Aviation

Prepared by the Logistics Training Council for the
Western Australian Department of Training and Workforce Development

17 Lemnos Street, Shenton Park, WA, 6008 – Postal: PO Box 7033, Shenton Park, WA, 6008
Telephone: (08) 9388 8781 - Facsimile: (08) 9388 8784 – Web: logisticstc.au
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# Table of Contents

Overview.................................................................................................................. 1
Trends Analysis ......................................................................................................... 2
Demographics of Workforce ..................................................................................... 4
  Size and Distribution ............................................................................................. 4
  Employment .......................................................................................................... 5
Qualifications and Training....................................................................................... 8
  Educational Attainment ......................................................................................... 8
Government Policy .................................................................................................... 9
  Regulatory Requirements ....................................................................................... 9
Globalisation............................................................................................................. 10
Technological ........................................................................................................... 10
Sustainability ........................................................................................................... 11
Economic Drivers...................................................................................................... 11
Regional Activity ...................................................................................................... 12
Social Impact ........................................................................................................... 13
Critical Skills Shortage Occupations ...................................................................... 13
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.

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.

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.

Jandakot Airport is the major general aviation airport in WA and is the busiest airfield and the largest aviation training base in Australia.1 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 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.2

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.3

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.
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.¹

**Airlines**

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.

**Helicopters**

With services ranging from tourism to the agricultural sector which includes spraying and cattle mustering, this particular niche within aviation has been growing, particularly for Western Australia. Activity taking place in the oil and gas sectors has increased the demand for services to off-shore rigs and platforms. Evidence of this can be seen through the sharp rise in helicopter registrations.⁴

**Trends Analysis**

The Asia-Pacific region is expected to incur a 41% growth in jobs for air transport professionals by 2030. Forecasts by Boeing indicate that 216,000 pilots required for the region which encompasses Australia. This estimate is based on the orders for aircraft and future needs. This does not take into account the high number of existing pilots approaching retirement who will need to be replaced. With Australia already facing a shortage, the global demand for pilots places additional pressure as locals are targeted to fly with international operators.⁵

Whilst interstate passenger numbers through Perth Airport fell by 2.3% in comparison to last year’s figures, the number of intrastate travellers grew by 3.8% over the same period. Long-term trends show a steady increase in interstate passengers through Perth Airport. Arrivals from key short haul Asian markets – Singapore and Malaysia – were significantly greater in June 2014 than they were in June 2013, with increases of 39.2% and 36.5% respectively. Long haul flights were dominated by the UK and China.⁶

The growth in international travel for Western Australians has not shown any signs of easing. Compared to January 2013, passenger numbers grew by 17%. Although Bali, Singapore and Kuala Lumpur remain top destinations, the biggest growth market has been through the Middle East.⁷ Qatar Airways, Etihad and Emirates continue to strengthen their presence in WA offering onward connections to other destinations from their respective hubs. Travellers stand to gain the greatest benefit from a wider selection of carriers. There will be a need for ancillary service providers to work to tighter deadlines and turnaround times to meet the high demand for efficient delivery of goods and services in the quickest and safest manner.

A third runway for Perth Airport is expected to be operational by 2019 to ease the pressure of congestion during peak travel times. Other airport upgrades to occur within the next ten years include a new terminal, airport railway station, domestic and international piers.

¹ Note: Air freight is characterised by goods that are time-sensitive or highly valuable, ie cash, mail and medical supplies.
Dealing with the future aviation needs of the State is a delicate process that requires the involvement of all relevant stakeholders. The State Aviation White Paper is intended to provide a sound framework for policy setting, and future planning and investment in Western Australian international and domestic air services and airport infrastructure. Following public consultation last year the strategy is expected to be completed in 2014.6

The need for vocational training has been acknowledged in the Perth Airport Master Plan for 2014. It outlines the future development plans of the Airport precinct for a 20 year planning period. With passenger numbers forecast to reach over 20 million by 2024, service offerings will need to be increased to cater for the growing demand for air travel in the coming years. By assisting with employment generating land use in the area surrounding the airport, both aviation and non-aviation related activities stand to benefit from greater public transport services to this employment hub.9

Virgin Australia is concerned that it will be unable to pass the costs of building a new runway onto passengers as the airline, along with Qantas, operates in a highly competitive market. It was for this very reason that it was also unable to pass on the cost of the carbon tax which cost tens of millions of dollars.10

In a bid to expand its regional footprint in WA, Virgin Australia acquired Skywest Airlines. The process which was completed in May 2013 will bring about increased competition in the fly-in-fly-out and regional markets. With both business and tourism set to benefit, investment in these particular market is envisioned and will complement the national network. The Skywest Airlines operating carrier was renamed Virgin Australia Regional Airlines Pty Ltd.11

A new manual of standards released by CASA will take effect in September 2014. The new Part 61 contains the rules relating to flight crew licensing including the requirements to obtain and maintain licences, ratings and endorsements and the limitations that apply to exercising their privileges. The new rules apply to flying training organisations, examiners, flying instructors, pilots and flight engineers. The changes are being implemented as a result of the alignment of the CASA regulations with International Air Transport Association (IATA), the international governing body on aviation. Further information on the changes can be found on the CASA website.

There has been a significant rise in the use of unmanned aerial vehicles (UAVs). Previously restricted to military use, this technology has been beneficial in a number of areas including real estate, 3D mapping and equipment monitoring12. The level of interest shown highlights the growth potential of this particular niche market. Commercial operation of UAVs will have an impact on the aviation industry and skilling needs of operators. Concerns have already been raised regarding safety and privacy issues when such machines are used.13

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.

As seen in the following graph, the Perth to Melbourne route ranks sixth in the top interstate travel routes in the country. This is the first point where an air traffic route to WA is mentioned out of the national top twenty routes. A 1% decrease from June 2013 levels brought the total number of passengers carried close to approximately 2.2 million in June 2014. Carrying 1.8 million passengers, the Perth to Sydney route ranked seventh during the same period.
Demographics of Workforce

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. It 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. There are a number of airports at major regional centres, and these are administered by local councils or private corporations.

- 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.
- 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.
Employment

As seen in the following graph, the Aviation Sector has the second largest percentage of part-time workers in transport and logistics. This can be attributed to the level of flexibility in certain job roles. In some regional airports with as little as two flights a week, it would not be feasible to employ full-time workers. In other subsectors, seasonal and shift work contribute to number the number of part-time workers.16

Graph 2 - Full-time and part time workers in Air Transport

<table>
<thead>
<tr>
<th>Full Time</th>
<th>Part Time</th>
</tr>
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<tbody>
<tr>
<td>80%</td>
<td>20%</td>
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Source: ABS 6291.0.55.003

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.

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.

The following figure depicts online job advertisements for a selected group of aviation occupations in WA. Job listings were taken from seek.com.au. It should be noted that although the demand for pilots remains very high, the low vacancy posting is due to companies recruiting from other sources; interstate, international and as a permanent feature in the careers section of company websites. The rise in ground operations staff and cabin crew advertisements coincides with the growing demand for aviation services from Perth to the Mid West.
As seen in the following graph, the number of job vacancy posts within aviation grew to over 200 postings in 2012. Although these figures are slightly higher than 2013 levels, the 2014 levels could be higher, as some companies recruit from permanent features placed on their websites. It should be noted that the quoted figures are to be used as a guide as the LTC is unable to record aviation advertisements from all print and digital sources.

**Graph 4 - Comparison of advertisements in Logistics - 2012 - 2013**

Age Profile

The workforce is ageing in all aviation occupations, particularly amongst helicopter pilots, flight instructors and commercial airline pilots. Due to the appeal of working in a sector with aircraft in some capacity, there is generally a higher proportion of younger workers (30 and below) when compared to other transport sectors. It comes in second to warehousing which
has less licensing restrictions. Although the 2011 census statistics depicted below indicate a high percentage of young workers, not be qualified like their older counterparts.

Graph 5 - Percentage of workforce in each age group over five years

Gender

According to the 2011 census data released by the Australian Bureau of Statistics (ABS), there were 61.8% male and 38.2% female participants working in air and space transportation. With the exception of machinery operators and drivers, the participation of females in aviation occupations such as management, administration and labourers is greater than 30%.

Graph 6 - Gender Distribution in the Aviation Sector 2011

- 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 which is 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.

**Qualifications and Training**

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. Jandakot Airport, where almost 70% of total aircraft movements are flying training, is the training base for pilots for a number of international airlines.17

**Educational Attainment**

As can be seen from the following graph, a large number of Air Transport Professionals (37%) 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. This figure has improved from the previous year which was 45%.

**Graph 7 - Qualifications profile - Aviation Sector**

Source: ABS census 2011
Government Policy

In June 2012 the Department of Transport released an updated Intrastate Aviation Framework for Western Australia. The key features of this framework are:

- all currently deregulated airports will remain deregulated;
- as from 23 January 2013, Skippers has commenced operations on the Broome/Derby/Fitzroy Crossing/Halls Creek route until 1 November 2013
- 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 which have provided the service on regulated routes in the past will need to re-apply, while smaller airlines and charter companies which had hoped to access these regulated routes in the future still have restricted in 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.\(^1\)

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

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

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.

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.

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.

It has been reported that Western Australian mining companies, amongst other businesses, have shown great interest in the use of unmanned aerial vehicles (UAVs). These machines are remotely operated by personnel from a fixed location. The technology provides users with greater flexibility to access and document a number of different items. Areas covered include mapping, photography, coastal patrol, forest fire management, pipeline inspection and surveillance. Given the lengthy and costly delays brought about by a backlog of export clearances for machines manufactured abroad, some local companies have begun to locally assemble their own UAV’s. They are more tailored to suit local conditions and cost less than the imports. 19
Sustainability

Although currently aviation is responsible for only 2% of global carbon dioxide emissions, this will grow as aviation activity continues to rise. 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.

CSIRO and other major aviation stakeholders came together in 2010 to look at future sustainability through the Sustainable Aviation Fuels. This led to the release of a report which highlights key challenges and opportunities for the sector, including a reduction in greenhouse gas emissions and the potential to employ over 12,000 jobs.

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 utilise 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, have approached the Federal 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.

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.

The softening of vacancies in this sector can be attributed to the vast number of positions that were filled in the past year. As expansion works are still under way at Perth Airport, ie the new Virgin Terminal, it is anticipated that more workers will be needed to deal with the increased capacity. There have also been job losses announced following the two billion cost cutting plans made by Qantas. As a major player in this industry, this will mean an increase in available job seekers for flight and ground crew and less available job vacancies in the short term.
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.24

Regional aviation facilities across WA will continue to benefit from the Regional Airport Development Scheme (RADS), with the announcement of almost $8 million in grants for 2013-14 and 2014-15. The grants will comprise $4.12 million from the Royalties for Regions program and $3.8 million from RADS. The 2012-13 funding will include work on runway, facility and safety developments; airport studies, including master plans; and smaller projects.25

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.

As seen in the graph below, the regional airports with the largest growth volumes in since 2008 include Newman, Port Hedland, Karratha and Paraburdo. This is mostly attributed to the level of mining activity taking place in around these regional hubs. Of these four, Karratha had the most growth of all regional airports with close to 9000 aircraft movements in 2011-12. It should also be noted that other airports such as Broome and Geraldton have remained relatively constant.26 Data is derived from international, domestic and regional RPT services, and does not include charter or other non-scheduled activity.

Graph 8 - Regional aircraft movement – 1985-86 – 2011-12

![Graph showing aircraft movements](image-url)
The large volume of FIFO workers in the State has had a huge effect 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 both the frequency and number of airlines flying in and out of Western Australia.

With the exception of Port Hedland, there does not appear to be much international traffic with direct links to regional WA. This is the case because most international travellers have travel to Perth before connecting to other locations.

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.27

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.28

**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 used 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 now expected to juggle even more aircraft coming into the airfield than ever before with the risk of a potentially fatal mistake.

**Occupations in Demand**

Aeroplane Pilot*
Helicopter Pilot*

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

*On Skilled Priority Occupation List
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