



Aircraft Maintenance Engineer Careers

Licences, ratings & pathways —  **Canada Edition**

A friendly, practical guide to becoming a Transport Canada licensed AME — maintenance careers, training, the licence categories, and how to get started.

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Introduction

Welcome. This guide explains how to build a career as an **Aircraft Maintenance Engineer (AME)** in Canada. It covers what the job involves, the working environment, how to train, the licence categories under **Transport Canada (TCCA)**, and how to take your first steps. It was created by a licensed engineer with 18 years of international experience — to give you an honest, simple roadmap.

In Canada, civil aviation safety is regulated by **Transport Canada Civil Aviation (TCCA)** under the **Canadian Aviation Regulations (CARs)**. AME licensing falls under **CAR Part IV (Subpart 403)**, with the technical detail set out in **Standard 566**. Transport Canada sets the standards, issues licences, and ensures aircraft are maintained to keep the flying public safe.

To understand the role of an aircraft maintenance engineer, you must first understand the safety culture built over many years by maintainers worldwide. Jerry Lederer, founder of the U.S. Flight Safety Foundation and known as the "Father of Aviation Safety," penned a Mechanic's Creed that applies to aviation maintainers everywhere. Canada's AMEs, like their counterparts around the world, are a vital link in the aviation safety chain.


The Maintenance Creed

***UPON MY HONOR** I swear that I shall hold in sacred trust the rights and privileges conferred upon me as a qualified aircraft maintenance engineer/technician. Knowing full well that the safety and lives of others are dependent upon my skill and judgment, I shall never knowingly subject others to risks which I would not be willing to assume for myself, or for those dear to me.*

***IN DISCHARGING** this trust, I pledge myself never to undertake work or approve work which I feel to be beyond the limits of my knowledge; nor shall I allow any non-qualified superior to persuade me to approve aircraft or equipment as airworthy against my better judgment; nor shall I permit my judgment to be influenced by money or other personal gain; nor shall I pass as airworthy aircraft or equipment about which I am in doubt, either as a result of direct inspection or uncertainty regarding the ability of others who have worked on it to accomplish their work satisfactorily.*

— Jerry Lederer, founder of the U.S. Flight Safety Foundation

For those willing to commit to upholding these ideals, there is a long-term and deeply satisfying career as an aircraft maintenance engineer. Keeping Canada's fleet of private and commercial aircraft flying safely is the job of the licensed AME — and there is real satisfaction in seeing your work result in well-maintained, safe, and efficient aircraft.

 **Internationally recognized.** Canadian AME licences are highly respected worldwide. Recognition between countries relies on agreements between Transport Canada and other national airworthiness authorities, so your licence can open doors well beyond Canada.

Maintenance Careers



What is an AME?

Every aircraft — from a small piston aeroplane to a large jet or helicopter — relies on skilled people to inspect it and keep it safe for flight. An **Aircraft Maintenance Engineer (AME)** is a person licensed by Transport Canada to **certify** that maintenance has been properly completed and to **sign the maintenance release** that returns an aircraft to service. This is one of the most trusted responsibilities in all of aviation.

Anyone may perform maintenance under an approved organization, but only a licensed AME (or an authorized person) may **certify** the work and **release the aircraft to service**. Canada issues these licences because it is a signatory to the *Convention on International Civil Aviation* — **Annex 1** (personnel licensing) and **Annex 6** (the maintenance release) — which obligate Canada to license qualified maintenance personnel to international standards.

On-wing vs. off-wing

Maintenance is either performed **on the aircraft** ("on-wing"), such as rectifying defects before departure, or **in a workshop** ("off-wing"), such as engine overhaul or avionics bench testing. Both carry the same responsibility — the engineer testing a navigation unit in a shop is just as vital to safety as the one releasing the aircraft on the ramp.

Mechanical vs. avionics specialists

Broadly, aircraft and their mechanical systems are maintained by broadly trained engineers, while avionic systems (navigation, communications, flight management, weather radar) are inspected and tested by avionics specialists. Modern aircraft range from classic wood-and-fabric structures to advanced composites and microprocessor-controlled jets — so a career can follow many specializations.

The Working Environment



AMEs depend on clear communication with flight crews to locate and repair faults. For example, a pilot may report a malfunctioning fuel gauge before takeoff; the AME then diagnoses the electrical system, finds the faulty wiring, and replaces it. Safety always comes first, but the work is done efficiently so the aircraft can return to service.

The environment ranges from the **Line** (open-air ramp, dispatching serviceable aircraft) to the **Base** (hangar, performing minor and major work) to the **workshop** (component overhaul). Inspections are scheduled by flight hours, calendar time, or operating cycles. Larger aircraft carry onboard monitoring systems that track key functions and reliability data.

● **A safe, professional workplace.** Aviation maintenance environments are subject to security and, where applicable, drug-and-alcohol programs. Many engineers see this as a benefit — it creates a disciplined, safe, and respectful place to work.


Training & Qualifications

Most AMEs qualify through a combination of **approved training** and **practical experience**, then pass Transport Canada examinations. A strong foundation in mathematics, physics, electronics, and mechanical drawing is valuable, and good communication skills matter because of the reports and records you must read and write.

To earn an AME licence in Canada you generally must:

- Be at least **18 years of age**.
- Gain the required **practical experience** — typically **48 months** of aircraft maintenance experience, which can be reduced with credit from an approved training program.
- Complete training at a Transport Canada **approved Basic Training Organization** (per the standards in **TP 13104**), or accumulate equivalent on-the-job experience.

- Pass the required **Transport Canada AME licence examinations** for your category.
- Submit your application with your documented experience to a Transport Canada regional office.

 **Tip:** Graduating from an approved program is usually the fastest, most structured route — it provides credit toward the experience requirement and prepares you directly for the exams.

Ways to train in Canada

Pathway	What it looks like
Approved college / institute	Full-time AME diploma programs at Transport Canada–approved training organizations across the country.
Airline / MRO apprenticeship	Learn on the job with an approved maintenance organization while building experience.
Military	Canadian Armed Forces maintenance training, which gives strong credit when moving to civil aviation.
Private training schools	Specialist courses, sometimes part-time, that build toward the licence.

Choosing a training organization — questions to ask

- Is the program **approved by Transport Canada**, and what licence category does it lead to?
- Where are classes located, and what are the entry requirements and fees?
- Will they help with the **experience requirement** and recognize prior training?
- What are the instructors' qualifications, and what is their graduate employment record?

Licence Responsibilities

What an AME licence allows you to do


As the holder of an AME licence, you may:

- **Maintain** aircraft within your licence category and ratings.
- **Certify** (sign for) maintenance covered by your licence and sign the **maintenance release**.
- **Supervise** others doing work you are yourself qualified and permitted to perform.

Anyone may perform maintenance if they understand their legal obligations and work within an approved organization — but only the licensed AME may certify the work and release the aircraft to service.

The licence holder's responsibilities

Just as a pilot is responsible for a safe flight, the AME is fully responsible for the maintenance they perform or supervise. You must work to **approved data and maintenance manuals**, use the **right tools and approved parts**, and certify only that the aircraft is airworthy and still meets its type design. When you sign the maintenance release, you are stating that the aircraft is safe to fly.

 **To stay current**, regulations require recent experience — generally **six months of relevant experience within the past 24 months** — and many employers expect ongoing manufacturer or type training as aircraft technology evolves.

Employment Opportunities

Skilled aircraft maintenance professionals are in steady demand in Canada. A significant share of openings comes from an **aging workforce** as experienced engineers retire, while aviation technology keeps advancing — increasing demand for those current in **avionics, composites, and modern aircraft systems**.

Employers include the major airlines, regional and commuter carriers, helicopter operators, business aviation, and **Maintenance, Repair & Overhaul (MRO)** organizations. Smaller operators offer broad, hands-on experience early in your career; the major airlines typically offer higher pay and travel benefits. **Experience is the key** that gives applicants the best chance to secure and advance in a role.

Canadian AME Licence Categories



Transport Canada issues the AME licence in categories and ratings that define the scope of maintenance you may certify. The main categories are:

Category	Scope
M1 — Small Aircraft	Maintenance and certification on small aircraft (aeroplanes and helicopters at or below 5,700 kg MTOW), including airframe, engines, and basic systems.
M2 — Large Aircraft	Maintenance and certification on large aircraft (above 5,700 kg MTOW) — the category used for transport-category airliners.
E — Avionics	Electrical, instrument, and radio (avionics) systems across aircraft types.
S — Structures	Aircraft structural repair — metal, composite, and related structural work.

Within each category, **ratings and type endorsements** further define what you can certify — for example, a specific aircraft type or engine. The more complex the aircraft, the more specific the rating. Full detail is published in Transport Canada **Standard 566**.

● **Mechanical (M) vs. Avionics (E)**. The "M" categories cover the airframe, engines, and mechanical/electrical systems of the aircraft; the "E" category covers the avionics suite. Many engineers begin with an M rating and add type endorsements as their careers grow.

Choosing Your Workplace

Where you work is your choice — and it shapes the experience you'll gain toward your licence. Ask:

- Does the organization give you the **quality and range of experience** you need?
- Do they offer an **apprenticeship or trainee scheme**, and will they allow time for study?
- What are your **prospects after training**, and what do they expect from you?
- What is their **reputation** in the industry?

Time spent researching the experience required to gain a licence is well worth it. Know what you need, and talk to prospective employers to confirm they can meet your goals.

✓ **You're ready to start**. Choose an approved training path, build documented experience, pass your Transport Canada exams, and protect your reputation by upholding the Maintenance Creed in everything you certify. A rewarding, internationally respected career awaits.

Created by an FAA A&P | Canadian AME M1/M2 | 18 years of international experience
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This guide is for general information only. Always verify current requirements directly with Transport Canada Civil Aviation (tc.canada.ca) and the Canadian Aviation Regulations (CARs Subpart 403 & Standard 566).