

Parliamentary Standing Committee on Public Works

REPORT

relating to the

UPGRADING OF FACILITIES FOR INTRODUCTION OF F28 AIRCRAFT, WAGGA WAGGA AIRPORT

New South Wales

(Eighth Report of 1984)

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

1984

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

R E P O R T

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UPGRADING OF FACILITIES.

FOR INTRODUCTION OF

F28 AIRCRAFT,

WAGGA WAGGA AIRPORT,

New South Wales

(Eighth Report of 1984)

MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

(Twenty-Seventh Committee)

Senator Dominic John Foreman (Chairman)
The Honourable Wallace Clyde Fife, M.P. (Vice-Chairman)

Senate

Houses of Representatives

Senator Gerry Norman Jones
Senator Bernard Francis
Kilgariff

David Bruce Cowan, Esq., M.P.
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Leonard Joseph Keogh, Esq., M.P.
Eamon John Lindsay, Esq., M.P.
John Saunderson Esq., M.P.

EXTRACT FROM
THE JOURNALS OF THE SENATE
NO. 62 DATED 15 DECEMBER 1983

32 PUBLIC WORKS - JOINT STATUTORY COMMITTEE - REFERENCES OF WORK:
The Minister for Social Security (Senator Grimes), by leave and
pursuant to Notices of Motion not objected to as Formal
Motions, moved the following Motions together:

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:

Upgrading of facilities for introduction of F28 Aircraft,
Wagga Wagga Airport, New South Wales.

. . .

Questions - put and passed.

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

UPGRADING OF FACILITIES FOR INTRODUCTION OF F28 AIRCRAFT, WAGGA WAGGA AIRPORT, NSW

R E P O R T

By resolution on 15 December 1983 the Senate referred to the Parliament Standing Committee on Public Works for investigation and report the proposed upgrading of facilities for the introduction of F28 aircraft, Wagga Wagga Airport, NSW.

The Committee has the honour to report as follow:

THE REFERENCE

1. The main elements of the proposed work are upgrading of the runway and aircraft movement area and the provision of a new terminal building and control tower.
2. The estimated cost of the proposed work is \$2.3 million at November 1983 prices.

THE COMMITTEE'S INVESTIGATION

3. The Committee received submissions and plans from the Department of Aviation (Aviation) and the Department of Housing and Construction (DHC) and took evidence from their representatives at a public hearing held in Wagga Wagga on 9 February 1984.

The Committee would like to record its thanks to the Mayor of Wagga Wagga for making the Council Chambers available for the public hearing.

4. The Committee also received submissions from a number of airlines based at, or operating services to Wagga Wagga, or operating services there, and from aviation industry associations and local government. A list of witnesses who appeared before the Committee and the organisations which they represented is at Appendix A.

5. At the conclusion of the public hearing departments were directed to provide the Committee with written answers to questions taken on notice and responses to other evidence presented at the hearing by non-departmental witnesses. These written responses were received by the Committee on 22 March 1984 and were accepted as evidence.

6. Prior to the public hearing the Committee inspected the main runway, the existing terminal building and associated areas and the sites for the proposed new terminal building and the control tower at Wagga Wagga Airport.

7. The Committee's proceedings will be printed as Minutes of Evidence.

BACKGROUND

8. Wagga Wagga Airport Wagga Wagga Airport is located at Forest Hill, about 10 kilometres south-east of the City of Wagga Wagga. (See Locality Plan, page B-1)

The airport is Department of Defence property controlled by the RAAF. RAAF Base Wagga, located adjacent to the northern boundary of the airfield area, is a major RAAF training establishment. There are no RAAF aircraft permanently based at Wagga although use is made of the airfield and surrounding air space by RAAF fixed and rotary wing aircraft for training purposes for several weeks during the year.

9. The aircraft movement area comprises two runways; a 1768 metre long sealed runway oriented in a north-east to south-west direction (runway 05/23) and a 1526 metre long unsealed landing strip oriented in a north-west to south-east direction (runway 12/30). (See Site Plan, page B-2).

10. Civil Aviation Operations Civil aviation operations have been carried out continuously from Wagga Wagga Airport since 1945. A permissive occupancy agreement between the Department of Defence and Aviation provides a civil aviation area comprising a terminal building and an apron. The civil area is used as the base for two regional airlines which provide services to other major centres in the Riverina and to Melbourne. Air New South Wales operates daily services to and from Sydney using F27 (Fokker Friendship) aircraft.

11. Ground access to the terminal area from Wagga Wagga is by way of the Sturt Highway and an access road running adjacent to RAAF Base Wagga/Forest Hill.

12. Aviation maintains a Flight Services Unit (FSU), housed in a weatherboard building, adjacent to the terminal building.

13. The Department of Aviation is directly responsible for the provision of civil aviation facilities at Wagga Wagga Airport because overall control of the airport remains with the Commonwealth (the Department of Defence) and cannot, in these circumstances, be devolved to local government as has been the case with other regional airports, under the Airport Local Ownership Plan (ALOP).

THE NEED - TERMINAL AND MOVEMENT AREAS

14. The need to upgrade Wagga Wagga airport has arisen as a result of plans by Air New South Wales to introduce F28-1000 (Fokker Fellowship) services to a number of regional centres, including Wagga Wagga. As a result, regular public transport (RPT) jet aircraft will enter the existing aircraft traffic mix. There will initially be a marginal increase in the number of passengers per flight although this will increase as the larger capacity F28-4000 aircraft are introduced.

15. Introduction of F28 Aircraft Air New South Wales, an RPT operator, has identified six regional centres suitable for jet-development in a three-year programme as follows:

- . Dubbo, Wagga Wagga, Coffs Harbour by 1983/4
- . Casino and Cooma by 1984/5
- . Broken Hill by 1985/6

16. Apart from Wagga Wagga, the other airports involved come under the ALOP. Aviation advised that in order to permit F28 operations the following arrangements and works have been completed or are proposed at the respective airports:

- a. Dubbo - upgraded for F28 aircraft in 1970; no further work necessary for re-introduction of the aircraft;

- b. Coffs Harbour - to be upgraded - new runway, link taxiway, apron, terminal building, control tower and ancillary works; works to commence in November 1984 and to be completed by September 1985; estimated total cost \$9.6 million;
- c. Casino - minimal upgrading to aircraft pavements; timing not determined; estimated cost \$1.5 million;
- d. Broken Hill - to be upgraded - new runway, link taxiway, apron and terminal building; works to commence July 1984 and to be completed by July 1985; estimated total cost \$5.6 million; F28 services permitted on pavement concession as a temporary measure;
- e. Maroochydore - runway, taxiway and apron have been upgraded; new control tower to be commissioned in 1984; estimated total cost \$3.2 million; and,
- f. Cooma - investigation to establish the extent of works required has just commenced and the timing of any necessary work will be determined on completion of the study; limited F28 operations are being permitted under a pavement concession; budget approval of \$2.5 million for upgrading.

17. The estimated cost of providing suitable facilities at airports other than Wagga Wagga for Air New South Wales F28 services is \$22.4 million. Re-equipment with F28 aircraft is not limited to Air New South Wales. The other intra-state operator, East-West Airlines, has also acquired F28 aircraft and the following airports have been or will be upgraded:

- a. Albury - pavement work completed in February 1983; terminal completed December 1983;

b. Tamworth - pavement work scheduled for completion in May 1984; a new terminal should be completed early in 1985; and

c. Armidale - investigations about to commence.

18. Aviation stated that F28 services will not be introduced to centres other than Dubbo, Cooma and Broken Hill until relevant upgrading works are complete.

19. Air New South Wales advised the Committee that 65 seat F28-1000 aircraft will be introduced to these centres when the necessary facilities are completed and a licence has been issued by Aviation. The company advised that details of schedules have not been confirmed but that it is intended to take up as much F27 flying with F28 aircraft as soon as possible. There would remain a continuing mix of aircraft but a predominance of F28 operations to the centres nominated for jet services. F27 operations will continue to serve a number of centres such as Narrabri, Moree, Narrandera, Griffith and Merimbula.

20. Aircraft Movements and Passengers. Table 1, below, is a comparison of the annual number of passengers and aircraft movements recorded and forecast for Wagga Wagga and two other major centres in NSW. The table shows that Wagga Wagga is comparatively busy, in terms of annual passengers and aircraft.

Table 1 - Annual Number of Passengers and Aircraft Movements
(actual and forecast)
Wagga Wagga, Dubbo and Coffs Harbour - 1975 - 2000.

	1975	1980	1982	1985	1990	2000
<u>Passengers</u>						
Wagga Wagga	84101	99162	88096	90500	103830	130200
Dubbo	64419	79914	66932	95430	96100	103300
Coffs Harbour	49291	64491	69844	92000	112000	146800
<u>Aircraft Movements</u>						
Wagga Wagga	20626	28135	31375	31293	31608	31880
Dubbo	12754	18588	17893	18280	18130	18300
Coffs Harbour	25073	23235	26693	25900	26270	26880

21. Existing Facilities at Wagga Wagga The existing terminal building at Wagga Wagga Airport is a weatherboard structure, built in 1941-42, which has been used since 1945. Additional terminal space comprising a second-hand building was added in 1949. Both buildings are "on loan" from the RAAF.

22. The terminal has a floor area of 330 square metres in which airline check-in desks, a small lounge area and a concession are housed. Aviation advised that the terminal can process current traffic comprising 52-seat F27 and 6-seat commuter aircraft at generally poor standards of service. After inspecting the building and the facilities offered the Committee agrees with this assessment. The introduction of 65 seat F28-1000 aircraft will mean the situation will become marginally worse. When 80-seat F28-4000 aircraft are introduced the level of amenities and services available to passengers and the non-travelling public will deteriorate even further.

23. Movement Area Aviation advised that the existing runway length is adequate for F28-1000 aircraft but that an additional 200 metre length would be required to enable F28-4000 aircraft to operate at economic passenger loads. DHC stated that the indicative cost of providing the runway extension to the south - west would be about \$600,000. The runway width of 45 metres should be retained.

24. F27 aircraft operate at weights of around 20,000 kilograms (kg) while the F28 operates at 30,000 kg. The Committee was advised that extensive testing of the existing runway and taxiway pavements by DHC and Aviation indicated some deficiencies in its strength. Two alternative methods of rectifying the deficiencies to permit the operation of F28 services were identified. The first involves strengthening pavements to required standards to provide a period of 10 year operations with minimal maintenance; the second, to provide minimal movement area improvements for F28 services and to repair failed areas as they occur. The method recommended by DHC and the reasons for its adoption is discussed below under "The Proposal".

25. The existing apron will be too small to accommodate foreseeable aircraft parking requirements. Aviation advised that the apron should be sized to accommodate one F28 position, two commuter aircraft positions and one Department of Defence position - to C130 size.

26. Summary Air NSW plans to introduce F28 services to six regional centres in NSW, including Wagga Wagga. All airports involved, with the exception of Dubbo, will require some upgrading to make them suitable for F28 operations.

27. The existing terminal at Wagga Wagga airport is old and offers only a low level of service. This level will decline even further with the introduction of F28 aircraft. The runway at Wagga will not be able to handle the heavier F28 aircraft and the size of the apron is inadequate to accommodate expected aircraft occupancy.

28. Committee's Conclusion The terminal, runway and apron at Wagga Wagga Airport should be upgraded to provide adequate levels of services to passengers and the non-travelling public and to permit F28 operations.

THE NEED - CONTROL TOWER

29. Aviation stated that the number of annual movements at Wagga Wagga Airport and the introduction of F28 aircraft necessitate the establishment of air traffic control (ATC) with consequential provision of a control tower. The Department advised that the requirement for ATC was based on the application of the following policy guidelines to Wagga Wagga Airport:

- . where total aircraft movement at an aerodrome, including both Regular Public Transport (RPT) and other Instrument Flight Rules (IFR) operations exceed 20,000 per annum, consideration must be given to the establishment of ATC services;
- . RPT turbo-jet flights will only be permitted in controlled air space except in special circumstances.

30. Annual Aircraft Movements One of the main criteria determining the provision of ATC services is the number of aircraft movements per annum. Aviation advised that the historical data and projections provided in Table 1 in respect of Wagga Wagga airport shows that Wagga Wagga meets the traffic criterion and has done so since 1975.

31. Turbo Jet Aircraft The second criterion for the establishment of ATC is that RPT jet operations will only be permitted in controlled airspace. Only in exceptional circumstances, where an equivalent level of safety can be maintained, will an exemption be granted.

32. Establishment of ATC The establishment of ATC at Wagga Wagga would require the creation of controlled airspace, depicted at page B-3, encompassing aerodrome traffic circuits, standard departure tracks, instrument approaches and holding patterns and the climb and descent profiles of aircraft flying on major routes to and from Wagga Wagga entering the existing overflying airspace controlled by Sydney and Area Control Centre.

33. The provision of ATC will also require a control tower to be located at the airport. The control tower would provide the following functions:

- a. a visual surface movement control service;
- b. a visual aerodrome control service for runway operations and controlled airspace within about a 10 kilometres radius of the airport; and
- c. a procedural (non-radar) approach control service to aircraft entering, leaving or transitting controlled airspace for which Wagga Wagga ATC is the controlling authority.

34. Wagga Wagga ATC would be staffed by four controllers, providing a 14 hours per day coverage, seven days per week with two officers both on duty for about 7 hours per day. If traffic density were found to be in excess of that envisaged the ATC establishment could be increased to a maximum of seven controllers. Aviation advised that FSU (10 officers) and ATC (4 officers) annual operating costs, including salaries, superannuation, equipment and building maintenance are:

FSU	\$599,000
ATC	\$322,000

35. Reactions A number of witnesses questioned the need for the establishment of ATC at Wagga Wagga. They made the following points in their opposition to the creation of ATC.

- a. the FSU has been operating at Wagga Wagga for many years and there have been no accidents or incidents due to the number of movement or the aircraft mix;
- b. the establishment of a discrete aerodrome information zone, operated by FSU staff, could perform much the same functions as ATC;
- c. the establishment of ATC would marginally increase the level of safety but it would add significantly to operating costs (due to frequent delays) and costs attributable to the aviation industry through the cost recovery policy;
- d. ATC would deter the RAAF from deploying fixed and rotary wing aircraft to Wagga Wagga for training thereby reducing the annual number of movements and the need for ATC.

e. ATC, without constructing a parallel taxiway to the 05/23 runway could cause long delays to aircraft awaiting clearance.

f. a concern about the future of the FSU when ATC is introduced.

36. Consideration The provision of ATC at Wagga Wagga is fundamentally a response to a perceived reduction in the level of safety which could result from an environment in which the accepted level of annual movements (20,000) has been exceeded and in which the introduction of RPT F28 aircraft will increase the complexity of the traffic mix. Aviation has developed criteria for the establishment of ATC; in the case of Wagga Wagga both criteria have been or will be met.

37. The FSU provides a service rather than controls to aircraft using the airport; it provides a traffic information service but it remains the responsibility of individual pilots to provide their own separation, to carry out approach procedures and to decide which runway to use. In controlled airspace ATC would provide separation and control landing approaches.

38. In circumstances where annual movement numbers are below 20,000 and where the mix of aircraft is not particularly complex a concession may be issued by Aviation to permit RPT jet operations without ATC.

39. Concessions have been granted to a number of outback Western Australian airports and other airports in the Northern Territory, Tasmania and NSW. For example, at Dubbo, Armidale and Casino the annual number of movements has not reached the 20,000 threshold and the traffic mix is not as significant as at Wagga Wagga and Coffs Harbour. Concessions, subject to review, have been granted at the former airports based on the notion that without ATC safety is not compromised.

40. No concession will be granted to RPT F28 operations to Wagga Wagga where minimal movements are in excess of 20,000, where the traffic mix is considered to be significant and where weather conditions often necessitate instrument approaches at particular times of the year.

41. The Committee sought the views of the Australian Federation of Air Pilots on the need for ATC at Wagga Wagga and was advised that Federation policy is that ATC should be provided in terminal area operations by turbo jet aircraft.

42. The question of cost recovery is addressed by aviation industry representatives at nearly all public hearings conducted by the Committee relating to the provision of new facilities at airports. The aviation industry has frequently argued that the provision of new facilities, especially new terminal buildings would result in significant increases in charges being imposed by the Commonwealth in order to recover costs. These charges are passed on to the travelling public and have led to increased air fares.

43. Prior to the public hearing the Minister for Aviation announced the membership and appointment of an independent committee to examine and report on the costs attributed to the aviation industry under the cost recovery policy. The inquiry has been given wide terms of reference and will examine the cost recovery policy on a national basis. In view of the general commonality of aviation industry reactions to proposed airport development, the Committee believes the enquiry will give the various sectors of the industry the opportunity of presenting general principles, designed to lead to more equitable cost recovery policies.

44. A number of witnesses based their opposition to the establishment of ATC at Wagga Wagga on their experience at Albury where ATC has been introduced. Aviation advised that delays in Albury during 1983 were due in part to the Royal Visit and frequent bad weather which necessitated instrument approaches. Aviation stated that flight times for a commuter airline operating on the Wagga Wagga - Albury route are 2-3 minutes less than planned flight times due to aircraft being able to join the circuit without having to fly three legs as at uncontrolled aerodromes.

45. The Committee sought further details on the requirement for a parallel taxiway for the 05/23 runway from Aviation following the public hearing. Aviation advised that the need for a partial parallel taxiway would be monitored when the annual number of aircraft movements exceed 30,000; when movements exceed 60,000 a taxiway would be essential.

46. The cost of providing a partial length 650 metres general aviation taxiway extending from the present taxiway to the north east would be \$230,000.

47. On the basis of information provided, it appears unlikely that the lack of a parallel taxiway would cause delays to aircraft movements in the foreseeable future. Aviation should closely monitor the situation and provide a parallel taxiway if significant delays arise.

48. On the question of the RAAF continuing to use Wagga Wagga airport for rotary and fixed wing aircraft training following the establishment of ATC the Committee was advised that it would require a policy decision taken by the Department of Defence.

49. Aviation advised that the FSU will continue to operate at Wagga Wagga with the establishment of ATC. FSU officers will not be required to provide information to aircraft within designated controlled air space. The FSU will be responsible for providing traffic information services to an extensive area in south-western NSW. No reductions in staff are envisaged.

50. Committee's Conclusion Air Traffic Control should be established at Wagga Wagga Airport to permit F28 operations. Aviation should closely monitor aircraft delays and provide a parallel taxiway if significant delays arise.

THE PROPOSAL

51. Terminal Building Location The Committee was advised that expansion of the existing terminal would be impractical due to site constraints and the structure of the building. It is therefore proposed to construct a new terminal building and to return the existing building to the Department of Defence.

52. The following criteria were used to assess the suitability of a number of sites for the new terminal:

- . proximity to existing engineering services;
- . maximum practical distance from the runway for taxi-ing aircraft; and
- . least disruption to the use of the existing terminal during construction of the new terminal.

53. The site selected for the new terminal, on the western side of the existing apron area, meets these criteria adequately. (See Terminal Area Plan, page B-4).

54. Terminal Size The terminal building will be a single storey structure with a gross floor area of 780 square metres, comprising a 570 square metre enclosed area and 210 square metres unenclosed area.

55. The size of the terminal was determined by the number of passengers and non-travelling public during daily peak periods. Aviation advised that due to interlining between commuter and airlines, peak hour loads on the terminal were based on 90 departing and 90 arriving passengers plus 90 members of the non-travelling public. The total of 270 people was based on an F28-4000 aircraft with a 90 per cent load factor (72 passengers) and two commuter aircraft (18 passengers) plus provision of space for the non-travelling public.

56. The option of sizing the building for F28-1000 aircraft passenger numbers with subsequent expansion to cater for the F28-4000 series had been considered but would be more costly.

57. Terminal Description The building has been designed to suit the environment and to minimise energy requirements.

58. A lounge will be provided for passengers and the non-travelling public, with areas for passenger check-in, toilets, and concessions. The layout of functional areas is designed to achieve separation of arriving and departing passengers and of passenger processing and waiting areas. Allowance has been made for queues to form without disrupting other functions. Other features to be provided include under-cover areas for baggage make-up and claim, babies' care rooms, public viewing areas and an area for a kiosk. Provision has also been made for physically handicapped people. (See Plan Terminal Building, page B-5).

59. The structure will consist of steel framing on a concrete raft floor. The roof will be pre-finished insulated corrugated sheeting with an acoustic ceiling. External walls will be of face brickwork; internal walls will be generally face brick work with ceramic wall tiles in toilet areas. Floors will generally be carpet; ceramic tiles will be used in heavily trafficked areas.

60. Concessionaires, airline, and office areas will be fitted out by the users.

61. The building will be air conditioned; toilet areas will be ventilated and artificial lighting will be provided. A perspective of the terminal building is at page B-6.

62. Areas adjacent to the terminal will be planted with native plants appropriate to the district. At the public hearing DHC representatives undertook to discuss the landscaping proposal with Wagga Wagga City Council. The Committee has been advised that DHC has provided relevant drawings to the Officer-in-Charge of the Council Parks and Gardens Department and will provide advice to DHC on appropriate trees and shrubs for the Wagga Wagga climate and environment. The Committee commends DHC for taking this action.

63. Access Road and Carparking Access to the terminal will be by way of a one-way road which will link up with existing airport access roads. Pick-up and set-down areas will be provided adjacent to the terminal.

64. A new car park to accommodate 120 vehicles will be integrated with existing sealed areas to provide a total of 202 vehicle spaces for public, employee and commercial parking.

65. Apron and General Aviation Taxiway It is proposed to enlarge the existing aircraft apron by 4,200 square metres to provide an F28 parking position near the new terminal. A smaller extension of 450 square metres is also proposed on the southern extremity of the apron to provide a C-130 parking position.

66. Fuelling reticulation and hydrants will be integrated in the new apron.

67. Apron pavement extensions will consist of 50mm of bituminous concrete surfacing on a 450mm layer of crushed rock or gravel, all new pavements will have three-metre wide shoulders.

68. A new general aviation taxiway will replace the existing taxiway which is on the site required for the new terminal.

69. Committee's Conclusion The extent of the proposed new terminal building, additional apron space and taxiway work is justified and adequate. The site selected for the new terminal building is suitable.

70. Runway and Taxiway Improvements As mentioned above (para 24) Aviation adopted the option of proposing "minimal movement area improvements" to permit the introduction of F28 services and to repair failed areas of pavements as they occur. Adoption of this option would defer strengthening the runway for 5 years and would increase the maintenance effort. DHC advised that this option can be ranked equally with the other option of strengthening the pavements now to provide a period of 10 years with minimal maintenance in terms of net present worth analysis.

71. Aviation advised the "minimal movement area improvements" option was adopted as a result of a government directive to restrain expenditure.

72. The general nature and extent of the runway and taxiway improvements proposed is as follows:

- a. provision of turning areas at runway ends for departing aircraft - 5,400 square metres of 75 mm thick, 45 metres wide bituminous concrete overlay;
- b. sealed jet blast areas at runway ends - 3,000 square metres;
- c. unacceptable ponding to be eliminated by about 13,500 square metres of shape correction with bituminous concrete;
- d. re-sealing of the runway and taxiway - 85,000 square metres.

73. Committee's Conclusion The Committee agrees to the adoption of minimal movement area improvements proposed but draws attention to recurrent maintenance expenditure necessary to keep the movement area operational.

74. Control Tower The Committee has concluded that a case has been made for the provision of air traffic control services at Wagga Wagga Airport. Aviation advised that the siting of control towers must satisfy a number of broad requirements as follows:

- a. maximum visibility from the control cabin to all movement areas and the airspace;
- b. response times of less than 4 seconds to all runway thresholds;

- c. ability of controllers to visually differentiate between aircraft or ground vehicles, their movement and their relative positions - the eye height of controllers is important in this regard;
- d. if cabin height exceeds 15 metres a passenger lift is required with consequent cost penalties.

75. The Committee was advised that the option of upgrading the existing unmanned war-time tower had been examined. The tower was considered unsuitable for use as its height did not meet the eye level criterion. To increase the height would necessitate structural strengthening which would exceed the cost of a new tower.

76. The site selected for the tower, shown on page B-2, would require a cabin floor height of 14.7 metres, has good response times to the runway ends and is within a reasonable distance of engineering services.

77. Control Tower Description The tower will comprise a control cabin with an amenities floor below, a ground level communications equipment room, battery room and plant room.

78. The building will be steel framed with reinforced concrete floors. External walls will be prefinished steel sheeting. The roof will be insulated. Cabin glazing will consist of glass panels sealed at the joints. (See Elevation, Control Tower Plan, page B-7).

79. The control cabin and the communications equipment room will be air conditioned to provide comfort and a suitable environment for equipment. Mechanical ventilation will be provided in the battery room. The Committee was advised at the public hearing that the amenities area will be ventilated by a bleed-off of air conditioning from the control cabin.

80. An access road to the tower and sealed parking for four vehicles will be provided.

81. Other Works The Committee was advised that Aviation will equip the control tower and will provide new runway lighting. These components are not included in this reference.

82. Committee's Conclusion The location and design of the control tower meet Department of Aviation requirements and are satisfactory.

ENVIRONMENTAL CONSIDERATIONS

83. Aviation stated that the Department of Home Affairs and Environment had been consulted and had advised that an Environmental Impact Statement would not be necessary to satisfy the objects of the Environment Protection (Impact of Proposals) Act 1974.

84. Aircraft Noise An Australian Noise Exposure Forecast (ANEF), based on forecast movement and traffic mix for 1990, was prepared by Aviation. Wagga Wagga City Council advised the Committee that existing and proposed residential areas of Forest Hill will not be located within the 25-30 ANEF contours. Council also advised that future upgrading of the 12/30 runway would be acceptable from a noise exposure viewpoint as future expansion of the Forest Hill residential area will generally take place between the Wagga Wagga - Ladysmith railway line and the Sturt Highway.

LIMIT OF COST

85. The limit of cost estimate for the proposed work is \$2.3 million at November 1983 prices.

PROGRAM

86. The works are scheduled to be completed within one year of approval to proceed.

87. Committee's Recommendation The Committee recommends the construction of the work in this reference.

RECOMMENDATIONS AND CONCLUSIONS

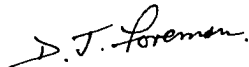
88. The recommendations and conclusions of the Committee and the paragraph in the report to which each refers are set out below:

Paragraph

- | | | |
|----|---|----|
| 1. | THE TERMINAL, RUNWAY AND APRON AT
WAGGA WAGGA AIRPORT SHOULD BE UPGRADED
TO PROVIDE ADEQUATE LEVELS OF SERVICES
TO PASSENGERS AND THE NON-TRAVELLING
PUBLIC AND TO PERMIT F28 OPERATIONS. | 28 |
| 2. | AIR TRAFFIC CONTROL SHOULD BE ESTABLISHED AT
WAGGA WAGGA AIRPORT TO PERMIT F28 OPERATIONS. | 50 |

Paragraph

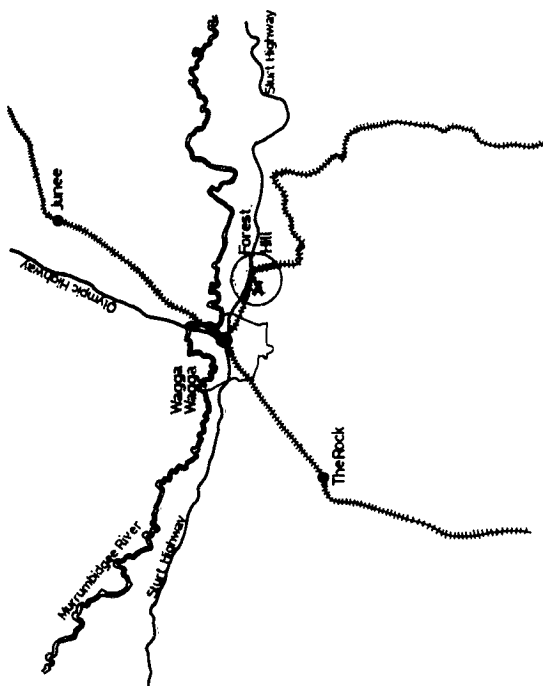
3. AVIATION SHOULD CLOSELY MONITOR AIRCRAFT DELAYS AND PROVIDE A PARALLEL TAXIWAY IF SIGNIFICANT DELAYS ARISE. 50
4. THE EXTENT OF THE PROPOSED NEW TERMINAL BUILDING, ADDITIONAL APRON SPACE AND TAXIWAY WORK IS JUSTIFIED AND ADEQUATE. THE SITE SELECTED FOR THE NEW TERMINAL BUILDING IS SUITABLE. 69
5. THE COMMITTEE AGREES TO THE ADOPTION OF MINIMAL MOVEMENT AREA IMPROVEMENTS PROPOSED BUT DRAWS ATTENTION TO RECURRENT MAINTENANCE EXPENDITURE NECESSARY TO KEEP THE MOVEMENT AREA OPERATIONAL. 73
6. THE LOCATION AND DESIGN OF THE CONTROL TOWER MEET DEPARTMENT OF AVIATION REQUIREMENTS AND ARE SATISFACTORY. 82
7. THE LIMIT OF COST ESTIMATE FOR THE PROPOSED WORK IS \$2.3 MILLION AT NOVEMBER 1983 PRICES. 85
8. THE COMMITTEE RECOMMENDS THE CONSTRUCTION OF THE WORK IN THIS REFERENCE. 87


(D.J. FOREMAN)
Chairman

Parliamentary Standing Committee
on Public Works,
Parliament House,
CANBERRA
29 March 1984

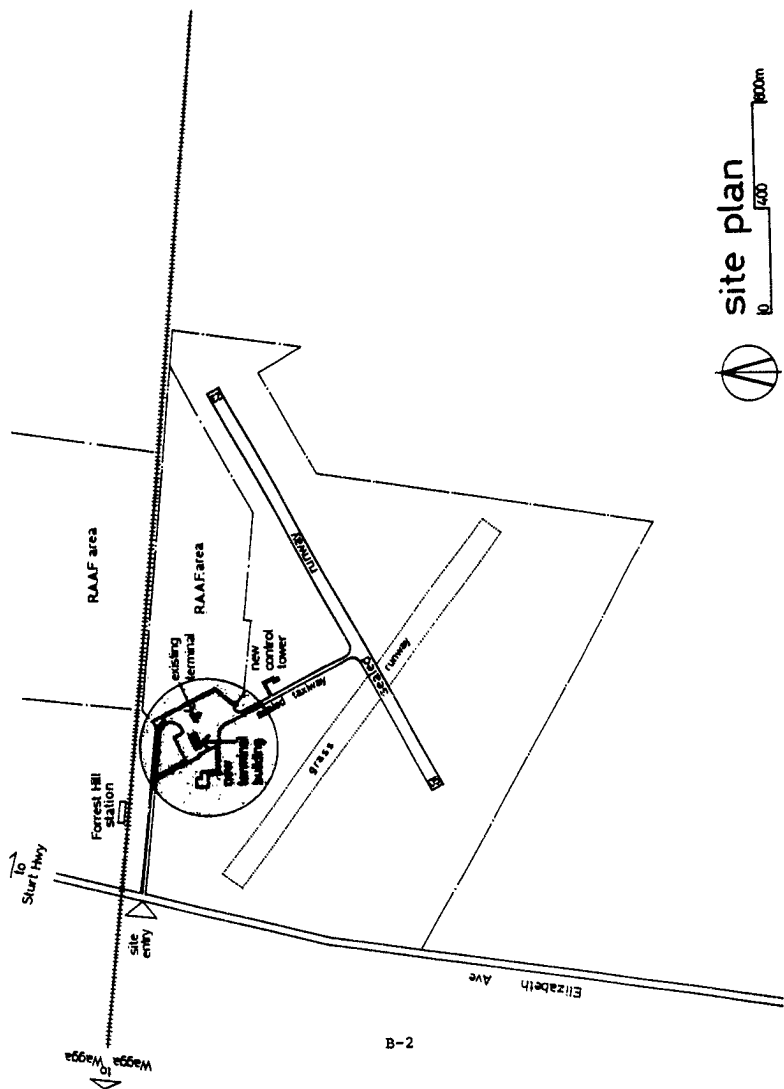
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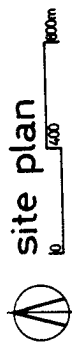


B-1

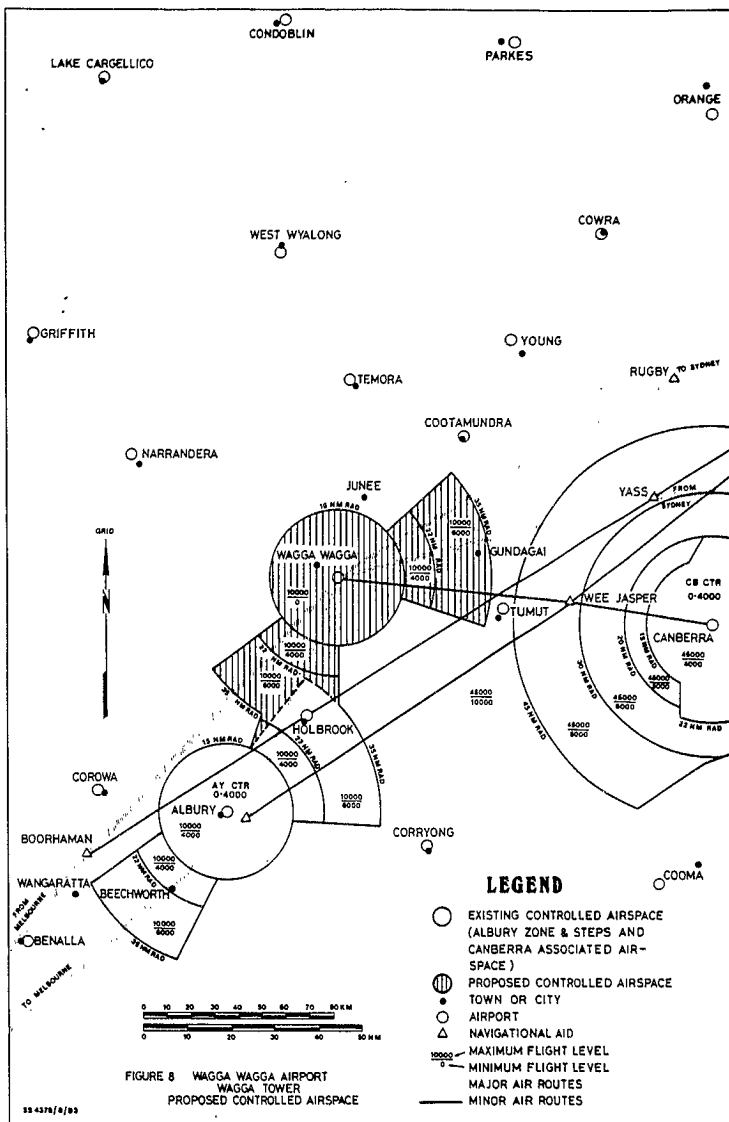


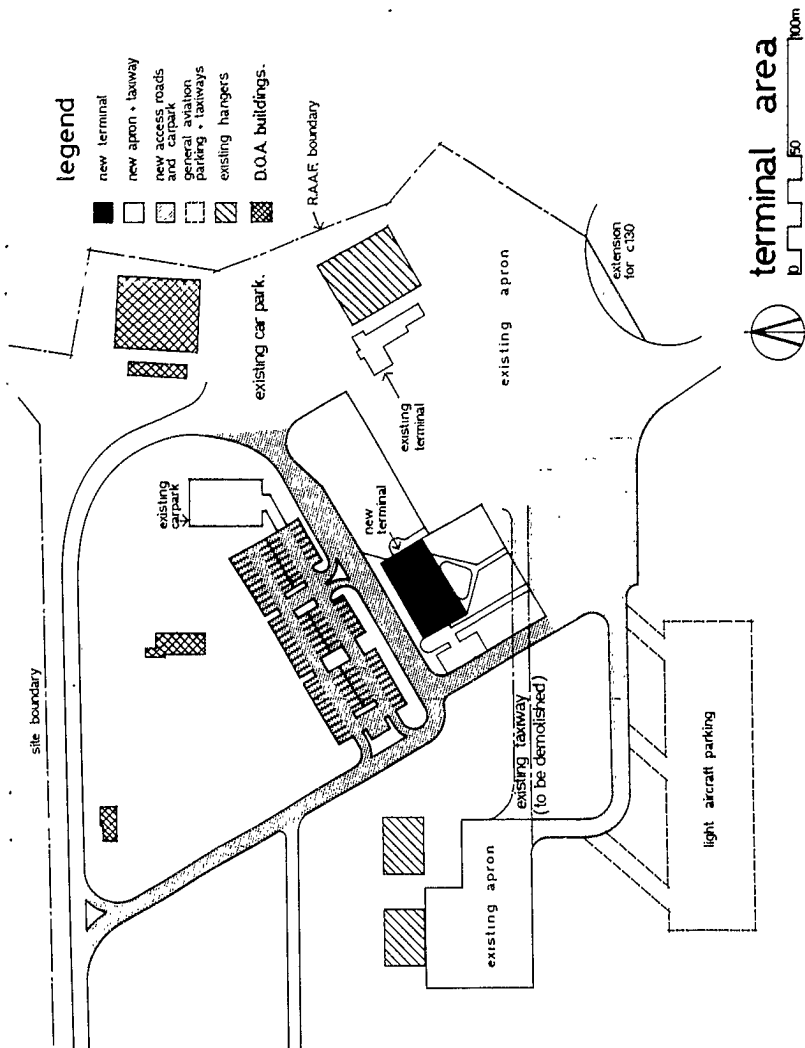


B-2



site plan

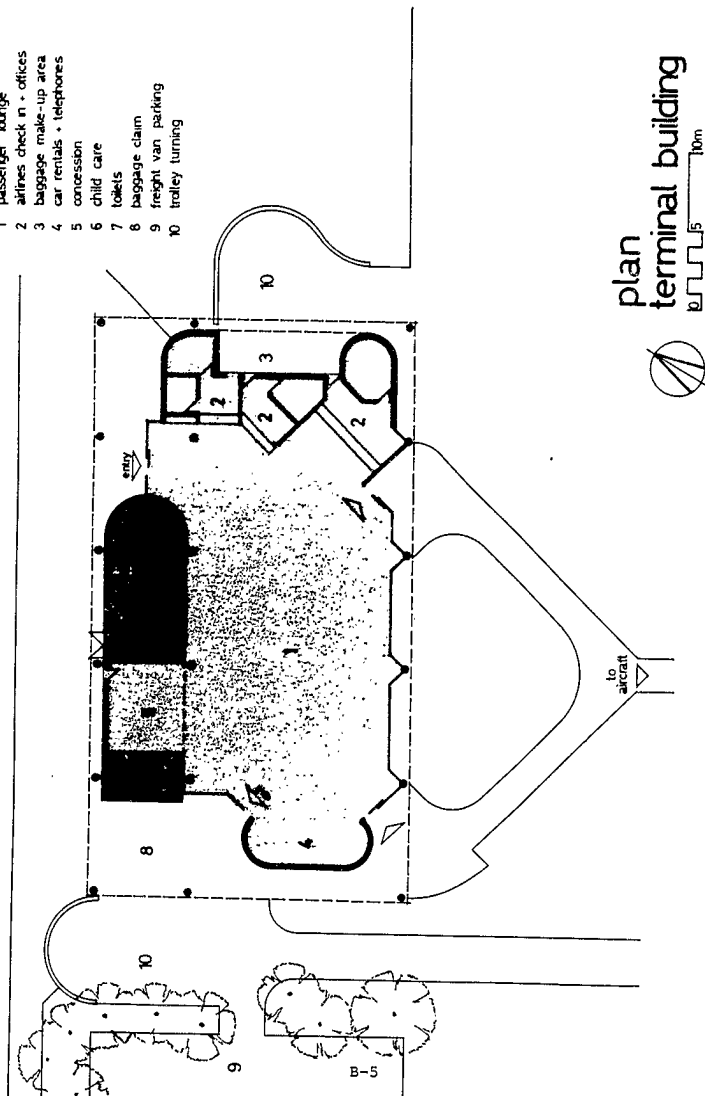




legend

- 1 passenger lounge
- 2 airlines check in + offices
- 3 baggage make-up area
- 4 car rentals + telephones
- 5 concession
- 6 child care
- 7 toilets
- 8 baggage claim
- 9 freight van parking
- 10 trolley turning

access road

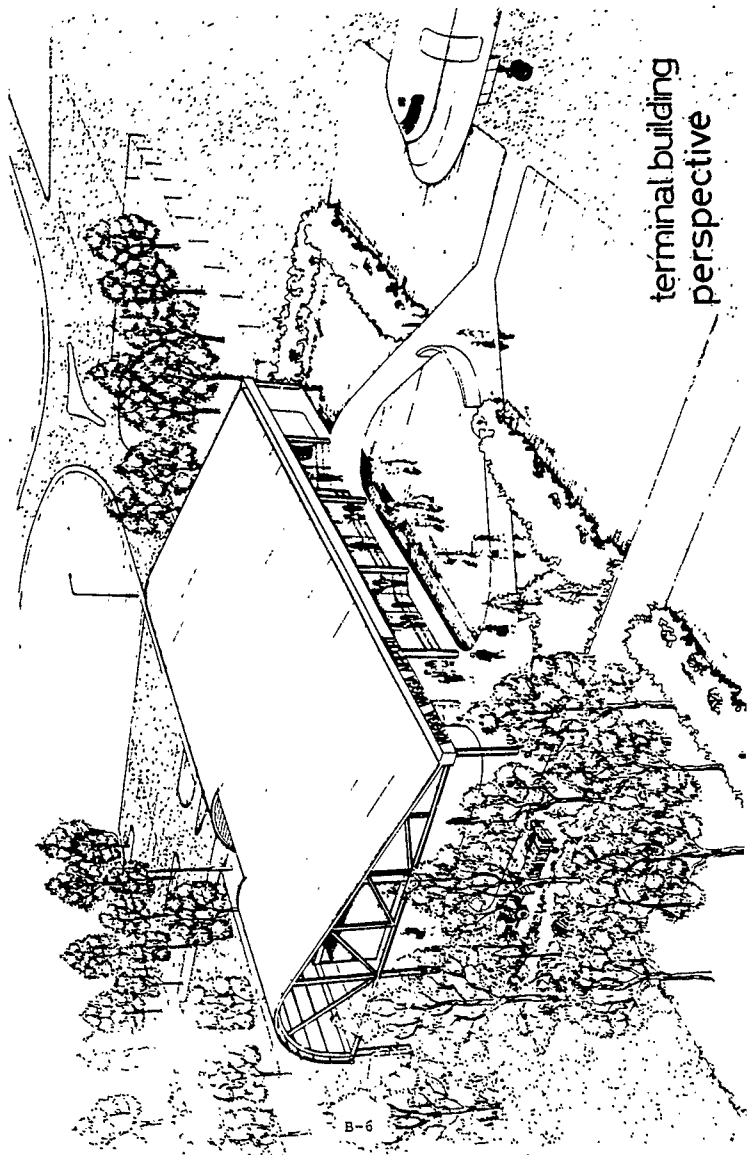


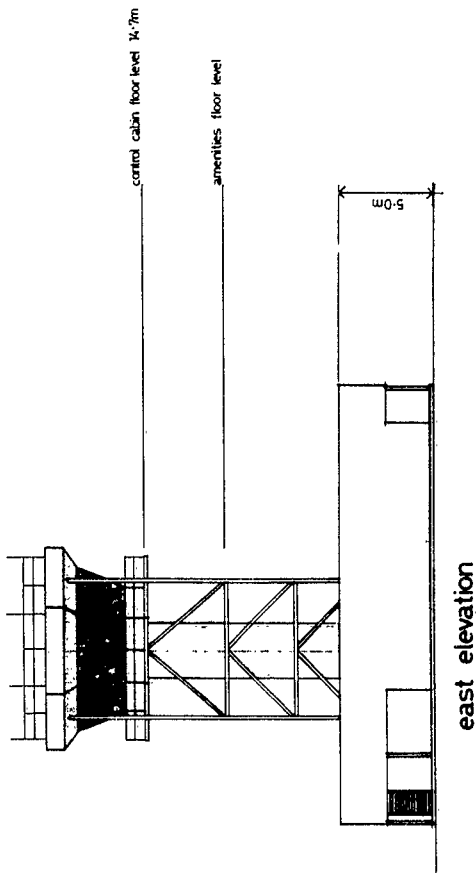
plan
terminal building



0 5 10m

terminal building
perspective





B-7

elevation
control tower

