



Parliamentary Standing Committee on Public Works

REPORT

relating to the proposed

REDEVELOPMENT OF FACILITIES AT RAAF BASE AMBERLEY, QLD

(Fifth Report of 1998)

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA
1998

The Parliament of the Commonwealth of Australia
Parliamentary Standing Committee on Public Works

Report relating

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Redevelopment of facilities at
RAAF Base Amberley, Qld

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**MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON
PUBLIC WORKS**

(Thirty-Second Committee)

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

Senate

Senator Paul Calvert
Senator Alan Ferguson
Senator Shayne Murphy

House of Representatives

Mr Richard Evans MP
Mr John Forrest MP
Mr Ted Grace MP
Mr Michael Hatton MP²

1 Replaced Mr Neil Andrew MP as Chairman on 4 September 1997

2 Replaced The Hon Michael Lee MP on 26 June 1996

Committee Secretary: Bjarne Nordin

Inquiry Secretary: Michael Fetter

Senior Research Officer: Ian McKinnon

**EXTRACT FROM THE
VOTES AND PROCEEDINGS
OF THE HOUSE OF REPRESENTATIVES**

No. 147 dated 24 March 1998

**PUBLIC WORKS—PARLIAMENTARY STANDING COMMITTEE—
REFERENCE OF WORK—REDEVELOPMENT OF FACILITIES AT
RAAF BASE AMBERLEY, QLD**

Mr Fahey (Minister for Finance and Administration), 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: Redevelopment of facilities at RAAF
Base Amberley, Qld.

Question—put and passed.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

Redevelopment of facilities at RAAF BASE Amberley, Queensland

On 24 March 1998, the House of Representatives referred to the Parliamentary Standing Committee on Public Works for consideration and report the proposed redevelopment of facilities at RAAF Base Amberley.

THE REFERENCE

1. The terms of reference were as follows:

The Department of Defence proposes a redevelopment of facilities at RAAF Base Amberley. A variety of new facilities and upgrading works are aimed at maintaining the required capability of the units located at Amberley. These redevelopment works will address shortcomings in the existing infrastructure that have contributed to the inefficient work practices and reduced productivity levels and will contribute to increased compliance with modern health and safety standards.

The development proposal will provide RAAF Base Amberley with appropriate functional facilities and working environments for the strike reconnaissance and other Australian Defence Force (ADF) capabilities whilst ensuring flexibility for future uses.

2. When referred to the Committee, the estimated out turn cost of the proposed work was \$73.7 million.

THE COMMITTEE'S INVESTIGATION

3. The Committee received a written submission from the Department of Defence (Defence) and took evidence from Defence officials at a public hearing held in Brisbane on Tuesday 19 May 1998.

4. Written submissions were also received from:

- Environment Australia—Environment Protection Group;
- Australian Heritage Commission;
- Queensland Government Department of Environment; and
- The Commonwealth Fire Board.

5. Letters of support for the project were also received from the following organisations and individuals:

- Ipswich City Council (Mayor and Councillor Pisasale);
- Ipswich Region Chamber of Commerce and Industry;
- Ipswich Events Corporation;
- Boeing Australia Ltd.;
- Ipswich-Amberley Support Group; and
- Queensland Department of Tourism and Small Business.

6. Prior to the public hearing the Committee undertook an extensive inspection of RAAF Base Amberley. The inspection included facilities which formed part of a proposal involving the development of No 6 Squadron Facilities, examined and reported on by the Committee in 1997 (*Committee's Fifth Report of 1997—Parliamentary Paper 86/1997*).

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

BACKGROUND

Location

8. RAAF Base Amberley is located on the western fringe of Ipswich, 40 kilometres west of Brisbane. The Cunningham Highway runs close to the Base and provides the major road link. Secondary access to the Base from the western part of Ipswich is provided by the old Rosewood Road.

9. The Base occupies an area of approximately 1,660 hectares. Land has been acquired by Defence, outside the Base boundaries, to act as a buffer zone.

Role of RAAF Base Amberley

10. As one of the RAAF's major airbases, Amberley is manned by about 2,700 Service and civilian personnel and is the home base of the RAAF's Strike Reconnaissance Group, which is equipped with F-111 aircraft. The Base also supports a variety of other Air, Logistics and Training Command units.

Units at RAAF Base Amberley

11. Units currently based at Amberley are as follows:

- Air Command—Strike Reconnaissance Group;
 - No 82 Wing,
 - No 1 Squadron,
 - No 6 Squadron,
- No 38 Squadron;
- No 301 Air Base Wing;
- Airfield Defence Wing;
 - No 2 Airfield Defence Squadron;
 - No 3 Airfield Defence Squadron (Ready Reserve);
- No 501 Wing;
 - No 501 Aircraft Maintenance Squadron,
 - No 501 Avionics Maintenance and Management Squadron,
 - No 501 Strike Reconnaissance Logistics Management Squadron,
- No 114 Mobile Control and Reporting Unit;
- RAAF Security and Fire School;
- No 23 (City of Brisbane) Squadron; and
- Air Training Corps.

History of development

12. The expansion of the RAAF in the late 1930s called for the development of a base in the Brisbane area. In 1938, in response to this requirement, Defence acquired a 330-hectare site located west of Ipswich for the development of RAAF Base Amberley. Construction of the initial facilities commenced shortly afterwards.

13. Amberley was named after a town in east Sussex, the birthplace of a pioneer farmer, James Edwin Collett. The Aboriginal name for the area was 'Jebropilly', meaning 'swampy place where flying squirrels are found'.

14. In 1940, Amberley commenced operations with the completion of a Station Headquarters and the arrival of No 24 Squadron. A flying training school and a recruit depot were also located there. It was not until 1942, that the Base assumed its principal support role, with the formation of No 3 Aircraft Depot. This had the responsibility for the assembly and repair of a wide range of aircraft. During the Second World War, numerous operational units used Amberley for refitting and as a staging area before moving to forward bases. Several United States squadrons were also based at Amberley during this period.

Post-war development.

15. The main runway and parallel taxiway were reconstructed on a new alignment in the immediate post-war years.

16. Shortly after the Second World War, No 82 Wing and a supporting Maintenance Squadron were transferred from Tocumwal, NSW. In 1948, when three squadrons were re-formed at Amberley with Lincoln aircraft, the operational role of the Base became firmly established. The Lincolns were replaced with Canberra aircraft in 1954. In the intervening years some of those squadrons saw extended service overseas. No 23 (City of Brisbane) Squadron was re-formed at Amberley as an auxiliary squadron, during this period.

17. RAAF Base Amberley is the largest single employer in the Ipswich region.

Acquisition of F-111 aircraft

18. In 1964, the Government announced the acquisition of the F-111 aircraft for the RAAF. It was planned to re-equip the bomber squadrons at Amberley with the new aircraft in 1968. Problems arose, requiring major modification of the aircraft, and as an interim measure, the RAAF leased Phantom aircraft from the United States Air Force. Phantom aircraft were operated by Nos 1 and 6 Squadrons, until the F-111s became available in 1973.

Further major development—involvement by the Committee

19. Major development of the Base took place between 1966 and 1969, to provide facilities for the introduction of the F-111 aircraft and to upgrade domestic accommodation. Those works involved the provision of new facilities as well as modifying many existing facilities dating from the Second World War. The main runway was extended between 1969 and 1971 to provide for

greater safety for F-111 operations. These operational works were not referred to the Public Works Committee on the grounds of "national security".

20. Works related to the acquisition of F-111 aircraft did not extend to the replacement of many other needed facilities. In 1972, the Committee examined and reported on a project involving the following elements (*Committee's Twenty-fourth Report of 1972—Development of RAAF Base Amberley—Parliamentary Paper 137/1972*).

- additional hangars and technical support facilities involving a major maintenance hangar for No 3 Aircraft Depot;
- facilities for No 12 (Helicopter) Squadron;
- hangars to replace two wartime igloo hangars; and
- various technical support facilities.

Further medium works

21. Further development of the Base occurred after 1978. Some of the more significant facilities which have been provided include:

- a Group Headquarters and Communications Centre;
- apron aircraft shelters for F-111 aircraft;
- additional aviation fuel storage;
- accommodation for No 114 Mobile Control and Reporting Unit;
- accommodation for the RAAF Fire and Security School;
- re-alignment and development of base roads and provision of a base entry control facility;
- airfield surveillance radar installation;
- extension to the Central Warehouse (part of the Defence Logistics Redevelopment Project—Air Force Aspects); and
- explosive ordnance storage and preparation facilities.

Acquisition of additional aircraft

22. In 1994, additional F-111 aircraft were obtained from the United States Air Force. These aircraft were to supplement the existing F-111 fleet and for use as future replacement aircraft.

Development of facilities for No 6 Squadron

23. In 1997, works to provide improved working accommodation and technical facilities for No 6 Squadron were considered by the Committee (*Committee's Fifth Report of 1997—Development of No 6 Squadron Facilities RAAF Base Amberley—Parliamentary Paper 86/1997*). The works comprised new facilities adjacent to the existing apron and hangars for the operation, servicing and maintenance of the F-111 aircraft. The proposal was aimed to provide an integrated facility for the various operational elements of No 6 Squadron, which included an operational reconnaissance and strike capability as well as aircrew conversion and training functions. Elements of the proposed works were:

- office accommodation;
- mission briefing and training rooms;
- storage facilities and workshops; and
- associated amenities for a unit strength of 180 personnel.

24. The estimated cost of these works was \$10.25 million. Following a recommendation that the works should proceed, they were commenced in 1997 and are due for completion in mid 1998.

Inspection by the Committee

25. The Committee examined work nearing completion during the inspection of the Base. Particular attention was paid to functionality and the capacity of the new facilities. Two features were particularly noted. First, what appeared to be insufficient attention to the functionality and layout of office and briefing areas and secondly what appeared to be inadequate provision of wiring outlets for computers in office areas.

26. The Committee was subsequently advised, at the public hearing that the new buildings will be connected to the RAAF communication network, including the secure network and the computer aided management system. The system will involve relevant personnel using terminals for all data entry, rendering paper redundant. The use of terminals will be introduced to F-111 squadrons in 1999-2000 and is already used by No 38 Squadron. It should,

however, be emphasised that during the inspection of the new facilities there appeared to be an inadequate provision of outlets for computer terminals which may necessitate retrofitting, if not provided in the new buildings under construction.

THE NEED

Future of RAAF Base Amberley

27. Before proceeding with an examination of identified deficiencies, the Committee sought to establish the long term future of the Base as one of the RAAF's major operational establishments and the future of the Evans Head air weapons range, which is a vital training asset. These fundamental considerations are based on a number of studies undertaken during the past decade and the recently completed Defence Efficiency Review.

28. The future of the Base draws certainties from a number of Defence planning parameters. These include Defence policy pronouncements and reorganisations derived from them. *The Defence of Australia* (1987) outlined the Government's Defence policy for Australia and became the basis of future Defence planning. The RAAF's F-111 were, at the time, seen as providing the Australian Defence Force with long range aircraft to strike sea and land targets with substantial immunity and for the reconnaissance version of the aircraft to provide all-weather long range reconnaissance in Australia's areas of interest.

29. *Defending Australia* (1994) ratified the need for F-111 aircraft to undertake specific reconnaissance tasks and a strategic strike capability with the aircraft being able to strike specific targets with precision munitions at night and in adverse weather. The Force Structure Review, which was undertaken in the early 1990s, resulted in the renaming of, and role changes to, a number of the major support elements located at Amberley. For example:

- the Base Squadron became No 301 Air Base Wing;
- No 3 Aircraft Depot became No 501 Wing;
- some logistics functions associated with weapons systems management were transferred from Headquarters Logistics Command to No 501 Wing;
- additional supply responsibilities were placed on No 301 Air Base Wing; and

- the maintenance responsibilities of No 482 (Maintenance) Squadron were transferred between the two operational F-111 squadrons and No 501 Aircraft Maintenance Squadron.

30. Defence advised that the F-111 aircraft will continue to provide the ADF long-range strategic strike and reconnaissance capability. The F-111 has a life of type to 2020. These factors will ensure that RAAF Base Amberley will remain as the home base for the F-111 aircraft and as the location of the Strike Reconnaissance Group Headquarters. In addition, Evans Head Air Weapons Range is planned to continue as a weapons range for practice weapons training for F-111 aircraft operating from Amberley.

31. Defence therefore believes that Amberley has been accepted as a base of the future. Urban encroachment has not impacted seriously and the purchase of properties adjacent to the base as buffer zones has guaranteed security against urban encroachment. Associated properties are used for a number of purposes and in some cases they are leased for agistment or farming purposes. Training by the Security and Fire Training School is also undertaken on one property.

32. Mindful that any investment in new facilities at Amberley for F-111 aircraft will exceed the life of type of the aircraft, the Committee also questioned Defence about the likelihood of F-111 replacement aircraft being located at Amberley. Defence advised that future developments in engineering may lead to reduced aircraft engine noise.

Future of Evans Head

33. The air weapons range at Evans Head, about 180 kilometres southeast of Amberley, is used extensively by F-111 aircraft operating from Amberley. The Committee questioned Defence about the future viability of continued use of the range. Defence advised that the range is located in a NSW State National Park, which is managed by the New South Wales Parks and Wildlife Service. While it remains a national park, there is no chance of encroachment. Defence advised the Committee that there are no moves to exclude Defence use. In terms of utilisation of the range, Defence advised that range usage during exercises is daily and probably four nights of the week.

THE NEED AND WHAT IS PROPOSED

Operational capabilities required

34. Defence advised the Committee that despite investments in new facilities which have been made over three decades, many of the existing Base facilities are over 50 years old. Some buildings used for the support of the F-111s are converted buildings constructed during the Second World War.

35. As the basis of an examination of the future direction of the Base, Defence examined the operational capability required in conjunction with a Master Planning Study. This included an examination of the Base layout and consideration of contemporary environmental issues. Resultant studies identified deficiencies which adversely affect the ability of the Base to perform its designated roles in a safe and flexible manner.

36. Deficiencies identified in the studies are outlined in the following paragraphs in terms of broad functions as follows:

- operational;
- training;
- aircraft maintenance;
- logistics;
- domestic; and
- lodger units.

Objective

37. Defence submitted that there is a need to improve Base facilities in order to:

- enhance the overall operational effectiveness;
- overcome many occupational health and safety problems (especially those related to working in noisy environments); and
- improve morale by providing modern working accommodation.

38. In addition, Defence also submitted that refurbishment or replacement of various engineering services would ensure the ability of the Base to sustain operations.

Master Planning

39. Siting of the proposed new permanent facilities accords with the principles outlined in the revised Master Plan for the Base, which was completed in 1997.

OPERATIONAL FACILITIES

No 82 Wing Headquarters Building

40. No 82 Wing Headquarters exercises command and control of F-111 operational squadrons (Nos 1 and 6 Squadrons) with primary responsibility for:

- planning, tasking and coordination of flying activities;
- testing and evaluation of flying training;
- gathering, analysis and dissemination of operational intelligence;
- provision of photographic support; and
- development and implementation of strike and reconnaissance policy.

Existing facilities

41. The present No 82 Wing Headquarters building was originally a series of huts, constructed during the Second World War, placed together and reclad in brick, with some minor extensions subsequently undertaken. The facilities have been in use since the early 1960s.

42. Deficiencies with the building stem from its age and composition. Apart from the general lack of amenities, poor climate control and aircraft noise intrusion, the building lacks adequate security screening. Other deficiencies stem from its poor location relative to its operational squadrons. Defence advised that the building cannot be refurbished in a cost-effective manner and believes that a new headquarters building, located at a more suitable site is required.

Proposal

43. It is proposed to construct a new headquarters building to overcome these deficiencies. The building will be sited adjacent to the operational squadrons and incorporate offices for executive and administrative personnel, secure conference and briefing facilities, miscellaneous storage areas and staff amenities. It will be noise attenuated, and include provision for secure communications. Defence advised that construction of a new Headquarters Building for No 82 Wing will provide secure working accommodation to a contemporary standard, and enable an obsolete and noise prone facility to be demolished.

Improvements to No 1 Squadron Hangar Facilities

44. No 1 Squadron operates F-111 and RF-111 aircraft and undertakes peacetime training to meet its operational roles for strike, reconnaissance, battlefield interdiction and surveillance.

Existing facilities

45. The Squadron occupies Hangar 363, with annexes, which provide facilities for operational maintenance support, stores, operational support, administration and training. While the hangar is well suited to meet the squadron's accommodation needs, Defence believes that the identified deficiencies which relate mainly to occupational health and safety and fire protection need to be rectified.

Proposal

46. The proposed works involve:

- extending the orderly room;
- extending the aircrew crew room into an adjoining office;
- providing a new office in a vacant space on the second floor of the western annexe;
- refurbishment and extension of the Flight Line Office into the adjacent Flying Clothing Workshop;
- relocation of the Flying Clothing Workshop to the existing Ground Support Equipment Workshop;
- construction of a new Ground Support Equipment Workshop contiguous to the existing Ground Support Equipment Storage Shelter;
- completion of the fire wall in the eastern annex;
- replacement lights in the hangar; and
- working accommodation for an additional 30 personnel transferred to the Squadron from No 501 Wing Central Management and Maintenance Facilities.

Benefits

47. Defence believes improvements to No 1 Squadron facilities will enhance working conditions and overcome occupational health and safety concerns especially in regard to poor lighting on the hangar floor.

Ordnance Loading Aprons

48. Amberley has no purpose-built ordnance loading aprons (OLAs). The Bomber Replenishment Apron (BRA), built in 1967, was to standards applicable at the time, but which subsequently became obsolescent.

Existing facilities

49. The BRA can only handle one aircraft. Consequently, ordnance is currently loaded at several other locations, such as the cross-runway and various taxiways. This procedure inhibits the use of the runway and taxiways by other aircraft while ordnance loading operations are taking place. The ordnance loading locations are distant from explosive ordnance storage facilities which requires the transport of ordnance over considerable distances.

Proposal

50. A new ordnance loading complex is proposed. The extent and capacity of the complex will comprise:

- five dispersed OLAs, three sized to accommodate F-111 aircraft and two sized to accommodate P3 maritime patrol aircraft;
- provision for the future construction of aircraft shelters on each aircraft apron;
- earth traverses and Gun Misfire Barriers;
- aircraft access taxiways inter-linking the aprons and linking the complex to the main aircraft pavements;
- vehicle access roadways;
- an acoustic shelter to each apron, incorporating a documentation room, ablutions and an electrical power converter room; and
- associated engineering services including airfield lighting, drainage, water supply, electrical and communications.

Construction

51. The layout and pavement design will be similar to that adopted for the latest OLA complex at RAAF Base Tindal and will incorporate the following features:

- aircraft pavements designed for continuous operations by fighter and strike aircraft at maximum all-up weight;
- taxiways constructed as flexible pavements, surfaced with bituminous concrete to a nominal width of 9 metres, apart from access taxiways to the OLAs to be used by Maritime Patrol Aircraft which are to be 15 metres wide;
- aprons of rigid pavement construction (Portland cement concrete surfaced);
- road pavements will be designed for traffic by heavy vehicles such as fully laden fuel tankers and fire tenders;
- services to the aprons will include lighting for general illumination, 50Hz and 400Hz power supplies, fire points, and communication cables for telebriefing, closed circuit television, voice and monitoring. Earthing points will be provided;
- concrete faced, earth embankment interceptor traverses and gun misfire barriers will be provided at each apron. They will be sized to provide mutual protection of facilities within the complex and to restrict damage to external aircraft and facilities in the event of a mishap;
- 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; and
- an alert/alarm will be provided at each acoustic shelter and linked to the Base Fire Station and the proposed new 82 Wing Headquarters building.

Committee questioning

52. The Committee questioned Defence about the extent of the facilities proposed, especially the likelihood of additional facilities being required in the

future to cater for additional aircraft operations arising from exercises involving allied forces. The inadequacies of OLAs were noted by the Committee during an inspection of the Base in March 1997 during *Operation Tandem Thrust*. Defence confirmed that during this exercise the arming of aircraft presented severe problems. Under current arrangements, ordnance loading activities are restricted to one of the existing runways, the cross-runway where aircraft are positioned for replenishment. Defence believes that continuation of this arrangement can only be regarded as a temporary expedient because would it deny the use of that runway.

53. Defence advised that the number of OLAs required will meet normal training requirements. The intent is that, based on the present usage of four operational and one spare, the number of required aircraft will meet the greater majority of training requirements out of Amberley. In the longer term, Defence advised that the 1997 Master Plan makes provision to duplicate the proposed facility adjacent to it, if necessary.

Benefits

54. Defence advised that new OLAs will improve safety with operations involving live ordnance and eliminate the need to use arming points on the main airfield pavements.

Reticulated Services to F-111 Flight Lines

55. Parked F-111 aircraft require a number of engineering services for starting, testing of aircraft systems and for flight-line maintenance activities. These include 115V, 400Hz power, high pressure starting air, and aircraft cooling and servicing air.

Existing facilities

56. F-111 aircraft are normally parked on flight lines under one of three aircraft shelters. Reticulated services have been provided to the shelters or in the adjacent apron. Defence advised that some of these services have been identified as inadequate, are poorly located or of insufficient capacity to meet the load demand of the aircraft.

Need

57. Defence believes that there is a need to supplement or replace power, compressed air and lighting services within the aircraft shelters to eliminate existing deficiencies.

Proposal

58. The proposed works involve:

- installation of new power inverters, one to each pair of aircraft positions and upgrading of the transformer and switchboards associated with the power supplies;
- installation of chilled air plants at all shelters;
- reticulation of compressed air from two compressors located in a new enclosure off the flight-line, with filtration and drying provided at each aircraft bay, and
- additional apron, service and security lighting.

Design

59. Frequency converters and cooling air equipment are to be located on platforms in the roof of the shelters, with outlets to the columns of the shelters. Compressed air is to be provided from two compressors located in a new enclosure adjacent to the flight lines.

Benefits

60. Defence advised that the reticulation of additional power, chilled water compressed air and lighting services to F-111 flight-lines will lead to operational cost savings, operational efficiencies, and improvements in occupational health and safety for personnel working in the area.

TRAINING

Training Services Flight and Field Training Flight Buildings

61. No 301 Training Services Flight provides generic training to Base personnel and is responsible for the Technical Distance Learning Flight.

62. The Technical Distance Learning Flight provides generic technical training for personnel prior to going on to No 82 Wing's Field Training Flight for aircraft specific training. In addition to running training courses, activities include library management, publications control, electronic data processing, reporting, and provision of audio-visual aids.

63. No 82 Wing's Field Training Flight undertakes technical training to support the maintenance, safety and ground handling of F-111 aircraft. About 240 courses are conducted each year. The training is practical and makes

extensive use of real or simulated aircraft, aircraft parts and systems, resulting in many of the training facilities being dedicated to a specific aircraft system.

Existing facilities

64. Training is undertaken in a variety of facilities including the former Amberley State Primary School. Defence believes these facilities are not well suited for their purposes. Some have been adapted from other uses, are badly configured, and lack sufficient workstations. The shortage of classrooms necessitates some classes being held outdoors, with consequent disruptions during bad weather.

65. Furthermore, airconditioning, ventilation and noise attenuation are inadequate in some buildings. Defence has found that this leads to poor student concentration. Toilets and lunchrooms are considered to be inadequate for the course sizes. Some buildings have been previously earmarked for demolition and their continued use involves undesirably high maintenance effort and cost.

66. For these reasons, Defence believes the dispersal of training elements adversely affects administration and is inconvenient to staff and students.

Proposal

67. The proposed works will consist of:

- a new facility for No 301 Training Services Flight and the Technical Distance Learning Facility containing classrooms, offices, storage areas and ablutions; and
- an extension of the Field Training Flight Building to accommodate all Field Training activities.

Benefits

68. Defence believes that provision of new training facilities for the Training Services Flight will improve management and generate cost savings through co-location of training elements. Greater proficiency of training will be facilitated through the availability of purpose-built accommodation.

AIRCRAFT MAINTENANCE

Revetted Engine Run-up Facilities

69. Ground based engine running is a maintenance activity to test, monitor and adjust aircraft engines to ensure their satisfactory performance.

Existing facilities

70. The existing revetted engine run-up facility is located on the eastern side of the airfield. It consists of two bays, one used for the uninstalled testing of all F-111 engines.

71. Defence has identified the following deficiencies:

- the control cabin is too small for the number of personnel it has to accommodate and lacks a positive air pressure system to prevent the ingress of engine exhaust gases and dust;
- the existing fuel supply system is unable to deliver the fuel flow required;
- the other test cell, used for running engines in aircraft requires better access for aircraft and improvements to its fuel interceptor/entrapment system;
- high noise levels from both test cells, over prolonged periods, have been the subject of some community complaints. For this reason, engine testing has been restricted between 6am and 10pm. The noise situation has been exacerbated with the introduction of more powerful engines; and
- both test cells have inadequate lighting for safe operation of the facilities. Current lighting levels require the use of torches when personnel examine engines for oil or fuel leaks, or work on small engine parts.

72. For these reasons, Defence believes there is a need to refurbish the present facility with the aim of reducing noise levels by 5dBA, permitting operations for the remaining life of the F-111s.

Proposal

73. The extent of the proposed works will comprise:

- replacement of the control cabin, and installation of a higher capacity fuel supply system;
- widening of the pavement inlet into the test cell and provision of additional fuel interceptor pits; and

- extension of the southern bund and provision of an acoustic absorptive barrier on top of the existing and extended bund walls; and
- provision of additional lighting within the test cells.

Design

74. The proposed control cabin at Test Cell 2 will be of masonry construction with a metal roof and adequate sound attenuation. An earth extension will be added to the southern bund of both test cells and a four metre high steel acoustic barrier erected on top.

Benefits

75. Defence believes that improvements to the Revetted Engine Run-up Facilities will ensure that noise levels from the test facility will be reduced and occupational health and safety concerns are addressed.

Surface Finishing Facilities

76. Surface finishing is undertaken primarily to protect aircraft and their components against corrosion. These activities involve both paint stripping and spray painting and should be conducted in enclosed facilities which incorporate pollution control features.

Existing arrangements and deficiencies

77. Defence advised that existing facilities have the following deficiencies:

- the Paint Stripping hangar and the Paint Shop are located in a high aircraft noise area. Noise attenuation is insufficient to comply with occupational health and safety standards;
- the Paint Shop waste entrapment system is inefficient and has the potential to release hazardous chemicals to the environment. Its heating system is old and unreliable, affecting paint drying times and the quality of finish; and
- the Paint Stripping hangar has no extraction system to remove vapours and dust generated in the stripping process and is not readily adaptable to the media blasting processes that are likely to replace the present solvent stripping processes.

Proposal

78. Defence proposes a new Surface Treatment Facility, with the following features, to overcome these deficiencies:

- flameproof lighting;
- recycling and/or treatment of wastes;
- filtration of incoming and outgoing air, compressed air and breathing air outlets;
- safety showers;
- fire protection;
- travelling anchorage points for personnel harnesses;
- a decontamination area; and
- an office for two personnel, and staff amenities.

79. The facility will include storage rooms for paints and chemicals.

Design

80. The structure of the Surface Finishing Facility will be similar to other proposed major workshops. Special safety and environmental features of the facility will include flash proof electrical fittings, temperature and humidity controls, vapour extraction, aircraft earthing points, and storage tanks for waste products.

Benefits

81. Defence believes that the provision of new and upgraded Surface Finishing Facilities will ensure that occupational health and safety and environmental standards are met, while meeting requirements associated with new processes.

Fuel Tank Deseal/Reseal Facility

82. F-111 fuel tanks are lined with a special sealant to prevent fuel leakage. This sealant deteriorates over time and needs to be removed periodically and the tanks resealed. The deseal and reseal process involves the use of toxic chemicals and must be undertaken to stringent occupational health and safety, as well as environmental standards.

83. The initial program of desealing and resealing was completed in 1993. The second program is now planned and is expected to take up to nine years involving more than 30 personnel. A third deseal and reseal program may be required before the retirement of the F-111s from service.

Existing arrangements and facilities

84. The initial program was completed in a Bellman hangar. Defence advised that in retrospect, this facility was inadequate for the task and required makeshift arrangements to ensure that occupational health and safety as well as environmental requirements were satisfied. The hangar is now being used for the Avionics Upgrade Project and is no longer available, nor are facilities available elsewhere. Defence believes refurbishment of the old paint shop will provide a suitable and cost-effective solution.

Proposal

85. It is proposed to modify the existing paint shop by undertaking the following:

- refurbishment of the airconditioning and waste disposal systems;
- improvements to noise attenuation;
- provision of additional features including a breathing air supply;
- an annexe for desealing aircraft wings; and
- undercover storage for ground support equipment.

Committee questioning

86. The Committee questioned the extent to which the work undertaken currently by Defence could be outsourced and the requirement for consolidation of facilities. Defence advised that the fuel tanks are integral to the aircraft, forming sections the wing and fuselage fabric. They cannot be removed and serviced separately. The process of desealing and resealing involves the disassembly of the wings and fuselage to access the tank joins. Under previous arrangements, the sealants required complete removal before recoating. Under improved arrangements, a spray-on sealant is used which, whilst an improvement, has consequential occupational and safety risks.

87. Defence advised the Committee that it would not be possible to outsource the work to an off-base contractor. The aircraft would need to remain on-base for strategic and security reasons. It would, however, be possible for the work to be undertaken by an on-base contractor. Other buildings, used to support the

maintenance of F-111 aircraft are located in close proximity to the desealing and resealing facility and have day-to-day functional dependencies. For this reason, any contractor undertaking the work would be required to operate in those on-base facilities.

Benefits

88. Defence believes that the provision of a Fuel Tank Deseal/Reseal Facility will enable ongoing refurbishment of F-111 aircraft fuel tanks to be undertaken in a manner that will ensure environmental and occupational health and safety compliance.

No 501 Wing Central Management and Maintenance Facilities

89. No 501 Wing is primarily responsible for deeper level maintenance of F-111 aircraft and subsidiary equipment. The Wing has three squadrons:

- No 501 Aircraft Maintenance Squadron—airframe, engine and components maintenance;
- No 501 Strike Reconnaissance Logistics Management Squadron—F-111 logistics management; and
- No 501 Avionics Maintenance and Management Squadron—avionics and configuration control management.

Deficiencies

90. Defence identified five areas which require rectification. These are as follows:

- Bonded Panel Repair

Extensive use is made of adhesively bonded panels over much of the structure of the F-111 aircraft. These panels require regular repair due to partial failure of the adhesive bond, impact damage, age deterioration or corrosion. These activities are currently carried out in a corner of the main aircraft maintenance area of Hangar 410. The area cannot accommodate some of the larger aircraft components and this work has to be undertaken in the general workshop area, which, Defence believes, is unsatisfactory because the facility has inadequate environmental control for the procedures involved.

- Non-Destructive Inspection (NDI)

NDI is carried out on F-111 aircraft on-line, under maintenance, and during servicing of aircraft engines and ground equipment. NDI support is provided to all Amberley based units. The workshop in Hangar 410 has several deficiencies, including no darkroom, no suitable facilities for chemical storage and no training areas. Improved facilities for non-destructive activities currently carried out in Hangar 410 are required. Defence also believes that the co-location of ultrasonic and magnetic rubber testing with radiographic non-destructive testing will optimise management and administration by having NDI activities in two locations rather than three. The second location, involving the non-destructive testing of engine components, needs to remain with TF-30 engine maintenance because such testing is an integral part of engine maintenance activities.

- Crew Ejection Module Maintenance

Maintenance and safety testing of modules is an ongoing commitment as the explosive items deteriorate with time and must be replaced periodically. The work is carried out in a congested area on the ground floor of the hangar in facilities that are too small for the safe and efficient performance of the task. There is no suitable storage for the explosives and chemicals used and no area to assemble explosives kits.

- Staff Amenities

Staff Amenities are inadequate and suffer from severe overcrowding of lunch areas, change-rooms and toilets. In addition, the conversion of spaces to office use has reduced the effectiveness of airconditioning in some areas.

- Wing and Track Maintenance Facility

As part of the F-111 deeper level maintenance programs, aircraft wings are removed and serviced. This work involves repairing and refurbishing leading edge slats and trailing edge flaps, refurbishing slats, flaps running gear and wing pivot fittings, repair of internal wing stiffeners and fuel flow vents. Main and nose landing gear is also overhauled and serviced. Wing and track maintenance activities are performed in two dispersed facilities. Defence advised that some of the facilities are poorly configured, too small for the functions being performed and present occupational health and safety problems. A number of compromises have been

implemented, but are considered to be unsatisfactory. The wing maintenance facility suffers from poor access and there are no installed cranes to handle wings and wing components. In addition, separation of the two facilities inhibits the interchange of personnel when workloads vary. As no alternative premises are available in or adjacent to Hangar 410 where the activities can be performed, a new workshop needs to be constructed.

Proposal

91. The proposed works are described in the following paragraphs:

- **Bonded Panel Repair**

A new facility will be constructed adjacent to the hangar for bonded panel production activities and the training function will remain in the present workshop in Hangar 410.

- **Non-Destructive Inspection**

The Radiographic testing facility will be extended to house ultrasonic and magnetic rubber testing, storage, training and section administration functions.

- **Crew Ejection Module Maintenance**

The Crew Ejection Module workshop will be relocated into the area of Hangar 410 to be vacated by Non-Destructive Inspection.

- **Staff Amenities**

The relocation and reorganisation of functions within the hangar makes space available for the construction of additional staff amenities.

- **Wing and Track Maintenance Facility**

A new workshop building (also to house the Bonded Panel Repair Section) is proposed. The Wing and Track Maintenance workshop will accommodate a track workshop, wing workshop, wing storage areas, office space, an overhead gantry crane or monorail, and staff amenities.

Benefits

92. Defence believes that regrouping and/or extension of elements of No 501 Wing's Central Management and Maintenance Facilities through the co-location of related activities and the provision of a new Wing and Track Maintenance Facility will improve efficiency of F-111 aircraft maintenance activities and overcome recognised congestion and occupational health and safety problems.

No 82 Wing Alternative Mission Equipment Maintenance Section Workshop

93. Equipment used to mount armaments and stores on F-111 aircraft requires regular testing, inspection and maintenance. These maintenance activities are undertaken in three buildings near the F-111 squadrons.

Existing deficiencies

94. Defence identified the following three deficiencies with the facilities:

- working areas within the buildings are congested and badly laid out for the tasks that are performed. There is insufficient space for maintenance of F-111G fuel tank/pylon assemblies with work being performed outdoors, delays occur during inclement weather;
- the buildings lack appropriate noise attenuation and are hot in summer; and
- the overhead gantry for heavy and awkward items is poorly located, requiring extensive use of trolleys, with consequent time delays.

Proposal

95. The facility will consist of a single building containing two open workshops, a large one for general maintenance activities, and an adjoining smaller one where pylons and racks will be serviced and tested. Both workshops will include overhead gantry cranes.

96. Ancillary areas within the building will make provision for office accommodation, ablutions, lunchroom, a computer/library office, cleaning areas, and an environmentally controlled electrical workshop. A shelter will be provided external to the building for Ground Support Equipment storage.

Benefits

97. Defence believes that the provision of a new Alternative Mission Equipment Maintenance Section Workshop for No 82 Wing will improve the effectiveness of maintenance of ancillary aircraft equipment and will redress occupational health and safety problems.

LOGISTICS SUPPORT

Air Movements Terminal

98. Air movements terminal and cargo handling facilities are provided at a number of major RAAF bases to manage the movement of air passengers and cargo, including overseas flights. The existing passenger terminal and cargo hangar at Amberley was constructed in the 1960s. The number of passengers being handled has increased since and terminal is frequently congested.

Existing deficiencies

99. The terminal seats only 45 people although up to 100 may need accommodating in peak periods. When passengers from a B707 size aircraft are discharged, many are forced to stand in or around the terminal. This unsatisfactory situation is exacerbated when arriving and departing passengers have to be accommodated at the one time. The terminal is not segregated to separate incoming from outgoing passengers, or domestic from international passengers. Customs and quarantine requirements for international flights can only be provided on an ad hoc basis. Ablution facilities are inadequate. The cargo hangar is adequate.

100. The assessed requirement for the air movement's facilities is:

- the capacity to handle up to 75 incoming and 75 outgoing passengers simultaneously;
- lounges with seating for 130, designed to segregate domestic and overseas passengers, or incoming and outgoing passengers; and
- facilities for customs and quarantine, crew briefing, VIP reception, a parents' room and ablutions and toilets.

101. Defence believes that the existing facilities are appropriately located until such time as major redevelopment of aircraft pavements takes place. The facilities are capable of being modified and enlarged, which is more cost-effective than constructing new ones.

Proposal

102. Refurbishment and extension of the existing terminal building is proposed.

Committee Questioning

103. The Committee raised a number of queries with Defence. These covered utilisation, use by visiting allied forces and if the functions to be performed by the new terminal could be transferred to a civil terminal.

104. Defence advised that a regular RAAF service will utilise facilities twice-weekly. In addition, there are frequent non-scheduled arrivals and departures. During exercises, the utilisation rate increases, especially when foreign allied forces are involved.

105. Aircraft and passengers from overseas are processed by Australian Immigration, Customs and Quarantine officials. At present, facilities available for these essential services can best be described as rudimentary. Defence described the processing of foreign military personnel during *Exercise Tandem Thrust* as crowded and inefficient.

106. Defence advised the Committee of a proposal to construct a civil air terminal on the other side of the airfield to support a twice-daily commuter service between Ipswich and Brisbane. However, no decision has been made although a site has been identified.

Benefits

107. Defence believes that the refurbishment and extension of the Air Movements Terminal will enable more effective and appropriate handling of passengers and provide upgraded facilities for customs and immigration activities.

Central Store Extension

108. Under the Defence Logistics Redevelopment Project (DLRP), RAAF Base Amberley has the responsibility for the storage and management of designated categories of equipment in support of weapons systems and units operating from the Base. Equipment holdings are generally classified for management purposes as Serviceable, Repairable and Quarantine, Disposal, F-111 Induction, and Bulk stores.

109. In 1992, DLRP made provision for extensions to the Central Store. The project took account of the poor condition of several minor warehouses then in use and the need for their replacement.

Deficiencies

110. Recently, the need for additional bulk storage warehousing became apparent and an additional bulk storage facility of about 3,000 square metres was constructed. This requirement stemmed from storage needs of F-111 components being obtained as part of the additional F-111 purchase and the limitations of storage available at the Army's South Queensland Logistics Group facilities at Meeandah, some 50 kilometres from Amberley.

Proposal

111. A 2,500 square metre extension to the Central Store, primarily for pallet storage, and provision of 800m square metres of paved compound is proposed. A driveway entrance and an undercover stores delivery area will be included.

Committee questioning

112. The Committee questioned Defence about the additional storage requirements arising from the purchase of additional F-111 spares and aircraft. Defence advised the Committee that in 1995, a task force was established to consider the future of F-111 aircraft, especially the life of type. At that stage, the United States authorities were also examining the future of their F-111 aircraft. The Australian task force examined closely the maintenance of aircraft and the sourcing of spares. In addition, the future of the US-based load testing facility, used to for the certification of airframes, was also considered.

113. After the United States Air Force withdrew the F-111 from service, Australia purchased a number of these aircraft and in addition, were offered spare parts at a ninety percent discount. As a result, Defence purchased a significant stock of parts, thereby creating a storage requirement unforeseen five years ago. The requirement for additional storage space for these spares arose as a consequence. Construction of a load testing facility at Amberley by 2001 has also arisen.

Benefits

114. Defence believes that the extension of the Central Store will enable Amberley's stores holdings to be consolidated and should result in improved warehousing efficiencies, in particular the increased stockholding of F-111 spare parts resulting from the additional F-111 acquisition.

Fuel Farm Office Upgrade

115. A fuel farm is used to store, filter, and dispense aviation turbine fuel to fuel tankers and underground refuelling systems on aircraft aprons.

Deficiencies

116. There are currently two fuel farms on the Base. Fuel Farm 1, which will eventually be decommissioned, and Fuel Farm 2, which is at the preferred master planned location, will be developed as the primary facility.

117. The office at Fuel Farm 2 is in a transportable building. Defence advised that this building is too small for the management activities being carried out. It does not have the appropriate staff amenities required for shift personnel. Particular problems are the lack of a computer room, ablutions and showers and inadequate lunchroom and change room facilities.

Proposal

118. The proposed works will consist of a new combined office and amenities building of about 130 square metres located at Fuel Farm 2.

Benefits

119. Defence believes that a new Fuel Farm Office will improve fuel management activities by allowing the use of computers and improve staff morale by meeting occupational health and safety requirements.

DOMESTIC SUPPORT

No 301 Air Base Wing Headquarters Building

120. No 301 Air Base Wing is responsible for the coordination of corporate services to meet Base demands. Management of corporate services is exercised by military and civilian personnel. This includes:

- personnel services;
- personnel administration;
- legal services; and
- estate management.

Existing deficiencies

121. These functions are presently accommodated in a variety of separate buildings which Defence advised are old, expensive to maintain and poorly designed. They lack adequate noise attenuation and are poorly located in relation to most of the functions administered. Their dispersed nature leads to management inefficiencies. For these reasons, Defence believes that a new facility is required.

Proposal

122. The proposed new building will accommodate about 60 personnel and will incorporate administrative accommodation, a courtroom, conference facilities and staff amenities.

Benefits

123. Defence believes that construction of a new headquarters and administrative building for No 301 Air Base Wing will generate greater efficiencies and administrative savings through the co-location of currently dispersed staff and enable more effective supervision of staff and functions in modern facilities.

Gymnasium

124. ADF personnel are required to maintain prescribed physical fitness standards. For this reason, physical fitness facilities for outdoor and indoor sports are an important component of any physical fitness program. Physical fitness training activities are supervised by qualified physical training instructors.

125. The present Base gymnasium consists of a building originally constructed during the Second World War as an Airmen's Mess and was adapted for its present use when a new Airmen's Mess was built in the 1960s. It is regularly used by 1,500 service personnel and by dependents on an intermittent basis.

Existing deficiencies

126. Defence identified the following deficiencies:

- the building has low ceilings, exposed columns and inadequate floor strength, which make it unsuitable for many sports, for example, basketball;
- it is badly ventilated and is too small to accommodate all the required activities;

- ablution and change facilities are inadequate;
- there are no squash courts;
- access to the gymnasium by dependents is difficult because it is located in the secure area of the Base; and
- the existing athletics field, with its running track, is located away from other sporting facilities and the track requires resurfacing in the foreseeable future.

Proposal

127. The proposed gymnasium will incorporate a basketball court, with spectator seating. Other activity rooms will provide for weight training, aerobics, and circuit training. The gymnasium will include squash courts, a meeting room, administration offices, a remedial therapy room, storage rooms, male and female ablutions and change rooms. A 400 metre running track and carparking will also be provided.

Design

128. Offices and exertion areas will be airconditioned and the remainder mechanically ventilated. The ceiling height in the sports auditorium will be suitable for ball sports. The floor will be sprung timber or proven synthetic material.

Benefits

129. Defence believes that the provision of a new gymnasium will facilitate more effective achievement of prescribed physical fitness standards.

LODGER UNITS

No 23 Squadron and Air Training Corps Facilities

130. No 23 Squadron is an active reserve squadron with eight permanent Air Force staff and about 200 reserve members. The role of the Squadron is to:

- provide trained personnel across all categories and musterings;
- supplement Amberley based units and other units within Air Command;
- provide support during exercises; and

- provide minor administrative support for the Air Training Corps in Queensland.

131. No 23 Squadron has its headquarters in the same building as No 82 Wing and No 6 Squadron and also occupies some Second World War igloo buildings. The Air Training Corps occupies a number of buildings previously used as the Australian Construction Services depot.

Existing deficiencies

132. Defence believes the replacement of No 23 Squadron facilities is long overdue. The facilities are unsatisfactory for the activities being performed, present occupational health and safety problems and have long exceeded their economic life.

133. Defence also believes that the Air Training Corps headquarters and storage facilities are reasonably satisfactory, although some refurbishment is required. These facilities are used for administration accommodation and the storage of uniforms, camping equipment and band instruments.

Proposal

134. The proposed works will include:

- construction of a new headquarters and training facility for No 23 Squadron; and
- refurbishment of selected buildings within the previous Australian Construction Services depot for the Air Training Corps, with redundant facilities being demolished.

Benefits

135. Defence believes that the provision of a new headquarters building for No 23 Squadron will improve the management and training of reserve personnel and enable its existing aged and decrepit facilities to be demolished.

Airfield Defence Wing Complex

136. The role of the RAAF's Airfield Defence Wing is to provide ground defence of airfields, operational assets and personnel. Basic training of airfield defence personnel is carried out at Amberley in conjunction with the Security and Fire Training School.

137. The Wing comprises a headquarters, one permanent squadron and two reserve squadrons. The Wing Headquarters, a permanent and a reserve squadron

are based at Amberley, and the other reserve squadron is at RAAF Base Tindal. In addition, the Wing Headquarters has an attached Support Flight made up of reserve personnel.

Existing facilities

138. The various Wing elements occupy facilities at Attached Property 2 which Defence believes are substandard and dysfunctional. No 2 and No 3 Airfield Defence Squadrons and Support Flight occupy interim facilities at Attached Property 2. The Airfield Wing Defence Headquarters occupies permanent accommodation designed for another unit (No 114 Mobile Control and Reporting Unit).

Proposal

139. Defence believes the most cost-effective solution would be to refurbish buildings vacated by No 114 Mobile Control and Reporting Unit, comprising ten permanent buildings and five demountable buildings, on Attached Property 2. Administration, storage, training, ready-room, ablutions and change facilities are proposed for each of Nos. 2 and 3 Airfield Defence Squadrons.

Benefits

140. Defence believes that the provision of modern co-located new facilities for the airfield defence wing will enhance management and training of the wing elements and enable unsatisfactory facilities to be demolished.

Fire School and Fire Training Facilities

141. The RAAF has been given the single Service responsibility for initial firefighter training for the ADF. All common Defence firefighter training and service specific RAAF training is presently undertaken at the RAAF Security and Fire School at Amberley. In addition, the Army currently undertakes advanced fire fighting training at Amberley.

142. The assessed annual ADF fire fighter training demands at the RAAF Security and Fire School post 2000 is shown below:

- Basic course—41 personnel;
- Advanced course —21 to 26 personnel; and
- Fire controller's course—8 personnel.

Existing facilities

143. Only makeshift and temporary facilities are available for firefighter training at Amberley. These facilities are deficient and pose environmental hazards.

144. Defence advised that although construction of an entirely new facility would provide the best working solution and would relocate the training functions to the designated master planned area, the additional cost would be high and difficult to justify, especially when the adequacy of the Field Training Flight Building is taken into consideration.

145. The present facilities do not lend themselves to being modified to rectify deficiencies.

Proposal

146. The proposed school facilities will comprise three components:

- the Fire School premises comprising classrooms, administrative facilities, equipment training and storage rooms;
- a structural fire training facility; and
- an aircraft fire training facility.

147. The latter two facilities will be gas fired and incorporate computer controlled fire and rescue scenarios and environmental control measures.

Committee questioning

148. The Committee questioned Defence about the number of personnel trained annually, the practicalities of contracting out firefighter training and if the facilities could be used to train firefighters from other agencies.

149. Defence advised the Committee that the school is responsible for all ADF fire training. Individual bases may have dedicated local training areas to enable airfield firefighters to maintain their skills. The school is responsible for training 200 specialised ADF firefighters annually.

150. This outsourcing of training has been extensively investigated and subjected to an Air Force committee process to establish its viability, given that civilian agencies carry out fire training. It was discovered that although such agencies provide firefighting training they did not and were not prepared to undertake the training of advanced firefighters and airfield fire controllers, as required by the RAAF. As a result, Defence considered the practicality of private sector organisations developing such training schemes but found that it was not economic or viable to do so.

151. As part of the development of this facility, negotiations were held with the Queensland Fire Authority (QFA) to develop an arrangement for joint training. These negotiations broke down due to the commercial imperatives of the QFA. Defence, however, did indicate that opportunities may exist in future to lease the facilities to the QFA if there is a need to undertake unique training requirements. It remains evident that the QFA would not need to maintain the overall skills the RAAF requires for its airfield fire controllers and for all firefighters in the ADF.

Benefits

152. Defence believes that a new Fire School and Fire Training Facilities will:

- provide facilities appropriate to the activities being performed;
- enable a wider range of repeatable training scenarios to be conducted; and
- achieve improved environmental safeguards through the construction of appropriately designed facilities.

SECURITY AND ENGINEERING SERVICES

Base Perimeter Fence

153. Fences are provided around military establishments for security purposes to control and limit intrusion of people onto the establishments. Within airfields, fencing is also provided to prevent intrusion of animals onto active airfield pavements.

154. The prescribed standards of fencing required at Amberley vary from a stock fence around low security zones, perimeter fencing around medium security zones, to security fences around high security zones.

Condition of fencing

155. The Master Plan for Amberley has delineated the three security zones. Although fencing exists at the Base, it does not entirely match the requirements of the designated security zones. The existing base perimeter fence is in poor condition, ranging from rural barbed wire to chain-wire. There is no fencing of the high security zone, which embraces key operational assets.

156. Provision of secure perimeter fencing has been assessed as being of the highest priority, whereas fencing of the high security zone can be undertaken later when circumstances dictate.

Proposal

157. The proposed works involve the provision of about 12 kilometres of perimeter fencing to complete enclosure of the Base. The fence will be 2.44 metres high, of steel post and chain-wire construction, and topped with three strands of barbed wire. Bitumen stabilised crushed rock will be used along the fence line to inhibit weed growth.

Committee questioning

158. The Committee raised the issue of Base security and if any problems had been identified. Defence advised the Committee that intruders are quickly detected. Dog teams and security police patrol the perimeter road.

Water Supply

159. The Ipswich City Council Water Authority supplies water to RAAF Base Amberley. The Base supply system has two storage reservoirs and a reticulation pipe network. Current average demand is about 1,200 kiloliters per day and is not expected to rise in the future. There are two reticulation systems on the Base, one for the domestic supply and the other for fire fighting supply to the technical areas of the Base. The domestic reticulation system also services the fire fighting requirements of the non-technical areas of the Base.

160. The existing storage reservoirs are for a fire fighting water supply reserve and are of adequate capacity. Some work was undertaken about two years ago to improve the fire fighting water supply ring main in the technical area.

Existing system

161. The domestic supply comes directly from the Council supply mains. Much of the domestic reticulation system is over 50 years old and has reached the end of its economic life. Replacement of much of the older reticulation system is now required.

Proposal

162. The proposed works will consist of progressive replacement of defective reticulation lines, commencing with the larger sized trunk mains in the older areas.

Sewage Treatment

163. The Amberley sewerage reticulation network and its two pumping stations are connected to an on-base treatment plant located in the southern sector of the Base, adjacent to Warrill Creek. Effluent is discharged to Warrill Creek and meets Department of Environment current standards. Certain toxic industrial waste, such as chemically contaminated water from the electro-plating shop, is treated at the source before it is discharged into the sewerage system. Other waste products, such as those emanating from the paint shop, are collected and not discharged into the sewerage system.

164. The system handles average flows of approximately 2.0 mega-litres per day. Defence believes this is sufficient for foreseeable demands.

Existing system

165. Although the current system meets most base requirements, it is susceptible to flooding and stoppages have occurred. Operating costs are increasing, and several elements of the system now require major maintenance to ensure its reliability. In addition, it is expected that Department of Environment requirements for discharge of treated effluent will be changed in the near future to require the control of nitrogen and phosphorus levels in the discharge. The existing plant will require modification to meet these new standards.

Proposal

166. Subject to agreement for connection to the Ipswich City Council sewerage system, the envisaged works will comprise a pumping station, a rising main, oxygen injection stations and associated ancillary works.

Electrical Reticulation and Emergency Power

167. The purpose of the Base electrical reticulation and emergency power system is to provide a reliable source of electrical power.

168. Mains power is normally supplied from more than one source to provide diversity and to improve the reliability of supply. Power is then distributed to Base facilities via ring mains, which provide further diversity by having two supply cables available at key operational facilities.

169. Essential facilities are provided with local emergency generator sets which start automatically in the event of a power failure. Some critical facilities also have uninterruptible power supplies.

Existing system

170. The electrical power system at RAAF Base Amberley comprises:

- two incoming feeders connected to a single Intake Switching Station from which power is distributed to facilities on the Base through a network of substations and underground high voltage and low voltage cabling; and
- Central Emergency Power Station and local emergency generator sets to maintain power in the event of external power supply failure.

Proposal

171. Rectification of deficiencies can be undertaken in three stages:

- Stage 1—encompassing the provision of essential elements including improvements to the reticulation system, a new incoming substation to give the Base a second source of supply, new substations and redirection of the existing mains to provide a more reliable power supply to operational facilities;
- Stage 2—encompassing improvements to control systems in the Central Emergency Power Station to ensure automatic starting and paralleling of the generators and re-configuration of automatic shedding devices to disconnect non-essential loads; and
- Stage 3—encompassing an increase in generating capacity in the Central Emergency Power Station.

172. The proposed works include:

- the provision of a new intake switching station with connections to Energex supply, the Central Emergency Power Station, the existing intake Switching Station and to three of the existing ring mains;
- new underground cable connecting the Central Emergency Power Station to the Energex system;
- replacement of the high voltage switchboard and modification of the control system in the Central Emergency Power Station to accommodate the new High Voltage system, achieve automatic

starting and paralleling of generating sets and provide automatic load shedding;

- new or upgraded substations; and
- cabling to support proposed new works and an extension of the northern ring main to supply the proposed new OLAs.

Communications

173. The communication systems on RAAF bases provides for voice and data communication, remote control of facilities, transmission of security information and management of the fire alarm system. Modern high performance communications systems demand improved performance and reliability from the communications cabling.

Existing system

174. The Base needs a reliable communications cable network. Although some upgrading to fibre-optic cabling has been undertaken, the bulk of the existing system consists of a multiplicity of multi-core copper cables which has become unreliable. Increased demand from new facilities and expanded functions will take up most of the system's spare capacity. Defence believes that further upgrading of the copper cabling is virtually impossible.

175. The recently completed Master Plan defines engineering service corridors throughout the Base. Many of the existing communications cables do not follow any recognisable layout plan.

Proposal

176. The proposed works will include replacement of much of the copper cabling with multicore fibre optic cables and provide connections to existing and future electrical substations.

CONSTRUCTION DETAILS

Buildings, Workshops, and Storehouses

177. New major buildings and workshops will be steel framed structures on stiffened concrete floors with high level footings. Foundation and floor slabs will be designed to allow for the highly expansive Amberley soils. Intermediate floors will be of suspended concrete.

178. Buildings will be metal roofed, masonry clad except where metal cladding is to be used to some larger workshops and storehouses. Building extensions will follow the form and structure of original buildings. Where annexes abut storehouses, common walls will have a two-hour fire rating.

179. Office areas will be steel framed, stud-wall partitions, with carpeted floors and airconditioned to comfort levels with acoustic treatment to ceilings and windows.

180. Workshops will be concrete floored, with vinyl overlay as required. Airconditioning will be provided to selected areas, with mechanical ventilation from specified areas where volatile or toxic substances are used. Specialised airconditioning will be provided in workshops where temperature and humidity control is required to specified tolerances and where volatile or toxic substances are in use. Anti-static treatment to floors will be provided to specific workshops where repairs such as avionics equipment takes place. Storage areas will be provided with mechanical ventilation

181. Lunch rooms will be airconditioned to comfort levels with mechanical ventilation to the food preparation areas.

182. Enclosed working areas will generally be designed to attenuate noise to 60dBA.

183. Window glazing will address the issues of acoustics, thermal efficiency and control of natural lighting. Double-glazing may be used in specific circumstances.

184. The design of airconditioning systems will take into account equipment generated heat loads. All airconditioning and mechanical ventilation systems will be designed with energy saving features, including variable airflow, direct intake of external air and a building management system.

185. For on-base facilities, electrical supplies will be drawn from the electrical ring main. Main switchboards will be separately housed and segregated and will incorporate surge protection on incoming supplies. Load shedding devices will be installed to disconnect non-essential loads under emergency conditions.

186. Frequency converters, with distribution boards, will be provided to supply 60Hz and 400Hz power to specialist workshop areas such as the aircraft systems testing workshops.

187. Voice and data communications will be linked to the Base communications network.

188. Security and fire detection will be incorporated into the Base security and fire alarm systems, monitored at the Base Fire Station and the Main Entry Control guardhouse.

189. Water and sewerage connections will be made to the existing Base systems.

External Works and Landscaping

190. Landscaping will comprise low maintenance plants indigenous to the area. New facilities will be provided with carparking. The number of carparks has been determined on building occupancy and usage criteria, including provision for visitors.

SYSTEMS AND SERVICES

Fire protection

191. The following principles will be adopted in the design of the fire protection/fire safety:

- 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 (FACMAN2). FACMAN2 details Defence fire protection policy for asset and building function protection. The levels of fire protection specified in FACMAN2 are above BCA requirements and have been determined by a risk assessment and management approach to fire protection,
 - all other applicable Codes and Standards,
- certification from a suitably qualified certifier, that the design and construction meet the requirements of the BCA, FACMAN2, relevant Codes and Standards and any additional State, Local Government and Defence requirements;

- any recommended departures from the BCA will be technically assessed by Defence specialist fire protection staff. Agreed departures will require written approval at Director General level; and
- successful tenderers will be required to produce a Quality Assurance Plan to clearly demonstrate how BCA, Australian Standards and any additional Defence requirements in relation to fire protection and safety will be met and the required standards for construction and installation maintained.

Electrical

192. Electric power will be provided from the established inground distribution network. Seven new substations will be required to service the proposed works.

193. Switching patterns and dimmers will be arranged to utilise available daylight. External lighting will be provided at all entrances and exits. Natural light will be introduced from suitably installed and positioned windows and skylights.

Energy management and lighting

194. 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.

195. To reduce energy consumption, lighting will be controlled, where possible, by photoelectric switches in conjunction with time-switch schedules. This will include the 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 is to be designed to minimise glare and colour distortion. Solar hot water systems will be used where practical and cost-effective.

Security

196. Security and fire detection will be incorporated into the Base security and fire alarm systems and monitored at the main security control panel. Fire suppression will be provided in the new maintenance hangars.

Communications

197. The existing Base communication system has sufficient capacity to service the requirements of this project. The data communications backbone is being upgraded as a separate project under the Defence Corporate Information Management Organisation.

Mechanical services

198. Natural ventilation will be used in areas where it is consistent with thermal comfort and equipment requirements. Airconditioning and mechanical ventilation will be provided generally with a design life of 15 years. Airconditioning will be provided in classrooms, office and administration areas. Mechanical extraction systems will be used for workshops. Compressed air supplies will be required in workshops, hangars and hangarettes. All amenity areas will be mechanically ventilated. Overhead gantry cranes will be provided to all hangars and to two hangarettes in each complex.

Gas

199. No additional gas infrastructure will be required to service the redevelopment works. Gas fired boilers are proposed for hot water heating and for heating to all workshops and hangars.

Stormwater

200. The existing stormwater system consists of underground stormwater pipes and open unlined drains. Defence advised that the existing mains system has sufficient capacity to service the requirements of this project. Stormwater will be collected from the building roofs and surrounding pavement areas and discharged to the existing drainage system. Adequate spill containment and environmental management systems, such as oil/fuel interceptors, will be incorporated into the drainage system for the maintenance facilities. The adequacy of these measures are considered further in this report.

Water

201. Hot and cold water will be reticulated throughout the facilities to showers, basins and sinks. Water efficient shower roses will be installed in all shower

cubicles. Electric instant boiling water units will be provided in all tea making areas.

Committee's Conclusions

202. As one of the RAAF's major airbases, RAAF Base Amberley is the home base of the RAAF's Strike Reconnaissance Group and supports a variety of other Air Force units.

203. Despite investments in new facilities which have been made over the past three decades, many of the existing Base facilities are over 50 years old.

204. Some buildings used for the support of F-111 aircraft are converted buildings constructed during the Second World War.

205. An examination of the future direction of the Base undertaken by the Department of Defence, identified deficiencies which adversely affect the ability of the Base to perform its designated roles in a safe and flexible manner.

206. A need exists to redevelop or provide new facilities at RAAF Base Amberley to enhance operational, training, aircraft maintenance, logistics, domestic, and ancillary capabilities.

207. The scope of the proposed work can be justified as addressing shortcomings in the existing facilities and infrastructure that have contributed to inefficient work practices and reduced productivity levels. The new work will contribute to increased compliance with modern health and safety standards.

ENVIRONMENT AND HERITAGE

Demolition of buildings

208. About 40 facilities that are no longer suitable for continued use, inappropriately located, costly to maintain, or are located on sites required for new facilities, will be demolished.

Certificate of Compliance

209. An Environmental Certificate of Compliance was issued in May 1998 following an assessment of the environmental impact of the proposed work undertaken by environmental consultants, Sinclair Knight Merz. Whilst the certificate grants Defence environmental approval for the majority of the works to proceed, it recommends further heritage study and consideration be

undertaken in respect of the following buildings which are proposed to be demolished:

- Building 41
- Building 42—Gymnasium
- Building 65—Headquarters No 301 Air Base Wing
- Building 54—Flammable liquid store

210. The certificate recommends that mitigation measures, outlined in the environmental impact assessment, should be implemented. The environmental impact assessment states:

Where it is decided that a building is to be demolished and which is listed in the Heritage Study, Amberley RAAF Base 1998, there should be a conservation report, prepared under the Burra Charter, prepared for the building. The conservation report will set out the background of the building's heritage value, its use and include photos and plans of the building. Copies of the report should be provided to Ipswich City Council, the Australian Heritage Commission, Department of Defence archives and the Department of Defence Estate Organisation. One copy should also be produced on archival paper and lodged with an appropriate body such as the Australian Archives.¹

211. Defence advised the Committee that it would prefer not to demolish these buildings if they were considered to be important. There is also at this stage of the project, some potential to relocate the listed buildings. Alternatively, provisions exist whereby if an accurately record including photographs is made and important elements of the building are retained, demolition can then proceed. If necessary, there would be consultation with the local heritage organisations before a decision about demolition is made.

¹ Amberley Base Redevelopment—Environmental Certificate of Compliance—Sinclair Knight Merz, for Department of Defence, Defence Estate Organisation, April 1998, page 12

The Australian Heritage Commission

212. The Australian Heritage Commission (AHC) advised the Committee that the Base has been nominated, but not yet assessed, for entry in the Register of the National Estate. The AHC is therefore keen to ensure that places on the Base with heritage values, which merit assessment and which may be entered in the Register, are not adversely affected in the interim.

213. The AHC commended Defence for commissioning a Heritage Survey in 1997-98 which provides an initial historical background and an inventory of heritage items. The AHC advised the Committee that the first recommendation in the report is that the original pre-Second World War and early Second World War facilities, including No 301 Air Base Wing Headquarters is significant architecturally, historically and in its setting. The AHC also noted that the proposed work could involve the demolition of 40 buildings on the Base which have not been identified. Accordingly, the AHC believes an evaluation of redevelopment proposals should be undertaken to assess their impact on heritage values. The AHC therefore recommended the preparation of a comprehensive Conservation Management Plan for the Base to assist development planning.

Environment Australia

214. Environment Australia (Environment Protection Group and Biodiversity Group) raised a number of matters relating to demolition, construction and operational impacts and the area of development. Defence advised that these matters are addressed in the Environmental Certificate of Compliance. In response to questioning from the Committee about the environmental impact of construction activity, Defence advised that construction contractors will be required to work to a construction environmental management plan, which will address solid and trade waste management and disposal during the construction process.

215. Environment Australia also raised the question of the presence of threatened species in development areas. Defence advised the Committee that given the redevelopment is proposed to occur within the existing developed area of the Base or within areas of cleared vegetation, it is unlikely that there will be an impact on species listed under the *Endangered Species Protection Act 1988*. Defence based this conclusion on a study undertaken by consultants in 1998 which illustrated the distribution of vegetation communities within the Base boundary. This study noted that the areas to be redeveloped did not encroach on these communities. On that basis, Defence assessed that the environmental implications of the project were minimal.

Waste water and trade waste

216. Defence advised that changed sewage treatment arrangements will have significant environmental benefits by eliminating problems associated with flooding of the treatment plant. In addition, Defence believes that improvements to aircraft stripping and painting operations and the new facility for deseal/re-seal of F-111 fuel tanks will reduce the risk of hazardous chemicals entering the environment.

217. The Committee nevertheless questioned Defence further regarding trade waste disposal. A number of workshops in the Base undertake activities requiring the use of materials which are potentially harmful to the environment. These include solvents, hydrocarbons and paint.

218. The Committee also questioned Defence about measures to be implemented to treat waste water. Defence advised that for many processes involving waste water and other potentially toxic liquids, steps are taken to contain chemical substances at their sources in pits and drums. Defence advised that these are removed by approved contractors for recycling or transported to approved sites for disposal.

219. The Committee notes that the Environmental Certificate of Compliance addressed the question of the containment and collection of potentially harmful substances in the following terms:

There are existing liquid waste collection facilities associated with the workshops where these chemicals are used. Wastes are able to be collected and moved from site by contractors. However, the efficiency and effectiveness of handling wastes can be improved.²

Aircraft noise

220. Defence recently completed an Australian Noise Exposure Forecast (ANEF) for the Base based on a 2006 prediction of aircraft operations. This draft plan has been based on military and civil operations, including deployed military aircraft activities and represents a realistic planning basis for the airfield. The draft plan is being widely circulated and has been made available to the Ipswich City Council.

221. The forecasts show that nearby residential areas are outside the 25 ANEF contour. Defence advised that limitations on development arising from aircraft

² *Ibid*, page 7

noise have been recognised by the Council and incorporated in strategic development plans.

Native Title Claims

222. Defence advised that to date, no Native Title claims have been lodged in respect of the Commonwealth's Amberley properties.

Committee's Recommendations

223. The Department of Defence should consult further with Heritage Authorities before demolishing a number of buildings identified as historically significant.

224. As part of the project, the Department of Defence should undertake a detailed study of liquid trade waste generation, its storage, treatment and disposal to eliminate any risks of toxic substances entering waterways adjacent to the Base or entering the watertable.

CONSULTATIONS AND SUPPORT

Ipswich Shire

225. Ipswich Shire indicated strong support for the proposed upgrade of facilities at RAAF Base Amberley.

226. RAAF Base Amberley employees and their families account for more than 10,000 of the Ipswich population. RAAF personnel and their families are part of the community and links between the civilian population and the Base have been strengthened over the past 50 years through the activities of such organisations as the Ipswich Redevelopment Corporation, the Ipswich Amberley Support Group and the Ipswich-RAAF Community Awards.

Employment opportunities

227. Over the envisaged construction period of about 48 months, an average of about 70 personnel would be directly employed on construction activities. In addition, it is anticipated that construction would generate further job opportunities off-site in the prefabrication of components and the manufacture and distribution of materials.

COST AND PROGRAM

Cost

228. The out turn cost of the project is \$73.7 million. This includes construction costs, professional fees and charges, furniture and fittings, construction contingency and a predicted indexation adjustment over the construction period.

229. The Committee questioned the relatively significant cost of the project and if the estimated cost is realistic. Defence advised that as part of the design process, value management workshops will be conducted with all of the users. While this may not result in significant changes to work practices, the examination of functional areas often leads to the adoption of improved processes or procedures, in addition to developing more effective buildings.

230. In terms of the cost of the project, Defence advised that existing procedures in awarding contracts are based on value for money. Defence indicated confidence that the procedures to be used will attract the best designers, project managers and contractors.

Program

231. Subject to Parliamentary approval, tenders for the initial work would be called in late 1998, with the objective of having all project completed by mid-2003.

Future Works

232. Defence advised that progressive replacement of other Base facilities is envisaged in the next century. No detailed planning has been undertaken at this stage but their siting will accord with the Master Plan.

Storage of additional F-111 spares

233. Defence also advised that there is a need to make arrangements for the storage of extensive F-111 life-of-type stores, being procured from the USA, some of which have already arrived and are being stored at Meeandah. Defence is presently examining the appropriate location for these stores. They may be located in Sydney, as part of the Defence National Supply and Distribution Centre, in Brisbane in either new or leased premises, or in new facilities at Amberley. If new facilities are required, a separate proposal will be developed.

Base auditorium

234. The redevelopment works have been cost capped at \$73.7 million. As a result, it has been necessary to exclude the provision of a new Base Auditorium from the development proposals.

235. In other Defence projects, it has been the practice for the construction of this type of facility to be funded from project savings. Defence advised the Committee that should additional funds become available, or should economies be achieved once detailed design has been undertaken and the works put to construction, the opportunity would be taken provide a new auditorium. If neither of those avenues achieve reinstatement, the proposal could be introduced as a new medium work in the future.

Existing auditorium

236. Defence believes that the present Base auditorium, which dates from the early 1940s, is in poor condition. Its deficiencies include inadequate ventilation and lighting, poor insulation from aircraft noise, an ineffective and inefficient configuration and limited fire protection. As a result of its age and type of construction, the building is both costly and time consuming to maintain. It is poorly located in relation to its users.

Requirement

237. Defence believes there is a need for a new Base auditorium with a 350 seat capacity. This would be adequate to seat about one eighth of Amberley's service population. The auditorium would be used to conduct large training courses, seminars and mass briefings.

Proposal

238. The proposed facility would be capable of seating 350 personnel. It would be designed to provide for a wide range of activities including lectures and seminars, be fitted with appropriate audiovisual equipment and meet occupational health and safety standards and requirements. Carparking would be shared with the proposed new training facilities.

Committee's Recommendations

239. The Committee believes that whilst the proposed base auditorium project has considerable merit, an examination should be undertaken of alternative buildings which could be modified for use as an auditorium.

240. The Committee recommends the construction of the works in this reference at an estimated out turn cost of \$73.7 million.

CONCLUSIONS AND RECOMMENDATIONS

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

- 1. As one of the RAAF's major airbases, RAAF Base Amberley is the home base of the RAAF's Strike Reconnaissance Group and supports a variety of other Air Force units. (Paragraph 202)**
- 2. Despite investments in new facilities which have been made over the past three decades, many of the existing Base facilities are over 50 years old. (Paragraph 203)**
- 3. Some buildings used for the support of F-111 aircraft are converted buildings constructed during the Second World War. (Paragraph 204)**
- 4. An examination of the future direction of the Base undertaken by the Department of Defence, identified deficiencies which adversely affect the ability of the Base to perform its designated roles in a safe and flexible manner. (Paragraph 205)**
- 5. A need exists to redevelop or provide new facilities at RAAF Base Amberley to enhance operational, training, aircraft maintenance, logistics, domestic, and ancillary capabilities. (Paragraph 206)**
- 6. The scope of the proposed work can be justified as addressing shortcomings in the existing facilities and infrastructure that have contributed to inefficient work practices and reduced productivity levels. The new work will contribute to increased compliance with modern health and safety standards. (Paragraph 207)**
- 7. The Department of Defence should consult further with Heritage Authorities before demolishing a number of buildings identified as historically significant. (Paragraph 223)**
- 8. As part of the project, the Department of Defence should undertake a detailed study of liquid trade waste generation, its storage, treatment and disposal to eliminate any risks of toxic substances entering waterways adjacent to the Base or entering the watertable. (Paragraph 224)**

9. The Committee believes that whilst the proposed base auditorium project has considerable merit, an examination should be undertaken of alternative buildings which could be modified for use as an auditorium. (Paragraph 239)

10. The Committee recommends the construction of the works in this reference at an estimated out turn cost of \$73.7 million. (Paragraph 240)

Wilson Tuckey MP

Chairman

25 June 1998

APPENDIX A

WITNESSES

GROWDER, Air Commodore Peter William, Commander Strike Reconnaissance Group, Department of Defence, RAAF Base Amberley, Qld

KELLY, Brigadier Garry Ross, Director General, Project Delivery, Department of Defence, Campbell Park Offices, Canberra, ACT

KIMBER, Squadron Leader Sheldon Dwight, Commanding Officer, RAAF Security and Fire School, RAAF Base Amberley, Qld

MACLEAN, Lieutenant Colonel Graeme, Project Director 1, Department of Defence, Campbell Park Offices, Canberra, ACT

SARGEANT, Group Captain Richard James, Officer Commanding 503 Wing, Department of Defence, RAAF Base Amberley, Qld

SIZER, Mr Brian, Executive Engineer, Sinclair Knight Merz, 65 Astor Terrace, Spring Hill, Qld

STEINBACH, Wing Commander Johannes Werner, Officer Commanding No 301 Airbase Wing, Department of Defence, RAAF base Amberley, Qld

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(Base plans are not available in PDF format)

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