

**CAREERS
SNAPSHOT**
AVIATION AND MARITIME

OCCUPATIONS IN GROWTH

FLIGHT ATTENDANTS



AVERAGE ANNUAL SALARY
\$57,880

This occupation is forecast to employ over 260 additional workers in the next three years in NSW (an increase of over 5.5%).

WHAT ARE SOME BASELINE SKILLS EMPLOYERS LOOK FOR?

COMMUNICATION	PROBLEM SOLVING	PLANNING	CULTURAL AWARENESS	COMPUTER LITERACY

Example of TAFE NSW course aligned to flight attendant:

- Certificate III in Aviation (Cabin Crew) [AVI30116]

AEROPLANE PILOTS



AVERAGE ANNUAL SALARY
\$102,540*



100+ JOB ADS



260K NEW PILOTS

In the last 12 months, there have been over 100 online job postings in Australia for aeroplane pilots.

Aircraft manufacturer, Boeing, has predicted that over the next 20 years (to 2037), around 240,000 new commercial pilots will be needed in the Asia Pacific region to meet industry demand.

Examples of TAFE NSW courses aligned to aeroplane pilot:

- Diploma of Aviation (Commercial Pilot Licence - Aeroplane) [AVI50215]
- Diploma of Aviation (Instrument Rating) [AVI50415]

*Average salary sourced from PayScale and is current as at 20 October 2018. Represents the job category of Airline Pilot, Co-pilot, or Flight Engineer.

SELECT EMPLOYERS IN THE INDUSTRY*

Lockheed Martin
Airbus Group QANTAS AIRWAYS
AUSTRALIAN GOVERNMENT
 Virgin Australia **REGIONAL EXPRESS HOLDINGS (REX)**
Boeing Australia Royal Flying Doctor Service
RAYTHEON AUSTRALIA

*These employers have been selected based on their job advertisement activity in Australia over the 12 months to October 2018.

OCCUPATIONS

AVIATION



... HAVE REPORTED EXPERIENCING A SKILLS SHORTAGE IN THE LAST 12 MONTHS.

The below occupations were the top five reported as being in shortage:

MARITIME



... HAVE REPORTED EXPERIENCING A SKILLS SHORTAGE IN THE LAST 12 MONTHS.

The shortages were primarily for Domestic Commercial Vessel occupations, including:

AVIATION	MARITIME
1. TRAINERS / INSTRUCTORS ALL TYPES	1. MARINE ENGINE DRIVERS
2. PILOTS	2. SMALL VESSEL (<35M) MASTERS
3. MAINTENANCE ENGINEERS / TECHNICIANS	3. DECKHANDS
4. AVIONIC / SOFTWARE ENGINEERS	4. MANAGERS
5. AERODROME REPORTING OFFICERS	5. EDUCATORS

Examples of TAFE NSW courses aligned to:

- **Commercial pilot:** Diploma of Aviation (Commercial Pilot Licence - Aeroplane) [AVI50215], Diploma of Aviation (Instrument Rating) [AVI50415]
- **Aircraft maintenance engineer / technician:** Diploma of Aeroskills (Mechanical) [MEA50215]
- **Avionics / software engineer:** Diploma of Aeroskills (Avionics) [MEA50115]
- **Marine engine driver:** CIII in Maritime Operations (Marine Engine Driver Grade 2 Near Coastal) [MAR30813], CIV in Maritime Operations (Marine Engine Driver Grade 1 Near Coastal) [MAR40513]
- **Small vessel master:** CIV in Maritime Operations (Master up to 35 Meters Near Coastal) [MAR40613], CIII in Maritime Operations (Master up to 24 metres Near Coastal) [MAR30913]

PRIORITY SKILLS



IMPORTANT SKILLS TO HAVE

In order of priority to the industry, the following skills were identified as the most important for the workforce within the next three to five years:



AVIATION	MARITIME
1. PILOTING	1. HEALTH / SAFETY
2. HEALTH / SAFETY	2. NAVIGATION / VESSEL HANDLING
3. COMPLIANCE	3. OPERATIONAL
4. ORGANISATIONAL	4. COMPLIANCE
5. MAINTENANCE / SERVICING	5. AUTOMATION

GENERIC SKILLS



VALUE OF UNIVERSAL SKILLS

Ranking of the 12 generic workforce skills in order of importance to the industry:



AVIATION	MARITIME
1. SCIENCE, TECHNOLOGY, ENGINEERING, MATHEMATICS (STEM)	1. MANAGERIAL / LEADERSHIP
2. MANAGERIAL / LEADERSHIP	2. DESIGN MINDSET / THINKING CRITICALLY / SYSTEM THINKING / SOLVING PROBLEMS
3. DESIGN MINDSET / THINKING CRITICALLY / SYSTEM THINKING / SOLVING PROBLEMS	3. TECHNOLOGY
4. TECHNOLOGY	4. LEARNING AGILITY / INFORMATION LITERACY / INTELLECTUAL AUTONOMY AND SELF-MANAGEMENT
5. LEARNING AGILITY / INFORMATION LITERACY / INTELLECTUAL AUTONOMY AND SELF-MANAGEMENT	5. ENVIRONMENTAL AND SUSTAINABILITY
6. COMMUNICATION / VIRTUAL COLLABORATION / SOCIAL INTELLIGENCE	6. SCIENCE, TECHNOLOGY, ENGINEERING, MATHEMATICS (STEM)
7. LANGUAGE, LITERACY AND NUMERACY (LLN)	7. COMMUNICATION / VIRTUAL COLLABORATION / SOCIAL INTELLIGENCE
8. DATA ANALYSIS	8. DATA ANALYSIS
9. CUSTOMER SERVICE / MARKETING	9. LANGUAGE, LITERACY AND NUMERACY (LLN)
10. ENVIRONMENTAL AND SUSTAINABILITY	10. CUSTOMER SERVICE / MARKETING
11. FINANCIAL	11. FINANCIAL
12. ENTREPRENEURIAL	12. ENTREPRENEURIAL

Note: The skills shortage and priority skills results are drawn from industry stakeholder responses to the Industry Reference Committee (IRC) Skills Forecast surveys conducted between 4 December 2017 and 16 January 2018.



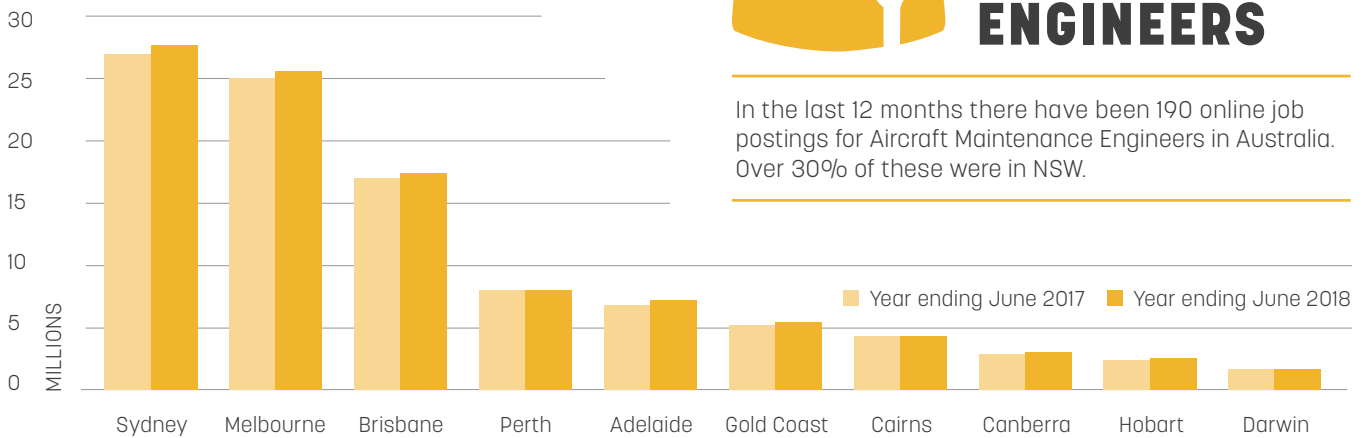
OVER 95% OF AUSTRALIAN EXPORTS ARE CARRIED BY SEA



63.2 MILLION PASSENGERS CARRIED

There were 63.2 million passengers carried on Australian domestic commercial aviation in the year ending June 2018, an increase of 2.4% compared with the previous year.

TOP AUSTRALIAN AIRPORTS BY PASSENGER MOVEMENTS



Note: Airport passenger movement numbers are the sum of regular public transport (RPT) passenger arrivals and departures at each airport.



MORE FEMALE PILOTS NEEDED FOR GENDER DIVERSITY

On average, women make up less than 5% of the pilots employed by the major airlines in Australia.

There are a number of associations seeking to inspire and support women to pursue careers in the aviation industry. Women in Aviation/Aerospace Australia is one initiative that has been developed to support increased gender diversity in aviation.



190 JOB POSTINGS FOR AIRCRAFT MAINTENANCE ENGINEERS

In the last 12 months there have been 190 online job postings for Aircraft Maintenance Engineers in Australia. Over 30% of these were in NSW.

WESTERN SYDNEY AIRPORT

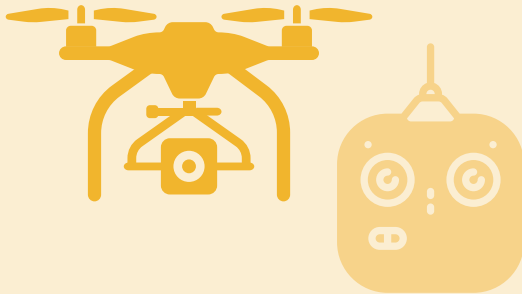


BY 2031, THE AIRPORT IS EXPECTED TO HAVE CREATED AROUND 9,000 JOBS IN THE WESTERN SYDNEY AVIATION INDUSTRY.

In September 2018, construction commenced on a new, **\$5.6 BILLION INTERNATIONAL AIRPORT** at Badgerys Creek in Western Sydney. Set to open in 2026, the Western Sydney Airport will be a major contributor to jobs growth in the region.

The new airport is expected to use advanced technologies including robotics, biometrics and artificial intelligence to increase operational efficiency. This is likely to see a demand for workers equipped with the skills to implement, manage, and monitor these new systems. There may also be demand for skills in data analysis, as the new technologies drive the availability of data.

UNMANNED AIRCRAFT SYSTEMS (UAS) OR DRONES



DRONES are increasingly being adopted across a range of industries including maritime, construction, mining and farming. This is driving **DEMAND FOR SKILLS IN FLYING UNMANNED AIRCRAFTS**.

TAFE NSW offers a nationally recognised qualification to equip students with skills in this growing area.

Examples of TAFE NSW courses aligned to:

- Drone operator: CIII in Aviation (Remote Pilot - Visual Line of Sight) (AVI30316), Statement of Attainment in Drone Essentials

CYBER SECURITY



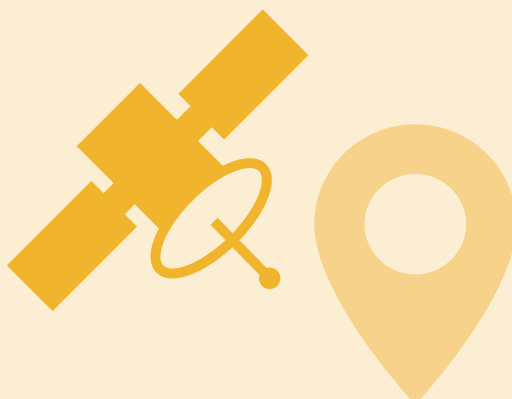
CYBER SECURITY is a major concern in both the aviation and maritime sectors, with internet and network connectivity being increasingly utilised across a range of services as well as remote system operations.

This is driving **DEMAND FOR A SKILLED CYBER SECURITY WORKFORCE**.

Examples of TAFE NSW courses aligned to:

- Cyber security specialist: CIV in Cyber Security (22334VIC), Bachelor of Information Technology (Network Security) (HE20524)

SBAS (SATELLITE-BASED AUGMENTATION SYSTEM) AND BIG DATA



In 2017, Australia became the first country to trial **SECOND-GENERATION SBAS WITH INTEGRATED PRECISE POINT POSITIONING CORRECTIONS**. SBAS can increase location accuracy to under a metre, and precise point positioning technology can achieve accuracy of a few centimetres. Testing is being done across a number of sectors including aviation and maritime.

The introduction of remote operating systems, including SBAS, will provide data that can be used to guide decision making. This is **INCREASING DEMAND FOR SKILLS IN BIG DATA ANALYTICS**.

Sources: Industry employment forecast, job advertisement, and employer data have been provided by TAFE Strategy. Employment forecast data was sourced from Deloitte Access Economics in February 2017. Job advertisement data was sourced from the Burning Glass Technologies' Labor Insight™ Real-time Labor Market Information tool and is based on online job postings over a 12-month period to October 2018 unless stated otherwise. Average salary data has been sourced from the Commonwealth Government's JobOutlook website unless stated otherwise. Skills shortage data, UAS, cyber security, and SBAS information have been sourced from Australian Industry Standards' *Aviation Industry 2018 Key Findings Discussion Paper* and *Maritime Industry 2018 Key Findings Discussion Paper*. Airline activity data has been sourced from the Bureau of Infrastructure, Transport and Regional Economics' *Domestic Aviation Activity 2017-18* report. Information on the gender gap in the pilot occupation has been sourced from The Australian's *Virgin stands out but airlines slow to put women at the top* article. Western Sydney Airport information has been sourced from the Commonwealth Government's *Jobs for Western Sydney - Building Western Sydney Airport* report and The Australian's *Robots and biometrics at 'first digital airport'* article.