



Australian Defence

November 1976

CONTENTS

**AUSTRALIAN
DEFENCE**

**Presented to Parliament
by the Minister for Defence
the Hon. D. J. Killen**

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INTRODUCTION

The first responsibility of government is to provide the nation with security from armed attack and from the constraints on independent national decisions imposed by the threat of such attack. This White Paper sets out the Government's position in this respect. It states the Government's estimates of the circumstances that uphold or that could jeopardise Australia's security. It gives the Government's views about future prospects. It describes the Government's policies for supporting those circumstances favourable to Australia, and the practical defence measures planned to provide the nation with insurance against any unfavourable change. It describes the Five Year Defence Program, within which projects will continue to be developed for later final financial decision in accordance with the normal processes of Government consideration.

2. The national defence effort is expensive, and it accounts for a substantial proportion of the Government's annual expenditure. Notwithstanding the priority given by the Government to its efforts to reduce inflation and revive the national economy, it has undertaken to increase the Defence Vote over the next five years, the period the Defence Department uses for its forward programming. It is proper that the nation should be informed of the reasons for this and of the manner in which its money is being spent. Public discussion of defence policy is sought by the Government. The aim of this paper is to promote discussion and to help mould a national understanding and consensus that will support our defence effort and the security that it affords.

CHAPTER 1

AUSTRALIA'S CHANGING STRATEGIC CIRCUMSTANCES

For most of its history, Australia was protected by Britain's imperial might. Even after the Second World War, when Australia had perforce turned to the United States, close Australian defence co-operation with Britain was sustained by that country's continued responsibilities in Malaya (later Malaysia), and by its membership of the South East Asian Treaty Organisation.

2. In the past decade, Britain has been turning increasingly to Europe and the North Atlantic, where its primary strategic interests lie. Australia acknowledges the British contribution to the secure establishment of the nation-states that succeeded to its imperial rule. Australia must also acknowledge that Britain can no longer be expected to accept significant military involvement in areas of concern to Australia east of Suez.

3. Change in strategic status has been experienced by most of the other 'Great Powers' that dominated world affairs thirty-five years ago. France, Germany and Japan, while principal powers in their own regions, and commanding influence and respect in many matters of world-wide concern (Japan is a world economic power), cannot compare in global status and military might with the two Super Powers of the contemporary era, the United States of America and the Union of Soviet Socialist Republics.

4. The withdrawal of former imperial powers and the proliferation of sovereign nation-states in numbers unprecedented in history have established a new world order. Australia's external political environment has been radically transformed by these changes—changes we were able to support in Indonesia a generation ago, to help defend later in Malaysia, and to assist in Papua New Guinea.

5. Changes have occurred also in the communist world. While possessing massive military power, the USSR has long ceased to command the undisputed political pre-eminence and leadership it enjoyed in earlier years. The communist movement is still a potent international force; but it is not the monolith that so concerned western leaders in the earlier post-war era.

6. In particular there has been a major re-assessment of China. China's earlier isolation has been much modified and it has entered into widespread relationships with other governments. It plays an important role in world affairs. We welcome the opportunity to develop our relations with China; but we recognise the important differences in our political attitudes.

7. In South East Asia, a region of abiding importance to Australia, the nations forming the Association of South East Asian Nations¹, have made notable progress in the tasks of nation-building. They continue to face difficult problems of economic and social development.

¹ Indonesia, Malaysia, the Philippines, Singapore, and Thailand.

8. Vietnam has been unified under the Government of the Socialist Republic of Vietnam. Communist Governments have likewise been established in Laos and Kampuchea. Tentative steps have been taken towards the establishment of relationships with the ASEAN Governments, but, given the basic political differences, many uncertainties persist about future developments.

9. The United States has now disengaged militarily from the mainland of South East Asia. There must be large questions about the circumstances that could move the US Administration and Congress to agree to become militarily involved there again, particularly with ground forces.

10. With the withdrawal of the colonial powers, a new political situation is developing in the South West Pacific. Most of the new states are small and with only limited resources.

11. A most significant event has been the massive build-up undertaken by the USSR in both its nuclear and conventional armaments. The USSR has achieved essential nuclear strategic equivalence with the US and competes with the US as a global power.

12. Allowance must be made for the USSR's perceptions of its requirements for defence. Nevertheless, the size of the Soviet military build-up and the scale of strategic weapons still leave questions about Soviet motivation unanswered. The USSR demonstrated in Angola both motivation and capability to project military power into a distant region.

13. The changes mentioned above, and others to be mentioned later in this Paper, constitute a fundamental transformation of the strategic circumstances that governed Australia's security throughout most of its history, and even throughout the post-war decades. Australia is now in a new strategic situation, and one that is still evolving, globally and regionally.

14. Change does not necessarily mean insecurity. Despite the major changes in Australia's circumstances in the last thirty years, we have been free from threat of military attack since the end of World War II. Use of military force is not a course adopted lightly by one nation against another. Military action must appear to offer worthwhile rewards; there must be substantial political hostility or ambition for conquest or adventurism to induce one nation to organise and sustain military attack upon the sovereignty and independence of another; and there would need to be apparently favourable strategic circumstances. The conjunction of such conditions is infrequent among the nations of the world and takes time to develop.

15. As a not insubstantial local power, Australia is able to influence developments. Remote from Europe, we now have one significant alliance—the ANZUS Treaty, with New Zealand and the US. Both countries are important to us; but it is prudent to remind ourselves that the US has many diverse interests and obligations. Australia has local and regional associates with whom we enjoy close and co-operative relations. We must continue to work constructively with them to support stability and security in the general strategic situation; and by our own policy and effort we can insure against the uncertainties that continuing change will sustain and that could produce situations with which we may well have to deal on our own.

16. The following Chapter summarily reviews our contemporary strategic situation and future prospects preparatory to discussion of the implications for Australia's defence posture and capability.

CHAPTER 2 PROSPECTS AND PERSPECTIVES

RELATIONS BETWEEN THE SUPER POWERS

The global powers of the modern era, the US and the USSR, maintain strategic nuclear forces at a level of destructive capability unprecedented in history. Their relations directly affect the security of all nations. Military conflict between them would risk widespread devastation by nuclear weapons.

2. The threat of mutual destruction has led the two Super Powers to seek ways of relaxing tension and avoiding military conflict. They have a variety of arrangements for monitoring and controlling strategic capabilities, such as the Strategic Arms Limitation Talks, and they show understanding of the need to avoid confrontations that could face them with a critical choice between military conflict or strategic concession. The two powers and their allies have also increased their political contacts and economic and technological exchanges.

3. Given the enormous risks from military conflict, on all rational calculations the restraints on use of force between the two powers, and the framework of their co-operation should endure.

4. All nations' interests, including Australia's, are served by relations between the US and the USSR which offer mutual advantage and in which neither exploits the other's difficulties. This relationship does not express a fundamental resolution of their political opposition, or dismantling of their strategic competition. While leagued in efforts to reduce tensions and risk, the two Super Powers remain adversaries. If their co-operation in avoidance of conflict can be expected to endure, so also can political and strategic competition.

5. The three key areas of strategic significance are the nuclear relationship, and the theatres of Central Europe and North East Asia. In these theatres there are massive concentrations of population, industry and military might. Rival politics confront one another. Weakness of either the US or the USSR in these theatres, or in the nuclear relationship, would risk its basic national interests, and its status as a global power.

Imbalances in the Key Areas

6. Continuing large scale Soviet military development is a cause for concern. If it cannot be slowed down or stabilised it must be countered, lest imbalances grow in important areas of the strategic relationship between the two Super Powers, particularly in the relative military strengths of the NATO and Warsaw Pact in the Central European theatre.

7. The current US Defence Administration, with strong Congressional support, and the NATO countries, are developing defence programs to prevent these potential imbalances. Given the political will, these powers possess the economic, technological and general military capacity to compete effectively with the USSR.

8. In North East Asia, the primary confrontation is between the USSR and China, but there are also critical issues regarding Korea and the territory of Taiwan. US involvement is related principally to Japan and the Republic of South Korea. Hostilities between China and the USSR, or hostilities in Korea or regarding Taiwan could disrupt the equilibrium between the US, the USSR and China, and stimulate changes in the defence policy of Japan.

9. At this time, any accommodation between the USSR and China appears likely to be limited and not substantially to affect their military postures. At the same time, they are likely to want to limit and localise any hostilities that might occur between them. Renewed war in Korea would carry serious risk of escalation and nuclear conflict. All powers involved in the region have major interests in avoidance of this. China is at present pursuing its claim to Taiwan by political means. As made clear in its recent Defence White Paper, Japan appears most unlikely to change its long-standing policy of limiting its military development. We expect this policy to continue, so long, at least, as regional developments do not risk Japan's security, and the security alliance with the US continues to command Japan's confidence and support.

Prospects for Stability

10. Australian assessments note many uncertainties. They also note the requirement for realism and sustained effort if strategic deterrence is to be effectively maintained, and if the pursuit of policies for the relaxation of tension and avoidance of conflict is not to induce a false sense of security and be exploited for unilateral advantage. Taking full account of these uncertainties and of this requirement, present Australian assessments see prospects for the maintenance of basic stability in the Super Powers' strategic relationship in respect both of their mutual nuclear deterrence and the situations in Central Europe and North East Asia.

11. However, this does not rule out lesser situations developing in a manner adverse to the interests of smaller powers. The Super Powers' relationship must be expected to fluctuate from time to time. Restraint will be necessary if crisis is to be avoided.

Competition Elsewhere

12. The US and the USSR each has substantial, though in important respects different, global interests, not only in strategic competition but in trade, aid, resource exploitation, political status and many other matters. But their basic postures clash. The US is basically interested in a peaceful and stable 'world order'. While having important interests in general international stability, the USSR has an ideology that can induce disruptive political change.

13. Although the USSR has relatively less need than the US for forces or major bases overseas, it is interested in access to facilities where this is militarily or politically useful. It appears ready to use its increasing global military reach for political purposes. At the present time, the USSR appears capable, following its action in Angola, of exploiting the developing situation in Southern Africa to further its political and strategic influence. It is already directly involved in the Horn of Africa.

The Indian Ocean

14. The primary area of Soviet strategic concern in the Indian Ocean is likely to remain the north-west sector. We do not know the USSR's motives, but the fact is that increased Soviet deployments there, backed by the USSR's military installations in Somalia, place it in a position in any time of international crisis to threaten critical lines of oil supply to Western Europe, Japan and Australia. Some seventy per cent of

Western Europe's oil imports cross parts of the Indian Ocean; approximately seventy-five per cent of Japan's and eighty per cent of Australia's oil imports (and about one-third of our total oil requirements) transit the Ocean. Soviet facilities also locate the USSR favourably for involvement further afield into the east Indian Ocean, should opportunity offer and it calculate the effort and risk to be worthwhile.

15. Littoral states on the Indian Ocean have varying relationships with the Super Powers. These are a function of national strategic situations and are a matter for national discretion. Significant extension of Super Power activity, however, can exercise a powerful influence on the strategic circumstances of nations in a region. Arms supply and other support can heighten regional confrontation and destabilise the military balance; it can attract competition and confrontation from the other Super Power; regional states can be drawn into these rivalries. Short of such major developments, the USSR could seek and gain local access for its military deployments, enabling it to exert direct pressure on local political developments.

16. The Australian interest is that these developments be avoided in the Indian Ocean littoral. The ability of the US to match the USSR and establish a restraining influence is important. For this reason, we support the present US program for modest development of the facilities at Diego Garcia, which will enhance the operational capability of the US Navy. But we would wish to see the Super Powers exercise restraint in their activities so that their deployments may be maintained at the lowest practicable level.

THE REGIONAL POWERS

17. The discussion so far has been related to the Super Powers because they alone in the contemporary era are able to project military power on a significant scale into regions distant from their homelands and relevant to Australia's strategic circumstances.

18. In the Indo-Pacific area the major powers are India, China and Japan. Australia seeks friendly relations with all of them. Australia, as a major source of food and resources, is well placed to play a constructive international role.

19. These countries all have their own local strategic preoccupations, and radical change in these circumstances and in their national policies could not be expected to be quick. No more than the former Great Powers of Europe can we expect these powers individually to play a large military role in strategic developments directly affecting Australian security in the foreseeable future.

CONFLICTS IN DISTANT REGIONS

20. Distant regional conflicts are not to be seen as necessarily directly affecting Australia's security interests and calling for heightened defence preparedness by us.

21. This is not to say that our national policies would be indifferent. Military conflict, particularly with arms supplied by external powers, might be intense and cause much suffering and damage. Changes in a regional distribution of power or in general strategic circumstances could have implications for Australia's security.

22. But in evaluating our defence policies and level of preparedness, we can note the fact that regional conflicts, as in the Middle East, have been successfully localised, and that it is in the Super Powers' interest to work together to confine such conflicts. While that mutuality of interest may not be assured in all circumstances, and in any

case policies of restraint may fail, outbreak of regional conflict need not be seen as a preface to the collapse of international stability and the first stage of a new world war.

23. This has implications for Australia's defence policy. Our military resources are limited and the first call upon them must always be in respect of our own national security tasks. We could not sustain significant operations in two theatres concurrently. We cannot contribute military forces that would be significant to the strategic balance in Europe or North East Asia, nor to the western nuclear deterrent. Events in distant areas such as Africa, the Middle East and North East Asia (assuming there were international sanction for Australia's involvement) are beyond the reach of effective defence activity by Australia. We can and do, however, contribute to UN peace-keeping operations.

AREAS OF AUSTRALIA'S PRIMARY STRATEGIC CONCERN

24. For practical purposes, the requirements and scope for Australian defence activity are limited essentially to the areas closer to home—areas in which the deployment of military capabilities by a power potentially unfriendly to Australia could permit that power to attack or harass Australia and its territories, maritime resources zone and near lines of communication. These are our adjacent maritime areas; the South West Pacific countries and territories; Papua New Guinea; Indonesia; and the South East Asian region.

25. Australia's defence interest is not confined to the presence or absence of military threat itself. We are concerned with developments that could directly or indirectly support Australia's security from military threat, or favour the development of threat sooner or later. Unfavourable developments in mainland South East Asia would not necessarily mean of themselves that threat of direct attack upon Australia was developing, but they could introduce uncertainties into our strategic prospects.

South East Asia

26. In the earlier post-war period, Australian strategic policy was strongly influenced by anxiety about the ability of the nascent nation-states of South East Asia to withstand domestic dissidence and external pressures.

27. The situation has changed in important respects. Our assessments, still necessarily short-term, depict a regional situation with reasonable prospects of stability, although with many imponderables and uncertainties.

28. On the favourable side, many regional states appear now to have better prospects than earlier expected of peaceful co-existence and of security from major extra-regional pressures. Basic political differences between the communist and ASEAN Governments are at present not proving a barrier to inter-governmental contacts. The prospect of large external powers acquiring major strategic influence in the region has very substantially receded. Their interests would not be served, now or foreseeably, by destabilisation of the region.

29. For a variety of reasons much will depend on how China, the closest of the external powers, decides to pursue its interests. It maintains its contact with the Maoists, and some support for dissident parties in the region, although currently at a subdued level. Chinese support for insurgencies in South East Asia appears now to be at a lower level than for many years.

30. The various domestic insurgencies continue, but appear unlikely to be able to organise major challenge as in the past. They would face a response from governments who, in general, are more strongly placed to deal with any such challenge.

31. It remains true that external powers have ample resources directly to support insurgent groups did they choose to adopt such a policy, and continuing political tensions in the region could provide them with opportunity. Bad times, or weak government, could produce serious instabilities.

32. Domestic instabilities in the region and even a level of political discord between the states would not of themselves jeopardise Australia's security; and we must accept there will be political change in the region, including that brought about by domestic violence. But in such circumstances, there could be risks of external intervention; regional rivalry and confrontation between external powers could develop. Prolonged regional tension could lead the regional states to develop capability for conventional military operations on a regional scale.

33. None of these developments is at present in prospect. Reference to them, however, can help to clarify the basis for our abiding concern regarding prospects in South East Asia. As already mentioned, defence policy is concerned with contingencies and not simply demonstrable threats.

34. Our policy will be to support as best we may the present relatively favourable prospect in South East Asia. We cannot succeed to Britain's earlier role, nor would this be acceptable either to us or to the regional states to-day. However, most of the regional countries appear to value some association with Australia in defence matters.

35. We intend therefore to continue our defence connections with them, by such means as defence co-operation programs, occasional military exercising, consultations and visits. We shall continue to co-operate under the Five Power arrangement, which embraces Australia, Britain, Malaysia, New Zealand and Singapore. While acceptable to the Government of Singapore, we shall continue to operate RAN ships from there, and we are due at the end of this year to hold discussions again with the Governments of Malaysia and Singapore concerning the deployment there of our two RAAF Mirage Squadrons.

36. We shall keep under review the adequacy of our present activities, in consultation with regional governments; but we do not expect that any significant change will be called for to support our important common interests and to maintain our valuable co-operation with them.

Indonesia

37. Friendly relations between Australia and its major neighbour Indonesia have prevailed for thirty years and have successfully weathered occasional sharp differences. The substantial considerations sustaining basic accord between the two countries have long been understood and acknowledged in Australian policy.

38. The Indonesian archipelago, together with Papua New Guinea, would be an important factor in any offensive military strategy against Australia. This consideration alone gives Australia an enduring interest in the security and integrity of the Indonesian Republic from external influence. For its part, there would appear to be substantial advantages for Indonesia in having to its south a friendly neighbour, sharing its basic strategic interests and able to make a significant military contribution to the deterrence or containment of any threat that might possibly develop at some future time.

39. Indonesia is a large country with many pressing national problems. Effective military forces are an important element in national resilience; Australian co-operation, though necessarily limited, can help to maintain and develop skills and capacity in support of this.

40. Indonesia and Australia maintain a program for defence co-operation, initiated by the Liberal Country Party Government in 1972 and continued by the Labor Administration in 1972-1975. This includes co-operation in such projects as the mapping of parts of Indonesia; the development of Indonesia's capability for maritime surveillance; training of Indonesian Servicemen; occasional combined exercising, and regular consultations about strategic developments and defence matters of common interest.

Papua New Guinea

41. The long association between Papua New Guinea and Australia supports a continued close relationship. Effective co-operation in defence matters is an important element in this. Although neither country seeks formal undertakings, it will be important that they maintain close consultations regarding any developments that could affect their security. At the present time, any external threat to Papua New Guinea appears improbable and remote in time.

42. At the present time, Australian defence co-operation with Papua New Guinea includes the attachment of Australian Servicemen to the Papua New Guinea Defence Force; supply support arrangements; a defence co-operation program for training and project aid; occasional operational assistance with transport, logistic and technical services; and defence consultations. It is intended to formalise these arrangements in appropriate governmental exchanges in the near future.

43. The common defence interests of Papua New Guinea and Australia extend beyond their bilateral contacts. Both countries share important interests with Indonesia regarding general strategic developments relevant to the security of the common neighbourhood. Australia and Papua New Guinea also share important interests regarding the South West Pacific, and it will be important that we consult and work closely together regarding developments there.

The South West Pacific

44. In the South West Pacific there are many newly independent and soon to be independent states. Australia enjoys friendly relations with all governments in the region. Australia seeks to co-operate with and assist these countries in their development in conditions of stability and security. Important lines of communication with Australia's major trading partner, Japan, and with its major ally, the US, run through this region.

45. The ANZUS Council at its recent meeting noted the increase in external awareness of this region.

46. There is scope for co-operation should regional governments desire this, in the organisation and development of security forces, in training, in selective projects and in other ways. Worthwhile contact has already been established with Fiji, and we intend to explore requirements and scope for co-operation with other interested regional governments.

47. We intend to maintain and develop Australia's military capability to demonstrate its interest in the region.

New Zealand

48. Our long historical association with New Zealand and the many common interests that sustain our co-operation as neighbours, partners and allies, need no elaboration here. Defence co-operation with New Zealand is fundamental to our interests and policy, and covers a very wide range. It includes bilateral consultation, maritime surveillance, combined exercises and training programs, exchanges of technical and operational information, and co-operation in intelligence, defence science and supply. We will devote continuing effort to sustain and further develop these programs.

Antarctica

49. The provisions of the Antarctic Treaty prohibit military use of the territory. Both the US and the USSR appear satisfied with these provisions. Political, as distinct from military, solutions to any disputes are to be expected.

NUCLEAR PROLIFERATION

50. Following renewed international efforts, including those by the two Super Powers, present prospects for slowing and curbing nuclear proliferation appear somewhat more favourable than previously. Any further proliferation appears likely to be essentially regional in its motivation and strategic significance, although there would be complex implications for central global relationships were proliferation to become extensive or lead to actual use of nuclear weapons.

51. There are no signs of significant movement towards acquisition of nuclear weapons in the regions of Australia's primary concern. Australia is a member of the Nuclear Non-Proliferation Treaty, which forbids manufacture or transfer of nuclear weapons.

LAW OF THE SEA

52. A large reduction of the traditional high seas and an expansion of maritime areas under varying degrees of national jurisdiction appear certain consequent upon international negotiations for new Law of the Sea.

53. Our defence interests are affected. There will be an increase in requirements for the surveillance, patrol and policing of our national waters and maritime resources zone, and for demonstration of our sovereignty in conjunction with civil agencies. The conferring of a 200-mile exclusive resources zone would, for example, add some 2 500 000 square miles to the tasks of our protective services. We shall be closely interested in any developments affecting passage through the seas and straits of the archipelagic regions to our north.

54. There are likely to be internationally agreed arrangements for the political or judicial settlement of disputes; but such disputes will have a contingent military element.

55. Implications for the structure of the Australian Defence Force are receiving close study, and provision has already been made for some increase in our surveillance and patrol capability.

CHAPTER 3

AUSTRALIA'S DEFENCE REQUIREMENTS

1. The summary statement in the preceding Chapter indicated the main factors and trends that affect Australia's security.

2. Where there is political instability, tension or military confrontation, a detailed course of events can be difficult to predict with reasonable confidence beyond a few years, or even less. Few of the findings described in this Paper would have indefinite validity and for some the range of vision is short; but there is much continuity in the determinants of Australia's strategic circumstances. Major threats (requiring both military capability and political motivation) are unlikely to develop without preceding and perceptible indicators. The final emergence of a major military threat to Australia would be a late stage in a series of developments.

3. Strategic pressure or direct military threat against Australia, its territories, maritime resources zone, or lines of communication are at present not estimated as probable. But important changes have been noted that give rise to significant uncertainties in some respects.

4. Along with the essentially external factors that have been indicated, certain features of Australia's geographic situation also support our security.

5. Closely and expertly though we may assess developments, prudent defence policy must insure against uncertainties and the risk that they might resolve unfavourably to our interests. How we go about this is described later in this Chapter.

SELF RELIANCE

6. A primary requirement emerging from our findings is for increased self reliance. 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.

7. Our alliance with the US gives substantial grounds for confidence that in the event of a fundamental threat to Australia's security, US military support would be forthcoming. However, even though our security may be ultimately dependent upon US support, we owe it to ourselves to be able to mount a national defence effort that would maximise the risks and costs of any aggression.

8. Short of this major, and improbable, situation, we could face a range of other situations that we should expect to handle more independently. It is not our policy, nor would it be prudent, to rely upon US combat help in all circumstances. Indeed it is possible to envisage a range of situations in which the threshold of direct US combat involvement could be quite high. This is as it should be. An alliance does not free a nation from the responsibility to make adequate provision for its own security, or to

help support stability and security in its own neighbourhood, should this requirement arise.

9. This self-reliant posture derives essentially from our own national interests and responsibilities. It also accords with our status as an ally of the US, for by accepting our local responsibilities we can contribute to the alliance relationship and to the US global effort.

10. Furthermore, Australian self-reliance would enable us to contribute effectively to any future combined operations with the US, for it would significantly reduce our demands upon US operational and logistic support.

11. Our stance also takes into account our co-operation with our regional friends and we are mindful of our natural associations with the western strategic community, and of our obligations in these respects.

RELATIONS WITH THE US

12. Many important practical advantages flow to Australia from its defence relations with the United States. These include assistance to Australia—unique in comprehensiveness and quality—in intelligence, defence science and technology, military staff contacts regarding tactical doctrine and operational procedures, and military exercising with forces using high technology which is not otherwise available. All this involves the sharing of military information of very high value to Australia.

13. These arrangements greatly assist Australia's defence capability. Moreover, they display to the world Australia's close defence association with the US. Australia's defence activities can, and do, support the US directly and indirectly in a number of areas. Our co-operation, which includes the joint maintenance of defence-related facilities on Australian soil, is also, despite the disparate strength and resources of the two countries, of value to the US.

14. The large US transfer to Australia of weapons technology, research information, tactical doctrine and intelligence could not be expected by a country that failed itself to maintain high standards in the professional employment of forces using modern technology, or that failed to evidence determination to contribute in a meaningful way to the development of defence technology, research and intelligence.

RELATIONS WITH EUROPE

15. Although our West European associates, including Britain, are not in a position to provide significant combat support to us in any defence emergency, they—and particularly Britain—still offer important defence connections.

16. Britain is an important source of intelligence and assessment, of military doctrine, defence science and technology, and advanced weaponry and equipment. European support in fields other than military could be valuable in a defence emergency. They are sources of defence supply, thus enabling us to spread our supply risks. Such considerations support our deliberate policy to maintain and cultivate defence relations with the NATO powers.

AUSTRALIA'S MILITARY STATUS

17. Insofar as we can directly influence developments shaping our strategic prospects, this will often be by the political rather than the military arm of policy. Our

military capability is, however, directly relevant in some circumstances, and it can in others provide important support for political policy.

18. For this reason, and because of our obligations to others, and against the possibility that we may have to rely upon military force to deter a threat to our interests, it is important that we be seen as a nation that takes defence matters seriously and that our military capabilities and competence should command respect.

19. As indicated earlier, our forces and associated capabilities should be able to operate with substantial independence in our own environment. We should avoid development of defence capabilities that are not relevant to our own requirements.

INSURANCE AGAINST UNCERTAINTY

20. Insurance against uncertainty was mentioned early in this Chapter as a basic principle of our defence planning. This has a number of elements.

21. The first is the maintenance of a substantial force-in-being, which is also capable of timely expansion to deal with any unfavourable developments.

22. Secondly, there must be continuous review of assessments by an expert intelligence organisation to ensure prompt detection of any significant change in the developing strategic situation.

23. This relates, thirdly, to the requirement for maximum warning time or any requirement for expansion of the Defence Force. Constant and close watch must be maintained on whether this warning time is likely to fall short of the lead times—sometimes many years—necessary for expansion, including development and training of the force, organisation of the defence infrastructure, acquisition of equipments, securing supply lines and other external support. Requirements in these respects will, of course, differ according to the nature of the possible threat that is perceived.

24. Fourthly, defence preparations could not be delayed until a definite threat finally emerged. Particularly in the case of more substantial situations, we should need to act well in advance. Our planning and preparations must be responsive to any change perceived as having potential for harming our interests. Preparatory planning and practical measures taken in advance and based upon a capable and versatile force-in-being would substantially reduce the time necessary to organise an effective defence response.

25. Such measures assume that the Government and Parliament of the day would be willing to respond to changes from time to time in the indicators for defence development.

26. The fifth element in insurance against uncertainty is the examination of contingencies—that is situations that, while possible, are not considered likely to occur but that appear typical of the sort of situation that could arise or are important enough to warrant policy attention. As in other countries, our defence planners use contingency studies as a means of systematically exploring future uncertainties and of developing judgments on possible requirements for defence preparedness, in such matters as the force structure, military concepts and command arrangements.

CURRENT REQUIREMENTS FOR DEFENCE CAPABILITY

27. The guidance derived from our present assessments and from our consideration of the likely requirement and scope for practical military measures may be summarised as follows:

- the force-in-being should be capable of performing current and foreseeable tasks and dealing with selected shorter-term contingencies—for example, maintenance and expansion of the training base; sea control in areas of Australia's maritime jurisdiction; quick detection of and response to any maritime or coastal harassment; aid to the civil power in counter-terrorist operations, as requested and appropriately authorised; exercising with allies and regional defence associates; maritime surveillance and display in areas of Australian interest; support for defence co-operation programs; and contributing to UN peace-keeping;
- the force should be of a size and versatility and possess or have under development or acquisition the structure, equipments and professional skills adequate for timely expansion against a range of contingencies of various types and timings, as indicated by the strategic guidance from time to time and having regard to the long lead times of certain equipments and skills;
- the force-in-being and planned should have a substantial capability for independent operations;
- the force should at all times demonstrate Australia's serious attitude to defence matters, military competence and capacity to absorb and operate high-technology equipments;
- the capacity to operate effectively with the US should be maintained to the extent relevant to likely commitments.

28. Our assessments of the international situation have not revealed any present likelihood of our being called upon to provide any direct military assistance to our allies or other defence associates. Were this sort of situation to arise in future, in certain circumstances we would be able usefully to support local forces by making available equipments or skills in which they were deficient. Subject to our own national priorities we should expect that such contributions could be provided from our force-in-being at the time.

29. In addition to our strategic prospects, Australia's physical environment provides further important guidance regarding the specific characteristics that we need in the Defence Force.

ENVIRONMENTAL FACTORS

30. Factors such as geography, population size and distribution, infrastructure, industrial capacity and resources distribution combine to create enduring features in our physical environment.

31. Our country is an island continent, with an extensive maritime resource area. We have no land frontiers. Except in the Torres Strait area, any approach to our continent would involve a transit of the open ocean, by sea or air. Any confrontation or conflict would be, initially at least, maritime in character. The population is relatively small and is largely urban, coastal and concentrated in the south-east. Defence infrastructure or relevant civilian infrastructure are still limited in the north and west.

32. The physical environment of Australia suggests that the characteristics of our force structure should include:

- a good capability for external intelligence;
- capacity for the regular surveillance and patrol of our ocean approaches and maritime resources zone;
- naval and air strike components to deter potential adversaries;
- readily transportable and mobile land forces, with adequate capability for reconnaissance, to meet hostile incursions at remote localities;
- mobile air defence elements;
- elements for the protection of shipping from attack or other interference in Australia's focal areas and port approaches;
- a capability for sustained operations at long ranges from bases and in areas remote from sources of logistic support.

THE TECHNOLOGICAL LEVEL

33. Australia's forces should use suitably high technology in Australia's weapons systems, equipment, training and support. Because Australia has close affiliations with the United States and Western Europe, and sufficiently developed technology to make use of those links, a wide choice is available. Our military technology should be compatible with, but not necessarily equal in technical advancement with, relevant weapons systems of larger allies. To acquire high-level technology in weapons and equipment now throughout our forces may give us advantages in effectiveness, but it would be very expensive. Advanced technology should be favoured where it offers compensating advantages, for example, in simplicity of operation and support, or avoidance of early obsolescence, or sufficient savings in additional equipment, manpower and life-cycle costings or is otherwise particularly suited to Australia's assessed strategic situation. Australia should aim to maintain its present relatively favourable position, and be prepared to increase selectively the technological level of its forces if this should be called for.

CHAPTER 4

MILITARY CAPABILITIES PLANNED FOR THE FUTURE

INTRODUCTION

This Chapter examines the present capabilities of the Defence Force and in broad terms it describes the types of capabilities the Government proposes, subject to any change that future circumstances require, to create or have in sight by 1981.

2. In determining the resources to be allocated to defence, account has been taken, as already described, of our strategic circumstances, physical environment, military technology and the basic concepts pertaining to the development of the Force. Within this context, the Government has examined broad policy choices available for the kind and size of forces that should be provided. To compose a program, it has examined different levels of total expenditure and different rates of annual growth in expenditure. Through this process, the Government has approved a financial planning ceiling of some \$12 000m (in January 1976 prices) for the five-year period 1976-77 to 1980-81.

3. The Five Year Defence Program (FYDP) represents the best present assessment of the ways in which the capabilities of our forces should be varied or enhanced. That assessment has to be looked at again each year, or earlier if there is a significant change in strategic outlook. The FYDP is a planning and programming framework.

4. The Program must not be looked upon as static and unchangeable. The year of acquisition, the number of equipments, and the manning and training of the Force must be capable of variation as changes occur—be it in our strategic situation, in technology, or in the operational concepts and doctrines that may evolve. Other program changes may be imposed by such influences as production realities, cost changes, the availability of needed manpower, or the general level of Australia's economic and industrial activity.

5. It follows that only annually (at the time of the Budget) are firm Government decisions made and commitments entered into, covering all the different acquisitions and activities planned for the Program in the first of the five years. Plans and projects which are to be put to decision in later years through the normal processes of Government consideration achieve a progressive firming of detail (e.g. quantity, weapon fit, source) as they approach their planned year of decision.

6. This Chapter outlines existing and planned operational and support capabilities of the three Services in terms of maritime warfare, land warfare, air warfare and their components. Attention is primarily given to major weapons and equipments. Paragraph 108 below sets out the decisions that have been included in the 1976-77 Budget.

7. The weapons and equipment form but a part of the defence capability. The Defence Force depends also for its effectiveness on manpower, on logistic support, on its facilities and supporting infrastructure, and on its scientific, technological, industrial and other forms of civilian support. These matters will be treated in later Chapters.

INTELLIGENCE

8. The strategic assessment made by the Government affirms the need for a highly effective intelligence system. Defence policy depends critically on a high level of performance of intelligence monitoring and assessment of international events so as to discern changes in adequate time. As well as the need for basic assessment of the existing and potential military capabilities, deployments and strategic motivation of other countries, intelligence has the responsibility for monitoring developments which could produce pressures or threats against Australia's interests to which a defence response may be needed.

9. Our capabilities and arrangements for meeting these requirements are good. Beyond our immediate environment, we draw considerable benefit from arrangements developed over many years with co-operating countries.

10. Intelligence assessment in support of defence planning and policy is based on the work of professionally qualified staff, both civil and military, with competence in strategic, military, political, economic, scientific and technological fields. This competent national intelligence capability is an accepted and recognised component of the structure of modern government.

11. The program allows for the continuing investment of resources to keep pace technologically with modern defence intelligence-gathering methods; and to develop skilled and experienced staff. Attention is also being directed to a greater coordination of the various components of the Australian intelligence effort. Whether any changes are needed in intelligence practice and organisation for defence purposes in respect of external intelligence is a matter that the Government will consider when it has received the reports of the Royal Commission on Intelligence and Security.

MARITIME SURVEILLANCE, RECONNAISSANCE, AND OFFSHORE PATROL

12. The physical environment of Australia emphasises the importance of maritime surveillance, reconnaissance and offshore patrol, including affirmation of our sovereignty in Australian waters and maritime resources zone. The increasing demand for civil surveillance and patrol, especially following the probable large increase in the resources zone area, is likely to continue.

13. The Defence Force has a variety of elements able to carry out these roles. Some will be strengthened and their capacity will be enhanced during the program period. The forces involved will continue to be trained in defence roles, but will provide an increasing contribution for civil purposes.

14. Largely because of Australia's geographic environment, Long Rang Maritime Patrol (LRMP) aircraft will be required at an early stage of the perception of any potential threat, to undertake increased surveillance and intelligence gathering.

15. The present LRMP force consists of ten P3B Orion aircraft based at Edinburgh and twelve Neptune aircraft based at Townsville. The Neptune aircraft will be phased out by 1978 when deliveries of the new P3C Orion commence.

16. The Government has decided to increase the current order for eight P3C Orion aircraft to ten. Edinburgh will become the home base for the total LRMP force,

and some improvements will be made there to the technical support and airfield facilities. Some aircraft will be deployed on a rotational or, with quick response-time, on a short-term basis to various RAAF bases, notably those at Pearce, Learmonth, Darwin and Townsville.

17. The new aircraft will have greater speed, range and endurance, and better sensor capability than the Neptune aircraft. An Orion aircraft has a radius of action of over 2000 miles. It can, in one sortie, sweep an ocean area of 300 000 square miles and in so doing detect all surface targets of about 2000 tonnes or greater. For a task 500 miles from its deployment airfield, it can be on station within two hours and remain on task for about eight hours.

18. For detection and localisation of quiet submarines, the new aircraft are planned to be fitted with the Australian-designed and developed Barra directional sonobuoys, and with processing equipment developed in Britain.

19. Patrol craft provide a capability for patrol, apprehension, intelligence, coast-watching, sovereignty visits, survey, and support of law enforcement by civil authorities (such as Customs, Fisheries, and Health). They are also used for search and rescue, fleet support, hydrography and Naval Reserve training. At present seven of the twelve patrol boats are based on Cairns and Darwin for defence and civil surveillance and patrol.

20. The Government has decided to acquire some fifteen new patrol craft with speed, range and seakeeping qualities superior to those of the Attack Class now in service. These new craft will enter service in the period 1979 to 1984. The first one or two will be built overseas and the remainder in Australia. The Attack Class is expected to retire from service from about 1982.

21. Patrol craft can best be used in conjunction with aircraft. Having regard to the probable substantial increases in the resources zone and consequent protective responsibilities, the Government has directed that consideration be given to acquiring short to medium range patrol aircraft, optimised for those various defence and national tasks not requiring the comprehensive and expensive capabilities of RAAF Orions or Navy Tracker aircraft.

22. These and current measures to obtain effective use of our existing patrol craft, augmented by co-operating aircraft and other ships, should provide a sufficient capability for surveillance and patrol of selected areas. Increasing use will be made of other sources of information—particularly from the Australian fishing fleet—in improving the efficiency of locating illegal military and civil incursions into our waters.

23. The Program allows for continuing research on over-the-horizon radar, discussed in a later chapter. An operational system could not be acquired until beyond the program period. Knowledge of new techniques applicable to conventional radar is being maintained. Technologies of sensors and systems operating at visual and infra-red wavelengths are being examined.

24. Many other vehicles and systems contribute substantially to surveillance. They include ships, aircraft, submarines, direction finding and sonar detection systems. In addition, through co-operative arrangements with allies, Australia has access to the skills, technology and product of advanced methods for surveillance and information gathering.

STRIKE, RECONNAISSANCE AND DETERRENCE

25. Australia's strategic and geographic circumstances call for strike forces that can deter attack. The Australian environment also calls for emphasis on strike against maritime targets at sea.

26. The land-based strategic strike capability resides principally in twenty-four F111C aircraft. These provide a core whose effectiveness can be markedly enhanced by improvements to weapons and sensor systems as the technology becomes available.

27. The Government has decided to fit by 1980 sensors to four of the F111C aircraft, to provide an all-weather, long-range reconnaissance capability.

28. Various precision-guided munitions now under development are being considered. These include electro-optical guided missiles and bombs, missiles that can be air-launched at long ranges from the target, and other weapons that would markedly increase aircraft effectiveness and improve their chances of survival.

29. Weapons effectiveness can also be enhanced by aircraft systems for identifying targets in poor weather conditions, and for providing homing signals to guide weapons accurately to their target. Aircraft survivability can also depend on the use of electronic countermeasures systems.

30. The Government has decided on the progressive acquisition of such capabilities for the F111C force. Experience in the use of these advanced technological systems can begin to be gained by the early 1980s.

31. The Program plans the acquisition of a training capability in air-to-air refuelling. Air-to-air refuelling would give the strike aircraft, and also the planned new tactical fighter aircraft, additional range, and would permit increased weapon loads, greater flexibility in the use of airfields, and improved recoverability in bad weather conditions.

32. The potential for strengthening maritime strike has been greatly increased by overseas developments in anti-shipping missiles, which are a cost effective means of deterrence. Such missiles include the French Exocet, the Italian Otomat and US Harpoon.

33. Harpoon is part of the weapon fit of the two new guided-missile frigates (FFGs) ordered earlier this year. This sea-skimming missile has an over-the-horizon capability and delays radar detection by approaching its target at very low altitude.

34. A further limited acquisition of anti-shipping missiles for destroyers, submarines and P3C aircraft is being considered. Timing of the acquisition will be dependent on satisfactory progress into production overseas.

35. The current sea-based strike capability rests primarily with the aircraft carrier HMAS *Melbourne*. Its Skyhawk aircraft can operate either from the carrier or from airfields.

36. Additional strike capability is provided by submarines and destroyers. As well, the Army Special Air Service Regiment and commando units can be moved by either air, sea or submarine to carry out strike and reconnaissance tasks.

NAVAL GENERAL PURPOSE WARFARE

37. The naval general purpose forces undertake peacetime and operational tasks ranging from sovereignty control to maritime defence, throughout the neighbourhood and the region.

38. The main naval general purpose warfare element consists of eleven destroyers—two Daring Class destroyers (DD), six River Class destroyer escorts (DE) and three Charles F. Adams Class guided-missile destroyers (DDG).

39. The two Daring Class destroyers are planned to retire in 1982-83, by which time the two new guided-missile frigates (FFGs) will be in service. Each of the FFGs will carry two helicopters, which will add a new dimension to the operations of the destroyer force. The helicopter provides reconnaissance and attack capability, and should permit the ship to make full use of its own weapon systems.

40. The operational lives and effectiveness of the four older River Class destroyers are being extended by a modernisation program for three, and a half-life refit of the fourth. The work on these ships should be complete before 1981. It is then planned to modernise the two newer River Class destroyer escorts in the period 1981 to 1983.

41. An extensive refit program is being undertaken for the three guided missile destroyers. Improvement and modernisation of guns and electronic equipment, and the fitting of a new surface-to-air missile system 'Standard', are underway. New data-handling systems are also being installed which can rapidly evaluate and display a threat and compute effective firing conditions. These three guided-missile destroyers are expected to remain operational until the 1990s.

42. Looking to the early 1980s, provision has been made for the destroyer force to be increased from eleven to twelve. The possibility of acquiring a third FFG is being considered. With a force of twelve destroyers, allowing for peacetime scheduling of refits, some eight to nine destroyers would be available at any one time.

43. To maintain the strength of the destroyer force from 1987 onwards, when the first of the destroyer escorts is due to retire, the Government has commenced investigations into the concepts, characteristics and cost of follow-on destroyers, preferably for construction in Australia.

44. These investigations will be in conjunction with those of missile-armed patrol boats. The number of destroyers to be acquired will also depend on the decision whether to replace the aircraft carrier HMAS *Melbourne* in the longer term.

45. For training junior naval officers at sea, it is planned to purchase or construct a new training ship to enter service in the early 1980s. The ship would be much simpler and more effective in the training role than the present training ship, HMAS *Duchess*.

NAVAL AIR WARFARE

46. The carrier HMAS *Melbourne* and its selected mix of fleet aircraft provide a naval strike capability against maritime forces or land targets. HMAS *Melbourne* and her aircraft also provide air defence at sea, reconnaissance and surveillance, anti-submarine warfare and facilities for command and control of the Fleet.

47. The Fleet Air Arm is equipped with sixteen A4G and TA4G Skyhawk aircraft for strike, air defence and ground attack; thirteen S2E Tracker aircraft for maritime

reconnaissance and anti-submarine warfare; and nine Sea King anti-submarine helicopters. An additional six S2E used Tracker aircraft are to be purchased. Other naval aircraft, including Macchi trainers, Wessex helicopters and HS748 aircraft, are also used in general support.

48. Investigations have shown that the life of HMAS *Melbourne* can be extended to 1985, and that it can provide a cost-effective contribution to a variety of our capabilities into the 1980s. The life-of-type of the carrier's aircraft extends beyond 1985.

49. The contribution and the form of capability appropriate in the future once HMAS *Melbourne* retires are force structure questions having major operational financial and manpower implications. These are, and have been, the subject of intensive examination in the Defence organisation. It is not a matter requiring decision at this time. A series of operational and analytical studies of naval air power, of the defence of sea lines of communication, and of other kinds of naval air warfare, is continuing. Alternative capabilities are being investigated which involve ships and aircraft. The aircraft might be either sea-based or land-based although a combination of both may prove desirable. In choosing among the various options, account must be taken of the availability and vulnerability of major force units, and the opportunities for exploiting technology which has implications for naval warfare in the future.

50. The ultimate decision will have far-reaching implications for the shape and size of the Navy. The Government proposes to institute funded project development at an appropriate time.

SUBMARINE AND ANTI-SUBMARINE WARFARE

Submarine Warfare

51. Submarines are a potent deterrent with important functions in anti-shipping and anti-submarine warfare, covert reconnaissance/surveillance and patrol, clandestine operations, and mine warfare. They provide the only means of sustained interdiction in areas where local air superiority cannot be established.

52. The force has four conventional quiet diesel-electric attack submarines of the Oberon Class, and a further two submarines under construction should become operational by 1978.

53. The submarines' capabilities are being improved. New fire-control and combat data-processing systems will be fitted from 1977 onwards, and the Government has decided to fit an improved attack/intercept sonar, and anti-submarine torpedoes with longer range and higher capability. The possibility of acquiring an underwater launched long-range anti-ship cruise missile is being considered within the Program.

54. After 1978, two of the six Oberon Class submarines will be in dockyard hands at any one time undergoing scheduled refits. From 1979, submarines will be based at Cockburn Sound.

Anti-Submarine Warfare

55. The effectiveness of submarines, and the complexities of the medium in which they operate pose very difficult problems for the defender and impose a disproportionately high strain on his resources. Emphasis has been given to indigenous development of a variety of new and more effective systems for anti-submarine warfare, and to the collection of data on the acoustic properties of the oceans surrounding Australia.

56. The principal elements in our anti-submarine forces are the ten P3B Orion and twelve Neptune Long Range Maritime Patrol aircraft (to be replaced as described), the thirteen S2E Trackers (to be increased as described), the nine Sea King helicopters, the eleven destroyers and the Oberon Class submarines.

57. Tracker aircraft and Sea King helicopters can be operated in either a sea- or land-based role. Studies are being undertaken into the possibility of increasing the capability of Sea King helicopters in the 1980s by the fitting of processing equipment for use with Barra and other sonobuoy systems.

AFLOAT SUPPORT

58. A modern underway replenishment ship can supply fuel, ammunition and other stores at sea so that destroyers, for example, may be deployed on task for longer periods and at greater ranges.

59. The Program includes the acquisition of an underway replenishment ship to enter service by 1980, when the fleet oiler HMAS *Supply* is due to retire. Consideration is also being given to the later acquisition of a second ship to provide added capacity for deployment, and to permit operations in both the eastern and western ocean areas. A second ship would ensure the availability of one at all times, including refit periods.

60. Repair and maintenance support to naval forces in remote areas can be provided, until the late 1980s, by the workshop facilities aboard the destroyer tender HMAS *Stalwart*.

MINE COUNTERMEASURES AND MINING

61. The mine countermeasures (MCM) force consists of two minehunters and one minesweeper, all of the Ton Class. Navy is examining a new concept in MCM vessels which should provide a more flexible and effective minehunting capability. This envisages an Australian-designed and developed glass-reinforced plastic craft fitted with modern minehunting and mine disposal equipment.

62. The Government has decided to proceed with the initial prototype design and acquisition of long lead items for two prototype vessels. The objective is to have new operational minehunting craft entering service during the first half of the 1980s.

63. A small number of practice mines of several types are used for submarine mine-laying and countermeasures exercises. The potential for air-drop mining exists in the Long Range Maritime Patrol aircraft and in naval fixed wing aircraft. Investigations are proceeding of the merits of mines of various types and when they might be acquired.

LAND WARFARE

64. The physical characteristics of Australia emphasise that our ground forces may need to be sustained over long distances; we return to this subject in paragraph 95 below. The ground forces need to be highly mobile, have an adequate capability for reconnaissance, and possess or have available air and other combat and improved logistic support. They must contain the necessary levels and skills for developing and testing tactics and techniques relevant to operations in Australia, while retaining the capability to operate overseas in areas relevant to our defence.

65. The Australian Army consists of two principal components, the Field Force and the Support Organisation. Both include Regular and Army Reserve units. The Regular Army element of the Field Force is based on a divisional structure and has organic to it combat units (armour, artillery, engineers, signals, infantry and aviation) and logistic units (such as supply, transport and electrical and mechanical engineers). The support Organisation provides additional logistic and maintenance support for the Field Force, and includes main base facilities and training establishments.

Ground Combat

66. The conduct of the land battle requires coordinated action by the fighting arms, which are supported by the logistic services. To facilitate command and control, the Regular Army division is at present grouped into three restricted task forces, each of two infantry battalions with supporting arms and logistic units.

67. Firepower additional to that developed by infantry-manned weapons is provided principally by supporting armoured and artillery units, by close air support and, in some circumstances, by naval gunfire. Close air support can be provided by tactical fighters of the RAAF and by Navy Skyhawk aircraft.

Armour and Anti-armour

68. Major equipments of armoured units are tanks, fire support vehicles, light reconnaissance vehicles and armoured personnel carriers.

69. In addition to reconnaissance, the roles of armoured units include the provision of armoured mobility, close fire support for the infantry and long-range defence against enemy armour.

70. The Government will buy a further fourteen Leopard tanks to add to the eighty-seven tanks already ordered. This will then provide sufficient tanks to allow training by a full armoured regiment, while at the same time maintaining equipments in the training organisation and repair pools. This total order of 101 provides for gun tanks, recovery vehicles, bridge layers, bulldozer tanks and mine clearers. The procurement of further specialist armoured vehicles is under examination.

71. Investigations are in hand to select suitable short, medium and long range anti-armour weapons. The investigations should lead to later specific procurement proposals from Army, and new equipments will begin to enter service from 1981 onwards.

Artillery

72. Regular Army elements of the Field Force are equipped with 105 mm howitzers and 5.5 inch medium guns.

73. Developments overseas have proceeded to the stage where the Army is now conducting trials in Australia of new 105 mm howitzers and 155 mm medium guns. A decision should be taken on the acquisition of these types of guns in time for introduction into service by the early 1980s.

Surveillance and Reconnaissance

74. Surveillance and reconnaissance of the battlefield entails the use of armoured reconnaissance vehicles, fixed- and rotary-wing aircraft, combat surveillance equipment and dismounted patrols.

75. Substantial improvements are planned in the program period in mortar- and gun-locating equipments, night observation equipment, surveillance radars and navigation equipment, and sensors available to the Field Force.

76. The tactical reconnaissance capability of the Mirage has shortcomings which will be taken into account in the selection of a replacement fighter aircraft.

Battlefield Air Defence

77. A capability for low- and very low-level air defence over the battlefield is required to complement the air defence capability provided by fighter aircraft.

78. By 1980 there will be a capability to train in the techniques of low-level air defence with the introduction into Army of the Rapier surface-to-air missile system. Sufficient elements of the system will be provided to enable a limited operational deployment. The Government has decided to proceed now with the acquisition of specialised radar equipments which will give Rapier an all-weather performance.

79. Army is equipped with the Redeye missile for very low-level air defence. New and improved equipments are expected to be available by the early 1980s, and studies in progress are examining various alternatives to the Redeye system, including a mix of missiles and guns.

Tactical Mobility and Logistic Support

80. It has been said that our ground forces need to be highly mobile. This mobility is primarily conferred by organic vehicles and equipments, by sea and air transport support from the Navy and RAAF, and by an appropriate logistic support capability.

81. Armoured units are able to make use of their inherent mobility in most parts of Australia. An armoured personnel carrier squadron, for example, can lift an infantry battalion. Army has at present some 750 armoured vehicles of the M113 family of carriers in various configurations.

82. A new light general service truck (Landrover) is entering service this year, and the introduction of a new medium general service truck is planned. But tactical mobility in the field depends also on the ability to construct roads, tracks and small airfields, to lay and breach minefields, and to cross gaps. The acquisition of a wide variety of construction equipment is being considered and new air-transportable medium girder bridges will improve gap crossing capability. The mobility of the Army should be considerably improved during and beyond the program period.

83. RAAF aircraft for employment in a short range tactical air lift role include twenty-two Caribou Short Take-off and Landing (STOL) aircraft, forty-seven Iroquois utility helicopters, and twelve Chinook medium lift helicopters, six of which are not in operational service.

84. An operational Iroquois squadron supporting the Army can carry a single company group in one lift, and the Chinooks, if all were brought into service, could transport a field artillery battery and its supporting ammunition in one lift. These aircraft are considered to provide an adequate capability within the force-in-being.

85. In the longer term, the Caribou will need to be replaced and the Government has initiated a project development, including an industry feasibility study. Responses will be sought from manufacturers and users interested in collaborating with Australia in the development of an existing or a new aircraft type to satisfy Australia's need for a new tactical fixed-wing short range transport aircraft in the mid-1980s.

86. The Government intends to improve the logistic support available in the Services in order to increase their capacity for action independent of allies when necessary. The nature of the Australian physical environment renders this difficult, because of the comprehensive nature of logistics. Logistic support embraces the acquisition, movement, distribution, maintenance, repair, evacuation and disposition of materiel, personnel, facilities and services.

AIR DEFENCE

87. There are at present three squadrons of Mirage III-0 fighters, and fourteen Mirage dual seat trainers. Two of the squadrons are deployed to Malaysia and the third is based at Williamstown, NSW. The Mirage squadrons will be progressively phased out during the early 1980s when new tactical fighters and associated weapons are planned to be introduced.

88. The Government has decided to proceed now with project development for the acquisition of the new tactical fighters. It is expected that, subject to all of the necessary evidence being accessible, a decision on the generic type of aircraft will be made in this financial year after the examinations described below.

89. Tactical fighters and their associated weapons have been developed to such a stage of diversity that it is probably no longer practicable for pilots to be operationally efficient in the whole range of skills required in air-to-air and air-to-surface roles.

90. In the interest of flexibility, there could be a case for acquiring a multirole aircraft and for training pilots in one role but with the potential to convert rapidly to another. Alternatively, there are specialised surface attack aircraft that may prove to be more cost-effective in the ground-attack and maritime-attack roles. For these reasons, the case for acquisition of multirole or specialised aircraft, or a combination of both, is under investigation.

91. Detailed investigations will continue on the type or types of aircraft to be acquired, and the priority for the air-to-air or the air-to-surface components. In order to evaluate competing aircraft, information is being accumulated on such matters as performance, cost, delivery schedules, programs for development and for reduction of technical risk, and on opportunities for Australian industrial involvement.

92. To complement the tactical fighter force, and to provide for the exercise of an integrated air defence system, consideration is being given to the acquisition of medium-range surface-to-air missiles.

93. Obsolescent air traffic control radars and precision approach radars at the RAAF and RAN bases are being replaced. Tactical radars capable of being carried by a C130 aircraft are planned to enter service by 1979. The radars of the two Hubcap air defence systems are also being replaced. An air defence radar system provides a vital service in air defence operations by detecting and identifying hostile aircraft, and by effecting tactical control of intercepting fighter aircraft. In the longer term, over-the-horizon radar (if proven and economically viable) could make a significant contribution to Australian early warning capability.

94. Advanced jet training is carried out in Macchi aircraft, which are expected to reach life of type during the first half of the 1980s. The government has initiated investigations on a replacement aircraft, and manufacturers are to be invited to submit proposals. Early consideration of this requirement will widen the opportunity for a collaborative program involving Australian industry.

STRATEGIC MOBILITY

95. The distances involved in our physical environment demand that long-range mobility by land, sea and air should be available to the force from the Defence inventory, complemented by civil aircraft, merchant shipping and other transportation facilities as may be available. Within Australia, restraints could be imposed on mobility by the locations and limitations of existing ports, airfields, roads and railways.

96. The recent decision to acquire an amphibious heavy lift ship (HMAS *Tobruk*) will provide, independently of established port facilities, a capability for the sea movement of heavy military cargoes such as the vehicles, weapons and equipment of armour, engineer, terminal and airfield construction units, as well as up to about 500 troops. The ship will also have the ability to work with helicopters, including Sea King and Chinook. The six heavy landing craft in service will complement this heavy lift ship. Both types of vessel will provide a useful capability for civil emergency and disaster relief.

97. The Government decided earlier this year to proceed with the order for twelve C130H Hercules transport aircraft which will enter service by 1978 and which will replace the twelve C130A aircraft currently in use. These new aircraft, together with the twelve existing C130E Hercules, should meet peacetime requirements of all three Services. This capability may be supplemented in the longer term, subject to availability, by the airlift capability of the air-to-air refuelling aircraft already mentioned.

OCEANOGRAPHY, HYDROGRAPHY AND LAND SURVEY

Oceanography and trials

98. Extensive oceanographic data is required to permit effective submarine and anti-submarine operations. Oceanographic research is also an important requirement for national development.

99. A new oceanographic ship (HMAS *Cook*) is being constructed to replace the limited capability of HMAS *Diamantina* which is of World War II vintage. A new trials and research ship to replace HMAS *Kimbla* and to enter service by the early 1980s is also contemplated.

Hydrography

100. HMA Ships *Moresby* and *Flinders* have the capacity to carry out only the minimum surveys essential to national development. Work has concentrated on the opening up of new ports, particularly in the north of Australia, and the charting of safe passageways for ships of increasing draught. Much work remains to be done.

101. In view of this, the program provides for the construction of a further two ships and six large survey launches to perform additional hydrographic tasks in the 1980s. The first of these ships would be locally constructed and would probably be of a design similar to that of HMAS *Flinders*.

102. The possibility of introducing laser and photographic techniques for shallow water survey is being examined. It could, if proven, considerably enhance the capability for data collection at a small increase in cost.

Land Survey

103. Continuing effort is planned for both Army and Air Force units in carrying out land survey, mapping and aeronautical charting of Australia. Under co-operation programs with the governments of Papua New Guinea and Indonesia, parts of those countries are also being covered. The life-of-type, and possible replacement, of Canberra aircraft used for survey photography are being investigated.

COMMUNICATIONS

104. To exercise effective command and control there is a need for rapid, flexible and secure strategic and tactical communications. A new Australia-wide fixed Defence communications network is planned to be introduced progressively through the 1980s. It will replace existing single Service networks. Other major communication equipments planned are directed to improving the Services tactical and long range communications, and their security.

ELECTRONIC WARFARE

105. There have been rapid technological developments overseas in all aspects of electronic warfare. This form of warfare takes advantage of the fact that communications systems, radars and various weapon systems rely on radiated energy for their effective operation. This energy is often susceptible to deliberate interference by an adversary, unless suitable electronic countermeasures are developed.

106. The modernisation of electronic warfare equipment in all three Services is planned. For training in electronic warfare, the two Navy HS748 aircraft are being fitted with equipment to simulate some of the electronic environment which can be expected in combat situations. The setting up of a ground-based facility for air electronic warfare training is being investigated.

107. In the Australian scientific field attention is being given to devising counters to electronic warfare threats, especially in naval warfare, air defence, tactical air support, strike and reconnaissance.

SUMMARY OF MAJOR EQUIPMENT DECISIONS

108. The Government has decided in the 1976-77 Budget to acquire the following major equipment items. The estimated total project costs provide for the purchase of prime equipment, associated support items including training, and for the cost of capital works, contract administration and Australian industry participation, where these are applicable. Final equipment selections will be based on achieving the best overall result in terms of operational performance, delivery timetables, cost, product support and Australian industry participation. Also all acquisitions are subject to reaching satisfactory financial and contractual terms and conditions with the supplier.

NEW EQUIPMENT ACQUISITION DECISIONS 1976-77

	<i>Estimated Total Project Cost (January 1976 Prices)</i>
	\$
15 Patrol Craft	115m
2 Orion P3C Aircraft (LRMP)	25m

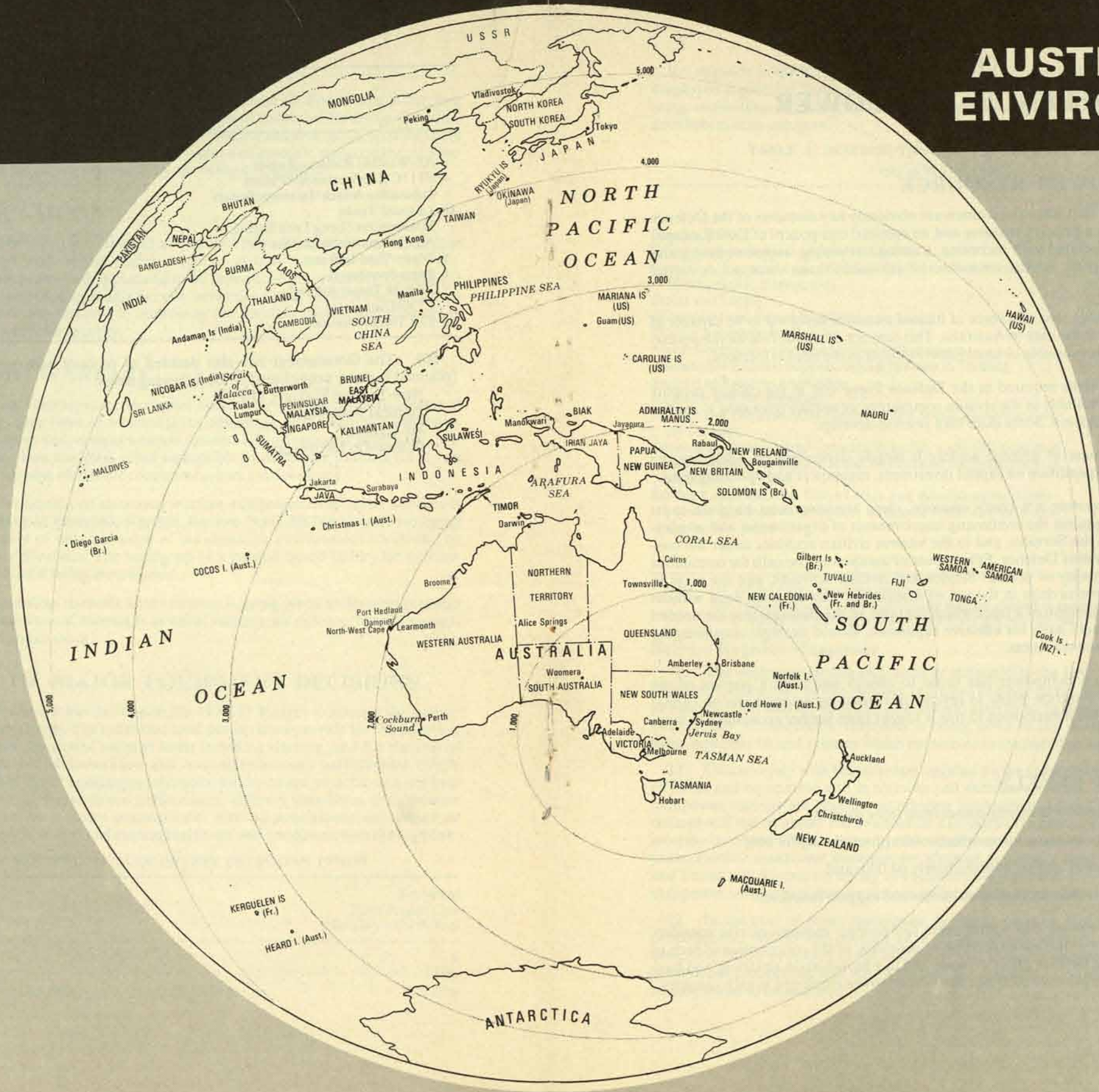
Estimated Total Project Cost (January 1976 Prices)

	\$
All-Weather Radars—Rapier	20m
4 F111C Reconnaissance Pallets	19m
Submarine Attack/Intercept Sonars	14m
14 Leopard Tanks	13m
Minehunters (Long Lead Items)	13m
Anti-submarine torpedoes	9m
4 Water/Fuel Lighters	7m
Barra Sonobuoys	6m
Jindivik Target Aircraft	4m
C130H Simulator	4m
6 S2E Tracker Aircraft	1m

109. The Government has also decided to proceed with project development (planned for later acquisition) of the following items:

- New Tactical Fighter (TFF)
- Tactical Transport
- Jet Trainer
- Follow-On Destroyers

AUSTRALIA'S ENVIRONMENT



CHAPTER 5

DEFENCE MANPOWER

THE MANPOWER RESOURCE

Experienced and skilled men and women are obviously key elements of the Defence Force. Manpower is a primary resource and an essential component of Defence capability. The costs associated with recruiting, training, retraining, accommodating and then providing properly for the retirement of personnel make them major capital assets.

2. This is especially true of a force of limited numbers designed to be capable of timely expansion as is the case in Australia. This concept demands that all the necessary skills be at hand or capable of timely development as the need is foreseen.

3. Many of the skills required in the Defence Force and in the civilian support staff are either not available in the civilian community, or require retraining to render them applicable to defence. Some skills take years to develop.

4. The effectiveness of defence activity is largely dependent on achieving the proper balance of expenditure on capital investment, manpower and operating costs.

5. Because manpower is a costly resource, close attention must be given to its efficient use. This requires the continuing improvement of organisation and of management practice in the Services, and in the various civilian activities under the control of the Department of Defence. Efficient use of manpower also calls for continuous review of the essentiality of present Service and civilian activities, and the ways in which we can achieve savings in the use of manpower. This must be done without compromising the retention of a force which contains all the elements that are needed to provide an adequate basis for effective expansion, should strategic circumstances call for greater defence readiness.

6. In recent years manpower has come to absorb too large a portion of the Defence Vote. The Program plans to reverse this trend by its emphasis on capital expenditure, and some contribution to this is sought from further economies in manpower use.

MANPOWER LEVELS

7. Defence manpower presently comes from three sources:

- the volunteer permanent forces which total approximately 69 000;
- the reserve forces totalling approximately 40 000; and
- some 33 000 civilians in various specialist and support functions.

8. The balance among and within these components requires careful consideration, taking account of the wide spectrum of activities; of the contribution of each of these activities to the defence effort in peace and in a mobilisation situation; and having regard to the comparative costs per unit of manpower employed in each category.

9. A guide to the categories in which full-time Service and civilian personnel are employed is given in Table 1. This allocation is based on a particular set of programming attributions of duties; different assumptions might lead to somewhat different numbers in each category.

TABLE 1: DISTRIBUTION OF DEFENCE MANPOWER
(As at 30 June 1976)

	Service	Civilian	Total
Combat Forces	23 600	..	23 600
Direct Logistic Support to Combat Forces	6 400	900	7 300
Specialist Support (eg. Medical Services, Communications, Hydrographic, Survey, etc)	5 300	1 000	6 300
Stores and Supply	3 200	5 000	8 200
Workshops and Repair Facilities	2 900	900	3 800
Quality Assurance Inspection	100	1 300	1 400
Naval Dockyards—Construction and refit program	100	5 300	5 400
Training Staff, Direct Support and Servicemen in Training	17 700	1 800	19 500
Support to Reserves and Cadets	1 600	100	1 700
Research and Development	400	5 700	6 100
Central and Departmental Functions and Specialist Administrative Services	2 300	3 700	6 000
Defence Regional Offices—provide financial, audit civil personnel and management support to the Services and the Department in all States	1 900	1 900
Service Command and District HQs and Administrative Units—provide administrative support to Service Units and Establishments in all States	5 200	2 900	8 100
	68 800	30 500	99 300

Note: (a) Above figures have been rounded.

(b) Civilian figures exclude 1300 locally engaged civilians in support of military deployments overseas, 900 persons on extended leave and 400 part-time staff.

Service Regular Manpower

10. The manpower levels and range of skills within the RAN and the RAAF are primarily determined by the number and types of equipments in service and planned to enter service, and the levels of operational activity to be maintained by our ships and aircraft. Considerable emphasis is being given to the design or acquisition of ships, equipments and systems which economise in the use of manpower.

11. Concurrently with the increases decided by the Government in the acquisition of stores and equipment and in training and exercise activities, Navy and Air Force manpower ceilings are planned to increase modestly in 1976-77. Naval manpower ceilings will rise by about 100 to about 16 215. Air Force manpower is also planned to increase by about 100, to about 21 650. These increases are the first for a number of years. Further manpower increases are planned to occur in later years, but their size and timing will depend on timing of equipment acquisitions, and on the extent of any manpower savings that may be thrown up by continuing reviews.

12. In the case of Army manpower, strengths must be at a level which permits development, within the concept of a force capable of expansion as elsewhere described, of the necessary range of military skills, tactics, command and control and operational procedures, and which permits the manning of weapons and equipment in service and to be acquired.

13. With these factors in mind, the Government has decided to increase the size of the Army. The Regular Army will increase from 31 500 to 34 000 and it is planned that the Reserve element will rise from 20 500 to a minimum of 25 500 by the end of the program period on 30 June 1981. In 1976-77 the increases will be some 300 and 1000 respectively.

14. No change is planned in the number of Regular battalions, but there will be a strengthening of Regular Field Force units and improvements in logistic support. This will enhance the ability of the Regular Army to sustain operations of increased duration and intensity.

15. The Government intends that women in the Services should now have greater job opportunities and closer equality with men in training and conditions of service. It has also been accepted that women would be permitted to serve in areas where hostilities were in progress, but they would not be employed as combatants or at sea.

16. An historical perspective of full-time Defence Force personnel is given in Table 2.

TABLE 2: PERSONNEL STRENGTHS OF THE DEFENCE FORCE 1966-1976
(As at June each year)

Year	Navy	Army		Army total	Air Force	Total
		Army volunteer	National Service			
1966	14 633	24 583	8 119	32 702	19 358	66 693
1967	15 764	25 721	15 671	41 392	20 130	77 286
1968	16 294	27 152	15 688	42 840	21 564	80 698
1969	16 758	28 044	15 871	43 915	22 712	83 385
1970	17 089	28 305	16 208	44 513	22 642	84 244
1971	16 997	28 107	15 662	43 769	22 539	83 305
1972	16 890	29 326	11 947	41 273	22 720	80 883
1973	17 215	31 151	2 839	33 990	22 712	73 917
1974	16 141	30 197	38	30 235	21 119	67 496
1975	16 094	31 514	..	31 514	21 546	69 154
1976	15 993	31 430	..	31 430	21 351	68 774

17. The composition of the Defence Force at June 1976 is shown in Table 3. The distribution between the different ranks reflects the responsibilities in the activities of the Services as they are discharged in present circumstances. At the same time, the proportion of officers and warrant and senior non-commissioned officers to junior ranks increases the capability for expansion, should this be necessary.

TABLE 3: COMPOSITION OF PERMANENT DEFENCE FORCE(a)
(Strengths as at 30 June 1976)

		Navy	Army	Air	Total
Male —	Officers	1 778	4 009	3 345	9 132
	Warrant and Senior NCOs	3 454	6 320	4 113	13 887
	Junior Ranks	8 671	18 253	12 120	39 044
	Cadets	293	481	310	1 084
	Apprentices	363	819	323	1 505
	Junior Recruits	583	583
	Total	15 142	29 882	20 211	65 235

		Navy	Army	Air	Total
Female —	Officers	51	153	126	330
	Warrant Officers and Senior NCOs	62	107	69	238
	Junior Ranks	738	1 288	945	2 971
	Total	851	1 548	1 140	3 539
Total strength		15 993	31 430	21 351	68 774

(a) Citizens Forces and Reserves on full-time duty are included in the appropriate category.

Reserve Manpower

18. The reorganisation of the Army Reserve, which is now entering its final phase, and increases in its strength should permit more effective training and employment than hitherto has been possible.

19. The Government's aim is to consolidate the concept of one army in two constituent parts—Regular and Reserve—and to provide a greater sense of purpose and immediacy for those who sacrifice leisure to join the Reserve forces. Greater peacetime use of Reserves is under close consideration in accordance with the 'Total Force' policy.

20. There is, at any one time, a margin of preparedness and operational efficiency between the Regular and Reserve elements. The margin cannot, for obvious reasons, be eliminated in peacetime. However, Parliament may well wish to consider whether the purpose of better training and better sense of participation would justify provisions authorising compulsory call-up of Citizen Reserves for limited periods in international situations proclaimed as requiring augmentation of the forces, but not proclaimed as a state of war or time of defence emergency; or for short-term assistance to the civil authorities during a natural disaster. Such a change would require the amendment of the relevant law; before such legislation is considered, the Government would wish to hear the views, not only of members of the Reserve, but of employers and other interested parties, and of the community at large.

21. A breakdown of strengths of Service Reserves is given in Table 4.

TABLE 4: DEFENCE RESERVE STRENGTHS—JUNE 1976

Service	With Training Obligations	Without Training Obligations	Total
Navy	1 020	4 100	5 120
Army	21 180	7 980	29 160
Air	460	5 940	6 400
Total	22 660	18 020	40 680

Civilian Manpower

22. Civilian personnel, in a wide range of skills and activities, are required to contribute to the total defence effort. A variety of professional skills is needed in defence planning, assessment and analysis areas and in management, including industrial management. Some are needed for the highly professional research, design and development work associated with new or modified equipment. Others are needed to

provide financial and negotiating experience in the policy deliberations and negotiations governing the very large financial commitments involved in obtaining weapons systems for the Defence Force. A substantial number are employed in the dockyards for production, maintenance, repair and refit of warships. Others perform such necessary tasks as storemen, cleaners, clerks and groundsmen. Defence outlay carries a commitment for civilian manpower supervising the operations of government-owned factories which produce munitions or other defence material.

23. The employment of civilians on appropriate tasks, not demanding deployment in war, avoids certain costs associated with the special terms of employment of Service personnel. Furthermore, the placement of civilians including specialists in support area positions, which do not require military knowledge or skills, frees Servicemen for duty in operational units.

24. Table 5 shows the organisational distribution of civilian manpower.

TABLE 5: CIVILIAN MANPOWER STRENGTHS—ORGANISATIONAL DISTRIBUTION—30 JUNE 1976

<i>In direct support (in Australia and overseas) and under the control of the Chiefs of Staff</i>	
Chief of Naval Staff	4 850
Chief of General Staff	6 350
Chief of Air Staff	4 450
	15 650
Dockyards	5 300
Defence Central Divisions and Specialised and Servicing Organisations to the Defence Force	3 300
Administrative, Financial, Personnel and other Support for the Defence Force in the States	1 900
Defence Science and Technology	5 650
	31 800

Note: Strengths exclude 900 persons on extended leave and 400 part-time staff. Figures have been rounded.

25. Almost two-thirds of the civilian staff are employed in and under the control of the Service Commands and in the naval dockyards. About half the remainder are engaged in work associated with Defence science and technology.

26. Total civilian employment levels are to be reduced during 1976-77 in line with the Government's general economic policy. After doing all that is possible to improve productivity in performing existing functions within these reduced ceilings, it is expected that there will be a need for some reductions of activities carried out by civilians. In addition, there will be some redistribution of manpower as a result of foreseeable policy changes. For example, there will be a reduction in the activities and facilities required by the two Governments in the joint U.K./Australia project at Woomera and the Weapons Research Establishment at Salisbury, resulting in a reduction in manpower. To achieve Navy's repair, refit and construction programs, allowance has been made to increase Defence dockyard employment in 1976-77.

27. Modest increases in manpower will be necessary over the later program period in areas associated with the new major equipment acquisitions for the Services.

CONDITIONS OF SERVICE FOR MILITARY PERSONNEL

28. The quality and motivation of personnel are major determinants in the effectiveness of the defence effort. A volunteer force has to be attracted to service and encouraged to remain; good morale is essential. There are many considerations. One is that there need to be satisfactory financial and non-financial conditions of service. It is a fundamental Government policy that members of the Defence Force and their families should share in rising community standards.

29. The Defence Force is a large, distinct and important area of Crown employment. Financial conditions of service, whilst in principle based on Public Service provisions, are determined with regard to the requirements and circumstances of the Defence Force; and the special nature of particular areas of performance of duty, or of the duty itself, involves the determination of some financial conditions that are unique to the Defence Force.

30. Pay and financial conditions of service are approved by the Minister for Defence on behalf of the Government after a process of advice which is designed to satisfy wage-fixing principles and equity. The Minister is advised through machinery which brings Defence Department expert analysis on industrial matters before Departmental officers, the Service Chiefs of Personnel and a senior Treasury officer.

31. Complementing the Departmental advisory machinery is an independent body, reporting direct to the Minister and external to the Defence and Service administrations—the Committee of Reference for Defence Force Pay. This body has an important part to play in an area of employment where there are no contending parties, and where the opportunity for independent counsel would otherwise not exist.

32. The Committee through its Chairman, who is a Deputy President of the Conciliation and Arbitration Commission, and through one of its two members who is a Commissioner of that Commission, provides a significant link with the civilian industrial relations system for determining just conditions. The third member is a retired senior Service officer.

33. Improvements have been made in satisfying statutory requirements more quickly, so that financial entitlements of Service members may be more promptly met, especially when adjustments of pay or other conditions of service are frequent.

34. Finally, there is a range of termination benefits to assist in the resettlement of Servicemen and women in civilian life. They include resettlement training and retirement benefits geared to Defence Force conditions of engagement and service.

35. The new Defence Force Retirement and Death Benefit Scheme enables members of the Regular Forces to qualify for a pension after 20 years' service and to exercise career options without suffering undue retirement benefit penalties. In comparison with the separation patterns of male officers prior to the introduction of the new scheme, it appears that fewer officers now leave early in service before becoming eligible for a pension. At the same time, the trend is towards fewer officers remaining until full retirement age; instead they may retire at a slightly earlier age, being eligible for a pension under the new scheme. Table 6 provides some details of male officers separations over the last four years.

TABLE 6: DEFENCE FORCE MALE OFFICER SEPARATIONS

<i>Nature of Separation</i>	<i>1972-73</i>	<i>1973-74</i>	<i>1974-75</i>	<i>1975-76</i>
Age Retirements	132	156	116	66
Resignation with Pension	183	399	349	417
Resignation without Pension		198	183	164
Completion of Short Service Commission	92	213	113	60
Other reason (medical, death, termination, completion of full-time duty by Reserves)	136	67	38	33
Total Separations	543	1033	799	740
Separations as Percentage of Average Yearly Officer Strength	5.6	10.5	8.7	8.1

36. Of the 740 officers who separated from the Defence Force during 1975-76, 417 (56 per cent) resigned their commission after having qualified for a pension but before reaching maximum retirement age and 164 (22 per cent) resigned before serving long enough to receive a pension entitlement (ie, normally 20 years).

37. Premature retirement by officers represents, in some cases, an undesired loss of skill and experience acquired at considerable cost. The extent of such retirements has in the past attracted Parliamentary discussion and it is believed that both sides of Parliament would hope that the loss of officers would stabilise at an acceptable level. The statistics available suggest that this may be happening.

38. The number of male other ranks who, on completion of their term of engagement, re-engaged for a further term, has improved significantly in recent years. Table 7 shows the percentage of re-engagements of men in this category for the past five years.

TABLE 7: MALE OTHER RANKS PERCENTAGE RE-ENGAGEMENTS

<i>FY</i>	<i>Navy*</i>	<i>Army</i>	<i>Air Force</i>
1971-72	44	69	66
1972-73	58	73	70
1973-74	61	72	75
1974-75	70	74	82
1975-76	67	73	81

* The Navy's initial engagement period is longer than for the other two Services.

39. The average length of service of female other ranks is generally much lower than that of males.

DEFENCE FORCE OMBUDSMAN

40. A Defence Force Ombudsman has been appointed to investigate any individual grievance arising from the administration of an Act, Regulation, Order or Instruction which wholly, or in part, affects the rights of a member or ex-member of the Defence Force, or eligible dependants. Legislation to cover the appointment is being prepared and will be introduced into Parliament as soon as practicable. Complaints related to rights of persons as citizens are not investigated.

TRAINING AND EDUCATION

41. The efficient operational use of national resources devoted to defence, and the management of these resources, call for a large continuing commitment to training and education programs.

42. Training commences with the induction of recruits. Between 8000 and 9000 replacement enlistments—some 13 per cent of the Regular Force—receive training each year in up to 340 different employment categories.

43. Particular importance is attached to acquiring and maintaining in the Services the technical skills requiring long training times. For example, the Services have excellent apprentice training schemes and are leaders in the field of adult apprenticeships.

44. Most training programs are manpower intensive, requiring high instructor/student ratios and extensive sub-professional and domestic supporting staffs. Whilst every opportunity is taken to use suitable civilian institutions, in-service training and education account for almost 20 per cent of Defence Force manpower, spread across all ranks.

45. Professional development of officers includes a series of courses planned at appropriate stages in their career. These range from the provision of full tertiary education for a proportion of those entering Service cadet colleges and academies, through professional training of selected officers at single Service and Joint Service Staff Colleges, to higher studies, usually overseas, for particular senior Colonel/Brigadier-level officers.

46. Because of Australia's size as a nation, there is special value in officers receiving training and having service in Britain and the United States. In this way they have access to the knowledge and practical experience of military doctrine, management and techniques of a major military and industrial nation, which can afford training institutions and other specialist facilities which it would not be economic to maintain in Australia. Officers and senior NCOs are sent on exchange postings to other countries including the United States, Britain, Canada and New Zealand.

47. Considerable overseas technical training is required of Service personnel, and some civilian specialists, for the particular purpose of enabling new equipments to be introduced into service and maintained with safety, operational effectiveness and economy. This is a fundamental part of the investment in modern, expensive weapons, and the ships and aircraft and other vehicles that carry them.

48. Altogether it is planned that some 700 personnel proceed overseas for these varying types of training—independently of operational exercises—during FY 1976-77 and the number may grow during the Five Year Program.

49. The Government has agreed in principle to the concept of establishing a Defence Force Academy in Canberra to replace the degree-education currently provided in association with Universities at the three separate Service Colleges at Jervis Bay, Duntroon and Point Cook. This will enable the advantages of scale to be exploited. There will be advantages in the range of degree courses that can be offered; in the calibre of staff that can be attracted; in the recognition that can be gained for degrees conferred; and in the economic use of resources.

50. An investigation is also being made into the feasibility of collocating the single Service Staff Colleges with the Joint Service Staff College, to be wings of an Australian Services Staff College.

51. These projects are designed to improve the undergraduate education and post-graduate professional development of career officers, and to further mutual understanding between the Services.

52. Courses for the civilian elements of Defence manpower include induction training for new entrants, apprentice training, technical training at the sub-professional level, tertiary education, training to improve old and provide new administrative and management skills, and courses designed for the further development of higher executives.

53. In summary the major program decisions concerning Defence manpower are:
- In 1976-77 the ceilings for the permanent Navy, Army and Air Force are to be raised by 100, 300 and 100 respectively;
 - In 1976-77 Army Reserve strengths are to rise by about 1000;
 - In 1976-77 overall civilian strengths are to be reduced, but dockyard employment is to be increased to cope with Navy's repair, refit and construction programs;
 - Over the five years of the Defence Program, the ceiling strength of the Regular Army is to rise by 2500 to 34 000 and the permanent Navy and Air Force ceilings to be increased as necessary to man new equipments and undertake increased activities;
 - Over the five years of the Program, the strength of the Army Reserve is to be increased by about 5000;
 - Over the five years of the Program, modest increases in civilian strengths are planned to provide support for the Services.

CHAPTER 6

ACTIVITIES OF THE DEFENCE FORCE

Factors which are sometimes not entirely reconcileable influence Defence Force activities in peacetime. The activities which the Government has approved represent balances between immediate capability and provision of a basis for expansion in a threat situation; between development and consolidation; and between training and peacetime operational use.

2. The costs of immediate capability and operational readiness are high in respect of manpower, and logistic and technical support. They have to be balanced against other necessary activities of the Force.

3. As described in earlier Chapters, there has been a shift in the country's strategic circumstances, leading to a need to develop the capability to operate more independently of allies and in a wide range of environmental conditions.

4. In past operational circumstances, Australia has, for reasons of economy or because of deficiencies, relied on allies for some logistic and other support. We have not had the full range of logistic units and equipment necessary for independent operations.

5. For example, in Vietnam the Australian Force relied on United States' logistic support for items such as food, some ammunition and bombs, and some spare parts. We necessarily relied on the US Forces for medium-lift helicopter support which we did not then possess; and we relied on the US for aerial reconnaissance, medium artillery and close air support, for some air transport and for certain hospital facilities, which we did not have in-theatre.

6. The Government's policy of greater operational self-reliance requires increased emphasis on our logistic support capacity; much has already been done and further effort is to be directed to that end.

7. Improvements are planned in our capacity to operate in areas remote from our bases, and to develop our infrastructure and bases, especially in the north and north-west of Australia.

8. Modern high-technology weapons place heavy demands on training. They make demands on skilled manpower for repair and maintenance in effective service under Australian conditions, which sometimes differ from those of the country where the equipment was designed.

9. The Defence Force is developing its own doctrine, tactics and procedures suitable for operations by the Australian Services jointly, rather than continuing to rely on British and US concepts. While developing its own concepts, the importance of still being able to operate with our major allies and our regional friends is not being overlooked.

OPERATIONAL READINESS

10. It is present policy that ships not undergoing refit are always at least within a day's notice for sea, and are ready for operational service at this same notice. A task force of two infantry battalions with armoured, artillery and other combat and logistic support is available for operational tasks at relatively short notice, whilst all RAAF front line squadrons are maintained at a state of operational readiness enabling them to deploy to advanced bases at similar notice. Readiness for some specific tasks could involve some limited additional training and administrative arrangements above those normally maintained.

11. An important peacetime role of the Defence Force is to provide assistance to civil authorities and organisations. The tasks generated by this role usually require quick reaction and thus a high state of readiness of various elements of the force. Examples are patrols for the protection of fisheries and other off-shore resources; search and rescue, both on land and sea; medical evacuation; relief from the effects of natural disasters, such as floods, bushfires or cyclones.

12. The Defence Force reacted quickly to such requests after Cyclone Tracy and more recently the Bali earthquake.

TRAINING AND EXERCISES

13. There will be an increase in those Service activities designed to enhance military skills essential in the development of the force, and for training with the equipment in the inventory.

14. There will be increased Fleet steaming time and greater flying hours for all three Services. In this way training activities will be stepped up, permitting higher standards to be achieved and the techniques of combat, command and control, and logistic support to be further developed and practised.

15. Joint training activities will be aimed at developing our surveillance capabilities; our ability to deploy and maintain readily transportable forces in remote areas; to protect external lines of communication; and to conduct joint operations related to the defence of Australia and its interests.

16. Necessary specialised equipment and associated simulators and apparatus which will be provided in the Five Year Defence Program will enhance the effectiveness of training directed towards these ends. But it is vital that training be carried 'beyond the classroom'. To this end, the Services will be constantly engaging in exercises of an individual and joint Service nature in many areas of Australia and neighbourhood waters.

17. Of particular value are the regular exercises conducted with allied and neighbouring countries. Such exercises serve not only to maintain operational skills, but also to evaluate techniques and compare performance.

18. The Kangaroo series of exercises in and off Queensland include participation by Australian, United States and New Zealand forces. The RIMPAC series, off Hawaii, sees Australian naval and air elements exercising with those from the United States, Canada and New Zealand. Examples of smaller, but significant, exercises are TASMEX with naval and air elements of Australia, the United States, Britain and New Zealand, and the Integrated Air Defence System exercises in Malaysia and Singapore involving the Royal Malaysian Air Force, the Republic of Singapore Air Force, the RAAF, the RAN and the RNZAF.

19. There are a number of international Army exchanges up to Company Group size (150 personnel) which serve to broaden knowledge and experience and to bring personnel into contact with the latest developments in equipment and tactical doctrine. These include exchanges between Australia and Britain, the United States, Canada, New Zealand and the Gurkha element of the British Army from Hong Kong.

20. Exercises in the more immediate neighbourhood are conducted with New Zealand and Indonesia, e.g. AUCKEX/LONGEX with RAN and RAAF participation, and TNI-AL/RAN exercises with the Indonesian Navy.

DEFENCE CO-OPERATION PROGRAMS

21. There has been reference in Chapters 2 and 3 to our important defence co-operation programs with regional defence associates.

22. Over the years the programs have moved away from the provision of miscellaneous equipments and military supplies. The emphasis now is on combined projects which develop or increase a particular capability or element in the defence infrastructure of the country concerned, often with valuable 'spin-off' into the civil area. To these projects Australia contributes technical advice and assistance, training in Australia and the more complex equipment. Notable examples include the maritime patrol project in Indonesia, the Armed Forces manufacturing workshop in Malaysia, and the survey and mapping projects in Indonesia and Papua New Guinea.

23. Australia has substantial programs of defence co-operation with Papua New Guinea, Indonesia, Malaysia and Singapore. Training assistance is also provided for members of the armed forces of a number of other countries, including Thailand, the Philippines and increasingly Fiji, where both training and specialist advisory assistance is given.

UNITED NATIONS CONTRIBUTIONS

24. Defence Force assistance is provided to United Nations peace-keeping operations. Army and Air Force provide limited support to the UN Military Observers Group, India and Pakistan, to the UN Truce Supervision Organisation in the Golan Heights and to the UN Emergency Force in the Sinai area.

NATURAL DISASTERS ORGANISATION

25. The Natural Disasters Organisation and the State and Territory Emergency Service Organisations comprising more than 30 000 active members constitute the core civil defence structure for Australia. The main preoccupation in peacetime is in mitigating the effects of natural disasters, but the primary role is to ensure that civil defence requirements in the organisation, especially those related to training and equipment, have the dual capability for meeting both the civil defence and natural disasters requirements.

26. The Natural Disasters Organisation will continue to develop counter-disaster plans in conjunction with State and Territory authorities, and to operate the National Emergency Operations Centre which co-ordinates Australian Government physical assistance to the States and Territories in the event of a disaster. It will continue to maintain a number of supporting programs from Commonwealth funds including

public education and information; training at the National Emergency Services College; emergency equipment; emergency broadcasting facilities; a fallout shelter survey service; reimbursement of salaries for State professional organisers at regional level; and subsidies on a dollar for dollar basis for accommodation for State Emergency Service units and for firebreaks. A Disaster Earmark Store is being established to expedite the supply of items to meet initial disaster relief requirements.

CHAPTER 7

DEFENCE FACILITIES

THE GENERAL PERSPECTIVE

1. The perspective in which the Government intends to develop and acquire defence facilities—buildings, airfields, docks and fixed installations of all kinds—reflects present emphasis on the defence of Australia within the broader context of our neighbourhood and region.

2. Much work remains to be done before we have a comprehensive infrastructure capable of supporting a self-reliant Australian defence posture. Substantial progress is planned in the next five years in producing facilities for the Defence Force. Where new construction or improvements are planned, due consideration is given to environmental factors.

3. More emphasis is now being given to operational facilities specifically required by maritime forces and mobile land forces. The need to develop airfields and patrol craft bases in the more remote areas of Australia, particularly in the north, ranks high in infrastructure development plans.

4. At the same time, the Government is planning improvements to support facilities through the replacement of obsolescent and dilapidated buildings. Development of the major naval bases and modernisation of existing dockyards is planned as part of this program. Extensive development of the task force bases at Holsworthy, Enoggera and Townsville is envisaged.

5. As stated elsewhere, there is a need to provide for adequate community life for the Serviceman and his family. Their environmental needs are similar to the rest of the Australian community and hence they would prefer to live in locations similar to the rest of the Australian population. This influence tends towards location of defence facilities near to centres of population. Also pushing us in this same direction is the need for many facilities, particularly dockyards, to employ large specialist civilian workforces.

6. Much of Defence property consists of wartime structures intended to be temporary. Such buildings are not of good quality, and often are not suitably located for efficient use of resources. Poor distribution of buildings increases manpower costs. Maintenance expense of these temporary structures is high. It is planned to close down inappropriate facilities and progressively provide replacements.

7. The facilities the Government plans to create or have under construction by 1981 involve expenditure of about \$600m (in January 1976 prices). Additionally, present plans suggest \$170m (in January 1976 prices) will be needed to be spent on the construction, acquisition or improvement of housing for servicemen.

8. The Government believes that the facilities which are discussed in the following paragraphs will permit current peacetime operations to be efficiently performed and will provide an infrastructure enabling timely expansion if the need arises.

9. The amount planned to be expended and committed over the next five years is allocated by function in the following proportions:

Function	Percentage	
	Planned Expenditure	Planned New Commitment
Naval Base Development	6	5
Army Base Development	7	10
Air Base Development	23	21
Educational and Training Facility Improvement	8	20
Dockyard Development	9	10
Scientific Facility Improvement	1	1
Support Facility Improvement	24	18
Housing	22	15

OPERATIONAL CAPABILITIES

10. Planned increases in expenditure on defence facilities will substantially improve operational capabilities.

11. The Government has already decided to accelerate works at Cockburn Sound, WA, to enable that base to be commissioned as HMAS *Stirling* in 1978. Berthing is already available, and the additional facilities the Government plans to provide include an armament wharf and an armament depot. When these works are completed, the establishment will be able to provide for the deployment of four destroyers and three submarines, and give support to visiting RAN task groups and allied ships.

12. The Government intends that the major naval base at Garden Island, NSW, should remain, but be modernised and developed in a way which pays careful attention to environmental considerations and improved aesthetics. Efficiency of the fleet as well as of the dockyard is presently hampered by the poor condition of the wharves and other facilities. A start will be made in the coming years to refurbish the wharves and to commence modernising the facilities.

13. The further developments of the two major naval bases at Garden Island, NSW and Cockburn Sound, WA will allow more satisfactory deployments and more efficient use of units—particularly destroyers and submarines—to the east and west of Australia simultaneously.

14. It is also planned to develop the existing interim patrol boat bases at Cairns and Darwin and to establish patrol boat facilities on the north-west coast of Australia, to cover the gap between Darwin and Cockburn Sound.

15. Allowance has been made in the Program for extensive development of the task force bases at Holsworthy, Enoggera and Townsville and for development of a divisional headquarters at Enoggera. At present the lack of working accommodation causes the wide dispersion of some divisional and task force units, thus hampering efficiency. Further, store and workshop accommodation is needed for units which are planned to be raised in order to enhance the capability of task forces for rapid deployment.

16. Provision for increased fuel storage at RAAF airfields is being made, especially at Amberley and Learmonth. Extensions to airfields and improved weapon handling areas at Air Force bases are planned. The Government recognises that some existing airfields are too short to permit all RAAF aircraft to operate to full capability,

and that there are insufficient runways in areas of strategic interest in the north and north-west of Australia. Thus, allowance has been made in the Program for the development and extension of RAAF airfields to permit greater use by tactical fighter and maritime aircraft.

17. In addition, as already mentioned, works at RAAF Base Edinburgh, SA, will permit the collocation of the two maritime reconnaissance squadrons, with consequential enhanced technical support.

DARWIN

18. Darwin will remain a place of substantial significance for defence activity in our northern maritime area. Development of defence facilities in the Darwin area will be necessary.

19. Following Cyclone Tracy, action has been taken to restore damaged working facilities, communications and accommodation within the constraints imposed by limitations on resources. It is planned during the next five years to restore substantially the defence facilities in Darwin to pre-cyclone levels, and to commence development of an enhanced capability.

SUPPORT FACILITIES

20. At Williamstown Dockyard, Victoria, work is underway to produce a hull-building facility for modern warships. A start is planned during the next five years to provide complementary outfitting and refitting facilities. Refitting of RAN ships and submarines is also undertaken at Garden Island and Cockatoo Island Dockyards in Sydney.

21. Much of the planned modern submarine refitting facility is already in existence at Cockatoo Island Dockyard. This facility will be completed in the next few years. In addition, it is planned to replace some of that yard's cranes and wharves.

22. The development of an integrated Naval Supply Centre at Zetland, NSW, has commenced and the establishment of an Army Support Complex at Randwick is planned; it will permit further vacation of land occupied by Army at South Head. Two modern maintenance hangars are under construction at Amberley, Qld, and a new RAAF stores building is nearing completion at Regents Park, NSW.

23. Demolition of unsightly Defence offices in Albert Park in Melbourne is proceeding, and will be completed when the various logistic and support units are finally housed in the St Kilda Road Defence complex.

24. New laboratories are planned for the Defence Science and Technology organisation including replacement facilities at the Materials Research Laboratory, Maribyrnong, Victoria, and a new materials laboratory at Fishermen's Bend, Victoria.

EDUCATIONAL AND TRAINING FACILITIES

25. More institutions will be needed. As mentioned in an earlier Chapter an Australian Defence Force Academy is planned, and consideration is being given to a co-located Australian Services Staff College. The rebuilding of one of the largest and most successful apprentice training institutions in Australia—the Army Apprentices School—is planned.

26. Urban pressures are increasingly encroaching on Defence training areas, and whilst the Government recognises these pressures, they must be weighed against the essentiality of maintaining suitable training areas for the Services—whether these be Army manoeuvre and firing areas, airfields or air and naval bombardment ranges. Consideration is being given to the use of the prohibited area at Woomera as a defence training area.

27. In making known Government plans to interested parties, Environmental Impact Statements have been published in respect of a proposal to increase the training area at Puckapunyal, Victoria, and to develop a joint training area at Yampi in north-west Australia.

ACCOMMODATION FOR SERVICEMEN

28. Although there is sufficient single accommodation for members of the Defence Force in most locations, the Government recognises that much of the accommodation requires replacement or extensive rehabilitation. Action has therefore been initiated to improve working and living accommodation.

29. There is a shortage of adequate married quarters in most areas. The Government plans to obtain a further 3200 houses for married Servicemen by the early 1980s towards meeting this shortage; and it also plans to continue to upgrade many existing houses that are below current standards. Financial allowance has been made in the Program for all these purposes.

RESERVE FORCE FACILITIES

30. At present there are numerous Reserve training depots located throughout the country. In the main, these consist of working accommodation, stores and indoor training facilities. Some buildings are purpose-designed and are of good quality, but many are sub-standard. In the longer term, the Government plans that some Reserve facilities will be relocated or rebuilt.

IMPORTANCE OF THE CIVIL INFRASTRUCTURE

31. Civilian facilities in the south-eastern part of Australia are, with some exceptions, capable of satisfying defence requirements in foreseeable strategic circumstances. Transport systems are less developed particularly in the north, north-west and centre of the continent. There is no all-weather overland route to the north of the continent. Most sizable communities have airstrips capable of accepting RAAF transport aircraft. Most coastal communities can provide fuel and provisions to naval ships, but ports are limited in number.

32. In present and prospective strategic circumstances, increased attention will be paid to influencing developments in civil infrastructure that may be relevant. This comprehends roads, railways, ports, airfields, communications, water acquisition and storage, and power sources. A more organised system is needed for bringing defence interests to the notice of the relevant authorities, with the objective of bringing the location of facilities of this kind more clearly into line with the strategic requirements for the defence of Australia.

33. New construction projects already approved by the Government and for which provision has been made in the 1976-77 Defence Budget include:

- Explosives Wharf at the West Australian Naval Support Facility, Cockburn Sound;
- Additional fuel storage at Amberley, Qld;
- Weapons handling facility at Learmonth, WA;
- Wardroom Mess HMAS Albatross, Nowra, NSW;
- Airmen's living accommodation, Edinburgh RAAF Base, SA;
- Army working accommodation, Enoggera, Qld;
- Airmen's living accommodation, RAAF Base, Point Cook, Vic.;
- Naval Supply Centre, Zetland, NSW;
- Refurbishing Wharves, Cockatoo Island, NSW.

34. Other major projects under development and for which provision has been made in this Budget include:

- Additional fuel storage at Nowra, NSW;
- Extensions to existing wharf at Garden Island, NSW;
- Army stores facility at Penfield, SA.

35. These, with other smaller facilities, will involve an expenditure of some \$89m.

CHAPTER 8

DEFENCE SCIENCE TECHNOLOGY AND INDUSTRY

1. The emphasis given in earlier Chapters to the development of a more independent capability requires corresponding improvements in our ability to assess Australia's equipment and technical needs, to undertake some independent research and development, and to enlarge the kind and scale of our industrial and logistic support.

SCIENCE AND ADVANCED TECHNOLOGY

Introduction

2. Few would contest that Australia's defence should exploit the capabilities of advanced military equipment rather than rely on masses of men. This choice fits the scale and nature of the continent, and the orientation of our economy.

3. Advanced equipment incorporates high technology, and is the product of scientists and engineers developing and applying new knowledge and innovative ideas.

4. Being small, but having enduring close relationships with large and advanced countries, Australia is able to avoid the crippling cost of developing most of its own military equipment. However, we must be in a position to select and employ equipment with skill, and we need to sustain its efficiency once in service with minimum dependence on overseas sources. Decisions on what should be developed independently of overseas sources are difficult to make, but where there are special environmental considerations there is a case for local development.

5. We have a substantial interest in securing early knowledge of new defence technology as it emerges in leading countries. We need also to absorb the scientific basis for the practical technologies in sufficient depth and breadth to support Australia's defence decision-making, the military forces and defence industry. Personal access is maintained, and is essential, to the world defence science community.

6. For these reasons we devote a component (currently about 3½ per cent) of defence expenditure to defence scientific establishments. The scientists and engineers in these establishments maintain a technology base, through processes of information-gathering, co-operative research with their equivalents in overseas countries, and by local research on topics of special importance to Australian defence. At the same time they apply their skills to the solution of real problems constantly arising in peacetime, and they lead the development of some items of defence equipment.

Science in the Australian Defence Region

7. As stated elsewhere, research is directed at understanding our marine and atmospheric environment and at methods of monitoring movements of ships (including submarines) and aircraft.

8. A major research area (Project Jindalee) is the investigation of the possibility of long-range over-the-horizon detection of aircraft by radar beam reflected from the ionosphere. In parallel with this work, the military effectiveness of continental air defence systems using this type of radar is being analysed by scientists working closely with the Services.

9. The effectiveness of sonar equipment in the detection of ships and submarines depends upon the propagation of sound in the complex ocean medium. This propagation varies from place to place, so that it is necessary for Defence scientists to carry out oceanographic research in waters near Australia and to participate in Navy trials.

New Topics of Special Interest to Australia

10. The calculating capacity and speed of modern computers can be harnessed with advanced mathematical techniques to distinguish very weak electronic signals from strong electronic 'noise'. These new methods are being studied in Australia and applied to obtain greatly enhanced performance from many types of military equipments—radars, acoustic sensor systems, infra-red systems are examples.

11. Advances in the guidance of weapons offer prospects of precise direction from far off at modest cost. Using this ability to attack crucial targets selectively, it is possible to increase military power but decrease unnecessary destruction.

12. Of particular interest to Australian scientists is the breadth of evolving technologies in propulsion, in new forms of microelectronics, in materials, in warheads, in guidance and in sensors to seek out and identify targets in adverse conditions. These new technologies may transform the nature of warfare and it is important that Australian scientists can both absorb them and exercise careful selection of areas within our resources.

13. We are looking into the capabilities that sophisticated and highly accurate missiles or 'smart weapons', including lasers, will confer.

Science and Major Defence Equipment

14. Defence scientists are closely involved when major defence equipment—for example, the Ikara anti-submarine weapon—is developed in Australia. Among present examples is Mulloka, an active sonar system; a prototype has been fitted to HMAS *Yarra* for operational trials and assessment of detection performance.

15. The development of the Barra sonobuoy, following an extensive Australian research program, continues in industry in conjunction with the development of the airborne processing equipment in Britain. Together, these should produce an advanced submarine detection system in 1978. It is expected to have a better detection range than other systems which might become available before that time.

Science in Support of Service Operations

16. A sizable defence science effort is directed towards maintenance in service of existing equipments, and provision of scientific supporting service to industry—particularly the munitions factories—engaged in the production of defence materiel. The resolution of local manufacturing problems on fuses for the 81mm mortar bombs, the local filling of warheads for the Matra missile and manufacture of ammunition for the Mirage guns are typical examples of such support. This is vital work which must continue.

17. The Australian Services tend to keep expensive major equipment longer than do the countries which build it. Defence science support is often required to assess the practicability of extending the operational life of equipment, and sometimes implement a program to achieve it. For example, aeronautical researchers have introduced into the RAAF advanced inspection techniques and reliability analysis to achieve maximum utilisation of the Macchi jet trainer.

18. Methods have been found to arrest the spread of cracks in aircraft structures. Materiel research and investigation by scientists and RAAF Servicemen indicate that fuel problems associated with the F111C could be overcome by the use of additives to the fuel to raise its lubricating qualities. We will keep abreast of expanding technologies in the materiel and aeronautical sciences to maintain the operational readiness of Defence Force equipment.

19. New weapon systems coming into service—such as the Rapier surface-to-air weapon and the Leopard tank—require intensive efforts by scientists and engineers assisting the Force to establish a satisfactory capability for in-theatre and infrastructure support. They also call for extensive trials which must be analysed and assessed. Similar analysis and assessment is required for trials of ships after refit, for weapon practices, for sonar and radar trials. Future equipment with more advanced technology will require even more support of this kind.

Analytical Studies

20. Defence scientists, working closely with Servicemen and other analysts, carry out military analytical studies in the development of Defence Force capabilities. Some 4 per cent of the defence science resources are used to carry out broad studies of overall defence interest in the fields of force structure, strategy and major equipment selection.

21. Two of the more significant studies are the evaluation of methods of broad area surveillance relevant to the defence of Australia, and a study of naval air capability particularly in the context of maritime protection.

Science and Defence

22. At any time there are several hundred scientific tasks in progress; ranging very widely in scale, application and scientific discipline. Within the physical limits of resources and the intellectual limits of foresight, defence science is directed so as to balance between meeting the ever-present day to day needs of industry and the Services, and absorbing the high technology we are likely to need in the future.

DEFENCE INDUSTRY

23. Few countries are technologically equipped for, or are able to afford, the option of meeting all defence equipment and materiel requirements from their own industry. Even during World War II with total mobilisation of national resources, Australia was not able to approach a position where supply for its forces came solely from within.

24. While in the period since World War II our industrial base has been growing impressively both in size and technology, the technical complexity and the requirements for sophisticated techniques of modern weapon systems have increased at an even greater rate. Current strategic circumstances would not support diversion of sufficient resources from other national priorities to overcome this technological gap, even if it were feasible and the higher cost of the small number of equipment items required could be justified.

25. Consequently, Australia will continue to rely on overseas sources for the design and construction of most of the larger and more complex weapons systems. On the other hand, much is being done using local industrial resources to reduce our dependence on overseas sources for the continued maintenance of this equipment.

Industry Policy Principles

26. The central objective of Defence industrial policy is thus to ensure that the Defence Force can be supported and maintained in Australia, utilising for the provision of equipment and materiel, a combination of local industry, selective stockholding and reliable overseas sources of supply. A further objective is the progressive development of a range of basic technologies and capacities which would facilitate an intensification and diversification of present activities to match force expansion, should the need arise.

27. In keeping with the circumstances outlined earlier in this paper, priority for expenditure of available funds and selective placement of orders in Australian industry will continue to be directed towards emphasising those activities which provide a capability to support the force in being in the execution of its current and likely tasks, while contributing to the longer term objectives.

Industry Capabilities

28. Industry activities thus generated include the establishment and maintenance of the capability to repair, maintain, modify and adapt to the Australian environment a wide range of equipment and weapons systems of the forces, and to manufacture high volume consumable and minor equipment items such as spare parts, ammunition, clothing, and personal and field communications equipment.

29. Also included are the manufacture of many general equipment items, such as military vehicles and engineering plant, the sustaining of the capability to construct and modernise selected naval vessels, and the sustaining of an aircraft industry able to provide support and selective manufacturing capability.

30. Implicit in these activities is a basic design and development capability which will permit selective local design and development of equipment, modifications and adaptations to overseas designs, as well as production.

31. The establishment and maintenance of large scale production facilities appropriate only to major expansions of present requirements take a lower priority in expenditure of available funds because of the absence of an identified or predicted requirement, their high cost, and the lack of continuing peacetime workload to exercise and maintain skills once capability is established. 'Peaking' in defence orders on Australian industry has occurred before and creates problems for management and work force. It creates pressures for orders out of phase with priority requirements, or in excess of them.

Stocking Policies

32. Policies on the levels of stockholdings of materiel which should be maintained must be viewed in the context of the likely nature, level and duration of Service activity to be supported, the ability of Australian industry to provide the items concerned or to provide substitutes for overseas supply should this be denied to us—as well as the cost of establishing and maintaining the stocks. Estimating the scale and duration of war in which Australia may be involved—the determinants of demand on stock and on production—is one of the most speculative aspects of defence planning. Stockholding policies are constantly under review and at the time of introduction of new equipment particular attention is paid to how best to provide it. The program

allows for a modest buildup of operating stocks to support the increases planned in activities of the Services already described.

The Industry Support

33. Specialised industrial support for the Defence Force within Australia is provided from Government factories and dockyards, private industry concentrating on defence work, and Service facilities. At the same time, production facilities in private industry, established and maintained for commercial reasons, provide the bulk of defence requirements of a less complex nature and can be expected to continue to do so.

34. Defence expenditure on industry facilities for production of equipment and materiel, and for support of locally manufactured and imported items, is concentrated on specific facilities and technologies not required or not economically viable for commercial reasons. The majority of this expenditure is in the aircraft, munitions, naval ship modernisation, refit and construction, and electronics industries.

Industry Studies

35. Structural changes are taking place within industry as a result of tariff and economic changes. These changes, which are being closely monitored, could result in the disappearance of skills important to defence which were previously maintained by commercial activity.

36. Two major studies of defence industry are at present in progress. These are being undertaken by the Defence (Industrial) Committee, chaired by Sir Ian McLennan and recently augmented by the appointment of six additional leading industrialists, and Sub-Committee C of the Joint Parliamentary Committee on Foreign Affairs and Defence covering Industrial Support for Defence Needs and Allied Matters, chaired by Mr D. J. Hamer, MP. The results of these studies should provide a basis for further adjustment to defence industry policy to cope with the structural changes described above.

Defence Expenditure in Industry

37. While Defence is a major spender in Australian industry, its contribution to the total manufacturing industry product is a relatively small proportion. It is also relevant that over the past five years some 60-70 per cent of Defence expenditure on the aggregate of votes covering new and replacement equipment, purchase of stores and repairs and overhaul of equipment, has been placed in Australian industry. This amounted to \$252m in 1975-76. Additional expenditures in industry result from R&D projects such as Barra and Mulloka, and the direct expenditure on Defence facilities and maintenance of production capacity in Government factories and aircraft industry firms. The 1976-81 Program envisages considerable real growth in this local expenditure. While it can be used to develop and maintain capabilities of special significance, this expenditure is not adequate for the shaping or support of the totality of Australian manufacturing industry which may be used by Defence.

38. Where there are specialised segments of private industry which are of major importance to the support or production of Service equipment, or the maintenance of essential capabilities to support Service activities, the Department of Defence continues to be prepared to consider selective assistance to keep the capacity alive in industry. The means available for the fostering of defence industrial capability are generally:

- a. through selectively directing Defence procurement in whole or in part into Australian industry and accepting any higher costs and delays that may be legitimately incurred;

- b. by funding separately, feasibility and project definition studies and the establishment costs of local production and/or support facilities;
- c. by facilitating the obtaining of offset work, on a competitive basis, in similar technologies through the insistence on such provisions in procurement arrangements; and
- d. through local development of equipment and systems either in industry or in Defence establishments with subsequent production in industry or government factories.

39. Where equipment and materiel have to be purchased overseas, efforts will continue to obtain Australian industry participation whether in the form of collaborative development and for part manufacture of the equipment, manufacture of less complex items, production of sub-systems, provision of high usage spares, or offset work in similar technologies. This policy will continue to be directed towards those activities supporting the longer term defence industry policy objectives.

Industry Development and Rationalisation

40. The Government has announced approval of expenditure on rationalisation proposals for the aircraft industry to reduce unused capacity and cost of operations. These plans will be implemented progressively over the next three years to bring the industry into a better and more efficient structure to provide local involvement in new aircraft projects such as the Tactical Fighter Force, jet trainer replacement and tactical transport aircraft which have been mentioned earlier.

41. Considerable upgrading of industry capabilities should result. Attention is being given to providing opportunities for development of long-term involvement in the production of the aircraft chosen, e.g. by collaborative production with overseas firms.

42. Munitions factories rationalisation has been under study for some time with a view to consolidating essential capabilities at a smaller number of sites with a smaller and better utilised workforce. Progressive implementation of these proposals is expected later in the five year Program. Some upgrading will be needed to produce the more modern munitions and ammunition items planned for introduction in 1976-1981.

43. The naval dockyards provide an essential shipbuilding and ship repair capability. Their capacity will be enhanced by the modernisation proposals. Planned workload through much of the program period will be provided by projects already approved. Increased manpower will be provided in the production, planning and quality control areas at Williamstown and Garden Island naval dockyards to undertake and prepare for the modernisation of the destroyer escorts and DDGs, new construction work and normal refits and repairs.

44. Defence requirements of the commercial shipbuilding industry are generally for non-combatant or smaller combatant vessels. Tenders are being invited for construction of an Amphibious Heavy Lift Ship. The current project definition contracts on patrol craft will lead to proposals for construction of all but the lead craft in Australian commercial yards. Potential opportunities for these yards exist later in the Program in relation to mine counter-measures vessels.

45. Defence requirements of the electronics industry are spread over a number of firms. Ways are being sought to assist the industry to maintain specific capabilities of importance by orders and other means. The industry is currently involved in the

engineering development of the Barra system and the Mulloka sonar already mentioned, and will undertake the production phase on successful completion of development. The capability of industry and Service establishments to modify and develop software and systems integration techniques to apply local tactical doctrine, particularly in new ships and aircraft, will be developed through projects such as the integration of the Barra system to the Long Range Maritime Patrol aircraft and the DDG modernisation.

46. Other sectors of industry providing support to Defence, such as the automotive and general engineering industries, generally have adequate capacity for Defence needs. The Government has already announced the progressive purchase, commencing this year, of 2100 light trucks with high local content. High local content is also planned in the new medium truck proposed for later in the Program.

CHAPTER 9

DEFENCE MANAGEMENT

The management of the Defence Force and the Department of Defence is concerned with making decisions about the protection of the nation and the attainment of an efficient and well equipped Defence Force. In so doing, defence policy and programs must conform to general Government policy, be integrated with foreign and fiscal policy, and reflect the weight of competing demands on resources at the disposal of Government.

2. In the derivation of the new organisational arrangements for the Department of Defence and the administrative concepts and framework which have been adopted, considerable attention has been paid to the management processes required to facilitate decision-making and the attainment of defence goals. The task is one of considerable magnitude involving in 1976-77 some \$2200m, 69 000 Servicemen and over 30 000 civilians.

ORGANISATION FOR DEFENCE MANAGEMENT AND OPERATIONS

3. The Department of Defence is organised on a functional basis to carry out its responsibilities relating to defence, including civil defence, and to provide support for the three Services. Legislation relating to the reorganisation of the higher management of the Department and the Defence Force was passed by the Commonwealth Parliament in September 1975. The main provisions took effect on 9 February 1976.

4. Under the Defence Act, the Minister for Defence has the general control and administration of the Defence Force. The Secretary, Department of Defence is the principal civilian adviser to the Minister and is responsible to him for advice on policy, resources and organisation. He exercises the powers of a Permanent Head under the Public Service Act, the Audit Act and Treasury Regulations. The Chief of Defence Force Staff (CDFS) is the principal military adviser to the Minister. Under the Minister he has command of the Defence Force and exercises overall direction of operations. The Secretary and the CDFS jointly are responsible for the administration of the Defence Force, except for matters falling within command responsibilities.

5. Each Chief of Staff commands his arm of the Defence Force under the CDFS. His responsibilities include the conduct of single Service operations, the training, welfare, morale and discipline of his Service, all within allocated resources and in accordance with approved policies.

6. A Council of Defence was constituted on 9 February 1976 to consider and discuss matters referred to the Council by the Minister for Defence, relating to the control and administration of the Defence Force and the respective arms of the Defence Force. The Council, which meets monthly, comprises the Minister for Defence (Chairman), the Minister Assisting the Minister for Defence, the Secretary to the Department of Defence, the Chief of Defence Force Staff and the three Service Chiefs of Staff.

EQUIPMENT ACQUISITION

7. Great stress is laid on the management of equipment and materiel acquisitions. The Department must obtain the best possible overall result in terms of operational performance, cost, delivery time scale, product support and Australian defence industry involvement in its weapon system acquisition. Careful management and co-ordination of the disparate operational, departmental and industrial factors involved are required.

8. Each large equipment program requires an acquisition strategy to guide its development through the acquisition process. The acquisition strategies are formulated in one division of the Department, in close consultation with the Service concerned and other relevant functional divisions.

9. Each Service has established for each of the more significant equipment programs, project managers or project management offices, whose function is to co-ordinate project activities both within the particular Services and beyond the Service boundary. Generally, these are created for the duration of the project.

10. The definition of the source of procurement is the responsibility of a Standing Committee, and follows the completion of Service evaluations. The Committee, comprising Service and civilian experts in force development, operational and technical requirements, logistics support, procurement, finance, contracts and contract law, industry and materiel matters, is drawn both from within the Department of Defence and from other departments. Its purpose is to ensure the comprehensiveness and objectivity of the Department's contractual activities with industry.

11. The Defence (Industrial) Committee, mentioned previously in this paper, also advises the Department on management methods and techniques used in industry through involvement in particular studies of defence production programs.

SERVICES LOGISTIC SUPPORT

12. The variety of equipment in use with the Services requires considerable back-up supply support. The inventory of the three Services and associated agencies contains nearly 1.25 million items. Control of the level of stockholding involved, the replenishment of stocks, and the management of the overall investment are tasks of considerable magnitude which are facilitated by the extensive use of computers. The new Departmental organisation recognises the importance of these activities and provides improved arrangements for central supply policy formulation and for co-ordination of supply activities for the three Services through the establishment of a Chief of Supply. As a particular example, the various stockholding policies among the Services are under review.

13. The procurement of support materiel continues to be the responsibility of each of the three Services supply authorities. Whenever possible or reasonable, use is made of the logistics systems operated by the Armed Services of other governments for spares support and training. Where local procurement is involved, contracts are arranged and orders are placed through such avenues as the Purchasing Office of the Department of Administrative Services which conducts its activities under established government purchasing procedures.

DATA STORAGE AND MANIPULATION

14. The management processes and administrative concepts adopted by the Department and the Services cannot be carried on, or developed, in the ways required without major computing support. This offers the only feasible basis for handling the data storage and manipulation tasks that are involved, and for bringing economy and uniformity of practice to their treatment.

15. Computer methods are used in the control of and in provisioning the Services' stores inventory. Complementary processing arrangements have been developed and established with other countries, which permit the rapid introduction into Australian defence catalogues and inventories, and their subsequent replenishment, of the large ranges of new items that arise from major equipment purchases from overseas.

16. The majority of the Defence Force is paid using computer methods. Computer techniques are assisting in job evaluation of occupational categories in the Services.

17. New computing systems are replacing existing equipment installed in the mid-1960s. Mini-computers linked to two large central computers are being installed in Service bases and other Defence establishments. They will provide direct and immediate access to the large volume of existing statistical information and enable it to be used constructively in the forward planning and management of Defence activities.

THE OUTLAY ON DEFENCE 1976-81

1. Previous Chapters have described the direction in which the Government plans to develop Australian defence capabilities. The levels of Service activity, manpower and planned capital equipment and facilities acquisitions (and the expenditure on previous orders still being paid for) are the essence of the Program. The task of the financial programmer is to reconcile timing and volume of expenditure with the defence requirement on the one hand, and the financial constraints on the other. The defence requirement embraces a complex matrix of policy objectives.

2. Analysis by its Service and civilian advisers led the Government to announce on 25 May 1976 that a program of some \$12 000m (in January 1976 prices) over a five year period was required to strengthen defence and correct existing shortcomings and imbalances.

3. The Program as already described will be achievable within an expenditure of about \$12 000m in 1976-81 with the addition of commitments of some \$2500m falling due for payment over a number of subsequent years.

4. Broad indications of provisional allocations in the program, on an annual basis and as between the major categories, are shown in the table below:

TABLE 7—DEFENCE PROGRAM
Broad Planning Allocations

Expenditure	(January 1976 Prices)					Total
	76-77	77-78	78-79	79-80	80-81	
	\$m	\$m	\$m	\$m	\$m	\$m
Ships, Aircraft, Armour and Other Equipment and Plant	300	380	450	540	650	2 320
Works, Housing and Acquisition of Sites and Buildings	130	130	150	170	190	770
Pay and Allowances of Service and civilian men and women and payments for Service retirement and death benefits	1 170	1 180	1 210	1 230	1 250	6 040
Defence co-operation and assistance to other countries	20	20	30	30	40	140
Service activities, operating and support costs (including administration)	500	530	560	590	610	2 790
Maintenance of Government Factories and Defence Industry	70	60	70	70	70	340
Total expenditure	2 190	2 300	2 470	2 630	2 810	12 400
Less: receipts from rent, charges made for rations and quarters, disposal sales and recoveries from other administrations	-70	-70	-80	-80	-80	-380
Total outlay on defence function	2 120	2 230	2 390	2 550	2 730	12 020

5. These broad provisional allocations are subject to review and adjustment according to actual timing of project developments, Budget considerations and the circumstances prevailing at the time that major decisions need to be taken. Moreover, in nine months' time the financial basis for a program for 1977-82 will be decided by Government. By this annual process—the rolling program—the dimensions of the Program will be adjusted up or down according to the prospective international circumstances as then assessed and the progress achieved to date in bringing defence up to the levels required. The table reflects what has been described in previous Chapters. The aggregated results depict, in quantified financial form, certain policy objectives which the Government will pursue.

TRENDS IN THE EQUIPMENT PROGRAM

6. The Program reflects the priority accorded to equipment in present circumstances. It provides for the continued acquisition of a wide range of basic items. It plans the introduction, in modest numbers, of a variety of advanced equipments which will enhance capability as discussed in Chapter 4 and enable the Services to gain experience in their operation and support.

7. In the program period it is planned that the proportion of total expenditure on new equipment will be progressively raised to over 22 per cent in 1980-81. This will mean new commitments of some \$3500m, and an expenditure on equipment approaching \$2500m over the program period.

8. Expenditure in the early years of the Program will not be as large as that occurring in the later years. This is brought about by the long lead times associated with the procurement of major items of equipment on which the heavier expenditures occur some two to three years and later, after placement of the order.

DEFENCE FACILITIES

9. Financial provision has been made for a sustained effort to improve our defence facilities in the short and longer term, as described in Chapter 7.

10. The proportion of defence expenditure on facilities is planned to increase progressively from the 6.2 per cent achieved in 1975-76 to over 7 per cent in 1980-81. In absolute terms this is a substantial increment.

MANPOWER EXPENDITURE

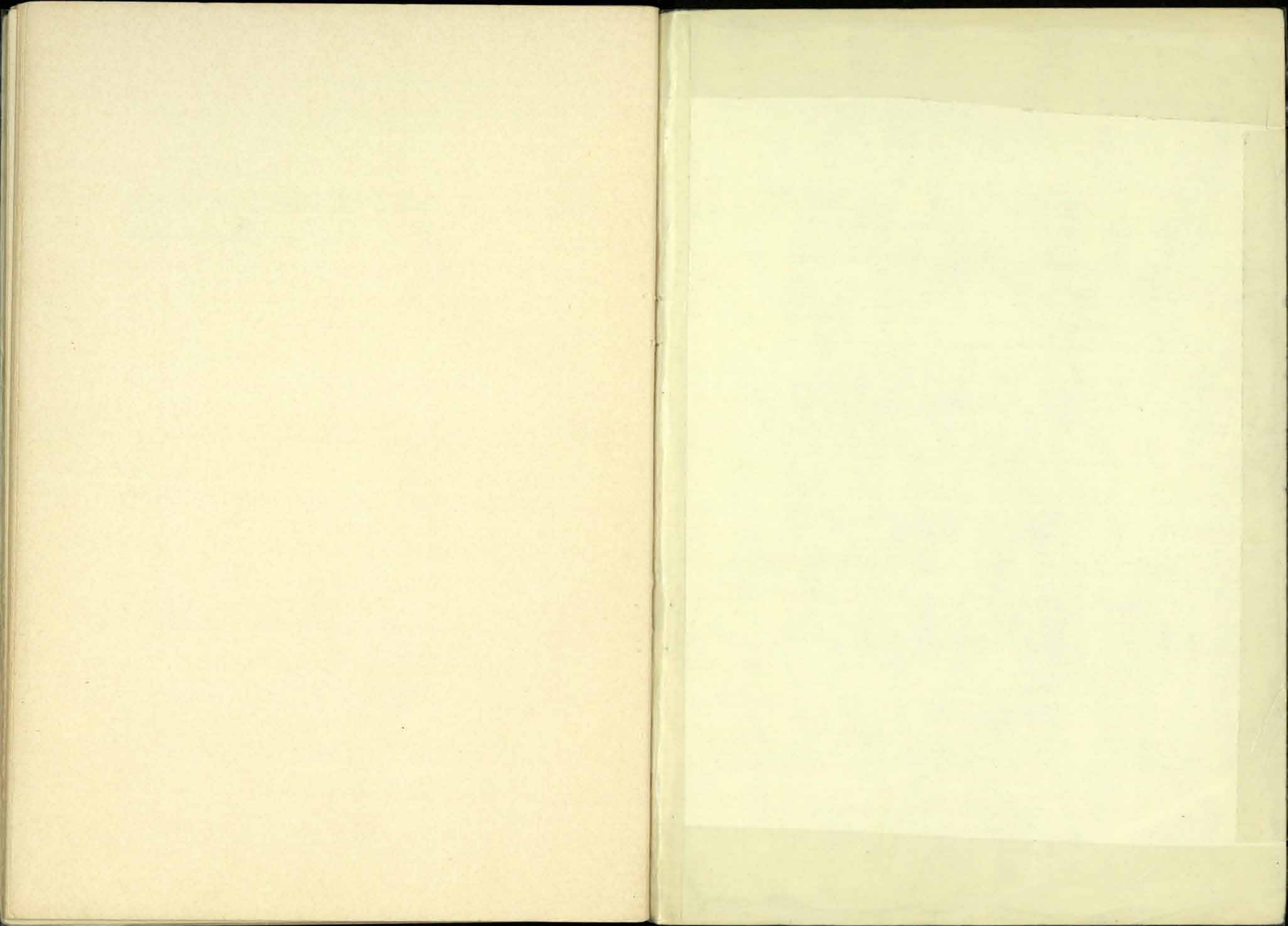
11. The financial provisions allow for the growth of the Regular Army to 34 000 and the increase in the Army Reserve of about 5000. Navy and Air Force manpower will be adjusted, mainly as determined by the increasing equipment levels and the growth in Service activities. At the same time, restraints and effective management will continue to be applied to overall manpower growth to ensure that resources are freed for capital investment and higher levels of Service activities. In the course of this restructuring the expenditure trend on manpower will be reversed; the object is that by the end of the Program only some 45 per cent of Defence expenditure will be directed to this area, compared with some 57.6 per cent in 1975-76.

SUMMARY OF RESOURCE ALLOCATIONS

12. In summary, of some \$12 000m (in January 1976 prices), which provides an annual average increase in real terms of more than 5 per cent:

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