The Parliament of the Commonwealth of Australia

Parliamentary Standing Committee on Public Works

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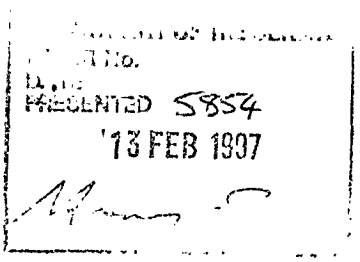

Development of operational facilities at RAAF Base Darwin

(First Report of 1997)

Parliamentary Standing Committee on Public Works

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relating to the proposed

DEVELOPMENT OF OPERATIONAL FACILITIES AT RAAF BASE DARWIN

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THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA
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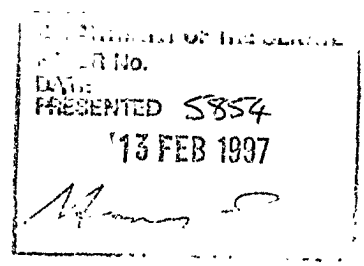

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MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

(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 Secretaries: Michael Fetter
Bronwen Gavin

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 DARWIN

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 Darwin.

Question-put and passed.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

DEVELOPMENT OF OPERATIONAL FACILITIES AT RAAF BASE DARWIN

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 Darwin.

THE REFERENCE

1. The Department of Defence proposes to provide the Base with facilities needed to perform its operational role in a safe and effective manner. RAAF Base Darwin forms part of a chain of defensive airfields across northern Australia and is vital to the air defence of Darwin. Together with RAAF Base Tindal, it is used for operational training of the air elements of the Australian Defence Force in northern Australia, often in conjunction with regional air elements.

2. The proposed work referred to the Committee encompasses:

- explosive ordnance loading aprons and alert facilities for fighter aircraft;
- operational and technical support facilities;
- additional aviation fuel storage;
- an upgrade of the emergency power station;
- a replacement fire and rescue facility; and
- replacement airfield lighting equipment facilities.

3. When referred to the Committee, the estimated out-turn cost of the proposed work was $59.5 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 in Darwin on 22 October 1996. The Committee also received written submissions

from the following organisations and individuals and took evidence from them at the public hearing:

- Aircraft Noise Abatement Group;
- Northern Territory Greens;
- Mr David Smith; and
- Greening Australia.

5. Mr John Pinney, Deputy Secretary, Northern Territory Department of Lands, Planning and Environment also gave evidence at the public hearing.

6. Written submissions were also received from the following organisations:

- Darwin City Council;
- Federal Airports Corporation;
- Commonwealth Environment Protection Agency;
- Australian Heritage Commission;
- Commonwealth Fire Board; and
- Retain Aviation in Darwin.

7. On Monday 21 October, the Committee inspected facilities at RAAF Base Darwin, the sites proposed for various works components and the control tower, under construction.

8. 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

Location

9. RAAF Base Darwin is located 6.5 kilometres north-east of Darwin's central business district. The airfield, Base and civil aviation area are bounded by four major arterial roads - the Stuart Highway to the south, Bagot Road to the west, McMillans Road to the north and Amy Johnson Avenue to the east.

Ownership and Control

10. The RAAF Base and the civilian airport occupy an area of approximately 1600 hectares. The property is owned by the Commonwealth, with the southern area under Defence control and the civil aviation area on the northern side of the Base being under the control of the Federal Airports Corporation.

History of RAAF Base Darwin

11. Originally, Darwin's airfield was located in what is now the suburb of Parap. Because of site limitations, land for a new airfield was purchased in 1937 and construction of what is now the RAAF Base commenced in 1939 and was essentially completed by 1940. RAAF Base Darwin was formed on 1 June 1940.

12. The Base was bombed by Japanese aircraft in February 1942. During the Second World War, the Base and numerous airfields in the Darwin-Katherine area were used for the air defence of Darwin and offensive operations north of Australia.

Location of Defence Elements

13. The RAAF's No 75 Squadron, when equipped with Mirage fighter aircraft, was based for a short period in Darwin from 1983. The squadron had been relocated there from Butterworth, Malaysia, and when re-equipped with F/A 18 aircraft, was permanently relocated to RAAF Base Tindal. Apart from this squadron, no other RAAF operational flying squadrons have been permanently based at RAAF Base Darwin since the end of the Second World War.

14. No 2 Control and Reporting Unit (2CRU) was relocated to Darwin in the early 1960s, and occupied operational facilities at Lee Point. This unit is planned to be relocated to RAAF Base Tindal. No 30 Squadron, which was equipped with Bloodhound missiles, was also located in Darwin until it was disbanded in the late 1960s.

15. Since the 1950s, transport aircraft, to support Northern Territory operations, have been located at Darwin. In recent years a permanent detachment of No 35 Squadron, equipped with Caribou aircraft, has been located at the Base. In 1995, the Army's No 161 Reconnaissance Squadron was relocated to RAAF Base Darwin.

Development of Facilities

16. The core of RAAF Base Darwin was built in 1940. During the Second World War a vast network of aircraft dispersals and numerous facilities of a temporary nature were constructed on the Base. From the mid-1950s and ending in the late 1970s, the Base underwent major changes which included:

- construction of the present airfield pavements in their present orientation;
- construction of an Air Traffic Control tower and Airfield Fire Station;
- development of an air defence radar site at Lee Point;
- improvements to explosive storage and handling facilities at Frances Bay;
- construction of major aviation fuel storage and dispensing facilities; and
- development of operational, technical and domestic support facilities.

17. At the end of 1974, Cyclone Tracy destroyed or badly damaged many of the domestic and administrative buildings and most of the aircraft maintenance support facilities on RAAF Base Darwin, as well as the radar facilities at Lee Point. Essential operational facilities have since been replaced and a new maintenance complex constructed at a cost of $4.5 million *(Committee's Seventh Report of 1980 - Parliamentary Paper 147/1980).*

18. Since the early 1980s, only essential works to maintain RAAF Base Darwin as a manned forward operational base have taken place. Notable works included:

- 1984 - rehabilitation of on-base married quarters - $8.7 million (*Committee's Eighteenth Report of 1984 - Parliamentary Paper 228/1984*);
- 1990 - provision of a new airmen's mess - cost $2.6 million;
- 1991 - construction of new ordnance facilities in the Marrara Swamp area and provision of new Police Guard Dog facilities in 1991; this was a medium works project paid for by the Northern Territory Government in exchange for Air Force's Frances Bay Land - $4.1 million; and
- 1994 - construction of facilities for the Army's 161 Reconnaissance Squadron (part of the APIN Stage 1 project) - $5.8 million.

19. In August 1995, the Committee examined and reported on the proposed construction of new Air Traffic Control facilities for RAAF Base Darwin. The proposal examined by the Committee involved locating new facilities in the civil aviation area of the airfield, including construction of a new air traffic control tower. The estimated cost of the project was $8.8 million (*Committee's Nineteenth Report of 1995 - Parliamentary Paper 168/1995*). During the site inspection the Committee was able to see that work on the project is well advanced, with completion planned for early 1997. Installation of new equipment will then be undertaken, with the new tower becoming operational by mid-1998.

20. The provision of new Ordnance Preparation Facilities for RAAF and Army use, in proximity to the Ordnance Storage Facilities in the north-eastern area of the Base, was initiated as two projects: a 1995/96 medium new works proposal for the RAAF; and a part of the Army's 'APIN Stage 2' Project.

21. The two projects were combined and construction at a cost of $5.6 million is in progress, with completion expected by the end of 1996. The Committee inspected the facilities during the broader site inspection.

22. During 1993 and 1994, the operational aircraft pavements were rehabilitated and airfield lighting was replaced in accordance with ongoing maintenance requirements at a cost of $10.7 million.

CIVILIAN AVIATION FACILITIES

23. Civilian aviation activities recommenced at Darwin at the end of 1945. A joint-user policy between the then Commonwealth Departments of Air and Civil Aviation enabled civil operators to use military facilities for their activities. Those activities took place in the southern portion of the airfield. An aircraft hangar, constructed during the Second World War, was used as a passenger terminal and for aircraft maintenance. These continued to be used until the mid-1980s.

24. Defence advised the Committee that it was always the intention that civil and military operations should be separated, with civilian aviation activities

being conducted on the northern side of the present main runway. RAAF master planning, conducted in the late 1960s, made allowance for the separation. The then Department of Civil Aviation also recognised the benefits of separate military and civilian developments at RAAF Base Darwin.

25. In 1984, the Committee examined and reported on a proposal to locate civil aviation facilities to the north of the main runway (*Committee's Seventh Report of 1984 - Parliamentary Paper 64/1984*). Work commenced but subsequently ceased.

26. In April 1988, the Federal Airports Corporation assumed responsibility for the ownership of Darwin Airport and agreed with the development of new civil aviation facilities on the northern side of the runway. As a result, the land on the northern side of the airport was ceded to the Federal Airports Corporation. In 1989, the Committee examined and reported on a revised civil airport terminal development - at a cost of $72 million (*Committee's Seventeenth Report of 1989 - Parliamentary Paper 491/1989*).

27. In summary, the past decade has seen RAAF Base Darwin and civil aviation facilities serving the Top End improved by substantial investments in infrastructure. Although this does not bring RAAF Base Darwin to the level of an operational base, the investments recognise and reflect the vital roles assigned to RAAF Base Darwin for the defence of Australia.

Relocation of Darwin Airport

28. In September 1993, the Government established the Committee on Darwin to examine the potential of Darwin to develop as Australia's northern link to East Asia. The Committee on Darwin, chaired by the Hon Neville Wran, AC QC, presented its findings to the Government in June 1995. The report canvasses, very briefly, the possible relocation of Darwin Airport (RAAF Base Darwin) as follows:

> In time it may be necessary either to build another airport or relocate the present airport. The present airport is in a built-up area, noise pollution from increased military operations is becoming a concern, and the airport's ability to cope with increased air traffic may come into question next century.
>
> Airport relocation or the construction of another airport raises several complex defence and civilian questions that are beyond the scope of the Committee's study. But

> experience elsewhere would suggest that relocation may be necessary in the longer term.

29. The Committee on Darwin therefore recommended:

> ...that the Northern Territory Government, in consultation with the Department of Defence, identify and designate an alternative site for a possible future airport. Early designation of a site would obviate longer term town-planning problems.

30. A representative of the Northern Territory Government advised the Committee that during the late 1980s, a considerable amount of research into potential sites for a new airport was undertaken and a possible site identified. It is expected that when the population of Darwin reaches one million people, such a relocation could be justified. The population is currently 75,000.

31. Defence advised the Committee that the relocation of RAAF Base Darwin will not be needed until well into the next century. In the meantime, Defence requires the operational capabilities of the Base to be improved so that it can meet its defined role. This role, in the context of Defence policy, is set out below.

Defence Policy

32. *The Defence of Australia (1987)* provided the basis for Defence planning. It required emphasis on Defence development in the north. *Defending Australia (1994)* reinforced this requirement. 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.

33. Defence advised the Committee that although the majority of RAAF activities will be centred on RAAF Base Tindal, a RAAF presence at Darwin will continue and RAAF Base Darwin will be retained as a forward operational base for the foreseeable future. The air defence of Northern Australia relies on both Bases operating as an entity, but with Tindal providing logistical support to sustain operations. Moreover, the close proximity of two major RAAF bases in northern Australia, together with the Air Weapons Range at Delamere, provides the RAAF with a unique environment where it can train and conduct exercises.

Role of RAAF Base Darwin

34. Defence advised the Committee that the defined roles of RAAF Base Darwin are:

- the air defence and surveillance of the northern approaches to Australia - being part of a chain of airfields, stretching across northern Australia from Learmonth in the west to Townsville in the east;
- the air defence of Darwin - in conjunction with RAAF Base Tindal, a manned forward operational redeployment base, enabling rapid build-up of defensive forces if required;
- support of air defence and joint exercises for training of the Australian Defence Force;
- a support base for exercises engaging regional forces;
- a military air head for transport operations; and
- a base for Army aviation activities conducted in the Top End.

35. In addition, the airfield services civilian aviation in the Darwin region, including international and domestic regular public transport and general aviation operations.

THE NEED AND ALTERNATIVES EXAMINED

36. Defence has examined the operational capability required at RAAF Base Darwin and found that facilities deficiencies exist at the Base, which impact on the ability of the Base to perform its designated role in a safe and flexible manner.

37. As mentioned in paragraph 2, Defence requires the following facilities on the Base:

- explosive ordnance loading aprons and alert facilities for fighter aircraft;
- operational and technical support facilities;
- additional aviation fuel storage;
- an upgrade of the emergency power station;

- a replacement fire and rescue facility; and
- replacement airfield lighting equipment facilities.

Reactions to the Need

38. At the public hearing, a number of organisations and individuals questioned the need for the further development of RAAF Base Darwin and suggested that RAAF Base Darwin be relocated to another site. Amongst the grounds for objecting to a continuation of the development of the RAAF Base were the following:

- the impact of aircraft noise, especially from fast military jet aircraft;
- the lack of a responsive aircraft noise complaints system;
- the location of a base used for pilot training proximate to the centre of a growing city;
- the safety of residents; and
- the enforcement by the Northern Territory Government, in conjunction with Defence, of stringent land use principles on land available for development proximate to the ends of the main runway.

Aircraft Noise

39. Defence advised the Committee that the number of aircraft operating from Darwin during exercises is not expected to increase if the facilities required are constructed. The draft ANEF contour plan for 2005 was prepared for RAAF Base Darwin in 1995 and was distributed to the Northern Territory Government for comment. This contour plan has shown that the extent of noise has decreased slightly from the previous plan, thereby indicating that there should not be an increase in the noise impact on the local community as a result of development of facilities on the Base.

40. It was asserted that fast military jet aircraft are the major cause of noise complaints. According to Defence, over the past five years the average percentage of military aircraft movements is about 13 per cent of total movements at the airport. Movements of foreign military aircraft amount to three to four per cent of the total. Defence advised that in 1997, there will be nine major exercises or deployments causing the base to be activated for about

7.5 months. This is almost similar to the number in 1996 and less than 1995. In 1998, four exercises are planned at this stage.

41. Defence advised that in 1993, a total of 300 noise complaints were received. In 1994, when Defence began to implement noise abatement procedures, this number was reduced to 120. In 1995, 32 complaints were received, although it should be acknowledged that a major air defence exercise was not held. In 1996, 72 noise complaints were received, some of which related to civilian aircraft. The effect of noise abatement procedures is best demonstrated by the reduction in complaints during major exercises. In 1993 there were 84 complaints during Operation Pitch Black; in 1996, this had been reduced to 30 during the three week exercise.

42. This may be due to the implementation of the recommendations of a report on aircraft noise complaints. In May 1994, following a spate of complaints about United States Marine Corps flying activity over the Darwin City area, the Minister for Defence (Senator the Hon. Robert Ray) directed the Deputy Chief of the Air Staff (Air Vice Marshall L B Fisher), to inquire into noise caused by military aircraft and allegations that visiting pilots were straying from designated flight plans and agreed procedures. The investigation found:

- no evidence of US pilots straying from flight plans;
- evidence of one pilot failing to comply with air traffic direction;
- evidence that some pilots breached noise abatement procedures;
- that current (May 1994) noise abatement procedures were inadequate - in terms of the clarity and way in which they were presented and in terms of their effectiveness in reducing military jet aircraft noise over Darwin;
- lack of arrangements to ensure all pilots received and understood briefing material provided on air traffic control procedures; and
- that public relations efforts for exercises by foreign forces during 1994 had not been effective.

43. Air Vice Marshall Fisher made a number of recommendations, including:

- the implementation of revised noise abatement procedures which reflect the suburban disposition of Darwin and the concerns of residents - new arrangements were proposed;
- to ensure compliance with noise abatement procedures:
  - publication of procedures in Australian aeronautical publications;
  - despatch of procedures to all foreign detachments before their departure for Australia;
  - on arrival in Australia, the briefing of aircrew on procedures before their next flight; and
  - a requirement that all pilots and navigators sign, as having read and understood, the noise abatement procedures;
- improvements to public relations involving the RAAF and Defence developing and implementing a program which:
  - explains why foreign forces exercise from Darwin;
  - provides early notification and gives wide dissemination of future air activities;
  - allays community concerns about continuous and unconstrained exercise activity over Darwin; and
  - emphasises that action has been taken to significantly reduce military aircraft noise at Darwin by the implementation of stringent noise abatement procedures.

44. At the public hearing, a senior Defence official described the noise abatement procedures in the following terms:

> For the last two years they [the noise abatement procedures] have been operating fairly successfully at the RAAF Base. They are quite stringent and they are some of the most stringent noise abatement procedures in the country. We have changed the attitude of aircraft, how they do their flight approaches and how they do their flight departures; we have limited their ceiling so they are limited to 2,000 feet; we have limited their power settings on take-

> off and we have cut out what we call initial and pitch procedures except on major air defence exercises where we require that particular procedure. That procedure is a means of getting large packages of aircraft on the ground in the shortest possible time. We have introduced curfews and we only operate from 0700 to 1900 out of exercise and up until 2200...during night exercises. We have introduced PR campaigns to let the local community know what is going on about noise, and we have had a major reduction in noise complaints in the last three years. (Transcript, p. 62)

45. The Committee questioned Defence about the practicalities of making more use of RAAF Base Tindal for exercises and deployments. Defence advised that maximum use of Tindal is made during exercises, but the extent of use is limited by size. For exercises, Darwin provides a threat axis, with defending aircraft based at Tindal. Defence also advised that because Tindal provides the main defensive capability in the north, there may be times, for national security reasons, in which it is undesirable to allow foreign military aircraft into Tindal. In short, Defence will continue to maximise the use of Tindal and make use of RAAF Base Darwin, when there are good reasons for not using RAAF Base Tindal. It must be emphasised, nevertheless, that the facilities required are not for exercise purposes; they are required to give RAAF Base Darwin the operational capability for the defence of Darwin.

46. The Committee also questioned the practicalities of retaining RAAF Base Darwin as a civilian airport for use by Defence as a bare base, which, in contingency situations, could be readily activated. Defence advised that:

> In a way that is what we do now. We only use Darwin to exercise the activities that we have to exercise in wartime. Darwin is quite a unique environment with the weather and operating area, and the type of air defence activities that have to be undertaken from Darwin can only be undertaken from Darwin. All our other activities are pushed south deliberately for security and to minimise our impact on the Northern Territory population. But, given the proximity of airfields that can be used against Australia and the speed of modern aircraft, the only effective place to provide air Defence of Darwin or its approaches, or the offshore resource extraction platforms, is from Darwin. Consequently, our crews have to exercise those alert

> procedures and air defence procedures from Darwin. (Transcript, pp. 63-4)

47. The practicalities of relocating the air force elements to another site, more remote from Darwin, were also raised by the Committee. Defence advised that:

> Certainly an alternate airfield to the Darwin airport would fulfil the same role as the current airfield at Darwin. The real issue would be that it would be a very costly exercise at this time. We are talking, from a military perspective only, of the cost of relocating being well in excess of $300 million, excluding the civil international component. That certainly would create a very significant cost to the Australian taxpayer. You need to compare that to the issues of concern to some elements within the Darwin community. We [Defence] believe the noise is one of the prime issues and we believe that it is quite manageable. (Transcript, p. 64)

Noise Complaints System

48. It was suggested that the reduction in noise complaints could be due more to the difficulties in making official complaints rather than the effects of the noise abatement procedures. Defence acknowledged that current telephone access may be difficult after hours, but these difficulties could be overcome. Defence also acknowledged that there has been no active campaign to notify the public of a dedicated telephone number, which may be called to lodge a formal complaint.

Location of RAAF Base Darwin

49. The airforce of the Republic of Singapore and the United States Marine Corps undertake unilateral deployments of aircraft to Darwin for periods ranging from two to five months. Both organisations also make use of the Delamere Weapons Range. It was asserted that foreign pilot training at RAAF Base Darwin is inappropriate, given the growth of the city during the past decade and the impact of planning restrictions on areas surrounding the RAAF Base. It was suggested that it is rare for a major military airfield to be located in the midst of a major city and decisions should now be made to relocate the airport, either RAAF and civilian, or move the RAAF Base to another location.

50. The Northern Territory Government has identified a possible site, some distance from the central business district, for a replacement airport. As previously indicated, the cost of construction would exceed $300 million for Defence works only. The Committee believes this is somewhat conservative, given the cost of Defence works at RAAF Base Darwin, the civil terminal and comparative construction costs at RAAF Base Tindal.

51. The Northern Territory Government supports the need for Defence to undertake works at RAAF Base Darwin which will enhance its operational role in a safe and effective manner. This support was given on the understanding that it is not intended to lead to increased air activity.

Public Safety

52. It was asserted that public safety is compromised by fast military jet aircraft and civilian aircraft operating out of RAAF Base Darwin. A number of purported "near misses" allegedly involving military aircraft, were advanced in support of this assertion. Defence advised the Committee that a "near miss" is when one or more aircraft take deliberate action to avoid a collision, irrespective of whether they are under air traffic control or not. Defence also advised the Committee that there have been no "near misses" during the past two years. Furthermore, the most recent "near miss" occurred in October 1994 and involved two civilian aircraft. Defence did, however, acknowledge that there may be situations which are not classified as a "near miss", where an aircraft may impinge on another's airspace and that there have been a number of incidents of that nature. There may therefore be a need to improve air to ground and ground to air communications and for pilots to be briefed on aircraft separation. These aspects are being addressed by the construction of new air traffic control facilities.

53. The Committee questioned the measures adopted to render safe aircraft ordnance, such as bombs or missiles, which have failed to jettison - ie, not dropped or fired. Defence advised that at present, aircraft with a "hung-up" weapon, will land and then taxi to the ordnance loading area, where the weapon will be made safe and disarmed by ground crew. This is undertaken at the ends of the runway. With the provision of purpose-designed OLAs, aircraft will be able to taxi and be unloaded in the revetted area.

Adjacent Planning

54. The required development of facilities is consistent with approved uses in the Darwin Control Plan. At the time of the public hearing, the Northern Territory Government had advertised a proposed land use objective which

might be applied to land in the vicinity of the Base, with limited public response. The land use objective had not been declared by the relevant Minister, although a senior Government official advised the Committee that any Defence facilities which address shortcomings at RAAF Base Darwin would be consistent with it and would result in increased amenity and safety in and around the airport.

55. A representative of the Northern Territory Government advised the Committee that, in recent years, the Government has maintained a strong position on any land which could compromise the future operation of the airport. With some exceptions, this has been demonstrated by:

- rezoning of private and public land around the airport;
- the declaring of land use policy at the eastern end of the airport;
- the blocking of proposed developments on private land; and
- the screening of many proposals for the use of large areas of Crown land in the vicinity.

56. The Northern Territory Government believes that Defence has paid heed to concerns raised by the Government and the community and has made its best endeavours to work within requirements. In response to suggestions that the recommendations of the Wran Report are not being given the attention they deserve, the Committee was advised that:

> In relation to the Wran Committee, and following on from its recommendations, there is now a joint Northern Territory Government and Defence structure to work together on strategic planning, including future air facilities. It is a committee jointly chaired at chief executive level by the Department of the Chief Minister and senior Defence officers. (Transcript, p. 142)

57. It was stated that the proposed land use objective can be attributed to a draft ANEF prepared by Defence and would detrimentally affect the ability of owners of land adjacent to the airport from developing the land. The Committee believes these are local planning issues which should be dealt with at the local level by appropriate authorities.

58. A written submission from Retain Aviation In Darwin supported the proposal, acknowledging the role of RAAF Base Darwin in the defence of

Australia, focussing on Darwin. The proposed works will contribute to the operational effectiveness of the Base.

Committee's Conclusions

59. The military presence in Darwin reflects Government policy for an increased defensive presence in the north of Australia.

60. RAAF Base Darwin is a vital component of the Defence infrastructure in the north and is likely to remain for many years at its present location.

61. Military and civilian infrastructure at RAAF Base Darwin represents a significant investment by the Commonwealth and the cost of relocating the RAAF Base to another site on the grounds of aircraft noise or public safety cannot be justified.

62. The Committee notes the responsible efforts of the RAAF in promulgating noise abatement procedures which have reduced the incidence of noise complaints.

Committee's Recommendation

63. The Department of Defence should establish a dedicated telephone line for receiving and recording any complaints about aircraft noise and a mechanism for their speedy investigation and reporting back to the complainants.

JUSTIFICATION OF THE NEED AND ALTERNATIVES EXAMINED

Ordnance Loading

64. Fighter and strike aircraft are deployed to RAAF Base Darwin for operational training. Although adequate aircraft parking exists on the Base for unarmed fighter and strike aircraft, ordnance loading is undertaken on licensed sections of the main taxiway. This limits the capability to mount operations and requires other aircraft to back track along the main runway, causing operational congestion and precluding use of the main taxiway as an emergency runway.

65. Defence advised the Committee that the requirements to achieve prescribed ordnance safety distances and passive defence separation present severe operational limitations. It is also tactically unsound to have concentrated in-line parking of strike and fighter aircraft as is now the case. Defence believes the provision of Ordnance Loading Aprons (OLAs), in a similar configuration

to that already adopted at RAAF Bases Tindal and Scherger, would overcome those operational deficiencies.

Alternatives Examined

66. A detailed study, undertaken by Defence, determined that the optimum design for the OLAs will constitute a circular layout of five stations. This standard design has already been adopted at RAAF Bases Tindal and Scherger. In order to accommodate the necessary number of fighter aircraft in a deployed squadron, two rings, each of five OLAs, are required.

67. Various possible sites were considered on the Base. The only available and suitable site which satisfies ordnance safety requirements and contains the safety arcs within Base boundaries was in the central operational area of the Base. The site selected overlaps the existing Control Tower and Fire Station. Each OLA would need to be able to accommodate a strike aircraft (rather than just one fighter size aircraft) in order to provide operational flexibility. Again, this practice has been adopted at other locations.

68. The most suitable site for OLAs should have a number of site services such as water supply, electrical cables and communications cables. Additionally, the site contains some redundant buildings such as the existing Control Tower, Approach Control Building and Airfield Fire Station. If the site is to be developed it will be necessary to relocate the engineering services and demolish the redundant buildings.

69. The Committee questioned Defence about the benefits, in terms of reduced aircraft noise, the OLAs would provide. Defence advised that the OLAs will reduce ground running noise.

Airfield Fire Station

70. By an agreement with Defence, Airservices Australia provides fire fighting services to the airfield and operates the airfield fire station. The existing airfield fire station is on the site best suited for new OLAs. If new OLAs are to be provided, the fire station would need to be relocated.

Alternatives Examined

71. Various sites were considered on the Base and the most suitable, on the north side of the airfield, adjacent to the existing Air Traffic Control Transmitter Building, has rapid access to airfield pavements available for emergency vehicles. Both Airservices Australia and the Federal Airports Corporation have been consulted and agree with the proposed location.

72. The Committee questioned the basis of master planning decisions which now, due to the provision of OLAs, requires the fire station to be relocated. Defence advised that the master plan for RAAF Base Darwin was updated in 1996, is based on strategic planning guidance and has been endorsed by the Air Force Development Committee.

73. The Committee also questioned Defence about the possibility of Airservices Australia meeting the total or partial cost of providing a new fire station. Defence advised that it is normal procedure that if there is a requirement to relocate a facility owned by another organisation, the party requiring relocation pays for it. Therefore, the responsibility for providing fire services for aircraft operations remains with Airservices Australia, but Defence will pay for the relocation of the facility.

Airfield Lighting Equipment Room

74. The airfield lighting equipment room is housed in the existing airfield fire station and would also need to be relocated. The equipment in the room is aged.

Alternatives Examined

75. Defence advised that international practice is for airfield lighting equipment to be located in two separate buildings, at the ends of the main runway. Under this arrangement, half of the lighting system will remain in operation in the event of a failure in one of the buildings. For this reason, rather than retaining a single airfield lighting equipment room, it is proposed to provide two separate rooms.

Operational and Technical Support Facility

76. A secure and protected facility is required from which deployed operational squadrons can be managed. Management activities include mission preparation and briefing and management of maintenance activities. Similar facilities have been provided at RAAF Bases Tindal, Curtin and Scherger. During the inspection, the Committee was able to see that there are currently no facilities which meet operational requirements available on the Base. Defence believes a new facility, located close to the OLAs, is required.

Alternatives Examined

77. Defence advised the Committee that briefing and crew rooms are available within the central area of the Base but they cannot be effectively used because of their location in relation to operational areas and because they lack

passive defence features. Defence identified a number of redundant temporary buildings available at the fighter and bomber replenishment aprons. The size and condition of these facilities do not meet requirements and they cannot be hardened economically. For these reasons, Defence believes the option of providing a new facility in the vicinity of the OLAs is preferred.

Quick Reaction Alert Facility

78. Operational training of crews of fighter aircraft in the air defence role requires the positioning of aircraft on alert at the end of the prime operational runway. There are no quick reaction alert facilities at RAAF Base Darwin. Defence believes there is a need for facilities which will enable aircraft and crews to shelter whilst on standby. Such facilities will require to be connected to communications and engineering services. Defence has undertaken an operational assessment of facilities required for aircraft on alert. This has indicated that there is a requirement for four fighter aircraft to be kept on short notice alert at Darwin. This is similar to other bases.

Alternatives Examined

79. Defence considered locating the facility at either end of the main runway. The option of locating the facility at the eastern end of the runway was discarded for the following reasons:

- prevailing wind direction;
- distance from other facilities;
- proximity to the Aviation Museum; and
- possible impact on sensitive areas of Marrara Swamp.

80. For these reasons, the preferred location would be at the western end of the main runway.

Aviation Fuel Storage Facility

81. Existing fuel storage facilities at RAAF Base Darwin are in above-ground unprotected tanks. The Base lacks a secure and protected aviation fuel storage installation. Defence policy is that vital fuel holdings at forward operational bases should be contained in protected and earth-covered installations. Defence advised the Committee that there is a need to augment storage capacity to meet predetermined requirements consistent with assessed rates of effort.

Alternatives Examined

82. The practicalities and benefits of using the standard design which evolved from similar installations at RAAF Bases Learmonth, Curtin and Tindal were examined. Defence advised that a reappraisal of their cost and vulnerability was undertaken and several alternatives were considered. As a consequence, Defence believes that an installation comprising several dispersed and buried tanks may provide a more effective solution to that previously adopted elsewhere.

83. The Committee questioned Defence about the security of fuel storage. Defence advised that there is a need to supplement existing fuel storage. The existing Fuel Farm 4 holds 60 per cent of current capacity. If lost, smaller fuel farms could be used, but with limited capacity. Defence therefore believes there is a need for a new fuel facility, with a capacity of 4 million litres, which would supplement fuel storage capacity as well as providing for redundancy should Fuel Farm 4 become non-operational.

Base Command Post

84. Defence believes there is a need to provide a Base Command Post from which the Base Commander can exercise command and control of the Base environment. Under present arrangements, Base command is undertaken from a permanent building and in some transportable huts. Defence believes these arrangements are unsuitable. The permanent building cannot be readily extended or hardened as required to provide the degree of security necessary for the vital activities being performed. Accordingly, Defence believes there is a need for a new semi-hardened facility.

Alternatives Examined

85. Several sites, within the Base, were considered. The preferred site is in the central area of the Base, outside the heritage precinct.

Central Emergency Power Station (CEPS)

86. Mains supply to the Base is provided through two 11 kV supplies from the local electricity authority. The CEPS on the Base provides emergency power to essential facilities in the event of loss of mains supply. The existing CEPS was constructed about 30 years ago and has two 750 kW generators, together with pneumatic and electrical ancillaries and controls. It was retrofitted with automatic controls in 1983. The controls have been disabled as one single generator cannot meet the initial emergency load. Defence advised

the Committee that the generators are proving unreliable because of their age, spare parts are difficult to obtain and they present acute maintenance problems. The assessed maximum operational demand for the Base under emergency conditions is 2.4 mVA and this load cannot be met by the two generators. For these reasons, Defence believes there is a need to replace the existing emergency power generators.

Alternatives Examined

87. Defence believes the existing CEPS building is in reasonable condition and capable of expansion and reconfiguration. Connections to the ringmain already exist and the building is located in an area considered appropriate. Defence believes the cost advantages arising from the utilisation of the existing building outweigh those associated with new construction.

Committee's Conclusion

88. There is a need to provide RAAF Base Darwin with facilities to meet assigned operational roles in a safe and effective manner.

THE PROPOSAL

Ordnance Loading Aprons

89. The design for the proposed complex will be very similar to that adopted for the latest aircraft OLA complex at RAAF Base Tindal and will incorporate the following features:

- 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 9 metres and will be constructed as flexible pavements surfaced with bituminous concrete. Aprons will be of rigid pavement construction (Portland cement concrete surfaced);

- aircraft shelters will be designed to accommodate two fighter sized aircraft side by side or one strike aircraft with its wings extended. The shelters will be open ended but designed to allow doors to be fitted in the future. They will be of steel frame, metal clad construction. The exterior surfaces of the shelters will be painted with a 'toned-down' colour scheme. Services within the shelters will include lighting for general illumination, 50 Hz and 400 Hz power supplies, fire points, and communication cables for tele-

briefing, closed-circuit TV, voice and monitoring. Earthing points will also be provided in the shelters;

- concrete faced earth embankment interceptor traverses and gun misfire barriers will be provided at each apron. These will be designed to provide mutual protection of facilities within the complex and to restrict damage to external aircraft and facilities through a mishap. Sizing of the traverses and barriers will accord with Defence ordnance safety criteria;

- an acoustic shelter at each apron 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 only;

- an alert/alarm will be provided at each acoustic shelter and will be linked to the proposed Operational and Technical Support Facility. Other communications links will also be provided between the two facilities; and

- airfield lighting will be provided to all pavements in the proposed Complex. The mimic panel in the Control Tower will be modified to indicate the operating state of the altered lighting system.

Benefits

90. Defence advised that provision of the OLAs would result in the following benefits:

- elimination of the need to use the main taxiway for aircraft arming; this in turn will eliminate the need for aircraft to backtrack down the main runway. There will be savings in operating costs by reducing aircraft taxiing distances and by aircraft not being required to hold in the circuit while the runway is occupied by taxiing aircraft;

- safety aspects associated with ordnance loading will be improved, especially with the provision of traverses and misfire barriers. Siting of the Ordnance Loading Complex will ensure that all safety arcs from the Complex are contained within the Base boundary;

- operational flexibility will be improved by providing the required number of positions where aircraft are loaded with ordnance consistent with the assessed operational need;

- dispersed and protected aircraft are less vulnerable to damage in a contingent situation;

- the central location of the OLAs will enable rapid access to and from the main aircraft pavements, including the main parallel taxiway, which is capable of being used as an emergency runway by many military aircraft;

- the aircraft shelters over the OLAs will reduce the harsh environmental effects on aircraft, equipment, and personnel. The ability to perform operational level maintenance to deployed aircraft will be enhanced with aircraft and personnel under cover; and

- acoustic shelters at the OLAs will provide duty personnel with a quiet retreat between aircraft operations, whilst at the same time providing required office accommodation for the preparation of documentation in a quiet environment.

Airfield Fire Station

91. The building will be a single storey steel frame structure with insulated metal roofing and masonry wall cladding but with the vehicle garages having metal wall cladding. Double glazing of windows will be provided in areas of the building requiring acoustic control. Internal masonry walls are proposed in areas requiring acoustic isolation. A Fire Control Centre within the building will be elevated to provide an all-round view of the airfield and movement areas with window glazing being inclined at 20 degrees to reduce reflections.

92. The dormitory within the building will be designed as a cyclone shelter.

93. The Fire Control Centre will incorporate facilities to monitor the airport fire alarm system and air to ground-to-ground radio communications.

94. Administrative, training and domestic areas within the facility will be airconditioned to comfort standards. The Fire Control Centre will be provided with an isolated airconditioning system to enable it to be operated in emergency situations. Mechanical ventilation, or natural ventilation, will be provided for areas such as toilets, ablutions, stores and workshops.

95. The hose drying facility will consist of an 11 metre high steel tower equipped with pulleys and a hand winch capable of supporting the weight of 12 wet hoses.

96. The smoke training hut will be of concrete block construction on a concrete slab and roof. The floor area will be about 80 square metres. There will be an entry/egress tunnel with top hinged door. A LPG fuelled smoke generator mechanism will be located adjacent to the hut to provide smoke within the facility. Also included will be a 1000 Kilogram LPG storage tank. The facility will be equipped with an exhaust extractor system, emergency exits, and movable internal partitioning to enable it to be configured in various ways for training.

97. The hot fire training area has been designed to replicate in generic form any of the airport fuel farms. It will consist of a pressurised fuel gantry comprising metal stairs, platforms, fuel valves, compressed air outlets - all mounted over a drained concrete slab. The facility will be designed to be fuelled by either kerosene (from a mobile trailer) or LPG (from the storage tank at the Smoke Training Facility). The drainage slab will be connected to a tank where unburnt hydrocarbons and other extinguishants will be collected for proper disposal.

98. Engineering services to the facility will include connections to the airport electrical ringmain and communications networks. Water, sewerage and stormwater connections will be made to the Federal Airports Corporation reticulation systems.

Benefits

99. The provision of the Airfield Fire Station will result in the following benefits:

- relocation of the Fire Station will free up the site for construction of the OLAs. (The Air Traffic Control Facilities which are at present on the site are currently being relocated.);
- some deficiencies with the present facility stem primarily from its age. A new Fire Station, designed to contemporary standards, will overcome such problems. In addition, adjacent fire training facilities will enable continuation training of firemen to occur proximate to their place of duty; and

- the new facility will be designed to meet current occupational health and safety standards. Physical fitness facilities within the new Fire Station will be provided to enable personnel to maintain required fitness standards.

Airfield Lighting Equipment Rooms

100. The buildings will be a single storey masonry structure with insulated metal roofing. Each building will house an Equipment Room for airfield lighting control equipment as well as providing space for maintenance activities. Plant rooms, housing a Local Emergency Generator set and a sub station, will also be provided. The buildings will be designed to Post Disaster Function standards.

101. The Equipment Room will be sound attenuated against aircraft noise because of its proximity to the taxiway and main runway. The Equipment Room will be airconditioned to reduce humidity and thermal loads on the equipment.

102. The project will include all necessary switchgear and controls to enable the airfield lighting system to be controlled from the Control Tower.

Benefits

103. The provision of two new Airfield Lighting Equipment Rooms will result in the following benefits:

- Air safety at Darwin will be improved - the new Airfield Lighting Equipment Rooms will be built to contemporary standards and will meet International Civil Aviation Organisation recommendations. The lighting circuits will be split between the two buildings thus providing for greater reliability of the airfield lighting system in the event of failure to part of the equipment;
- improved reliability by the replacement of aged and obsolete equipment with modern equipment; and
- reductions in maintenance costs.

Operational and Technical Support Facility

104. The Squadron Operations and Technical Maintenance buildings will be of concrete arch construction on a concrete slab, with a permanent steel lost-formwork lining. They will be earth covered 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 and 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 OLAs.

105. The Fly Away Kit Store will be a steel framed metal clad building on a concrete slab. The Ground Support Equipment shelter will be a metal carport style structure. Electrical power, lighting and fire detection will be provided to these buildings.

106. A concrete slab with engineering services will be provided for two deployed photographic cabins. The toxic waste generated from the cabins will be stored in two 5000 litre holding tanks.

Benefits

107. The provision of an Operational and Technical Support Facility will result in the following benefits:

- a secure and protected facility - deployed squadron operations could be managed, thus contributing to the operational effectiveness of the Base;
- the present deficiencies associated with the use of dispersed and unsatisfactory facilities for management and control of deployed squadron operations will be overcome;
- the improvement of squadron management - by the siting of a new facility in the correct position near the OLAs where aircraft will be located; and
- location of ancillary facilities, such as the Fly Away Kit Store and Ground Support Equipment shelter, in the vicinity of the Technical Support Building, will enhance operational support to the squadron.

Aircraft Quick Reaction Alert Facility

108. 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 9 metres and will be constructed as flexible pavements. Aprons will be of rigid pavement construction.

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

110. Aircraft shelters will be sized to accommodate two fighter aircraft side by side. The shelters will be open ended but designed to allow doors to be fitted in the future. They will be of steel frame, metal clad construction. The exterior surface of the shelters will be painted with a 'toned-down' colour. Services within the shelters will include lighting for general illumination, 50 Hz and 400 Hz power supplies, fire points and communication cables for tele-briefing, closed-circuit TV, voice and monitoring. Earthing points will also be provided within each shelter.

111. Concrete faced earth embankment interceptor traverses will be provided at the sides of each shelter. Their design will be similar to those at the OLAs.

112. The Ready Room will be steel framed 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 ablutions area will be mechanically ventilated. Communications links will incorporate landlines for an Aircraft Scramble Alarm and for telephones and faxes. A closed-circuit TV system will allow activities in and around the shelters to be monitored.

113. Airfield lighting will be provided to all pavements in the proposed Complex. The mimic panel in the Control Tower will be modified to indicate the operating state of the altered lighting system.

Benefits

114. The provision of an Quick Reaction Alert Facility will result in the following benefits:

- enhancement of the operational effectiveness of the RAAF Base by the provision of a capability to maintain fighter aircraft on alert at the end of the runway for prolonged periods;
- the ability of aircrew to sustain longer duty periods by the provision of a sheltered facility, together with a Ready Room; and

- reduced deterioration of equipment installed in aircraft (and savings in maintenance costs) by the provision of shelters from the harsh environmental conditions.

Additional Aviation Fuel Storage Facility

115. The Fuel Storage Facility will comprise a number of anchored, earth protected tanks. Defence advised the Committee that secondary containment will be considered to protect the environment. The tanks will be coated internally to prevent corrosion. Metallic tank surfaces in contact with soil will also be externally coated and cathodic protection will be provided to minimise corrosion.

116. The tanks will be interconnected to enable fuel transfers. Pipelines will be provided to offload and dispense fuel. For each transfer operation, fuel will be circulated through a fuel filtration system. Low carbon steel or stainless steel pipework will be used. Larger size (not smaller than 100 mm in diameter) low carbon steel pipelines will be coated internally. Smaller pipelines (less than 100 mm in diameter) will be of stainless steel. All buried pipelines will be externally coated and cathodic protection will be incorporated as a secondary corrosion protection measure.

117. The fuel distribution system will incorporate automatic control systems for fire prevention and emergency response. Automation will be considered for remote operation of key isolation and control valves.

118. The fuel management and quality control building at the installation will be of steel framed metal clad construction on an earth protected arch structure and will incorporate appropriate noise attenuation. This building will accommodate monitoring and control equipment, and equipment to enable fuel quality tests to be conducted. The control equipment will include a mimic panel depicting the operational status of the entire fuel installation.

119. A system to detect fuel leaks from tanks will be incorporated into the design. Adequate spill containment and environmental management systems, eg oil/fuel interceptors, will be incorporated into the facility's drainage system. Monitors and alarms to identify any leakage from the fuel storage tanks will be incorporated into the installation control system. Interceptor pits will be provided on drainage lines.

Benefits

120. The provision of the proposed Aviation Fuel Storage Facility will result in the following benefits:

- the availability of fuel from a protected fuel storage installation should improve the operational effectiveness of the Base in a contingent situation; and
- storage capacity will be increased to meet specified holdings against predetermined rates of effort.

Base Command Post

121. The design of the proposed facility will be similar to the Squadron Operations and Technical Maintenance buildings described earlier. External services include communications cabling with links to vital assets.

Benefits

122. The construction of the proposed Base Command Post will result in a secure and protected facility from which the Base Commander can discharge primary command responsibilities for the defence of the airfield, the maintenance of base facilities and ensure that air operations are sustained. Thus the provision of the facility will contribute to the operational effectiveness of the Base.

Upgrade of Central Emergency Power Station

123. The proposed works involve an extension of the existing power station building in a style to match the existing form of construction (steel framed masonry building with sheet metal roofing and concrete slab on ground construction). The two existing generators will be removed, together with the existing controls and switchgear and replaced with three new 1 mVA generators and control equipment. The new generators will be designed for automatic starting and for parallel operation. A new control panel with mimic diagrams will be installed to the sound attenuated control room overlooking the generator floor.

124. The size of the building extension will enable a fourth generator to be housed if required.

125. Assessment of fuel options of diesel or gas will be made, taking operating costs into account. Fuel storage will be located underground and be sized to allow running for four days before resupply.

Benefits

126. The upgrade of the Central Emergency Power Station will ensure that designated essential power demands of critical operational and support facilities can be met in the event of a failure in the external mains power supply. This will contribute to the operational effectiveness of the Base.

Common Design Features, Engineering Services and Site Works

127. All necessary engineering services will be provided to the new facilities. Some of the common design features are:

- electrical power - drawn from the electrical ringmain on the Base, with local emergency generator sets when specified. The Central Emergency Power Station is on the ringmain. Load sheding controls will be provided to disconnect less essential electrical loads in the event of a mains failure, thus enabling the essential load demands to be met from the Central Emergency Power Station. Facilities considered to be important and not provided with a local emergency generator set will be provided with a mobile generator link box;
- lightning protection - provided as required;
- communications cables - connected to the Base communications network;
- landscaping - low maintenance plantings suitable for the local area, to facilities located away from aircraft operational areas. Earth covered buildings will be grassed; and
- fuel interceptor pits - on drainage lines from areas where aircraft parking is planned.

PLANNING AND DESIGN

Planning

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

Standards

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

- the Building Code of Australia;
- Northern Territory 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; and
- the International Civil Aviation Organisation Air Traffic Services Planning Manual.

Design philosophy

130. The philosophy adopted in the design of the proposed facilities has incorporated the following considerations:

- the provision of austere, and utilitarian facilities of efficient design suitable for the rigours of the climate;
- adoption, where possible, of conventional construction techniques and materials, in particular those commonly used by the construction industry in Darwin; and
- utilisation of readily available and durable materials that combine long life with minimum maintenance.

Fire Protection

131. All construction and fire protection requirements will, as a minimum, be 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. The policies for asset protection, detailed in FACMAN 2, are the Defence risk management approach to the risk assessment of Defence assets and functions.

132. Defence will require certification from a suitably qualified certifier, that the design and construction meet the requirements of the BCA, FACMAN 2, relevant Codes and Standards. This will also apply to any additional State, local government and Defence requirements.

133. The NT Fire Brigade will be invited to comment on the project, visit the site and offer comment to ensure that the Brigade's operational requirements are met.

134. 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.

135. 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.

ENERGY MANAGEMENT AND LIGHTING

136. 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.

137. To reduce energy consumption, where possible, lighting will be controlled by photo electric switches in conjunction with time-switch schedules. This is to include provision of personnel sensor controlled lighting to amenities and other intermittently occupied areas. 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.

Legionella

138. As air cooled airconditioning systems are proposed, no specific precautions against legionella are considered necessary. Potable water will be below the temperature range where Legionella can breed to levels affecting health.

Committee's Conclusion

139. The proposed development works will enhance the operational effectiveness of RAAF Base Darwin as a forward operational redeployment base and an air defence base for Darwin.

ENVIRONMENT AND HERITAGE

Environmental Approvals

140. An environmental assessment report was produced to examine the environmental impact of the proposed development, which formed the basis of the granting of an environmental certificate of compliance in July 1996.

Direct Environmental Impacts

141. Defence believes there will be no direct adverse environmental impacts resulting from the construction of the proposed new facilities. Nevertheless, precautions will be taken to ensure that no silting or contamination of Marrara Swamp or Rapid Creek occurs as a consequence of construction activities. Fuel interceptor pits and flame traps will be provided on drainage lines from areas where aircraft parking is planned. Any waste generated from photographic activities at the proposed Operational and Technical Support facilities is proposed to be stored in two 5000 litre holding tanks and disposal will be by a certified contractor.

142. Rapid Creek is the only remaining freshwater creek in the Darwin Metropolitan Area. A number of organisations have an interest in the Rapid Creek area. A Steering Committee for the environmental control of Rapid Creek has been established, under the chairmanship of Defence, on which 12 organisations are represented. A three-tier plan has been developed which covers fire control, weed control and water quality control. It is worth noting, however, that areas which feed into Rapid Creek are not confined to RAAF Base Darwin.

Environmental Audit and Environmental Management Plan

143. An initial environmental audit was undertaken of all RAAF establishments some years ago and matters of environmental concern identified. Also, an Asbestos Survey was undertaken and appropriate rectification measures initiated. As with all RAAF establishments, measures are in hand to produce an Environmental Management Plan for the Base, but this will take some time to complete.

Aircraft Noise

144. Issues raised in connection with aircraft noise have been addressed previously.

Explosive Ordnance

145. An Ordnance Safeguarding Plan has been produced for the Base incorporating the safeguarding arcs for the proposed OLAs, the existing Ordnance Storage Facility, and the Ordnance Preparation Facility. Once all the presently proposed ordnance facilities have been built, the need for any Departmental Risk Waivers will be removed.

Aboriginal Cultural Heritage

146. Northern Territory Government Aboriginal Site Registers have confirmed that there are no recorded Aboriginal sites within the Base boundary.

147. A recent Defence initiated archaeological heritage study has revealed that the highest potential for archaeological sites exists within the Marrara Swamp/ Rapid Creek environs. Twelve Aboriginal archaeological sites (artefacts scatters) and ten isolated finds were located within the Marrara Swamp/Rapid Creek study area. No archaeological material was located within other study areas. The significance of the identified sites was assessed as being either low or moderate within a local context. The controlled access environment of the Base is likely to make the surviving sites an increasingly valuable asset, representing local examples of this type of archaeological landscape. Other than in the Marrara Swamp - Rapid Creek environment, there appears to be no archaeological constraints for development elsewhere within the RAAF Base.

European Cultural Heritage

148. The works proposed as part of the Development of Operational Facilities at RAAF Base Darwin are assessed as not having any heritage implications. The central area of the Base has a heritage classification. A Conservation

Analysis has been drawn up for the Base. Work has been undertaken in recent years to conserve and restore some of the more important buildings in the Heritage Precinct of the Base such as the original Formation Headquarters building, the Main Entrance and Guardhouse, and the Cinema. The original Airmen's Mess suffered acute structural degradation and a large portion of that building had to be demolished; nevertheless, the facade and dining areas were retained. That work was done with the full agreement of the Heritage Commission.

CONSULTATION

149. Defence advised the Committee that the following Authorities were consulted and/or advised during the planning stages:

- Federal and State Government Representatives for the area;
- the Federal Airports Corporation and Airservices Australia;
- 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);
- the Darwin City Council; and
- the NT Fire Brigade.

EMPLOYMENT

RAAF

150. The present service population of RAAF Base Darwin is approximately 650 personnel. No increase to the RAAF complement permanently based at RAAF Base Darwin is envisaged as a result of the implementation of the proposed works.

Construction Workforce

151. Over the envisaged construction period of about 30 months, an average of about 100 personnel will be directly employed on construction activities. In addition, it is anticipated that construction will generate further job opportunities off-site from the prefabrication of components and the manufacture and distribution of materials.

COST AND TIMINGS

Cost

152. The cost of this project is estimated at $46.5 million (November, 1995 prices) with an out-turn cost of $59.5 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.

Timings

153. Subject to Parliamentary approval, tenders will be called in February 1997, with the objective of having construction completed by November, 1999.

Committee's Recommendation

154. The Committee recommends the development of operational facilities at RAAF Base Darwin at an estimated out-turn cost of $59.5 million.

OTHER WORKS AT RAAF BASE DARWIN

Airmen's Recreation Facility and Canteen

155. The 1996/97 Defence medium new works program includes the construction of a new Airmen's Recreation Facility and Canteen on RAAF Base Darwin at an estimated cost of $3.7 million. The requirement for the facility is independent of the works proposed in this reference. Defence provided the Committee with details of the proposed work, which will be undertaken concurrently with the operational works.

156. The existing Airmen's Recreation Facility (locally referred to as the Airmen's Club) does not meet the recreational needs of Other Ranks based at Darwin and those on exercises or deployed to the Base.

157. The existing Base Canteen needs to be replaced because of its deteriorated condition and poor layout. An examination of options for the replacement or refurbishment of the two facilities was made, with replacement being considered the most practical and satisfactory option.

158. The site for the two buildings is proposed on the existing carpark adjacent to the Base Cinema and in an area where other recreational facilities

are located. As the site is within the heritage precinct, it will be necessary for the design to be compatible with, and sympathetic to, other facilities in the area. Defence advised the Committee that the Australian Heritage Commission will be consulted to ensure that the heritage characteristics of the precinct are preserved. The need, scope and details of this proposal are amplified at APPENDIX B.

Future Works

159. There are no other major works proposals involving RAAF Base Darwin in the current Defence Five Year Development Program. Some medium new works proposals, primarily to rationalise, consolidate and improve domestic and support facilities on the Base, may be pursued in future years. Such proposals might include:

- improvements to warehousing and air movements facilities; and
- consolidation of flight line facilities and rationalisation of on-base roads and engineering services.

160. In addition, works will be required to enable No 114 Mobile Control and Reporting Unit to be relocated to Darwin. In the much longer term there may be a need to construct some of the additional airfield pavements depicted in the Master Plan.

CONCLUSIONS AND RECOMMENDATIONS

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

1. **The military presence in Darwin reflects Government policy for an increased defensive presence in the north of Australia. (Paragraph 59)**
2. **RAAF Base Darwin is a vital component of the Defence infrastructure in the north and is likely to remain for many years at its present location. (Paragraph 60)**
3. **Military and civilian infrastructure at RAAF Base Darwin represents a significant investment by the Commonwealth and the cost of relocating the RAAF Base to another site on the grounds of aircraft noise or public safety cannot be justified. (Paragraph 61)**

4. **The Committee notes the responsible efforts of the RAAF in promulgating noise abatement procedures which have reduced the incidence of noise complaints. (Paragraph 62)**

5. **The Department of Defence should establish a dedicated telephone line for receiving and recording any complaints about aircraft noise and a mechanism for their speedy investigation and reporting back to the complainants. (Paragraph 63)**

6. **There is a need to provide RAAF Base Darwin with facilities to meet assigned operational roles in a safe and effective manner. (Paragraph 88)**

7. **The proposed development works will enhance the operational effectiveness of RAAF Base Darwin as a forward operational redeployment base and an air defence base for Darwin. (Paragraph 139)**

8. **The Committee recommends the development of operational facilities at RAAF Base Darwin at an estimated out-turn cost of $89.5 million. (Paragraph 154)**

Neil Andrew MP
Chairman

6 February 1997

APPENDIX A

WITNESSES

CLARK, Mr Alister James, Urban Bushland Manager, Greening Australia Northern Territory, GPO Box 1604, Darwin, Northern Territory, 0801

GRAY, Group Captain Norman Arthur, Director, Aerospace Systems Development, Director-General Force Development—Aerospace, 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

HOWELL, Ms Kerry, Coordinator, Aircraft Noise Abatement Group, GPO Box 4456, Darwin, Northern Territory, 0801

KAVANAGH, Group Captain Brian Lawrence, Officer Commanding, 321 Air Base Wing, Headquarters 321 ABW, RAAF Base Darwin, Darwin, Northern Territory, 0800

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

MARTIN, Mr Lex Stephen, Public Officer/Spokesperson, Northern Territory Greens, 10 Becker Place, Rapid Creek, Northern Territory, 0810

MIDGLEY, Ms Katharine Elizabeth, Coordinator, Aircraft Noise Abatement Group, GPO Box 4456, Darwin, Northern Territory, 0801

PINNEY, Mr John, Deputy Secretary—Lands, Department of Lands, Planning and Environment, GPO Box 1680, Darwin, Northern Territory, 0801

SMITH, Mr David, Managing Director, Vysrose Pty Ltd, GPO Box 2898, Darwin, Northern Territory, 0801

APPENDIX B

AIRMEN'S RECREATION FACILITY AND CANTEEN

Introduction

1. This proposal incorporates the provision of a new Airmen's Recreation Facility and a Canteen on RAAF Base Darwin, as two separate but contiguous buildings, located in the vicinity of the existing Base Cinema.

Background

2. The existing Airmen's Recreation Facility (Airmen's Club) was constructed in 1968 to cater for much smaller numbers of personnel than currently use the facility. The facility has been modified to handle larger numbers but is still incapable of meeting the needs of the 505 permanent personnel together with 400 other personnel who visit the Base on exercise or deployment. This facility has civilian management operating under the direction of the Airmen's Club Committee.

3. The existing Base Canteen was originally constructed as a technical facility, and was converted to a canteen in the late 1970s. The internal layout of the building is poor and it is in need of major refurbishment or replacement. The Base canteen is managed by a civilian organisation known as Frontline Services.

4. The Airmen's Club represents an important part of Base life. The provision of the recreational facilities plays an important part in fostering good morale, cooperation and esprit-de-corps, a desired feature within the ADF. Similarly, the Base Canteen facilities are utilised by all personnel, especially those making use of fast food services.

Existing Deficiencies

5. The deficiencies of the existing Airmen's Club are summarised as follows:

- the main area of the facility is a large 'public bar'. This is not considered appropriate, as the ADF today aims to encourage a sensible attitude to the consumption of alcohol and a pursuit of healthier social activities. The facility does not contain suitable areas for entertainment activities, quiet areas for reading or conversation, and may present a poor image to guests. Other areas of the building intended for recreation are not suitable for this purpose;

- the facility is in poor condition, having deteriorated with time and use. Many areas are termite damaged and others leak in the wet season. Building movement has occurred and portion of the floor and walls are cracking. Mould growth in the wet season is a continuing problem;

- the Club is too small to accommodate the numbers that wish to use the facility; and

- on-base married quarters are often affected by noise emanating from the Airmen's Club.

6. The deficiencies of the existing Canteen Facility are summarised as follows:

- the building is about 30 years old and has suffered in Darwin's tropical environment. It has deteriorated to the stage where major refurbishment or replacement is required to bring it to a suitable standard; and

- the building suffers from a poor internal layout. Although it has been used as a canteen for a number of years, it was not originally designed for that purpose.

Options Considered

7. The main options considered were either to undertake major refurbishment or to replace the Airmen's Club and the Canteen. Replacement with new facilities was considered the better option for the following reasons:

- refurbishment and extension of the facilities would be costly and require demolition of large sections of the structures. This would

result in buildings where substantial components will still be 30 years old, with further refurbishment probably required in the near future. New facilities will provide buildings with a life of at least another 25 years;

- refurbishment and reconfiguration of the buildings would not result in an effective layout. This could only be achieved by providing new purpose-built facilities meeting contemporary functional requirements; and

- refurbishment of the existing facilities would add to the inconvenience of users of the facilities. Construction of a new facility will enable the existing facilities to continue to be used until the new facilities are available.

Requirements

8. The broad scope of work for the proposed new Airmen's Recreation Facility and Canteen is outlined below:

- provision of a purpose designed Airmen's Club of about 1,600 square metres sited on the existing carpark adjacent to the Base Cinema. The new facility will contain bar and lounge areas, TV and ante room, games room, entertainment areas, committee, library and quiet rooms, mothers' and indoor child care room, manager's office, and service, ablutions and staff facilities;

- provision of a purpose designed Canteen of about 250 square metres, adjacent to the proposed Airmen's Club, containing a fast food outlet and a retail store (with fit-out being undertaken by Frontline Services);

- demolition of the existing Airmen's Recreation Facility and Canteen; and

- construction of a replacement car park on the site of the demolished facilities might be required.

Social Benefits and Cost Savings

9. The social benefits and savings achieved by providing new facilities will include:

- the lifestyle and morale of Base personnel will be improved;

- the Base will be able to dispense with inappropriate and unsatisfactory facilities which have reached the end of their economic lives; and

- the high costs of maintaining the existing facilities will be eliminated.

Design Considerations

10. Design considerations for the new facilities will include:

- all relevant codes and practices will be followed;

- the facilities will be of utilitarian and efficient design suitable for Darwin's climate, using conventional construction techniques and durable materials which combine long life with minimum maintenance, and of a style compatible with the location of the facilities within the Heritage Precinct of the Base; and

- the buildings will be of steel frame and masonry construction with occupied areas being airconditioned. Ablution areas will be mechanically ventilated. Food preparation areas will incorporate features to ensure hygienic conditions are maintained. The building surrounds will be landscaped, as will be any outdoor entertainment areas.

Master Planning

11. Sites for the two facilities have been reserved on the recently revised Master Plan for the Base.

Manpower Implications

12. There are no manpower implications resulting from the provision of the facilities.

13. Over a construction period of nine months, an average of about 15 personnel will be directly employed on constructing the facilities, and in addition, further off-site job opportunities will emerge from the fabrication of components and the manufacture and distribution of materials.

Financial Aspects

14. The estimated ceiling cost for the works is $3.7 million. This cost does not include the fit-out of the Canteen, which will be borne by Frontline Services.

Timing

15. Subject to necessary approvals, it is envisaged that construction will commence in March 1997, with the objective of having the project completed by December 1997.

Environmental Compliance

16. The proposal is still in its formative stage. Before the project can proceed an Environmental Certificate of Compliance will need to be obtained.

Environment and Heritage Considerations

17. No adverse environmental impacts are foreseen as a result of constructing the proposed new facilities.

18. The Australian Heritage Commission has been consulted regarding the design and siting of the facilities. The facilities will be designed in accordance with the surrounds of the Heritage Precinct.

Consultation

19. As design of the proposed facility progresses, consultation will occur with the Airmen's Mess Committee and Frontline Services.