



# **Logistics Industries ENVIRONMENTAL SCAN**

**November 2011**

**Aviation**



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## Overview

Aviation is a critical mode of transport in Western Australia, servicing isolated population centres, vast resources operations and important tourism facilities. The vision of any aviation workforce development strategy should be aimed at developing a dynamic and sustainable passenger air transport system to meet the existing and future social and economic needs of Western Australians and all other travellers to the State.

After declines in 2010, intrastate travel within WA is starting to correct to pre Global Financial Crisis (GFC) levels, with intrastate passenger movement through Perth Airport showing an increase of 14.1% for the year ending June 2011 in comparison to 2010. Intrastate passenger numbers through Perth and Kalgoorlie airports grew in the same period, however Broome airport showed a slight decline.<sup>1</sup>

For the year to 30 September 2011 the Perth to Newman route was the fastest growing in the nation's top 53, jumping 24.1%. This growth, fuelled by the resources boom, is setting records. Routes from Perth to Sydney, Melbourne, Brisbane, Kalgoorlie and Karratha were about 10% busier. Overall passenger growth through Perth jumped 9.5% to 11.45 million last financial year. Perth airport is set to get busier with Qantas subsidiary Network Aviation due to acquire ten 100-seat Fokker 100s in the next six months to support fly-in fly out operations.<sup>2</sup>

Interstate passenger numbers through Perth Airport also continued to grow for the year ending June 2011, at 7.3% over the previous year. This was a 17.8% increase on the previous year of the number of visitors who cited business as their reason for travel. Long term trends show a steady increase in interstate total passengers through Perth Airport, averaging at 4.5% per annum over the last three years. The international visitor estimates to WA grew for year ending June 2011 by 5.3%, predominantly from the business market (an additional 21,900 visitors).<sup>3</sup>

Jandakot Airport is the major general aviation airport in WA and is the busiest airfield and the largest aviation training base in Australia. The airport provides access for essential service organisations such as the Royal Flying Doctor Service, Department of Environment and Conservation's (DEC) Forest and Bushfire Patrol and the WA Police Air Support. Jandakot is also an important training base for international airline pilots, with Singapore Airlines and China Southern Airlines operating flying colleges and student accommodation facilities at the airport. There are currently 12 pilot training schools operating out of Jandakot with that number expected to grow.

The aviation industry is global in its activity and in its nature. Downturns are often characterised by the movement of pilots to local or offshore destinations where work can be found. The economic downturn has caused a reduction in the use of air transport, primarily for international carriers, with Qantas and other airlines reducing some staffing levels. While pressures remain around airline profitability it is possible that outsourcing of some airline support functions may be initiated; and this will have an impact on attraction and retention strategies for airlines. The continued mining and oil and gas exploration in WA has seen local airlines continuing to operate at high levels, although some have experienced periods of slow growth. Many companies have diversified their services to survive the downturn.

Although some regional airlines are experiencing record profits, others are struggling in an increasingly competitive marketplace. It is in these businesses that Australian trainee pilots gain flying hours as a means of moving up the hierarchical flight ladder. Seasonality in some regional areas, especially those relying on tourism for work, means that pilots need to travel to find work. In an environment where these opportunities are limited it is likely that WA will have a glut of pilots with underpinning qualifications but with limited capacity to find the requisite flying hours to engage fully in the industry. However, the new State development projects planned for WA will see an increased need for FIFO workers, so as long as the pilots are available this need may be met.

Flight instructor quality remains an issue as newly qualified pilots become instructors to increase logged flying hours and senior instructors are lured back to the industry by regional and mainline airlines.

## Trends Analysis

The International Civil Aviation Organisation (ICAO) has predicted that more than 800,000 new pilots and engineers will be required globally to meet the needs of the expanding international commercial fleet of planes, with more than double the current fleet expected to be purchased in the next 20 years. ICAO believes the following factors will lead to the predicted shortage of skilled aviation professionals:

- retirement of current generation of workers;
- failure to attract suitable people; competition from other industries for workers;
- lack of training capacity; and
- lack of international harmonisation of some aviation competencies.<sup>4</sup>

Total air passenger movements in Australia and globally are projected to nearly double by 2025–26. Perth Airport is expected to experience annual growth of 4.7%, the second highest in Australia. This forecast level of growth calls for a significant increase in airline capacity and infrastructure at capital city airports. The major airports are already planning ahead and are in the process of implementing measures to cope with increased future capacity. It is anticipated that growth will occur through increased international traffic, although the major resource projects in WA will certainly be a major part of their growth. This will include increased fly in/fly out (FIFO) from the Eastern States.

Perth Airport has commenced initial stages of a \$1 billion redevelopment project to build a new intrastate terminal that will boost capacity for domestic services to remote resource areas. This involves building an aircraft parking apron capable of holding up to 36 aircraft to service the future terminal. However, there has been no increase in runway capacity, and with peak periods at their maximum capacity due to FIFO, there will be restrictions placed on the movement of air traffic which will impede future growth. Air traffic management is being undertaken to relieve this pressure, and the development of new FIFO airport hubs in Geraldton, Kununurra, Port Hedland and Kalgoorlie will also be vital. There may also need to be planning for a second Perth Domestic/International Airport, but this is conjecture at this stage.

The forecast growth in air traffic also calls for a coordinated response to improve landside transport links between airports and city centres in order to facilitate future increases in passenger movements to and from airports, eg rail.

## Aviation

Passenger travel accounts for more than 80% of effort in the aviation sector, with freight and postal making up the remainder. Airlines that provide scheduled domestic air transportation of mail on a contract basis are also included in this industry.<sup>1</sup>

In the past, the changing tourism market and contracting resource sector impacted on the employment of pilots. However, with the current and future growth expected in the resource sector, a shortage of pilots has already been felt.

Changes to regulations are impacting on the needs of regional airports including increased reporting officers, the need for greater use of security screening of passengers, and baggage checking equipment.

Flight instructor quality remains an issue as newly qualified pilots become instructors to increase logged flying hours and senior instructors are lured back to the industry by regional and main-line airlines.

## Airlines

Domestic airlines operate aircraft on scheduled domestic routes for the transportation of passengers and/or freight. The international airlines industry provides air transportation of passengers and/or freight over regular routes and on regular schedules. These include any flights which either originate or terminate internationally.

The primary activities of companies operating international scheduled flights are:

- Aircraft charter, lease or rental (with crew; for use in scheduled international air transport)
- Air transport service (scheduled, international)
- Air transport terminal operation (for scheduled international air transport; except airports)
- Freight transport service (scheduled international air transport)
- Passenger transport service (scheduled international air transport)

Industry participants operate aircraft that are used in the transportation of passengers and freight on non-scheduled flights. These include fixed-wing aircrafts (airplanes), helicopters, balloons and airships. The industry also covers the launching of space vehicles including satellites, which is very limited within Australia.

The primary activities of companies operating non-scheduled flights are:

- Charter air transport
- Air training
- Private air transport
- Business air transport
- Agriculture
- Test and ferry air transport
- Lease or rental of aircraft charters (with crew) for use in non-scheduled air transport.
- Air transport of passengers or freight on non-scheduled routes (including FIFO)
- Running of air transport terminals, excluding airports.

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<sup>i</sup> Note: Air freight is characterised by goods that are time-sensitive or highly valuable, ie cash, mail and medical supplies.

## Aviation

Charter air transport and air training make up nearly 70% of work in the non-scheduled activity, with private and business air transport the next largest. This is expected to increase as the FIFO industry picks up, but may be balanced by capacity at airports for the volume of air traffic.

Air transport professionals fly and navigate aircraft, control and direct air traffic to ensure the safe and efficient operation of aircraft in flight and on the ground, and instruct students in flying aircraft.<sup>5</sup>

Air transport professionals who work in this sector are:

- Aeroplane pilots
- Flying instructors
- Helicopter pilots
- Flight attendants/cabin crew
- Ground staff/customer service

Regulatory changes to flight attendant number requirements may have an impact on employment, as it has the potential to reduce the number of Cabin Crew required for some flights and aircraft.

## Airports

The industry includes businesses which operate international, domestic or regional airports and remote airfields. These include services to air transport such as airport terminals, runways, air traffic control services, aircraft refuelling aerospace navigation and baggage handling services.

The primary activities of companies and occupations within this industry are:

- Air traffic control
- Air transport navigation
- Airport baggage handling
- Airport terminal operations
- Aircraft baggage handler
- Airline ground crew

Other airport services include refuelling and hangar rental.

## Regulatory Requirements

Stringent regulatory requirements exist for this industry sector.

### Civil Aviation Safety Authority (CASA) key licences:

- Private Pilot's Licence PPL
- Commercial Pilot's Licence CPL
- Air Transport Pilot's Licence ATPL (required by Scheduled Domestic and International Air Transport, ie regional, domestic and international airlines – see below)
- Airport Certification and Registration

## Aviation

### **Airport Operations and Management**

Regulated by:

- Civil Aviation Safety Authority -
- Department of Infrastructure, Transport, Regional Development and Local Government
- Department of Transport

### **Scheduled Domestic and International Air Transport**

Regulated by:

- Civil Aviation Safety Authority
- Department of Infrastructure, Transport, Regional Development and Local Government
- Department of Transport
- Australian Customs and Border Protection Service

### **General Aviation (non scheduled)**

Regulated by:

- Civil Aviation Safety Authority
- Department of Infrastructure, Transport, Regional Development and Local Government
- Department of Transport

The International Civil Aviation Organisation (ICAO) provides international guidance to CASA, which then regulates accordingly. The International Air Transport Association (IATA) works with the Industry via agreement to ensure best practice is adopted.

## **Demographics of Workforce**

- Pilots and air traffic controllers have a very large male cohort, when compared to females and the “all occupations” average.
- Conversely, there are a large number of females operating as flight attendants, although there are proportionally more males entering the sector.
- 75% of all pilots and air traffic controllers are full-time, while this applies to only 65% of flight attendants. This may be due to the high female cohort who are traditionally more active in the part-time workforce.
- WA is the third largest employer by State of Air Transport Professionals, which is due in a large part to the FIFO workforce of the mining and oil and gas industries' workforces.

## Age Profile

The workforce is ageing in all aviation occupations, particularly amongst helicopter pilots, flight instructors and commercial airline pilots.

## Impact of Globalisation

With the increase in international air travel, skilled personnel (particularly pilots) are being lured to overseas airlines and airports. This has created a demand for training additional to projected domestic labour requirements, and increased competition from other carriers. Australia's large, relatively clear airspace, especially in WA, has attracted the international student training market, placing further pressure on domestic training availability.

The need for improved air cargo and passenger security arrangements sparked by increased global terrorist attacks has also had major implications for additional security training for staff and increased training for existing personnel.

## Impact of Government Policy/Decisions

The Government's plan to encourage international airlines to increase services to Australia's secondary international gateways, will give the regions further potential to grow their inbound tourism markets. By providing airlines which serve regional airports with greater access to the major gateway destinations of Sydney, Melbourne, Brisbane and Perth, the Government will provide further incentives to airlines to better service destinations such as Cairns, Darwin and Broome.<sup>6</sup>

In April 2010 the Department of Transport released its new Intrastate Aviation Framework for Western Australia. The key features of this framework are:

- all currently deregulated airports will remain deregulated;
- Geraldton will become deregulated;
- existing regulated Regular Public Transport (RPT) air services offered through the Coastal Network, Northern Goldfields Network and Kimberley Subsidised Air Service will be broken up and offered through a Request for Proposal (RFP) process; and
- charter services on regulated air routes will continue to be limited to one service per client per calendar week (Monday-Sunday).

This means that those airlines that have provided the service on regulated routes in the past will need to re-apply, while smaller airlines and charter companies that had hoped to access these regulated routes in the future have still been restricted in their access.

The Government plans to harmonise civil and military air traffic management, and develop a joint operational concept, which will offer significant improvements in safety, efficiency and capacity.<sup>7</sup>

CASA is also investigating its fatigue management policies, with its focus now on ground crew as well as maintenance and flight crew.

## Technological

As the fleets age, Australian airlines are introducing new more fuel-efficient aircraft, some of which are 20% more fuel-efficient than those they are replacing. However, as the larger carriers introduce the new aircraft, the old planes are picked up by smaller carriers, for use in fly-in/fly-out and general aviation sectors.

Security screening has seen many advances, with body scanners now being used as a tool in major airports to improve safety and reduce the increasing threat of terrorism on planes.

The emergence of an increasing Unmanned Aerial Vehicle (UAV) market globally has seen greater use of this technology in Australia.<sup>8</sup> The Defence Forces have been using this technology for decades, but Air Safety Regulations, high cost, public concern and high insurance have limited their use in the civilian marketplace until more recently. Activity in the UAV sector includes aerial photography, telecommunications, coastal patrol, forest fire management, pipeline inspection, power line inspection, agricultural applications, geophysical mapping, surveillance and recreational use. There has also been work done in the safe and cost effective operation of UAVs by the CSIRO, especially in the field of solar power. However, more work needs to be done to ensure the safe use of UAVs in manned airspace, which is still a major impediment to wholesale use.

## Economic Drivers

Weakened economies in other countries and a strong Australian dollar have resulted in a drop in travel to Australia. This is expected to change as economic conditions improve.

The transition to a deregulated market in the regional aviation industry has resulted in increased airport and regulatory charges and higher costs for airlines where growth has been static or in decline on many routes.

## Size and Distribution

Australia's global aviation industry has responsibility for 11% of the world's airspace, directly supports nearly 50,000 jobs and contributes \$6.8 billion to Australia's GDP.

Perth Airport is the major airport for the State, servicing both domestic and international travel. There are a number of airports at major regional centres, and these are administered by local councils or private corporations.

Perth airport is currently being upgraded with the following representing the first stage towards having all commercial air services operating from one convenient location within the next ten years.

- A new domestic terminal being built next to the current International Terminal to service the needs of regional WA and some interstate routes
- A major expansion of the arrivals and departures areas of the current International Terminal
- A new domestic pier which will become home to Virgin Australia from 2014

## Aviation

- Dedicated pick-up and drop-off areas at the front of each terminal and easy access to taxis and buses for arriving and departing passengers.<sup>9</sup>

## Regional Activity

The geographical isolation and extreme environmental conditions faced by many Western Australian communities has meant that these communities rely heavily on air transport. Regional towns often depend on access to large regional centres and to Perth for the provision of essential services such as health and education.<sup>10</sup>

Regional aviation facilities across WA will continue to benefit from the Regional Airport Development Scheme (RADS), with the announcement of almost \$14 million in grants for 2012-13 and 2013-14. The grants will comprise \$10 million from the Royalties for Regions program and \$3,8 million from RADS. The 2011-12 funding will include more than \$2.5 million for airports at Albany, Busselton and Esperance to establish passenger security screening facilities, ensuring the airports comply with recent changes to Federal Government legislation regarding security screening.<sup>11</sup>

Workers at regional airports are more multi-skilled than their city counterparts, and tend to work only when public planes are scheduled, with many having more than one job. Environmental concerns are high on the priority with animal and bird hazard control being uppermost.

The large volume of FIFO workers in the State has had a huge affect on the airlines, particularly those flying to the North West, with numbers estimated at 70 flights per day and growing as the volume of workers is expected to grow to approximately 7,000 workers. Similarly the volume of migrants settling in Perth has affected all airlines flying in and out of Western Australia.

The Wheatbelt's aviation industry continues to grow with significant developments at Northam, Cunderdin and Wyalkatchem airfields. The Wheatbelt Development Commission was not successful in accessing the resources to complete a regional aviation development plan but will continue to work with local governments and industry to develop strategic aviation related projects within the Wheatbelt.<sup>12</sup>

A detailed study has been undertaken by the Shire of Carnarvon to identify the relative merits and cost benefits of moving the current airport to a new site and upgrading to commercial jet standards.<sup>13</sup>

## Sustainability

Although currently aviation is responsible for only 2% of global carbon dioxide emissions, this will grow as aviation activity continues to grow. Sustainability has become the focus of industry and governments, with industry making substantial efforts to reduce the environmental footprint. New aircraft are much more fuel efficient, less polluting and quieter than planes of ten or twenty years ago, and air traffic management systems are being implemented to reduce fuel and noise, but more will need to be done. The Australian Government is currently working to improve aviation's environmental performance and will pursue a range of measures to manage aircraft noise. These include maintaining existing curfews and aircraft movement caps, and phasing out the operation of older, noisy aircraft.<sup>14</sup>

CSIRO and other major aviation stakeholders are currently looking at future sustainability through the Sustainable Aviation Fuels Road Map. This will articulate the pathways and challenges to accelerate the development and commercialization of a sustainable aviation fuels industry in Australia and New Zealand. A report is expected by September 2010 which will provide input into strategic policy and investment decision making by both Government and Industry.

Biofuels is one part of the process, with work being done globally to find a solution to the looming shortage of a suitable fuel. Both the United Arab Emirates and the Queensland Government, through the University of Queensland, are focused on finding a green alternative, with sea algae and saltwater plants appearing to be viable. There is also a major effort to utilize the jatropha plant, which grows as a noxious weed in Australia, but produces a good source of bio-oil which is renewable.

Some players in the domestic aviation industry, which include the two major airlines, Qantas and Virgin, approached Government to voluntarily be included for the payment of a carbon levy. Participating in this will be an alternative to paying a fuel excise of 5.06 cents a litre therefore companies will be able to obtain abatement measures at the lowest possible cost. This thus offers companies more flexibility and certainty for future operations.<sup>15</sup>

## Qualification Profile of Workforce

Training is primarily delivered to meet regulatory requirements. The bulk of training is delivered on the east coast; however commercial pilots are trained in WA. Public funding is available for the theory component of the Commercial and Air Transport Pilot's Licence. The student funds practical training.

Flexible delivery and distance learning are important for this industry. Through the State Government's Regional Airports Development Scheme (RADS) funding is provided to regional airport owners/leaseholders on a case by case basis to assist in developing airport infrastructure to encourage aviation training in regional WA. In the RADS funding rounds of 2009-10 and 2010-11 more than \$2.28 million has been granted to the Shire of Wyalkatchem towards airport infrastructure works to develop aviation training at the Wyalkatchem Airport.

## Educational Attainment

It is worth noting that a large number of Air Transport Professionals (45%) do not hold any post-school qualifications. This is due to no minimum education requirement for the granting of a pilot licence; rather CASA only requires that all licence standards are met, which are not currently aligned to a qualification.

However, the 20-34 year age group does not fit this statistic, with 86% holding a diploma or above qualification. This could be due to a greater focus on training and qualifications, and the aviation industry supporting more formal training as a pathway to fly.

## Social Impact

Many employees work long and erratic hours, particularly maintenance staff. This is due to call outs when concerns arise and planes are not in use.

Newly qualified pilots earn very low wages whilst increasing flying hours. One of the major issues for these pilots is that they are use as instructors for flying schools where they are only paid for flying time, not for time spent in preparation and on the on the ground assessments.

Another major issue is the high stress levels that can be experienced due to the working environment. The working environment can be quite stressful, eg air traffic controllers, are not expected to juggle even more aircraft coming into the airfield than ever before with the risk of a potentially fatal mistake.

## Critical Skills Shortage Occupations

Aeroplane Pilot  
 Helicopter Pilot  
 Mid level management  
 Airport planner  
 Flying Instructor (Aeroplane and Helicopter)  
 Air Traffic Controller

## Reference – End Notes

- <sup>1</sup> Tourism WA Quarterly Tourism Snapshot year ending June 2011
- <sup>2</sup> West Australian, 24 November 2011, ( Bureau of Infrastructure, Transport and Regional Economics)
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- <sup>4</sup> International Civil Aviation Organisation conference [www.icao.int/](http://www.icao.int/)
- <sup>5</sup> Australian Government. (2010) Job Outlook – [www.joboutlook.gov.au](http://www.joboutlook.gov.au)
- <sup>6</sup> National Aviation Policy White Paper – Flight Plan to the Future – Commonwealth of Australia 2009
- <sup>7</sup> National Aviation Policy White Paper – Flight Plan to the Future – Commonwealth of Australia 2009
- <sup>8</sup> Study analysing the current activities in the field of UAV, EC Frost & Sullivan, [www.barnardmicrosystems.com/L4E\\_uav\\_market](http://www.barnardmicrosystems.com/L4E_uav_market)
- <sup>9</sup> Perth Airport website [www.perthairport.com.au](http://www.perthairport.com.au)
- <sup>10</sup> Department of Transport website [www.transport.wa.gov](http://www.transport.wa.gov)
- <sup>11</sup> Ministerial media statement, Troy Buswell, Minister for Transport, 29 November 2011
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- <sup>13</sup> Gascoyne Development Commission, Gascoyne Development Plan 2010-2020
- <sup>14</sup> National Aviation Policy White Paper – Flight Plan to the Future – Commonwealth of Australia 2009
- <sup>15</sup> Probyn. A, Airlines volunteer to pay carbon tax, The West Australian, (10/10/11)