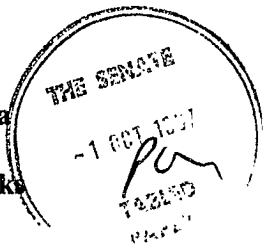
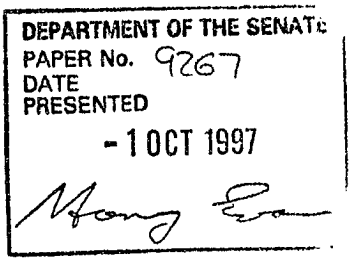
The Parliament of the Commonwealth of Australia

Parliamentary Standing Committee on Public Works





Report relating

to the proposed

Development of operational facilities at RAAF Base Learmonth, WA

(Ninth Report of 1997)

Parliamentary Standing Committee on Public Works

REPORT

relating to the proposed

DEVELOPMENT OF OPERATIONAL FACILITIES AT RAAF BASE LEARMONTH, WA

(Ninth Report of 1997)

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA
1997

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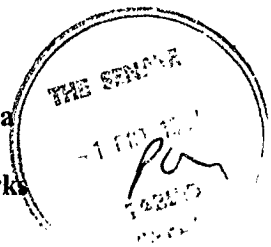

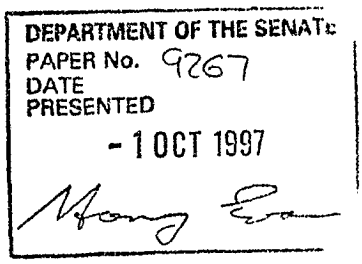

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MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

(Thirty-Second Committee)

Mr Wilson Tuckey MP (Chairman)[1]
Mr Colin Hollis MP (Vice-Chairman)

Senate	House of Representatives
Senator Paul Calvert	Mr Richard Evans MP
Senator Alan Ferguson	Mr John Forrest MP
Senator Shayne Murphy	Mr Ted Grace MP
	Mr Michael Hatton MP[2]

1 Replaced Mr Neil Andrew MP as Chairman on 4 September 1997
2 Replaced The Hon Michael Lee MP on 26 June 1996

Committee Secretary:	Bjarne Nordin
Inquiry Secretary:	Michael Fetter
Administrative Officer:	Lynette Sebo

EXTRACT FROM THE VOTES AND PROCEEDINGS OF THE HOUSE OF REPRESENTATIVES

No. 85 dated 15 May 1997

PUBLIC WORKS—PARLIAMENTARY STANDING COMMITTEE—REFERENCE OF WORKS—DEVELOPMENT OF OPERATIONAL FACILITIES, RAAF BASE LEARMONTH, WA.

Mr Jull (Minister for Administrative Services), pursuant to notice, moved—That, in accordance with the provisions of the *Public Works Committee Act 1969*, the following proposed works be referred to the Parliamentary Standing Committee on Public Works for consideration and report: Development of operational facilities at RAAF Base Learmonth, WA.

Question-put and passed.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

Development of operational facilities at RAAF Base Learmonth, Western Australia

On 15 May 1997, the House of Representatives referred to the Parliamentary Standing Committee on Public Works for consideration and report the proposed development of operational facilities at RAAF Base Learmonth, Western Australia.

THE REFERENCE

1. The terms of the reference were as follows:

> The Department of Defence proposes to construct new facilities to improve the operational effectiveness of RAAF Base Learmonth. RAAF Base Learmonth forms part of a chain of defensive airfields across northern Australia and is vital to the air defence of north-western Australia. Learmonth is a bare base under the command of Headquarters Air Command and is administered by No 321 Air Base Wing, based in Darwin.
>
> The primary function of the Base is to serve as a deployment base for combat aircraft in a contingency. The proposal will provide:
>
> - explosive ordnance loading aprons for fighter, strike and maritime patrol aircraft—one apron will double as an explosive ordnance apron for transport aircraft;
> - alert facilities for fighter aircraft;
> - operational and technical support facilities;
> - ordnance preparation facilities;
> - a central emergency power station;
> - rehabilitation of existing airfield pavements;
> - airfield lighting equipment; and

- airfield lighting, engineering services and civil works.

2. When referred to the Committee, the estimated out turn cost of the proposed work was $69 million.

THE COMMITTEE'S INVESTIGATION

3. The Committee received a written submission from the Department of Defence (Defence) and took evidence from Defence officials at a public hearing held at Exmouth on 30 June 1997. The Committee also received a written submission from Exmouth Shire Council and the Gascoyne Development Commission.

4. Prior to the public hearing, the Committee inspected existing facilities at RAAF Base Learmonth and the sites proposed for ordnance loading aprons, quick reaction alert facilities and the central emergency power station.

5. Witnesses who appeared before the Committee at the public hearing are listed in APPENDIX A. The Committee's proceedings will be printed as Minutes of Evidence.

BACKGROUND

Location

6. RAAF Base Learmonth is located on North West Cape, WA, 1235 kilometres north of Perth. The nearest township, Exmouth, is 35 kilometres north of the Base. The Base covers an area of approximately 2550 hectares and is situated on the coastal plain between Cape Range and Exmouth Gulf. The layout of the Base is shown in APPENDIX B.

Ownership and control

7. The Base is owned by the Commonwealth, and is under Defence control. Exmouth Shire Council operates civil aviation facilities which occupy a leased area on the eastern side of the main runway.

History

8. RAAF Base Learmonth was formally established in 1943, to support RAAF operations on North West Cape and was also used to support the nearby United States Navy submarine support base, *Pot Shot*. Wartime facilities were largely destroyed in February 1945, when a severe cyclone struck the region.

After the Second World War, the airfield was used primarily by civil aviation operators.

9. The airfield was reconstructed in the early 1970s, by No 5 Airfield Construction Squadron to provide a bare base from which strike, maritime, fighter and transport operations could be conducted. The works included:

- extending and strengthening the 18/36 runway;
- providing a taxiway system comprising the main parallel taxiway (Taxiway A), stub taxiways (B and C) and highspeed taxiways (E and F);
- alert aprons at both ends of the main runway; and
- aircraft parking hardstands, supporting infrastructure and the upgrade and development of a base camp area.

10. Additional work was undertaken at the Base in the early 1980s to provide:

- aviation fuel storage; and
- explosive ordnance and flight line operational facilities for deployed squadrons.

11. Apart from these works, the Base has only been subject to ongoing maintenance works commensurate with its role as a bare base for deployed RAAF operations.

12. The Base has been fenced off from the surrounding countryside for many years. Feral and domestic grazing animals have been excluded and from the air, it is possible to see that the condition of vegetation within the Base boundary is considerably better than outside the boundary.

13. The Base is surrounded by levee banks which divert sheet flow from the west and provide protection against tidal inundation from the east as a consequence of cyclones.

14. The Base continues to be used by the RAAF and foreign services as a major exercise and training base.

Climate

15. The climate of the region is characterised by dry sub-tropical summer conditions, with some monsoonal effects, such as tropical cyclones and high temperatures. The area has an average mean rainfall of 267.2 mm, primarily occurring between January and March and May and June. The hottest months are from December to March, with maximum daily temperatures averaging 37.5 degrees Celsius. The coldest month is July, with an average maximum of 24.1 degrees Celsius.

THE NEED

Role of RAAF Base Learmonth

16. RAAF Base Learmonth is a bare base under the command of Headquarters Air Command. No. 321 Air Base Wing, based in Darwin, is responsible for the day to day administration and maintenance of the airfield.

17. The primary function of the Base is to serve for deployment of combat aircraft during a contingency. The location of the Base, at the south-western edge of the Pilbara, allows it to be used for the air defence of the economically important Pilbara region and North-West Shelf gas and oilfields. Learmonth's location provides maritime aircraft with access to the Indian Ocean and allows the Base to support operations to the Cocos (Keeling) and Christmas Islands.

18. The Committee questioned Defence about the suitability of the location of the Base. Defence advised that the location was examined by higher Defence committees. The Base was developed before the development of RAAF Bases Scherger and Curtin and the location of these bases was influenced by the existence of Learmonth. Defence also advised that RAAF Base Curtin and Learmonth complement each other in providing locations from which assets in the Indian Ocean and their respective hinterland can be protected.

19. The Committee also questioned Defence about the reasons behind the decision to maintain Learmonth as a bare base. Defence advised that the Base was manned until 1973 and that the decision to maintain Learmonth as a bare base was made mainly for economic reasons.

20. RAAF Base Learmonth also serves as the major civil aviation facility in the North West Cape area. Civil aviation operators conduct daily regular passenger transport operations and the airfield is designated as an international alternate to Perth Airport.

Defence policy

21. *The Defence of Australia* (1987) outlined the Government's defence policy for Australia and became the basis for future defence planning. The policy placed emphasis on the development of defence infrastructure in the north. *Defending Australia* (1994) also adopted this policy. The present Government has emphasised the need for Australia's continued defence self sufficiency and enhanced operational effectiveness, including defence of Australia's northern approaches. Defence advised that the strategic review will strengthen the need for the redevelopment of the Base.

Deficiencies in facilities available identified

22. Defence advised the Committee that an examination of the operational capabilities required in the context of its functions, revealed the existence of a number of deficiencies in facilities. These deficiencies have impacted on the ability of the Base to perform its roles in a safe and flexible manner. In summary, Defence believes there is a need to upgrade, replace or undertake new construction of a number of operational facilities. Specific shortcomings and requirements are summarised below.

Ordnance Loading Aprons (OLAs)

23. Fighter and strike aircraft are deployed to RAAF Base Learmonth for operational training. At present, the OLAs and Explosive Ordnance Aprons (EOAs) are located on the taxiway parallel to the main runway and aircraft parking areas. These areas are not traversed and, in general, their capacity for explosive ordnance operations is hampered by the proximity of the existing flight line and operational and technical facility at the northern end of the airfield and by adjacent aircraft aprons. It is also tactically unsound to have concentrated in-line parking of strike and fighter aircraft. The provision of dispersed, purpose designed fighter/strike OLAs would overcome these operational deficiencies.

OLAs for maritime and transport operations

24. Maritime patrol aircraft (P3C Orion) will be tasked to operate from RAAF Base Learmonth during various exercise, contingency and search and rescue situations to the north and north-west of Australia. Transport aircraft will be tasked to transport explosive ordnance to RAAF Base Learmonth in support of operational peacetime training and contingency operations. OLAs and EOAs are required to support these activities.

25. There are currently no suitable facilities on the Base where loading activities can take place without compromising other operational activities or civil aviation operations. At present, explosive ordnance loading and unloading is undertaken on unprotected points along taxiways, making the taxiways unavailable for use by other aircraft.

26. The provision of dispersed maritime OLAs and transport EOAs would overcome the deficiency and allow for the loading and unloading of relevant munitions in accordance with NATO Principles for the Storage and Transportation of Ammunition and Explosives and the Defence Explosives Safety Manual (OPSMAN3).

Quick Reaction Alert Facilities (QRAF)

27. Defence advised that for operational reasons, fighter aircraft on short notice air defence alert are required to be armed and positioned near the threshold of the main operational runway. Assessments undertaken by Defence indicate that at Learmonth, four fighter aircraft would need to be kept on short notice alert. There are currently no QRAFs or similar facilities at RAAF Base Learmonth.

28. QRAFs comprise facilities which enable short notice alerts to be supported for extended periods. The facilities provide aircraft, aircrew and support personnel with shelter during extended alert periods. For operational reasons, QRAFs should be connected to the Base communications and engineering services.

Operational and technical facilities for maritime operations

29. Defence advised that operations and technical facilities are required to support maritime operations from RAAF Base Learmonth. Deployed squadrons require a secure and protected facility from which operations can be co-ordinated and managed. The facility must allow secure mission planning, preparation and briefing, and management of administrative and maintenance activities.

30. Defence proposed to use existing operations and technical facilities to support future maritime patrol deployments to the Base. Deployed aircraft will operate from the adjacent northern apron and the four proposed additional P3 OLAs. The operational and technical facility is close to the aprons and therefore requires structural upgrading and revetting to provide blast protection. The existing communications and engineering services to the operations and technical facility will also require upgrading.

Operational and technical facility for fighter and strike operations

31. A similar requirement exists for secure facilities to permit the coordination and management of operations for deployed fighter and strike squadrons. Functional requirements include the provision of secure facilities for planning, preparation and briefing and the management of administrative and maintenance activities.

32. Defence advised that the existing operations and technical facility, located near the northern aprons, is too small to support simultaneous maritime, fighter and strike operations and is too remote from areas designated for fighter/strike OLAs to adequately support deployed fighter and strike squadrons. Defence believes that for these reasons a new facility is required to support fighter and strike squadrons and should be located near the site designated for fighter and strike OLAs.

Explosive ordnance preparation facilities

33. Explosive ordnance preparation facilities are required near the site designated for OLAs. The facilities are required to enable the safe and efficient preparation and handling of explosive ordnance. Functionally, the facilities include requirements for:

- bomb preparation;
- combined ammunition and missile preparation; and
- preload.

Central Emergency Power Station (CEPS)

34. RAAF Base Learmonth has one 33/11 kV incoming supply from the local supply authority—Western Power. The Base is also equipped with a CEPS which provides emergency power during loss of mains supply. Emergency power is also currently made available to the Department of Administrative Services/United States Air Force Solar Observatory located adjacent to the Base and to the civil aviation facilities.

35. To ensure efficient integration of existing aircraft pavements and any new OLAs, the existing CEPS will require relocation. Defence advised that replacement of the existing CEPS facility with a new facility is necessary to ensure that the Base can remain operational in the event of a failure of the external power supply.

36. The new CEPS will be used to meet emergency power loads and sited in accordance with the Master Plan for the Base.

Rehabilitation of airfield pavements

37. The airfield pavements were constructed by No 5 Airfield Construction Squadron in the early 1970s. Defence advised that the pavements have received periodic holding maintenance treatments. Defence submitted that the pavements now need to be rehabilitated by providing a bituminous concrete overlay. This form of treatment is normally necessary at between ten and fifteen year intervals. In the case of Learmonth, however, there has not been an overlay since the pavement was constructed in the early 1970s. Defence advised that the extended life of the surface was achieved through the judicious use of minor maintenance treatments.

Airfield lighting equipment and lighting

38. The airfield lighting equipment is controlled through two Airfield Lighting Equipment Rooms (ALERs). A stand alone ALER is located at the northern end of the airfield and the other is housed in the existing CEPS building. The stand alone ALER is to be maintained in its current location. Defence advised that this facility will require upgrading. The relocation of the CEPs will necessitate the provision of a new ALER which should be located at the southern end of the runway. This location would provide a balance of loads between the two ALERs and provide a level of redundancy in the event of a failure in one of the ALERs.

39. Defence advised that the airfield lighting equipment itself is aged and does not meet contemporary operational requirements. Defence therefore believes that to retain consistency between the existing ALER and any new ALER at the southern end of the airfield, would require the provision of new airfield lighting equipment for both ALERs.

40. According to Defence, the cables and lights which provide airfield lighting have reached their life expectancy. Fittings are no longer suitable for operations and require replacement with modern lights and cables. Defence also advised that the cables and lights would need to be removed to allow for any pavement rehabilitation works undertaken.

Engineering services and civil works

41. For operational and safety reasons, the sites for any new OLAs/EOAs would need to be in areas that are currently traversed by the main Base access road and a number of engineering services. Consequently, a new access road would need to be provided and electrical and communication reticulation systems would need to be relocated. Any new facilities required will exceed the capacity of existing electrical and communications systems. Defence believes that there is consequently a need for the following work to be undertaken to engineering services:

- upgrade the intake substation;
- rationalise the high voltage ring main system;
- upgrade the communications infrastructure to cater for telecommunications, data, fire, security and airfield lighting controls; and
- upgrade the electrical reticulation control system.

42. Any new fighter/strike OLAs to be provided would also encroach on existing facilities for helicopter operations and the site of a deployed military, mobile air traffic control tower. It would therefore be necessary to construct a new helipad to support operations by a single helicopter and to prepare a new site for the deployed air traffic control tower. The latter requires a hardstand area and connections to the Base power and communications systems.

Committee's Conclusions

43. RAAF Base Learmonth is a bare base which forms part of a chain of defensive airfields across northern Australia, whose primary function is to serve as a deployment base for aircraft in a contingency.

44. The Base was developed during the early 1970s and 1980s and no further development or major maintenance work has occurred since.

45. In the context of the primary function of RAAF Base Learmonth, the Department of Defence undertook an examination of operational facilities required which revealed a number of deficiencies and shortcomings.

46. There is a need for operational facilities at RAAF Base Learmonth to be upgraded to bring them into line with requirements designed to enhance its capabilities for the deployment of fighter, strike and maritime aircraft in a safe and flexible manner.

THE PROPOSAL

Ordnance Loading Aprons

47. Defence advised that 10 OLAs are required, designed to accommodate F/A18 or F111 aircraft and to allow for taxi through operations. The design of the proposed complex will be similar to that adopted for the latest aircraft OLA complexes at RAAF Bases Tindal and Scherger.

48. Shelters for each aircraft apron will be designed to accommodate two fighter-sized aircraft parked side by side in a staggered arrangement with unfolded wings or one strike sized aircraft with its wings extended.

49. The shelters will be designed to provide environmental protection to the aircraft. They will be open ended but designed to allow for the future provision of doors, although one shelter will have doors installed to provide environmental protection for aircraft under maintenance.

50. The shelters will be of steel frame, metal clad construction. Engineering services within the shelters will include lighting, 50 Hertz and 400 Hertz power supplies, fire points and communication cables for tele-briefing, closed-circuit television and voice communications. Aircraft earthing points will also be provided in the shelters.

51. Earth embankment interceptor traverses will be provided at each apron within the OLAs. These will be designed to protect facilities within the complex against accidental detonation of explosive ordnance whilst aircraft are parked on the apron. Sizing of the traverses will be in accordance with explosive ordnance safety criteria. The earth traverses will be provided with protection from erosion by grass or a bituminous seal.

52. Gun misfire barriers will be provided at the front of aircraft parking positions to protect against inadvertent misfires of forward-firing ordnance. Sizing of the gun misfire barriers will be in accordance with Defence explosive ordnance safety criteria.

53. Aircraft access and exit taxiways will be provided. Roads to facilitate the movement of ground support and service vehicles to and within the OLAs will be provided as required.

54. An office, a toilet and a room for a frequency converter will be provided at each facility. The shelter will be of steel framed metal clad construction. Noise attenuation will be provided to the office area by wall, ceiling and floor insulation together with acoustic seals on doors and sealing of all penetrations. All windows will be double-glazed and the room will be airconditioned. The converter room and toilet will be mechanically ventilated.

55. Communication links will be provided between each acoustic shelter and the operational and technical support facility.

56. Associated infrastructure and services including airfield lighting, drainage, stormwater pollution control measures and electrical reticulation will be provided.

OLAs for maritime and transport operations

57. Four new OLAs will be provided. Each will be designed to accommodate one P3C aircraft. One of the OLAs will be designed as a combined OLA/EOA for the loading or unloading of C130 aircraft. The design will make allowance for future extension of the facility to accommodate additional OLAs. The OLAs will allow for taxi through operations and aircraft access and exit taxiways will be provided. Aircraft pavements will be designed in accordance with their projected usage by P3C and C130 aircraft. Taxiways will have a nominal width of 15 metres. Shoulders will be three metres wide and constructed as flexible pavements surfaced with bituminous concrete. Aprons will be of rigid pavement construction.

58. Vehicular access will be provided to the OLAs for refuelling by tanker and to enable the transportation of explosive ordnance by armament trailers.

59. Facilities to be provided for personnel will be similar to those provided in the design of OLAs. Offices areas will be designed to accommodate twelve personnel..

60. Associated infrastructure and services will be similar to that proposed for the OLAs.

Quick Reaction Alert Facility

61. Two aircraft shelters are required for the QRAF. Aircraft shelters will be designed to accommodate either one F111 or two F/A18 aircraft parked side by side. The shelters will be open ended but be designed to allow doors to be fitted in the future. The shelters will be of steel frame, metal clad construction. Services within the shelters will include lighting for general illumination, 50 Hz and 400 Hz power supplies, fire points, and communications cables for tele-briefing, CCTV and voice communications. Earthing points will also be provided within each shelter.

62. A ready room is required to accommodate four pilots, eight ground crew and two ground crew supervisors. The ready room will be of steel frame, metal clad construction. Noise attenuation will be provided to the occupied areas by wall, ceiling and floor insulation together with acoustic seals on doors and sealing of all penetrations. All windows will be double glazed and the room will be airconditioned. The toilet will be mechanically ventilated. Communications links will incorporate landlines for an aircraft scramble alarm and for telephones and faxes. A CCTV system will allow activities in and around the shelters to be monitored.

63. Aircraft pavements will be designed for continuous operations by fighter and strike aircraft at maximum all-up weight. Taxiways will have a nominal width of nine metres and be constructed as flexible pavements. Aprons will be of rigid pavement construction.

64. Road pavements will be designed for traffic by heavy vehicles such as fully laden fuel tankers and fire tenders.

65. Earth embankment interceptor traverses will be provided at the sides of each shelter. The size of the traverses will accord with Defence explosive ordnance safety criteria. The earth traverses will be provided with erosion protection in the form of grassing or a bituminous seal.

66. Airfield lighting will be provided to all pavements in the proposed facility.

Operational and technical facilities for maritime operations

67. The proposed upgrade works to the existing operations and technical facility will include structural upgrading and protection. A detailed structural assessment of the existing operations and technical building will determine the actual structural upgrading required. In addition, earth traversing is required to

protect the operations and technical facility against blast, debris and fragments. Some internal partitioning will be necessary to improve the functional layout of the facility.

Operational and technical facilities for fighter and strike operations

68. The proposed works include construction of a new operations and technical facility and associated support facilities. A squadron operations facility and a technical maintenance facility will be provided. Both will be of concrete arch construction with permanent steel lost formwork lining and concrete/earth cover. Entrances will be designed with revetted angular entrances and the footings provided will be stiffened to support a possible future hardened structure.

69. Each facility will be designed for blast protection including blast doors and blast valves and protection of sensitive equipment to dampen shock. Ducted airconditioning will be provided to all occupied rooms and mechanical ventilation will be provided to the toilet areas.

70. The following additional facilities will be provided:

- a facility to shelter the 'fly away kit', which is used to support squadron operations. This facility is to be a steel framed metal clad building on a concrete slab. The building will be sized to allow access to forklifts. Electrical power, lighting and fire detection will also be provided;
- a ground support equipment shelter comprising a metal clad carport style structure with a concrete floor. Electrical power and lighting will be included;
- a concrete slab with engineering services to support two deployed photographic cabins. Toxic waste generated by the two cabins will be stored in two 5,000 litre holding tanks, which will have a high tank level warning system;
- a liquid dry breathing oxygen (LDBO) compound. This will be a metal clad carport style structure, with a concrete floor enclosed within a security fence. LDBO supplies would be provided from portable tanks that will be stored in the LDBO; and

- engineering services—including communications, electrical, lighting, fire detection and protection, and water supply and sewerage systems.

Explosive ordnance preparation facilities

71. The proposed explosive ordnance preparation facilities will include buildings for the preparation of bombs, ammunition and missiles and a preload facility for the temporary storage of prepared explosive ordnance. Buildings will be of low maintenance slab-on-ground type construction. Each of the buildings will have light, frangible construction and have suitable traversing in accordance with explosive ordnance safety requirements.

72. The bomb preparation, combined ammunition and missile preparation and preload facilities will be designed to be driven through by vehicles. The buildings will be provided with lightning protection. Electrostatic protection and vehicle earthing points will also be provided. Personnel earthing touch plates and antistatic flooring will also be provided.

73. Gantry cranes are required in bomb and combined ammunition and missile preparation buildings and will be power operated in both horizontal axes. These facilities also require compressed air outlets.

74. Sealed access roads will be provided to connect the storage area, preparation area and the OLAs.

Central Emergency Power Station

75. It is proposed to construct a new CEPS building which will be an above ground earth covered structure with the following features:

- control room—airconditioned and acoustic treatment;
- high voltage switchroom;
- generator hall;
- 25 square metre workshop area;
- air chamber allowing mixing of exhaust, radiator and ventilation air prior to leaving the building;
- separate step up transformer enclosures;
- oil store for oils, lubricants and mechanical components; and

- ablution, shower and change room facilities.

76. Control and monitoring equipment to allow for the manual operation of individual generators will be provided.

77. A local emergency generator monitoring and control panel and a high voltage mimic panel will also be provided.

Rehabilitation of aircraft pavements

78. Existing flexible aircraft pavements at RAAF Base Learmonth will have a bituminous concrete overlay, with the exception of the civil apron. The pavements included are the 18/36 runway, the main parallel taxiway, all connecting taxiways and all associated shoulders.

Airfield lighting equipment

79. It is proposed to replace the existing airfield lighting equipment in the CEPS building with a new ALER building to be constructed at the southern end of the runway. The building is required to provide environmental protection to all equipment associated with the airport lighting supply and control system. The building will be of steel arch construction and allow for an earth cover to be provided at a later date. The airfield lighting equipment within the existing ALER at the northern end of the airfield will be replaced.

80. The airfield lighting circuits are to be divided between the two ALERs and new feeder cables will be installed to connect the lighting field circuits to nominated ALERs. A new airfield lighting control system will be provided.

81. Defence advised that all existing airfield lighting equipment has reached the end of its life and will be replaced. New airfield lighting will be installed in pavements associated with new OLAs, EOAs, the QRAF and rehabilitated pavement.

82. Establishment of airfield lighting remote controls from the new mobile air traffic control tower hardstand area will be included.

Engineering services and civil works

83. The scope of electrical and engineering services to be undertaken is as follows:

- upgrading of the existing intake substation—this includes the replacing or extension of the existing HV switchboard;

- rationalisation of existing HV rings to provide an interconnector and three rings and the installation of six new substations;
- installation of a communications network and data communications equipment; and
- installation of a new Base fire indicator panel or signal concentrator.

84. A new hardstand area is proposed for a mobile air traffic control tower and for the deployment of Base fire services, including fire tenders and personnel. This area will consist of a concrete pad with full access to the Base communications and electrical reticulation systems. The mobile air traffic control tower will be deployed to the Base, as required.

85. It is proposed to provide a new Base entrance and access road. The road will consist of a two lane, two way sealed pavement and will provide direct access to the Base camp from the main road.

86. A drainage system, to accommodate both the existing Base infrastructure and the proposed redevelopment will be installed. The design of the system will include the provision of pollution control and spill containment features.

87. Rejuvenation of all disturbed areas within the airfield will be undertaken, using topsoil, where necessary and revegetation with native grasses.

Use of Base following completion of work

88. The Committee questioned Defence about the use of the Base for exercises. Defence advised that it anticipates the Base will be used continuously on a limited scale, with deployments from mainly the RAAF and the Army. The Base will be activated for major exercises once every three years.

Security

89. The Committee also questioned Defence about the level of security to be maintained at the Base. Defence advised that the RAAF has a number of bare bases and if there is a requirement for additional security, this will be examined. The current threat assessment indicates that there is no requirement to apply additional specific security resources. Local security is covered by caretaker personnel and standard defensive measures such as fences. During exercises, security personnel will form a part of the deployed personnel.

PLANNING AND DESIGN

Master Plan

90. A revised Master Plan for RAAF Base Learmonth was recently produced by Defence. Defence advised the Committee that the siting of the proposed facilities accords with the Master Plan.

Design standards

91. Where appropriate, the design of new facilities conforms to the relevant sections of:

- the Building Code of Australia (BCA);
- Western Australia Building Act;
- relevant current Australian Standards and Codes;
- the Defence Fire Protection Engineering Manual (FACMAN 2);
- the Defence Security Manual (SECMAN);
- the Occupational Health, Safety and Welfare Act;
- the International Civil Aviation Organisation Air Traffic Services Planning Manual;
- the Defence Aerodrome Design Criteria (ADFP602);
- the Defence Explosives Safety Manual (OPSMAN 3); and
- the Manual of NATO Safety Principles for Storage of Military Ammunition and Explosives.

Design principles

92. The following design principles have been adopted:

- austere, and utilitarian facilities suitable for the rigours of the climate;
- maximum use of existing infrastructure to minimise capital costs;

- adoption, where possible, of conventional construction techniques and materials; and
- use of readily available and durable materials which combine long life with minimum maintenance.

Fire protection

93. All construction and fire protection requirements will, as a minimum, be in accordance with the provisions of the BCA, FACMAN 2 and all other applicable Codes and Standards.

94. Defence will require certification from a suitably qualified certifier, that design and construction meets the requirements of the BCA, FACMAN 2, relevant Codes and Standards and any additional State, Local Government and Defence requirements.

95. Any recommended departures from BCA requirements in relation to the project will be technically assessed by Defence specialist fire protection staff. Agreed departures ensuring an equivalent or higher level of protection than BCA requirements, will require written approval at Director General level.

96. Successful tenderers will be required to produce a Quality Assurance Plan to clearly show how BCA, Australian Standards and any additional Defence requirements in relation to fire protection/fire safety will be met and the required standards for construction and installation maintained.

Energy management and lighting

97. The design of all power supply, electrical and mechanical equipment will include an assessment of energy use applying life cycle costing techniques and power demand analysis. Facilities will incorporate building management systems, metering and other provisions to measure and monitor energy use and to allow regular energy audits.

98. Photoelectric switches and time-switch schedules will control lighting to reduce energy consumption where practicable. In addition, the provision of sensor-controlled lighting to amenities and other intermittently occupied areas will be provided. Lamps will be high efficiency fluorescent, compact fluorescent or discharge type. External lighting will be designed to minimise glare and colour distortion. Solar hot water systems will be used where practical.

Committee's Conclusion

99. The extent of the proposed development represents a substantial upgrading, required to enable the Base to support aircraft operations in a safe and flexible manner at levels required by the Department of Defence and can therefore be justified.

REACTION FROM LOCAL GOVERNMENT AUTHORITIES

Gascoyne Development Commission

100. The Gascoyne Development Commission (GDC) strongly supported the proposal. Construction activity will boost local business and a comprehensive directory of businesses located in Exmouth and the wider Gascoyne region has been prepared to demonstrate the availability of local resources.

101. The GDC pointed to the diversity of tourist attractions in the Exmouth area and that the development of the tourism industry has been identified as a high priority in the future economic development of the region. With this objective, funds obtained from the sale of United States Navy houses in Exmouth have been invested in a number of tourism developments. These include Exmouth Boat Harbour and associated canal/resort development. Construction of an international terminal, adjacent to the civil terminal, is also planned with a fully developed design and documentation package having been completed.

102. The GDC believes RAAF Base Learmonth, with its extensive aircraft pavements and the civil terminal, are important in the future development and expansion of tourism and other significant industries in the area. The basis of the proposed construction of an international terminal includes the following:

- Learmonth has been identified by State tourism and transport authorities as having a key role in the development of future air links in the north-west of Australia;
- successful charter links to the region by Singapore Airlines operated in 1994 and 1995 but were discontinued due to the lack of appropriate terminal facilities;
- Learmonth is the closest point on the Australian coastline to Singapore and on the direct flightpath of services to and from Asia;

- Exmouth features high in locations with potential to be developed for pilot training; and
- Learmonth is an alternate to Perth.

Shire of Exmouth

103. The Shire supports in principle the proposed development, for the following reasons:

- Learmonth is an integral component of the Defence network;
- the past and future development of Exmouth is greatly dependent on the Base being maintained to the highest level; and
- there is likely to be direct monetary gain to the local business community from the project.

Issues raised

104. Whilst supporting the proposed development, both the GDC and the Shire raised a number of matters which are believed to have an impact on the potential of the civilian area to be developed and on the capacity of the runway to support unconstrained civil operations. The Shire was given a long term lease from the Commonwealth in 1993, for the management of civil operations on the eastern side of the Base. The civil facilities are used by Regular Public Transport operators, charter operators and on an 'as required' basis by international airlines.

105. The Shire sought the following assurances from Defence:

- that the proposed modifications to intake power supply and the construction of the CEPS will not affect previously agreed power distribution and supply arrangements to the civil side;
- that the proposed bituminous concrete overlay will extend to the civil leased property boundary and will be of sufficient strength to at least the level of the previously published strength rating;
- that the proposed airfield lighting refurbishment will extend to and include light fittings leading to Taxiway W; and
- that the proposed rationalisation of the High Voltage cabling extend from the relocation of substation 4 to a location outside the civil area and the upgrade of airfield lighting control include

the installation of a VHF Pilot Activated Lighting System (PALS).

Power supply

106. Power, including emergency power, is currently provided to the civil area from the RAAF distribution system on a user pays basis.

107. Defence advised the Committee that when works on the fighter and strike OLAs commence, the existing CEPS will need to be removed. As a consequence, Defence advised, no emergency power will be available for any users during construction. To overcome this problem, Defence proposes to develop administrative arrangements with the Shire for the provision of services to ensure that requirements are met during the construction period.

108. When the new CEPS is completed, Defence will not be able to guarantee the availability of emergency power to other users, including the civil terminal. If demand for emergency power from other users exceeds capacity, Defence will be required, for operational reasons, to undertake load shedding. Defence advised that other users will therefore need to make judgements about the acceptability of load shedding or make their own arrangements for emergency power. Defence is not a utility supplier in the commercial sense and cannot offer continual supply, nor is it in a position to pay for the upgrading of electrical systems to meet the requirements of other users.

109. Defence believes, therefore, that the stance adopted is consistent with the relevant clauses in the lease between the Commonwealth and the Shire.

Pavement

110. The Shire advised the Committee that the current strength of the pavement was downgraded in the 27 March 1997 edition of Enroute Supplement—Australia, from a Pavement Classification Number (PCN) of 50 to 39. Defence advised the Committee that the downgrading of the PCN from 50 to 39 was a consequence of Defence efforts to align the PCN with the RAAF classification system. The Shire submitted that the reduction has altered the use of the runway for aircraft larger than B737 size. The Shire therefore requested that the previous PCN be restored.

111. The Committee understands that after the public hearing, Defence advised the Shire that following a consultant's review of the pavement classification from first principles, the PCN of 39 was found to be appropriate for the existing pavements. Upon completion of the overlay, comprising a

nominal thickness of 50 mm of bituminous concrete, the PCN will be rated at 50. The pavement overlay is expected to be undertaken in 1999. In the meantime, the change in the published PCN may affect the maximum weight for continuous operation of some aircraft.

112. The threshold at which a concession is required from Defence for aircraft to operate is now lower. However, the Shire would prefer operators not being required to apply for pavement concessions. Defence advised the Committee that any requirement to increase pavement strengths for Defence purposes would be funded by Defence. Conversely, an upgrade above the Defence requirement would need to be funded by the joint user.

113. Defence was prepared to enter into further discussions with the Shire on this matter.

114. The scheduling of works may preclude completion of the overlay until 1999. The Committee believes, nevertheless, that every effort should be made to advance completion of the overlay before the planned target date in order to restore the PCN to its previous classification.

Taxiway W

115. Defence advised that Taxiway W is located outside the area leased by the Shire but is not required by Defence. Defence indicated that under normal joint user arrangements, the maintenance costs of such assets, including light fittings leading into Taxiway W, are the civil operator's responsibility.

Relocation of substations and PALS

116. Defence advised that electrical power to the civil terminal is drawn from substation 5, a spur fed from substation 4. Both substations are within the Shire's lease area. The Shire regards the location of the substations as being an impedient to possible future apron and terminal development. Defence has no requirement to relocate the substations. They would only need to be relocated in the event of major developments in the civil area. Defence therefore regards any relocation costs as a legitimate charge to developers of the civil area.

117. The proposed works will include the provision of a new airfield lighting management system. Defence has no requirement for a PALS at Learmonth. If a PALS system is required by the airport operator or commercial users of the airfield, it would need to be provided at their cost.

Committee's Recommendation

118. The Department of Defence should enter into further discussions with the Shire of Exmouth about the practicalities of upgrading the Pavement Classification Number of the runway.

ENVIRONMENT AND HERITAGE

Environmental impact assessment

119. Defence advised that a draft environmental assessment report, which examined the environmental impact of the proposed development, was prepared. The environmental impact assessment addressed the following:

- heritage listing;
- geology and geomorphology;
- surface water;
- groundwater;
- vegetation and flora;
- fauna (terrestrial, bird and cave dwelling); and
- Aboriginal and European heritage.

120. The report concluded that the proposed facilities would not affect the environment to a significant extent, provided that management methods are established and implemented during construction to control any possible effects on the groundwater in the area.

Heritage listing

121. The nearby Cape Range National Park and the Ningaloo Reef Marine Park are listed on the Register of National Estate. Defence advised the Committee that the subterranean area of Cape Range and adjacent coastal plain, which includes a substantial part of the RAAF Base Learmonth, has recently achieved Interim Listing on the Register of the National Estate. The listing relates to the karst formations and the associated cave fauna.

Geology and geomorphology

122. The geomorphology of the North West Cape coastline area, which includes the Base, does not contain any exceptional features. Limestone caves have some significance mostly as habitat for rare cave fauna. Defence consider it unlikely that the proposed works would have any detrimental effects on the surrounding terrain.

123. Landforms and soils in the area have already undergone significant change due to the existence of the Base and extensive grazing and it is considered unlikely that the proposed developments would have any further significant effects.

Surface water

124. The only surface water feature on the Base is a shallow creek line, which supports a narrow strip of trees and relatively dense vegetation. Impacts on the creek line and sheet flow will be minimised by appropriate design and construction methods. The levee bank around the Base redirects sheet flow originating from Cape Range.

Groundwater

125. A large aquifer is recharged by rainfall infiltration and runoff. The low average rainfall in the area results in a similarly low recharge rate. Defence advised that pump tests have been undertaken to determine safe yield from the aquifer. The Committee was assured that the extraction rate of water during construction will be regulated to prevent deterioration of the groundwater resource.

Vegetation

126. A vegetation survey and assessment was undertaken. Defence advised that the biota of the area is unexceptional. Almost all plants are common and widespread throughout the Pilbara and Gascoyne regions. The vegetation on the Base is in better condition than the surrounding vegetation due to the exclusion of feral and domestic grazing animals. The Committee confirmed this during the site inspection.

127. The existence on North West Cape of a number of rare, scarce and endemic plants is known. Defence advised that field work associated with the vegetation survey did not reveal their existence on the Base. The vegetation on the Base is homogeneous over a wide area and Defence considers that there is

little likelihood of damage to any rare plant communities from the proposed works.

Fauna

128. Surface dwelling fauna in the area are mostly widespread and common. The fauna habitat assessment indicated that there are no outstanding habitat features in this area.

129. It was initially thought that caves might exist within the Base, which could contain several species of rare cave fauna. As part of the hydrogeological study of the capacity of existing bores on the Base, Defence, in association with the WA Museum, conducted a search for any rare fauna that might be present in the aquifer. No entrances into cave systems were found during the survey, and initial results from the hydrogeological study indicate that the species of rare cave fauna are not present in the area.

Aboriginal heritage

130. A survey of the area showed no evidence of significant sites. Evidence of Aboriginal occupation was restricted to fragments of marine shell material. Defence considers it unlikely that any further evidence will be located.

131. An ethnographic survey was also conducted in conjunction with the senior Aboriginal custodian for the Learmonth area. This survey concluded that the area is clear of any sites of contemporary cultural significance, and that the proposed development would not interfere with sites of importance to the Aboriginal custodians of the area.

132. A search of the Register of Native Title Claims and the National Native Title Register indicated that no applications for the determination of Native Title have been lodged in relation to land in this area.

European heritage

133. The site was also assessed for evidence of European heritage. It was found that there were no known European heritage sites which would be affected by this project.

134. The Defence Heritage Committee of the National Trust of Australia (WA) suggested that a re-inspection of the Base by people with expertise in defence heritage be undertaken. Defence advised that the Base is recognised a having heritage importance arising from its role during the Second World War. Defence believes it would be appropriate for the recording of the heritage to be

undertaken as part of the study of Second World War defence sites in Australia, currently being undertaken by the Australian Heritage Commission. Defence advised that arrangements could be made for heritage specialists to visit Learmonth if required.

Australian Heritage Commission

135. The Australian Heritage Commission indicated to the Committee that the proposed construction work presents no significant threat to the karst systems and typical fauna of the region. This is because the Base is located beyond the limits of the karst area and there are no known caves or rare species in its immediate vicinity.

136. The Commission did, however, express concern at the possible detrimental effects of routine activities which may involve the runoff of liquids into the subterranean systems of the area. Bores to the west of the Base are directly linked to the aquifer associated with karst. The Commission therefore sought assurances that practices will be designed to avoid the introduction of chemicals, detergents, fuel, sewage or saltwater into subterranean systems.

Environment Australia—Environment Protection Group (EPG)

137. The EPG sought similar assurances that any losses of liquids from tanks, pipelines, connections or valves will be detected promptly to avoid contamination of ground or surface water. EPG also suggested that an audit of older electrical equipment be undertaken to identify any containing polychlorinated biphenyls. If such equipment is discovered, it should be labelled accordingly and provision made for its eventual decommissioning and safe storage and disposal in accordance with the PCB Management Plan being implemented by the Commonwealth.

Environment Australia—Biodiversity Group (BG)

138. The BG advised that based on the information presented by Defence to the Committee, it appears unlikely that the project will cause a significant impact on environmental values of direct concern such as threatened species. The BG recommended Defence continue consultations with the WA Department of Conservation and Land Management and the WA Museum.

Environmental Certificate of Compliance

139. Defence issued an Environmental Certificate of Compliance for the proposed works on 18 June 1997. The conditions of approval for the work to proceed is subject to the following environmental safeguards:

- precautions are to be taken to ensure the protection of the land resources through the instigation of soil and water management techniques over disturbed areas to minimise uncontrolled erosion;
- flow attenuation measures are to be undertaken to protect the aquifer—the measures shall include minimisation of diversion of overland flow, retardation basins, sediment traps and drainage system rehabilitation;
- water quality management techniques are to be used to ensure that no contamination affecting the aquifer would occur. The techniques shall include the diversion of clean surface runoff from disturbed areas or potentially contaminated areas, bunding around fuel storage and maintenance areas and the use of oil separator systems for contaminated waters—including runoff from pavements, apron and taxiway areas likely to contain concentrated hydrocarbon pollution;
- management of the borefield, including the monitoring of flow rates, water quality and biological monitoring. These measures will be implemented prior to, during and after construction; and
- minimisation of clearing, particularly in the creek line and revegetation, where required.

Impact of exercises

140. The Committee questioned Defence about the impact of major exercises on civil aviation operations. Defence advised that air traffic control facilities will be brought to the Base during major exercises.

CONSULTATION

141. The following authorities and organisations were consulted and/or advised during the planning and environment assessment for this project:

- Australian Heritage Commission;
- WA Department of Transport;
- WA Ministry of Planning;
- WA Waters and Rivers Commission;

- WA Department of Environmental Protection;
- WA Department of Conservation and Land Management;
- Exmouth Shire Council;
- Bureau of Meteorology;
- WA Museum;
- Gascoyne Development;
- Exmouth Station;
- Ningaloo Station;
- DAS/United States Air Force Solar Observatory; and
- Harold E Holt Communications Station.

EMPLOYMENT

142. Two personnel are employed full time on the Base. No increase in staff is envisaged as a result of the implementation of the proposed works.

143. Defence advised that during the 18-24 month construction period, an average of about 140-160 personnel will be directly employed on construction activities. The construction workforce will be accommodated in the existing Base camp area. Defence anticipates that construction will generate further job opportunities off-site through the fabrication of components and the manufacture, distribution and supply of construction materials.

COST AND PROJECT DELIVERY

Cost

144. The out turn cost of the proposed works is $69 million. The cost includes construction, professional fees and charges, furniture and fittings, construction contingency and a predicted indexation adjustment over the construction period.

145. The Committee questioned Defence about cost premiums associated with construction activity in a remote locality such as Learmonth. Defence advised that the greatest risk, in terms of cost, is the high performance rock materials required. Defence believes this risk is manageable and have decided to leave it to the construction industry to locate and provide the necessary materials which are required to meet specific design parameters.

Project Delivery

146. Subject to Parliamentary approval, calling of tenders for construction of facilities is planned to commence in September 1997, with the objective of having construction completed by November 1999.

147. Defence proposes to let a single contract for the works following a competitive tendering process. It is envisaged that subcontractors will be appointed.

FUTURE WORKS

148. Defence advised the Committee that the proposed works will address most identified operational deficiencies at RAAF Base Learmonth. A Stage 2 development of the Base is planned for 1999 and is likely to include explosive ordnance storage facilities, a Base command post and replacement of the domestic accommodation.

Committee's Recommendation

149. The Committee recommends the development of operational facilities at RAAF Base Learmonth, Western Australia, at an estimated out turn cost of $69 million.

CONCLUSIONS AND RECOMMENDATIONS

150. The Committee's conclusions and recommendations and the paragraphs in the report in which they appear are set out below:

1. RAAF Base Learmonth is a bare base which forms part of a chain of defensive airfields across northern Australia, whose primary function is to serve as a deployment base for aircraft in a contingency. (Paragraph 43)

2. The Base was developed during the early 1970s and 1980s and no further development or major maintenance work has occurred since. (Paragraph 44)

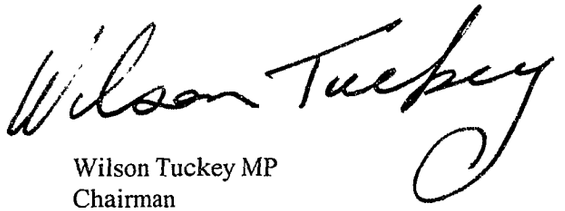
3. In the context of the primary function of RAAF Base Learmonth, the Department of Defence undertook an examination of operational facilities required which revealed a number of deficiencies and shortcomings. (Paragraph 45)

4. There is a need for operational facilities at RAAF Base Learmonth to be upgraded to bring them into line with requirements designed to enhance its capabilities for the deployment of fighter, strike and maritime aircraft in a safe and flexible manner. (Paragraph 46)

5. The extent of the proposed development represents a substantial upgrading required to enable the Base to support aircraft operations in a safe and flexible manner at levels required by the Department of Defence and can therefore be justified. (Paragraph 99)

6. The Department of Defence should enter into further discussions with the Shire of Exmouth about the practicalities of upgrading the Pavement Classification Number of the runway. (Paragraph 118)

7. The Committee recommends the development of operational facilities at RAAF Base Learmonth, Western Australia, at an estimated out turn cost of $69 million. (Paragraph 149)



Wilson Tuckey MP
Chairman

25 September 1997

APPENDIX A

WITNESSES

BATHGATE, Mr Douglas George, Former Councillor/President, Shire of Exmouth, PO Box 21, Exmouth, WA and Senior Regional Officer, Gascoyne Development Commission, PO Box 266, Exmouth, WA

BYRNE, Group Captain, Philip Darcy, Director of Aerospace Systems Development, Department of Defence, Russell Offices, Canberra, ACT

FORTE, Mr Andrew Jeffrey, Airport Consultant, Shire of Exmouth, PO Box 21, Exmouth, WA

GRAHAM, Mr Kerry James, Chief Executive Officer, Shire of Exmouth, PO Box 21, Exmouth, WA

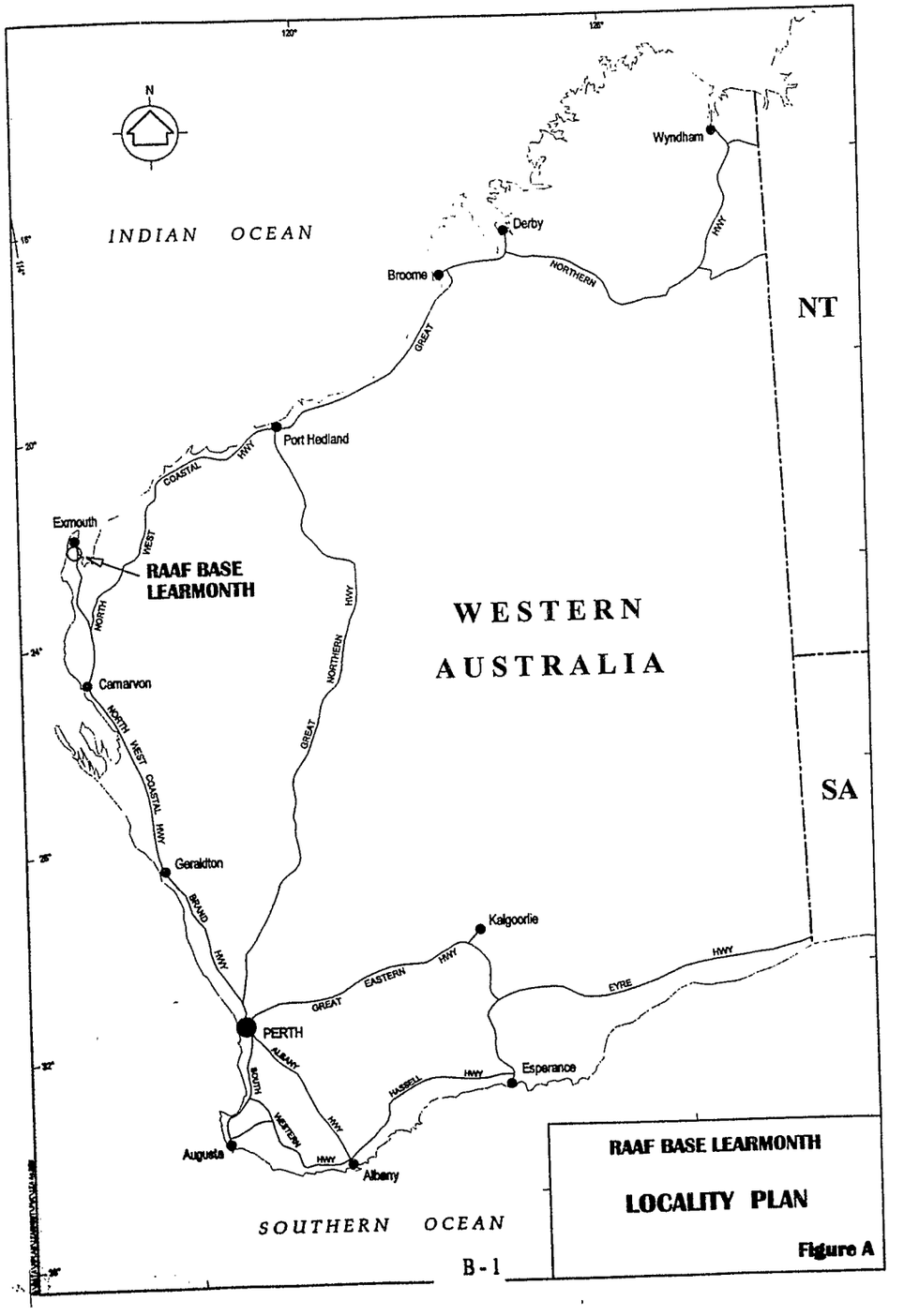
KAVANAGH, Group Captain, Brian Lawrence, Officer Commanding No 321 Air Base Wing, Department of Defence, RAAF Base, Darwin, NT

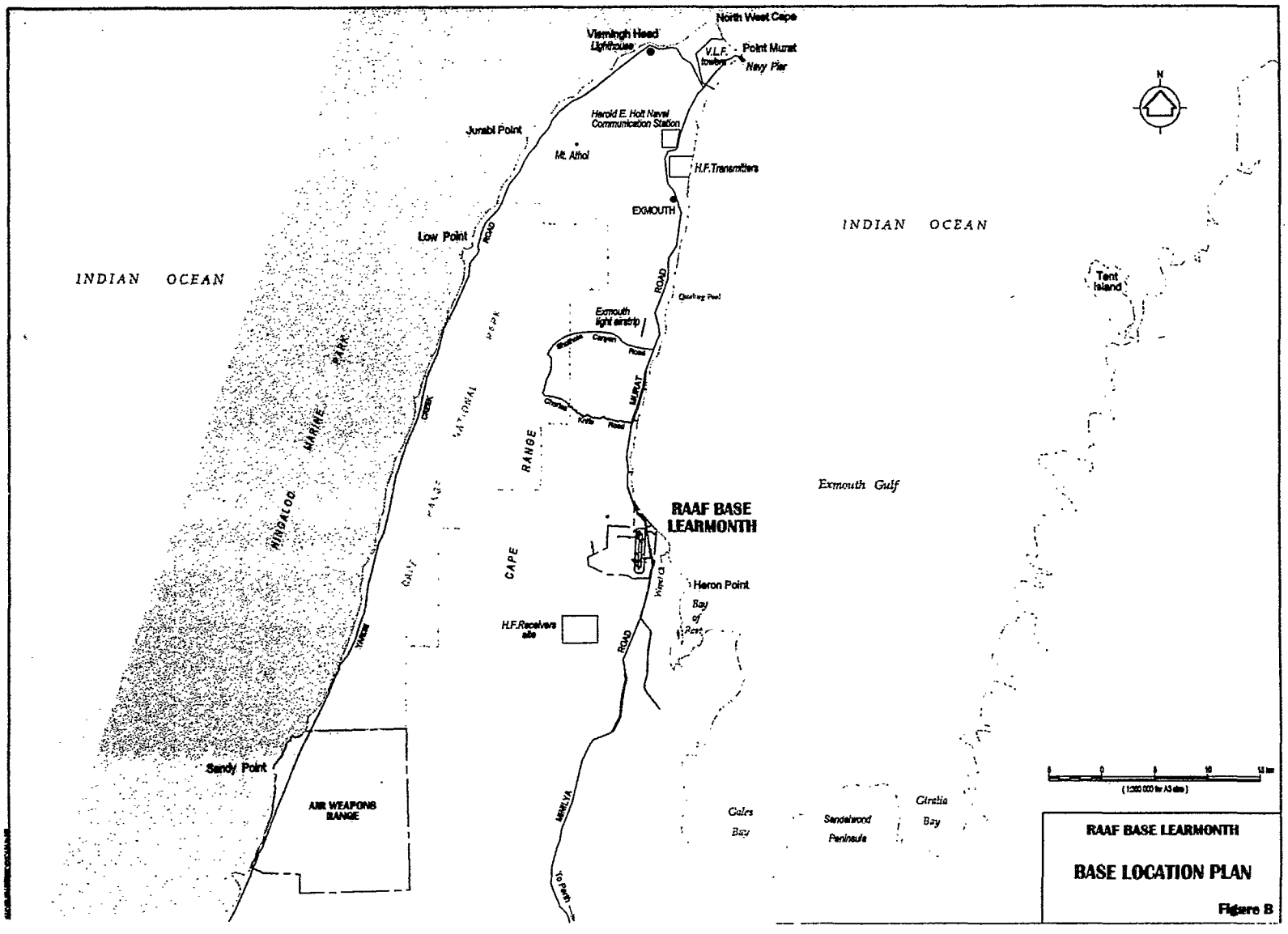
KENNEDY, Air Commodore James Frederick George, Director General Facilities, Air Force, Department of Defence, Campbell Park Offices, ACT

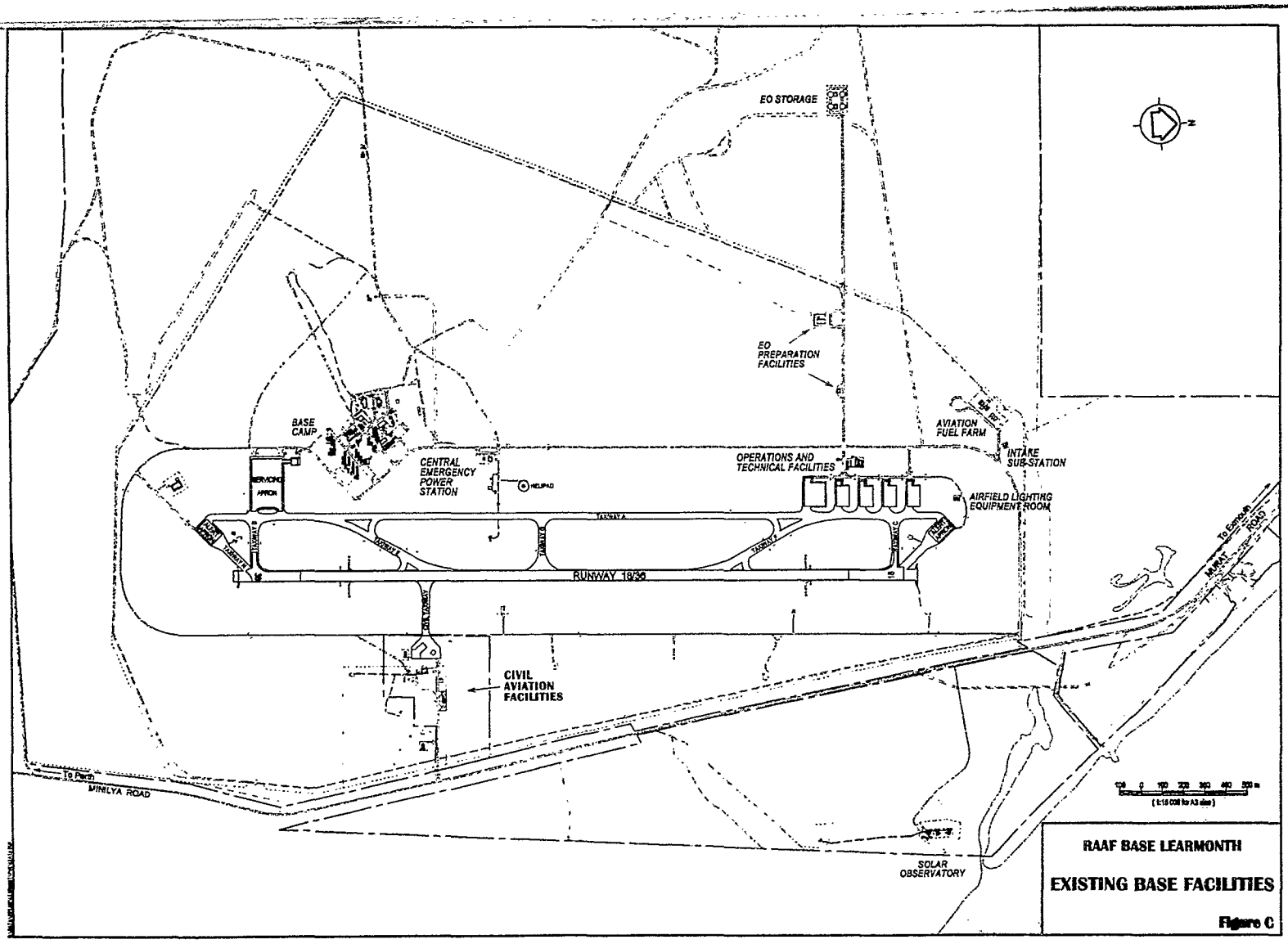
MORGAN, Wing Commander Stephen James, Project Director, Department of Defence, Campbell Park Offices, Canberra, ACT

APPENDIX B

PROJECT PLANS




North West Cape
Vlamingh Head Lighthouse
V.L.F. towers
Point Murat
Navy Pier
Herold E. Holt Naval Communication Station
Jurabi Point
Mt. Athol
H.F.Transmitters
EXMOUTH
Low Point
ROAD
INDIAN OCEAN
INDIAN OCEAN
Tent Island
Exmouth light airstrip
MURAT ROAD
RANGE
CAPE
RAAF BASE LEARMONTH
Exmouth Gulf
Heron Point
Bay of Rest
H.F.Receivers site
Sandy Point
AIR WEAPONS RANGE
Cules Bay
Sandalwood Peninsula
Giralia Bay
MINILYA ROAD
To Perth
RAAF BASE LEARMONTH
BASE LOCATION PLAN
Figure B


EO STORAGE
EO PREPARATION FACILITIES
BASE CAMP
CENTRAL EMERGENCY POWER STATION
OPERATIONS AND TECHNICAL FACILITIES
AVIATION FUEL FARM
INTAKE SUB-STATION
AIRFIELD LIGHTING EQUIPMENT ROOM
SERVICING APRON
RUNWAY 18/36
CIVIL AVIATION FACILITIES
To Exmouth
MURAT ROAD
To Perth
MINILYA ROAD
SOLAR OBSERVATORY
RAAF BASE LEARMONTH
EXISTING BASE FACILITIES
Figure C