

CHAPTER 4

DEFENCE

This chapter outlines Australia's defence policy and its defence relationships with other countries; the higher defence organisation; the functions, organisation, manning and training of the three Services; the functions and activities of the Defence Science and Technology Organization; the Natural Disasters Organisation; and the functions of the Department of Defence Support.

Further information on current defence planning and activities is available in the Defence report and other publications of the Department of Defence, and in statements to the House of Representatives by the Minister for Defence.

Current defence policy

The primary aim of Australian defence policy is to ensure the security of Australia and its direct interests against military threat.

In pursuit of this goal, Australia's defence policy attaches high priority to developing and improving Australia's capacity to mount an independent national defence effort. This involves the development of the forces, infrastructure and support facilities to deter and if necessary respond effectively to acts of aggression. In particular, defence policy seeks to maintain and strengthen Australia's ability to deploy forces appropriate to cope with the lesser types of military contingencies which have the potential to arise with little or no warning and to establish the basis for expansion should the prospect of more substantial threat to Australia develop. This policy recognises that United States combat support may not be available in all circumstances of threat to Australia. However, the alliance with the United States under ANZUS gives substantial grounds for confidence that, in the event of a major threat to Australia, United States military support would be forthcoming.

The emphasis placed upon improving the operational self-reliance of the Defence Force has regard to our national interests and responsibilities and to the constraints imposed by resources on our ability to project power at distance. The security and stability of our immediate neighbourhood is of primary strategic importance to Australia and the continued development of an independent defence capability enhances our ability to contribute to the peaceful development of that region. Priority in defence activity is given accordingly to areas close to Australia and high value is placed on fostering the defence relationship with the countries of South-East Asia and the South-West Pacific.

While defence policy recognises the strategic importance of our immediate region, Australia is also conscious of its traditional association with the liberal democracies of the Western strategic community and the strong economic links which reinforce this association. The ANZUS alliance remains a central element of our defence policy and provides the framework within which Australia can support the United States in its efforts to deter global war.

Higher defence organisation

Legislation concerning the present organisation of the higher management of the Defence Force and the Department of Defence was passed by the Commonwealth Parliament in September 1975 and became effective on 9 February 1976. It specifically recognised that responsibility for the general control and administration of the Defence Force rests with the Minister for Defence.

Chief of Defence Force Staff: Under section 9 (2) of the *Defence Act* 1903 the Chief of Defence Force Staff is vested with the command of the Defence Force. The Chief of Defence Force Staff is the chief military adviser to the Minister and in addition the Chief of Defence Force Staff has, with the Secretary, the joint administration of the Defence Force as specified above.

Secretary, Department of Defence: The Secretary derives his normal administrative powers as a Permanent Head and Chief Officer from the Public Service Act, the Audit Act and Finance Regulations. In addition to these powers, section 9A of the *Defence Act* 1903 makes the Secretary and the Chief of the Defence Force Staff jointly responsible for the administration of the Defence Force (except for the matters falling within the command of the Defence Force or any other matter specified by the Minister). The Secretary is the principal civilian adviser to the Minister for Defence and is responsible to the Minister for advice on general policy and on the management and utilisation of defence resources.

Higher Defence Machinery

The *Council of Defence* considers and discusses matters referred to it by the Minister relating to the control and administration of the Defence Force and the respective Arms of the Defence Force. Council is chaired by the Minister for Defence and membership includes the Minister for Defence Support, the Secretary of the Department of Defence, the Chief of Defence Force Staff, the Secretary of the Department of Defence Support and the Chiefs of Staff.

An extensive committee system exists to prepare advice for the Minister on defence policy, and to identify the respective Armed Services' operational requirements to meet defence objectives. It is also designed to facilitate the sound management of resources and the development of general policy and to enable the interests of elements of the Defence organisation to be represented when decisions on resource allocation are taken. The committee system brings together the expertise of both military and civilian members in the internal policy formulating process and the proffering of advice to Government. The more important committees are described below:

The *Defence Committee*, chaired by the Secretary with the Chief of Defence Force Staff, the three Chiefs of Staff, and the Secretaries of the Departments of the Prime Minister and Cabinet, Treasury and Foreign Affairs as members. Representatives of other Government Departments and Agencies may be invited as members or consultants. The Committee advises the Minister on defence policy as a whole, the co-ordination of military, strategic, economic, financial and foreign affairs aspects of defence policy, and matters of policy or principle and important questions having a joint Service or inter-departmental aspect.

The *Chiefs of Staff Committee*, chaired by the Chief of Defence Force Staff, is responsible for providing the Minister with collective professional advice on military operations; military implications of defence policy; endorsement of military plans; and other related subjects.

The *Defence Force Development Committee*, chaired by the Secretary with the Chief of Defence Force Staff and the three Chiefs of Staff as members. It is concerned with advising the Minister on the formulation of the Five Year Defence Program, annual budget estimates, new major equipment acquisitions, and other matters relating to force structure and the management of resources.

Defence Review

On 30 April 1981 the Prime Minister announced in the House of Representatives a major review of the Defence organisation as part of the Review of Commonwealth Functions.

The Committee is chaired by Mr John Utz, Chairman and Chief Executive of Wormald International Ltd.

The terms of reference for the Review are:

- To review the organisation of the higher Defence machinery in the light of experience since the Defence re-organisation of 9 February 1976, with particular reference to;
- the suitability of the organisation to propose and implement policy for the achievement of governmental defence objectives, including development of:
 - capability for independent defence of our national security interests;
 - national defence preparedness;
 - defence co-operation with allies and regional friends;
 - increased self-reliance in the national infrastructure supporting Defence; and
 - the scope for further rationalisation and economy in managerial arrangements for defence-related activities of the Government now conducted outside the Defence organisation.
- the suitability of the organisation for a defence emergency or war;
- the distribution of responsibilities within the higher Defence machinery as laid down in Defence and other relevant statutes and in the Directives issued by the Minister for Defence;
- the organisation and functions of the senior Defence Committees.

An interim report on the issue of Departmental organisation was presented at the request of the Prime Minister in May 1982, and the recommendations were tabled in the Parliament on 7 May 1982.

The Review Committee concluded that there were disadvantages in the large structure of the Defence Department. It recommended the creation of a second Department in the Defence area—a Department of Defence Support.

The concept of a separate defence support organisation is not new. Such an arrangement operated when there was a Minister for Supply up to the time of the major defence re-organisation of 1973-76.

The Revised arrangements provided for the creation of a Department of Defence Support under a Minister for Defence Support, that Minister was also appointed as Minister Assisting the Minister for Defence. That Department has since been formed by the transfer of the following units from the Department of Defence:

- Aeronautical Research Laboratory
- Materials Research Laboratories
- Advanced Engineering Laboratory
- Electronics Research Laboratory
- Weapons Systems Research Laboratory
- RAN Research Laboratory
- Armed Forces Food Science Establishment
- Joint Tropical Trials and Research Establishment
- Materials Testing Laboratory
- Defence Support Centre, Woomera
- Administration Branch of the Defence Research Centre, Salisbury
- Industry Development Branch of the Defence Industry and Materiel Policy Division
- Guided Weapons and Electronics Support Facility, St Marys
- Dockyard Secretariat Branch
- HMA Naval Dockyard, Williamstown, Victoria
- HMA Naval Dockyard, Garden Island, New South Wales

together with the following elements from other Departments:

- Major Projects Branch of the Purchasing Division (excluding the ADP Purchasing Section) from the Department of Administrative Services
- Munitions Supply Division
- Aircraft Guided Weapons and Electronics Supply Division
- Management Division, together with the Government factories from the Department of Industry and Commerce.

The grouping of defence support activities under a separate Minister and Department should enable close co-operation with scientific and industrial organisations, who were involved with the Defence Department. At the same time, defence support effort could be integrated more closely with private sector industrial capacity and move towards increased self-reliance in industrial support. In the longer term this would also provide an expanded base for the overseas marketing of Australian-designed defence products.

EXPENDITURE OF DEFENCE FUNCTION
(S'000)

<i>Departmental category</i>	<i>Actual expenditure</i>					<i>Estimated expenditure</i>
	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
Department of Defence—						
Capital Equipment	319,238	406,880	495,731	563,556	500,748	698,144
Capital Facilities	111,595	90,828	89,706	116,793	161,737	163,063
Defence Co-operation	26,952	24,600	30,045	37,914	39,676	42,963
Manpower	1,197,502	1,255,390	1,386,587	1,599,461	2,045,640	1,931,416
Other Running Costs	569,285	633,872	788,876	967,616	1,044,268	1,066,823
<i>Total</i>	<i>2,224,572</i>	<i>2,411,570</i>	<i>2,790,945</i>	<i>3,285,340</i>	<i>3,792,069</i>	<i>3,902,409</i>
Department of Defence Support—						
Capital Equipment	6,410	10,167	14,190	21,593	32,833	75,255
Capital Facilities	3,094	5,673	8,277	8,014	17,298	36,544
Manpower	9,641	9,484	7,845	10,846	13,123	168,264
Other Running Costs	67,956	71,277	81,850	91,350	112,061	148,648
<i>Total</i>	<i>87,101</i>	<i>96,601</i>	<i>112,162</i>	<i>131,803</i>	<i>175,315</i>	<i>428,711</i>
Other Departments—						
Capital Facilities	9,138	4,442	4,470	8,541	9,180	14,230
Manpower (including Renumeration Tribunal and Defence Force retirement and Death Benefits)	140,720	162,669	181,800	205,298	252,129	295,977
Other Running Costs	17,778	19,081	23,216	27,968	35,343	36,251
<i>Total</i>	<i>167,636</i>	<i>186,192</i>	<i>209,486</i>	<i>241,807</i>	<i>296,652</i>	<i>346,458</i>
Total expenditure on Defence function						
	2,479,309	2,694,363	3,112,593	3,658,947	4,264,035	4,677,578
Special provisions—						
Acquisition of Boeing 707 aircraft . . . . .	..	10,201	3,395	196	289	100
Allowance for prospective wage and salary increases . . . . .	..	..	..	..	..	110,000
Total Defence expenditure	2,479,309	2,704,564	3,115,988	3,659,143	4,264,324	4,787,678

Equipment for the defence force

An amount of \$533.6 million (excluding Boeing 707 aircraft) was spent on equipment of a capital nature in 1981-82. An amount of \$773.4 million is expected to be spent in 1982-83.

The significant new equipment items received by the Services in 1981-82 included three Fremantle Class patrol craft (HMAS *Townsville*, *Wollongong*, and *Launceston*), 75 eight tonne cargo trucks, 58 medium wheeled tractors, 24 fire fighting trucks, one well drilling rig, and some 1,700 Barra sonobuoys.

New major capital equipment decisions approved by the Government during 1981-82 include 75 McDonnell Douglas F/A-18 tactical fighter aircraft; 10 additional P-3C Orion long range maritime patrol aircraft; the establishment of production capability and the initial manufacture by Australian industry of the 105mm UK light gun; the Australian design, development and manufacture of a new turboprop basic training aircraft for the RAAF; a modernisation program for the RAN's three guided missile destroyers; and two Phalanx close-in weapon systems for the RAN.

On 25 February 1982 the former Minister for Defence announced the Government's decision to acquire the British aircraft carrier, HMS *Invincible*. However, following the Falkland Islands conflict, the British Government reviewed its overall defence priorities and decided not to sell the *Invincible*.

The Defence Department is re-examining the options available to meet the needs that earlier led the Government to decide to buy HMS *Invincible*. The options to be examined range from alternative ways of operating the necessary aircraft at sea, to a carrier capable of taking the F/A-18 aircraft. The re-examination will be completed towards the end of 1982.

Deliveries expected during 1982-83 include the third guided missile frigate (HMAS *Sydney*), four more Fremantle Class patrol craft (HMAS *Whyalla*, *Ipswich*, *Cessnock*, and *Bendigo*), four water fuel lighters, Matra R550 missiles, 235 eight tonne and 259 four tonne cargo trucks, 215 light field vehicles, 8 heavy cranes, 9 fire fighting trucks, 26 medium vibrating rollers, 46 compressors and 219 sustained fire machine guns. In addition, one River Class destroyer escort (HMAS *Stuart*) and one Oberon Class submarine (HMAS *Ovens*) will be received from modernisation.

Defence industry

Australian industry complements the Defence Force through provision of a wide range of goods and services including manufacture, repair and maintenance of defence equipment. As an essential element in a credible policy of self-reliance, defence industry policy seeks to establish, enhance or maintain industry capabilities that would maximise the potential for self-reliance, subject to the technological and resource constraints inherent in Australia's middle power status.

Industrial support for the Defence Force is fostered through operation of Government owned and operated establishments and private operators of Government facilities; provision of plant, equipment and technical assistance to private enterprises; preference for local production in Government purchases and provision of more general assistance to sectors of industry of major and direct strategic importance. Where equipment is purchased overseas, related or technologically equivalent work is sought in Australian industry up to 30 per cent of the value of the purchase as a contribution to self-reliance and to upgrade technological capabilities.

Of the \$534 million spent on capital equipment in 1981-82, some \$308 million was spent in Australia and \$19.5 million of Australian Industry Participation (AIP) in Defence purchases was achieved.

Over recent years, local procurement has accounted for about 30 per cent of total expenditure on capital equipment. The 1981-82 increase (58 per cent) was caused by the unforeseen reduction in overseas capital expenditure resulting from the British Government's decision to retain HMS *Invincible*.

INDUSTRY RELATED DEFENCE EXPENDITURE IN AUSTRALIA

	1977-78		1978-79		1979-80		1980-81		1981-82	
	\$m	%	\$m	%	\$m	%	\$m	%	\$m	%
Capital Equipment—										
Total	325.6		417.0		509.9		585.1		533.6	
Local	99.95	30.7	127.2	30.5	160.3	31.4	204.2	34.9	307.7	57.7
Replacement Equipment and Stores—										
Total	234.1		267.8		359.4		442.7		461.6	
Local	164.7	70.4	189.3	70.7	252.4	70.2	314.3	71.0	328.8	71.2
Equipment Repair and Overhaul—										
Total	74.1		87.5		108.2		134.9		159.9	
Local	72.2	97.5	80.0	91.4	98.6	91.1	126.3	93.6	146.3	91.5
Total Equipment Related Expenditure—										
Total	633.8		772.4		977.6		1,162.7		1,155.1	
Local	336.9	53.2	396.5	51.3	511.3	52.3	644.7	55.4	782.7	67.8

Supply support

The rising cost of supporting older equipment, an expanded capital equipment program and the higher level of sophistication of new equipments give rise to increased support requirements.

A number of new major capital equipments are obtained from overseas sources and Australia continues to pursue a policy of securing assurances of follow-on supply and support for these equipments. The United States is the major overseas source and the reciprocal logistic arrangements with that country are subject to ongoing development. Improved arrangements with other countries which are likely to be significant suppliers of defence equipment to Australia are also under development.

There is also, a continuing commitment to develop and sustain local industry capabilities of defence significance. The development of specialised capabilities in industry was fostered through expenditure of about \$16 million in 1981-82. In December 1981 the Government entered into separate agreements with McDonnell Douglas and General Electric in relation to the new tactical fighter project under which assembly of the engines and final assembly and test of the F/A-18 Hornet will be undertaken in Australia. In addition many major parts of the aircraft and its systems will be manufactured in Australia and will introduce the new technologies needed to support the aircraft. The total value of contracts to be placed with Australian industry is estimated at \$550 million.

With an increasingly large inventory, improved supply management systems are being developed with more extensive use of computers. Minicomputers for stock control and related functions are

already operating at selected establishments and are being progressively installed at other locations: data processing systems have been developed which will enable the supply catalogue to be maintained in a single supply data base for use by all Services.

Computer assistance is also employed in movement management systems to speed up these processes.

Capital facilities

During 1981-82 total expenditure on Capital Facilities was \$188 million. Expenditure in 1982-83 is expected to increase to some \$214 million.

Emphasis has continued on the development of facilities in the north of Australia. The new patrol boat base at Cairns was officially opened on 28 May 1982 and a patrol boat base at Darwin was officially opened in October 1982. A site has been reserved for possible patrol boat facilities at Finucane Island near Port Hedland, W.A. In support of the RAAF, works on an aircraft maintenance complex at RAAF base, Darwin, and improvements to the Learmonth, W.A. airfield's capacity for handling aircraft deployments are both expected to be completed by mid 1983. Design development for a new major airfield at Derby, W.A., has been continuing and construction is planned to begin by mid 1983.

Other operational bases where new major works are involved include: HMAS *Stirling*, Cockburn Sound, W.A.—where an armament depot was completed in 1981 and a fuel installation is expected to be completed later this year; Army bases at Townsville and Enoggera, Qld—where work is well advanced on stages of major development programs; RAAF base Amberley, Qld—where test facilities for the F-111 aircraft engines were completed early in 1982; RAAF base Edinburgh, S.A.—where work on a facility for maintaining aircraft avionics systems was completed late 1982; HMAS *Moreton*, on the Brisbane River—where wharves were acquired during the year to support the new heavy lift ship, HMAS *Tobruk* and other landing craft.

Major works on support facilities continued during the year with modernisation programmes at both Garden Island and Williamstown Naval Dockyards. At Cockatoo Island Dockyard, Sydney, construction of new cranes continued. Other support facilities which were substantially completed during the year include: Kingswood, N.S.W.—a maintenance and testing facility for missiles and torpedoes; Randwick, N.S.W.—stores administration buildings and other working facilities; RAAF Headquarters Glenbrook, N.S.W.—command and administrative facilities. During the year some 285 houses for Servicemen and their families were completed and it is expected to authorise construction or acquisition of 600 additional houses to reduce present shortfalls and replace some of the worst existing housing.

Major works at Defence Force educational and training institutions included: continuation of the development of the Australian Defence Force Academy in Canberra; the expected completion in early 1983 of facilities at Bonegilla, Vic., for the Army Apprentices' School and School of Military Survey; the completion during the year of additional living quarters at HMAS *Creswell*, Jervis Bay, A.C.T. and at HMAS *Nirimba*, Quakers Hill, N.S.W.; and the continuation of construction of additional living quarters, classrooms and administrative facilities at RAAF bases Wagga, N.S.W., and Laverton, Vic.

Defence manpower

Employment

The following table indicates the range of activities and occupations in which defence military and civilian manpower are involved.

FUNCTIONAL DISTRIBUTION OF DEFENCE MANPOWER AS AT 30 JUNE 1982

<i>Function</i>	<i>Service</i>	<i>Civilian</i>	<i>Total</i>
Operational Forces and Logistic Support	29,690	780	30,470
Specialist Support (e.g. communications, medical services)	4,900	4,065	8,965
Stores and Supply: Storage and Control	2,795	4,475	7,270
Dockyards, equipment production, repair and overhaul	3,060	1,195	4,255
Training	18,930	1,465	20,395
Support to Reserves and Cadets	1,275	100	1,375
Research and Development	300	255	555
Central Headquarters and Administration including overseas representation	4,060	3,195	7,255
Regional Commands and Administration	7,945	3,830	11,775
Defence Co-operation	230	—	230
Total	73,185	19,360	92,545

NOTES: Figures have been rounded.

Figures cannot be reconciled with those in previous Year Books owing to changes within classifications and transfer of civilian staff to the Department of Defence Support.

Civilian figures include only full-time operatives and exclude locally engaged civilians employed in support of Air Force deployment overseas, persons on extended leave, and part-time staff.

Permanent Defence Force

PERSONNEL STRENGTHS OF THE PERMANENT DEFENCE FORCE AS AT 30 JUNE

	<i>Navy</i>	<i>Army</i>	<i>Air Force</i>	<i>Total</i>
1978	16,298	31,883	21,689	69,870
1979	16,582	31,813	21,803	70,198
1980	16,961	32,321	22,249	71,531
1981	17,298	32,898	22,322	72,518
1982	17,598	32,876	22,711	73,185
1983 (approved targets)	17,146	32,850	22,477	72,473

COMPOSITION OF PERMANENT DEFENCE FORCE (a) AS AT 30 JUNE 1982

	<i>Navy</i>	<i>Army</i>	<i>Air Force</i>	<i>Total</i>
Male—				
Officers	2,076	4,159	3,411	9,646
Other Ranks	13,131	25,461	16,739	55,331
Cadets	377	470	437	1,284
Apprentices	687	908	480	2,075
Junior Recruits	172	—	—	172
<i>Total</i>	<i>16,443</i>	<i>30,998</i>	<i>21,067</i>	<i>68,508</i>
Females (b)—				
Officers	104	299	222	625
Other Ranks	1,013	1,558	1,394	3,965
Cadets	38	21	28	87
<i>Total</i>	<i>1,155</i>	<i>1,878</i>	<i>1,644</i>	<i>4,677</i>
Total Strength	17,598	32,876	22,711	73,185

(a) Includes Reserve personnel on full-time duty. (b) Excludes female personnel on maternity leave.

Reserve Forces

Reserves comprise trained and partly trained volunteers who are available to participate in the defence of Australia and its interests in times of war or defence emergency. Royal Australian Navy and Royal Australian Air Force Reserves can be used to supplement and increase the rate of effort of the Permanent Forces. The Army Reserve consists mainly of formed units and sub-units, which, with the Regular Army, provide the basis for expansion of the Army.

RESERVE COMPONENTS WITH TRAINING OBLIGATIONS (a) AS AT 30 JUNE

	<i>Navy</i>	<i>Army</i>	<i>Air Force</i>	<i>Total</i>
1978	917	23,164	490	24,571
1979	1,037	22,978	498	24,513
1980	1,039	23,986	502	25,527
1981	1,021	31,125	591	32,737
1982	1,094	31,706	873	33,673

(a) Strengths exclude those members who are serving full-time in the Permanent Defence Force but include members who have not fulfilled their minimum training obligations.

Defence co-operation

In support of Australia's defence and foreign policies the Government conducts Defence Co-operation Programs with South-East Asian and South Pacific countries. The programs are bilateral, geared to the needs and priorities of co-operating countries, and emphasise the transfer of skills and technology. Activities include training in Australia, joint projects, loan of Australian personnel, and combined military exercises.

Training in Australia is an important activity. In 1981-82 over 1,360 overseas personnel were trained by the three Services or with civil organisations, which is an increase of over 18 per cent from the previous year. In accordance with the Government's decision to increase defence co-operation with neighbouring countries this figure is expected to expand steadily in future years. To assist in providing this increased level of training an initial program of upgrading selected training facilities and equipment in Australia was completed in 1982. This includes establishment of an English language training and cultural familiarisation centre (Defence Co-operation Language School) at RAAF Laverton which most overseas personnel attend prior to undertaking training at other Service establishments. The cost of establishing this centre was \$1.97 million.

Co-operation with Papua New Guinea included the provision of Australian Loan Servicemen to PNG, combined exercises, training for PNG Servicemen in Australia, survey and engineering projects in PNG, and the provision of defence equipment. Expenditure in 1981-82 totalled \$16.65 million.

In Indonesia major Defence Co-operation projects include maritime patrol assistance (including further maintenance assistance and an additional Attack Class patrol boat), survey and mapping of Irian Jaya, a survey feasibility study of the Islands of Sumatera, map production, Dockyard equipment for the Tanjung Uban Naval Base (Riau Islands), and test equipment for the Indonesian Defence Research Centre. Together with the provision of training and advisory assistance, total expenditure was \$8.6 million in 1981-82.

Assistance to Malaysia in 1981-82 amounted to \$4.0 million, mainly for training. Australian advisers in Malaysia provided assistance in the areas of ordnance, cataloguing, defence research and corps training.

Defence Co-operation with Singapore, composed of training and study visits in Australia and advisory assistance (mainly flying instruction) in Singapore, totalled \$1.2 million in 1981-82. A similar figure was spent on the program with Thailand, also largely on training in Australia. Project assistance in Thailand included equipment and training at the Vehicle Rebuild Workshop, Military Technical Training School and Language Training School. Defence assistance to the Philippines in 1981-82 amounted to \$1.9 million and included Australian advisory teams to assist in establishing a Nomad maintenance system and to support Australian DART target ranges, as well as training and study visits in Australia.

In 1981-82 expenditure on co-operation with South-West Pacific countries increased to \$3 million. Activities in the South-West Pacific are not confined to those states with defence forces. They include technical advisers, survey and mapping, hydrography, channel clearance operations, training and equipment assistance. A new initiative in 1981-82 has been the development of a program of Army engineer assistance to South-West Pacific States to undertake civil engineering projects in remote areas.

Defence representatives overseas

Defence representatives are accredited to Britain, Burma, Canada, China, France, India, Indonesia, Iran, Japan, Republic of Korea, Malaysia, Nepal, New Zealand, Pakistan, Papua New Guinea, the Philippines, Singapore, Switzerland, Thailand and the United States of America.

Defence force activities overseas

The main areas where Australian Defence Force elements have been deployed during the year were Malaysia/Singapore, Papua New Guinea, the Middle East and the Indian Ocean. Units also visited the United Kingdom and Western Germany, Indonesia, the Philippines, Japan, the People's Republic of China, the United States, Canada, New Zealand and the South-West Pacific.

Australian Defence Force elements in the Malaysia/Singapore area include:

Navy—A Destroyer or Destroyer Escort is maintained in South-East Asian waters for much of the year. In addition other ships of the RAN visited the area on goodwill visits.

Army—An Australian infantry company is maintained at Butterworth on the basis of three month detachments from Australia, in a training role.

Air Force—Two squadrons of Mirage fighter aircraft are maintained at Butterworth with a detachment at Tengah in Singapore. Up to three P3 Orion maritime patrol aircraft are also maintained at Butterworth for surveillance duties.

The Defence Force continued to contribute to United Nations peacekeeping operations with Australian Army observers in Kashmir and the Middle East. In addition, since February 1982 Defence Force personnel have been deployed to Sinai for peacekeeping duties with the Multinational Force and Observers (MFO).

Five Australian Army instructors have been in Uganda since February 1982, as part of a Commonwealth Military Training Unit.

Since mid-January 1981 RAN ships have been deployed for patrol duties in the Indian Ocean and the Arabian Sea. These vessels have also paid goodwill visits to Indian Ocean littoral states.

Under the Defence Co-operation Program with neighbouring countries, elements of the Defence Force have conducted surveying and mapping operations in Indonesia, Papua New Guinea and Fiji, and have undertaken other tasks in the Solomon Islands, Tonga, Vanuatu and Kiribati.

THE DEFENCE FORCE

Royal Australian Navy

The RAN maintains and exercises a modern, well-equipped and highly-trained maritime force. The structure of this force is based primarily on the provision at sea of a balanced force group, consisting of surface warships, naval aviation and submarines.

Higher organisation

The Chief of Naval Staff has command of the RAN, subject to the overall command of the Defence Force by the Chief of Defence Force Staff. Principal staff officers to the Chief of Naval Staff are the Deputy Chief of the Naval Staff, the Chief of Naval Operational Requirements and Plans, the Chief of Naval Personnel, the Chief of Naval Technical Services, and the Chief of Naval Materiel. Other senior officers of the RAN include the Flag Officer Naval Support Command and the Flag Officer Commanding H.M. Australian Fleet.

Ships of the Royal Australian Navy

The Fleet, September 1982: *Melbourne*—aircraft carrier (decommissioned in June 1982 and is now in contingent reserve); *Supply*—oiler; *Stalwart*—Destroyer tender; *Tobruk*—amphibious heavy lift ship; *Adelaide, Canberra*—guided missile frigates; *Perth, Hobart, Brisbane*—guided missile destroyers; *Vampire*—destroyer; *Yarra, Parramatta, Swan, Torrens**—destroyer escorts; *Jervis Bay*—training ship; *Curlew, Snipe*—coastal minehunters; *Ibis*—coastal minesweeper; *Moresby, Flinders*—surveying ships; *Cook, Kimbla*—oceanographic research ships; *Otway, Onslow, Ovens, Otama, Oxley, Orion*—submarines; *Attack, Acute, Advance, Adroit, Ardent, Assail, Aware, Barquette, Bayonet, Bombard, Buccaneer, Fremantle, Launceston, Townsville, Warrnambool, Ipswich*—patrol boats; *Banks, Bass*—general purpose vessels; *Brunei, Labuan, Tarakan, Wewak, Betano, Balikpapan*—heavy landing craft. (**Stuart* and *Parramatta* decommissioned—undergoing modernization at Williamstown).

Fleet Air Arm

The aircraft carrier HMAS *Melbourne* was decommissioned in June 1982 and is now in contingent reserve. The Government announced in September 1980 that the *Melbourne* would be replaced by an aircraft carrier capable of operating helicopters and STOVL aircraft. The type of carrier and date of introduction into service is still under consideration. Four squadrons are based at the RAN Air Station, Nowra, New South Wales; HS 817 operates Sea King MK 50 helicopters in the anti-submarine role; HC 723 operates Iroquois UH 1B and Wessex 31B helicopters in utility tasks and search and rescue and also provides Bell 206 B/1 aircraft for the survey ship HMAS *Moresby*; VC 724 operates Skyhawk A4G and Macchi aircraft for fighter ground attack training and Fleet support activities including target towing; VC 851 operates Tracker S2E/G aircraft in anti-submarine and surveillance tasks and HS 748 aircraft in electronic warfare training. The RAN also operates Jindivik pilotless target aircraft. Helicopter capable ships in the RAN are the FFG's, *Stalwart*, *Tobruk* and *Moresby*.

Ship Construction and Repairs

There are two naval dockyards, one at Garden Island, Sydney and one at Williamstown, near Melbourne. A third yard at Cockatoo Island in Sydney harbour is operated by Vickers Cockatoo Dockyard Pty Ltd (VCD) under agreement with the Australian Government. This company carries out considerable naval refitting work, particularly of submarines. In August 1979 the company was awarded a contract to construct a new replenishment ship for the RAN the keel of which was laid in August 1980.

Other current construction projects include eleven patrol boats being built in Cairns, two guided missile frigates in the United States of America and modernisation of two destroyer escorts being undertaken by Williamstown Naval Dockyard (WND). A contract for the building of prototype MH Catamarans is expected to be placed shortly.

The significant new equipment received by the Navy in 1981-82 included:

HMAS *Townsville* from North Queensland Engineering Agents (NQE);

HMAS *Wollongong* from NQE;

HMAS *Launceston* from NQE;

Deliveries expected in 1982-83 are:

HMAS *Sydney* in January 1983;

HMAS *Stuart* ex modernisation from Williamstown Naval Dockyard in March 1983;

HMAS *Whyalla* from NQE in July 1982;

HMAS *Ipswich* from NQE in November 1982;

HMAS *Cessnock* from NQE in March 1983;

HMAS *Bendigo* from NQE in May 1983;

Four Water Fuel Lighters from WND;

HMAS *Ovens* ex modernisation by VCD.

Evaluation is continuing on the selection of a replacement for HMAS *Melbourne* and the construction of two FFG type frigates in Australia.

Work will continue on the construction of HMAS *Darwin* (FFG04) in the USA, HMAS *Success* (AOR-01) at VCD, 6 Fremantle Class Patrol Boats at NQE.

Training and Entry

RAN Staff College. The RAN Staff College located at HMAS *Penguin*, Balmoral, N.S.W., prepares RAN officers of Lieutenant Commander and Lieutenant rank for command and staff appointments. Two courses of 22 weeks duration are run annually, each course comprising 20 students, typically 15 Naval officers, 1 Army officer, 1 RAAF officer and 3 Public Service Board officers.

Officer Entry. The Royal Australian Naval College at Jervis Bay is the training centre for officers in the RAN. Applicants for permanent commissions (presently male only) must be under 20 years of age on 1 January of the year of entry and must matriculate to a university in an Australian capital city. Officer appointees specialise in Seamen, Engineering, Supply and Secretariat, or Instructor Branch. Appointees either complete a full-time degree course in Engineering Science, Surveying or Art at the University of New South Wales, or complete a Diploma of Applied Science at the Royal Australian Naval College. Applicants for degree studies must meet the entry requirements of the appropriate faculty of the University of New South Wales. Male and female applicants for short service commissions must be under 27 years of age on 1 January of the year of entry and have either matriculated to a degree course at an Australian university, College of Advanced Education, or Institute of Technical and Further Education, or achieve four passes at Year 12. Entry is also available to professionally qualified persons such as doctors, teachers, engineers and lawyers.

Sailor Entry. There are several entry schemes available, depending upon an individual's age, educational standard and interests. New entry training is carried out at the following establishments:

- HMAS *Nirimba* at Quaker's Hill, New South Wales, is the primary establishment for all RAN trade training which includes courses for apprentices aged between fifteen and eighteen, general entry personnel and direct entry tradesmen.
- HMAS *Leeuwin* at Fremantle, Western Australia, is the junior recruit training establishment for male entrants aged between fifteen-and-three-quarters and sixteen-and-a-half.
- HMAS *Cerberus* at Westernport, Victoria is the training establishment for general entry members aged between seventeen and twenty-six. Recruits receive twelve weeks initial basic training before progressing to branch training courses.

Advanced branch training is also undertaken at the various schools at HMAS *Penguin*, and HMAS *Watson* in Sydney, and the Naval Air Station at Nowra, New South Wales. A number of specialist courses are conducted in the United Kingdom and United States.

Australian Army

The Australian Army maintains a potential ability and readiness to conduct operations on land for the defence of Australia and, in co-operation with the other arms of the Australian Defence Force, shares a responsibility to deter aggression, to ensure the nation's security and to preserve its national interests.

Higher Organisation

Command of the Army is the responsibility of the Chief of the General Staff, subject to the overall command of the Defence Force by the Chief of Defence Force Staff. He has for his principal staff officers the Deputy Chief of the General Staff, the Chief of Operations, the Chief of Personnel, the Chief of Logistics, the Chief of Materiel and the Chief of the Army Reserve.

The Army is organised into three commands as follows:

- *Field Force Command* which commands all field force units of the Australian Army, both Regular and Army Reserve.
- *Logistic Command* which commands the principal logistic elements of the Army.
- *Training Command* which is responsible for all individual training and commands all Army training establishments and schools with the exception of the Royal Military College, Duntroon (which is under the command of the Chief of the General Staff).

Military Districts as listed below provide administrative support for the three commands, and, in certain cases act as intermediate headquarters for them:

- *1st Military District*—the State of Queensland.
- *2nd Military District*—the State of New South Wales, less those parts included in 3rd and 4th Military Districts.
- *3rd Military District*—the State of Victoria and part of southern New South Wales.
- *4th Military District*—the State of South Australia, plus a portion of south-western New South Wales.
- *5th Military District*—the State of Western Australia.
- *6th Military District*—the State of Tasmania.
- *7th Military District*—the Northern Territory.

The military district headquarters also handle those matters in which both Commonwealth and State Governments are involved.

Training

Australian Staff College. The Command and Staff College is located at Queenscliff, Victoria. The course is held annually and is of twelve months duration. The normal intake is eighty students, twenty of whom are from overseas countries. The course is designed to prepare selected majors for command and staff appointments in the rank of lieutenant colonel.

Royal Military College. The Royal Military College was established in 1911 at Duntroon in the Australian Capital Territory to provide trained officers for the Army. The conditions of entry are laid down in the Royal Military College Regulations. The course is either four or five years of military and academic studies depending upon the academic course undertaken. On graduation, cadets are appointed lieutenant in the Australian Regular Army.

Officer Cadet School. The Officer Cadet School was established in 1951 at Portsea, Victoria, to increase the rate at which junior regimental officers could be produced for the Australian Army.

Civilians between eighteen-and-a-half and twenty-two-and-a-half years are eligible for entry. Serving soldiers are eligible for entry from eighteen-and-a-half up to twenty-seven years. Civilians accorded special entry status because of completed or part completed tertiary qualifications are eligible for entry between eighteen-and-a-half and twenty-five years. The course lasts for forty-four weeks and, on graduation, cadets are appointed second lieutenants in the Australian Regular Army.

Women's Royal Australian Army Corps School. The WRAAC School at Mosman, New South Wales, has two wings: one whose task is the training of officer cadets for the WRAAC; and one which is a basic training wing. The officer cadets are selected on the same criteria as entrants to the Officer Cadet School. The course is of forty weeks duration and, on graduation, cadets are appointed second lieutenants in the Women's Royal Australian Army Corps.

Land Warfare Centre. The Land Warfare Centre at Canungra provides training for personnel in tactics and administration and conducts sub-unit and individual training in battle skills.

Army Apprentices School. The Army Apprentices School was opened in 1948 at Balcombe, Victoria, to train youths as skilled tradesman for the Regular Army and to provide them with a background for an Army career. The course is open to youths between the ages of fifteen and seventeen-and-a-half and provides training in a number of highly skilled trades. With the move to Bonegilla in 1983, the Army Apprentices School will be open to male and female applicants.

Other Schools. Army schools have been established for the major arms and services to train officers and other ranks in the up-to-date techniques of their own arm or service, to qualify them for promotion and to produce trained instructors. Courses at Army schools are conducted for members of both the Regular Army and Army Reserve.



A Leopard tank of the Royal Australian Armoured Corps. The Leopard is the Army's most potent fighting vehicle. Its 105 mm gun can engage an enemy tank at distances up to 2500 m and lesser targets up to 8000 m.

PLATE 29

Royal Australian Air Force

The function of the Royal Australian Air Force is the conduct of operations in the air for the defence of Australia and Australian interests.

Higher Organisation

The Chief of the Air Staff (CAS) has command of the Royal Australian Air Force subject to the overall command of the Defence Force by the Chief of Defence Force Staff. The CAS is assisted in his decisions by an advisory committee which includes the Deputy Chief of the Air Staff, Chief of Air Force Personnel, Chief of Air Force Technical Services, Chief of Air Force Development, Chief of Air Force Materiel, Air Officers Commanding Operational and Support Commands, Director General Supply—Air Force, Assistant Secretary Resources Planning, and other senior officers or specialists as may be directed by the CAS. The Committee has no statutory authority nor executive function and the CAS is not obliged to accept its recommendations.

The Chief of Air Staff administers and controls RAAF units in Australia through the two commands. Operational Command is responsible to the CAS for the command of operational units and the conduct of their operations within Australia and overseas. Operational units based at Butterworth, Malaysia, contribute to the development of the Malaysian and Singapore defence capability and provide forces for the Integrated Air Defence System. Support Command is responsible to the CAS for training of personnel, and the supply and maintenance of Service equipment.

Structural Organisation

The RAAF has five operational elements, the units of which actively and directly participate in air operations. These elements are the strike/reconnaissance force, tactical fighter force, air transport force, tactical air support force and the maritime force. The strike/reconnaissance force provides a capability for offensive air operations against land and naval targets, and a long range reconnaissance capability. The tactical fighter force is responsible for air superiority, air defence and air interdiction operations, and also provides close air support to sea and land forces. The air transport force is used for routine strategic and domestic transport, and in addition has a tactical transport role. Tactical transport and close air support aircraft normally operate within a tactical air support force which is usually controlled by a joint (Air Force/Army) headquarters. Maritime forces are primarily employed in ocean surveillance, anti-submarine warfare and search and rescue. Major maritime operations are controlled by a joint (Air Force/Navy) headquarters.

The support component consists of those units and personnel which support units of the operational component. The elements are maintenance, supply, air training, ground training, administrative and the RAAF Reserve.

Aircraft

The RAAF's strike/reconnaissance force is equipped with F-111C and RF-111C aircraft. The air defence and ground attack squadrons are equipped with the Mirage 1110/D. Transport aircraft currently in use are Hercules C130H and C130E, Caribou, Mystere 20, HS-748, Boeing 707, and BAC-111. Three squadrons operate Iroquois and one operates the Chinook medium lift helicopters. Maritime squadrons operate Orion P-3B and P-3C aircraft. Aircraft used for aircrew initial training are the CT-4 Airtrainer, Macchi and HS-748T2.

Training

RAAF Academy. The RAAF Academy at Point Cook, Victoria is an affiliated college of the University of Melbourne. Cadets are selected principally for the General Duties Branch, and, after three years tertiary training, graduate with a Bachelor of Science degree. Graduates then complete a basic aircrew training course. Cadets selected for the Engineer Branch study the first year at the Academy and then attend the University of Sydney to graduate with a Bachelor of Aeronautical Engineering degree.

Engineer Cadet Squadron. The Engineer Cadet Scheme provides training for degree status in aeronautical, mechanical, electronic and communication engineering at the Royal Melbourne Institute of Technology. Electronic and communication engineering can also be taken at the Western Australian Institute of Technology.

Equipment Cadets. Cadets selected for Equipment Branch duties undertake a three year course at the Darling Downs Institute of Advanced Education in Queensland. They graduate with a Bachelor of Business degree.

Basic Aircrew Training. Flying training for RAAF pilots is conducted at Point Cook, Vic., and Pearce, WA, while RAAF navigators are trained at East Sale, Vic. Officer and military training forms part of the flying training course. Trainees receive their wings and are commissioned on graduation. The RAAF also provides pilot and observer training for the RAN and initial pilot training for the Army. Airmen, aircrew for employment as flight engineers, loadmasters and crewmen are trained in two phases: a basic aircrew course at Richmond, NSW, and flying training within the conversion training or operational squadrons.

Aircrew Operational Conversion. Conversion training to Mirage fighter aircraft and Orion Maritime aircraft is conducted by the respective conversion training squadrons. Conversions to other operational aircraft are conducted within the operational squadrons.

Officer Training. With the exception of those officers commissioned from the RAAF Academy, all officers entering directly (with or without tertiary qualifications), commissioned airmen and airwomen, engineering and equipment cadets and undergraduate students undergo the Officers' Initial Training Course at the Officers' Training School, Point Cook, Vic.

Staff College. The RAAF Staff College located at Fairbairn, ACT, provides two residential staff courses. The Basic Staff Course of six weeks duration provides Command and staff training to officers of the rank of Flight Lieutenant. The Advanced Staff College Course of forty-three weeks duration provides staff training and higher service education to selected officers normally of the rank of Squadron Leader. This course is designed to broaden the students' professional background and to prepare them for Command and staff appointments of greater responsibility. A one year correspondence course covering military studies, international affairs and management is a compulsory prerequisite for entry to the advanced course.

Ground Training. The major ground training schools are the School of Radio at Laverton, Victoria and the School of Technical Training at Wagga, New South Wales. Both schools provide trade and technologist apprentice and adult trade training for technical personnel. They also provide post graduate-type training and specialist familiarisation courses on aircraft and telecommunications systems. Non-technical courses conducted at Wagga include catering, clerical, supervision and management and instructional technique.

SERVICE ESTABLISHMENTS PROVIDING EDUCATIONAL COURSES OF SIX MONTHS DURATION OR LONGER, AUSTRALIA, 1979, 1980 AND 1981

Establishment	Students enrolled			New entrants during year			Number completing course during year		
	1979	1980	1981	1979	1980	1981	1979	1980	1981
Staff colleges—									
Joint Services Staff College	82	88	89	82	88	89	82	88	89
Australian Staff College	80	80	80	80	80	80	80	80	80
RAAF Staff College	48	41	40	48	41	40	47	41	40
RAN Staff College	34	36	40	34	36	40	34	35	40
Officer cadet training establishments—									
RANC	(a)537	567	486	332	314	235	217	245	197
RMC	439	456	453	135	139	149	77	71	72
RAAFA	130	127	136	46	33	47	25	26	32
Apprentice schools—									
Navy	677	904	880	184	252	761	167	527	560
Army	557	559	570	254	274	268	216	204	228
Air Force									
Wagga Wagga	338	335	300	161	173	179	(b)42	144	142
Laverton	86	109	71	50	50	51	(b)—	23	29
Other—									
RAN Junior Recruit Training School	360	256	460	360	256	320	344	220	300
RAAF School of Languages	34	45	41	34	45	41	34	35	29

(a) Now includes all RAN officer training.
 (b) Low numbers completing the course are due to extension of the course length by an average of three months. Apprentices graduated in 1980.

Defence Science and Technology Organisation

The Chief Defence Scientist heads the Defence Science and Technology Organisation (DSTO) which is engaged in research, analysis, development, trials and evaluation. It consists of a central office and ten establishments, a small number of people in overseas posts and some in joint activities with other nations. The DSTO contains about 4,400 staff (including some 1,000 professionals) who provide a degree of scientific expertise in most physical sciences and engineering fields of relevance to defence.

As part of major changes in the Department of Defence structure (Interim Defence Review Committee (Utz) Report) announced by the Prime Minister on 7 May 1982, the day-to-day responsibility for administration of nine DSTO establishments (i.e. all those except Central Studies Establishment) passed to the new Department of Defence Support.

The Minister for Defence retains central responsibility for defence science policy and co-ordinating defence expenditure. The Chief Defence Scientist, Professor P. T. Fink CBE FTS and his DSTO policy, advisory and military studies staff in Canberra remain in the Department of Defence.

The objective of DSTO is to ensure that Australia takes best advantage of modern technology in its Defence Force. The major activities are: scientific input to Defence policy formulation; solution of Defence Force problems particularly where high technology or special features of Australian physical or military environment are involved; modification and extension of life of military equipment; development of Australian equipment; evaluation of military equipment and procedures by trials, exercise analysis or operational research; support to defence industry; international co-operation in defence Research and Development.

The central office of DSTO in Canberra has 2 Divisions in the Department of Defence:

Programs and Administration Division controls the management and administration of the DSTO forward planning and advises on the optimum deployment of DSTO resources; co-ordinates co-operation with overseas governments and is responsible for information services as well as career planning and assessments. It also manages special joint undertakings with other countries.

The Projects and Analytical Studies Division provides management and advice on Major Projects and Co-ordinates relevant establishment activities; co-ordinates analytical studies throughout DSTO, fosters DSTO contacts with other national science and technology agencies and bodies, with professionals in industry and academic institutions and with the wider community.

DSTO Establishments

DSTO laboratories are located in eastern and southern Australia.

The DSTO establishments are:

Advanced Engineering Laboratory, Salisbury, S.A.

Armed Forces Food Sciences Establishment, Scottsdale, Tas.

Aeronautical Research Laboratories, Fisherman's Bend, Vic.

**Central Studies Establishment, Canberra, A.C.T.*

Electronics Research Laboratory, Salisbury, S.A.

Joint Tropical Trials Research Establishment, Innisfail, Qld.

Materials Research Laboratories, Maribyrnong, Vic.

Materials Testing Laboratory, Alexandria, N.S.W.

Royal Australian Navy Research Laboratory, Edgecliff, N.S.W.

Weapons Systems Research Laboratory, Salisbury, S.A.

* Still in the Department of Defence.

For further information see section on Department of Defence Support.

Implementation of DSTO Reviews

As a result of the DSTO Independent External Review and the Internal Review into Objectives and Procedures the following organisational changes occurred in February 1982:

- the central office division of Service Laboratories and Trials was abolished;
- the Royal Australian Navy Trials and Assessing Unit was transferred back to Navy;
- the Engineering Development Establishment transferred back to Army;
- responsibility for the Armed Forces Food Science Establishment, the Joint Tropical Trials Research Establishment, and the Materials Testing Laboratory passed to the head of the Materials Research Laboratories; and
- the Trials Resources Laboratory was absorbed into the Advanced Engineering Laboratory.

Natural Disasters Organisation

The Natural Disasters Organisation (NDO) was established in the Department of Defence in 1974, absorbing the functions of the former Directorate of Civil Defence; the latter had been in the Department of the Interior until moved to Defence in December 1972.

The organisation mitigates the effects of disasters at the request of State and Territory counter disaster organisations and in conjunction with the Defence Force, Commonwealth Government Departments and other Government and non-Government organisations; and supports the development of a core civil defence structure. The NDO and the State and Territory Emergency Service organisations constitute the core civil defence structure for Australia, but their main continuing activity in peace is related to mitigation of the effects of disasters. The States and Territories have complete responsibility for their own counter-disaster organisations.

At the national level NDO is required to develop and implement contingency plans involving Commonwealth resources to cope with requests by State/Territory counter-disaster authorities during disasters, and with civil defence needs. The headquarters of NDO in Canberra, through its National Emergency Operations Centre, provides a focal point for the co-ordination of national effort where appropriate. It is through this Centre that the physical resources available from the Commonwealth are co-ordinated when assistance or support is requested by State and Territory authorities.

The NDO administers a number of programs from Commonwealth funds for the support of the Emergency Service organisations, namely: the supply of emergency type equipment (radios, rescue vehicles, first aid kits, generators, flood rescue boats, etc.); reimbursement of salaries of State/Territory full-time organisers at regional level; provision of training films and handbooks, and subsidies on a limited dollar-for-dollar basis to provide accommodation for the State/Territory units at local government level.

Other programs which benefit all organisations with a counter-disaster involvement, and the community at large, are: training, principally at the Australian Counter Disaster College at Macedon, Victoria; emergency broadcasting facilities; a fall-out shelter survey service; and a public awareness program.

DEPARTMENT OF DEFENCE SUPPORT

The Department of Defence Support was formally established (by the Governor-General in Council) on 7 May 1982, and draws together elements previously located in the Departments of Administrative Services, Defence, and Industry and Commerce as recommended by the Interim Report of the Defence Review Committee (the Utz Committee).

This grouping of defence support activities under a separate Minister and Department enables close co-operation between scientific and industrial organisations involved in defence activities. At the same time it allows closer integration of private sector industrial capacity with the defence support effort leading to increased self-reliance in industrial support.

In responding to the manifold needs of Australian defence, the Department:

- undertakes the purchase of goods and services for defence purposes;
- undertakes and sponsors research and development relevant to defence needs, supporting both the Defence Force and the defence industry base in this regard;
- provides technical expertise and other forms of assistance to encourage defence industry initiatives and the acquisition of modern techniques and technologies;
- ensures that Australian industry participates in the procurement and support of defence equipment to the maximum practical extent;
- administers the Australian Offsets Program so as to stimulate technological advancement and broaden the capabilities of Australian industries of significance to this country's strategic and overall manufacturing needs;
- manages the Government's defence oriented facilities including munitions and aircraft factories, and dockyards; and
- consistent with the Government's defence and foreign affairs policies, markets defence and allied products and services to help maintain industrial capabilities of strategic significance.

All these activities are directed to the Department's singular goal—the provision of optimum support for the nation's defence effort in peace and war.

The Department employs some 19,000 employees under the Public Service Act, the Supply and Development Act and the Naval Defence Act. The employees include, in round numbers, 1,600 technical professionals, 4,800 tradesmen and 1,600 apprentices.

The intertim Utz Report saw the Committee system as a key means of integrating the Department with the Defence Organisation as a whole and recommended that the Minister and senior officers be members of, or invited to, a number of committees including:

- the Council of Defence;
- the Defence Committee;
- the Defence Force Development Committee;
- the Defence Force Structure Committee;
- the Consultative Group;
- the Defence Science and Technology Management Advisory Committee; and
- the Defence Science and Technology Committee.

The Minister and Secretary are members of the Council of Defence.

Membership of Departmental officers on a wide range of other committees is under review.

Budget allocations

Estimated total expenditure for the Department in the 1982-83 Budget was \$429 million.

The Department is heavily committed to work associated with important defence projects ranging from the Basic Trainer Aircraft and the F/A-18 fighter programs to the Waler armoured vehicle, the Raven combat radio, the Discon telecommunications, the Barra anti-submarine and the follow-on destroyer projects.

Some of these projects already involve considerable work by Australian industry and contribute further to the nation's expanding technological capability.

On the Research and Development front the Department's scientists are applying state of the art technologies in such fields as weapons guidance systems and effective means of combating the threat of surface-to-surface and air-to-surface missiles.

DEPARTMENT OF DEFENCE SUPPORT: ELEMENTS OF EXPENDITURE, 1982-83 (\$'000)

Capital equipment	70,126
Defence facilities	35,243
Manpower	168,264
Other operating costs	155,363
Total expenditure	428,996

DEPARTMENT OF DEFENCE SUPPORT: EXPENDITURE ALLOCATIONS, 1982-83 (\$'000)

Government Munitions and Aircraft Factories	192,161
Naval Dockyards	82,003
Research Laboratories	128,569
Industry Development	5,396
Purchasing	5,238
Administration	15,629
Total	428,996

Some major programs for 1982-83, by functional areas, are:

Munitions

Nitroglycerine and propellant paste manufacturing plant at Mulwala Explosives Factory. Required for the manufacture of double-based propellant. Estimated expenditure \$2 million.

Heavy shell forging plant at Ordnance Factory, Maribyrnong. Required for the forging of 155 mm shells. Estimated expenditure \$2 million.

Modernisation of small arms ammunition production facilities at Ammunition Factory, Footscray. Estimated expenditure \$3.4 million.

Occupational safety and health improvements at Munitions Filling Factory, St Marys. Estimated expenditure \$1.5 million.

Aircraft, Guided Weapons and Electronics

Funding, marketing, plant re-arrangement and capital equipment and plant for the Basic Trainer project. Total cost of \$2.9 million. Subcontract of design and manufacturing work will go to member organisations of the Australian Aircraft Consortium Pty Ltd and to the Department's Aeronautical Research Laboratories of Fishermen's Bend.

Provision has been made in the Budget estimates for development of a Box Launched Ikara at a cost of \$853,000.

Construction of a structural bonding workshop, Government Aircraft Factories, at a total cost of \$25.0 million. This workshop will provide a very significant update of airframe manufacture and modification and repair capability in the Australian industry. It will be very well equipped for fabricating airframe components in advanced carbon composite materials which are becoming more and more widely used in both military and civil aircraft production.

Approval has been given for capital expenditure (at Commonwealth cost) on buildings and works and machinery and plant required for the Australian industry program for the F/A-18 fighter. The works and machinery and plant items will be located at government and private factories.

This expenditure in the Australian aircraft industry will be principally in areas of high technology directly applicable to the role which the local industry will play in the new F/A-18 fighter.

Australia will undertake the final assembly of the aircraft and its engines and some airborne equipments. For the main part, this work will consist of assembling imported components. However, some major parts of the airframe, engine and equipments will be produced in Australia from raw materials. Such components will be produced in high volume for export to the United States under the Government's offsets policy.

Naval Dockyards

Modernisation of Garden Island Dockyard is continuing. An amount of \$33 million has been committed for Stage 1 works.

A total of \$88 million is to be committed for Stage 2 works which include the Woolloomooloo Fleet Base.

The principal activities of Garden Island continue to be the repair and refit of Naval ships and the manufacture and repair of naval stores.

At Cockatoo Island, leased and operated by Vickers Cockatoo Dockyard Pty Ltd, the RAN spent \$29 million in 1982 on the modernisation and refit of the submarine HMAS *Ovens*, and is spending \$32 million on HMAS *Orion*, due to be completed in August 1983. Construction of HMAS *Success* has been hampered by shortages of skilled labour and a delay in completion seems likely.

Principal activities at Williamstown Naval Dockyard are the continuing modernisation of HMAS *Stuart* and *Derwent* and the completion of four motor water/fuel lighters.

Research Laboratories

Provision has been made for the construction of a new physics laboratory at the Materials Research Laboratories at Maribyrnong at an estimated cost of \$2.6 million. Work will begin soon after the necessary procedures through the Parliamentary Works Committee are completed.

Work will continue on the refurbishment and modification of the former Royal Edward Victualling Yard at Pyrmont, N.S.W., which will accommodate the Royal Australian Navy Research Laboratory currently located at Edgecliff.

New computing facilities will be installed in the Aeronautical Research Laboratories at Fishermens Bend, Victoria, and the Royal Australian Navy Research Laboratory, for an estimated total cost of \$4.8 million.

Revenue

Estimated revenue for the Department in 1982-83 is \$6.813 million comprising moneys payable to the Consolidated Revenue Fund in relation to Nomad aircraft sales, recovery of certain charges by the Research and Development Laboratories, repayment of working capital and moneys in excess of requirements at the Government Factories and other miscellaneous receipts.

Purchasing

Major contractual activities in 1982-83 are expected to include the construction of minehunter catamaran hulls, the defence integrated secure communications network, the Barra Project, additional helicopter requirements, a bridge simulator for the RAN and a flight simulator for the F/A-18.

Defence Purchasing

Under the Administrative Arrangements Order of 7 May 1982, the Minister for Defence Support became responsible for that part of defence purchasing which until then had been under the administrative control of the Minister for Administrative Services.

The Department of Defence Support is the Purchasing Authority (i.e. the Tendering Authority and Contract Authority) for all defence supplies of goods and services purchased in or from Australia from commercial suppliers above the prescribed public tender threshold (currently \$10,000).

In the Department of Defence Support, defence purchasing is being handled in two ways:

- for major defence equipment procurements (usually those over \$5 million, but also other requirements of smaller value but with great complexity or other special features) the tendering and contracting arrangements are done in Central Office; and
- for all other defence purchasing, the tendering and contracting is decentralised in the Department's regional offices in the capital cities.

Exceptions to the above are that the Department of Administrative Services will continue to handle defence requirements over the following range of supplies, for which it has a central purchasing role or expertise, for departments generally:

- ADP equipment including hardware, software and services (excepting for weapons and the like);

- furniture and fittings where the cost of single items or the overall cost of any discrete project exceeds the public tender threshold;
- cleaning; security and watchkeeping services; and
- common-use supplies on period contract (except where it is assessed that Defence/Defence Support requirements would account for 80 per cent or more of the supplies expected to be purchased under such contracts).

In respect of major contracts, contractual arrangements undertaken recently for the Department of Defence include:

- development and supply of three mine hunter weapons systems by Krupp Atlas Elektronik of FRG (\$13m);
- an acoustic sonobuoy for Project Barra (second production contract) to be supplied by Amalgamated Wireless Australia Ltd (\$54m);
- production of sonar arrays by Honeywell Inc. U.S.A. (\$U.S.11m);
- the production of instrumentation for sonar detecting devices for the Mulloka Sonar System by Electronics (\$16m);
- the design and development of the Basic Training Aircraft by the Australian Aircraft Consortium Pty Ltd (\$40m); and
- purchase from Lockheed Corporation of P3-C and trade-in of P3-B Orion aircraft (\$275m).

The Department's purchasing function is heavily committed to work associated with other important Defence contracts such as:

- WALER, a project to replace the Army's current range of Light Armoured Fighting Vehicles;
- RAVEN, a project to provide the Army with a single channel radio system and associated ancillaries;
- DISCON, a project to provide a secure multipurpose communications network, between major Defence establishments throughout Australia; and
- Minehunter Catamarans, a project to design, develop and build minehunter and disposal systems for the RAN.

In addition to the above, the Department is engaged in contractual administration of many projects including construction of Patrol Boats and the Fleet Underway Replenishment ship for navy.

Defence Research and Development

The Department's defence research and development laboratories, form the second largest research and development organisation in Australia with some 1,000 professional scientists and a total staff of about 4,400. There are nine laboratories in five States.

The work of the research establishments is aimed at meeting the needs of Australian defence, present and future, and to help the defence force take best advantage of modern technology.

There is considerable interaction between the Research and Development (R & D) establishments and the defence force and defence industry, who are their principal customers. A large number of companies are associated with this R & D effort, some having facilities adjoining that of the Defence Research Centre Salisbury including several major aerospace companies.

Despite the laboratories strong alignment with defence, their unique skills and facilities are available for non defence tasks where priorities permit. Functions of the laboratories are briefly described below.

Materials Research Laboratories, Maribyrnong, Vic.—Provides research and development support to the defence force and defence industry in fields including materials, munitions, organic chemistry and high energy lasers.

Materials Testing Laboratory, Alexandria, N.S.W.—Responsible for chemical and metallurgical testing of materials for defence and defence related purposes.

Armed Forces Food Science Establishment, Scottsdale, Tas.—Determines energy and nutrient requirements of defence force personnel and translates these to ration packs and mess feeding.

Joint Tropical Trials and Research Establishment, Innisfail, Qld.—Studies behaviour and degradation of materials in hot/wet environments as well as effects of marine immersion.

Aeronautical Research Laboratories, Fishermens Bend, Vic.—Undertakes research and development in areas of significance to defence and on specific projects particularly in the field of aeronautics.

RAN Research Laboratory, Edgecliff, N.S.W.—Undertakes research, operational and other studies in this fields of underwater acoustics, oceanography, sonar and mining.

Advanced Engineering Laboratory.—Responsible for engineering feasibility studies, design, development, manufacture and trials of systems and equipment in mechanical electronics and communications engineering fields.

Electronics Research Laboratory.—Responsible for research and development in radio, electronics, radar, infrared applications, optics, electro-optics, electronic warfare, surveillance and navigation.

Weapons Systems Research Laboratory.—Responsible for research and development related to systems aspects of weapons, aerballistics, underwater detection and rocket propulsion.

Defence Research Centre, Salisbury, S.A.—Comprises the Advanced Engineering, Electronics Research, and Weapons Systems Research Laboratories and provides for their administrative support. Provides general support services for the Defence Support Centre, Woomera.

Defence Support Centre, Woomera, S.A.—Provides an outdoor laboratory essential for weapon systems trials in support of research and development programs.

Production Facilities

The Department of Defence Support maintains and operates nine factories for the manufacture of munitions and other defence material, including military clothing, and two concerned with aircraft production. The munitions factories undertake work in the fields of light, heavy and chemical engineering.

As well as achieving progress in the development and production of munitions for Australia the factories have helped to broaden the country's industrial base. They develop and adopt new manufacturing technology and a diverse range of production equipment is used to develop new production processes and apply new techniques.

An extensive program of continued implementation of Computer Aided Design and Computer Aided Manufacturing (CAD/CAM) techniques within the factories has generated much interest in Australian industry.

Through the Department, the munitions factories have links with munitions manufacturers in the UK, Europe and North America. The Department also maintains contact with ASEAN countries on defence production matters and provides some training for their engineers. Functions of the facilities are briefly described below.

Small Arms Factory, Lithgow, N.S.W.—Manufactures small arms, weapons and kindred defence equipment.

Mulwala Explosives Factory, N.S.W.—Manufactures acids, nitro-cellulose and granular propellants.

Munitions Filling Factory, St Marys, N.S.W.—Assembles and fills artillery ammunition, bombs, depth charges, warheads, rockets, mines and pyrotechnic items.

Albion Explosives Factory, Vic.—Manufactures explosives and propellants, concentrates and mixes, nitric and sulphuric acids.

Australian Government Clothing Factory, Coburg, Vic.—Manufactures uniforms and other clothing for the defence services and other government departments.

Ordnance Factory, Bendigo, Vic.—Manufactures ordnance stores such as gun barrels, gun mountings, marine propulsion gearing, general gearing and general engineering items, and undertakes the modification and reconditioning of such stores.

Ammunition Factory, Footscray, Vic.—Manufactures small arms, medium calibre ammunition, cartridge cases, shell fuses, small munitions and undertakes fuse development.

Explosives Factory, Maribyrnong, Vic.—Produces rocket motors, gun propellants, explosive devices, special paint products and undertakes chemical and design.

Ordnance Factory, Maribyrnong, Vic.—Manufactures ordnance, pressure vessels, generators, heavy forgings, fabrications and test equipment.

Government Aircraft Factories, Fishermens Bend and Avalon, Vic.—GAF is Australia's main designer and producer of manned and unmanned aircraft and guided weapons. GAF depends significantly on exports of military equipment of its own design and on work resulting from the Government Offsets policy. GAF is a major subcontractor to McDonnell Douglas and Northrop on the F/A-18 tactical fighter and is a consortium member for the Basic Trainer Project.

Aircraft Engineering Workshop, Pooraka, S.A.—Performs a broad range of short run work on aircraft spares and ground support equipment as well as commercial work.

Non-Government Operated Aerospace Facilities—Hawker de Havilland Australia Pty Ltd operates its Bankstown, N.S.W., facility on land owned by the Commonwealth. In 1981-82 the company benefited from Government expenditure of almost \$5 million towards maintenance of its production

capability. Similarly, in 1981-82 the Government spent more than \$4 million to support maintenance of production capability, and invested more than \$1 million for machinery and plant at the Commonwealth Aircraft Corporation Ltd's facility at Fishermens Bend, Victoria.

Plant is also provided to the Aviation Division of Dunlop Olympic Ltd under an ongoing production agreement for the manufacture of defence components and spares and maintenance and overhaul of defence equipment.

Defence Dockyards

The Department of Defence Support manages the naval dockyards at Garden Island and Williamstown and is responsible for the Cockatoo Island Dockyard which is operated on behalf of the Commonwealth by Vickers Australia Pty Ltd.

These dockyards undertake:

- refitting;
- repair;
- modernisation; and
- construction of naval vessels.

Garden Island is principally concerned with refitting, repair and modification and is undergoing major modernisation to improve its ability in these areas and to create a fleetbase which is able to cope with the demands of modern naval vessels and systems.

In 1982 at Garden Island:

- HMAS *Curlew* and *Ibis* mine countermeasure ships, were refitting;
- HMAS *Kimbla*, oceanographic duties vessel, was refitting;
- HMAS *Jervis Bay*, training ship, was undergoing intermediate docking; and
- HMAS *Torrens*, destroyer escort, was on extended, intermediate docking.

Williamstown Dockyard, planned as the principal construction yard for destroyer size ships, is also being modernised with the view to the possible building there of FFG type vessels for the Royal Australian Navy.

At Williamstown in 1982:

- HMAS *Stuart* and *Derwent*, destroyer escorts, were on a modernisation program; and
- of four fuel/water lighters on order, two were undergoing trials and two were under construction.

All updates and modifications of submarines are carried out at Cockatoo Island and the new under-way replenishment ship, HMAS *Success* is under construction there. In 1982 the submarines HMAS *Ovens* and *Orion* were refitting there.