> Aviation Development Concept – Proposed Requirements

Bankstown Airport

Master Plan
2004/05

> Aviation Development Concept – Proposed Requirements

A key step in the preparation of this MP has been the determination of the land and facilities required to accommodate the forecast level of aircraft and passenger movements set out in Section 12.

The facilities requirements analysis process involved reviewing the traffic forecast driven requirements against existing facilities to determine what facilities need to be provided, upgraded or improved and the most efficient way in which the additional or upgraded facilities can be provided.

All proposals to make changes to aviation facilities will be required to go through the approvals process set out earlier in Figure 2. Some of the changes proposed may trigger the need for a Major Development Plan under the Airports Act 1996 which includes additional consultation requirements. Inclusion in the PDMP, and even the approval of the Final Master Plan, does not give approval to proceed with any changes. Rather, it is the first step in the approvals process. The key aspects of the facilities requirement analysis are set out below.

13.1 Proposed Aviation Infrastructure Requirements

The Bankstown Airport runway and taxiway system were described earlier in Section 8. The annual operational capacity of the airport runway system has been estimated at 480,000 to 500,000 aircraft movements per annum, based on advice from Airservices Australia and the fact that Bankstown Airport recorded more than 484,000 aircraft movements in 1989/90 during the pilot's strike.

The traffic forecasts project that by 2024/25, aircraft movement numbers will reach approximately 424,000. This level of forecasted traffic is well below the airport's estimated annual capacity. As a result, no capacity increases are anticipated through the end of the master plan period.

Based on the Design Aircraft identified above, runway and taxiway geometry and separations meeting Aerodrome Reference Code 3C standards will apply to those movement and operations areas where BAe-146 activity is expected to occur. While lesser standards have been applied to other areas of the airport, the standards used will reflect the Reference Code for the largest aircraft expected to use those facilities on a regular basis.

On the basis of the demand forecast, however, some changes to the runway complex are required as follows:

- **Runway 11C/29C extension** – a 220 metre extension of Runway 11C/29C is required from 1,415 metres to 1,635 metres. The current runway is not of sufficient length to enable the BAe 146-300 Design Aircraft or other Code 3C aircraft to operate at Maximum Take-Off Weight (MTOW) without undue payload or stage length restrictions. While these types of aircraft can and do utilise the existing runways, an extension would provide operational efficiency and flexibility. The proposed runway extension does not make Bankstown Airport capable of accommodating Code 4 aircraft such as the B737 and the A320;
- **runway, taxiway and apron pavement strength** – the Design Aircraft, the BAe 146-300 has a MTOW of 44,225 kg. Runway 11C/29C has a pavement strength rating of 20,000 kg and accommodates occasional use by aircraft up to 50,000 kg. Taxiway pavement strengths range from 5,700 kg to 20,000 kg. The higher rated taxiways also support occasional use by aircraft up to 50,000 kg. A full strength parallel taxiway is likely to be needed to Code C standards along the entire north side of Runway 11C/29C, with connections to the runway, terminal area apron and any tenant areas proposing to utilise aircraft of this type. While the Design Aircraft can currently use the existing pavements, the level of usage included in the traffic forecasts could result in a reduction in the effective life of the pavement. Consequently, strengthening of the pavement is proposed to give it a longer effective life. Strengthening of the pavement does not make Bankstown Airport capable of accommodating Code 4 aircraft such as the B737 and the A320;
- **Runway 18/36 closure** – based on the principle of matching aviation facilities to demand to optimise the sustainability of aviation operations at Bankstown Airport, closure of runway 18/36 has been planned. The runway serves as a cross wind runway for aircraft less than 5,700 kg MTOW during daylight hours. As the runway is unlit, it is not available at night and serves only as a taxiway during non-daylight hours. Planning for closure of runway 18/36 has been incorporated for the following reasons:

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- **limited utilisation** – Airservices Australia has advised that due to the extremely limited utilisation of the runway, no statistics on the utilisation of the runway are kept. Airservices Australia has also advised that because of the very high volume of traffic on the parallel runway system, most pilot requests for use of runway 18/36 are turned down, except on the very infrequent occasions when the runway is preferred due to weather considerations;

  During the master planning process, BAL sought to gather further evidence on the utilisation of runway 18/36 prior to consideration of closure. Evidence was sought via consultation with key tenants, including flying training operators, and via a survey distributed to 117 Bankstown Airport aviation tenants and around 1,390 aviation operators identified on Bankstown Airport's database as regular or casual users of the airport. Both the interview process and the tenant/user survey identified very limited use of the Runway. Only a limited number of respondents to the survey reported using Runway 18/36 at all. On average, survey respondents reported using the Runway for less than 1 per cent of their activity, with no expectations of any increase in Runway 18/36 utilisation in the future;

- **limited requirements** – one of the reasons why Runway 18/36 has very limited usage is that it has very limited requirements as a cross wind runway. Analysis of wind data for Bankstown Airport over a 10 year period highlighted that the net wind coverage contribution of Runway 18/36 for the maximum allowable small aircraft crosswind component of 21 km/h (11.5kts) and greater is less than two per cent. The primary runways, with 11/29 orientations, provide 97.3 per cent wind coverage. The wind coverage provided by Runway(s) 11/29 exceeds the 95 per cent coverage typically needed for a single runway airport. There are many single runway/single direction airports in operation in Australia and internationally where the single runway/direction provide adequate coverage; and

- **community benefits** – closure of the runway would result in some reduction of aircraft noise, albeit small, for areas to the north and south.

  As a result of these considerations, closure of the Runway 18/36 is planned, with the part of the Runway within the parallel runway complex being redesignated as a taxiway;

- **engine-run-up bays** – engine run-up bays are an important operational feature for pilots to ensure the proper functioning of their aircraft engines and equipment prior to take-off. The facilities analysis confirmed that existing engine run-up bays were able to adequately service forecast demand; and

- **navigation aids** – the facilities requirements analysis identified that the Non-Directional Beacon (NDB) radio navigation aid and the two anemometers located at each end of the parallel runway complex adequately served the forecast level of traffic. The NDB, owned and operated by ASA, restricts development within a 150 metre radius and occupies land ideally suited for other forms of development. The recently published strategic plan prepared by the Australian Strategic Air Traffic Management Group (ASTRA) anticipates phasing out of the NDB by 2011. Consequently, long-term development plans for the airport assumes de-commissioning of the antenna and the availability of the site for alternative uses.

13.2 Passenger Terminal Requirements

The existing passenger terminal at Bankstown Airport is a total of 715m^2. Previous studies have reported the terminal to have a passenger processing capacity of 170 departing passengers and 150 arriving passengers at IATA Level of Service (LOS) Category "C". The passenger movement forecasts anticipate a high of 288,000 passengers per annum. Planning criteria contained in the US Federal Aviation Administration (FAA) Advisory Circular 150/5360-13, Planning and Design Guidelines for Airport Terminal Facilities and FAA Advisory Circular 150/5360-9, Planning and Design of Airport Terminal Facilities at Non-Hub Locations have been used to determine overall passenger terminal requirements.

The extent of passenger facilities depends on the acceptable LOS to be provided and the needs of prospective RPT carriers.

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For the purpose of assessing the adequacy of existing facilities to meet forecast demand, it has been assumed that facilities will be required to LOS Category C and that the needs profile of any prospective carrier will fit a typical low-cost-carrier approach of minimal space and facilities.

On the basis of the traffic forecast, it is assumed that Bankstown Airport will require facilities sized to adequately handle a maximum of two BAe146 aircraft operating during the peak hour with passenger traffic amounting to 200 departing passengers.

The majority of existing terminal and related facilities may need to be redeveloped to reflect the forecast level of traffic growth as follows:

- aircraft apron – sufficient aircraft apron exists within the terminal precinct to accommodate the forecast requirements of two simultaneous BAe 146 aircraft using power-in/power-out parking as well as two additional reserve parking positions;
- terminal building – increasing the floor space to reflect the traffic forecast and provide space for check-in areas, arrivals and departures areas, security areas, baggage reclaim areas, rest rooms, commercial areas and mechanical/electrical/ communications support areas; and
- vehicle parking – an appropriate area is required for public, employee, rental car and taxi parking.

13.3 Aircraft Parking & Storage

As traffic at Bankstown Airport grows, demand for aircraft parking and storage facilities for both based and transient aircraft will also grow.

There currently exists an estimated 45,000m^2 of designated grass tiedown area accommodating an estimated 90 small aircraft parking positions. The existing designated grass tiedown areas are only lightly used, although there are numerous aircraft parked informally on grass at various locations around the airport. It is anticipated that this number of grass and light aircraft tiedown facilities will be adequate to accommodate forecast traffic levels. In addition to grass parking and tiedowns, there is currently 70,600m^2 of aircraft apron of which an estimated 63,700m^2 is available for based and transient aircraft parking. It is anticipated that this level of apron parking is more than adequate to accommodate forecast traffic levels.

13.4 Tenant Areas

Around 12 hectares of land is currently leased to airside tenants, just over 50 per cent of which is occupied by building area. An additional 2 hectares is provided in aprons allocated for existing hangars.

Based on the traffic forecast, it is estimated that an allowance needs to be made for an additional 20 new hangars (together with associated apron, taxiway and landside access areas) of various sizes and a substantial expansion of area set aside for freight operations, requiring in total an additional 7-8 hectares of land.

13.5 Security Arrangements

Although planning for long term security arrangements is not a requirement for an Airport Master Plan under the Airports Act 1996, BAL has taken security issues into account in the development of the DMP.

BAL has implemented security measures based on risk assessments and advice from the NSW Police Service. Examples of security arrangements include the provision of man-proof fencing around all aviation areas, the installation of access control devices for vehicle and pedestrian gates, daily airfield inspections, landside and airside signage, the preparation and distribution of newsletters with educational material on security matters for the aviation community and the provision of appropriate security training for all operational staff. All Bankstown Airport security and operations staff are trained and registered in accordance with NSW legislation.

The NSW Police have also undertaken security risk assessments at the airport and have interviewed airport tenants with respect to their security arrangements and have advised on various options for improving tenant security. ASIO has also engaged in a pro-active approach to security and have increased the security awareness of general aviation operators.

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Recently, DoTaRS identified Bankstown Airport as one of the 139 airports that will be required to prepare an Airport Security Program (ASP) in accordance with new security regulations currently being drafted. The ASP will be based on a comprehensive security risk analysis, and will address how security activities are managed and how security incidents are reported and responded to. BAL will comply with all of the requirements of the proposed security regulations. BAL will also comply with any requirements to provide passenger and baggage screening as required, if and when passenger services are introduced.

In BAL's view, the Aviation Development Concept improves security management at Bankstown Airport. By consolidating aviation activity into a smaller, contiguous area, there will be a substantial reduction in the total length of the airside/landside boundary and a significant reduction in the number of airside access points.

13.6 Emergency Management Arrangements

Although planning for long term emergency management arrangements is not a requirement of an Airport Master Plan under the Airports Act 1996, BAL has taken emergency management arrangements into account in the development of the MP.

In accordance with Civil Aviation Security Regulations, BAL has an Airport Emergency Plan (AEP) in place which outlines the roles and responsibilities of external emergency agencies to respond to an airport emergency. The members of the Airport Emergency Committee include representatives of all the emergency services. In accordance with its obligations under the regulations, BAL regularly tests the procedures involved in responding to an airport emergency. The AEP will be expanded to include management of natural emergencies including bush fire and flood and will address emergency evacuation of airport sites.

In BAL's view, the Aviation Development Concept improves emergency management arrangements at Bankstown Airport. The revised layout of the airport, including the consolidation of aviation activity into a smaller, contiguous area and the proposed internal ring road will facilitate rapid emergency response to both aviation and non-aviation emergencies.

The MP does not plan for the provision of dedicated aviation rescue and fire-fighting services at Bankstown Airport (ie as provided by Airservices Australia). This is primarily because the level of passenger traffic forecast for Bankstown Airport does not exceed the threshold set by CASA requiring the provision of such services. While the CASA threshold currently sits at 350,000 passenger movements, the forecasts included in this MP only envisage a maximum of 288,000 passenger movements. Consequently, the continuation of the current emergency management arrangements has been assumed in this MP.