

Engineering History of Canada 101

By The CSSE History and Archives Committee

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The Canadian Society of Senior Engineers (The CSSE), formerly The Life Members' Organization of The Engineering Institute of Canada, was formed in 2002 with the object of paying back to Canada something of what its members have received and learned. The CSSE's stated mission is to maximize the well being of all Canadians. To that end, it advocates specific strategies leading to public policies that are deemed to enhance the well being of all Canadians. One such strategy that The CSSE advocates is that Canadians be made more aware of the engineering history of Canada, so that they can learn from past successes and mistakes, as they plan for the future.

The engineering history of Canada begins with the arrival of the first aboriginal "Canadians", Paleo-Indians, from Alaska around **14,000 B.C.** In spite of being isolated from the rest of the world, the aboriginal Canadians ("First Nations" and Inuit Canadians) managed to survive by engineering hunter-gatherer groups, shelters, clothing, and transportation and fortifications with the resources that they had. By **900 A.D.** they had engineered over 630 "First Nations" bands and several Inuit settlements. (To learn more, google "History of Canada".)

With the arrival, around **900 A.D.**, of European "Canadians", a 900-year period of engineering developments began, leading up to Canadian confederation and The British North America Act (The Canada Constitution Act) of **1867**. Notably, engineered were wheeled vehicles, stronger fortifications, water-supply systems, firearms, deep-water harbours, lighthouses (such as The Louisberg Lighthouse in Nova Scotia in **1734**), bridges (such as The Union Suspension Bridge in Ottawa in **1844**), canals (such as The Welland Canal in Ontario in **1829** and The Rideau Canal in Ontario in **1832**), roads (such as The Caribou Road in British Columbia in **1865**) and The Landing of the First Transatlantic Telegraph Cable at Heart's Desire, in Newfoundland in **1858**. (To learn more, google "History of Canada".)

In **1867**, when Canada comprised New Brunswick (N.B.), Nova Scotia (N.S.), Ontario and Quebec, the average lifespan expectancy of a Canadian was around 50 years or less. By **2014**, Canadians had engineered it to over 85 years. How? The following are some of the milestones.

In **1870** Manitoba and The Northwest Territories joined Canada. Then came British Columbia (B.C.) in **1871** and Prince Edward Island (P.E.I.) in **1873**. Then, in **1876**, Alexander Graham Bell engineered the first distant speech transmission. In **1885** the Montmorency Falls power plant was completed in Quebec and The Canadian Pacific Railway started service from Montreal to Port Moody, B.C. In **1898** The Yukon joined Canada, and The DeCew Falls 1 hydroelectric plant was completed. In **1901** the first transatlantic radio signal was received in Newfoundland. Alberta and Saskatchewan joined Canada in **1905**. Canadian aviation was launched in **1909** with John McCurdy's flight at Baddeck, N.S. In **1919** The Quebec Bridge was completed. In **1949** Newfoundland and Labrador joined Canada. In **1950** the first external pacemaker was produced. In **1952** the first Canadian television station began to broadcast. In **1956** the first submarine transatlantic telephone service (via Newfoundland) came into service. In **1959** The St. Lawrence Seaway opened. In **1962** The Alouette-Isis satellite was launched. In **1965** The 735 Kilovolt Alternating Current Transmission System, the world's first, was commissioned in Quebec. In **1968** The Tri Universities Meson Production Facility (TRIUMF) Cyclotron was commissioned in B.C. In **1972** The Nelson River High Voltage Direct Current System in Manitoba was commissioned, and in N.B. The Eel River High Voltage Direct Current Converter (the world's first) was completed. In **1981** Canadarm was launched on board the space shuttle Columbia. In **1997** Confederation Bridge (P.E.I. to mainland) was completed. In **1999** Nunavut joined Canada. (To learn more, email info@seniorengineers.ca, phone 613-821-5273, or write to The Canadian Society for Senior Engineers, 1717 Lakeshore Drive, Ottawa, Ontario K4P 1H1.)

