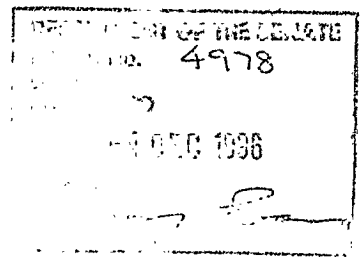
The Parliament of the Commonwealth of Australia

Parliamentary Standing Committee on Public Works



Report relating

to the proposed

Development of Operational Facilities at RAAF Base Tindal, NT

(Third Report of 1996)

Parliamentary Standing Committee on Public Works

REPORT

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DEVELOPMENT OF OPERATIONAL FACILITIES AT RAAF BASE TINDAL, NT

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THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA
1996

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Development of Operational Facilities at RAAF Base Tindal, NT

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MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

(Thirty-Second Committee)

Mr Neil Andrew MP (Chairman)
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*

* Replaced The Hon Michael Lee MP on 26 June 1996

Committee Secretary: Bjarne Nordin

Inquiry Secretary: Michael Fetter

Secretarial Support: Lynette Sebo

EXTRACT FROM THE VOTES AND PROCEEDINGS OF THE HOUSE OF REPRESENTATIVES

No. 25 dated Wednesday, 21 August 1996

PUBLIC WORKS — PARLIAMENTARY STANDING COMMITTEE — REFERENCE OF WORK — DEVELOPMENT OF OPERATIONAL FACILITIES AT RAAF BASE TINDAL, NT

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 work be referred to the Parliamentary Standing Committee on Public Works for consideration and report: Development of operational facilities at RAAF Base Tindal, NT.

Question-put and passed.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

Development of operational facilities at RAAF Base Tindal, NT

By resolution on 21 August 1996, 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 Tindal, NT.

THE REFERENCE

1. The Department of Defence proposes to construct new facilities to improve the operational effectiveness of RAAF Base Tindal. RAAF Base Tindal forms part of a chain of defensive airfields across northern Australia and is vital to the air defence of the region. It is the home base for a fighter squadron and supporting RAAF elements. Together with RAAF Base Darwin, it is used for operational training of elements of the Australian Defence Force, often in conjunction with regional air elements.

2. The works proposed in the reference will provide:

- explosive ordnance aprons for maritime patrol and transport aircraft;
- alert facilities for figher aircraft;
- operational and technical support facilities; and
- living accommodation for personnel during exercises and contingencies.

3. When referred to the Committee, the estimated out-turn cost of the proposed work was $31.4 million.

THE COMMITTEE'S INVESTIGATION

4. The Committee received a written submission from the Department of Defence and took evidence from Defence officials at a public hearing held at RAAF Base Tindal on 21 October 1996. Written submissions were also received from the following organisations:

- Australian Heritage Commission;
- Commonwealth Environment Protection Agency;
- Australian Nature Conservation Agency; and
- Commonwealth Fire Board.

5. Prior to the public hearing, the Committee inspected RAAF Base Tindal and the sites proposed for various works elements in the reference.

6. A list of witnesses who appeared at the public hearing is at APPENDIX A. The Committee's proceedings will be printed as Minutes of Evidence.

BACKGROUND

7. RAAF Base Tindal is located approximately 15 kilometres from the centre of the town of Katherine and approximately 330 kilometres by road from Darwin. It is situated adjacent to the Stuart Highway which links Darwin and Alice Springs.

8. The climate is characterised by periodic heavy rains during the hot and humid summer (wet season) and warm to hot, generally rainless, conditions during the winter (dry season).

9. Tindal and its associated properties are owned by the Commonwealth and are under Defence control. Tindal's airfield serves military and civil aviation. The land on which the civil airport is sited is leased to the Katherine Town Council.

10. The Base encompasses 13,700 hectares, and the associated Delamere Air Weapons Range, about 150 kilometres to the south-west of Tindal, encompasses 211,000 hectares.

11. Originally known as Carsons Airfield, Tindal was constructed during the Second World War as one of three airfields between Katherine and Daly Waters suitable for heavy bombers. Construction was begun in mid 1942 by an American engineer regiment. The regiment was replaced by an element of the Victorian Country Roads Board, which completed the works in hand at the end of 1944. Although suitable for bombers up to B-24 Liberator size, it was never used operationally and no aircraft squadron was stationed there during the War.

12. The airfield was renamed after Wing Commander A R Tindal, the Commanding Officer of No 24 Squadron based at Darwin in 1941. Wing Commander Tindal was killed in action in February 1942, during the first Japanese air raid on Darwin.

13. Reconstruction and extension of the airfield pavements was begun in October 1963 by the RAAF's No 5 Airfield Construction Squadron, in order to provide a back-up airfield to Darwin. The works were completed in 1970. At that stage Tindal was an unmanned bare base, although numerous squadron deployments for air exercises took place from 1966. Civil aviation operations were transferred to Tindal from the original Katherine Airport in 1969.

Commencement of large scale development

14. Together with the Army Presence in the North (APIN) project, development of RAAF Base Tindal respresents one of the most significant investments in Defence facilities in the past decade. More than $250 million has been spent on transforming a bare base into a modern air force base, possessing the infrastructure required to support air operations in the north of Australia. The Committee has played a role in examining and reporting on how this was achieved in its past inquiries.

Previous Committee reports

15. A study initiated in 1982, to assess the implications of basing an F/A-18 squadron at Tindal rather than Darwin, resulted in the first of three major developments undertaken at the Base. In 1984, the Committee examined and recommended a proposal, estimated to cost $167 million, to enable a squadron of F/A-18 aircraft to be based at Tindal *(Committee's Twelfth Report of 1984 - Parliamentary Paper 73/1984)*.

16. Elements of the proposed development included:

- construction of aircraft pavements;
- technical, administrative and domestic facilities;
- associated engineering services;
- construction of housing in Katherine; and

- the development of an air-to-surface weapons range 130 kilometres south-west of the Base.

17. The development was essentially completed in 1988, enabling No 75 Squadron, equipped with F/A-18 aircraft, to be home based at Tindal.

18. The second stage of the development of the Base commenced in 1988 *(Committee's Tenth Report of 1988 - Parliamentary Paper 323/1988)* when the Committee examined and recommended the construction of:

- additional aircraft pavements;
- technical and support facilities;
- associated engineering services; and
- the provision of an additional 20 married quarters on the Base.

19. The estimated cost of these works was $34.9 million for Base facilities and $2.75 million for housing (December 1987 prices).

20. In 1991, the Committee examined and recommended the construction of Stage 3 of the development of the Base *(Committee's Ninth Report of 1991 - Parliamentary Paper 300/1991)*. The Stage 3 development, estimated to cost $53. 5 million (April 1991 prices), comprised the following elements:

- air defence facilities - sector operations centre and headquarters for No 2 Control and Reporting Unit;
- living-in accommodation associated with projected personnel increases;
- deployed squadron operational and technical facilities;
- aircraft pavements;
- aircraft shelters; and
- associated engineering services.

Bicycle track

21. The Committee's report on the Stage 3 development recommended that:

A dedicated bicycle track could be constructed linking East Katherine with Tindal with the Northern Territory Government and Katherine Town Council meeting the cost.

22. This recommendation was accepted and the Northern Territory Government met the cost. Defence advised the Committee that the sealed bicycle track has been a success. There are 200 married quarters in Katherine and many RAAF personnel cycle to and from the base. The main benefits derived from the track are considerably improved safety and fitness.

Tindal's role

23. Tindal forms part of a chain of airfields, stretching across northern Australia from Learmonth in the west to Townsville in the east, that are maintained for the air defence and surveillance of the northern approaches to Australia. Tindal functions as:

- the hub for air operations for northern Australia;
- the home base for the major RAAF units comprising:
  - ◊ No 322 Air Base Wing,
  - ◊ No 75 Squadron,
  - ◊ No 1 Airfield Defence Squadron, and
  - ◊ No 2 Control and Reporting Unit;
- a base for the air defence of Darwin and the northern approaches to Australia - in conjunction with RAAF Base Darwin;
- a manned operational redeployment base providing for rapid build-up of defensive forces, if required;
- a base for the support of air defence and joint exercises for training of Australian and selected overseas air elements - in conjunction with the Delamere Air Weapons Range. Defence believes the close proximity of Tindal and Darwin, together with

the Air Weapons Range at Delamere, provides the RAAF with an outstanding environment in which to train and exercise;

- a military air head for transport operations;
- a transit location for Army land and air elements; and
- a service for civilian aviation in the Katherine region, including domestic Regular Public Transport and General Aviation operations.

THE NEED AND ALTERNATIVES CONSIDERED

24. Defence advised the Committee that an examination of operational capabilities required at Tindal has revealed a number of deficiencies in existing facilities. These have impacted on the ability of the Base to perform its roles in a safe and flexible manner. They are summarised in the following paragraphs.

Facilities for deployed maritime patrol aircraft

25. There is no facility on the Base from which:

- deployed armed maritime patrol aircraft can operate for prolonged periods; and
- ordnance loading activities can take place without compromising ordnance safety regulations or involving restrictive interim measures which preclude operational use of some aircraft pavements.

26. The transit staging of maritime patrol aircraft does take place through Tindal but such operations rarely involve extended deployment in the way that strike and fighter aircraft can be deployed to an optimal level.

27. Under present arrangements, armed aircraft are parked on unprotected points along taxiways, which precludes their use for taxiing aircraft. Defence believes the provision of dispersed parking for four maritime patrol aircraft on individual explosive ordnance aprons, separated by prescribed ordnance safety distances, would overcome the armed aircraft parking deficiency.

28. Unarmed aircraft are parked on the Air Movements Apron, an arrangement which can continue in the future if the proposed Explosive Ordnance Aprons are occupied.

29. Deployed operational flying elements require a secure and protected facility from which their operations can be managed. These activities include mission preparation and briefing and management of maintenance activities. Similar operational and technical support facilities have been provided at forward operational bases for fighter and strike aircraft and are now required at Tindal for maritime patrol aircraft.

Alternatives considered

30. Defence advised that there will be a continuing requirement to park armed aircraft on the Base and that existing arrangements are unsatisfactory. Defence believes that these problems can be overcome by constructing new ordnance loading aprons suitable for maritime patrol aircraft. Six sites on developed areas of the Base were considered and six individual sites were located within the areas bounded by the coat hanger taxiway system. This would not inhibit future development of the entire area for other designated purposes and only four sites need to be developed at present to meet defined operational objectives.

Aircraft ordnance loading and unloading

31. RAAF C130 transport aircraft are required to deliver ordnance to forward operational bases. No suitable facility exists on the Base where such activities can take place without compromising other operational activities.

32. At present, ordnance loading and unloading activities are undertaken on unprotected points along taxiways. This makes the taxiways unavailable for use by other aircraft, a situation similar to that applying to armed maritime patrol aircraft.

33. The provision of dispersed explosive ordnance aprons would overcome the deficiency. Because of the similarity in pavement dimensions required for the parking of C130 and maritime patrol aircraft, the explosive ordnance aprons required for both types of aircraft can be the same, although one of the aprons would need to incorporate greater separation to enable larger quantities of explosive ordnance to be handled.

34. Defence advised the Committee that the concept of using one type of facility for both types of aircraft has been examined and is operationally acceptable.

Alternatives considered

35. Defence also advised that a dedicated explosive ordnance apron could be provided for ordnance loading and unloading of C130 aircraft. One of the two spare sites discussed earlier could be used for this purpose. Rather than pursuing this solution, it was considered that using the proposed maritime patrol aircraft aprons as combined facilities would be more economic and one of those aprons would be sited so as to permit a C130 to operate with a high ordnance loading. There is little difference in the pavement dimensions required for parking the two aircraft types but some additional vehicle strength pavements would be required so that aircraft loading and unloading vehicles can be manoeuvred at the rear of C130 aircraft.

Quick reaction alert facility

36. Air defence at Tindal is provided by No 75 Squadron. Operational practice of the air defence roles of fighter aircraft requires the positioning of aircraft on alert at the end of the primary runway. The hot climate at Tindal necessitates the provision of sun protection for the aircraft, pilots and ground crew. The shelters would need to be provided with engineering and communication services. Defence advised the Committee that the operational assessment stipulated that four fighter aircraft must be able to be kept on short notice alert at Tindal (and at other forward operational bases).

Alternatives considered

37. Two alternatives were examined on the basis of keeping two aircraft on alert in each of two shelters. These were - the construction of a completely new facility or the modification of two existing No 75 Squadron ordnance loading aprons.

38. Defence advised that the modification option presents some acceptable operational limitations and can be adopted on cost grounds. It was considered that the loss of two ordnance loading aprons for use as quick reaction alert facilities should not diminish the total number of sheltered aircraft parking positions available to No 75 Squadron.

Air movements apron

39. The Committee was advised that the general purpose apron was constructed by the RAAF's airfield construction squadron in the 1960s and no additional work has been undertaken since that time.

40. Civilian wide body aircraft such as B747s are used to transport military personnel and equipment to Tindal during major exercises in the Northern Territory. Visiting foreign military personnel, operating in conjunction with the Australian Defence Force, are deployed to Tindal in large military transport aircraft such as C5 (Galaxy) and C141 (Starlifter).

41. The existing air movements apron is located at the north-western end of Taxiway A. It is about 75 metres wide and 460 metres long and has capacity for eight C130 sized aircraft or four wide body (B747 and C5) transport aircraft. The long narrow shape of the apron restricts the ground manoeuvring of wide-body aircraft, whose large wing spans necessitate nose-to-tail parking. This parking arrangement restricts the flow of aircraft and causes manoeuvring difficulties. The entire apron has the potential to become blocked if the exit taxiway is obstructed or aircraft unserviceability restricts or delays movement. This limitation impacts on the efficiency of air movement operations and increases the risk of mishaps associated with these activities. Extending the apron to permit dedicated parking for wide body aircraft would rectify the deficiency.

Alternatives considered

42. Various layouts were examined to enable the manoeuvring and simultaneous parking of two wide body and six C130 aircraft. The option adopted provides for a north-eastern extension of the existing apron of sufficient size for parking and unrestricted access by two wide body aircraft. The existing apron area can readily accommodate six C130 transport aircraft. The existing terminal and associated buildings would be unaffected.

Base Command Post

43. A Base Command Post is required from which the Base Commander can exercise command and control of the Base environment. During exercises, a temporary Base Command Post was established in the now vacant Base Calibration Centre and, previously, in the No 75 Squadron Armament Section. These temporary Base Command Posts were found to be deficient. The internal layout inhibited liaison between Base Command Post elements and the buildings lacked the passive protection required for a vital asset. Defence advised the

Committee that the Base Calibration Centre building cannot be modified economically to become a protected structure providing the degree of security necessary for the vital activities being performed.

Alternatives considered

44. Alternative locations for the siting of the Base Command Post were considered as part of the reappraisal of the Base Master Plan. Factors such as accessibility to the facility by key Base personnel and security of the asset were considered.

Deployment accommodation

45. A construction camp, now known as the TEAL Camp (Transit and Exercise Accommodation Lines), was provided on site for the workers involved in the construction of the first stage of the Base. The TEAL Camp is now used as deployment accommodation but the facilities are approaching the end of their economic life and Defence believes they will require replacement. The Camp is affected by noise and vibrations from aircraft operations on the runway and the nearby ordnance loading aprons intrude into the facilities. If the air movements apron is extended, noise from aircraft operations will increase further.

46. RAAF has found, through experience, that provision of deployment accommodation in permanent or semi-permanent airconditioned structures provides the most suitable form of accommodation. Personnel deployed from a southern climate are able to obtain quality rest and are better able to perform their duties. The structures are designed to withstand the rigours of the climate in all seasons. Defence advised that the use of tents is not a practical alternative. The initial requirement is that deployment accommodation for about 450 personnel should be provided at Tindal.

Alternatives considered

47. Consideration was given by Defence to the location and type of new deployment accommodation. The accommodation could be placed all in one location in the same current form. However, due to the nature of exercises conducted at Tindal, there is a need to provide manned defensive perimeters about vital assets. There is also a desirability to avoid high concentrations of personnel. This requires that the new accommodation be sited in at least three locations, each in proximity to key operational assets. Moreover, with the need to replace the existing accommodation, the opportunity is being taken to trial new forms of accommodation, both in terms of the performance of the structures in the

environment as accommodation units, their operational suitability and their habitability. The accommodation units that the RAAF wishes to trial are of two kinds: a semi-hardened structure; and another structure that is capable of being semi-hardened in the future by the placement of earth traverses next to its walls. Both types of structure are required to be noise attenuated to provide suitable living conditions.

Committee's Conclusions

48. An examination by the Department of Defence of operational capabilities has revealed a number of deficiencies in existing facilities at RAAF Base Tindal.

49. These deficiencies have impacted on the ability of the Base to perform its assigned roles in a safe and flexible manner.

50. There is a need to provide:

- **dispersed parking for four maritime patrol aircraft on individual explosive ordnance aprons and a secure facility from which aircraft operations can be managed;**
- **dispersed explosive ordnance loading and unloading aprons for C130 transport aircraft;**
- **quick reaction alert facilities at the end of the primary runway, including the provision of sun protection, engineering and communication services;**
- **the general purpose movements apron to be enlarged to permit dedicated parking of wide body aircraft and improved manoeuvring of aircraft;**
- **a new Base Command Post from which the Base Commander can exercise command and control of Base personnel during exercises and contingencies; and**
- **new accommodation for use by personnel deployed to RAAF Base Tindal during exercises and contingencies.**

THE PROPOSAL

51. The scope of the proposed works is summarised below:

Explosive ordnance aprons

52. Aircraft pavements will be designed in accordance with projected usage by maritime patrol and C130 aircraft. Taxiways will have a nominal width of 15 metres and shoulders will be 3 metres wide. Aprons, sized for use by either aircraft type, would be of rigid pavement construction. One of the aprons would be sized to take a future aircraft shelter.

53. The apron designated for use by C130 aircraft will be provided with additional pavements to permit the manoeuvring of vehicles. Road pavements will be designed for traffic such as fuel tankers and fire tenders.

54. Services to the aprons will include power supplies, fire points and communication cables. Earthing points will be provided on the aprons. Ducting will be provided to the aprons for communications installations.

55. A steel framed, metal clad acoustic shelter will be provided at each apron. Noise attenuation will be provided to the office area by wall, ceiling and floor insulation, together with acoustic seals on doors. All windows will be double glazed and the room would be airconditioned. The converter room and toilet would be mechanically ventilated only.

56. All pavements will be provided with airfield lighting. The mimic panel in the control tower will be modified to indicate the operating state of the altered lighting system.

Benefits

57. Provision of the new aprons will result in the following benefits:

- elimination of the need to use taxiways for parking armed maritime patrol aircraft and for the loading and unloading of ordnance transported by C130 aircraft. It would remove restrictions on the operational use of aircraft pavements;

- improved safety;

- improved operational flexibility - aircraft can be loaded with ordnance consistent with the assessed operational need;

- reduction in the vulnerability of aircraft in a contingency situation; and

- the acoustic shelters would provide duty personnel with a quiet retreat between aircraft operations and provide office accommodation.

Committee's Conclusion

58. The extent of the proposed ordnance loading aprons can be justified on the basis of operational requirements, improved security and occupational health and safety.

Operational and technical support facility

59. The Squadron operations and technical maintenance buildings will consist of concrete arch construction on a concrete slab, with a permanent steel lost-formwork lining. It will be earthcovered and designed to withstand a pre-determined blast load. Concrete end walls will incorporate external blast doors and entrance passageways will be of revetted angular design. Internal partitions will be of masonry or sandwiched board construction. Airconditioning will be provided to comfort levels. Services within the buildings will include local emergency power supplies, fire detection and emergency lighting. External services will include communications cabling with links to vital assets, including the explosive ordnance aprons.

60. A Fly Away Kit Store will consist of a steel framed, metal clad building on a concrete slab. The ground support equipment shelter would be a metal carport style structure. Electrical power, lighting and fire detection would be provided to these buildings.

Benefits

61. Defence believes the following benefits will result from the provision of the facilities:

- improved operational effectiveness of the base - security and protection would be provided for the management of deployed maritime patrol (or other deployed squadron) operations;

- improved management efficiencies resulting from siting the facility near the ordnance loading aprons where squadron aircraft would be located; and

- enhancement of operational support to the Squadron by locating the Fly Away Kit store and ground support equipment shelter near the technical support building.

Committee's Conclusion

62. The proposed squadron operations and technical support facility will considerably enhance the management of deployed maritime patrol aircraft, or other deployed aircraft, to RAAF Base Tindal.

Aircraft quick reaction alert facility

63. The proposed facility would utilise two existing ordnance loading aprons which will be modified. Existing access taxiways at the two will be widened on the curves and designed to the same strength as adjacent pavements.

64. The ready rooms will be steel framed and metal clad. Noise attenuation will be provided to the occupied areas by wall, ceiling and floor insulation, together with acoustic seals on doors. All windows would be double glazed and the rooms would be airconditioned. Ablution areas in each building will be mechanically ventilated. Communication links will comprise landlines for an aircraft scramble alarm, telephones and faxes. The existing CCTV system allows for activities in and around the aircraft shelters to be monitored.

Benefits

65. The benefits resulting from the facility are:

- enhancement of operational effectiveness - fighter aircraft will be able to remain on alert near the end of the runway for prolonged periods; and

- sustained longer duty periods for air and ground crews through the provision of a protected and controlled environment.

Committee's Conclusion

66. The siting and design of the quick reaction alert facilities enhance operational effectiveness by enabling fighter aircraft to remain ready for prolonged periods and for personnel to sustain longer duty periods.

Air movements apron extension

67. Aircraft pavements are to be designed in keeping with their projected usage by B747, C5 and other large transport aircraft. Shoulders, three metres wide, will be constructed about the unbutted perimeter of the apron extension.

68. Road pavements will be designed for traffic by heavy vehicles, such as fully laden fuel tankers and fire tenders. Two fuel hydrant outlets would be provided within the apron, and linked to the existing fuel farm by a pressurised line, capable of delivering 45 litres of fuel per second.

69. Outlets would be provided within the apron to supply electrical power. Earthing points would be provided in the apron. Apron flood lighting will be installed from masts at the perimeter of the apron. Apron edge lighting would be provided to the extended pavement. The mimic panel in the Control Tower would be modified to indicate the operating state of the altered lighting system.

Benefits

70. The following benefits will result from the extensions:

- uninhibited parking and movement of wide body and other aircraft; and

- facilitation of aircraft turnaround by the provision of aviation turbine fuel through hydrants on the apron.

Committee's Conclusion

71. Extensions to the air movements apron will facilitate the parking and movement of wide body aircraft.

Base Command Post

72. The design of the proposed facility would be similar to the Squadron operations and technical maintenance buildings. External services will include communications cabling with links to vital assets.

Benefits

73. Defence believes construction of the proposed command post will result in the provision of a secure and protected facility. From this, the Base Commander will discharge primary command responsibilities for the defence of the airfield and the maintenance of Base facilities.

Committee's Conclusion

74. The proposed Base Command Post will enable Base command to direct defence of the airfield and facilities during exercises and contingencies.

Deployment accommodation

75. There are two types of accommodation buildings proposed. One type is to be earth covered and the other is to be capable of being semi-hardened in the future by the placement of earth traverses near its walls. The associated laundry unit to each group of buildings would be the same.

76. The design of the proposed earth covered accommodation buildings would be similar to the Squadron operations and technical maintenance buildings. Noise attenuation measures will be provided to ensure levels not greater than 35 dB(A) are achieved for steady noise and 50 dB(A) for pass-by noise. External services including water, sewerage, electricity and communications would be provided.

77. The unhardened accommodation buildings will be of metal clad, steel framed construction and will be windowless. Internal partitions will be of masonry or sandwiched board construction. Airconditioning will be provided to comfort levels and ablution areas will be mechanically ventilated. Services within the buildings will include power, light, communications, fire detection and emergency exit lighting.

78. A laundry will be provided for each group of three accommodation buildings. This will also be of steel clad, steel framed construction with power, lighting and mechanical ventilation. An attached pergola of about 70 square

metres will be roofed with shade cloth (providing 90% shading) and paved with brick.

Benefits

79. Defence advised the Committee that construction of the deployment accommodation will result in the following benefits:

- improved conditions - the existing TEAL camp is in a noisy area and the proposed facilities will be noise attenuated;
- improved security - the accommodation will be at three locations near vital assets; and
- improved defence training - locating the facilities near vital assets will enable personnel to be trained in protecting the assets in a ground threat environment.

80. The estimated cost of the proposed facilities, provided to the Committee on a commercial-in-confidence basis, indicates that a significant proportion of the budget is for this accommodation. Accordingly, the Committee questioned a number of aspects of the underlying philosophies adopted by Defence in proposing dispersed deployment accommodation, the amount of accommodation to be provided and the need for some accommodation blocks to be earth covered.

81. Defence advised that two concepts are involved. First, that of defending vital assets with personnel living in close proximity to the assets. Secondly, the design of the individual structures, as earth covering is required for noise attenuation purposes. These concepts will be tested against operational considerations such as victualling, command and control and the movement of personnel, at short notice, to defensive positions. Operational considerations have not been developed.

82. The Committee believes the estimated cost of providing the accommodation is significant and sought to establish if accommodation for less than the 450 beds would suffice. This line of inquiry was taken because of the untested nature of the concepts. Defence advised that there is a requirement to accommodate up to 500 personnel. The deployment accommodation has reached the end of its economic life and is located in a high noise area. Defence also indicated that more accommodation than that proposed would be required but has opted for a lesser number, in order to test the proposal before proceeding further.

Committee's Conclusions

83. The Committee has some concerns about the necessity for major expenditure on earth covering of deployment accommodation for noise attenuation at the sites identified in the proposal.

84. Whilst the Committee accepts the need for new deployment accommodation at RAAF Base Tindal, the significantly large proportion of the project budget allocated for this purpose and the, as yet, untested conditions under which the facilities would operate, require some caution to be exercised in approving the facilities as proposed.

85. Further consideration should therefore be given to the location of this accommodation, given the cost.

Committee's Recommendation

86. The Committee recommends that a further evaluation of the cost and benefits of covered accommodation be undertaken and resubmitted to the Committee before this component of the project is commenced.

Common design features, engineering services and site

87. All necessary engineering services will be provided to the new facilities. Electrical power will be drawn from the electrical ring main on the Base, with local emergency generator sets when specified. The central emergency power station is on the ring main. Load shedding controls will be provided to disconnect less essential electrical loads in the event of a mains power failure. This will enable essential load demands to be met from the central emergency power station.

88. Lightning protection will be provided as required.

89. Communications cables will be in ducts and, in most cases, connected to the Base communications network.

90. Landscaping, incorporating low maintenance plantings suitable for the local area, will be provided to facilities located away from aircraft operational areas. Earth covered buildings will be vegetated.

91. Fuel interceptor pits will be provided on drainage lines from areas where aircraft parking is planned.

92. Standardised signage would be provided at each facility.

DESIGN

Buildings

93. The following factors have been adopted for inclusion in the design of the proposed facilities:

- austere, efficient and utilitarian facilities suitable for the rigours of the climate;
- adoption, where possible, of conventional construction techniques and material - especially those commonly used by the construction industry in the locality; and
- use of readily available and durable materials, which combine long life with minimum maintenance.

Fire Protection Systems

94. Design of fire protection systems will adopt the following principles and standards in accordance with the provisions of the Building Code of Australia (BCA), the Defence Manual of Fire Protection Engineering (FACMAN 2) and all other applicable Codes and Standards, which:

- require certification from a suitably qualified certifier, that the design and construction meet the requirements of the BCA, FACMAN 2, relevant Codes and Standards and any additional State, Local Government and Defence requirements;
- provide that 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; and
- specify that 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/installation maintained.

95. The Commonwealth Fire Board advised the Committee that on the basis of the above measures, it considers the proposed development meets the necessary fire safety requirements.

Energy management and lighting

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

97. Photo electric switches, in conjunction with time-switch schedules, will control lighting to reduce energy consumption where possible. In addition, the provision of personnel 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 are to be used where practical.

Master planning

98. A revised Master Plan for RAAF Base Tindal has been produced and endorsed within the Department of Defence. The siting of the proposed new facilities accords with the Master Plan.

ENVIRONMENTAL IMPACT AND HERITAGE

Environment

99. An Environmental Certificate of Compliance was issued by the Department of Defence in July 1996, to cover the works proposed in this reference.

Environmental Impact Statement

100. Tindal's development, since 1984, was the subject of an Environmental Impact Statement (EIS) which identified environmental concerns, both on and off

the Base, likely to emerge from the development itself and from the physical occupation of the Base.

101. The EIS addressed the following matters:

- preservation of Aboriginal and archaeological sites;
- aircraft noise;
- identification and preservation of fauna and flora;
- social effects on Katherine's population; and
- waste management and land use.

102. In addition, an Environmental Management Plan was formulated which identified measures to be pursued to minimise any adverse effects resulting from the occupation of Tindal. Defence believes the works proposed as part of this project should not present any additional adverse environmental implications.

103. The Australian Nature Conservation Agency sought further details from Defence about any likely impacts on threatened flora and fauna habitats. Defence assured the Committee that the proposed development site is not expected to impact on threatened species.

Aircraft Noise

104. The Base Australian Noise Exposure Forecast (ANEF) noise contour plan was produced in December 1988 for a forecast year of 1997. The aircraft movement projections used in the preparation of ANEF contours assumed a far greater use of the airfield than is occurring presently. The conservative nature of the contours permits increased levels of operation without expanding the documented noise contour which had been used for land use planning purposes. The 1997 ANEF noise contour plan is considered to be relevant for the development of land adjacent to the Base as it will accommodate any projected increase in the use of the airfield resulting from the proposed development.

Drainage

105. The Committee's report on the Stage 3 development of Tindal recommended, *inter alia* that:

An independent analysis - to be funded by Defence, the Northern Territory Government and Katherine Town Council - of the drainage pattern of the Tindal-Katherine area should be undertaken to identify factors contributing to flooding and to recommend realistic measures to minimise it.

106. During the inquiry into the present reference Defence advised the Committee that since commencement of the development of the Base in the mid 1980s, there has been concern that flooding along the Four Mile Creek, downstream from the Base, has worsened.

107. Stormwater modelling investigations, commissioned by the Northern Territory Government, indicated that there was no significant increase in the run-off from the Base resulting from the development work. There has been an increased rate of run-off from the developed areas of the Base from small storms but the effect is largely contained within the boundaries of the base. The run-off was considerably less significant for the larger storm events, which would be likely to cause flooding. The land around Uralla Road was subject to flooding during storms but this has always been the case. The Katherine Town Council now acknowledges that the development of Tindal has not worsened flooding for the rural subdivisions.

108. Defence assured the Committee that the design of drainage work associated with the proposed development should ensure, through the continued use of retention basins, that downstream run-off external to the Base is not increased. Fuel interceptor pits would be provided on drainage lines from areas where aircraft parking is planned.

Heritage

109. The Aboriginal sites of significance identified in the EIS and the Environmental Management Plan will remain unaffected by the works now proposed.

110. The Australian Heritage Commission (AHC) advised the Committee that it may be timely for a comprehensive natural and cultural heritage survey of the Base to be undertaken. The survey would cover indigenous and cultural values and should include recommendations concerning the management of the values identified. Defence advised the Committee that this suggestion would be considered at a time when the revised Base Environmental Management Plan is compiled.

CONSULTATION

111. Defence advised that the following individuals and organisations were consulted and advised during the planning stages:

- Commonwealth and Territory representatives for the area;
- the Northern Territory Department of Industries and Development, (which is acting as the single point of contact for liaison with all other Northern Territory Departments); and
- the Katherine Town Council.

Aboriginal community

112. The EIS identified a number of sacred sites and designated the entire property as being of significance to Aborigines. Sacred sites are protected in accordance with the requirements of protocol. An Aboriginal liaison officer works on a daily basis with executives of the Jawoyn Association on a range of matters.

113. Part of the workforce is Aboriginal and there is a cross-cultural training program aimed at providing training packages which meet RAAF and Jawoyn Association needs. A work program currently underway, involving ten Aborigines, is being developed into an apprenticeship program in conjunction with a local TAFE.

Relationship with Katherine community

114. The Committee questioned Defence on the possible impact of more extensive air operations which could result from provision of the proposed work, on the Katherine community. Defence advised that, based on the level and scope of the works proposed, it is doubtful that there would be an increase in actual air activities.

115. RAAF personnel and their dependents represent close to one-third of the Katherine community and interaction between the RAAF and the civilian community has caused little discontent. There are one or two complaints about aircraft noise annually.

EMPLOYMENT

RAAF

116. The present service population of the Base is approximately 950 personnel. No increase to the RAAF complement permanently based at RAAF Base Tindal is envisaged as a result of the implementation of the proposed works.

Construction employment

117. Defence advised that over the envisaged construction period of about 30 months, an average of about 110 personnel (peaking at 200) would be directly employed on construction activities. In addition, it is anticipated that construction would generate further job opportunities off-site from the prefabrication of components, and the manufacture and distribution of materials.

Tendering

118. Given the relatively remote location and sparse population, the Committee questioned Defence on the number of possible tenderers in the Katherine area capable of undertaking the work. Defence advised that preference is not given for contractors. Tenders are advertised nationally and Defence policy on the awarding of contracts in the Northern Territory has been relayed to the construction industry through an industry forum. Two have been held during the past two years. The most recent was well attended by consultants and construction contractors who, as a result, are fully aware of Defence processes and procedures.

119. The Committee also questioned Defence if evidence of collusive tendering had been found previously. Defence advised that there was an incident where alleged collusive tendering was investigated but not proven.

TIMING

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

COST

121. The cost of this project is estimated at $24.9 million (November 1995 prices) with an out-turn cost of $31.4 million. The out-turn cost estimate includes

construction costs, professional fees and charges, furniture and fittings, construction contingency and a predicted indexation adjustment over the construction period. The estimate includes the cost of relocating existing Defence equipment.

122. The Committee questioned the need for Defence to set aside eight per cent of the project's budget for contingencies. Defence believes this amount is realistic and justifiable. The contingency will cover unforeseen events, including latent conditions and unknown market forces. Defence advised that contingencies of eight to ten per cent are normal for such a complex project. The project will be managed by a control group which will be responsible, amongst other things, for ensuring that the cost cap for the project is not exceeded. This, Defence believes, will require very close monitoring of the construction contingency.

Committee's Recommendation

123. Subject to the recommendation in paragraph 86, the Committee recommends the development of operational facilities at RAAF Base Tindal at an estimated cost of $31.4 million.

OTHER WORKS AT RAAF BASE TINDAL

Major works

124. Defence advised that a proposal, known as the Air Combat Training System, is currently being developed to provide a modern air combat training capability for the ADF. The system is proposed to be made up of a new Electronic Weapons Range at Delamere together with an Air Combat Manoeuvre Instrumentation capability. The Electronic Weapons Range would provide a tactical electronic warfare environment where realistic aircrew training may be carried out and air tactics developed. It would provide an infrastructure where the operation of aircraft electronic warfare systems may be verified and validated.

125. The Air Combat Manoeuvre Instrumentation Capability would provide a mechanism to accurately record aircraft position and systems data as well as an ability to record, replay and debrief training sorties.

126. To date, the proposal has identified that additional facilities would be required at Tindal and Delamere and, in addition, some very minor facilities may have to be provided at Darwin and Williamtown.

127. The proposal is still in its formative stage and the facilities component of the project is in the order of $11 million. The works would be primarily at Delamere and Tindal and would be implemented towards the end of this decade. Defence envisages the works being referred to the Committee at a later date.

128. Defence advised that no other major works proposals at the Base are in the present Five Year Development Program. It is envisaged that development of further operational facilities may be necessary in the first decade of the next century but these are not endorsed requirements. Facilities which might be required include additional exercise and contingency accommodation, a new air movements terminal and cargo hangar, additional apron areas, additional explosives ordnance facilities and deployment facilities for the Army.

Medium works

129. Defence advised that the 1996/97 Medium New Works Program contains two proposals for No 75 Squadron at Tindal. These are:

- a new Oxygen Equipment Maintenance Workshop at an estimated ceiling cost of $0.58 million; and
- new Technical Support Facilities at an estimated ceiling cost of $4.6 million.

130. Defence believes the requirement for these facilities is independent of the operational development works proposed in this reference. Nevertheless, because the work is to be undertaken within the same timeframe as the operational works, an outline of the proposals is at APPENDIX B.

CONCLUSIONS AND RECOMMENDATIONS

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

1. **An examination by the Department of Defence of operational capabilities has revealed a number of deficiencies in existing facilities at RAAF Base Tindal. (Paragraph 48)**

2. **These deficiencies have impacted on the ability of the Base to perform its assigned roles in a safe and flexible manner. (Paragraph 49)**

3. **There is a need to provide:**

   - **dispersed parking for four maritime patrol aircraft on individual explosive ordnance aprons and a secure facility from which aircraft operations can be managed;**
   - **dispersed explosive ordnance loading and unloading aprons for C130 transport aircraft;**
   - **quick reaction alert facilities at the end of the primary runway, including the provision of sun protection, engineering and communication services;**
   - **the general purpose movements apron to be enlarged to permit dedicated parking of wide body aircraft and improved manoeuvring of aircraft;**
   - **a new Base Command Post from which the Base Commander can exercise command and control of Base personnel during exercises and contingencies; and**
   - **new accommodation for use by personnel deployed to RAAF Base Tindal during exercises and contingencies. (Paragraph 50)**

4. **The extent of the proposed ordnance loading aprons can be justified on the basis of operational requirements, improved security and occupational health and safety. (Paragraph 58)**

5. **The proposed squadron operations and technical support facility will considerably enhance the management of deployed maritime patrol aircraft, or other deployed aircraft, to RAAF Base Tindal. (Paragraph 62)**

6. **The siting and design of the quick reaction alert facilities enhance operational effectiveness by enabling fighter aircraft to remain ready for prolonged periods and for personnel to sustain longer duty periods.(Paragraph 66)**

7. **Extensions to the air movements apron will facilitate the parking and movement of wide body aircraft. (Paragraph 71)**

8. **The proposed Base Command Post will enable Base command to direct defence of the airfield and facilities during exercises and contingencies.(Paragraph 74)**

9. **The Committee has some concerns about the necessity for major expenditure on earth covering of deployment accommodation for noise attenuation at the sites identified in the proposal. (Paragraph 83)**

10. **Whilst the Committee accepts the need for new deployment accommodation at RAAF Base Tindal, the significantly large proportion of the project budget allocated for this purpose and the, as yet, untested conditions under which the facilities would operate, require some caution to be exercised in approving the facilities as proposed. (Paragraph 84)**

11. **Further consideration should therefore be given to the location of this accommodation, given the cost. (Paragraph 85)**

12. **The Committee recommends that a further evaluation of the cost and benefits of covered accommodation be undertaken and resubmitted to the Committee before this component of the project is commenced. (Paragraph 86)**

13. **Subject to the recommendation in paragraph 86, the Committee recommends the development of operational facilities at RAAF Base Tindal at an estimated cost of $31.4 million. (Paragraph 123)**

Neil Andrew MP
Chairman

21 November 1996

APPENDIX A

WITNESSES

GRAY, Group Captain Norman Arthur, Director-General Force Development (Aerospace), Director of Aerospace Systems Development, Department of Defence, Russell Offices, Canberra, Australian Capital Territory, 2601

HAMMOND, Wing Commander Owen James, Project Director D, Director General Facilities—Air Force, Department of Defence, Campbell Park Offices, Canberra, Australian Capital Territory, 2601

KENNEDY, Air Commodore James Frederick George, Director General Facilities—Air Force, Department of Defence, Campbell Park Offices, Canberra, Australian Capital Territory, 2601

LEE, Group Captain Geoffrey Ronald, Officer Commanding 322 Air Base Wing, Headquarters 322 Air Base Wing, RAAF Base Tindal, Tindal, Northern Territory, 0853

APPENDIX B

CONCURRENT WORKS

1. The Department of Defence 1996/97 Medium New Works Program contains two proposals for No 75 Squadron at Tindal. These are:

- a new oxygen equipment maintenance workshop - estimated cost - $0.58 million; and
- new technical support facilities - estimated ceiling cost - $4.6 million, comprising:
  - new surface finishing workshop;
  - extension to the composite materials workshop; and
  - refurbishment of an area for a remote computer based training system.

SUMMARY

2. Defence believes the requirement for these facilities is independent of the Stage 4 operational development works. The works are to be undertaken within the same timeframe as the operational works and Defence provided the Committee with an outline of what is proposed.

Requirement for intermediate level maintenance

3. The maintenance policy for No 75 Squadron, when Tindal was initially developed, included the provision of facilities where some intermediate maintenance could be undertaken. The requirement stemmed from a need for No 75 Squadron to operate effectively without the need to return aircraft components for fault diagnosis to RAAF Base Williamtown where most of the RAAFs specialised F/A-18 maintenance workshops were built. Augmented maintenance capabilities at Tindal would reduce the number of aircraft maintenance components to be purchased.

4. Defence advised the Committee that, in the eight years No 75 Squadron has operated at Tindal, the extent of aircraft maintenance activities has had to increase. This is primarily to overcome inordinate delays associated with aircraft

and support equipment having to be returned to RAAF Base Williamtown for specific maintenance operations.

5. In addition, the RAAF has in recent years rationalised and reconfigured its technical training system and methodology. This has resulted in a greater devolution of technical training to the workplace.

6. The facilities included in these two Medium New Works proposals are to augment F/A-18 maintenance capabilities at Tindal and to improve technical training capabilities at No 75 Squadron.

Oxygen equipment maintenance workshop

7. The proposed oxygen equipment maintenance workshop will provide facilities to enable No 75 Squadron to perform increased maintenance of oxygen equipment used with fighter aircraft. The facility would comprise an extension to the existing avionics equipment maintenance section building and should provide a safe working environment for the required tasks.

Technical support facilities

8. The proposed technical support facilities will enable No 75 Squadron to:

- undertake finishing of large surface areas of F/A-18 aircraft without dismantling the aircraft and for surface finishing to be undertaken on large dismantled aircraft components;
- perform increased maintenance of composite aircraft components and to overcome shortcomings with the existing workshop; and
- improve facilities for the remote computer based training system, which is a computer based training system where technical personnel can be updated and provided with training related to their technical specialities.

9. The technical support facilities will comprise:

- a new surface finishing workshop located adjacent to aircraft pavements;

- an extension of the technical support complex building for a new composite materials workshop; and

- conversion of the existing small surface finishing workshop into a classroom for remote computer based training.

OXYGEN EQUIPMENT MAINTENANCE WORKSHOP

Background

10. An oxygen equipment maintenance workshop was provided within No 75 Squadron avionics equipment maintenance section building. This building was constructed in 1988, as part of the Tindal Stage 1 Development. At the time, it was envisaged that major maintenance work on oxygen equipment would be undertaken at RAAF Base Williamtown and the maintenance work to be undertaken at Tindal would only be of a minor nature. As a result, only a small workshop space and basic support equipment were provided.

11. The facility has been used for a number of years to provide a degree of maintenance support in excess of design requirements. The present facility is inadequate both for its present functions and for future functions required to be performed in the facility. Moreover, because the oxygen maintenance workshop and the avionics workshop are being used to perform maintenance activities on oxygen equipment for which they were never designed, deficiencies affecting safety now exist.

Required capability

12. Defence has found that it is more economical to maintain oxygen equipment at Tindal than supplying serviced items from an alternative maintenance source, such as No 481 Wing at Williamtown. Supply from distant locations impose longer supply pipelines and make further demands on military transport aircraft to interchange oxygen system components between locations. The need for No 75 Squadron to perform maintenance to aircraft oxygen equipment is incorporated in the RAAFs technical maintenance plans.

Existing deficiencies

13. The main deficiency is that the workshop is too small for the required functions. Whereas it has an area of about 14 square metres, a facility to house all the necessary functions needs about 120 square metres. It is so undersized

that the two tradesmen responsible for manning the workshop cannot perform their duties independently and simultaneously.

Alternatives considered

14. Alternatives considered included:

- moving the activities to other premises;

- extending the existing oxygen maintenance workshop; and

- building a new workshop either as a free-standing building or as an extension to the existing avionics equipment maintenance section building.

15. Extending the existing avionics equipment maintenance section building was selected as the preferred option because construction costs would be less (the electrical power system could supply the extension without upgrading and there would be a common wall), and management of the oxygen equipment maintenance activities would be improved.

Functional requirements

16. A workshop incorporating the following features is needed to maintain oxygen equipment maintenance at Tindal:

- a dedicated cleaning room with cleaning baths;

- a storage and packing room to hold component spares;

- a workshop area with a laminar flow workstation and a liquid dry breathing oxygen aircraft converter work bench;

- a liquid dry breathing oxygen trailer maintenance workshop; and

- an administrative area.

Benefits

17. Defence advised that the following benefits, savings and social effects will result from provision of the new facilities:

- a workshop of sufficient size and housing the necessary test equipment, to enable all activities associated with maintenance of oxygen equipment to be performed at Tindal in a safe and effective manner;

- existing OH&S problems would be overcome; and

- enhancement of Tindals operational effectiveness as a support Base.

Design considerations

18. The internal design of the workshop will include all the necessary safety measures required of a workshop in which oxygen equipment maintenance is performed. Some of those features include antistatic floor and wall treatments, flash proof electrical fittings, separate airconditioning and fume extraction, an earthing point for trailer mounted equipment, a pickling bath for cleaning large items and a capability to store a small quantity of spare components.

Financial Aspects

16. The estimated ceiling cost for the works is $0.58 million. This cost does not include the cost of any RAAF supplied equipment to be incorporated into the workshop.

Timetable

17. Subject to necessary approvals, it is envisaged that construction would commence in March 1997, with the objective of having the works completed by June 1997.

Environmental Compliance

18. The proposal is still in its formative stage. Before the project can proceed an Environmental Certificate of Compliance would need to be obtained. It is envisaged that this would occur towards the end of 1996.

TECHNICAL SUPPORT FACILITIES

Scope

19. This proposal is made up of three components which provide for:

- a new workshop where No 75 Squadron can undertake the surface finishing of aircraft and components;

- an extension to the existing technical support complex building to provide a new composite material workshop where F/A-18 components can be repaired; and

- a fitout of the vacated surface finishing workshop for use as a remote computer based training classroom.

Background

20. A surface finishing and composite materials workshop was provided in No 75 Squadron technical support complex building, constructed in 1988, as part of the Tindal Stage 1 development. At the time, it was envisaged that only operating level maintenance would be performed, involving surface finishing and composite materials repair. The workshops were sized accordingly and higher levels of maintenance were to be undertaken at Williamtown. The changes in requirements for the two workshops has been a result of changes to operational practice which have developed with time.

21. The extent of remote computer based training of technical personnel has increased in recent years and the existing classroom, a converted storeroom, requires to be augmented.

Required capability

22. The F/A-18 technical maintenance plan requires surface finishing work to be undertaken on aircraft as part of most structural repairs. Experience gained in the eight years that No 75 Squadron has been operating at Tindal, indicates it would be more cost effective to undertake a higher level of aircraft surface finishing at Tindal rather than Williamtown. In addition, a formalised maintenance policy is being developed for anti-corrosion maintenance, which will involve No 75 Squadron undertaking increased surface finishing, for which it has no suitable facilities. The activities required to be performed from the facility

include spray painting, surface preparation, paint stripping, corrosion control and application of lettering and numbering on aircraft.

23. Repairs to F/A-18 components made of composite material need to be undertaken by No 75 Squadron at Tindal to avoid the need to send these components to Williamtown. Tasks required in the composite materials workshop include repairs to ailerons, trailing edge flaps, horizontal stabilisers, radomes, blade antennae and aircraft doors and covers.

24. Computer based training is required to be conducted by No 75 Squadron at Tindal. The training includes F/A-18 safety and familiarisation courses, Trade Supervisor/Independent Inspector re-certification and other technical courses for both tradesmen and officers. Increased training requirements will require the installation of several additional computer terminals in the near future. A facility having a classroom incorporating computer workstations, an office/library and a storeroom, is required.

Deficiencies

25. The main deficiency is that the existing workshops are too small for the required functions or have other shortcomings.

26. The surface finishing workshop is too small for a complete aircraft or major aircraft components. Some aircraft surface finishing is undertaken in an existing maintenance hangar or in the open. This is inappropriate, does not meet technical or OH&S standards and has led to some environmental concerns.

27. The existing composite materials workshop, apart from being too small for its required functions, presented unacceptable safety problems with the materials now being used and has had to be shut down.

28. The existing remote computer based training system operates in crowded conditions, lacks sufficient library space and instructors/counselling offices. Additional space is required for the present system to be upgraded.

Alternatives

29. Defence advised there are no alternative premises available for surface finishing activities, without disrupting aircraft maintenance activities. The main alternatives are to undertake surface finishing operations at another base or the provision of a new facility.

30. Flying aircraft to surface finishing facilities in a southern base are costly and reduce aircraft availability. Transportation delays have also been experienced with surface finishing of large components. Defence is confident that surface finishing at Tindal could be performed within a day of a requirement. For these reasons, the provision of a new surface finishing workshop for No 75 Squadron is the preferred alternative. The alternative has the added benefit that the existing surface finishing workshop is available for conversion to a remote computer based training classroom.

Requirements

31. To perform the necessary surface finishing functions, Defence believes there is a requirement for a facility incorporating the following features:

- a paint stripping, surface preparation, and painting workshop of sufficient size to house a F/A-18 aircraft, incorporating air filtration and humidity controls, together with all necessary safety features for a surface finishing facility;
- ancillary work areas for preparation and painting of small components;
- a paint mixing area, paint and solvent storage rooms and tool and painting equipment storage rooms;
- change rooms incorporating decontamination showers, laundry, and ablutions; and
- administrative areas and staff amenities.

Composite material repair

32. To perform the necessary composite material repair functions, a facility incorporating the following features needs to be provided:

- a workshop divided into three separate work areas made up of: a receiving room; a preparation room; and a bending room, all incorporating the necessary fittings, environmental controls and the safety features for a workshop where repair of composite materials is undertaken; and

- an administrative office.

Computer classroom

33. The remote computer based training system classroom would involve the refurbishment of the existing surface finishing workshop to incorporate:

- up to eight workstations, each capable of accommodating a computer terminal and student course material;
- storage for training aids and course material; and
- an instructors/counselling room.

Benefits

34. Defence believes the benefits, savings and social effects stemming from the provision of the new facilities will be:

- increased aircraft availability and, hence, the operational effectiveness of No 75 Squadron;
- reduced dependence on air transport of equipment requiring repairs at southern bases;
- elimination of the need to undertake urgent surface finishing tasks in inappropriate facilities; and
- further training of technical personnel by No 75 Squadron.

Design considerations

35. Design considerations to be adopted with the new facilities will include:

- all relevant codes and practices;
- the form and style of the proposed surface finishing workshop similar to the existing aircraft maintenance hangars. The building extension for the composite material workshop will match the form and style of the parent building;

- the internal design of the workshops would incorporate all the necessary safety features for the functions being performed. Some of those features include flash proof electrical fittings, temperature and humidity controls and vapour extraction, as necessary, aircraft earthing points, storage tanks for waste products; and
- access would be provided to the new facilities, including the provision of aircraft strength pavements to the proposed surface finishing workshop.

Financial aspects

36. The estimated ceiling cost for the works is $4.6 million. This cost does not include the cost of any RAAF supplied equipment to be incorporated into the facilities.

Timetable

37. Subject to necessary approvals, it is envisaged that construction would commence in April 1997, with the objective of having the works completed by March 1998.

Environmental Compliance

38. The proposal is still in its formative stage. Before the project could proceed, an Environmental Certificate of Compliance would need to be obtained. It is envisaged that this would occur towards the end of 1996.