



Australian Government
Civil Aviation Safety Authority

A photograph of two young people, a woman in the foreground and a man behind her, both wearing high-visibility yellow safety vests and smiling. They are standing in front of an aircraft, with the woman's hand on a control lever. The background shows the tail fin of a white aircraft with a red chevron and a hangar structure under a clear blue sky.

Engineer student guide

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What is an aircraft maintenance engineer?

Do you...

- love to work with your hands
- want to know how things work
- fix things when they break
- enjoy maths, science or computers?

Then you might make a good aircraft maintenance engineer!

They are like a car mechanic – but for aircraft. But unlike in a car, a pilot can't pull over if something goes wrong.

Your job as an aircraft maintenance engineer is to make sure that the aircraft is safe for the pilot.

You can work on all different types, including aircraft:

- flown for fun
- that people learn to fly in
- used in search and rescue, firefighting, and agriculture
- that fly passengers around the world.

In the future you could even work on uncrewed aerial vehicles, electric air taxis or large drones.

What does an engineer do?

It's an exciting job with lots of variety.

One day you can be rebuilding an aircraft in a workshop or doing an important check of a complete engine. The next day you might go out in the field to change a rotor blade on a helicopter.

Aircraft maintenance engineers:

- check aircraft systems to make sure they work correctly and are safe
- read diagrams
- repair or replace faulty or old parts or systems
- test parts to make sure they work correctly
- keep records of the work they have done.

Aircraft maintenance engineering is not just about engines and airframes. As aircraft become increasingly complex, their systems rely more and more on onboard computers. So, a fast-growing area is avionics – repairing and maintaining computers and software.

You might decide to specialise in one area, like avionics. Or you could become an engine specialist, so you would fine-tune and repair engines, as well as work on propellers.

Maybe you are more interested in becoming a mechanical specialist, where you could work on every part of the aircraft, except instruments and other avionics systems.

Or you might apply your skills to a range of tasks, but specialise in working on helicopters, or on aeroplanes. Or work on both. It's up to you.





image: Aviation Australia



Mechanical

Mechanical engineers work on aircraft airframes, engines, electrical and other mechanical systems. These include brakes, fuel, the flight controls, landing gear and more.



Avionics

Avionics engineers work on the aircraft's instruments, radio, electrical and other onboard information systems. More and more, complex computer technology controls the aircraft's navigation and communication systems.



Structures

Structures engineers make and repair parts for the body of an aircraft. You could work with wood and fabric on historic aircraft, with metal, or high-tech materials such as carbon fibre and Kevlar on modern passenger airliners.



image: Michael Yip, Director of Maintenance Becker Helicopters

Michael Yip

Just plain fun

Michael Yip says he had two options during Year 10: continue going to school or get an apprenticeship. His mother said, 'Don't become a motor mechanic like your dad – it won't lead you anywhere!'

He says he didn't really have any interest in aviation apart from making plastic models, but he needed a job. His mum got him interviews with airlines and the Royal Australian Air Force, and he was lucky to be selected as an apprentice by an airline. He was one of 4 selected from the 250 who applied.

Michael says 'aircraft engineering is a passion, and that shows through in everything you do'.

'As a career, it has a bit of everything, and for that, it is very rewarding. If you get in the right environment, this industry and all the opportunities that open up are just plain fun.'

What do you need to be an engineer?

There is a need for aircraft maintenance engineers around the world. So, once you're qualified, you can probably find work anywhere.



You need to be:

- able to listen and communicate well
- good at solving problems
- patient and accurate
- practical, disciplined and well-organised.

For most courses you must have Year 10 maths and English. It is also good to complete Year 11 and 12 in maths and science. That gives you a head start with the theory part of your training.



You'll learn about:

- aircraft systems and equipment
- how aircraft fly – aerodynamics
- what maintenance different types of aircraft need
- how to repair aircraft
- working safely
- aviation safety rules.

Emma Mahoney

Best decision she ever made

Emma Mahoney wasn't sure what she wanted to do when she left school; but she knew she wanted to work with her hands.

She saw an ad for courses in aviation maintenance and decided to give it a try. She says it was the best decision she ever made.

She really enjoyed the practical activities on the course, and the chance to visit hangars.

But she says getting her head around the electrical theory was a bit of a challenge.

She says aircraft maintenance engineering is a fun and rewarding career. No 2 days on the job are the same. One day she could be doing a major check on a Dash 8 (passenger aircraft), and the next travelling to a remote community (Emma is in northern Queensland) to rescue a broken-down aircraft.

image: Emma Mahoney, LAME Hawker Pacific Avionics





image: Sven Glanzer, Aircraft maintenance engineer (mechanical) QantasLink Brisbane

Sven Glanzer

What you do matters

Sven was working in a dead-end job when a friend talked him into looking at aircraft maintenance engineering. Sven was always pretty good at mechanical things and interested in anything that flew but was not confident about writing.

So, he spoke to the teachers at his local TAFE, and started his Aeroskills study a few months later. He did well at his TAFE studies but says that starting work was a bit of a shock. There was so much he didn't know. He worked hard, and the rest of the team helped teach him.

After 4 years he finished his apprenticeship and did a road trip from Perth to Brisbane. That's where he got his job at QantasLink. He does all types of maintenance, as well as troubleshooting if there's a defect. He likes troubleshooting the most – 'you go home, and you know what you've been doing matters'.

He is studying for his diploma to give him even more options for his future.

Getting started

Contact a local aircraft maintenance company for their advice. If after you talk to them it sounds like the career for you, there are several ways you can start.



School

- Take maths and physics/science subjects at school
- At some high schools, for example Aviation High in Queensland, you can study aviation (engineering) in years 11 and 12
- Begin an apprenticeship part-time



Training

- Enrol in a full-time Aeroskills course at a training school
- Get the basic skills and knowledge to become an apprentice and finally, an AME or LAME



Work

- Find work at an aircraft maintenance engineering company
- Train on the job, study and earn an income
- Join the Australian Defence Force to join and train with them

AME or LAME?

AME (ay-mee) – aircraft maintenance engineer

- Not licenced
- Study and exams
- Practical experience
- Must be supervised
- Work must be checked

LAME (lame-ee) – licensed aircraft maintenance engineer

- Licenced
- Specialist study and exams
- A lot more experience
- Can supervise others
- Allowed to do more on aircraft
- Paid more







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