Bay in Vietnam, and the development of new support facilities there, is a significant concern for Australian defence policy. Cam Ranh Bay is now the largest Soviet military base outside the Warsaw Pact.

**2.30** In peacetime, access to ports and airfields in Vietnam is a useful military asset for the Soviet Union. From Vietnam, the Soviet Union undertakes regular intelligence and maritime surveillance missions against US naval units operating in or passing through the South China Sea, it operates against Chinese military forces in the area, and it can deploy its own forces more flexibly to the Indian Ocean.

**2.31** The Soviet military presence is not, however, in all respects a political asset to the Soviet Union. There is a central contradiction in Soviet strategy in the Pacific. On the one hand the Soviet Union aspires to pursue legitimate economic interests in the area and to seek friendly relations. On the other hand it is difficult for nations in the region to accept the sincerity of such gestures of co-operation whilst the Soviets engage in a substantial build-up of their Far East Fleet and use their relationship with Vietnam to expand their military presence in the region through Cam Rahn Bay.

**2.32** The Soviet Union does not enjoy naval or air dominance in the region and in the event of global conflict its military assets in Vietnam would be very vulnerable. Nevertheless, the continuous presence of Soviet warships and military aircraft, based in Vietnam, is an adverse element in regional security perspectives.

#### **Australia's defence activities**

**2.33** This Government's approach to the support of security in South-East Asia concentrates on practical co-operation with the countries of ASEAN in activities of common defence interest. This approach is consistent with the significant steps each ASEAN country is making to strengthen its own ability to resist external strategic pressures.

**2.34** Australia has encouraged the development of a pattern of consultations with regional countries on security prospects and policies; reciprocal visits by defence representatives and military units; combined exercises; specialist consultancy arrangements to examine common problem areas; training; and joint projects concerned with the development and support of specific defence capabilities.

**2.35** Developments in the archipelagic states, and especially Indonesia, are of great strategic significance to us. Australia sees a stable Indonesia as an important factor in its own security. Not only does Indonesia cover the majority of the northern archipelagic chain, which is the most likely route through which any major assault could be launched against Australia, it also lies across important air and sea routes to Europe and the North Pacific.

**2.36** Indonesia forms a protective barrier to Australia's northern approaches. It possesses the largest military capability among the ASEAN nations, but this capability has been designed primarily to ensure internal security and to protect its very large and geographically diverse island chain.



**2.37** Australia seeks to maintain a sound and constructive defence relationship with Indonesia. The Australian Government considers that such a relationship should recognise fundamental features of our respective political and social systems.

**2.38** A practical approach is also being followed in our defence activities with the other countries of ASEAN. Combined land exercises in Australia with Malaysia and Thailand are well established. Scientific and industrial co-operation with Malaysia and Thailand has opened up promising areas for further development, including commercial opportunities for Australian defence industry. Similarly, technical co-operation, for example in the area of aircraft maintenance with Thailand, is providing mutual strategic and economic benefits. Singaporean forces train in Australia and exchanges are maintained in a number of specialist areas. Normal defence contacts with the Philippines have been resumed since the accession to power of President Aquino. Since Brunei achieved independence bilateral defence contacts have expanded, and include training in Australia, joint maritime exercises, and the sale of Australian manufactured defence equipment. The Government will continue to provide, where appropriate, financial resources to facilitate these co-operative activities and seeks to develop our defence relationships with the countries of ASEAN along these general lines.

**2.39** Australia's longstanding defence interests in South-East Asia are also reflected in our participation in the Integrated Air Defence System (IADS) and other co-operative activities under the FPDA with Malaysia, Singapore, New Zealand and the United Kingdom. The Government has previously announced that the RAAF presence at Butterworth Air Base in Malaysia is to be maintained after the withdrawal of our Mirage fighters from service by rotational deployments of the new F/A-18 Hornet tactical fighter to Malaysia and Singapore, supplemented on some occasions by F-111 aircraft. The pattern of deployments will enable continued RAAF participation in the series of air defence exercises conducted each year under the auspices of IADS. Through those exercises, Australia will continue to make a significant contribution to the enhancement of Malaysia's and Singapore's air defence capability. The Government has also announced its commitment to continue to deploy an Australian Army rifle company in Malaysia under the auspices of the FPDA.

**2.40** Surveillance patrols by RAAF aircraft over the South China Sea and the north-east Indian Ocean will also continue. These patrols are conducted from Butterworth by a continuous detachment of P3C Orions. They enable Australia to monitor naval movements in an area of increased strategic interest for us since the establishment of the Soviet presence at Cam Ranh Bay. The information from these flights represents a valuable contribution to Australia's intelligence data base. They also represent an effective and practical contribution to shared regional strategic interests.

## South-West Pacific

**2.41** Although remote from areas of major contention, the South-West Pacific is important for Australian defence planning because of its geographic

proximity to Australia. Important lines of communication with Australia's major trading partner, Japan, and with our major ally, the United States, run through the region. The countries in the region lie across important trade routes and approaches to Australia's east coast, where most of our major population centres are located. An unfriendly maritime power in the area could inhibit our freedom of movement through these approaches and could place in doubt the security of Australia's supply of military equipment and other strategic materiel from the United States.

**2.42** During the 1970s, Australia's strategic focus in the South-West Pacific widened as a number of the island states attained independence and as the region received increased attention from external powers.

**2.43** The small size of the national economies and the limited defence forces in the South-West Pacific fundamentally affect the ability of these countries to protect their interests. In view of significant regional concerns over sovereignty protection and economic vulnerability, bilateral Australian defence co-operation has been mainly directed toward those areas. Emphasis is being given to activities that benefit the island nations in the development and protection of maritime and other resources. Assistance is also continuing to provide technical and infrastructure support. Defence activities in the South-West Pacific thus support and complement Australia's development assistance.

**2.44** The entry into force of the Treaty of Rarotonga instituting the South Pacific Nuclear Free Zone is a gain for Australian and regional security. The Treaty also protects Western strategic interests in the region.

## Prospects for change

**2.45** A number of recent developments affecting the South-West Pacific have increased the region's potential to pose strategic problems for Australia. While not directly threatening, they raise questions about the changing political and strategic patterns of the region.

**2.46** Amongst these developments is the establishment of links between some regional states and external powers with strategic interests potentially inimical to Australia's. The Soviet Union has had a fisheries agreement with Kiribati and now has an agreement with Vanuatu. Further access by the Soviet Union, especially the establishment of a presence ashore, would be an unwelcome development because of its potential to enhance Soviet influence in the region. Soviet involvement in the region is at a low level at this stage. However, its existence imposes an obligation on Australia and its allies to properly develop and co-ordinate their security policies.

**2.47** There has been continuing tension between the United States and the South-West Pacific countries over the negotiation of fees for access by US commercial fishing fleets. An agreement has now been reached and the island states will receive substantial payments from the United States. More serious damage to Western interests in the South-West Pacific has been inflicted by the continuing French nuclear testing program and tension over the future of New Caledonia.



2.48 These developments damage Western standing in the South-West Pacific and contribute to an increasingly complex political and strategic situation. The fragile and narrowly based economies of the South West Pacific countries will continue to present opportunities for exploitation by external powers.

#### **Australia's defence activities**

2.49 As with the ASEAN countries, in the South-West Pacific Australia has sought to emphasise co-operative activities centred on practical matters of common concern.

2.50 In accordance with the concern of island governments to protect national sovereignty and exercise control over their maritime resources, a considerable proportion of our current defence activities in the South-West Pacific is directed towards the development of national maritime surveillance and enforcement capabilities. A result of these activities will be the development of a set of inter-related surveillance systems that will contribute to the development of regional co-operation and provide information on ship movements in the Pacific.

2.51 To support this, a program of P-3C Orion long range maritime patrol (LRMP) deployments was instituted in 1983. The same year Australia announced the Pacific Patrol Boat project, which will now provide a total of twelve 31.5 metre boats and training and advisory assistance to six South-West Pacific states.<sup>2</sup> These activities have been complemented by naval visits and bilateral activities aimed at establishing and improving communications facilities and hydrographic skills, as well as the accurate delineation of 200 mile maritime zones.

2.52 In order to build upon and reinforce the defence co-operative activities already in progress in the South-West Pacific and to meet the challenge posed by recent strategic developments, the Government has decided on a number of important initiatives, including:

- increasing the number of RAAF LRMP deployments to the region (arrangements will be made for co-ordination with deployments undertaken by New Zealand);
- increasing RAN ship visits to the South-West Pacific (a policy decision has been taken to emphasise the South-West Pacific at the expense of some of our more distant deployments);
- continued assistance in the fields of hydrography and survey and mapping;
- further assistance to help South-West Pacific countries consolidate their maritime surveillance centres; and
- the provision of training and advisory assistance to assist in fisheries surveillance and enforcement.

<sup>2</sup> Countries participating in the project are Papua New Guinea (four boats), Fiji (four boats), Solomon Islands, Vanuatu, Western Samoa, Cook Islands (one boat each). Tuvalu is presently considering participation in the project.

## **Papua New Guinea**

2.53 Apart from traditional ties, Papua New Guinea is by virtue of its geographic location an important factor in Australia's security. Because of the potential strategic implications, Australia would be understandably concerned should a hostile power gain lodgement or control in Papua New Guinea.

2.54 The relationship of Papua New Guinea with its neighbours will always be a matter of interest to Australia. Although there have been minor incidents along the border with Indonesia, mainly as a result of the activities of the Free Papua Movement, both Papua New Guinea and Indonesia have demonstrated a co-operative approach to management of their common border. The Government welcomes the signing of the Treaty of Mutual Respect, Friendship, and Co-operation between Papua New Guinea and Indonesia in October 1986.

2.55 Australia has a continuing close relationship with Papua New Guinea in defence matters. Defence relations include Australian support in the development of the Papua New Guinea Defence Force and, at the working level, continuing close contacts between our two Defence organisations. This support increasingly comprises provision of specialist advice and exchanges of views on areas of defence policy and capabilities. The relationship also provides for formal consultation on matters affecting common security interests should either Government consider this necessary.

## **Antarctica**

2.56 The Government strongly supports the provisions of the Antarctic Treaty, which prohibit military use of the territory. The national interest of Australia lies in ensuring that Antarctica remains demilitarised and free from political and strategic competition. So long as Antarctica remains demilitarized, no threat to the security of Australia itself is in prospect from or through that region. There is no requirement for defence activities to support our territorial or economic interests in Antarctica or for defence involvement beyond the present limited logistic support for Australia's national effort there.

2.57 The Government's policy is to pursue political, as distinct from military, solutions to any disputes. Growing international interest in the exploitation of continental and off-shore resources in Antarctica is stimulating pressures for challenges to the Treaty. With the other Treaty consultative parties, we are working on means to preserve the Treaty.

## **The national strategic setting**

2.58 The fundamental conclusion arising from the preceding sections is that Australia's bilateral relations with its major allies and with neighbouring countries are basically sound, notwithstanding the political fluctuations which inevitably occur from time to time. No neighbouring country harbours aggressive designs on Australia, and no country has embarked on the development of the



extensive capabilities to project maritime power which would be necessary to sustain intensive military operations against us.

**2.59** This is not to argue that we have no need for defence, or for alliance. On the contrary, strategic developments in the superpower relationship have the potential to undermine our security. Moreover, uncertainties inherent in relationships in our region could pose serious problems for Australia's defence were political relationships to deteriorate.

**2.60** Australia's defence interest is not confined to the presence or absence of military threat itself. We are concerned with developments that could either support Australia's security or have the potential to lead to a military threat. Prudent defence policy must insure against uncertainties and the risk that they might resolve unfavourably to our interests.

**2.61** Defence planning has to contemplate the possibility that developments in our region could lead to direct military pressure or attack upon Australia. Such a development could generate requirements for defence effort fully committing the level of resources currently or prospectively allocated. In keeping with these judgements, provision for self-reliant national defence commands priority in this Government's defence planning. It guides the structure of the Defence Force and development of supporting infrastructure (see Chapter 4).

**2.62** Our military capabilities and competence must command respect. This basic competence and preparedness in matters of our national defence are the necessary foundation for our defence influence further afield.

## Australia's physical environment

**2.63** Australia's national strategic setting is shaped in a unique and enduring way by basic facts of geography and location, population size and distribution, and our national economic resources and infrastructure. Australia is distant from the main centres of superpower rivalry and the major areas of instability in the world. The great majority of our population and industrial centres are in the south-east and south of the continent, naturally protected by vast ocean surrounds and the inhospitable tracts of our own country to the north and north-west. While our manpower base is small, we have a relatively large and sophisticated economic, scientific, technological and industrial expansion base. By regional standards, this gives us a substantial capacity to repair, support and develop our own defence equipment. Our research base and industrial infrastructure, however, cannot develop and manufacture at an economic cost the full range of high technology equipment which characterise contemporary defence forces (see Chapters 5 and 6).

**2.64** More fundamentally, our geographic location and the lack of land borders, combine to provide us with natural defences against conventional attack. To minimise the problems involved in conducting combat operations at great distance from main support areas, it is most likely that any adversary would first seek to secure bases in the archipelago to our north. Even so, the mainland of our nearest neighbour, Papua New Guinea, is 160 kilometres from

the Australian mainland, and Indonesia is some 250 kilometres away at its nearest point. The Asian mainland is almost 3 000 kilometres away.

**2.65** These basic facts of our geographic location indicate that conventional military attack against Australia would most likely be directed against the northern part of the mainland, its maritime approaches or off-shore territories. The corollary is that those basic facts of geography highlight the fundamental importance for Australia of maritime forces<sup>3</sup> capable of preventing an enemy from substantial success or control in those areas.

**2.66** The military capabilities required for a large-scale conventional attack on Australia, in particular the naval and air power to project and sustain substantial operations against Australian forces, are beyond those currently possessed by any regional power. Given the long lead times and large costs involved in establishing the kind of major military capabilities which would be required, this is likely to remain so for many years. And if a regional country were to develop the motivation and capability, the features of our northern environment would complicate large scale conventional military operations. Shallow waters and large tidal variations make navigation difficult and generally hinder maritime operations. Any land forces that were to elude Australian opposition and overcome the maritime obstacles would find themselves in a harsh and inhospitable continent.

**2.67** The paucity of population and of transport and other infrastructure in northern Australia, and the nature of the land, would tend to focus military operations of substance on a few areas, for example, airfields, off-shore resource projects, shipping in coastal waters, port facilities, and communication and transport links. Australia would be dependent on many of these facilities for logistic support of forces deployed along the northern coast, and an attacker would want to take them if he were to sustain a lodgement or make progress.

**2.68** While all of these factors limit the potential for major military operations against Australia, many of the same factors introduce potential vulnerabilities which could be exploited by alternative, and less costly, military operations. The use of limited military force to harass, for example, remote settlements and other targets around northern Australia, our off-shore territories, or shipping in proximate areas, would pose significant problems for us. The physical characteristics of northern Australia and its distance from the major support bases in the south and south-east would also complicate our operations. In those circumstances, our vast coastline, the rugged terrain, the distances between population centres or settlements, the remoteness of our island territories, the location of our northern resource zones, and the requirement to protect focal areas and the approaches to our major ports, could be exploited to our disadvantage.

---

<sup>3</sup> The term 'maritime forces' means naval and air forces.



## National defence interests

2.69 Arising out of the foregoing discussion, Australia's principal national defence interests can be summarised as:

- the defence of Australian territory and society from threat of military attack;
- the protection of Australian interests in the surrounding maritime areas, our island territories, and our proximate ocean areas and focal points;
- the avoidance of global conflict;
- the maintenance of a strong defence relationship with the United States;
- the maintenance of a strong defence relationship with New Zealand;
- the furtherance of a favourable strategic situation in South-East Asia and the South-West Pacific;
- the promotion of a sense of strategic community between Australia and its neighbours in our area of primary strategic interest;
- the maintenance of the provisions of the Antarctic Treaty, which ensure that continent remains demilitarised.

## Chapter three Priorities for force development

3.1 The defence interests outlined in the preceding chapters of this Policy Information Paper place considerable demands on Australia's resources. To use those resources most effectively, priorities for force development have to be determined and applied rigorously.

3.2 While it is not possible to predict the future, it is possible to indicate the principal contingencies that must shape Australia's defence planning. This Government believes that Australia must be able to provide its own defence in circumstances, presently quite unlikely but still credible as a future possibility, of a threat posed to Australia by a nation operating within our own region. Such developments would place great demands on our defence capacity. Our force structure planning will ensure that we have, and can be seen to have, the capacity to respond effectively to them.

## Possible forms of military pressure against Australia

3.3 While a principal objective of our defence policy is to reinforce the positive aspects of our strategic setting, prudent defence policy must also insure against the uncertainties we have noted in our strategic circumstances and the risk that they could result in direct military pressure or attack on Australia. In considering possible forms of military pressure against Australia, account has to be taken of the enduring features of our national strategic setting described in Chapter 2 and the consequent military capabilities an opponent would require to mount and sustain hostilities. We must also compare the military capability required for this task with the existing and projected military capabilities of regional countries. And we have to consider the political and military rationale attaching to different forms of military pressure against Australia.

3.4 Chapter 2 described how basic facts of our geographic location, the lack of any shared land borders, and the difficulties of our northern environment, combine to provide Australia with substantial natural defences against major, conventional military attack. Equally, it noted that many of the same factors introduce potential vulnerabilities for Australia which could be exploited by an adversary using alternative, and less costly military options. Even the use of limited military force against Australia would pose significant problems for us and would have the potential—given the vast expanse of our territory and maritime approaches—to require a defence effort heavily committing our defence resources.



## Low level conflict

**3.5** Successive reviews of the strategic basis of Australian defence policy have noted the advantages an opponent might see in a campaign of sustained low level military pressure against Australia. The use of military force to harass remote settlements and other targets in northern Australia, our off-shore territories and resource assets, and shipping in proximate areas<sup>1</sup> could be decided upon as an attempt to demonstrate Australia's vulnerability and thereby force political concessions over some disputed issue. In these circumstances, the attacker could hold the operational initiative. Attacks could be widely dispersed and unpredictable. Relatively modest military pressure could oblige Australia to respond with quite disproportionate effort.

**3.6** The adversary could, if he wished, sustain low level activity virtually indefinitely. For Australia, there would be the cost of undertaking a wide variety of operations and of maintaining forces at a high state of readiness. Our operations would require highly effective intelligence and surveillance capabilities and forces with significant range, endurance and mobility.

**3.7** Within the capacity of its forces, the adversary would seek to hold the initiative in relation to escalation. Australia's need to counter this and to provide against localised escalation would add significantly to the scale of our military effort. In such circumstances there would be arguments for retaliation against the attacker. A potential aggressor would recognise this and may seek to constrain Australia's options through careful control of the scale and intensity of the military harassment and possibly through the use of covert, and therefore ostensibly disavowable, operations. While broader political considerations might caution against a policy of retaliation, its prospective advantages, both as a means of deterring attack, or if that fails deterring escalation, reinforce the need for capabilities providing the option for a retaliatory response.

**3.8** The capability required to mount and sustain low level military pressure against our nation already exists in the region of primary strategic interest to Australia. This is not to identify any country as a potential threat. It is merely to address the factors which shape assessments of the possible time-scale over which threats could emerge. The existence of capability necessarily implies that threats could emerge over a shorter time-scale.

## Escalated low level conflict

**3.9** Within Australia's region of primary strategic interest the capability also exists to mount more conventional but still limited military operations against Australia. These could take the form of increased levels of air and sea harassment, extending to air attacks on northern settlements and off-shore installations and territories, attacks on shipping in proximate areas, mining of northern ports, and more frequent and more intensive raids by land forces.

**3.10** Essentially this level of conflict would be characterised by the attacker supplementing or substituting unconventional tactics and forces with military

<sup>1</sup> The issue of threat to Australian trade is discussed in more detail in a separate section later in this chapter.

units prepared to confront our forces direct. This would carry risks for the attacker. His calculations would need to take account of our force structure and the probability of his forces suffering heavy attrition through clashes with the ADF and the expectation that escalation would allow Australia greater freedom in the use of its strike assets. He would also need to assess the risks of international repercussions and, most significantly, the reaction of Australia's ANZUS allies.

**3.11** The limits of escalated low level conflict would be set at any one time by the military capabilities that could practically be brought to bear against Australia's interests. In determining the forms of military activity that could be credible, account needs to be taken not simply of the existing and prospective capabilities of other countries, but also the extent to which they could realistically be applied. Without the development of a significant operational support capability, which would require the commitment of resources over several years, an attacker's ability to conduct escalated operations over a wide area or for an extended period would be limited.

**3.12** To have significance for our planning, potentially opposing capabilities must be assessed in terms of their ability to project military force against Australia in the face of our offensive and defensive capabilities, and in terms of the rationale that would underlie possible forms of military action, including their potential to trigger the direct involvement of our ANZUS allies in the conflict.

## Summary judgements

**3.13** The possible time-scale attaching to the development of low level and escalated low level conflicts dictate that the ADF should be capable of countering them essentially from the force-in-being. The ADF should therefore be able to conduct such operations as maritime surveillance, interdiction and protection tasks, including mine countermeasures. There may be a need for offensive strike, especially against maritime targets. As noted previously, although constraints would apply to strike against land targets in the adversary's own territory, the ability to conduct such operations would allow an important option.

**3.14** Ground and other forces (such as air defence) would be needed to protect the bases from which our forces were operating, to conduct offensive action against such enemy forces that had crossed the sea and air gap, and to protect the military and civilian infrastructure and the population. Operations would usually be joint, and their conduct may require naval, air and land forces to deploy at short notice for sustained operations at a considerable distance from their main bases. ADF operations can be expected to be conducted concurrently over widely dispersed geographic areas.

## More substantial conflict

**3.15** No regional country now has the capability—nor the motivation—to sustain high level intensive military operations against Australia. Military attempts to take control of the maritime approaches to Australia and secure lines of approach for major ground forces would require substantial military



expansion with external support or assistance. Such an expansion would involve long lead times and be clearly evident to us. Meanwhile, the adversary would have to assume that Australia would expand its military capability to maintain a relative advantage.

**3.16** The invasion and subjugation of Australia would involve exceptional difficulties. Huge distances, determined military opposition, and a harsh environment would have to be overcome in successfully transporting and protecting an invasion force. And unless an adversary gained control of our major population and industrial centres in the south-east, enemy forces lodged on the mainland would face eventual defeat as we mobilised our national effort, with allied support, to cut off their lines of communication and support.

**3.17** Short of invasion of the continent, the forces that any adversary would need to attempt and sustain a major assault on Australia would also be substantial. The skills and equipment required for an opposed amphibious landing are specialised and extensive. Very few nations have this capability and there is no evidence that regional countries are developing or intend to develop their force structure in this way. The assets required to transport and resupply a lodgement force, and to protect it against our determined attack, would be large. They would be at risk to pre-emptive attack as they assembled prior to transit, and vulnerable during transit and when coming ashore.

**3.18** The development of military capabilities to the stage where such operations could be seriously contemplated would imply dramatic change, not now in prospect, to a belligerent and provocative external policy on the part of a neighbouring country. Alternatively it would require major strategic lodgement in the northern archipelago by an external power, also now a remote prospect given the increased strategic resilience of our ASEAN neighbours. The interests of nations other than Australia would be threatened by the arrival in the region of such a power.

**3.19** The maintenance of the vitality of our alliance relationship with the United States is obviously important as an insurance against higher levels of conflict. It provides us with confidence that assistance would be forthcoming in the event of substantial military attack on Australia or its direct interests. Moreover, United States action would be most unlikely to await the emergence of a major threat. The dramatic strategic changes that would precede such a threat would inevitably impinge on important interests the United States has in the region. Major strategic lodgement in the archipelago by an external power would affect such interests and would provide strong impetus for the United States to institute countermeasures.

**3.20** These considerations provide considerable reassurance against the possibility of major attack. Nevertheless, because of the severe consequences if such threats emerged over a longer time-scale, Australian defence policy and force structure planning cannot ignore them.

**3.21** The maintenance of a range of capabilities in the ADF applicable to higher levels of conflict, sufficient to provide a basis for timely expansion, has been endorsed by successive Governments as an appropriate measure of

insurance against the uncertainties in our long term security prospects. Such considerations have led Governments to acquire and develop highly capable maritime and other forces.

**3.22** With our present force structure and its development already approved by this Government, we have considerable military capabilities by regional standards. During the period that an adversary would need to develop the motivation, forces and skills needed for a major assault, we would be able to develop our surveillance, maritime and other forces still further. In this, we would be assisted by the relative advantage that is latent in our military and industrial base and our alliance relationship with the United States.

### Summary judgements

**3.23** In summary, the need to recognise that at some time in the future there could be a serious deterioration in our strategic circumstances means the ADF should contain a level of skills from which expansion to meet the developing threat could occur. As with lower levels of conflict, a priority concern would be to deny the adversary effective use of the sea and air gap. There would be a greater need for strike and other offensive measures against the adversary's military bases and infrastructure, and there would be an increased need for such protective capabilities as mine countermeasures, anti-submarine warfare, and air defence, especially around the bases from which our maritime operations were being conducted.

**3.24** Specific implications for ground force development follow from the constraints the sea and air gap imposes on the range and type of ground forces that an opponent could land and sustain against Australia. This has implications for the priority to be given in our force development planning to preparing for large scale conventional ground force operations. The primary function of our ground forces in more substantial levels of conflict would be to defeat those enemy forces that had been able to land on Australian territory. Our ground forces would be required to conduct offensive action against the enemy's forces, to contribute to the defence of maritime and other military bases, and to protect the civil population and infrastructure.

**3.25** Against the prospect that the adversary had been able to land and sustain more substantial forces, we need expansion base elements for conventional ground force conflict, but not at a high level of preparedness. The Government considers it is appropriate to make greater use of the Reserves in the expansion base for these tasks, in association as necessary with Regular personnel.

### Threats to Australian trade

**3.26** Ranging across the levels of conflict addressed in Australian defence planning is the issue of threat to Australian trade by attempted interdiction of shipping on our trade routes and in proximate ocean areas.

**3.27** Australia's overseas trade routes are diverse and their comprehensive interdiction would be credible only in the unlikely circumstances of protracted



global conflict. Under those conditions threats to international shipping would affect many countries. Countries which have important interests in the free flow of trade would seek to protect international shipping. Australia would then contribute to wider efforts to protect international trade, operating in our own area in accordance with the procedures of the Radford-Collins Agreement.

**3.28** Australia enjoys a high degree of economic self-sufficiency. We are a net exporter of energy and self-sufficient in food. The economy has basic features which have enabled previous short-term or sporadic interruptions to trade—through industrial action—to be accommodated, though with inconvenience and economic cost. While our long term prosperity certainly requires a healthy level of commodity exports (exports now account for some 12 per cent of GDP—down from 20 per cent of GDP in the early 1950s), Australia could survive significant disruption of overseas trade in the event of global war, though at a cost to our standard of living. Most of the essential needs of the civil community could be met without external supply if appropriate measures of conservation and rationing were introduced. Those essential items that are imported (including defence equipment and spare parts, industrial machinery, transport equipment, lubricants and rubber) could be stockpiled or alternative sources arranged—even if at higher cost—if there is any change in our current judgement about the remote prospect of global conflict.

**3.29** Disruption to Australia's trade could occur in a range of other circumstances, and in particular in those contingencies assessed as credible in the shorter term. Important Australian trade passes through choke points in the archipelago to our north and these passages could be denied to us even during lower levels of conflict. In those circumstances, there would be options for re-routing shipping clear of the archipelago. Economic costs would be involved which, without Government subsidy, could adversely affect the competitiveness of our exports that normally pass through the archipelago. Again, the cost to Australia would reflect itself in reduced living standards and economic impact on some regions of the country, rather than a threat to national survival.

**3.30** Effective interdiction of our trade in open ocean areas would require wide area surveillance capabilities such as satellites or over-the-horizon radar with real-time communications links to attacking forces. No regional country now has such capabilities and their development is not in prospect. Surveillance and intelligence information of this kind is unlikely to be made available to a regional adversary.

**3.31** Interference with or interdiction of shipping in coastal waters and in our focal areas and ports might be seen as a more practical option for an adversary. The movement of cargo by coastal shipping contributes substantially to the national economy. Its disruption would have a serious effect on such industries as oil and petroleum, mineral ores, fertilizer and chemicals, coal, and iron and steel. Some parts of Australia and some of our remote northern settlements are heavily dependent on supply by coastal shipping. Protecting shipping in our coastal waters is an important priority for our maritime forces.

**3.32** Our force structure priorities are guided by these more credible situations requiring the protection of shipping in coastal waters and in our focal

areas and ports. We require significant forces to defend against this contingency, which would be very demanding for our maritime forces because of the distances involved and the dispersion of our focal areas. Such forces could contribute to protecting shipping in the unlikely event of global conflict.

## Warning and defence preparation

**3.33** Our force development planning reflects an acceptance that higher levels of threat could emerge only after a longer period of time. Our force capability priorities are structured to take account of existing and projected capabilities in regional forces and the possibility that low levels of military threat could emerge over shorter timescales.

**3.34** An important objective of defence planning is to provide maximum time for defence preparations. As some of the responses that could be required involve long lead times, the Government requires a constant monitoring of international circumstances, and particularly of foreign military capabilities, to ensure that Australia makes the appropriate military preparations in good time.

**3.35** Defence policy depends heavily on a high level of performance of intelligence monitoring and assessment of international events to detect changes in adequate time. Our intelligence organisations have the responsibility for monitoring developments which could produce pressures or threats against Australia's interests and to which a defence response may be needed. Competent intelligence capabilities are an accepted and recognised component of the structure of modern government.

**3.36** The concept of warning, and its application to Australian defence planning, has been given careful attention by successive Governments. The concept had its origins in the Strategic Basis documents of the early 1970s, which noted that it would take many years for any regional country to develop the substantial military capabilities required to sustain major operations against Australia. In 1976, the Defence Committee, in its document *Australia's Strategic Analysis and Defence Policy Objectives*, expanded on this point, noting that:

the emergence of a threat would be a late stage in a series of developments and Governments would need to act well in advance of it. Defence planning and preparations over the preceding years should therefore be responsive to any strategic change perceived as having potential for harming Australia's interests

**3.37** This definition was reflected in the 1976 White Paper, which observed that defence preparations could not be delayed until a definite threat finally emerged. Preparatory planning and practical measures taken in advance and based on a capable and versatile defence force would substantially reduce the time necessary to organise an effective defence response. The concept of warning does not imply a defence force which is static until a threat has materialised, but one responsive to any significant strategic change with the potential to weaken Australia's security.



**3.38** The development of the concept of warning has been part of the process by which Australia has distinguished its unique strategic circumstances from those of its traditional friends and allies in the northern hemisphere. Our allies face direct and identifiable military threats from nearby forces to which they may have to respond in timescales measured in days and weeks. Australia faces no presently identifiable major military threat, except for the remote possibility of global war. All conceivable such threats from a regional power would be preceded by a build-up of forces. The two superpowers alone possess the military capabilities that could threaten Australia with invasion. The United States is a close ally of Australia and it is impossible to see, in that context, what purpose would be served by a major military threat to Australia from the Soviet Union short of global war.

**3.39** Any decision to embark upon hostilities as a deliberate act of state policy is a major one for any government to make. There would need to be some matter of sufficient weight in dispute. Tensions would need to develop to the point where one side decides to use force. Australia does not have that kind of dispute with any nation. Much would need to change, therefore, in our international position for the possibility of such conflict to arise. These changes would be evident to us and to our friends.

**3.40** There would also be indicators of major physical preparation. Within our region no nation has the ships, aircraft and transportable forces that would be necessary to launch and sustain an effective assault upon Australia. These are among the most expensive and sophisticated forms of defence technology for any country to acquire. Their acquisition and introduction into full operational service could not be concealed and the development of the operational expertise to use this technology effectively in an assault on Australia would take many years.

**3.41** Our considerations are also influenced by the preparation necessary for military expansion. Comparison of the expansion times for other countries and Australia to become effective in the use of important military capabilities includes a careful weighing of combat training skills, the ability to operate and maintain advanced equipment, the size and scope of the economic, industrial, and scientific and technical base, and the prospects for assured external support.

**3.42** Different considerations apply when low level threats are contemplated. As already pointed out these threats could range from harassment of our maritime zone and offshore rigs or mining of ports at the lower level, through to substantial raids of short term duration on important northern targets or our offshore islands. For such activity, which could heavily consume Australian defence resources, the range of indications is much smaller. The capabilities required are much less and already exist in a number of countries.

**3.43** The political problems which might lead to low level threats are more diverse in nature than those which might invite more substantial attack. Less time would be needed for an adversary to prepare and Australia would also have less time to mount a military response. Thus the Government has directed that priority be given in defence planning to ensuring adequate and appropriate capabilities exist within the Defence Force to deal with such pressures.

## Australia's defence strategy

**3.44** Australia's defence strategy is based on the concept of defence in depth. This strategy and our force structure planning give priority to meeting credible levels of threat in Australia's area of direct military interest. An adversary would be faced with a comprehensive array of military capabilities, having both defensive and offensive components. Australia is not an aggressive or expansionist nation, but an adversary must be left in no doubt about our ability to counter the escalation of his military operations against us, including by use of our strike and interdiction capabilities.

**3.45** Defence in depth gives priority to the ability of the ADF to mount operations capable of defeating enemy forces in our area of direct military interest. This means that we must have forces capable of tracking and targeting the adversary, mounting maritime and air operations in the sea and air gap to our north, capable of offensive strike and interdiction missions, having a comprehensive range of defensive capabilities—including air defence, mine countermeasures, and protection of coastal trade—and embodying mobile land forces able to defeat hostile incursions at remote locations.

**3.46** The fundamental importance of the sea and air gap to our security gives high priority to maritime (naval and air) forces capable of preventing an adversary from substantial operations in that area. There could be a need to be able to conduct operations against the bases that an adversary was using for his attacks on us, and against his infrastructure. As our maritime forces would not be able to prevent an adversary from at least limited use of the sea and air gap, a primary task for us would be the protection of the bases from which our maritime forces operated. Ground forces would also be needed to take offensive action against the forces the adversary had landed, and, with other force elements, to protect other areas of the military and civil infrastructure and population.

**3.47** For successful operations in all levels of conflict our forces need to have effective capabilities with good range, endurance and mobility and be trained to operate in a harsh environment. The communications needed for command and control, and the logistics organisation needed for resupply, have to be designed to operate effectively over great distances. In the event of conflict, logistics would be particularly demanding and there would be a need to make best use of our civil assets.

**3.48** In developing forces with the required characteristics, the prudent application of advanced technology plays an important role. In many cases the ability to apply advanced technology effectively provides the only real solution to many aspects of defending our vast continent and our interests in surrounding maritime areas. This reinforces the need for continuing national and defence expertise in selected areas of science and technology (see Chapter 5). Nevertheless, high technology equipment is very costly. Assessments of the value of constructing weapon platforms in Australia must involve a careful evaluation of the strategic requirement for maintaining or developing local capabilities. The important requirements are to be capable of sustaining and



supporting operations in our area of direct military interest, to develop those capabilities that can be efficiently produced from our own resources, and to adapt and maintain equipment in the Australian operational environment.

**3.49** In relation to the question of operational readiness, the forces we would require to deal effectively with the types of military threats that could arise in the shorter term need to be maintained at a high state of readiness. This does not mean that all such units should be at uniformly high readiness but we need to be confident that they could become effective, deploy, and sustain operations in an appropriate timescale.

**3.50** Readiness will be enhanced by increased training and basing in those areas of the continent most likely to be involved in credible situations. Training in northern areas fosters familiarity with likely areas of operation and thus allows an immediate advantage over an adversary. It allows us to determine more accurately the substantial demands on defence and other infrastructure of this harsh operating environment—for example, the requirements for surveillance, command, control and communications, mobile strike forces and the necessary logistic capacity in remote areas.

## Requirements for force development

**3.51** The broad requirements which result from the application of the priorities discussed in this chapter can be summarised as:

- intelligence collection, assessment and regular review processes to detect changes in strategic circumstances;
- planning processes which regularly test the consequences for our force structure of the types of military pressure that could arise over shorter time-scales; and
- a defence force able to:
  - undertake current and foreseeable peacetime operational tasks;
  - deal effectively with the kinds of military pressure that could arise over shorter time-scales; and
  - provide a suitable basis for timely expansion to meet higher levels of threat if our strategic circumstances deteriorate over the longer term

**3.52** Within this planning framework, priority capability areas include:

- surveillance and patrol operations in our maritime resources zone and proximate ocean areas;
- maritime forces (including mine countermeasure forces) able to protect shipping in coastal waters and in our focal areas and ports;
- ground reconnaissance and surveillance forces;
- mobile ground forces able to defeat hostile incursions at remote localities and protect military and infrastructure assets that support the projection of our maritime power
- air defence within our maritime areas and northern approaches;
- maritime and land interdiction and strike capabilities, particularly the ability to

undertake maritime strike operations in the approaches to north and north-west Australia;

- a capability to sustain operations in areas of Australia and its territories remote from our industrial and logistic support centres; and
- command, control and communications systems commensurate with these tasks

**3.53** These basic requirements determine our force structure. The characteristics of range, endurance and mobility that we plan for the ADF provide the Government with practical options for sustaining our defence activities further afield should the need arise.



## Chapter four

# The Australian Defence Force and its development

4.1 The preceding chapters have drawn conclusions from our strategic circumstances about priorities for the capabilities we need in the Australian Defence Force (ADF). This chapter describes the capabilities of the ADF and outlines the directions in which Government will develop the ADF in the light of these priorities.

## Intelligence and surveillance

### Intelligence

4.2 A high level of capability in strategic intelligence is fundamental. This allows us to review developments in the defence capabilities and political positions of other countries and to monitor them for changes that could affect our security. Our intelligence priorities focus on those potential changes that affect us directly. We must also, however, be able to assess developments beyond our region of primary strategic interest.

4.3 By continuing to develop our own capabilities and by supporting existing arrangements for intelligence sharing with allied countries, the Government will ensure that our needs for strategic intelligence of high quality will continue to be met.

4.4 The Government plans to enhance our independent intelligence capabilities by establishing a large satellite communications station in Western Australia. This will contribute to Australia's security in our area of strategic interest. The station will be totally Australian owned and will be manned and operated by the Defence Signals Directorate.

4.5 With the operational emphasis of the ADF being focused on lower levels of conflict, our priorities for operational intelligence should be similarly directed. The Government will ensure that, through our own capabilities and co-operation with allies, we shall continue to meet our needs for operational intelligence.

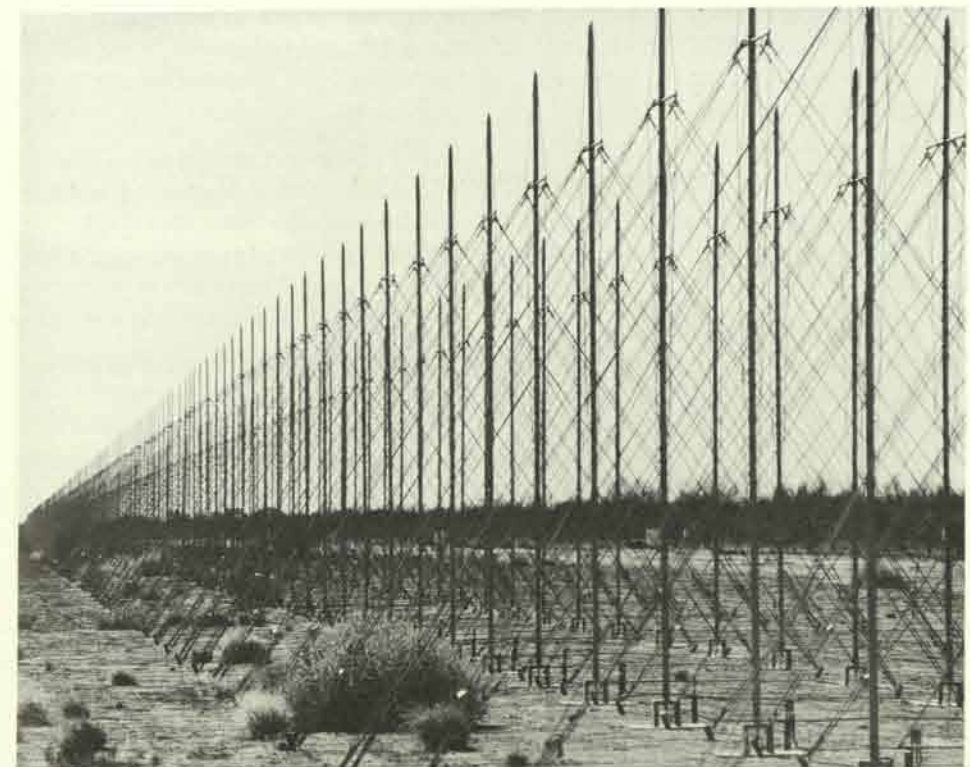
### Broad area surveillance

4.6 The ADF requires a manifest capability to conduct surveillance of our vast sea and air approaches. The capability must provide the means to detect, identify and, if necessary, respond to sea and air activity in our sovereign air and sea space.

4.7 This national requirement for broad area surveillance poses formidable problems. Ground based or ship based microwave radars lack coverage beyond about 250 nautical miles for high flying aircraft; for detection of low flying aircraft and surface ships, the range is much more limited. Although airborne early warning and control (AEW&C) aircraft can provide greater coverage, a solution based on the sole use of AEW&C aircraft would be prohibitively expensive.

4.8 Recent technological developments in over-the-horizon radar (OTHR) have led to practicable broad area surveillance at an affordable cost. For Australia, OTHR with its ability to sweep large volumes of air and sea space from a single location offers the only affordable solution. With an OTHR network, we expect to be able to monitor the great expanses of our sea and air approaches and provide long range detection and tracking of aircraft and surface ships. Without an OTHR network, we would remain essentially unaware of movements of interest in our vast maritime approaches.

4.9 The Government has given high priority to the design and development of this network, based on the Australian designed Jindalee experimental radar. The OTHR network will be a basic element of a national system for air defence and airspace control.



*The aerial array of the Jindalee over-the-horizon radar. A Jindalee network of up to three radars will be a basic element of a national air defence and control system.*



**4.10** Up to three new radars have been identified as required and studies are underway on their precise locations. Current planning is for one or two to be sited in north-eastern Australia and one sited in the west or south-west. The system will be developed to improve tracking of surface ship movements.

**4.11** The ability of OTHR to control air intercepts will continue to be investigated; however, the precision required for such a task is probably only consistently achievable in the foreseeable future by use of microwave radars, either in the intercepting aircraft or ship or in an AEW&C aircraft.

**4.12** The Government has decided to upgrade the existing Jindalee radar at Alice Springs to provide a test bed for scientific, engineering and operational development. This will allow the testing of important new features including specialised transmitters, greater computing capacity and further development of the computer software. The upgrade will also enable Service operators to gain valuable operational experience on OTHR in preparation for the new network.

## Air surveillance

**4.13** The Government will develop a national system of air defence and airspace control which will integrate the information available from a variety of sources (eg, OTHR, civil and military microwave radars, intelligence sources), collate and analyse that information, and present the results to commanders. Other major elements of the system include the Tactical Fighter Force, an infrastructure of air bases, command and control, and the supporting communications system.

**4.14** The RAAF operates three ground based microwave air defence radars, and the acquisition of further radars is under consideration. These can provide greater definition and control in the vicinity of airfields and other important areas. All RAN major combatants have early warning radars for monitoring and controlling their respective environments, which includes the control of aircraft. These radars can also assist in the protection of important coastal installations.

**4.15** The combination of an OTHR network and AEW&C aircraft offers considerable potential for airspace surveillance. AEW&C aircraft have the flexibility and speed to respond quickly to targets detected by OTHR. The microwave radar of the AEW&C aircraft has the precision to monitor with great accuracy the movements of a target and, if required, direct an interception.

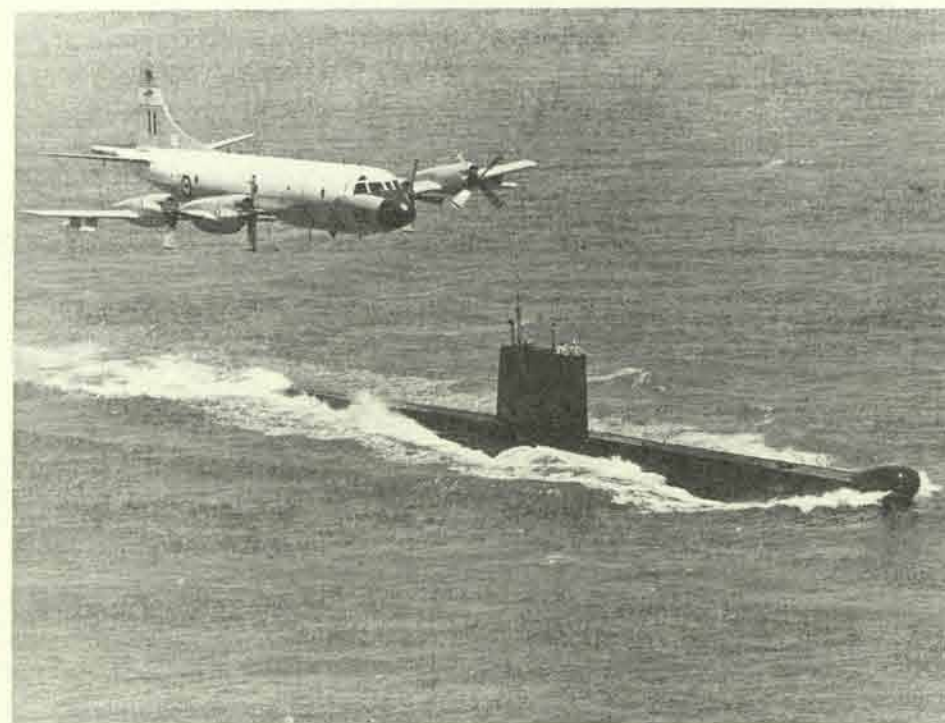
**4.16** The Government has requested and the Department of Defence is now evaluating proposals from industry for AEW&C systems. The Government accepts in principle the need for such systems and will include provision in the Five Year Defence Program. The Department is also conducting a major study into air defence surveillance elements.

## Maritime surveillance

**4.17** The planned OTHR network will form the basis for our system of maritime surveillance. However, even if a ship has been detected by OTHR, it may still need to be intercepted and identified by ship or aircraft. In the vast expanses to our north, this is a formidable task.

**4.18** Until the capability of OTHR for the detection of surface ships is better developed, maritime surveillance will continue to be undertaken by long range maritime patrol aircraft, and surface ships. Embarked helicopters significantly increase the surveillance capability of surface ships. The guided missile frigates (FFGs) of our current fleet have this capability, as will future major surface combatants.

**4.19** The ADF's fleet of 20 P-3C Orion long range maritime patrol (LRMP) aircraft is expected to remain in service for at least the next 20 years. This aircraft has long range and endurance and can operate from the major airfields across the north, including those on Cocos and Christmas islands. This number of aircraft is adequate for our present and foreseen needs. The Government will improve the capabilities of these aircraft through the acquisition of modern electronic support measures which facilitate the detection and classification of electronic emissions. An update to the radar is also being considered.



*Two elements of Australia's maritime surveillance capability. P3C Orion long range maritime patrol aircraft and Oberon class submarine.*



## Anti-submarine surveillance and anti-submarine-warfare

**4.20** The threat to Australia from submarines is low. Nevertheless, because the necessary skills are difficult to acquire and the lead times for adapting and developing anti-submarine warfare (ASW) technology for the Australian environment are long, we need to maintain our expertise in anti-submarine warfare.

**4.21** Our first priority for surveillance against submarines is the protection of our major focal areas and their approaches. Although shipping using our southern ports and waters gains some protection from submarine attack by virtue of the distances that an attacker would need to cover to operate in those areas, no such protection is afforded to shipping using northern ports and waters.

**4.22** Anti-submarine surveillance and ASW are conducted by units of the Fleet and the LRMP force. The guided missile destroyers (DDG) and destroyer escorts (DE) of the RAN are equipped for ASW with the Ikara ASW missile and anti-submarine torpedoes. The submarines and the FFGs are also equipped with the latter.

**4.23** The anti-submarine surveillance capabilities of the Fleet will be considerably enhanced as a result of the Government's decision to purchase Seahawk helicopters for the FFGs. The Sea King helicopters already in service can provide a further land based ASW capability in our major focal areas. In anti-submarine operations, the P-3C aircraft has the ability to lay and monitor sonobuoys, including the Australian designed and produced Barra sonobuoy, to attack submarines with torpedoes, and to lay mines.

**4.24** Another important development in anti-submarine surveillance is the surface-towed acoustic array. This new technology, coupled with advanced computer processing, offers prospects of long range detection of modern submarines in some nationally important sea areas, including those of our south. Our investigations of the potential of this new approach will proceed, as a matter of priority, to at least the trials and evaluation stage. Similarly, acoustic arrays towed by submarines will contribute to anti-submarine warfare.

## Ground surveillance and reconnaissance

**4.25** There is a need for ground force surveillance of our northern areas against the prospect of an adversary's raiding forces crossing the sea and air gap and conducting operations on the Australian continent. To meet this requirement, three Regional Force Surveillance Units manned largely by the Army Reserve have been established to cover the Pilbara, the Kimberleys and Northern Territory, and Northern Queensland.

**4.26** To complement the surveillance role of Regional Force Surveillance Units the Special Air Service Regiment can undertake ground reconnaissance to locate and identify any raiding forces operating on Australian territory. In addition, 2nd Cavalry Regiment, which is to be relocated to Darwin, has a

considerable capacity for mobile reconnaissance over a wide area. Specialised equipment will be acquired to expand further our capabilities for surveillance and mobility.



*Soldiers of the Special Air Service Regiment during a training exercise near Northam, WA. The Regiment can complement the Regional Force Surveillance units in its surveillance role.*

## Electronic warfare

**4.27** The incorporation of modern technology into defence equipment has led to a greater and more complex use of the electromagnetic spectrum by sensors and weapons. This has increased the importance of being able to exploit an adversary's use of electromagnetic radiation and to restrain his exploitation of ours.

**4.28** Our priorities in electronic warfare (EW) reflect the operational needs of lower level contingencies. This gives emphasis to electronic support measures as an aid to surveillance and identification, and to communications EW to support ADF operations. We need to know the transmission characteristics of the friendly, neutral and hostile forces that would be most relevant in such contingencies. The establishing and development of the Defence EW Data Base will be important in this regard.



**4.29** In other areas of EW, our priorities concentrate on the need for scientific and technological understanding of EW and its developments rather than on acquiring a high level of operational capability.

## Mapping, charting and infrastructure knowledge

**4.30** The availability of comprehensive and up to date military maps and charts, together with a detailed knowledge of the environment and its infrastructure, is fundamental to the effective conduct of military operations. The size of Australian sovereign territory and our area of direct military interest makes this an imposing task. Priority in this work is being given to operationally important geographic areas.

**4.31** Productivity increases arising from new technology will speed up the production of military maps and related data required by the ADF for military operations. Nevertheless, the mapping of the priority areas of the north will still take many years. Further advances may be possible in the context of Government's consideration of the rationalisation of Commonwealth mapping. Aerial photography for mapping purposes will continue to be conducted using leased aircraft.

**4.32** Detailed knowledge of Australia's marine environment is fundamental not only to Australia's commercial interests and purposes but also to the safe and effective conduct of maritime operations, especially for navigation, mine and counter-mine warfare, and submarine and anti-submarine operations. The task is formidable and there are few specialised ships available. Measures are being taken to redress this.

**4.33** Two heavy landing craft have been allocated as interim survey ships to assist in the national charting effort undertaken by HMA Ships MORESBY and FLINDERS. The Government is acquiring four survey motor launches. In addition, an Australian designed laser airborne depth sounder is under development. This promises accurate surveying of coastal waters at a faster rate than conventional means. Other options under consideration include the acquisition of more survey ships.

**4.34** Oceanographic research is conducted by HMAS COOK. Another vessel will be acquired particularly to assist in the development of towed acoustic arrays.

## Nuclear, Biological and Chemical Defence (NBCD)

**4.35** No neighbouring country now has nuclear weapons, and their development or acquisition is not in prospect. Similarly, no neighbouring country maintains chemical or biological weapons although, by their very nature, the time-scale for the development of chemical or biological weapons would be much shorter.

**4.36** The ADF undertakes some basic training in NBC defensive and protective measures, but such training does not command a high priority. A scientific competence in NBCD matters is maintained to advise on policy and to give direction to ADF training.

## Strike and interdiction

**4.37** Earlier chapters have noted that although political constraints could limit the use of our strike capabilities in lower levels of conflict, they represent a useful option that a Government would wish to have available. They are also part of the expansion base we need for higher levels of conflict. Two force elements have a primary strike and interdiction function—the F-111 strike and reconnaissance force and the submarine force. Other elements such as the Tactical Fighter Force, LRMP aircraft, surface ships and special action forces can also contribute to this capability.

### Strike aircraft

**4.38** Our 23 F-111 aircraft represent a unique force in regional terms. They are long range aircraft with the ability to strike sea and land targets with substantial immunity. Four F-111s are fitted to conduct all-weather, long range reconnaissance. Since their acquisition, the F-111s have been updated progressively and their effectiveness enhanced. They have been fitted to fire Harpoon for maritime strike. The Pave Tack precision weapon delivery system, which significantly enhances target identification and weapon delivery, is being fitted. It increases the accuracy with which conventional bombs can be delivered, it can designate targets for the delivery of the laser guided bombs which have been acquired for the F-111, and it could be used with other precision weapons that might be acquired.

**4.39** The effectiveness of the F-111 will decline unless some of its avionics and support systems, which are becoming increasingly difficult to maintain, are updated. The introduction of the F/A-18 Hornet raises the possibility that Hornets could be used to replace F-111s lost from the strike force through attrition. A submarine launched missile is another strike option for the longer term.

**4.40** The lead times for taking up these options are substantial. Meanwhile, separate options are being developed to refurbish the F-111 fleet at minimum cost to maintain the aircraft in service and to reduce significantly its operating costs.

### Submarines

**4.41** Our six Oberon class submarines were commissioned into service from the late 1960s. With their updated sensors and weapons they represent the most formidable sub-surface strike force in the region. Their weapons include the Mk48 torpedo, effective against both ships and submarines, and the anti-ship Harpoon missile.





*The long range F111 aircraft have a highly effective maritime strike capability. Four are being fitted for all-weather, long range reconnaissance.*

**4.42** The characteristics of the Oberons (and their replacements) include long range and endurance and the ability to operate independently and effectively in areas where an adversary might have air superiority.

**4.43** The Oberon submarines are expected to be paid off during the 1990s as they become more difficult to maintain and suffer operational degradation. The Government is introducing a new class of submarine which will be constructed in Australia. We will acquire six new submarines which, with their modern equipment, high performance and greater availability, will enhance the capability of our submarine force.

**4.44** To ensure that the Commonwealth gets value for money in this costly project and to reduce risk, the Government has funded competitive tenders between two different submarine designers and two different designers of submarine combat systems. These tenders have been submitted and are being evaluated. The Government will announce its decision in 1987.

## Maritime warfare

**4.45** By its very nature, the defence of Australia and its territories emphasises maritime warfare capabilities. The ADF must be able to conduct maritime operations to prevent an adversary from substantial use or exploitation of our maritime approaches. The maritime force structure reflects the requirements for both coastal operations—particularly for mine countermeasures and to counter harassment and infiltration—and ocean operations, which require a higher level of offensive and defensive capabilities.

### Surface combatant force

**4.46** The present surface combatant force consists of 12 destroyers (three DDGs, four FFGs, five DEs) and 20 patrol boats (15 Fremantle Class and five Attack Class). Two further FFGs are being built at Williamstown Naval Dockyard, and will enter service in the early 1990s, when two of the older DEs pay off. The Government will expand the Navy to a force operating 16 to 17 major surface combatants.



*HMAS DARWIN, one of the RAN's fleet of 12 destroyers. Two further guided missile frigates are being built to enter service early next decade.*



**4.47** Present planning for the development of the surface combatant force envisages three broad levels of capability. At the first level are high capability surface combatants able to contribute to a wide range of operations in both low level and more substantial contingencies. They have sensors and weapons able to provide a wide range of capabilities and a high degree of survivability, and are capable of integrating with allied forces if required. At present, the DDGs and FFGs comprise the first level. The DDGs are being progressively modernised at Garden Island Dockyard, with the last to be completed by 1990. They are expected to remain in service for at least ten years after modernisation. The FFGs are expected to be in service for 30 years.

**4.48** The second level comprises ships of lesser capability, suitable for dealing with lesser forms of military pressure which could arise in Australia's resource zones and proximate waters or in Australia's area of direct military interest. A new class of vessel—a light patrol frigate—has been proposed for this level of capability. Eight ships will be constructed in Australia. They will be designed so that their sensors and weapons can be enhanced to enable them to contribute to operations in more substantial contingencies and to complement the first level of capability in operations in the direct defence of Australia. They will need endurance, sea-keeping and combat capabilities commensurate with these tasks, and will be able to embark Seahawk helicopters. A significant influence on their selection will be the need to achieve the required numbers within reasonable cost. The ship will be of a type that will allow the Government to select from a number of Australian yards for construction.

**4.49** At the third level are the patrol boats, which are suitable for coastal operations. Their capabilities are primarily defensive. They can undertake national peacetime tasks including fisheries patrol and law enforcement and are also capable of contributing to coastal, port and harbour defence if the occasion demands. The present Fremantle boats will remain in service well into the 1990s. The number of third level vessels required in the longer term will depend on the numbers, capabilities, and cost of the ships acquired for the second level.

## Submarine force

**4.50** As well as being able to conduct strike operations against surface ships and other submarines, the submarine force can conduct reconnaissance and patrol, and operate in conjunction with the Army's special action forces.

**4.51** The Government has recognised that the effectiveness of the submarine force would be enhanced by basing some of the submarines in the west closer to priority operating areas. HMAS Stirling is being developed as a major submarine facility. Oberon class submarines will be home-ported there, as will some of the new submarines. The Government has authorised the construction of a substantial submarine training facility in Stirling and has more facilities under consideration.

## Maritime air operations

**4.52** Land based aircraft capable of maritime operations are P-3C Orions for surveillance, strike and ASW, and F-111s and F/A-18 Hornets for strike, interdiction and maritime air defence. Ships' systems, such as radars, air defence missiles and guns also contribute to air defence.

**4.53** The P-3C LRMP aircraft provide maritime surveillance against surface ships and are able to conduct anti-surface warfare operations using the Harpoon anti-ship missile. The P-3C can also lay mines. F-111C and Hornet aircraft armed with Harpoon missiles perform a valuable role in anti-surface warfare operations. This capability—indeed maritime operations generally—would be enhanced if AEW&C aircraft are acquired.

**4.54** The Government decided in 1985 to acquire Seahawk helicopters to operate from our six FFGs. The Seahawks will provide surveillance and weapon targeting, and will conduct ASW operations. The eight light patrol frigates will be able to operate these helicopters. Our Sea King helicopters can undertake coastal and focal area ASW operations from land bases. Navy's helicopter needs for HMA Ships SUCCESS, STALWART and TOBRUK after the Wessex utility helicopters reach their end of life are presently under study.

## Mine countermeasures force

**4.55** The Government gives a high priority to the development of a capable mine countermeasures force. The present force consists of a single minehunting ship. This is inadequate. A mine countermeasures force will be developed that will ensure that our major ports can be kept open.

**4.56** A new class of glass reinforced plastic inshore minehunter (MHI) catamaran has been developed in Australia for hunting mines in inshore waters. The first of two prototype MHIs has been delivered and the second is expected in mid-1987. Subject to successful evaluation and further review of our priority needs, it is planned to acquire at least four additional MHIs.

**4.57** Because the waters in which we could need to counter mines vary in their characteristics, we need minesweepers to complement the minehunters. The RAN is developing an innovative Australian concept for acoustic and magnetic sweeps, and will acquire craft-of-opportunity, such as fishing boats and tugs, for the rapid expansion of our mine countermeasures force. This concept involves the use of members of the Naval Reserve whose knowledge of local waters would be of great advantage in mine warfare.

**4.58** The mine countermeasures force also needs the capability to counter mines specifically targeted against mine countermeasure vessels themselves. A mine warfare systems centre will be developed in Sydney to support the mine warfare force. This support will include the collation of extensive environmental data on the mining characteristics of our ports.





*HMAS RUSHCUTTER, a 31 metre glass reinforced plastic catamaran designed to hunt mines in harbours estuaries, channels and other shallow waters which abound along Australia's coastline.*

## Amphibious forces

**4.59** The Fleet currently includes seven amphibious ships—a heavy landing ship (LSH) and six heavy landing craft. In peacetime and in low level contingencies they provide the sea transport capability of the ADF. An advantage of these ships is their ability to discharge cargo and personnel across a beach or through non-operational ports by beaching and, in the case of the LSH, HMAS TOBRUK, by using helicopters or small vessels.

## Afloat support

**4.60** Underway replenishment has advantages particularly where naval units are required to undertake sustained operations at long ranges from bases and logistic support. There are similar advantages with afloat maintenance support where ships are operating in areas away from major Naval bases.

**4.61** HMAS SUCCESS provides underway replenishment. This vessel was commissioned in 1986 and will join the Fleet as a fully operational unit in 1987. Afloat maintenance support is provided by HMAS STALWART which is due to reach its end of life in the later 1990s.



*HMAS TOBRUK, a heavy landing ship of the amphibious force which provides sea transport capability for the Australian Defence Force.*

**4.62** With major Fleet units homeported on the west coast and to cater for possible expansion, there are advantages in acquiring a second underway replenishment ship. Various options are being examined including the acquisition and conversion of a merchant tanker or the acquisition of a low cost naval vessel.

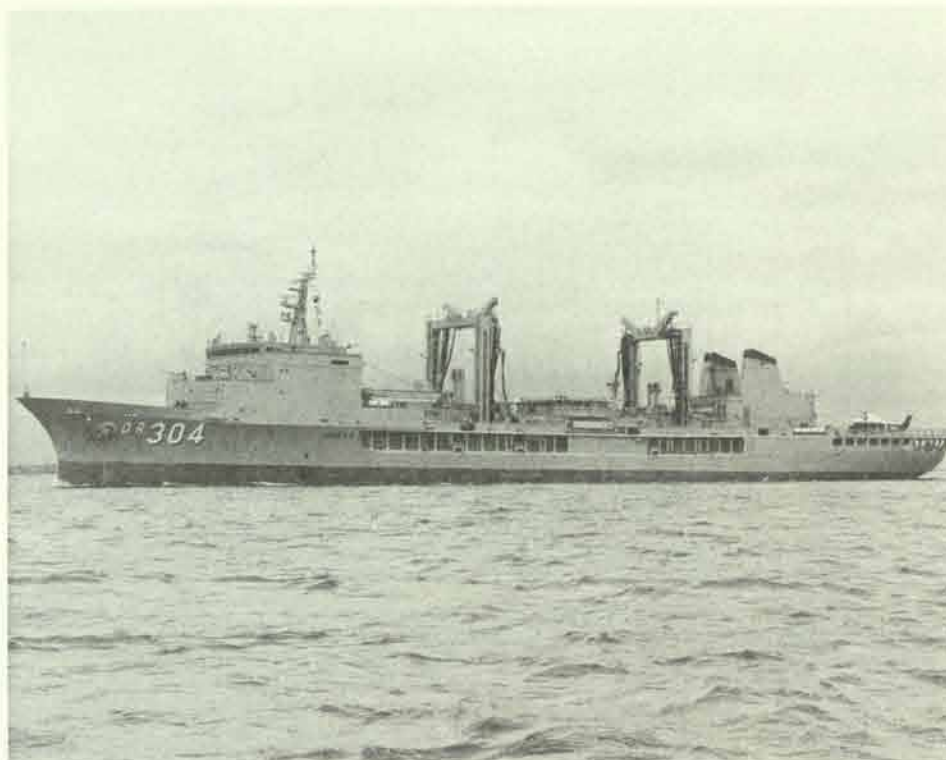
## Naval infrastructure

**4.63** The need for the Navy to operate from both the east and the west coasts has been recognised for many years. However, for historic, strategic and economic reasons the RAN has operated primarily from the east coast.

**4.64** The homeporting of major fleet units at HMAS Stirling recognises the need for the Navy to be able to operate effectively from both coasts for the direct defence of Australia. Two DEs, two Fremantle class patrol boats, one Attack class patrol boat (operated by the Naval Reserve) and a survey ship are based at Stirling. They will be joined shortly by an Oberon class submarine.

**4.65** To inform judgements on options for the future disposition of naval units and the location of infrastructure, the Department of Defence has conducted the Fleet Base Relocation Study. This study reported on all significant





*HMAS SUCCESS, the Fleet's underway replenishment ship permits naval units to undertake long range and sustained operations without reliance on shore-based logistic support.*

issues and options associated with the relocation of Fleet elements from Sydney to Jervis Bay (NSW) and prospects for increasing ship basing at HMAS Stirling. Issues considered included strategic, operational and cost factors as well as implications for the community. The study noted the advantages of Jervis Bay over other locations on the east coast for a new Fleet base. The Government is committed to examining fully the environmental considerations of what is clearly the most suitable alternative location for the major fleet base in the east, before reaching any decision.

**4.66** The Fleet Base Relocation Study reported that the development of HMAS Stirling for up to half the fleet would be a sensible planning objective to be achieved progressively. It is now the Government's intention to move half the fleet to HMAS Stirling. This will enable the Navy more readily to develop expertise in areas in which it would need to operate in contingencies that could arise in shorter timescales. Ships operating in the strategically important areas of the north and north-west and supported from HMAS Stirling will gain a substantial increase in their effective operating time. In this further development at Stirling, there will be an emphasis on avoiding duplication of specialised support facilities already available on the east coast.

**4.67** Rationalisation of shore training and support establishments to enable more efficient use of resources is being examined. Relocation of substantial functions to Jervis Bay and HMAS Stirling is probable.

## Air warfare

**4.68** By the very nature of the medium in which it takes place, air warfare is part of all forms of warfare—maritime, land and air. Consequently, some aspects of air warfare have been covered earlier in this chapter in the sections describing air and maritime surveillance, strike and interdiction, maritime air support, anti-submarine surveillance and anti-submarine warfare. Air support of the land battle is covered later in this chapter. This section covers air defence and the Tactical Fighter Force, ground based surface to air missiles, strategic transport, and northern airfield infrastructure.

### Air defence and the Tactical Fighter Force (TFF)

**4.69** Airspace surveillance, including the need for a national system for air defence and airspace control, has been discussed earlier. The developments planned for OTHR, the Tactical Fighter Force (TFF), defence communications and defence command systems should result in such a system for northern Australia by the late 1990s. It is a primary requirement for effective air defence.

**4.70** Doctrine and operating procedures which effectively integrate all air defence elements, including naval elements, will be developed for the defence of vital assets. This will become increasingly important if the potentials of OTHR and AEW&C aircraft are to be fully realised.

**4.71** Within the TFF, the replacement of the Mirage fighter aircraft by the F/A-18 Hornet is proceeding smoothly and, with the associated upgrading of the TFF's air-to-air missiles, represents a major upgrading of capability. Two squadrons and the operational conversion unit will be based at Williamtown (NSW) and the third squadron will be based at the major airfield being developed at Tindal (NT). The last of the 75 Hornet aircraft that have been ordered is planned to be delivered by the Government Aircraft Factories in 1991.

**4.72** The Government's decision to modify the four Boeing 707 aircraft of the RAAF will allow the Hornet aircraft to increase its effective range and payload. This number of aircraft is sufficient to provide a training capability, a limited operational capability and a base for expansion. It facilitates the development and acquisition of the complex skills needed for effective refuelling operations.

**4.73** The Hornet has capabilities for strike and interdiction as well as air defence. Its existing capabilities include precision weapons such as the Harpoon anti-ship missile and laser guided bombs.



**4.74** Modern munitions have greater accuracy and effectiveness and can lead to enhanced survivability of the delivering aircraft. They are costly, however, and the priority for their acquisition needs to be based on a clear understanding of their use in different levels of contingency. Also important are lead times for acquisition, the development of necessary doctrine and skills, and ascertaining performance in our areas of interest. These considerations lead to a policy of acquiring limited stocks of selected types of munition to gain a basic level of familiarity in weapon performance and procedures and to maintain a contingency reserve.

### Land based surface-to-air missiles

**4.75** The Rapier low level air defence weapon system and the RBS-70 very low level air defence weapon system, which will replace Redeye in 1987, provide close-in protection to airfields, important installations and vulnerable points.



*The Rapier (pictured) and the RBS-70, two air defence weapon systems which provide close-in protection to airfields and other important facilities.*

**4.76** The current capability is one battery of each system. This is a minimum but adequate structure to establish command and control procedures appropriate to more substantial conflict, and to meet the needs of low level conflict.

**4.77** Land based area surface-to-air missile systems command a low priority in present strategic circumstances. In more substantial conflict they could be required for the protection of vital areas and points. However, they can be readily integrated into the nation's air defence system if a change in circumstances leads to their acquisition.

### Strategic transport

**4.78** The strategic transport needs of the ADF are met by the Boeing 707 and C-130E aircraft of the RAAF. These can be augmented by aircraft of the civil air fleet. That augmentation is of special significance in the event of conflict as it offers a major reserve capacity.



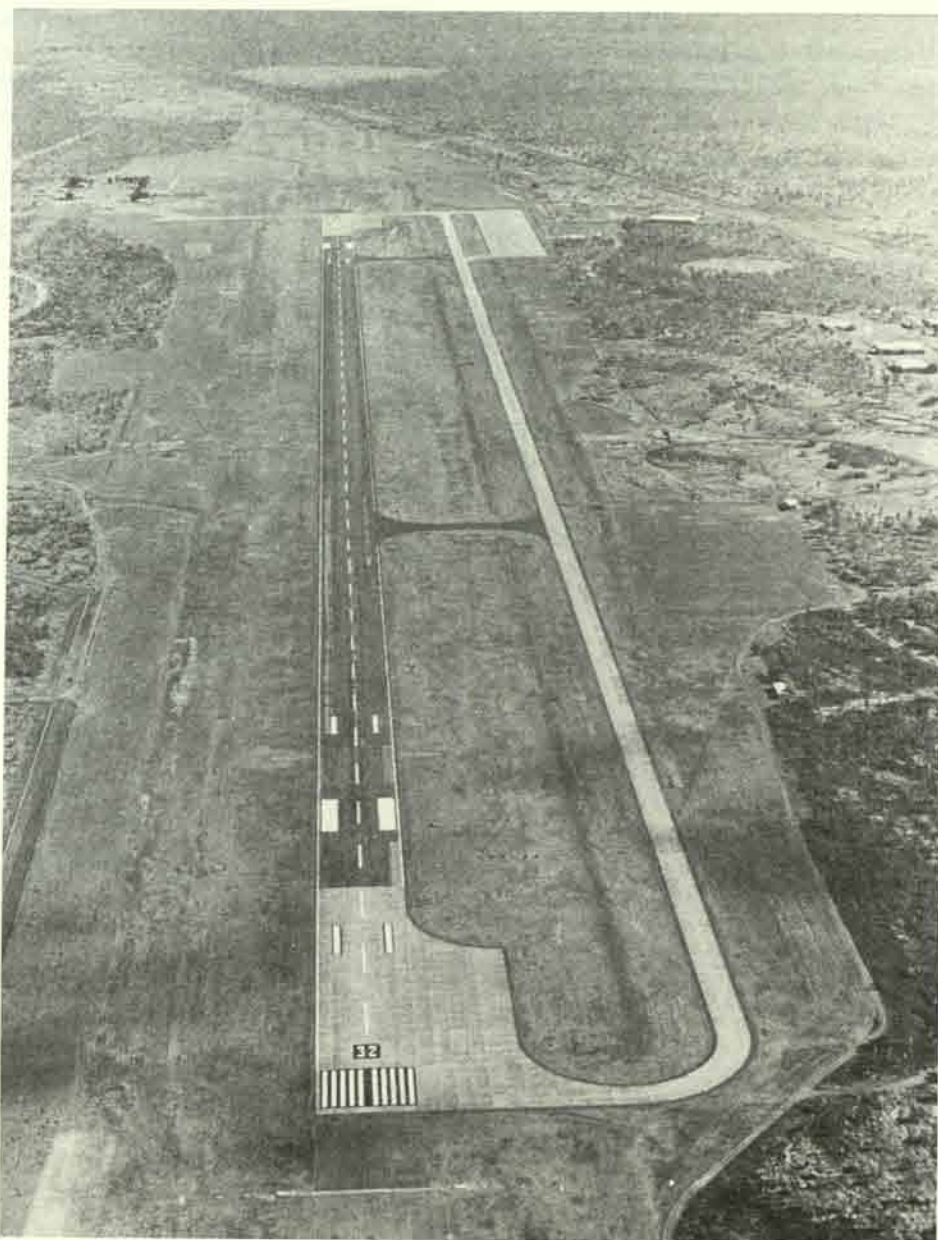
*The Boeing 707 aircraft, above, together with C130E aircraft meets the strategic transport needs of the Australian Defence Force. It is planned to modify the 707 aircraft for in-flight refuelling.*

### Northern airfield infrastructure

**4.79** A chain of northern air bases is needed for the RAAF to react effectively to possible contingencies and to support ADF operations across the vast expanses of the north. There are already major manned bases at Darwin



and Townsville, and unmanned bases at Learmonth and Tindal. Stage one of the construction of Derby airfield is due for completion in 1987, and the current development of Tindal will allow the basing of a Hornet squadron there from late 1988.



*Tindal airstrip. Construction of RAAF Tindal is proceeding to permit the basing of an F/A-18 squadron there in 1988.*

**4.80** The Government will build an airfield on Cape York Peninsula. A number of issues, however, have yet to be resolved. For example, site options must be developed, environmental impact studies must be completed, land acquisition resolved, and extensive engineering and design effort conducted after the selection of an appropriate site. The aim is to have the airfield operational as early as possible in the 1990s.

**4.81** Civil airfields in the north are also available for military use. They include Port Hedland, Broome, Kununurra, Gove, Mt Isa, Weipa and Cairns. Some can sustain regular military movements while others are suitable only for emergency use of limited duration.

## Land Warfare

**4.82** The Government's policy is that, in response to the wide range of credible northern contingencies, the Army's structure must include highly mobile forces capable of rapid deployment anywhere within Australia and its territories. The ground force must be able to conduct protracted and dispersed operations in harsh terrain where the existing infrastructure and resources are sparse, and be logistically supportable within Australia's resources. An expansion base is required at a lower priority to maintain the essential skills and capabilities needed for more substantial conflict, together with sufficient units on which to base timely expansion. Elements for lesser contingencies also form a large part of the expansion base. The command, training and logistic framework to support the development, operation and maintenance of the total force is also required.

**4.83** These requirements indicate changes of emphasis rather than a significant departure from existing organisation. We need a force structure that includes a light air portable force, capable of rapid deployment; forces capable of following up an initial deployment; and the availability of greater combat power to reinforce deployed formations if necessary. In addition, elements capable of deploying to defend vital defence installations and national infrastructure, and a logistic organisation capable of supporting the deployment and subsequent operations of these forces, need to be given priority.

**4.84** This force structure requires no major changes from the current Army organisation based on the 1st Division (essentially Regular), two Reserve divisions (2nd and 3rd), and Training and Logistic Commands. However, some changes are needed to meet requirements for readiness, sustainability, and strategic and tactical mobility.

## 1 Division

**4.85** 1 Division will become more readily deployable, with a priority task being to provide the tactical headquarters, formations and units required for credible contingencies. All elements will be required to achieve specific degrees of operational readiness. As a secondary priority, 1 Division will continue to develop and maintain doctrine and skills for the broad range of conventional operations required in more substantial conflict.



**4.86** 1 Division will remain structured as an infantry division, with 3 Brigade, 6 Brigade, and 7 Brigade (a Reserve formation) providing the formations likely to be deployed to meet shorter term contingencies. 1 Brigade and 11 Field Force Group (a Reserve formation) will also remain with 1 Division, but in different readiness categories from the other formations. This grouping will give flexibility within the division to assign units according to the particular requirements of a contingency.

#### **3 Brigade (Townsville)**

**4.87** 3 Brigade, comprising two infantry battalions, will continue to provide the bulk of the Operational Deployment Force (ODF) and short degrees of readiness will continue to apply. The ODF will remain a lightly equipped air portable force. In addition, to broaden the scope of its employability, Regular units including an armoured personnel carrier squadron and the parachute battalion (from 1 Brigade) have been earmarked to augment the ODF should they be required. Other units that might be required are currently under review, and could include ground mobility, surveillance, reconnaissance, communications and logistics elements. Such units would also be placed on appropriate degrees of notice.

#### **6 and 7 Brigades (Brisbane)**

**4.88** These brigades are manned and equipped at a level that is adequate for training but not for operations. Consideration is being given to placing the regular elements of 6 Brigade on 90 days notice to move and the Reserve elements of 6 and 7 Brigades on six months notice from callout. Both brigades will be 'rounded out' from other Reserve elements in the event of operational deployment.

#### **1 Brigade (Sydney)**

**4.89** 1 Brigade currently provides the structure for the development of a parachute capability (3 RAR), the mechanised capability (5/7 RAR), and the armoured capability (1 Armoured Regiment in association with 5/7 RAR). A battalion group parachute capability is being developed to secure a point-of-entry for the ODF or alternatively to augment the ODF should a third battalion be required. The parachute group will be placed on similar readiness to other ODF elements. The other battalion of the brigade, together with the armoured regiment, provides the expansion base for mechanised and armoured capabilities.

#### **Logistic support**

**4.90** To support 1 Division if deployed, a Logistic Support Force will be formed. The force will provide essential third line logistic support. It will be built on the current structure of the existing but smaller Logistic Support Group that is part of the ODF, with additional elements being provided by the Reserve.

## **Protection of vital assets**

**4.91** In the event of military conflict, military bases and the civilian infrastructure and population in the north must be protected. Plans will be developed to use both Regular and Reserve forces for this vital task. Planning will proceed on the basis of a possible initial need to use Regular units deployed at short notice, followed by their relief by designated Reserve elements to release the Regular units for mobile offensive operations.

## **Regional Force Surveillance Units**

**4.92** The development of three Regional Force Surveillance Units covering the north of the continent is well advanced. These units are North West Mobile Force (Norforce, headquartered in Darwin), Far North Queensland Regiment, and the Pilbara Regiment. Further expansion of these units is constrained by the limited availability of manpower in these regions.



*Versatility in operations is needed for Regional Force Reconnaissance Units. Pictured are members of Norforce patrolling the Walker River, NT.*



## Northern basing

**4.93** Focusing attention on the needs of credible northern contingencies raises the issue of basing Regular Army units in the north. The 2nd Cavalry Regiment, a reconnaissance unit currently based at Holsworthy, will be relocated to Darwin.

**4.94** 2nd Cavalry Regiment will provide a considerable capability for mobile reconnaissance over a wide area, and a modest capacity to deal with incursions. The unit is capable of independent operations in low level contingencies and, with its mobility and communications, can react to sightings by Regional Force Surveillance Units.



*Armoured Personnel Carriers provide the capability for highly mobile reconnaissance, a task to be undertaken by the 2nd Cavalry Regiment.*

**4.95** Northern basing will allow the unit to gain valuable experience in northern operations which, in turn, will inform decisions on the acquisition of future light armoured vehicles. On present planning, the unit's existing tracked M113 vehicles will be replaced with wheeled armoured vehicles carrying weapons and surveillance equipment suitable for credible northern contingencies. A selected range of vehicles will be evaluated under northern conditions.

**4.96** The Government has directed that detailed studies commence on the possible relocation of a brigade to the north. Together with support elements and accompanying families, such a deployment would involve some 6 000 to 7 000 personnel. Detailed analysis of the implications of relocating a brigade is required, including careful consideration of possible alternatives. The Government's decision will be influenced by experience with the move of the 2nd Cavalry Regiment.

## Offensive air support

**4.97** Offensive air support in land warfare can be provided by both the TFF and F-111s. This support can be given in the form of interdiction of the battlefield or close air support for our troops. Close air support is important in all levels of conflict; however, in operations against small units of dispersed forces, restricted and limited battlefield interdiction and close air support could also be conducted by less capable aircraft such as advanced fixed wing trainer aircraft or armed utility helicopters.

## Battlefield helicopters

**4.98** Helicopters integral to the land force contribute importantly to its combat power, providing reconnaissance, tactical mobility, fire support and logistic support within the area of operations. As battlefield helicopters are an important element of the Army's combat team, the Government has decided to transfer full command and ownership of battlefield helicopters from the Air Force to the Army. This will enhance the ADF's capability at all levels of conflict and, in particular, will improve its ability to bring its combat power swiftly to bear on enemy forces in the dispersed operations which would be typical of the more credible contingencies we face.

**4.99** The Government has already decided to acquire 14 Blackhawk helicopters to supplement the 30 UH-1H helicopters already in service. A further 22 Blackhawks will be acquired to complete a company group lift. More Blackhawks will be acquired for a second company group lift and further helicopters for a third company group lift will be considered in examining force development priorities.

## Army aviation

**4.100** The Army's surveillance, reconnaissance and communications aircraft (44 Kiowa light observation helicopters, and 14 Porter and 11 Nomad fixed wing aircraft) are expected to remain in service until the 1990s. Experience from training in the north will be important to inform judgements on the capabilities needed in the replacements for these aircraft.





*The Army's battlefield mobility will be enhanced by the introduction of the Blackhawk helicopter (top) to supplement the capability provided by the in-service Iroquois (lower).*



## M113 light armoured fighting vehicles

4.101 Light armoured fighting vehicles are essential for mobility, protection and firepower in credible northern contingencies. The Government has decided that the present fleet of 773 M113s, of which 700 are currently on issue, can be reduced to 600 or fewer under current circumstances. Some of the fleet will be upgraded, others placed in storage.

## Mechanisation

4.102 With greater priority being given to dispersed low level operations, the present level of mechanisation of 1 Brigade will be restricted to battalion group level. This will provide a suitable level of mechanisation to meet expansion base needs and to contribute to credible contingencies. There will be increased emphasis on training in northern Australia.

## Tanks

4.103 1 Armoured Regiment is to become an integrated Regular and Reserve unit, with initially one of its three Regular tank squadrons being converted to Army Reserve. In the light of experience, the composition of the Regiment will be further reviewed.

## Artillery

4.104 Acquisition of 59 new field guns (105mm) for the Regular Army will continue, including 36 guns for the Regular component of the Field Force. This Government has approved 46 new guns for the Army Reserve. Acquisition of further new guns for the Reserves will be considered in the light of the current review of the structure of the Army Reserve.

4.105 The Regular 8th/12th Medium Regiment consists of two medium batteries and one field battery, with one of the medium batteries also equipped with field guns. The Reserve 10th Medium Regiment provides general support medium artillery. The balance between Regular and Reserve medium batteries will be reviewed.

## Rationalisation of the Reserve structure

4.106 Our requirements for land warfare cannot be achieved without extensive Reserve participation. Accordingly, the Army Reserve structure is being reviewed and changes will be implemented progressively. Since World War Two the Reserve has provided the expansion base for the Army. It will now, in addition, be required to contribute to operations which might arise in the shorter term as part of the total Army, at a level commensurate with achievable degrees of training and readiness. The Government will soon legislate for restricted call-out of Reservists, thus ensuring their availability in credible contingencies.



**4.107** New areas of Reserve activity will include integration with Regular forces, particularly in 1 Division and the Logistic Support Force, augmentation of high priority elements of the Regular force, defence of vital assets across the north, and participation in some higher level capabilities in the expansion base such as tanks. These challenging tasks will provide a new focus for the Army Reserve. With some restructuring and changes to roles it will be achieved within a ceiling of 26 000.

## **Tactical air transport**

**4.108** Tactical air transport in support of land forces is provided by the C130H Hercules, Caribou, Chinook medium helicopters, and utility helicopters. The Caribou short range transport aircraft will reach the end of its planned life of type in the 1990s. In considering its replacement we will take regard of the potential of our northern airfields (military and civil) to support movements by different aircraft types and the potential benefits of aircraft commonality—such as an expanded fleet of C-130 Hercules. Our studies on how best to meet the ADF's needs for tactical air transport will also consider the future of the Chinook helicopters, newer technologies such as the tilt-rotor and X-wing concepts, and the need for air transport support in dispersed northern operations.

## **Command, control and communications**

**4.109** Since the re-designation in 1984 by this Government of the Chief of the Defence Force Staff as the Chief of the Defence Force (CDF), and the creation of Headquarters, Australian Defence Force (HQ ADF), the CDF now commands the ADF with direct staff support being provided by HQ ADF. In conjunction with the Service Offices, HQ ADF undertakes operational military planning for the CDF.

**4.110** Under these arrangements, the single Service Chiefs of Staff retain command responsibilities. They remain responsible to the Minister, under the CDF, for commanding their individual Services. In addition, they are responsible for advising the CDF on all matters relating to their Service, including operations, and in raising, training, supplying and maintaining combat ready forces. Under command arrangements approved by the Government in 1986, they are also responsible for providing combat ready force elements to joint force commanders.

**4.111** In 1986, Maritime, Land Force and Air commanders were appointed. Supporting operational headquarters are being developed. The joint force commanders report directly to CDF and have responsibility for the conduct of designated joint ADF operations and exercises.



*Russell Offices, Canberra the location of Headquarters, Australian Defence Force and part of the Central Office of the Department of Defence.*

**4.112** These new command arrangements enhance the ADF's operational ability—they facilitate the development of staff procedures and the conduct of joint exercises; and they are expandable if strategic circumstances deteriorate. In a transition to operations, HQ ADF would expand to support the CDF in furnishing military advice to Government and in operational planning.

**4.113** The Government has given a high priority to the development of an automated system to support the new command arrangements. This system will be capable of displaying, recalling and transmitting a wide variety of data. The progressive introduction of the Defence Secure Communications Network will overcome the limitations of the present communications system.

**4.114** With increased ADF activity and basing in northern Australia, the Government believes there could be value in developing joint administrative and command arrangements in northern Australia. This will be further examined after the new joint operational command system is established and working effectively.



**4.115** Further changes will also be made to the organisation of HQ ADF. In 1986, the Government created the appointment of Vice Chief of the Defence Force (VCDF), whose initial task has been to study how force development planning can be co-ordinated better between HQ ADF and the single Service offices. The results of the VCDF's study are being examined. Some initiatives, including a greater centralisation of force development planning under the CDF, have already been taken.

## Summary—The ADF and its development

**4.116** As a result of this Government's decisions, the ADF in the late 1990s will be a highly capable force better matched to our strategic needs. Through its training and exercising it will be skilled in operating in our unique geographic environment. The Defence Force will have modern weapons, greater mobility and endurance, and better logistic support. A chain of forward bases and facilities in the north and west of the continent will be complete. Our surveillance capabilities, especially for air defence, will be greatly improved. And we will have an effective system for the command and control of the ADF in joint operations.

**4.117** Some of the more important developments in the ADF's capabilities achieved and planned for the years ahead are summarised below:

### Command, control and communications

- The ADF's command arrangements have been improved by the redesignation of the Chief of the Defence Force Staff as the Chief of the Defence Force, the formation of Headquarters ADF, and the creation of a Vice Chief of the Defence Force at equal rank to the Chiefs of each Service.
- A joint operational command system has been created through the appointment of Maritime, Land Force and Air commanders who report directly to CDF.
- Computer based information systems are being developed to support the decision making of operational and higher level commanders.
- New communication systems to support operations and administration will be introduced, making use of modern technological developments including satellites. The use of cryptographic security will be considerably extended.

### Navy

- The number of major surface combatants will increase from the present 12 to 16 or 17 with the introduction of the light patrol frigate. This warship will be built in Australia. It will have the sensors and weapons, the endurance, and the sea-keeping capabilities required for the ADF's operating environment.

- The six new submarines to be brought into service in the 1990s will enhance substantially the capability of our submarine force with their greater availability, higher performance and more modern equipment.
- The high priority given by the Government to the development of mine countermeasures (MCM) will result in an MCM force of at least six inshore minehunter catamarans, minesweepers (probably using innovative Australian technology), and a mine warfare centre. Naval reserves will be expanded to undertake minesweeping operations in key geographical areas.
- A second underway replenishment ship will be acquired, as will hydrographic survey vessels and a trials and research ship. Capabilities for charting will be improved.
- The Government has recognised the need for our Navy to operate effectively from both coasts. HMAS Stirling will be developed as a main naval base for half the Fleet—both surface and submarine forces.
- The anti-submarine capabilities of the Fleet will be considerably enhanced by the purchase of Seahawk helicopters and the development of an Australian surface-towed acoustic array.

### Army

- More emphasis will be given to highly mobile forces capable of rapid deployment.
- 1 Division (an infantry division) will be more readily deployable. The ODF will be augmented when necessary by a parachute battalion group, an armoured personnel carrier squadron and other capabilities. The other brigades of the Division will be rounded out and made more ready for operations. A Logistic Support Force will be formed to support 1 Division.
- Responsibility for command and operation of battlefield helicopters is being transferred to Army.
- Blackhawk helicopters will be acquired to provide a company group lift. More Blackhawks will be acquired for a second company group lift. A further purchase for a third company group lift will be considered.
- Studies on the relocation of a brigade to the north have begun. Initially, a reconnaissance unit (the 2nd Cavalry Regiment) will be based in Darwin.
- The Army Reserves will have a greater role, including specific duties to protect vital defence installations and infrastructure, especially in the north. They will also participate to a greater extent in expansion base activities.
- Legislation will be introduced to enable restricted call-out of Reservists.
- New and more capable small arms will enter service throughout the ADF.
- New field artillery with increased range and mobility will be introduced to both the Regular and Reserve components of the Army.
- The entire fleet of general service off-road vehicles is being replaced by new 1,2,4 and 8 tonne vehicles manufactured in Australia.
- Modern surveillance devices and electronic warfare systems will be introduced for land warfare.



- The capability of the M113 light armoured fighting vehicle fleet will be improved. Some M113s will be upgraded, others will be placed in storage. Faster, more mobile wheeled light armoured fighting vehicles, carrying weapons and surveillance equipment suitable for northern contingencies, will be introduced into service.
- 1 Armoured Regiment will become an integrated Regular and Reserve unit.
- An expansion base including mechanised and armoured capabilities, will be retained to allow timely expansion if our strategic circumstances deteriorate. 1 Brigade will develop mechanisation at the battalion group level.

## Air Force

- A national system of air defence and airspace control will be developed.
- A combination of an OTHR network and AEW&C aircraft will form the basis of the national system. Up to three OTHR radars will be built. The number of AEW&C aircraft is to be determined; provision has been made in the Five Year Defence Program.
- The capabilities of the P-3C Orion long range maritime patrol aircraft will be improved through the acquisition of modern sensors.
- The introduction of the F/A-18 Hornet into service represents a major upgrading of our air defence, maritime strike, and ground support capability.
- The F-111 strike aircraft will be refurbished, at minimum cost, to reduce significantly operating costs and to maintain them in service. The need for F/A-18 Hornet aircraft to supplement the F-111 fleet as it reduces through attrition, will be considered.
- The four Boeing 707 aircraft will be modified for in-flight refuelling to allow the Hornet to increase its effective range and payload.
- The construction of Tindal and Derby airfields will be completed and an airfield built on Cape York Peninsula.
- A Hornet squadron will be based at Tindal from late 1988.
- Pilot training will be improved by the introduction into service of the PC-9 turboprop aircraft, assembled in Australia.

**4.118** With these improvements the Government will ensure that the nation has a Defence Force structured, equipped, supported and trained to assure our security into the 21st century.

## Chapter five Supporting the Defence Force— infrastructure, logistics, science and technology

**5.1** This chapter outlines the Government's policies for defence infrastructure and logistic support, and our need for indigenous scientific and technological achievements in meeting the challenges inherent in Australia's defence.

## Infrastructure and logistics

**5.2** The vast area of Australia, its territories, and its maritime approaches, and our relatively small population, strongly influence our requirements for infrastructure and logistic support. For strategic reasons, some operational bases should be located in forward areas in the north and west of the continent. But the separation of our main support bases in the south of Australia from likely operational areas in the north, the likely dispersal of forces across a number of areas, and the limited northern industrial and transport infrastructure, would place heavy demands in a contingency on military transport, supply and maintenance. Civil assets would help relieve the support burden, but the ADF must be prepared to operate from austere forward locations under circumstances where local support would not always be available.

## Infrastructure planning

**5.3** We need an extensive infrastructure of bases, airfields, communications stations, training and other facilities to support the ADF and its operations. The Government's policies for the development of this infrastructure reflect the increasing emphasis on operations in the north and north-west of Australia, but also acknowledge the concentration of population and industry in the south and south-east. Defence infrastructure development also has regard to wider concerns, including the ability of civil infrastructure to meet defence needs, and the impact of defence activities on the community.

**5.4** There is already a defence infrastructure of bases, airfields and other facilities in Australia's north and north-west. These include: patrol boat bases at Cairns and Darwin, the major development at Tindal airfield where an F/A-18 squadron will be based from late 1988, the new bare-base airfield at Derby, due for completion in 1987 and suitable for all types of RAAF aircraft, the airbase at Darwin, and the bare-base airfield at Learmonth.



**5.5** The Government has a range of initiatives for the further support of northern operations:

- An airfield will be built on Cape York Peninsula to complete a band of airfields across northern Australia. The Government will proceed shortly to identify a site and commence construction.
- Naval facilities will be progressively developed in the north-west to enhance patrol operations in that region.
- There will be further development of the naval base at HMAS Stirling to allow more surface vessels and submarines to be based there. One submarine will be based at HMAS Stirling from 1987 and others, including some of the new submarines, in later years.
- The 2nd Cavalry Regiment will move from Holsworthy to Darwin



*HMAS Stirling is to be further developed to accommodate the additional vessels to be based there following the decision to relocate half of the RAN fleet from Sydney to Cockburn Sound.*

**5.6** Mining and other civil developments have provided civil infrastructure in the north on which Defence can draw. Civil airfields available for military use include those at Port Hedland, Broome, Kununurra, Mt Isa, Gove, Weipa and Cairns, though not all are suited to the full range of possible defence use. Port facilities at Dampier and Port Hedland, heavy engineering repair and maintenance facilities at mining towns such as Mt Newman, and local communications facilities are other examples of civil assets with defence utility. Nevertheless, specialised maintenance services, and military demands beyond the civil capacity in remote areas, would largely need to be provided from Service resources.

**5.7** Future defence infrastructure planning will emphasise longer term options for developing, rationalising and in some cases relocating defence facilities throughout Australia, and the greater use of civil infrastructure.

**5.8** While Defence needs to be aware of major civil infrastructure developments from their earliest stages, there is no need for Defence to subsidise such developments, unless defence requirements would add significantly to their cost and if they were not justified on normal civil criteria. Generally neither will be the case.

## Defence infrastructure and the community

**5.9** Defence is by far the largest Commonwealth owner or user of land in Australia, and most Defence establishments are in or near the more populated areas of the continent. The Government will review its use of Defence properties. It will release those not required for efficient operations and as necessary acquire new facilities including training areas.

**5.10** Concern for wider social issues is important in Defence infrastructure planning. Local problems sometimes arise when areas currently used by Defence, or sought for future use, are also wanted for civil purposes. The economies of many local communities depend on employment provided by Defence establishments and the local expenditure they generate.

**5.11** Urban growth and increasing constraints on the Army's artillery training in the Sydney area will require the establishment of new training areas. Similar urban pressure has led to Government plans for the movement of the Navy's major armament depot from Newington. The transfer of the armament depot to Jervis Bay will free some 250 hectares for development close to Parramatta and remove the need for lengthy transits of high explosives through urban areas. Development of the Newington site is being discussed by the Commonwealth and NSW Governments.

**5.12** Strong arguments exist for moving the main Fleet Base from Sydney (see Chapter 4). Studies indicate that Jervis Bay is the best alternative location. The Government has directed that an environmental impact study be completed as a matter of priority. This study will also embrace the projected move of the Newington Armament Depot.

## Logistics

**5.13** Defence manages inventories worth several billion dollars, and employs more than 30 000 military and civilian personnel in support functions. There are over 1.4 million line items stocked in defence warehouses and stores, and about 17 million transactions annually in supply computer systems alone.



**5.14** This large logistic system is required to support combat operations. There may be less costly ways of providing peacetime support—with smaller inventories, more centralised services, and minimal redundancies. However, such measures, important in commercial enterprises, are not always appropriate for an effective response to military threats.

**5.15** In logistics development as in force development, priority will continue to be given to our needs in the types of military conflict that could arise in the shorter term. Within this context, a central policy need is to identify the logistic capabilities important in such contingencies, to determine which capabilities would be readily available to the ADF through national economic development, and to decide which require special fostering in civil infrastructure or which should be integral to the ADF.

**5.16** The Government will extend the use of common logistics support, eliminating unnecessary duplication between elements of the ADF and also between Defence and the civil community. For example, quality assurance activities in the munitions factories will be managed by Army on behalf of the other Services; there will be common support services for the Seahawk and Blackhawk helicopters; Army will be responsible for long distance road freight for all three Services, drawing also on other Government and private operators; and a substantially common computer-based supply system will be developed and introduced for Navy, Army and Air Force.

**5.17** Australia's civil transport assets will complement ADF resources in defence emergencies. Ground force operations would draw on the civil air transport fleet, with heavier items and replenishment stores being moved by road, rail, pipeline or sea. While sea transport is more efficient for bulk cargoes, improvements to the road system will reduce reliance on coastal shipping for many military stores.

**5.18** The ADF must have the ability to draw on appropriate resources in the civil community should the need arise. The task of co-ordinating civil transport resources for defence needs involves complex legislative, administrative and operational aspects. This Government has completed a study on the co-ordination of civil maritime resources, the first major interdepartmental transport planning for credible contingencies for many years. Further planning for co-ordination of defence needs with civil assets will continue, including a response by Defence to the Government's recent direction to the Inter-State Commission to examine the efficiency of interstate transport arrangements.

### External logistic support

**5.19** The threshold for direct combat assistance from the United States in some circumstances could be quite high, but logistic support from overseas is a different matter. In low level conflict we could expect that overseas resupply would continue. Military action to deny resupply to Australia is well beyond the existing or potential capacity of regional countries.

**5.20** The continued vitality of our defence relationship with the United States is an important element in these judgements. The United States is the major source for much of our advanced defence technology and equipment, and in some cases it is the only source. The alliance relationship, supported specifically by a Memorandum of Understanding on Logistic Support, renegotiated by this Government in 1985, makes a substantial contribution to our defence support capabilities.

**5.21** The need for weapon systems appropriate to our particular requirements has led to Australia's acquisition of defence equipment from a range of overseas suppliers. Our selection is influenced by whether suppliers are able and willing to provide assurances of timely and appropriate support in all circumstances, and the willingness of the supplier to provide technical detail required for maintenance and possible modification. Difficulties have been experienced with some suppliers being unwilling to provide detail of the computer software that much modern equipment relies on for operation. This is unacceptable and the matter is being pursued. We have obtained Government undertakings from several European countries to ensure their continuing support for defence materiel and intellectual property sourced in those countries. Negotiations are proceeding with others.

## Science and technology

**5.22** The effectiveness of the ADF depends to a significant extent on the maintenance of a high level of technology. Australia should favour advanced technology where it confers an operational advantage, reduces manpower or life-cycle cost, avoids early obsolescence or the need for additional equipment, simplifies operation and support, or where it is otherwise particularly suited to Australia's strategic circumstances.

**5.23** Australia's large area and small population often call for the selection of advanced technology to meet defence needs. This does not always imply the most advanced 'state-of-the-art' equipment. The cost-effective use of technology requires specialist scientific expertise to discriminate between alternative technological options, to modify equipment and in some circumstances to develop indigenous equipment.

### Technology and the Defence Force

**5.24** This Government's policy of self-reliance in defence calls particularly for the enhancement of our own capabilities for technological support, modification and development. We cannot rely completely on imported technology and offshore technological support. Australia's strategic circumstances pose challenges that sometimes call for unique and therefore local solutions.

**5.25** While we procure major defence systems off the shelf from foreign suppliers, there are also some important Australian defence requirements not readily met by systems available overseas. In these cases there is a need for



indigenous Australian development. This applies in particular to intelligence, surveillance and sensor equipment, together with associated command and control systems, which need to be tailored to Australia's specific environment. Such capabilities have priority when local technological development is under consideration.

**5.26** Australia will continue to rely, nevertheless, on substantial overseas supply of equipment. This calls for a well-informed understanding of how to specify operational and technical requirements, how to evaluate proposals, and how to be alert for possible technical problems as equipment ages. Specialist technical advice and support are essential in the equipment selection process and in its modification or adaptation following the emergence of problems or shortcomings.

**5.27** We need to be able to determine the performance in our own environment of equipment of both overseas and local origin and to modify and adapt overseas equipment as necessary to improve its performance in our likely theatres of military operations. For this we need a detailed knowledge of our physical environment (climate and meteorology, terrain characteristics, optical, infra-red and radio propagation, oceanography and ionospheric phenomena) so that we can understand its influence on the conduct and effectiveness of operations and the performance of equipment and systems.

**5.28** Our defence planning recognises that in some circumstances our forces could face an adversary using materiel of Western origin. This would demand the development of specific capabilities for our own equipment.

**5.29** These technological needs arising from Australia's geo-strategic circumstances emphasise the importance of defence science and technology in effective Australian defence. A highly proficient defence science and technology capability is essential for proper defence decision making and policy formulation, to provide specialist technical support to the ADF so that the leverage of its advanced technology may best be exploited, and to advise and support industry.

**5.30** Defence scientists need to be aware of developments in defence policy, strategic assessments, and operational and tactical concepts. This requires close, continual contacts between defence scientists, the Department and the ADF.

## The Defence Science and Technology Organisation

**5.31** While parts of the wider Australian scientific community and defence industry make useful contributions to defence science and technology, the required capability does not, in general, currently exist outside the Department of Defence. The different objectives of non-defence research and development organisations limit them to a contributory role, while defence industry has a more substantial part to play in the later stages of development and production.

**5.32** The Defence organisation's science and technology capability is concentrated in the Defence Science and Technology Organisation (DSTO). DSTO contributes to the development and implementation of Australian defence

policy by the direct application of science and technology. DSTO provides assistance to the ADF, the Department of Defence, other defence agencies and, as necessary for defence purposes, Australian industry.

**5.33** DSTO employs scientists, engineers and technologists in five major laboratories, with divisions sited in South Australia, Victoria and New South Wales and smaller branches in Queensland and Tasmania. It has a total staff of 4300 and an annual budget of \$180m.

**5.34** DSTO contributes scientific advice for defence decision making and policy formulation. It provides a specialist technical service to the ADF, helping it to make the best use of science and technology in choosing, using, maintaining and extending the life of its equipment. DSTO maintains a base of skills and knowledge in defence science and technology and develops selected equipment concepts to meet Australian requirements.

**5.35** DSTO's research and development effort will continue to concentrate on problems unique to the Australian strategic and natural environment, and on other areas where research and development information is not available to us or where we need to ensure our access to appropriate overseas military technology.

## The technology base

**5.36** The provision of expert and up to date scientific advice depends on the maintenance of an adequate technology base. So too does the ability to solve the various technical problems which arise in defence equipment. The defence technology base encompasses a wide range of technologies which are important to defence interests, but which may have little or no priority for non-defence research organisations. While DSTO draws to the maximum extent possible on research and development in the wider Australian community, it is necessary to maintain a substantial in-house research and development program to secure the medium to long term technological interests of Australian defence.

**5.37** The technology base can never be static. It needs to be continually maintained and enhanced by a program of strategically oriented scientific research, development and other activities, anticipating future trends in defence science and technology. This establishes the knowledge and understanding essential for a timely response to defence technological needs. The maintenance of an up to date technology base in many areas of defence related research has enabled DSTO to initiate the wide range of projects listed in the DSTO program below.

## DSTO program

**5.38** DSTO's current and future program includes many activities specifically designed to increase Australia's self-reliance in defence. Examples of DSTO's capacity for indigenous development of military equipment for the ADF include: —over-the-horizon radar—following a decade of research and trials by DSTO in Project Jindalee, this Government has accorded high priority to the design and development of an Australian OTHR network. This recognises its great



potential for effective wide area surveillance. Jindalee is a good example of how forward looking research on the technology base can lead to the development of important Australian defence capabilities;

- towed acoustic arrays—DSTO's development of a unique slim-line hydrophone array will enable our new submarines and ships to be fitted with a long, reelable array, adding significantly to our capability for surface and sub-surface surveillance of our maritime approaches;
- anti-ship missile defence—DSTO's research on novel concepts for ship defence has enabled Australia to enter into a unique co-operation with the United States in all stages of design and development in Project Nulka;
- hydrography—the laser airborne depth sounder conceived and developed in DSTO will greatly increase the productivity of the RAN's charting of Australian continental waters
- military survey—the graphic superimposition ocular developed by DSTO increases the Army's efficiency in producing maps from stereophotographs; and
- camouflage—research in DSTO has led to its development of camouflage schemes for a variety of Army applications (including newly developed combat clothing) which are especially effective in the Australian environment

**5.39** Examples of DSTO's scientific and technical advice and support for the acquisition of new equipment for the ADF include:

- the mine countermeasures force (both minesweeping and minehunting);
- the new submarine;
- the new surface combatant ship;
- the strike and reconnaissance force—the future of the F-111 aircraft, its equipment and systems;
- national air defence and airspace control; and
- electronic warfare, including its tactical command and control

**5.40** DSTO solves a very wide range of technical problems arising in the use of defence equipment. Without this service, the effectiveness and self-reliance of the ADF would be greatly reduced. Examples include:

- investigation of material damage and failure in defence equipment, e.g. cracking in ships' hulls, failures in aircraft and ship turbine engines, cracking in guns;
- development of protective schemes against fatigue and corrosion;
- development of crack repair schemes for aircraft and other equipment;
- investigation of performance of a wide range of sensors and warning systems such as thermal imagers, radars (e.g. in the F/A-18 aircraft) and visual systems;
- investigation and development of electronic warfare systems;
- quantitative analysis of ADF exercises;
- investigations in radio (including satellite) communication;
- battlefield communication frequency management techniques; and

—investigation of ballistic and terminal performance of ammunition and weapon systems

**5.41** The indigenous Australian expertise developed by DSTO in its program will continue to add greatly to our national defence capacity.

## Technology transfer to industry

**5.42** DSTO has an impressive record of technology transfer to industry in Australia. Generally, much of this achievement has been through contracts let to industry for technical support and the later stages of equipment development. Technology transfer has been most efficient and effective when scientists and engineers from DSTO and industry work side by side.

**5.43** This Government is resolved to improve on this good record. The Government is taking steps to expand the role of defence industry in research and in the early stages of defence system development. This will result in a marked enhancement of relevant industry capabilities. Another initiative to be explored is the formation of companies to promote technology transfer from DSTO to Australian industry.

## International collaboration

**5.44** Technology transfer with our allies enables us to maintain a current technology base and to support the acquisition and operation of equipment of high technological content.

**5.45** Technology transfer is achieved through bilateral agreements and programs such as The Technical Co-operation Program between Australia, United Kingdom, Canada, New Zealand and the United States. DSTO has collaborated effectively internationally for many years. This has been facilitated by DSTO's unique contributions derived from work done to meet Australian needs and at a quality comparable with world standards.

## Government review of DSTO

**5.46** This Government recognises the need for special working arrangements within a research organisation such as DSTO. Following earlier Government reviews of DSTO, several reforms have been put in train, including the promotion of research scientists to reward distinguished research performance. In line with the public service reforms being implemented by the Government, management of the DSTO has been modified to provide greater flexibility, increased devolution of authority and improved accountability.

**5.47** This Government has noted that short term priorities have caused research for the technology base to fall below a desirable level and seeks improvement in the balance between DSTO's longer term and short term support for Defence.



**5.48** The review of public investment in research and development in Australia, released by the Australian Science and Technology Council (ASTEC) in November 1986, stated that DSTO was an efficient, well directed and well managed organisation, and that with increased autonomy and flexibility, it could make an even greater contribution to national goals.

**5.49** This Government emphasises the importance of a sound indigenous capacity in science and technology for Australian defence capability. The Government's defence policy will ensure that Australian scientific expertise effectively supports defence decision making, allows the ADF to make best use of advanced technology, and supports industry planning and development.

## **Self-reliance and support of the ADF**

**5.50** Defence self-reliance demands a defence force capable of independent operations. Fundamental to this capability are appropriately sited bases, effective logistic arrangements, and the scientific and industrial ability to select, adapt, repair, maintain and develop defence equipment. The Government will continue to give priority to these essential elements of defence support, recognising that defence self-reliance demands increased indigenous capabilities in areas where we previously depended on our allies.

**5.51** This Government's policies emphasise that defence infrastructure, logistic and industry support, and defence science and technology are now fundamental for the self-reliant defence of Australia.

**5.52** Government policy recognises the need for maximum efficiency, elimination of unnecessary duplication, and judicious use of supporting services available in the national infrastructure, to complement the specialist logistic services and capabilities maintained in the Defence organisation. It recognises the advantages available to Australian defence through the wise exploitation of advanced technology and the need to foster an effective, highly skilled defence science and technology capability directed towards uniquely Australian requirements.

**5.53** This Government's policy for the industrial, logistic, and scientific support of the ADF will ensure its ability to conduct independent military operations over the vast expanse of our area of direct military interest.

## **Chapter six Defence and Australian industry**

**6.1** This chapter explains the role of industry in meeting the Government's requirement for defence self-reliance. It outlines policies for Australian industry to support self-reliance and lists some major defence projects currently underway or planned for the future that heavily involve local expertise.

## **Industry and defence**

**6.2** Since taking office, this Government has implemented a wide range of policy changes to make Australian industry more internationally competitive and export oriented. The new policies are designed to enable industry to adapt to changing market conditions and to take advantage of opportunities presented by technological developments. To meet these objectives, industry needs to be able to design world class products, manufacture and market them competitively, and be less reliant on Government assistance. Changes have included economic policies, such as deregulation of the exchange rate and of the financial sector; general industry policies, for example those applying to research and development, technology development and exports; and industry specific policies for many areas important for defence, such as aerospace, telecommunications, electronics, machine tools, steel, heavy engineering, shipbuilding and ship repair.

**6.3** Efficient and successful industry can use the strengths derived from commercial activities to participate more competitively in the relatively small scale production required by the ADF in times of peace. It would also require less of the nation's resources when undertaking larger scale defence production in times of war.

**6.4** While a substantial commercial workload can provide a base from which to bid for defence orders, the inverse is rarely true. The peacetime requirements of the ADF are usually too small and, particularly for the acquisition of new equipment, too infrequent and too limited in duration, to provide a viable long term base workload for individual firms or industry sectors.

**6.5** Participation in defence projects can, however, bring to industry important technology, introduce new equipment and skills, and develop expertise in aspects of project management and quality control. This can lead to ongoing work in repair, maintenance and adaptation, as well as to participation in other defence projects, and to work on related civil production or for export. The Offsets obligations generated by overseas suppliers can be exploited by Australian industry to supplement Australian defence orders, providing a longer production run, a more viable production base, and access to new technology and markets.



**6.6** Defence forces require substantial support from industry for essential equipment, goods and services. Frontline equipment (eg. aircraft, submarines and ships) embodies the leading edge of world technology. Rations, clothing, ammunition and fuel are often technologically ahead of their civil counterparts and employ advanced production processes. Services such as repair, maintenance, transport and communications draw upon civil industrial capabilities and advanced civil technology.

**6.7** Australian industry has the potential to participate in a wide range of defence activities in times of peace and would provide an essential underpinning of ADF operations in times of tension or hostilities.

## **Industry involvement and levels of conflict**

**6.8** The capacity to maintain, repair, modify and adapt defence equipment to the Australian environment, independently of overseas sources, is of fundamental importance for our combat effectiveness in all levels of conflict. This requires Australian involvement in design, development and production to acquire the necessary detailed knowledge, skills and facilities. Through such work local industry can make an important contribution to the sustained operational effectiveness of our forces in combat.

### **Low level conflict**

**6.9** In low level conflict equipment would be used more intensively than in peacetime, especially for surveillance and response tasks. Harsh operating conditions would be demanding of maintenance capacity and spare parts. Requirements for other consumable items, such as ammunition, would be relatively modest. Nevertheless, there would be a need to build up stocks and to ensure adequate supplies of items little used in peacetime.

**6.10** Reflecting this priority, over 90 per cent of defence repair and maintenance work is done in Australia and some 70 per cent of replacement equipment and spares are supplied locally. We are largely self-sufficient in military consumables, such as food and the more common ammunition types, and could provide defence needs for petroleum fuels and lubricants other than a few special items required in small quantities. We are self-sufficient in, or have substantial reserves of, industrially important minerals and strategically important chemicals. The capabilities of the manufacturing sector to meet priority defence needs are also adequate, apart from some specialist areas.

### **Higher level conflict**

**6.11** Higher level conflict would involve maintenance, repair and adaptation of a wider range of equipment and higher usage of consumables, such as ammunition. The Defence Force would need to be expanded by the acquisition

of selected additional weapons platforms and major systems. Equipment losses would need replacement. The particular requirements would depend on the nature of the conflict.

**6.12** Production facilities appropriate only for a major expansion of the ADF take a low priority because of the speculative nature of the requirement, the high cost, and the lack of a peacetime workload to maintain skills so expensively acquired. Moreover, the time required for a substantial threat to develop would allow development of some additional capabilities, as well as redirection of civil industrial capacity for defence work. Substantial industrial sectors in Australia could, if the need arose, undertake defence work, including the heavy and light engineering, motor vehicle, telecommunications, and manufacturing industries.

**6.13** Under past policies only some 30 per cent of expenditure on new capital equipment has been incurred locally. Most of the Australian content, has been directed towards capabilities for subsequent through-life support and has often involved substantial subsidies. This reflected the nature of equipment then being procured and the poor competitiveness of Australian industry at the time.

**6.14** It is the policy of this Government to encourage the widest possible cost-effective involvement of Australian industry in defence work. Such involvement in peacetime can establish the involvement and familiarity with defence requirements essential to timely escalation in contingencies.

## **Reviews**

**6.15** The need for special industrial capabilities and the capacity of key sectors of Australian industry to support defence is kept under review by the Government's principal defence industrial advisers through the Defence Industry Committee.

## **Priorities for local sourcing**

**6.16** It would benefit our self-reliance and our industry if all of our defence requirements could be developed and supplied locally. Such a course is simply not feasible for a country of Australia's size, nor indeed for any country other than, perhaps, the two superpowers. Despite such difference in size (US expenditure on defence research and development, for example, is several times the total Australian defence budget) Australian research agencies and industry have a commendable record of developing world class products. It is in "niche" areas, rather than in competing across the board, that Australian industry can expect most opportunities to arise.

**6.17** The ADF requires equipment embodying sufficiently advanced technological capabilities to be credible. A careful balancing of indigenous and overseas sources, complemented, where appropriate, by stockpiling is necessary to meet this requirement. In defence equipment development, the Government's



policy is to concentrate scarce indigenous resources in areas where we have special operational requirements and to draw on developments in other countries where they are clearly ahead.

**6.18** In practice, there are many suppliers in Australia who can meet the requirements of the ADF for goods and services and who can compete successfully with overseas suppliers on performance, quality, timeliness and price grounds. The Government's policies are intended to increase the number and scope of such suppliers.

**6.19** Recognising, however, that Australian industry cannot be expected to be competitive across the full range of defence requirements, the Government in June 1984 agreed that defence policy for industry is an integral part of defence policy and set priorities for the use of defence resources for the development of local industrial capability. The priority requirements are:

- the repair, overhaul and adaptation of military equipment fundamental to Australia's defence in circumstances to which the Government has given priority, and the provision of munitions, spares and other consumable stores for which we could least rely on overseas supply (including stockpiling and other actions for greater assurance of supply); and
- the range of technology and supply and support capabilities (including design, development and manufacture) that meet the longer term needs of the ADF in accord with Government policy and Defence guidance as to an acceptable balance of strategic benefits and costs

**6.20** These priorities, and the assessments underlying them, determine the acceptability of cost, time and performance penalties in achieving higher local content in procurements. Such judgements are necessarily made on a case-by-case basis.

**6.21** In many cases, other countries are the only practicable source for additional defence items. Australia is dependent on overseas sources for many special materials, components, production equipment and know-how. For example, there is no Australian manufacturer of ball bearings, aircraft grade aluminium or very high performance integrated circuits. In the peacetime economy, manufacturing such items has so far not been viable. Judicious stockpiling is required to reduce the risk of an inadequate response, or even denial of Australian requests for supply.

**6.22** Even in times of serious tension or hostilities, when cost and performance penalties for local production would be more acceptable, it will still not be practicable to aim at self-sufficiency, particularly in major weapon platforms and systems. Lead times for establishing local production will also limit the level of self-reliance attainable.

## Defence assistance to industry

**6.23** Defence and defence-related industrial activities in Australia are eligible for the same Government assistance as industry generally.

**6.24** There are, however, differences between the defence and civil markets. There is only one substantial domestic customer, the ADF, providing a small and intermittent peacetime market. There are constraints, resulting mainly from security considerations, on the transfer of international and domestic technology. There are strategic, security and foreign policy constraints on sales of Australian defence and defence-related products to other countries. Potential customers foster national self-reliance and other barriers to their markets, similar, often, to those we apply in our own procurements.

**6.25** These differences, and the strategic importance of selected industrial capabilities, provide the only justification for assistance to defence and defence-related industrial activities in Australia additional to that provided for civil industrial activities.

## Defence purchasing

**6.26** Defence projects can foster the development of managerial and other expertise in Australian industry which can then facilitate growth in related civil or export markets. Policies and procedures have been developed to encourage local firms to bid for Defence contracts and to improve their chances of success. Australian organisations are encouraged to take on the responsibilities of prime contractors to maximise the benefits they can receive.

**6.27** Forward equipment plans covering the next five years have been issued for projects in the range \$1-10 m. These will be updated annually. There will be similar releases of plans for acquisitions worth more than \$10m and for repair and maintenance work. Published procurement plans are supplemented by seminars and briefings by Defence officials and direct contact between firms and the staff of the procurement projects. Australian firms must realise however that the plans, particularly for later years, may vary as a result of changes in technology, strategic and operational requirements or budgetary circumstances.

**6.28** Briefings will also be provided on the forward program of the Defence Science and Technology Organisation to encourage industry to enter projects at an earlier stage and to seek to exploit, for commercial as well as defence-related uses, the research work being done for the Services and that undertaken to maintain the technology base.

**6.29** When seeking Defence business, Australian organisations can register to be advised automatically of Invitations to Register Interest, Requests for Proposals and Requests for Tenders.

**6.30** When tender responses are considered, local firms benefit from the Government's Purchasing Preference Policy, which provides a notional discount to the tendered price equivalent to 20 per cent of the value of the local content. This is in addition to notional application of relevant tariffs, bounties, and other forms of general industry assistance.

**6.31** Where there are sufficient strategic benefits to justify the additional cost, the Minister for Defence may provide a price advantage in excess of the 20 per cent preference. This measure is used rarely because of the high cost



involved and the low probability that items needing this form of assistance will later become competitive in local or export markets.

**6.32** Where there are special Australian requirements for equipment, development contracts are let. These involve higher risks in terms of performance, time and cost than purchasing products already in production and proven in operational use. Hence they are restricted to items not available in acceptable commercial variants or from overseas inventories. The number of such contracts, often for adaptation of equipment for local requirements, is quite high.

**6.33** Firms that take advantage of early advice of Defence projects and prospective work will be better placed to develop competitive new products on a commercial risk basis where there are proven overseas products. Such developments are eligible for assistance under general Commonwealth policies, eg the taxation provision for 150 per cent write-off of expenditure on research and development in Australia, and would not usually receive additional assistance from Defence.

### Australian industry involvement

**6.34** When defence equipment is purchased overseas, or where there is substantial imported content in a local product, high strategic priority is given to independent local repair, maintenance and adaptation capabilities. To assist Australian industry to acquire the necessary technology, equipment and expertise, Defence procurements have a requirement for Australian Industry Involvement.

**6.35** Australian Industry Involvement comprises, firstly, 'Defence Designated and Assisted Work' (DDAW), under which elements of the item being procured are required to be manufactured, assembled, tested or set-to-work in Australia. DDAW often incurs cost and delivery time penalties. Such penalties must be justified for each item in terms of their contribution to independent supply and support compared with alternatives such as spare parts stockpiling.

**6.36** The second element of Australian Industry Involvement is Defence Offsets. This Government revised the Offsets policy in January 1986. Under the new policy, technology transfer and work to the value of 30 per cent of the imported content of a project valued at \$2.5m or more must be placed with Australian industry. The Offset activities are to lead to internationally competitive industry in Australia and in the Defence area, to the support of self-reliance.

**6.37** Defence Offsets often relate to capabilities established in local industry under DDAW. This ensures that a longer product run is provided and the expertise acquired at a cost premium is retained for a longer period. It can reduce the costs attributed to each item associated with setting up capabilities and becoming proficient in their operation.

**6.38** Projects initiated in the past, such as the F/A-18 Hornet aircraft, had relatively low local content with correspondingly high requirements for Defence offsets. New projects, such as the submarines, light patrol frigates and OTHR

will have high levels of local content. It will be important for Australian industry to use the linkages established in achieving higher local content to build longer term relationships with overseas principals. These will be essential if opportunities for competitive sub-contracting and exports, previously provided under the Defence Offsets program, are to continue.

### Exports

**6.39** The export of defence and defence-related products can foster skills and capacity in Australian industry and reduce the costs of indigenous supply and support for the ADF. Successful competition in overseas defence markets benefits our overall trade interests as well as the firms involved.

**6.40** In October 1986 this Government announced a package of measures designed to assist Australian firms to gain overseas acceptance of their defence and defence-related products, penetrate markets and provide follow-on support. Important elements of the package include product trialling by the Army, Navy, or Air Force, support in management of acquisitions and spares, and the use of Defence Offsets commitments to assist initial exports and collaborative ventures culminating in exports.

**6.41** Successive Australian Governments have, of course, controlled the export of defence materiel. Defence exports must take into account Australian strategic and security interests and the operational concerns of the ADF. As an aligned nation and a responsible member of the international community, Australia opposes private traffic in arms, abides by its international commitments to limit the arms trade and circumscribes the export of defence materiel to countries engaged, or likely to be engaged, in hostilities. Australian controls on defence exports will be administered with a view to achieving a balance of Australian defence, international and commercial interests.

### International collaboration

**6.42** As military equipment has become more capable and complex, it has also become much more expensive. As a result, international collaboration is now becoming increasingly common as a means of sharing risks, spreading costs, increasing market size, and exploiting specialization and economies of scale. The European nations have been particularly active in collaborative defence equipment development programs and the United States has recently enacted legislation to facilitate participation by its agencies and firms.

**6.43** Opposition is growing to the traditional Offsets mechanism used by Australia. Governments are seeking to further restrict foreign access to their defence purchases on security and self-reliance grounds. Hence collaborative projects are likely to become increasingly important for Australia.

**6.44** The Government has used the Offsets program and the leverage afforded by major Defence procurements to provide opportunities for Australian industry to collaborate in future developments with major overseas defence equipment manufacturers. Recognising the inherent difficulties in matching



operational requirements, timing and financing, of defence procurements with other countries, we have commenced negotiations of government-to-government agreements to facilitate this process.

## Defence industry structure policies

**6.45** The Government's policy for industry seeks to provide an environment where industry itself, in consultation with unions and Government, can move towards more efficient and internationally competitive activities. In the defence industry area, belated recognition of fundamental economic, industry and defence factors has caused some severe structural problems. These must be rectified to enable defence industry to conform with the Government's general industry policies.

### Competition for defence contracts

**6.46** Previous policies have tended to establish important defence capabilities in industry and then allocate them work exclusively. This has established sole sources, which have subsequently lapsed into the poor performance and high costs that often characterise monopolies.

**6.47** It is this Government's intention that, unless there are compelling reasons to the contrary, defence work will be allocated on a competitive basis using fixed price (as opposed to cost-plus) contracts, with payments against milestones (rather than elapsed time) and with other incentives for improved performance where appropriate. Wherever possible, opportunities are to be provided for Australian organisations to bid as prime contractors.

### Ownership of machinery and facilities

**6.48** Consistent with our emphasis on normal commercial practice in our dealings with industry, and to facilitate the commercial exploitation of capabilities built up for defence work, the Government has begun selling much of the Commonwealth-owned machinery and plant now located in industry.

**6.49** In future, wherever practicable, industry will own the machinery, plant, licences and other items required to undertake defence work in Australia. The Commonwealth's interest in the ongoing provision of the capability in Australia will be protected by contractual clauses that have such items revert to it, perhaps with some payment, on failure of the company to meet contracted performance or maintain agreed strategic capabilities.

### Australian ownership, control and influence

**6.50** Australia protects sensitive international defence technology not only by physical security but also by requiring local branches of multi-national firms to isolate themselves from parents of other than approved nationalities. Such policies and procedures are common to our main allies, including the United States, and can be a precondition to Australian access to some overseas technology.

**6.51** Australia is now developing a number of sensitive indigenous technologies, of which OTHR and the Nulka anti-ship missile defence system are examples. These require similar protection to that previously afforded overseas technology. Measures are being developed to restrict access to Australian nationals and to enterprises that can demonstrate a very high level of Australian control of their local operations.

### Government factories and dockyards

**6.52** The Government has recognised that, despite significant past expenditure, the capabilities and capacities of its defence factories and dockyards are ill-matched to our strategic needs. Since the incorporation of the Defence Production Establishments into the Department of Defence in 1984, reform has proceeded on three levels—revision of the relationship between customer elements of the Department and the supplying establishments, restructuring of factories, and reassessment of the work they undertake.

**6.53** The Office of Defence Production, is now responsible for the efficient and effective operation of the Government's defence factories and dockyards. As far as possible, those establishments are treated by the 'customer' elements of the Department as simply another source of goods and services. Their maintenance of important, dedicated and exclusive defence capabilities can, however, lead to closer relationships with Defence customers than usually occur with commercial organisations. In place of the contracts that Defence places with commercial firms, work is now sought from Office of Defence Production establishments under Production Management Agreements (PMAs). As far as possible, PMAs are the equivalent of commercial contracts. They include damages for failure to perform to 'contract', in the form of authority to withdraw work rather than as monetary damages. Progressively, the Government expects that the establishments will enter collaborative arrangements with local and overseas industry and will compete against local commercial enterprises for defence and other work.

**6.54** In December 1985 the closure of the Albion Explosives Factory in Victoria was announced with the transfer of important capabilities for manufacture of military high explosives and propellants to the Mulwala Explosives Factory in NSW. Sale of the Pooraka Aircraft Engineering Workshops in South Australia was announced concurrently. In July 1986, the Government announced its decision to convert the Government Aircraft Factories (GAF) in Victoria to a Government owned company, Aerospace Technologies of Australia. Membership of the board of the new company was announced in December 1986 and its "takeover" of GAF is planned for 1 July 1987.

**6.55** All of the Government factories and dockyards will use commercial costing and pricing procedures from 1 July 1987. Williamstown Dockyard adopted these arrangements when it undertook construction of the Australian frigates.



**6.56** In recognition of changing technology and workload, and of the very substantial subsidies of their operations, substantial workforce reductions have been made at individual establishments and at the central office of the Office of Defence Production.

**6.57** The highly specialised and excess capacity of some factories is costly and detracts from their ability to compete effectively in wider markets. Wherever possible, such capacity is being minimised or avoided by techniques that reduce the lead time for its establishment to within likely warning times for its use. It will be retained only where it can be shown that difficulties could be expected with overseas supply (eg where sources are limited and likely to be unsympathetic, or where transport to Australia would be difficult), stockpiling is difficult or prohibitively expensive (eg where shelf life is short), and where local commercial production capacity could not be redirected.

## **Industry and some major procurements**

**6.58** The procedures for acquisition of major capital equipment have been streamlined and the responsibility of project managers strengthened by the creation, in July 1984, of the Capital Procurement Organisation (CPO) within the Department of Defence. The CPO has placed greater priority on project management training and procedures, and has sought more responsible involvement of Australian industry in defence work in accordance with the Government's defence policies for industry.

**6.59** Major defence acquisitions vary widely in the nature of the equipment, the likely sources, the potential for local activities in design, development, production and Australian Industry Involvement, and, hence, the strategy for acquisition. While no two projects are the same, there are some common policies and principles that can be applied. Some examples follow illustrating the application of this Government's policies to procurements with substantial potential for local industry involvement.

### **Indigenous design and development projects**

**6.60** The impetus for local design and development projects can come from local research and development undertaken to meet special local requirements (eg OTHR and sonar systems) or as a consequence of research undertaken to maintain the technology base (eg Project Nulka and minehunter systems). The main difficulty in such projects is to manage the cost, schedule and technical risks to produce an acceptable final product. An important consideration is to set up projects in ways that encourage industry to exploit the results in wider markets.

### **Over-the-horizon radar**

**6.61** Following a decade of research and trials by the DSTO, the principles of OTHR using reflections from the ionosphere have been largely established, the basic hardware and software elements have been demonstrated in an experimental system, and the Government has authorised the first stage in the establishment of an operational system.

**6.62** The Australian OTHR system is adapted to the ionospheric, geographic and strategic circumstances of Australia. Other countries have sought different technical solutions. There is high security attached to the details of such systems, particularly their performance and susceptibility to countermeasures. As a result, there is likely to be scope for exchange of research and technical information with close allies, but, at least at this stage, little scope for exports of complete systems. Australian industry will benefit by acquiring expertise in a number of high technology aspects of the system, applicable in other defence projects, and may be able to develop commercial products based on some elements.

**6.63** Australian electronic, software and other companies have been involved in the development of the experimental system and will have an increasing role as the system develops. The importance and sensitivity of the OTHR project will restrict access to Australian nationals and to organisations complying with the Australian Ownership Control and Influence provisions. Within these restrictions, it is the Government's intention that the project be structured to maximise competition in industry involvement.

### **Anti-ship missile defence system**

**6.64** Innovative techniques for the protection of ships from some of the more recent anti-ship weapons have been developed by DSTO in co-operation with Australian industry, including the Government's defence factories. Unlike OTHR, Australian needs for such a system are neither unique nor substantial and would command most priority in higher levels of conflict considered more remote in time and less likely. Such a system could, however, be expected to be of considerable interest in other theatres. This raises the prospect of substantial exports.

**6.65** There are high costs and risks in taking the experimental results obtained by DSTO through full-scale engineering to an operational system which can be shared by collaboration. A joint project can also bring access to technology and markets which would otherwise be restricted. Such a joint project, known as Nulka, has been established with the US Navy. It will draw on the technology developed in both countries, and their industrial bases.

**6.66** Nulka is our first major collaborative equipment project with the United States. It will be managed in both countries through competitive fixed price contracts for defined tasks. This contrasts with previous Australian development projects, such as the Basic Pilot Training Aircraft, which have been run and 'cost-plus' basis with work directed to designated establishments. The approach used in Nulka will place much more responsibility for performance on Australian



industry. That performance will, of course, be an important influence on both future production work on Nulka and prospects for further collaborative projects with the United States.

## Local development and production programs

**6.67** In some cases, equipment with the fundamental capabilities required by the ADF may be available overseas, but it must be developed, adapted or integrated into a system tailored to our specific requirements. Many defence systems require only minimal local adaptation (eg in their communications fit to major platforms), while others are more extensive (eg submarines, new surface combatants). Such projects require close technical and managerial control to ensure that performance, time and cost goals are met. Local capabilities are required for independent through-life support and subsequent mid-life modernisation and adaptation. Involvement of Australian enterprises in detailed design can ease production difficulties and facilitate incorporation of local components.

### Submarines

**6.68** It was recognised from the outset that Australian industry had little of the specialised knowledge and experience needed to design and build submarines to replace the present fleet of Oberon class vessels. Industry had, however, many of the basic industrial capabilities and the existing submarine designs needed substantial modification to meet Australian operational requirements. The vessels require a large and complex infrastructure for their through-life support, independently of the overseas source, which would be assisted by local construction.

**6.69** This Government decided that the vessels would be built in Australia. It judged that the cost premium for local construction could be justified in terms of the self-reliance gained in the local capabilities established for subsequent set-to-work, repair, maintenance, modification, refit and, probably, mid-life modernisation.

**6.70** The Government also agreed that Australian industry should be encouraged to take a major role in the project, including sharing the risks, and consortia were formed between local organisations and the overseas tenderers for the platform and combat systems to undertake Project Definition Studies and to bid for production. A substantial portion of the work will be sub-contracted by the prime contractors to Australian enterprises, which will have to comply with strict quality standards within delivery schedules and to cost.

**6.71** This model for Australian industry participation in a major defence development and production project offers the prospect of substantial industrial and defence self-reliance benefits. It is demanding on the resources of industry and Defence project management.

### New surface combatant (light patrol frigate)

**6.72** This project aims to acquire eight ships at a cost of some \$3.5 billion. The Government intends to select an established overseas design for construction in one or more Australian shipyards under 'local prime', 'fixed price' contracting arrangements. Some modifications to the design will be necessary to meet Australian requirements and to facilitate construction in Australia.

**6.73** Construction of civil and naval surface vessels has a long history in Australia. Recent defence projects include patrol craft at Cairns and Fremantle, large support vessels at Newcastle and Sydney, and frigates at Williamstown, Victoria. The ability to perform the projects to cost and on time has been varied.

**6.74** The procurement strategy aims to keep overseas designers and qualified Australian shipyards in competition until production contracts are signed. It allows for early and substantial involvement of Australian shipyards, early introduction of the vessels into service, and a high level of local content. The latter is important for independent through-life support and will confer a capability, should the need ever arise, for a high degree of self-reliance in construction of additional vessels to expand the Fleet. Risk is low in the design, but Australian shipbuilders will be expected to carry the construction risk in arrangements with the overseas designer. Planning provision is being made for possible joint procurement involving the industries of other countries.

**6.75** The project is seen as important for the local shipbuilding industry, which, in common with the industry world wide, has substantial excess capacity, which is being further exacerbated by changing technology reducing ship docking and repair work.

## Local production of overseas designs

**6.76** In some cases, the requirements of the ADF can be met most cheaply and expeditiously by existing overseas products where there is no economic or technical prospect of a local competitor. Local industry involvement in such projects is through Designated Work and Offsets. This can involve a substantial element of local production and may include opportunities for follow-on work and exports. Examples include battlefield helicopters, rifles and missiles.

### Battlefield helicopters

**6.77** Extremes of temperature, areas of higher elevation, and rugged operating conditions in northern Australia place severe demands on a battlefield helicopter. The ADF requires a helicopter with a radius of action including tactical flying of over 160 km, and able to carry an infantry section of ten troops with sufficient personal equipment to enable sustained independent operations. Exercises have shown the existing fleet of Bell Iroquois UH1H aircraft to be deficient in these conditions. The French Aerospatiale Super Puma M and the US Sikorsky Blackhawk were found to be acceptable aircraft after competitive evaluation.



**6.78** Following the formal tendering process, the two companies were invited to negotiate contracts with the Commonwealth. Considerable emphasis was placed on warranties of performance, particularly in the conditions likely to be found in northern Australia, price, and the involvement of Australian industry in the project.

**6.79** This competitive procedure resulted in selection of the Blackhawk and yielded better warranties than had been achieved previously in helicopter purchases, a significant price reduction, and Australian Industry Involvement of over 40 per cent of the contract value, including items of considerable strategic and industrial importance. There is also provision for Australian collaboration in future design and development projects.

**6.80** While not universally applicable as a purchasing strategy, the approach used in this case demonstrated clearly the benefits of competition being held open as long as possible.



*The new individual weapon for the Australian Defence Force is the Steyr rifle. 70,000 will be manufactured at the Small Arms Factory, Lithgow, NSW.*

#### Rifles

**6.81** In 1982 the Government approved the replacement of the Belgian designed FN L1A1 individual weapons with new, smaller calibre, lighter weight, automatic weapons. In October 1985, after exhaustive competitive trials, the Austrian Steyr AUG 1 was selected.

**6.82** Initial production of some 70 000 rifles for the ADF is to be undertaken at the Small Arms Factory at Lithgow, NSW, which is the sole local mass producer of small arms with a long history of weapons production.

**6.83** To avoid the need to establish substantial facilities duplicating those available in civil industry, and to exercise the relationships with private firms that would be necessary should strategic circumstances require greatly increased production rates, a large proportion of the weapon components are being sub-contracted. The new technology of the AUG 1 has facilitated this approach. Costs and subsidies will be reduced and the problems of workforce rundown at the conclusion of the production program minimised. This is a break with the past practice where the factory produced the entire weapon.

**6.84** Other features of this project have been the full cost 'contractual' agreement between the factory and the Army, the scope the industry strategy provides for other countries seeking to purchase weapons from Australia to provide work for their own industries, and the export agreement with the principals, Steyr of Austria. New Zealand has agreed to purchase the rifle from the Small Arms Factory under these arrangements.

## Defence work in Australian industry

**6.85** In 1985-86, the Australian Defence Budget was some \$7 000 million of which some \$2 800 million was spent on activities directly relevant to industry (new capital equipment, replacement equipment and spares, repair and maintenance, and direct subsidies to industry, including the Government's factories and dockyards). Of the latter, some \$1 300 million was spent in Australia. Over one quarter of the Defence outlay was spent on new capital equipment, which reflects the high technology nature of modern warfare and the need to acquire and maintain important operational capabilities. Australian industry also benefits from the Defence Offset obligations generated by defence purchases, which provide technology transfer and workload to the value of over \$200 million per year. Exports of defence products, unrelated to offsets, are estimated at some \$40 million per year.

**6.86** While such funds seem substantial in the Australian context, they will be adequate only if utmost economy is pursued in meeting ADF requirements. Inefficiency, unnecessary subsidies, cost and schedule over-runs and other poor policies and management practices will cause important projects to be deferred or deleted from the program, including projects that would have been of importance to industry.

**6.87** The Government is providing opportunities for industry to increase substantially its share of the Defence new capital equipment program and to improve its export prospects. The efficiency and competitiveness of industry will largely determine the extent to which the opportunities are exploited and result in more defence work being undertaken in Australia with enhanced self-reliance for this country.



## Chapter seven

### Defence personnel

7.1 Our people—the men and women of our fighting forces and our defence civilian staff—are our most valuable asset and a vital resource in the security of Australia. In total some 137 000 men and women apply their professional knowledge, skills and commitment to maintain and improve our defence capabilities. There are some 70 000 Regular and 27 000 Reserve members of the Australian Defence Force (ADF) and 40 000 civilians within the Defence organisation (Figure 1 shows the allocation of Defence personnel).

#### DEFENCE PERSONNEL – PLANNED STRENGTHS 1986–87

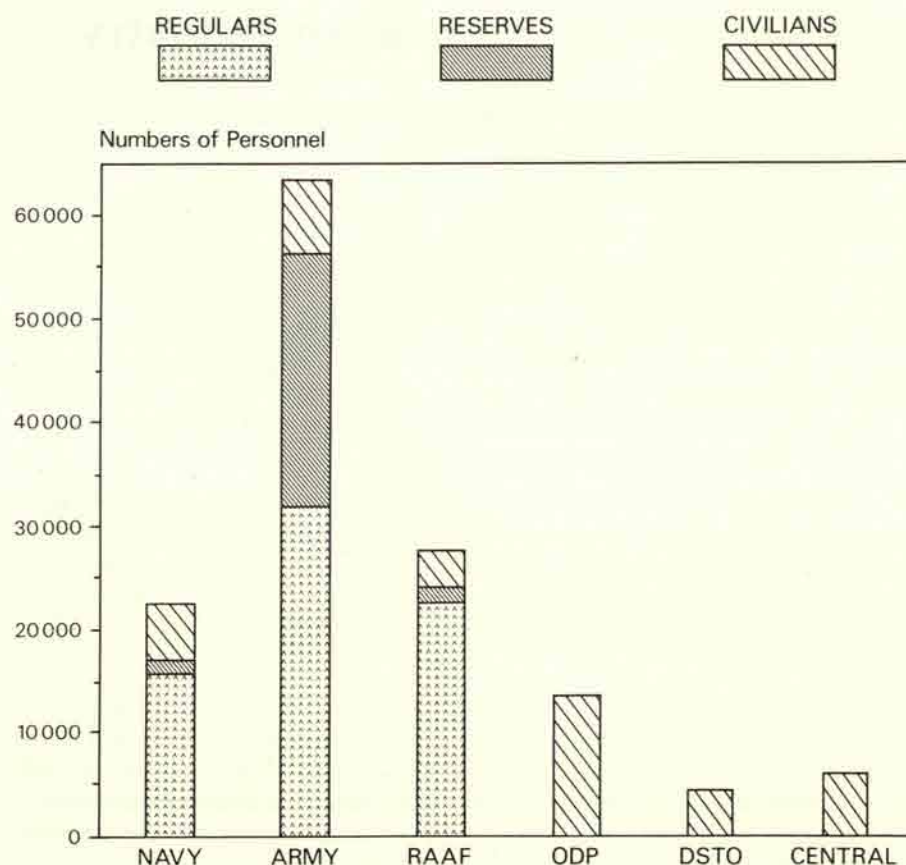


Figure 1

7.2 The Defence organisation needs to attract, train, and retain skilled men and women for combat and support roles, including the operation and maintenance of increasingly complex equipment and support facilities. In addition, initiatives detailed earlier in this Paper designed to enhance our defence self-reliance will increase the Defence organisation's demand for highly qualified professional, technical and tradespeople already the subject of strong competition in the market place. Competition for manpower will increase in future years as the changing age distribution of Australia's population reduces the number of people available for recruitment into the ADF. To be successful in attracting sufficient people of the right calibre, the Government must offer rewarding and challenging careers, and competitive pay, allowances, and conditions of service.

#### The regular component of the ADF

7.3 The planned strength of the ADF for 30 June 1987 is: Navy 15 732, Army 32 000 and Air Force 22 797; a total strength of 70 529 (see Figure 2). The reduction from a peak in 1981–82 reflects the Government's decisions on the aircraft carrier and naval fixed-wing aviation, and a reduction of 677 in the authorised terminal strength of the Army in the 1985–86 Budget.

7.4 A broad range of employment opportunities is offered, with periods of service available from as little as two years to careers of 20 years or more. A wide variety of skills is developed and practised in the ADF, providing demanding and rewarding employment. Some 7 000–8 000 personnel annually leave the Regular component of the ADF on retirement or to pursue their careers in the civilian workforce. This group is encouraged to join the Reserve force.

#### Women in the ADF

7.5 The Australian Government's strong commitment to eliminating discrimination against women was evidenced by its ratification of the UN Convention on the Elimination of All Forms of Discrimination Against Women in 1983 and passage of the Sex Discrimination Act in 1984. A major focus of the Sex Discrimination Act is the elimination of discrimination in employment. In this context the Government agreed to exemptions for combat and combat-related duties in the ADF on the understanding that as many positions as possible would be open to women consistent with maintaining combat preparedness.

7.6 Prior to the implementation of the Sex Discrimination Act and new Defence Force employment policies in 1984, the proportion of women in the Defence Force was 6.5 per cent. Although there was no common policy among the Services on employment areas for women, they were generally allocated to the traditional areas of female employment.



## AUSTRALIAN DEFENCE FORCE PERSONNEL — 1965-87

### REGULAR(or Full Time Duty)

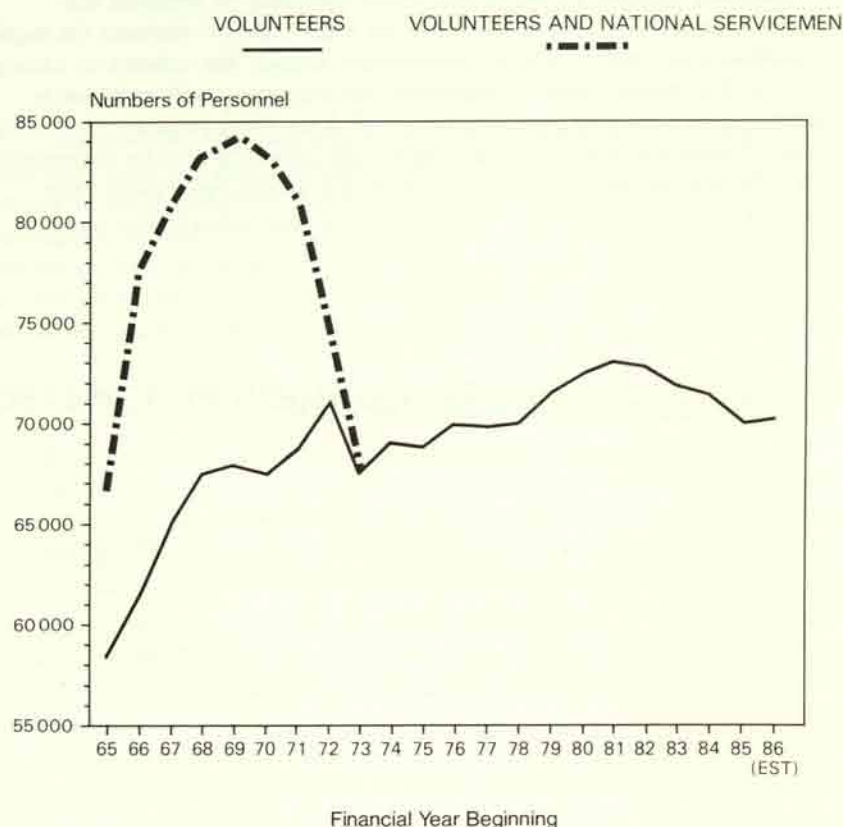


Figure 2

**7.7** Since the introduction of the Sex Discrimination Act and Government reviews of ADF employment policies, the number of women in the ADF has increased steadily under the present Government, with some 5 760 (or 8.4 per cent) serving as at 31 December 1986—a 30 percent increase over the 1984 figure. About 21 750 (35 per cent) of the positions in the Regular component of the ADF are now open to women in competition with men. A further review is underway to expand employment opportunities available to women in the ADF. The Government will continue to make available as many positions as possible on merit.

### Reserve Forces

**7.8** The Government will continue to give priority to our increasingly effective Reserve Forces. Additional tasks for the Reserves have already been announced. These include major roles in northern defence, logistic support, surveillance, protection of key installations, and maintenance of expansion base

skills in armour, artillery, air transport, and mine countermeasures. Legislation will also be introduced to allow Australia's Reserve Forces to be called out for service in situations short of a full scale war or defence emergency. The legislation will allow Reserves to play the fullest possible role in the defence of Australia by enabling them to be used in the sort of low level threat which could emerge with relatively little warning.

**7.9** The defence program provides for an Army Reserve of 26 000 and for modest increases in the smaller Reserve components of the Navy and Air Force to bring the total Reserve strength to over 30 000.

### Civilians in defence

**7.10** Civilians not only provide administration and support for the Navy, Army, and Air Force, but are also employed in policy and management areas and in such non-military bodies as the Defence Science and Technology Organisation (DSTO).

**7.11** Of the 40 000 civilians in the Defence organisation, 39 per cent are employed at ADF bases, workshops and depots, 34 per cent support the ADF in Defence factories and dockyards, 11 per cent work for DSTO, 14 per cent provide administrative support and management services, and 2 per cent provide policy support to the Department.

### Pressures on the defence personnel resource

**7.12** The Government will continue to allocate the largest share of the Defence budget to defence personnel. However, the need to acquire new equipment and facilities to ensure an efficient, self-reliant defence force means that overall expenditure on personnel will continue to be restrained. The number of Service personnel has actually declined in recent years (see paragraph 7.3). Tight control of civilian numbers has continued, resulting in reductions in total numbers. The recent restructuring and rationalising of the Government's defence factories and dockyards have also produced considerable manpower savings.

**7.13** This constraint on the numbers of Defence personnel is consistent with the Government's policy of limiting the size of the Commonwealth's employment force. Nevertheless, some measure of personnel relief is necessary to maintain adequate combat capabilities, and to support and operate the new equipment required for a modern and effective fighting force.



## A personnel resource strategy

7.14 Australia's reliance on a volunteer ADF means that its operational strength will fluctuate. To manage the complex ADF personnel resource better, this Government will introduce a more flexible personnel resource policy based on identifying two separate components within the ADF—an operational force of trained personnel and a training force comprising personnel undergoing pre-employment training. This important initiative permits the strength of the training force to be varied with rises and falls in separation rates<sup>1</sup> while maintaining the trained force at the strength necessary to meet the objectives set for it by Government. Given that higher than normal separation rates might continue in the short term, some supplementation of the training component through increased manpower ceilings will be necessary to maintain the trained force at its present level and capability.

7.15 A program of management reviews will enable the Government to make more efficient use of Defence manpower, providing trained personnel for the acquisition and operation of new equipment and facilities, and for the maintenance of essential combat skills. The rationalisation of Defence factories and dockyards will continue. Better management and more efficient work practices will be introduced under the Defence Management Improvement Plan to reduce current demands on ADF and civilian personnel. Tasks now performed by Service personnel that could be performed at less cost by civilians will be identified; the review of Defence warehousing by the Efficiency Scrutiny Unit is a first step. A greater proportion of defence work will be contracted out to private industry.

7.16 These measures, along with the return of a fighter squadron and support staff from Butterworth, will help reduce some of the pressure on defence personnel from the new capital investment programs. This should also allow Defence to achieve a minimum saving of 3 per cent in civilian staff over the next three years (a reduction of at least 1176) thus meeting the Government's efficiency dividend target.

## Retention

7.17 The Government is concerned at the present rate of separation from the ADF and positive action is planned to reduce the numbers leaving. While a reasonable turnover of personnel in the ADF is necessary to exercise the training infrastructure and maintain a young fit force, the present level is higher than desired. There are a number of reasons for this. One is the below average separation rates of the recent past. Figure 3 shows that the average annual separation rate over the last ten years was about 11.1 per cent; the lowest rate was 9.4 per cent in 1983–84, the highest 12.3 per cent in 1985–86. Varying age and length of service distributions in the ADF, resulting in part from its growth in the 1960s, are also factors. The state of the national economy, conditions of ADF service, and family aspirations, also influence separations. And the lack of skilled manpower being produced by the wider community for civil purposes adds to the demand for personnel trained by the Defence Force

<sup>1</sup> Figure 3 shows separation rates over recent years. This matter is addressed further later in this chapter.

## ADF SEPARATION RATES

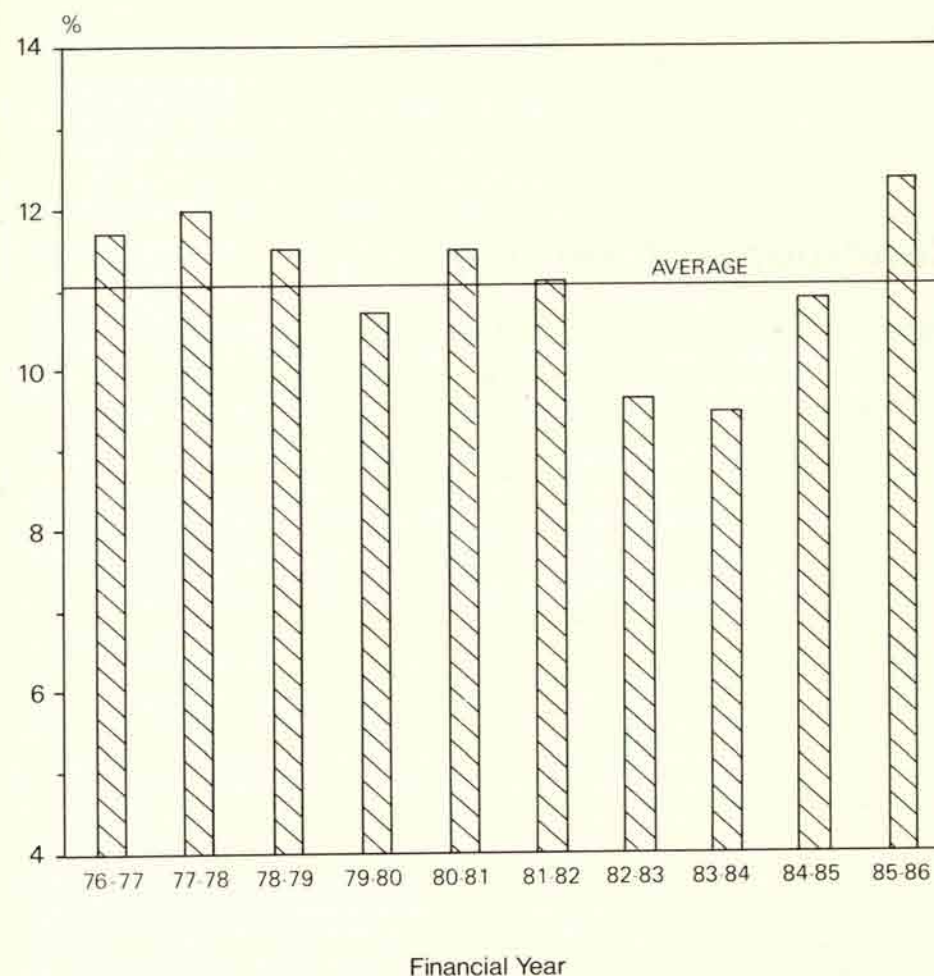


Figure 3

7.18 One particular factor that the Government is addressing relates to the impact of changing socio-economic patterns, including the increase in two income families. Dependence on the spouse's income and the spouse's own desire for employment may influence the decision of some serving members to leave the Services to avoid the adverse impact that frequent postings may have on their families.

7.19 Recognising that mobility of ADF personnel is necessary to maintain an effective operational force, the Government is working towards implementing the recommendations of the Hamilton Report to minimise the adverse aspects of essential changes of location. Standards of Defence housing are being improved



through increased expenditure and better management and a new Defence Housing Authority is being established. These initiatives are explained in more detail later in this chapter.

**7.20** Additional initiatives being considered to reduce the present rate of separation include improvements in conditions of service, financial incentives for selected categories, and changes to periods of engagement.

## Conditions of service

### Defence Force Remuneration Tribunal

**7.21** The Government has changed the system of salary fixation for the ADF by establishing the Defence Force Remuneration Tribunal (DFRT). The DFRT is a totally independent and expert body with power in its own right to determine Defence Force pay and allowances. The Defence Force's 'employer'—the Government—is now no longer the final wage fixing authority. This initiative gives Service personnel access to a pay fixing system broadly comparable to that available to the general community.

**7.22** The establishment of a special tribunal for the Defence Force both recognises the special aspects of military service and acknowledges the convergence that has occurred between military and civilian employment. These arrangements better integrate the Defence Force into the industrial framework applying to the community at large. Underlying this reform is the Government's fundamental recognition of the right of servicemen and women to equitable pay and allowances and to an independent and impartial wage fixing system. In September 1985 a 5.9 per cent increase in Service pay was granted by the DFRT under the anomalies provisions of the wage fixing principles. This award was subsequently back-dated to 30 May 1985.

**7.23** The establishment of the DFRT and the Defence Force's participation in the centralised wage fixing system have also provided regular National Wage increases. These increases reflect movements in prices in return for restraint in seeking increases for other reasons. The commitments involved in National Wage decisions have been accepted in both the Defence Force and the wider community.

### Defence Force Advocate

**7.24** As an integral part of the revised arrangements for determining Defence Force pay, the Government created the position of Defence Force Advocate, a publicly funded office, to ensure that the Defence Force is not disadvantaged by not having an industrial organisation to represent it in proceedings before the DFRT.

## Superannuation and Defence Force Retirement and Death Benefits

**7.25** The Government has supported improvements in superannuation, industry by industry or occupation by occupation. These are to be offset against national productivity and based on a 3 per cent wage equivalent. The Australian Conciliation and Arbitration Commission has accepted this broad proposal but has left it to individual parties to negotiate the terms of such agreements, subject to certain guidelines. Noting that the public sector is already well served in the area of superannuation, the Government has indicated that it will not be at the forefront in concluding productivity arrangements in respect of its own employees.

**7.26** In the light of the overall trend, supported by the Government, to improve and extend occupational superannuation in the community, the Government has no intention of reducing the basic Defence Force Retirement and Death Benefits entitlements as some speculation has suggested. It will also ensure that improvements in superannuation in the wider community flow appropriately to the Defence Force.

## Defence housing

**7.27** This Government will continue to rectify the poor living conditions many Defence Force families have had to face through neglect and underfunding in previous years. The 1986–87 Budget provided a real increase of 17 per cent for Defence housing and some \$750 million will be spent on new housing over the next ten years.

**7.28** A new Defence Housing Authority will commence operations on 1 July 1987 providing the flexibility and efficiency of management needed to ensure better accommodation. The Authority is already operating in interim form pending the passage of legislation. The management board comprises a mix of Service personnel and civilians selected for their knowledge of real estate and management expertise. In addition, the Government will continue to improve living conditions for single personnel. These new arrangements are a major step forward in the management of living conditions for the Defence Force.

## Supporting service families

**7.29** A major initiative taken by this Government was the commissioning of a survey by Mrs Sue Hamilton from the Office of the Status of Women on the problems faced by ADF families. Her report pointed out deficiencies and problems in the support available to Service families and made recommendations as to how these might be redressed.



7.30 In response to the report, a National Consultative Group of Service Spouses was established in 1986 and a Defence Families Information and Liaison Service will commence operations in 1987. The implementation of the report's conditions of service recommendations (including a review of the length of postings, disturbance allowances and removal for separated spouses) is under consideration by the Government.

## Chapter eight

### Resources and programming

8.1 Governments have a fundamental responsibility to allocate resources for the security of the nation. But national resources are finite and subject to many competing demands. Thus governments must also set out Defence policies and objectives, define priorities for their attainment, and ensure that the allocation of resources is consistent with these priorities.

8.2 Our demands for defence resources must not be so high during times of peace as to distort and thus weaken our economy. Our defence development must be based on a rigorous consideration of what is essential for our security and how to achieve this in the most effective and efficient way.

8.3 While all defence activity is constrained by annual financial allocations appropriated by Government for defence, money is not the sole constraint. Our defence plans must also take into account such other factors as the scientific and industrial resources of the nation, the personnel available, and their range and level of skills.

### Wider economic considerations in defence funding

8.4 The provision of resources for the defence of Australia cannot be determined in isolation from other national priorities and our economic circumstances.

8.5 The proportion of the nation's resources that are directed towards defence is commonly measured by relating defence outlay to gross domestic product (GDP). Figure 1 (see overleaf) shows that defence outlay peaked at well over 4 per cent of GDP during the Vietnam War. Since the end of our involvement in Vietnam, defence outlay has been around 2.6 to 2.9 per cent at GDP. Naturally, as GDP may fluctuate from year to year there can be no rule that defence spending should, in every year, bear a precise mathematical relationship to GDP. But, broadly speaking, a share of GDP similar to that devoted to defence in recent years will need to be retained if future governments are to achieve the levels of defence capability identified in this Paper.

8.6 In the Government's annual Budget, Defence competes directly with other pressing national priorities such as health, education and social security. Figure 2 shows that Defence outlays have, on average, risen from a low of about 8.4 per cent in the mid-1970s, following the end of Australia's



## DEFENCE OUTLAY AS PERCENTAGE OF GDP



Figure 1

commitment in Vietnam, to around 9.5 per cent at the start of the 1980s and 9.9 per cent in the Budget of 1986-87. The rise in the past ten years or so has occurred despite the greatly increased pressure on governments to increase spending on social security.

**8.7** Given competing national demands, any sustained increase in the overall share of resources going to defence, measured in terms of GDP, could be justified only in the event of marked deterioration in our strategic circumstances.

## DEFENCE OUTLAY AS PERCENTAGE OF COMMONWEALTH BUDGET OUTLAYS

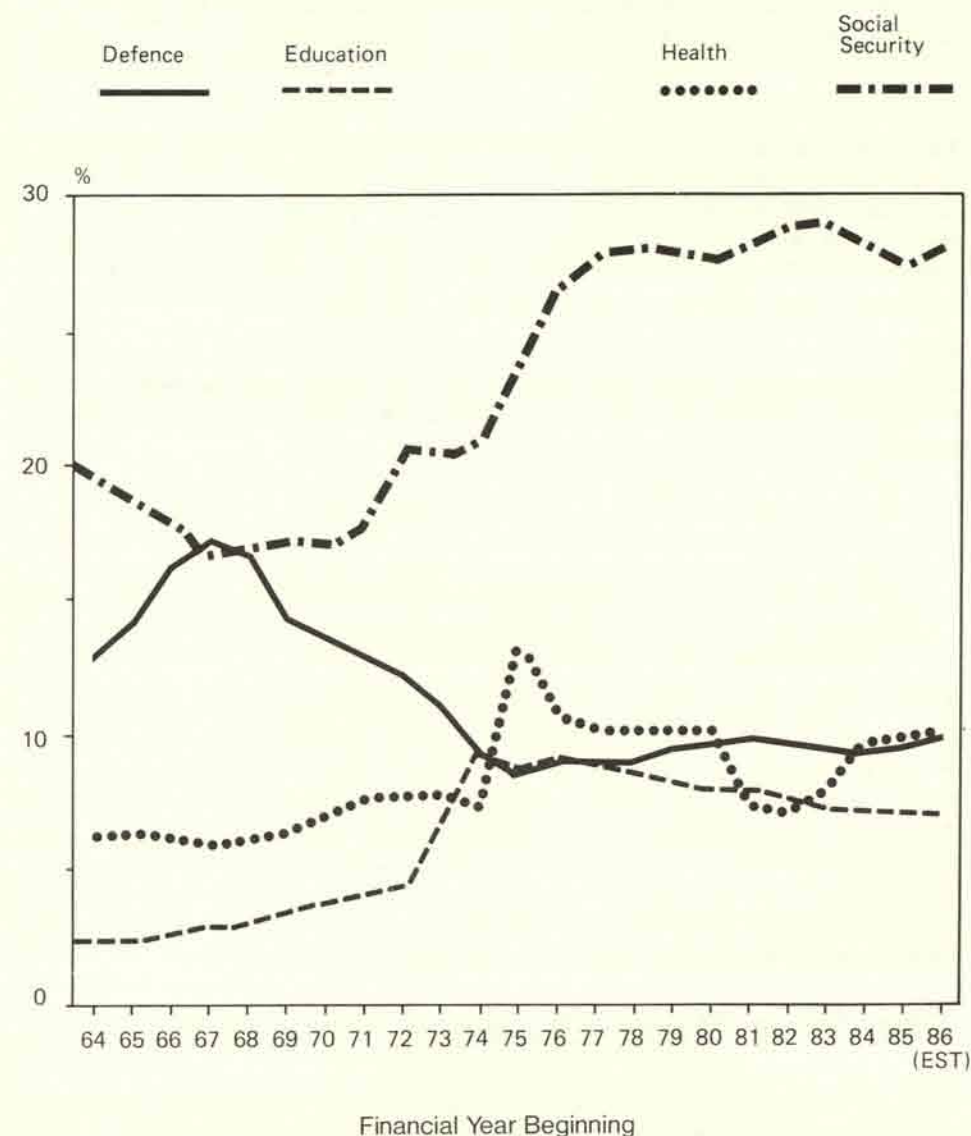


Figure 2



## Defence spending overseas

**8.8** One particular element of defence outlays has come under notice in relation to wider economic considerations: a significant proportion of the defence budget (around 25 per cent) is spent overseas and, looked at in isolation, adds to pressures on Australia's external account. But this should not be exaggerated. Direct defence spending overseas in 1985-86 equalled about 5 per cent of imports.

**8.9** As outlined in earlier chapters, it is essential that Australia maintain a technological edge in the region; this is practicable only through significant purchases from overseas. Were Australia to direct more funds into domestic procurement than could be justified under our Defence Policy for Industry, our defence capabilities would be reduced and the resulting inefficient use of resources would affect the national economy adversely.

**8.10** Economic as well as national security reasons point to the need for a continued significant reliance on overseas procurement. The Budget Statements for 1986-87, tabled by the Treasurer, included the following pertinent comments in analysing the external accounts problem:

While the size and urgency of the imbalance might be seen as justifying almost any means to increase exports and reduce imports, efficiency criteria cannot be overlooked. If resources are directed into import replacement or export activities which need to be highly protected or subsidised, living standards in the economy as a whole would necessarily be lower than if the same adjustment to the balance of payments were achieved by the expansion of export and import-competing industries that are internationally competitive

**8.11** Nevertheless, the Defence Policy for Industry announced by this Government in 1984 and the initiatives outlined in this Paper (see Chapter 6), should see a reduction in overseas expenditure on capital equipment in the years ahead. The F/A-18 Hornet currently dominates our acquisition program and the bulk of the expenditure is in the United States. These aircraft are now being delivered. Hence overseas expenditure on this project will start to reduce significantly from 1987-88 and will be virtually completed by the early 1990s. In the Hornet's place there will be OTHR, new submarines, and the new light patrol frigates, which will all have a substantially higher local expenditure.

## The Five Year Defence Program

**8.12** The rolling Five Year Defence Program (FYDP) provides the framework within which policies and priorities, their timescales for implementation, and the anticipated resources that Governments provide as a basis for forward planning, are reconciled and brought into balance. Such an approach is necessary because of the long timescales involved in defence planning. It takes many years to train for military operations and to learn to operate modern complex equipment. Equipment acquisition times can spread out over many years, for example, expenditure on the construction of the new submarines will extend over at least ten years. Forward commitments on personnel and equipment generally allow only limited flexibility for change in any particular Defence Budget.

**8.13** The FYDP is necessarily dynamic, being subject to continuing assessments and change resulting from continued analysis of our defence needs, technological and strategic developments, and management improvements. It takes account of Government decisions on the annual Defence Budget (with the program's consequent rolling forward by one year) and also indicates for Government the longer term implications of those decisions.

**8.14** The FYDP must take account of changes in the level of Government's financial guidance to Defence, and differences between this guidance and actual Budget allocations. This Government recognises that considerable waste and inefficiency in defence planning is inevitable when unrealistic guidance is given as a planning basis for defence spending. The Government is committed to more realistic financial guidance for defence planning, although some adjustments will still need to be made when settling annual Budgets.

## Recent trends in Defence expenditure

**8.15** Figure 3 shows the broad shifts that have occurred over the last decade on the balance of expenditure between the major components of the FYDP: capital equipment, capital facilities, personnel costs and operating costs.

**8.16** By the mid-1970s, investment in new equipment and facilities had fallen to little more than 10 per cent of defence expenditure. It became evident then that given the high cost and long lead times involved in acquiring new equipment and facilities, defence capabilities would decline in the decades ahead unless this trend was reversed. It has therefore been the policy of this Government to increase the proportion of defence expenditure on investment. Over the past four years this has risen from less than 22 per cent to over 33 per cent planned for 1986-87. In the same period, expenditure on capital equipment has risen from 17 per cent to over 28 per cent of total defence spending.

**8.17** Associated with increased expenditure on investment has been restraint on operating costs and personnel. Some reductions in this regard were the result of specific force structure decisions by this Government with regard to naval air power and the Fleet Air Arm. There have also been economies and efficiencies in production establishments and civilian support.

**8.18** In 1986-87 about 28 per cent of estimated expenditure will be on capital equipment, 5 per cent on capital facilities, 40 per cent on personnel and 27 per cent on operating costs.



## ACTUAL DEFENCE EXPENDITURE BY MAJOR CATEGORY AS A PERCENTAGE

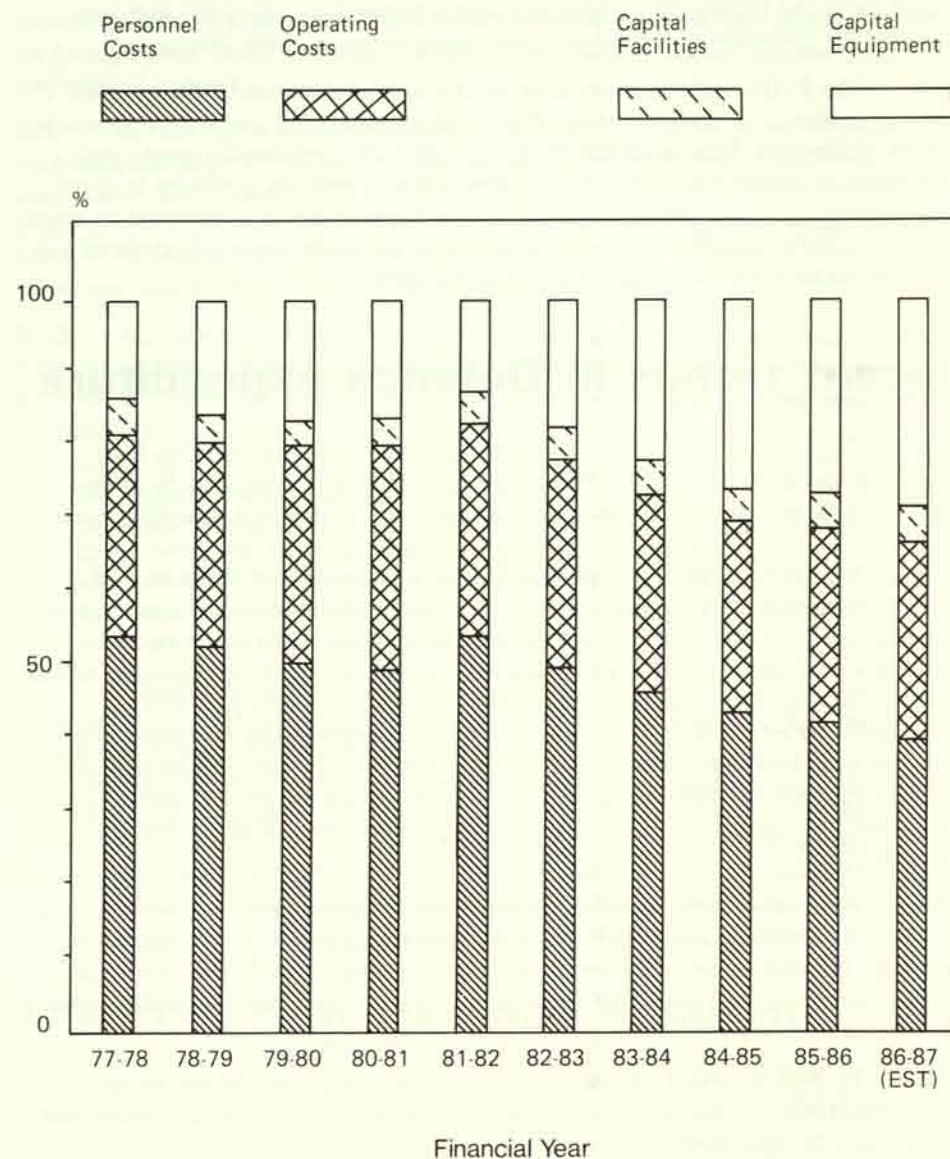


Figure 3

## The years ahead

**8.19** The continuing re-equipment program, and the need to continue to pay attention to facilities and infrastructure, indicate a requirement to direct the same broad share of defence expenditure to investment in the immediate years ahead. This will require continuing constraints on personnel levels and only limited expansion of current training and exercise activities. Figure 4 shows the planned percentage allocation of defence expenditure for the period 1986-87 to 1991-92, reflecting these broad principles.

### Capital equipment

**8.20** Commitments on major equipment projects already approved by Government account for 40 per cent of the funds programmed for major capital equipment over the next five years. Expenditure on approved projects such as the Hornet, and the FFG-7 class frigates will wind down, while new major commitments will be entered into, for example, new submarines, mine countermeasure vessels, more helicopters, and OTHR.

**8.21** Figures 5 and 6 show the expected wind-down in expenditure in percentage terms on projects already committed and the planned increase on new proposals yet to be approved by Government. Expenditure is shown in broad capabilities, e.g. maritime warfare and airspace surveillance. Figure 7 shows the aggregate of all major capital equipment, both approved and not yet approved.

### Capital facilities

**8.22** Expenditure on capital facilities is planned to increase significantly in the years ahead with this Government's emphasis on strategic initiatives and improved living accommodation for Service personnel. New strategic initiatives will include the continued development of defence facilities to support operations across the north, such as airfields and the northern basing of the 2nd Cavalry Regiment, further development of HMAS Stirling in the west and a possible new fleet base at Jervis Bay. Expenditure on these initiatives will extend well beyond the five years of the current defence program.

**8.23** An important area of Government expenditure will involve the substantial improvement of living accommodation for Defence Force members and their families (see Chapter 7). Other facilities initiatives will include the rationalisation and modernisation of defence training and production establishments and office accommodation.

### Personnel

**8.24** Personnel constraints will demand a more efficient use of Regular and Reserve forces and civilians. As outlined in Chapter 7, the Government is introducing new policies for the management of the personnel resource. The strength of the ADF's trained force will be directly related to objectives set for



## PROJECTED DEFENCE EXPENDITURE BY MAJOR CATEGORY AS A PERCENTAGE

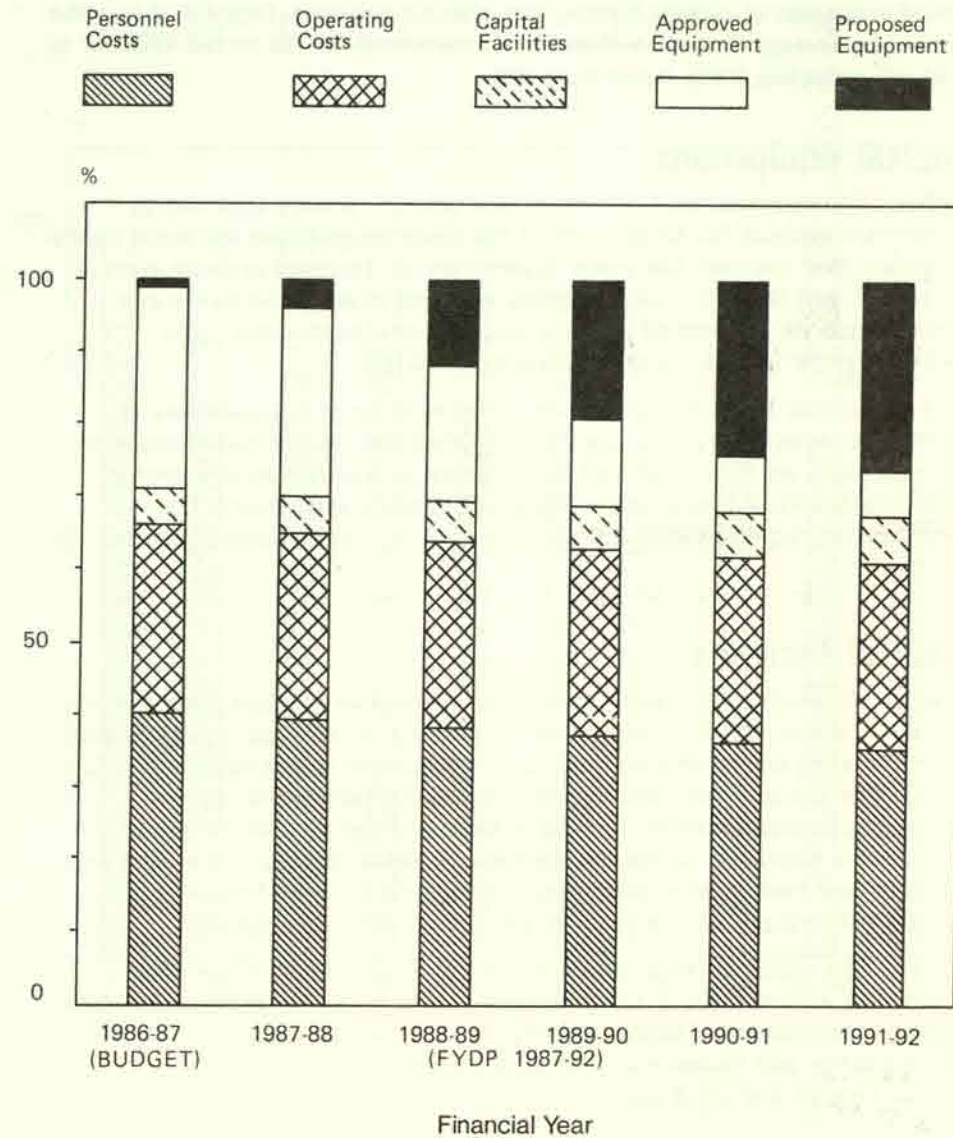


Figure 4

## APPROVED MAJOR EQUIPMENT Expenditure by Major Components

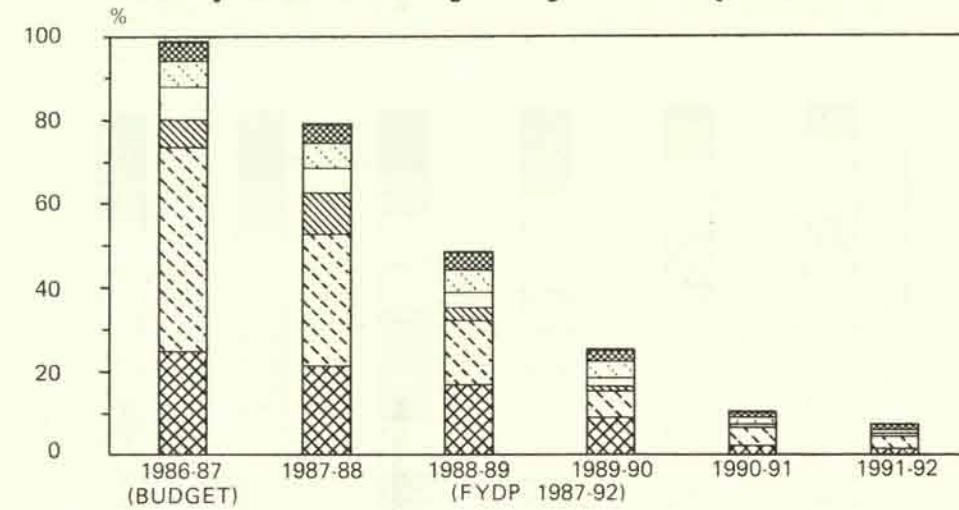


Figure 5

## PROPOSED MAJOR EQUIPMENT Expenditure by Major Components

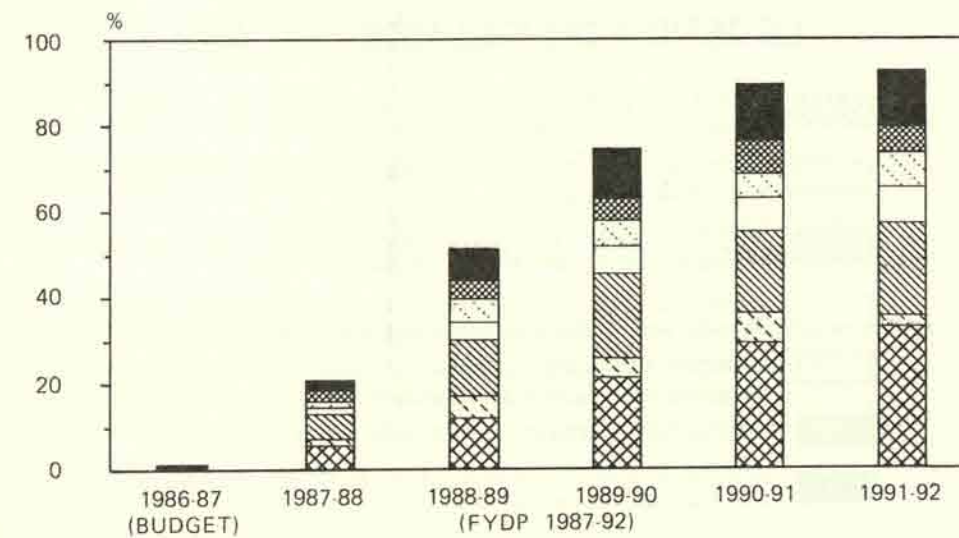


Figure 6



## TOTAL MAJOR EQUIPMENT Expenditure by Major Components

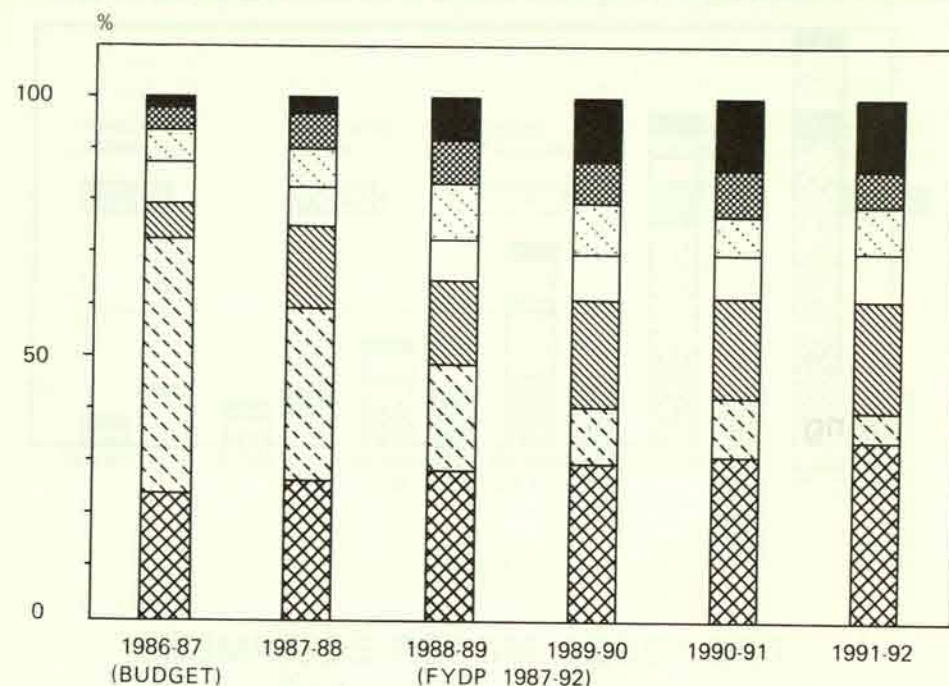


Figure 7

### LEGEND FOR FIGURES 5, 6 AND 7

- MARITIME WARFARE - Includes Submarines, New Surface Combatants and MCM Vessels
- TACTICAL AND STRIKE AIRCRAFT - Includes F/A-18 aircraft and F-111 improvements
- MOBILITY AND TACTICAL SURVEILLANCE - Includes Blackhawk Helicopters, Light and Medium Trucks and AFVs
- WEAPONS AND AMMUNITION - Includes Missiles for Ships and Aircraft, and Artillery Weapons and Ammunition
- SUPPORT SYSTEMS - Includes Computer systems for supply and manpower and major training systems
- COMMAND, CONTROL AND COMMUNICATIONS
- AIRSPACE SURVEILLANCE - Includes OTHR, AEW&C Systems and Tactical Air Defence Radars

it by the Government, while the strength of the training component will be related to separation rates. A program of management reviews will identify areas in which ADF personnel can be replaced at less cost by the use of civilians and private industry. Better management and more effective work practices will be introduced.

**8.25** Civilian numbers will be reduced with the restructuring and rationalisation of the Government's defence factories and dockyards, and with the return of the fighter squadron from Butterworth, Malaysia. Other reductions will follow from the Government's program to increase efficiency in the public sector.

**8.26** With the increased roles planned for the Reserves, the defence program has provision for the Army Reserve to increase to a strength of 26 000, and for modest increases in the Reserve components of the Navy and Air Force, to bring the total strength to over 30 000.

### Operating costs

**8.27** Operating costs cover broad areas of defence spending, for example training and exercises, recruitment, repair and maintenance of equipment and facilities, DSTO, the Government factories, and central and regional administration. The Government's defence planning will continue to provide for modest annual real increases in operating costs, recognising that it generally costs more to operate modern and more capable equipment than it did to operate older designs of equipment.

**8.28** The level of some defence activities will also increase as resources are directed to training and exercise programs necessary for a better understanding of operations in our north. But training programs must be selective, recognising that not all elements of our defence force need to be at high states of readiness.

**8.29** There will also be continued provision for the acquisition of increased stocks to support higher rates of effort in the lower level contingencies that could arise in the shorter term. Again, this does not apply to all elements of the Defence Force but to such elements as the P3C Orion maritime surveillance aircraft that would need to increase their rates of effort early in a time of tension.

**8.30** Economies will continue to be pursued, particularly in relation to the operation of the Government's factories, running costs at bases and administration generally. These economies will also have regard to the Government's recently announced reforms aimed at improving public sector efficiency.



## Chapter nine

### Conclusions

9.1 This Paper has set out the Government's policy for the defence of Australia. It has explained our alliance and regional associations; the capabilities required for an effective Australian defence force, including proper logistic, technical, and industrial support; our need for skilled and properly trained personnel; and the appropriate level of resources to be allocated for our defence effort.

9.2 This Government believes that Australia must be able to provide its own defence in circumstances of military threat posed to Australia from within or through our own region. Although such contingencies are now considered remote, we have explained that they would place great demands on our defence capacity. Our practical defence development over the coming years must ensure that we have, and can be seen to have, the capacity to respond effectively to them.

9.3 The Government has surveyed Australia's strategic circumstances and the interests and policies that relate to our defence and has found a substantial measure of continuity with the recent past. The generally favourable prospects for security in Australia's own geo-political environment have been noted, although there are some situations that require close monitoring for their longer term implications. Our national effort in the defence field, the alliance relationships we have with the United States and New Zealand, and the enhancement of our defence relationships with friendly countries in the region all help to sustain our favourable strategic situation.

9.4 This Paper has stressed that the priority need for the Defence Force is to fulfil the national task of defending the nation. It has also dealt with the need for Australia's defence effort to take account of developments in our region of primary strategic interest, and to be capable of reacting positively to calls for military support elsewhere, should we judge that our interests require it. The Government considers that Australia can deal with both, but to do so we must be alert to priorities.

9.5 The Government considers that its planned defence development will meet Australia's needs. It builds on the programs approved by successive governments for over ten years to develop a more self-reliant defence force. More advantage will be taken of present favourable circumstances to develop and consolidate the ADF, its infrastructure, bases and logistics, and, most importantly, the personnel policies that provide the well-trained and motivated men and women on whom operations in a defence emergency and defence expansion would critically depend.

9.6 The Defence Force development detailed in Chapter 4 will provide the basis for our security into the next century. This Government has given considerable attention to identifying deficiencies and gaps in areas of our force structure which would be important for the defence of Australia. These deficiencies include the lack of a credible mine countermeasures force, the requirement to provide our Army with greater battlefield mobility for operations in the north of the continent, the need to develop an integrated air defence capability, and the need to develop further the command and control arrangements for the ADF.

9.7 The characteristics of range, endurance and mobility that we plan for the Defence Force provide practical options for sustaining our defence activities further afield. In particular, they enable Australia to play a significant role in its own region and, by so doing, to contribute to the security of that region and the protection of Western interests.

9.8 This Paper has stressed the importance for self-reliance of properly sited defence infrastructure and effective logistic support. And it has emphasised the necessity of indigenous scientific and industrial capabilities.

9.9 The Government is developing policies for the rationalisation and greater efficiency of its defence factories and dockyards. Australian industry can make a greater contribution to the defence effort. Programs such as the new submarine and the light patrol frigate will provide the most exciting opportunities for local industry involvement since World War Two. The Government will also emphasise greater transfer of technology and expertise to the industrial base so that it can more readily support the Defence Force.

9.10 Australia's defence personnel are the most valuable resource in our nation's security. The Government will introduce a more flexible personnel resource policy to enable the Defence Force to be more readily maintained at the necessary operational level. The need to give priority to our equipment requirements, and the development of defence bases in the north, will involve overall constraints on manpower levels. However the Government will continue to allocate the largest share of the defence budget to defence personnel. A program of management reviews will result in more efficient use of this vital resource, providing trained defence personnel for the acquisition and operation of new equipment and facilities and for the maintenance of essential combat skills.

9.11 This Government recognises the right of servicemen and women to equitable pay and allowances. It has established an independent and impartial wage fixing system for the Defence Force. It will ensure that improvements in superannuation in the wider community flow appropriately to the Services.

9.12 The Government will provide \$750 million over the next ten years for new housing for the Defence Force, a substantial increase over previous years. As part of a major improvement in the management of living conditions for the Services, a new Defence Housing Authority has been created. The problems faced by Service families are being addressed with the progressive implementation of the Hamilton Report. These initiatives by the Government will help counter the current above average separation rate from the Defence Force.



**9.13** A priority task for the Government is greater use of our increasingly effective Reserve personnel. A range of additional tasks are being introduced for the Reserves of significant importance for our immediate defence needs. Combined with legislative changes proposed by this Government, these new roles will make our Reserves a much more effective element in a self-reliant Australian defence force.

**9.14** We have also explained the major resource considerations shaping our defence posture. A disciplined relationship between strategy, force structure, and financial constraints must be maintained. In our current and prospective strategic and economic circumstances these resources need to be spent wisely.

**9.15** There is a need for realism in expectations of the resources that governments will be able to allocate to Defence. If we are to achieve the levels of defence capability and the priorities reflected in this Paper, there is a need, over the life of the program, for an allocation of resources generally within the order of 2.6 per cent to 3.0 per cent of GDP. Annual allocation to Defence will of course continue to be subject to the normal reviews of our economic circumstances and other policy imperatives, as well as changes in our strategic outlook.

**9.16** Our basic competence and preparedness in matters of national defence are the necessary foundation for our own security and for our defence activities and influence further afield. The Government believes that the planned development of the Defence Force is attuned to Australia's national security needs. It accomplishes the priority task of defending the nation, ensures that we would be a most difficult country against which to use force, and allows for a realistic contribution to regional security and alliance activities.





SCALE 1:60 000 000  
AZIMUTHAL EQUIDISTANT PROJECTION



