Canadian Aviation – The First Hundred years

Aviation history is short by most standards, a little over 100 years. This year marks the 100 year anniversary of powered flight in Canada. Let us take a quick look at how aviation developed over the 100 years in Canada since the first flight in 1909.

The Beginning

The development of the light internal combustion engine of enough power to allow a reasonable chance of success in powering aircraft had captured the imagination of scientists and technicians in many countries. Work being carried out in Europe, the United States and Brazil was monitored in Canada. The first successful Canadian powered flight was at Baddeck, NS in 1909.

Technical development work was carried out by a surprising variety of individuals across Canada. Farmers on the prairies constructed early engines; some basic helicopter work was carried out on the lower mainland of BC; and many people worked on flight problems in Quebec and Ontario. And, of course, work was conducted as well in the Maritimes, the site of Canada's first powered flight.

The First World War Years

Around the world, national militaries were extremely interested in the potential of aviation. In Canada, military flight training began in Toronto and military aviation trades training was set up at Camp Borden, Ontario. During the First World War, the Curtis Company of Toronto assembled aircraft designed in the United States for Canadian use. Camp Borden was also the training centre for pilots and mechanics in Canada's war effort. Engine fitters and airframe riggers were the two dominant trades. Later, armament technicians became important as aircraft grew bigger and faster, and were loaded with more armament. Manufacturing firms tended to locate near larger centres like Toronto and Montreal for the ready supply of skilled labour. Many who served in the Royal Flying Corp and later the Canadian Air Force went from there into civil aviation work after the war.

Between the Wars

Canada began aerial mapping of all its territory, some of which had never been mapped. Canadian commercial air routes multiplied and expanded. In the north and west, early resource exploration and fire fighting was begun. The 20s also saw the creation of the Royal Canadian Air Force and the first Civil Aviation Authority. The Federal Department of Transport was created in 1936 (now Transport Canada). The government greatly assisted early air operators with air mail contracts. This work eventually developed into trans-Canada flights staged along a new system of airway beacons and airports.

The expansion of bush flying together with national air routes supported a small manufacturing and maintenance industry base, laying the foundation for great

expansion during the Second World War. The pioneering cross-Canada flights, contributed greatly to the experienced aircrews for the Trans Atlantic ferry and cargo/passenger routes used so effectively in the Second World War.

The Second World War

Many of Canada's largest maintenance facilities began during the Second World War and they continue in all parts of Canada today. They required technicians and Aircraft Maintenance Engineers. The need was filled by technical schools in many regions, which eventually became today's community colleges.

Aeronautical research and development in Canada was led (and still is) by the National Research Council's aeronautical branch, which built the necessary laboratories and wind tunnels Electronics, electrics and instrumentation had, by 1940, advanced enough that WWII became known as an electronics war. Community colleges rushed to develop training courses for the now large electronics manufacturing and repair industry to meet the demand for skilled technicians.

The single greatest aviation achievement in Canada during WWII was arguably the enormous undertaking of the British Commonwealth Air Training Plan. Others were the creation of an Air Force in Europe, Ferry Command, and the associated growth in manufacturing including the four-engine Lancaster Bomber. Pioneering unguided and guided rocket work led to the development of rocket-based armament systems used on wartime fighter bombers and later on Canadian aircraft defending Europe and North America through NATO and NORAD.

Post War – 1950 to 1980

The expansion of airports across Canada and especially in the north set the stage for post-war commercial aviation. Large manufacturing plants provided the means for post-war developments that included the world's first jet-powered airliner and the famous Avro Arrow. Even when the Arrow was cancelled in 1959 and Canada lost some 15,000 skilled workers, the manufacturing sector recovered by building CF-104s and CF-5s in Quebec. Military orders and subcontracting to international manufacturers kept Canadian facilities going. A large military aviation force requiring civilian support made these years' busy ones. Trans-Canada Airlines (TCA) dominated commercial traffic at this time and later became Air Canada.

Late Twentieth Century- 1980- 2000

The eighties brought in deregulation of the economic side of air carriers and the shuffle began. One early casualty was the renowned Wardair absorbed into PWA, which in turn was absorbed by Canadian Airlines. In 2001, Canadian Airlines was taken over by Air Canada. Calgary entrepreneurs then started West Jet, which by 2008 has become number two in fleet size in Canada. The story of this time technically would have to be around the electronic revolution and the new airframe and engine technologies which by now we were solidly embedded in the aviation system.

Governments Role

One must take note of the huge amount of public money spent on expanding Canada's air navigation system and airports. Beginning with enormous military investments by Canada, United Sates and even Great Britain in Canada's in WWII, additional investments were made during the 50 years of the Cold War. In the 1950s, Transport Canada took over and continued to expand and improve both these systems.

Government policy decisions during the 1980s and early 1990s led to the privatization of nearly all of Canada's airports and the air navigation system. One reason given was enormous capital costs, which were difficult to raise. Another reason was the desire for operating efficiency that is difficult to achieve in government. All this led to the creation of NavCanada and the many Airport Authorities that exist today. Transport Canada then became a policy and safety regulatory department with a large economic development component but not an operator. So Canada has gone full circle from private creation of aviation infrastructure through large government control and involvement back to mainly private operations and financing.

Today and tomorrow

Canada's aviation standing in the world today is based on the pioneering work of those early aviators. There are many fine Canadian aviation museums both military and civil that tell their stories. Aircraft maintenance engineers have a dedicated Hall of Fame in the Canadian Bushplane Heritage Centre in Sault Ste. Marie, ON. Canada's Aviation Hall of Fame celebrates the accomplishments of many great test pilots, pilots, aeronautical engineers and representatives of other trades.

There may be potential for the use of airships in the north as general cargo carriers. Another growing area of interest is the idea of using pilotless vehicles for such things as border patrols, pipeline inspection, and power line monitoring and military purposes.

Canada is second in the world for size of aviation network and has a dynamic general aviation and space sector. Canada is approximately fourth in the world in aerospace manufacturing and maintenance, not bad for a nation of 33 million people.

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 positions at Ottawa HQ and in Ontario Region. 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

Marvell, France, and 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: 204-232-8819.