



# Personnel Certification

*The foundation of aviation maintenance*

*by Roger Beebe*

*It is very appropriate in 2009 while we are celebrating 100 years of powered flight in Canada to think about the skilled trade side of aviation. We see video of aviation events and read articles that acknowledge the debt today's aviation industry owes to the pioneers. It is, perhaps, a good time to think about the relatively unknown technicians behind the technical advances that have made aviation what it is today.*

## **History**

The system of aviation personnel certification can be traced back many generations. Individuals have been specializing in trades and crafts for thousands of years. By mediaeval times in Europe, a formal system of trade guilds and apprenticeship had been established. Formal education and the recording of one's qualifications later became an important practice. Individuals were both trained and certified their trade by more senior practitioners, masters and teachers. In today's world, certification is usually authorized by state bodies or third parties delegated to act on the state's behalf.

Aviation pioneers were able to use certification models from the marine and railroad industries, which were established long before aviation was invented. Aviation requirements

of the First World War necessitated more formal aviation training and certification. By 1919 Canada had made its first attempts to regulate aviation, and personnel certification and licensing was not far behind. Rolland Groome was Canada's first licensed pilot in 1920 and Robert McCombie soon followed as Canada's first licensed AME. Both licences were issued in Regina, Saskatchewan.

## **Why are they called AMEs?**

The title Aircraft Maintenance Engineer or AME came from the British habit of using the term "engineer" to mean anyone operating or maintaining the new machines of the industrial revolution. Americans adopted the term "mechanic" to describe a technician employed in aviation. It quickly developed in Canada that Air Engineers were doing most of the work maintaining aircraft, supported by other trades. Therefore, what were originally known as licensed Air Engineers became known as licensed Aircraft Maintenance Engineers (AMEs). At this time, AMEs were still seen as both technicians and as inspectors. Later, it became evident that the AME's work was supported by a large number of personnel with very specific trade qualifications. By default, the AME licence had become the trade standard in civil aviation and most technicians worked towards that goal.

The Canadian military continued to opt for a multi-trade approach, based partly on military needs and partly on its complex rank structure. In the 1980s, the military began to look at the civil aviation model more closely. The Air Force of the 1960s had approximately 14 different aircraft maintenance trades. When I joined civil aviation in 1969 there were three: the general purpose AME (AME-M), the avionics technician (AME-E) and the structures AME (AME-S). There were others doing very important tasks, such as upholstery, painting, welding, etc. but they were not at the centre of the hangar and flight-line action. They were then generally known as ancillary or support trades.

Industry leaders in aviation maintenance came to realize that something could be done to encourage people to become aircraft trades people by formally recognizing their skills. In addition, it would be necessary to have accurate and complete standards for all trades and some organization to certify them. From those discussions, The Canadian Aviation Maintenance Council was established as one of the new Sector Councils by the federal government in 1991.

### **Why Personnel Certification for Aviation Trades?**

Why do we need to certify aviation trades people? Part of the answer is obvious: managers hiring new staff are able to raise the standard of applicants by setting certification standards as a basic requirement. In addition, industry can better plan its future human-resource needs if it possesses a set of skilled and recognized trades with certified practitioners. It also allows colleges to plan their courses based on accurate knowledge of industry needs.

The certified individual benefits from having a personal document attesting to skill and knowledge, allowing movement anywhere across the industry. As companies do come and go (unfortunately), having a personal certification document is a definite advantage. The fact that the certificate is based on a National Occupational Standard developed by industry adds to its credibility. This is further supported by individual company certification systems. This pool of CAMC-certified skilled trades people supports the licensed AMEs in their work of inspecting and certifying aircraft.

And let's not forget international trade in which aviation contributes greatly to Canada's trade balance. Customers and regulatory bodies around the world can look to Canada and see a unified national system, supported by government and

industry. That is a powerful tool when trying to sell Canadian manufacturing, maintenance and training around the world.

### **CAMC's origins**

In the early 1980s, it became apparent to many aviation industry leaders that something needed to be done to ensure an adequate supply of skilled labour in the maintenance industry. Mr. John Mew, Chief of Manufacturing and Maintenance for Transport Canada (TC), had created an Advisory Council to help him plan future AME licensing and training matters. While Transport Canada was not responsible for the aviation industry's human-resource planning — that belonged to Employment and Immigration (EI), it obviously had a vital interest. I organized a meeting in Calgary in 1989. To a way to deal with a potential shortage of skilled trades, especially sheet metal workers. This brought together EI, TC and affected community colleges, as well as some unions and industry associations. The Canadian military (DND) also attended because it was determined to simplify its complicated on aircraft trade structure and try to take more advantage of civilian technical training. DND also wanted to establish a better career path by providing those retiring from the military with a recognizable civilian trade document.

For aviation trades in Canada, this was a watershed meeting. A previous study by AMEs Gerry Wolfe and Gordon Dupont



*Above: Keewatin Air Ltd. Quality Assurance Manager Sheryl R. Pfeiffer and Technician Joe Szkwarek discuss a PT6-65A engine inspection issue at the company maintenance facility at the James A. Richardson International Airport in Winnipeg. Opposite page: Art Tendies, Operations Manager at Advance Avionics Aircraft Ltd. discusses avionics matters with Ed Ratzlaff of Keystone Air Service Ltd. The Advance Avionics facilities are located within the Keystones Maintenance facility at St Andrews Airport in St. Andrews, Manitoba.*



Left: Technician Marcel Peloquin reviews the maintenance manual during an inspection at Keystone Air Service Ltd.'s maintenance facility at St. Andrews Airport, Manitoba.

Above: He inspects a Piper 31-350 Chieftain engine.

had mapped a procedure for AME licensing; now the task was to address the same issue for the other, unlicensed, trades. Transport Canada declared that it could not license all the trades involved, as that would hopelessly complicate the aircraft inspection release system. Some organization would have to take on the task of developing trade standards and certifying personnel.

Many viewpoints were presented and strenuously argued at the meeting. The AMEs were well represented and expressed concerns about Transport Canada's intentions for the future of licensing; few AMEs wanted to return to the days of company-issued licenses. Companies and unions were concerned about costs and about ensuring adequate standards for the unlicensed trades. All parties were concerned about the need to attract young people into aviation. The field of aviation could no longer be seen as a lead industry — overtaken by the computer industry among others. Finally EI offered, to fund a sector study on the need to develop national trade standards and certify individuals. That sector study (completed and published in March 1991) recommended the creation of an industry council. Such a body was formed later that year and named the Canadian Aviation Maintenance Council (CAMC).

### Today

The front-line AME today is supported by a large number of aviation trades. These are usually found in hangars and shops rather than on the flight-line. Today CAMC offers

individual certification in 26 occupations (See list on page 15). These National Occupational Standards and accompanying logbooks are subject to periodic review by CAMC's Trade Advisory Committees (NSTACs), for updating according to current procedures and technology. CAMC is also expanding its list of occupations to include, most recently, Quality Assurance Manager and Quality Assurance Systems,

Canada now has a thorough and complete system in place to support the aviation industry. This fact is important for Canada's global reputation in the industry and helps to assure the public that all the work is being done by qualified people. On an individual level, certification is a matter of personal pride and a statement of qualification that is recognized by employers across Canada. On an industry level, the fact of personnel certification in unlicensed trades raises the basic level of skill in the industry and helps to attract new workers into the industry. ■

*Now retired as Regional Director, Prairie and Northern Region, Transport Canada after 10 years in the position, **Roger Beebe** also held other positions in his Transport Canada career, including Director, Airworthiness Western region, and senior positions at Ottawa HQ. His civil aviation experience includes Air Canada and Wardair. He also served six years in the Royal Canadian Air Force, mostly in Europe at 1 Wing Marville, France, and in Lahr, Germany. His aircraft experience includes B747, L1011, DC-8 series, DC-9 series, B707, B727, Twin Otter, Single Otter, Bristol 170, Viscount, and many 1960s military fighter aircraft, especially the CF-104.*

*He holds an AME licence in the categories M1 and E, and CAMC certification as both an Avionics Maintenance Technician and an Aircraft Maintenance Technician. Roger now lives in Manitoba where he is President of **Plane Talk Consulting**: 204-388-6884.*