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L'INSTITUT CANADIEN DES INGÉNIEURS
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EIC HISTORY & ARCHIVES

WORKING PAPER 8/2001

**ENGINEERING
DESIGNATIONS OF
NATIONAL HISTORIC SIGNIFICANCE**

Compiled by Andrew H. Wilson

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Request copies from: EIC History & Archives Committee, 9 Cedar Grove Court, Nepean, Ontario
K2G 0M4

Abstract

This compilation of designations of national historic significance has been based on the *Register* published by Parks Canada in March 1999. It covers - with certain exclusions - the national historic sites, persons, events and other designations made by the Historic Sites and Monuments Board and its predecessors between 1919 and 1998 that are *engineering-related*. The exclusions are: most buildings, railroad stations, battle sites, fur trade forts and posts, townsites and early or reconstructed villages. While many of these would require the services of engineering people, the contributions of others (such as architects) could be even more significant.

The compilation shows that this relationship exists with 17% of all national historic sites. Around 2% of all of the persons designated were engineers, although a further 3% were associated closely with the promotion of engineering projects and/or their management. And some 25% of the events in the original list can be considered related to engineering. The interpretation of eligibility has been the responsibility of the compiler and, in a few instances, he has also edited the original *Register* entries.

About the Compiler

Mr. Wilson has been associated with work in the history of engineering in Canada since 1975, although most of it has been done since his retirement from federal government service in 1986. Professionally, he is a mechanical engineer but also has training in economics and history. He is currently Chair of the History & Archives Committee of the Engineering Institute of Canada.

About the Working Paper Series

In June 1995 the Council of the Engineering Institute of Canada agreed that Working Papers on topics related to its history and development, to the history and development of other institutions serving the engineering profession in Canada, and to engineering generally should be published from time to time.

The Papers have limited initial distribution, but a supply is maintained by the EIC History & Archives Committee for distribution on request. They may also be published later, in whole or in part, in other vehicles, but this cannot be done without the expressed permission of the Institute. The available Papers are listed in the EIC's website (www.eic-ici.ca).

A hiatus in publication occurred between 1998 and 2001 while the present EIC History & Archives Committee was being organized and its program set in place. The Series is now being administered by its Publications Sub-Committee in cooperation with the Executive Director of the Institute.

Opinions expressed in the Working Papers are those of the author(s) and are not necessarily shared by the Engineering Institute of Canada or its History & Archives Committee.

INTRODUCTION

The following information has been extracted from the three categories listed in the *Register of Designations of National Historic Importance* published in March 1999 by Parks Canada for the Historic Sites and Monuments Board of Canada. In particular, with certain exclusions, it covers those entries that are *related to engineering* for the years from 1919 to 1998.

The interpretation of what could be considered *engineering related* has been the responsibility of the compiler. He has also, but very occasionally, edited some of the *Register* entries. For example, the flight of the *Silver Dart* in 1909 has been shown as the first powered flight in Canada, but not in the British Empire. This honour, in fact, may well go to a New Zealander - Richard Pearse - who flew briefly some months before J.A.D. McCurdy. The compiler must also take responsibility for the exclusions. These include most buildings, railroad stations, battle sites, fur trade posts, townsites and early or reconstructed villages. While many of these may have had the benefit of engineering expertise, the contributions of others - such as architects - may well have been more significant. Also, the earliest of the *engineering-related* entries that have been included belong to the periods covered by the French and later the British *military* engineers whose activities preceded those of the later *civil* engineers.

The process of designation of sites, persons and events as being of national historic importance is governed by the federal Historic Sites and Monuments Act. The Minister responsible is (currently) the Minister of Canadian Heritage, who is advised by the Historic Sites and Monuments Board of Canada. The Board's members have been chosen by the provinces, as their representatives. Recommendations for designation may come from the federal government, the provinces and territories, and the general public - which includes Engineering Institute of Canada and its Member Societies. After recommendations are researched under the guidance of Parks Canada, they are considered by the Board which, in turn, makes its own recommendations to the Minister, who may authorize designation. An action program is then put in place by Parks Canada. This program usually includes the preparation of a historical marker, agreement with the owner of the site chosen for it, and the protection and presentation of this site.

The three extracted lists - for historic sites, persons and events - appeared originally in the form of a memorandum prepared for the information and guidance of the members of the EIC's History & Archives Committee as they prepare to make further recommendations for national designation to the Historic Sites and Monuments Board. However, since interest in the designations that have already been made is much broader than the Committee, it was considered useful to include this information in an EIC History Working Paper. With this extended audience in mind, the guidelines and criteria used by the Board - as they appear in the *Register* - have been quoted in full.

Criteria for National Historic Significance:

Any aspect of Canadian human history may be considered for Ministerial designation of national historic significance. To be considered for designation, a place, a person, or an event will have had a nationally significant impact on Canadian history, or will illustrate a nationally important aspect of Canadian history.

Subjects that qualify for national historic significance will meet one or more of the following criteria:

1. A place may be designated of national historic significance by virtue of a direct association with a nationally significant aspect of Canadian history. An archaeological site, structure, building, group of buildings, district, or cultural landscape of potential national historic significance will:

- (a) illustrate an exceptional creative achievement in concept and design, technology, and/or planning, or a significant stage in the development of Canada; or*
- (b) illustrate or symbolize in whole or in part a cultural tradition, a way of life, or ideas important in the development of Canada; or*
- (c) be most explicitly and meaningfully associated or identified with persons who are deemed of national historic importance; or*
- (d) be most explicitly and meaningfully associated or identified with events that are deemed of national historic importance.*

2. A person (or persons) may be designated of national historic significance if that person individually or as the representative of a group made an outstanding and lasting contribution to Canadian history.

3. An event may be designated of national historic significance if it represents a defining action, episode, movement, or experience in Canadian history.

General Guidelines:

** Considerations for designation of national historic significance are made on a case-by-case basis, in accordance with the above criteria and in the context of the wide spectrum of Canada's human history.*

** An exceptional achievement or outstanding contribution clearly stands above other achievements or contributions in terms of importance and/or excellence of quality. A representative sample may warrant a designation of national historic significance because it eminently typifies a nationally important aspect of Canadian history.*

** An explicit and meaningful association is direct and understandable, and is relevant to the reasons associated with the national significance of the associated person or event.*

** Uniqueness or rarity are not, in themselves, evidence of national historic significance, but may be considered in connection with the above criteria for national historic significance.*

** Firsts, per se, are not considered for national historic significance.*

** In general, only one commemoration will be made for each place, person, or event of national historic significance.*

Places:

** Buildings, ensembles of buildings, and sites completed by 1975 may be considered for designation of national historic significance, provided five years have passed since the death of those responsible for their design.*

** A place must be in a condition that respects the integrity of its design, materials, workmanship, function and/or setting to be considered for designation of national historic significance, insofar as any of these elements are essential to understand its significance.*

** The boundaries of a place must be clearly defined for it to be considered for designation as a national historic site.*

** Large-scale moveable heritage properties that would not normally be considered suitable for museum display may be considered for designation of national historic significance.*

Persons:

** Persons deceased for at least twenty-five years may be considered for designation of national historic significance, with the exception of Prime Ministers, who are eligible for commemoration immediately upon death.*

It should be noted that this paper uses the official map form for Québec - the city - and Quebec - the province.

NATIONAL HISTORIC SITES

In this section, the sites are listed by: province/territory (alphabetically); name; location (alphabetically); significance; year designated; and year plaqued (or shown as 'not plaqued'). From the information given - in the other two sections as well as this one - it is clear that several years may elapse between designation and plaquing.

Alberta:

Aqueduct; Brooks; landmark irrigation project built by Canadian Pacific Railway in 1912-14; 1983; 1989

Yellowhead Pass; Jasper National Park; transportation route through the Rocky Mountains; 1971; 1985

Leduc-Woodbend Oilfield; Leduc; most important oilfield in the history of Alberta; 1990; 1997

Galt Irrigation Canal; Magrath; first major irrigation project in Canada; 1983; 1992

Turner Valley Gas Plant; Turner Valley; early gas plant, central to the history of petroleum extraction technology; 1995; 1998

Turner Valley Oil Field; Turner Valley; first major oilfield in Alberta; 1990; 1998

First Oil Well in Western Canada; Waterton Lakes National Park; first commercially productive oil well in the West; 1965; 1968

British Columbia:

Britannia Mines Gravity-fed Concentrator Complex; Britannia Beach; important 20s-30s copper mine; 1987; 1989

Brilliant Suspension Bridge; Castlegar; Doukhobor-built bridge, symbol of Doukhobor culture; 1995; not plaqued

Fisgard Lighthouse; Colwood; first permanent lighthouse on Canada's West Coast; 1958; 1982

Fort Rodd Hill; Colwood; late 19th century fort to defend Victoria-Esquimalt fortifications; 1958; 1992

Esquimalt Naval Stations; Esquimalt; historic naval district with significant built resources; 1995; not plaqued

Rogers Pass; Glacier National Park; Canadian Pacific Railway route through the Selkirk Mountains; 1971; 1984

Moyie; Kaslo; restored river steamboat launched in 1898; 1958; 1978/98

McLean Mill; Port Alberni; lumber mill complex, buildings and equipment; 1989; not plaqued

North Pacific Cannery; Port Edward; oldest extant West Coast salmon cannery; 1985; not plaqued

Britannia Shipyard; Richmond; historic ship repair and building facility; 1991; not plaqued

Kootenay Mining Region; Rossland; major mining and refining region; 1997; not plaqued

Gulf of Georgia Cannery; Steveson; outstanding West Coast fish processing complex; 1976; not plaqued

Triple Island Lighthouse; Triple Island; striking concrete station in isolated setting; 1974; 1990

St. Roch; Vancouver; first vessel to navigate Northern Passage west-east; 1962; 1974

Esquimalt and Nanaimo Railway Roundhouse; Victoria; early West Coast railway facility; 1992; not plaqued

Point Atkinson Lighthouse; West Vancouver; strategic light integral to growth of Vancouver harbour; 1974; 1994

Manitoba:

Churchill Rocket Research Range; Churchill; upper atmosphere research centre; 1988; not plaqued

Inglis Country Grain Elevators; Inglis; rare row of standard plan country grain elevators typical of "Golden Age" from 1920s to 1940s; 1995; not plaqued

St. Andrews Caméré Curtain Bridge Dam; Lockport; largest of its type in the world, built 1907-10; 1990; 1995

New Brunswick:

Fort Beauséjour; Aulac; remnants of 1751 French fort; 1920; 1923

La Coupe Drydock; Aulac; site may represent 18th century Acadian construction; 1953; 1954

Fort Nashwaak (Naxoat); Fredericton; site of French fort, 1692-98; 1924; 1926

Hartland Covered Bridge; Hartland; longest extant covered bridge in the world; 1977; 1980

Fort Jemseg; Lower Jemseg; site of 1659 English post, captured by the Dutch in 1674; 1927; 1929

Marysville Cotton Mill, Marysville; typical late 19th century textile mill; 1986; 1990

Miscou Island Lighthouse; Miscou Island; strategic Chaleur Bay octagonal colonial lighthouse; 1974; 1977

Fort Gaspareaux; Port Elgin; military ruins and cemetery of 1751 French fort; 1920; 1923

Fort Howe; Saint John; built 1777 to defend Saint John River from Americans; 1954; 1980

Fort La Tour; Saint John; site of French fort 1931; 1923; 1925

Fort Nerepis; Westfield; site of 1749 French fort on aboriginal site, Fort Boishebert; 1930; 1931

Newfoundland:

Battle Harbour; Battle Harbour; district evocative of the 19th and early 20th century fishing outposts of Newfoundland and Labrador; 1996; 1998

Ryan Premises; Bonavista; East Coast fishing industry complex; 1987; not plaqued

Cape Pine Lighthouse; Cape Pine; early circular cast-iron tower, 1851; 1974; 1977

Cape Race Lighthouse; Cape Race; strategic landfall light on major shipping lane; 1974; 1977

Cape Spear Lighthouse; Cape Spear; oldest surviving lighthouse in Newfoundland; 1962; 1983

Fort Amherst; St. John's; site of 1777 fortifications, St. John's harbour; 1951; 1970

Fort Townshend; St. John's; headquarters of Newfoundland Garrison, 1779-1871; 1952; 1953

Fort William; St. John's; headquarters of Newfoundland Garrison, 1618-1779; 1952; 1953

St. John's WWII Coastal Defences; St. John's; safe port for World War II convoy vessel assembly, Atlantic bulwark; 1993; not plaqued

Northwest Territories:

No relevant engineering sites

Nova Scotia:

Fort Anne; Annapolis Royal; 1695-1708 fortifications; 1920; not plaqued

Alexander Graham Bell; Baddeck; commemorates famous inventor; 1952; 1958/78

Fort Lawrence; Fort Lawrence; English fort, 1750-1755; 1923; 1923

Fort McNab; Halifax; fort built in 1889 to defend Halifax harbour; 1965; not plaqued

Georges Island; Halifax; harbour fortification, contains Fort Charlotte; 1965; not plaqued

Halifax Citadel; Halifax; restored British masonry fort, 1826-56; 1935; not plaqued

Halifax Dockyard; Halifax; oldest dockyard in North America, built in 1758, still in use; 1923; 1924

HMCS *Sackville*; Halifax; only surviving Flower class corvette from the Battle of the Atlantic, World War II; 1988; 1990

Acadia; Halifax; steamship launched in 1913 and played a leading role in charting Hudson Bay; 1976; 1982

Prince of Wales Tower; Halifax; late 18th century stone defence tower; 1943; 1951

York Redoubt; Halifax; major seaward defences of Halifax harbour from the American Revolutionary War until World War II; 1965; 1992

Poutrincourt's Mill; Lequille; site of 1607 flour mill; 1947; 1968

Fortress of Louisbourg; Louisbourg; reconstruction of 18th century French fortress; 1920; 1925

Fort St. Louis; Port La Tour; site of French fort, 1630; 1931; 1937

Marconi Wireless Station; Port Morien; first regular public intercontinental service; 1983; not plaqued

Sambro Island Lighthouse; Sambro Island; earliest lighthouse in Canada (1758); 1937; 1939

Fort St. Peters; St. Peters; French trading post and fort, 1650-1758; 1929; 1931

St. Peters Canal; St. Peters; operational canal with structures dating from the 19th century; 1929; 1931

Nova Scotia Coalfields; Sydney, Stellarton, Springhill; surviving clusters of *in situ* resources associated with the fields and the coal industry; 1997; not plaqued

Marconi; Table Head; site of first wireless station in Canada; 1985; not plaqued

Fort Edward; Windsor; oldest blockhouse in Canada, 1750; 1920; 1925

Nunavut:

Frobisher Site; Kodlunarn Island; Martin Frobisher habitation and iron smelting, 1576-1578; 1964; not plaqued

Ontario:

Rosamond Woollen Mill; Almonte; begun in 1866, one of the largest mills in Canada; 1986; 1990

Point Clark Lighthouse; Amberly, Point Clark; 1859 "Imperial Tower" and lightkeeper's house; 1966; 1978

Amherstburg Navy Yard; Amherstburg; site of British naval yard (1796-1813), and War of 1812; 1928; 1931

Fort Malden; Amherstburg; 19th century border fortification, Fort Amherstburg, War of 1812; 1921; 1939

Mnjikaning Fish Weirs; Atherley; aboriginal fishing site; 1982; not plaqued

Canal Lake Concrete Arch Bridge; Bolsover; early use of concrete in bridge construction; 1988; not plaqued

Bell Homestead; Brantford; location of important events in Alexander Graham Bell's life; 1996; 1997

Forbes Textile Mill; Cambridge; built in 1863, woollen mill industrial complex; 1989; not plaqued

Diefenbunker/Central Emergency Government Headquarters; Carp; Cold War bunker, symbol of

nuclear deterrence strategy; 1994; 1998

Royal Flying Corps Hangars; CFB Borden; rare World War I hangars; 1989; not plaqued

Bridge Island/Chimney Island; Chimney Island; War of 1812 naval station; 1936; 1937

Old Stone Mill; Delta; one of the oldest surviving mills in Ontario (1810); 1970; 1973

Fort Erie; Fort Erie; War of 1812 fort, rebuilt 1937-1939 by Niagara Parks Commission; 1931; 1933

Hamilton Waterworks; Hamilton; intact early waterworks in elegant Italianate structure, built by Thomas Keefer (1857-59); 1977; 1984

Fort Frontenac; Kingston; site of French fort, captured by the British in 1758; 1923; 1926

Fort Henry; Kingston; British fort completed in 1836 to defend the Rideau Canal; 1923; 1982

Kingston Navy Yard; Kingston; established in 1789, declined after 1817 treaty; 1928; 1935

Kingston Fortifications; Kingston; site of Royal Naval Dockyard during the War of 1812; 1989; 1992

Kingston Dry Dock; Kingston; built 1890. World War II corvettes made here; 1978; 1986

Lansdowne Iron Works; Lyndhurst; first Ontario iron smelting from local ore (1801-12); 1932; 1935

Electrical Development Company Generating Station & Powerhouse; Niagara Falls; important early power project; 1983; not plaqued

Navy Island; Niagara Falls; archaeological remains related to ship building; 1921; 1928

Point Mississauga Lighthouse; Niagara-on-the-Lake; site of the first lighthouse on the Great Lakes, 1804; 1937; 1939

Fort George; Niagara-on-the-Lake; reconstructed British fort from the War of 1812; 1921; 1930/68

Fort Mississauga; Niagara-on-the-Lake; 19th century brick tower within star-shaped earthworks, War of 1812; 1930; 1931

First Oil Wells in Canada; Oil Springs; start of one of Canada's key industries (1858); 1925; 1938

Rideau Canal; Ottawa/Kingston; operational canal - 202 km route, 45 locks; 1925; 1926/64

Penman Textile Mill; Paris; built 1874, knitting mill complex; 1989; not plaqued

Lift Lock; Peterborough; world's highest hydraulic lift lock (1896-1904); 1979; 1985

Point Albino Light Tower, Point Albino; aesthetically enriched reinforced concrete lighthouse; 1998; not plaqued

Backhouse Grist Mill; Port Rowan; one of the oldest and best-preserved small water-powered establishments; 1998; not plaqued

Fort Wellington; Prescott; military remains of 1813-1838 fortifications, War of 1812; 1920; 1926

Fort Drummond; Queenston; site of 1814 redoubt and battery, War of 1812; 1928; 1932

Queenston-Chippawa Hydro-Electric Plant; Queenston; built 1917-21, first large hydro project in the world; 1990; not plaqued

Algoma Central Engine House; Sault Ste. Marie; first in Canada to have internal turntable; 1992; not plaqued

Sault Ste. Marie Canal; Sault Ste. Marie; non-operational - first electrically-powered lock, 1888-94; 1988; 1923/98

Bascule Bridge; Smiths Falls; oldest surviving structure of its type, 1912-13; 1983; not plaqued

Fort St. Joseph; St. Joseph Island; British military outpost on the western frontier, 1796-1812; 1923; 1928

HMCS *Haida*; Toronto; last of World War II Tribal class destroyers; 1984; 1990

Trent-Severn Waterway; Trenton/Port Severn; operational canal - 386 km route, 45 locks; 1929; 1938

Gooderham & Worts Distillery; Toronto; significant mid-19th century industrial complex; 1988; 1989

Prince Edward Island:

No relevant engineering sites

Quebec:

Beauharnois Power Development; Beauharnois; built 1929-32 - economically and technologically important; 1990; not plaqued

Cap-des-Rosiers Lighthouse; Cap-des-Rosiers; built in 1858 - tallest lighthouse in Canada at 112 feet; 1974; 1977

Fort Ste. Thérèse; Carignan; site of French fort for defence against the Iroquois, 1665; 1923; 1927

Carillon Canal; Carillon; operational - site of two earlier canals; 1929; 1931/87

Chambly Canal; Chambly; operational - 9 locks, swing bridges; 1929; 1930/87

Fort Chambly; Chambly; restored and stabilized 1709 stone fort; 1920; 1940

Old Chicoutimi Pulp Mill; Chicoutimi; 1983; 1988

Fort Lennox; Île-aux-Noix; outstanding example of early 19th century fortifications; 1920; 1926

Île-Verte Lighthouse; Île-Verte; 1809 tower - first light on the St. Lawrence; 1974; 1976

Fort St. Louis; Kahnawake; built in 1725 for protection of Christian Iroquois; 1930; 1937

First Geodetic Survey Station; Kingsmere; built 1905 - systematic program of surveying; 1929; 1930

Davie Shipyard. Lévis; historic Canadian shipyard - established 1829; 1990; not plaqued

Fort No. 1 at Pointe de Levy; Levis; part of the Québec fortification system; 1920; 1984

Longueuil Fort; Longueuil; site of a stone fort built by the French, 1685-1690; 1923; 1925

Magog Textile Mill; Magog; 1883 cotton mill; 1989; not plaqued

Lachine Canal; Montréal; non-operational - 5 locks, railway and road bridges; 1929; 1931

Lachine Canal Manufacturing Complex/Redpath; Montréal; manufacturing/industrial complex, especially from 1880 to 1940 - 41 establishments, 12 production groups; 1996; not plaqued

Merchants Textile Mill; Montréal; 1882 cotton mill; 1989; not plaqued

Round Stone Windmill and House; Notre-Dame-de-l'Île-Perrot; rare 18th century industrial/residential grouping; 1969; not plaqued

Pointe-au-Père Lighthouse; Pointe-au-Père; early reinforced concrete lighttower at strategic location;

1974; 1982

Powerscourt Covered Bridge; Powerscourt; built 1861 - McCallum inflexible arched truss; 1984; 1989

Fortifications of Québec; Québec; 4.6 km network of walls, gates and squares; 1957; not plaqued

Québec Martello Towers; Québec; 1808-1812 sandstone fortifications of the British military; 1990; 1995

Québec Bridge; Québec; longest clear-span cantilever bridge in the world - first to make extensive use of nickel steel and the K-truss; 1995; 1997

Saint-Joseph-de-la-Rive Shipyard; Saint-Joseph-de-la-Rive; between the French regime and the 1960s, it was the largest builder of "goélettes" wooden schooners; 1996; 1998

Saint-Ours Canal; Saint-Ours; operational canal, plus remains of 1849 lock; 1929; not plaqued

Sainte-Anne-de-Bellevue Canal; Sainte-Anne-de-Bellevue; operational canal - site of earlier 1843 canal; 1929; not plaqued

Fort Richelieu; Sorel; one of the earliest forts in New France, 1642; 1923; 1925

Fort Trois-Rivières; Trois-Rivières; wooden fort, foundation of the modern city; 1920; 1926

Canadian Pacific Forest Products Mill; Trois-Rivières; 1919-20 pulp and paper mill; 1991; not plaqued

Forges du Saint-Maurice; Trois-Rivières; remains of Canada's first industrial village; 1919; 1923

Saskatchewan:

Brick Plant; Claybank; important early 20th century brickmaking complex; 1994; 1997

Yukon:

Dredge #4; Bonanza Creek; symbolizes importance of dredging operations (1899-1966) with the evolution of gold mining in the Klondike; 1997; not plaqued

Keno; Dawson; 1922 wooden steamboat - 140 ft x 30 ft, 3 decks; 1961; not plaqued

Klondike; Whitehorse; largest and last Yukon commercial steamboat; 1962; 1981

PERSONS OF NATIONAL HISTORIC SIGNIFICANCE

In this section, the people on the first list were engineers or functioned as such in terms of their commemoration; those on the second were not engineers, but were closely associated with the promotion of engineering projects and/or their management.

Both the engineers and the non-engineers are listed by: surname (alphabetically); significance; year designated; place and year of plaquing (or shown as "no plaque in place, etc" or "no plaquing planned").

First list:

Baldwin, Frederick Walker "Casey"; worked with A.G. Bell, designing aircraft and hydrofoils; 1957; Baddeck 1978

Bombardier, Joseph-Armand; industrialist and developer of the snowmobile; 1994; no plaque in place, no recommended site

By, John; military engineer who built the Rideau Canal (1826-32); 1954; no plaque in place, Ottawa recommended

Fessenden, Reginald Aubrey; pioneer in radio communication, who developed the sonic depth finder; 1943; Austin (Quebec) 1983

Fleming, Sandford; railway survey and construction engineer, and advocate of Standard Time; 1950; Ottawa 1957

Girouard, Edouard Percy Cranwell; military engineer, who constructed railways in Africa; 1938; Montreal 1951

Gzowski, Casimir Stanislaus; engineer, railway builder and first Chairman of the Niagara Parks Commission; 1956; no plaquing planned

Howe, Clarence Decatur; important Liberal Cabinet Minister, who began Atomic Energy of Canada Limited; 1984; Thunder Bay 1992

Keefer, Thomas Coltrin; hydraulics engineer and railway promoter, who built the Waterworks at Hamilton; 1938; Ottawa 1977

Magrath, Charles Alexander; engineer and surveyor, and the first Mayor of Lethbridge; 1950; Lethbridge 1952

McCurdy, John A.D.; first person to fly an aeroplane in Canada (*Silver Dart* 1909); 1974; Baddeck 1978

Turnbull, Wallace Rupert; aeronautical engineer - built the first wind tunnel in Canada; 1960; Saint John 1985

Willson, Thomas Leopold; inventor - commercialized the production of acetylene gas (1892); 1972; Ottawa 1986

Second list:

Beck, Adam; regarded as the father of Ontario Hydro; 1938; London 1946

Bouchette, Joseph; Surveyor-General of Lower Canada (1804-41), author and mapmaker; 1937; Quebec 1941

Boyle, Joseph Whiteside; mining entrepreneur, founded the Klondike Mining Company (1904); 1984; Bonanza Creek 1986

Cunard, Samuel; founded a commercial empire of shipping, banking, lumber and coal; 1937; Halifax 1977

Deville, Edouard Gaston; Surveyor-General of Canada (1885) - introduced the technique of photogrammetry; 1971; Yoho National Park 1975

Eddy, Ezra Butler; manufacturer of matches, wood products and pulp and paper; 1976; Hull 1980

Fraser, Archibald; lumber industry magnate and pioneer in pulp and paper manufacture in New Brunswick; 1975; Edmunston, no date given

Hill, James Jerome; Red River Transportation Company (1856) and the Great Northern Railway; 1938; Rockwood (Ontario) 1953

Logan, William Edmond; first Director of the Geological Survey of Canada; 1967; Percé (Quebec) 1974

Mackenzie, William; railway entrepreneur - built the Canadian Northern Railway; 1976; no plaque in place, Kirkfield (Ontario) recommended

Mann, Donald; railway builder - helped develop the Canadian Northern Railway; 1976; no plaque in place, no recommended site

Massey, Hart Almerin; founder of the Massey-Harris Company and Massey Hall in Toronto; 1971; Toronto 1987

McKay, Donald; world renowned designer and builder of clipper ships; 1938; Jordan Falls (Nova Scotia) 1966

McLaughlin, Robert Samuel; industrialist, whose carriage works in Oshawa became General Motors of Canada (1918); 1989; no plaque in place, but Ontario recommended

Merritt, William Hamilton; industrialist and politician, who led the construction of the Welland Canal; 1974; St. Catharines 1974

Molson, William; brewer, banker, steamship builder, lumberman, and railway builder; 1971; no plaque in place, but Quebec recommended

Moody, Sewell P.; entrepreneur, who established sawmills in the Vancouver area (1865-75); 1988; no plaque in place, but British Columbia recommended

Van Horne, William; Chief Engineer of the Canadian Pacific Railway and later its President; 1954; Montreal 1961

Walker, Hiram; industrialist, who developed a distillery, ferry and railway in Windsor, Ontario; 1971; Windsor 1975

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EVENTS and OTHER DESIGNATIONS OF NATIONAL HISTORIC SIGNIFICANCE

In this section, the events etc. are listed by: name (alphabetically); significance; year designated; place and year of plaquing (or shown as "no plaque in place, etc").

1954 Voyage of HMCS Labrador; first navigation of the Northwest Passage by a deep draft ship; 1981; no plaque in place, Resolute (Nunavut) recommended

Accommodation; first steamboat in Canada (Montréal - 1809); 1925; Montréal 1928/86

Alaska Highway; joint United States-Canadian defence project (1941-43) - Dawson Creek to Fairbanks; 1954; Contact Creek (B.C.) 1977 and Soldier's Summit (Yukon) 1992

Alcock - Brown Transatlantic Flight; first non-stop transatlantic flight (1919) - Newfoundland to Ireland; 1950; St. John's 1952

Ayling - Reid Flight; first flight from mainland Canada to England (1934); 1949; Wasaga Beach, Ontario, 1954

S.S. Beaver; first steam vessel on the Pacific Northwest Coast; 1923; Vancouver 1924

Beaver (Aircraft); single engine highwing aircraft developed by De Havilland in 1946 for bush flying; 1974; Downsview 1988

Beginnings of Coal Mining; mining established in 1720 to supply Louisbourg; 1959; Port Morien (Nova Scotia) 1960

Bluenose; famous Canadian schooner - has become national symbol; 1952; Lunenburg 1953

Boundary Water Treaty of 1909; negotiated between the U.S. and British Governments to settle outstanding environmental issues; 1997; no plaque in place, London (Ontario) recommended

British Commonwealth Air Training Plan; schools established across Canada to train Commonwealth airmen in World War II; 1983; Trenton 1990 and Brandon 1992

Building of the St. Clair Tunnel; first underwater tunnel in North America (1889-91); 1992; Sarnia 1994

Bush Pilots of Canada; vital role in charting and developing Canadian North; 1960; Yellowknife 1967

Canol Road; American military project in 1941 to exploit Norman Wells oilfields; 1983; Norman Wells 1996

Cape Breton - Newfoundland Cable; vital section of first transatlantic cable - completed in 1856; 1927; North Sydney 1934

Cariboo Wagon Road; 700 kilometre road from Yale to Cariboo goldfields - completed in 1865; 1923; Yale, 1924

Cascades Canal; first constructed by Royal Engineers in 1779-83; 1929; Pointe-des-Cascades 1935

Chambly Road; military route connecting Richelieu River Forts with Montréal, 1665; 1929; Saint-Hubert 1935

Chemin Royal; Québec to Montréal roadway inaugurated as the King's Highway in 1734; 1927; Québec 1936

Collins' Overland Telegraph; intended to link Europe to America via Russia - abandoned in 1867; 1929; Quesnel (B.C.) 1941

Completion of the Canadian Pacific Railway; "Last Spike" driven in 1885 - first transcontinental train arrived at Port Moody the following day; 1936; Port Moody 1986; (see also Eagle Pass, below)

Construction of Dundas Street; road from Burlington to Thames River, 1793-94; 1927; Dundas, 1931

Construction of Hudson's Bay Railway; major political and railway engineering achievement in North America; 1994; no plaque in place, no recommended site

Construction of Yonge Street; begun in 1795 - became the main road from Toronto to Georgian Bay; 1927; Bay Ridges 1937

Cornwall Canal; constructed in 1834-42 to bypass Long Sault Rapids; 1929; Cornwall 1939

Covered Bridges; wood structures built in Eastern Canada; 1977; no plaque in place, no recommended site

Craig's Road; built in 1810 - direct route from Quebec to New England; 1939; Richmond 1950

Crowsnest Pass; Canadian Pacific Railway built rail line in 1897 - government subsidies led to Crowsnest rates; 1971; Crowsnest Lake, Alberta, 1982

Dawson Road; land and water route from Lake Superior to Red River - completed in 1871; 1933; Ste. Anne (Manitoba) 1939

Dawson to Ashcroft Telegraph Line; one of the longest and most remote telegraph lines completed over land; 1994; Whitehorse 1998

Development of Cobalt-60 Beam Therapy Unit (Cobalt Bomb); its first use in 1951 marked a new era in the fight against cancer; 1996; London, no date given

Direct Drive Waterpower; importance of hydraulic power in Canadian history; 1986; no plaque in place, no recommended site

Dominion Lands Survey System; 1871 system determined settlement patterns of Western Canada; 1930; Headingly (Manitoba) 1930

Dominion Telegraph; line from Lake Superior to Edmonton built between 1874 and 1878 - important communications link; 1943; Humboldt (Saskatchewan) 1971

Eagle Pass; "Last Spike" of Canadian Pacific Railroad 1885; 1971; Craigellachie 1985 (see also Completion of the Canadian Pacific Railway, above)

Exploitation of Nova Scotia Coalfields; important industry leading to the transformation of the Maritime economy of the late 19th and 20th centuries; 1997; no plaque in place, Nova Scotia recommended

First Aeroplane Flight in Canada; the *Silver Dart* in 1909; 1934; Baddeck, no date given

First Air Crossing of the Canadian Rockies; Captain E.C. Hoy flew from Vancouver to Lethbridge in 1919; 1961; Lethbridge 1966 and Vancouver 1974

First Eastward Crossing of the Northwest Passage; 1940-42 Arctic voyage of the *St. Roch* from Vancouver to Sydney, Nova Scotia; 1943; Regina 1950

First Electric Telegraph; line from Toronto to Queenston carried the first message in 1846; 1925; Toronto 1929

First Marine Compound Engine; this engine powered the steamship *Reindeer*, launched in 1845; 1926; Saint John 1928

First Military Test Flights; military demonstration of aircraft flight in 1909; 1951; Petawawa 1952

First Paper Mill in Canada / Argenteuil Paper Mill; established at Argenteuil in 1805; 1925; Saint-André-Est (Quebec) 1951

First Patent in Canada; issued in 1824 by the Province of Lower Canada for a washing machine design; 1929; Québec 1935

First Railroad in Canada; the Champlain and St. Lawrence Railway opened 1836 and connecting St-Jean with Laprairie; 1925; St-Jean-sur-Richelieu 1929

First Railroad in Western Canada; built 1877-78 from St. Boniface to the U.S. border; 1954; no plaque in place, Manitoba recommended

First Sault Ste. Marie Canal; built 1797-98 to accommodate Montréal canoes - destroyed in 1814; 1987; Sault Ste. Marie 1990

First Steam Foghorn; invented by Robert Foulis in 1854 and installed on Partridge Island in 1859; 1925; Saint John 1928

First Steamship on Lake Ontario; the *Frontenac*, launched in 1816, enabling faster travel between Kingston and Toronto; 1923; Bath (Ontario), 1924

First Submarine Telegraph Cable; laid in 1852, it was also the first major submarine cable in North America; 1932; Charlottetown 1933

First Transcontinental Train; departed from Montréal in 1886 and was the first regular transcontinental service; 1939; Montreal 1939

Fraser Canyon Transportation Corridor; main route inland during the goldrush of 1857-66; 1985; no plaque in place, no recommended site

General Mining Association; major coal producer in British North America (1827-65); 1983; no plaque in place, Stellarton (Nova Scotia) recommended

Grenville Canal; constructed 1818-33 - enlarged 1871-82 - connecting Montréal with Ottawa; 1929; Grenville (Quebec), no date given

Hydro-Electric Power Development in Canada; major source of energy for industrial and domestic use; 1986; no plaque in place, no recommended site

Industry at Trail, British Columbia; first refining of lead in Canada in 1902 and major smelting centre; 1954; Trail 1955

Intercolonial Railway; completed 1876 - was the first railway connecting Central Canada with the Maritimes; 1976; no plaque in place, Moncton recommended

Invention of the Telephone; A.G. Bell's experiments with the telephone and the site of first long-distance call in 1876; 1952; Brantford 1953

Manufacturing in Canada; industrial complexes, powered by water, steam or hydro-electricity; 1987; no plaque in place, no recommended site

Marco Polo; world-famous clipper ship built in 1851 at Saint John - wrecked in 1883; 1990; no plaque in place, Saint John recommended

Mining; one of Canada's most important industries; 1973; no plaque in place, Sudbury recommended

The following areas of mining have been, or are to be, plaqued:

- Asbestos; mining began in Canada in 1878; no plaque in place, Asbestos (Quebec) recommended site
- Copper; discovery of copper ore in Northwestern Quebec led to the founding of Rouyn-Noranda in the early 1920s; Noranda plaqued 1977
- Gold; gold production in Canada entered a new era with the discovery in 1909 of lode deposits in the Porcupine area of Ontario; South Porcupine plaqued 1985
- Iron; in the 1890s major deposits were discovered in Western Labrador; Labrador City plaqued 1977
- Nickel; closely tied to the Sudbury basin whose mines have produced most of the metal in this country since 1883; Sudbury plaqued 1983
- Silver; important mineral product for Canada's economy since the Cobalt boom of 1903; Cobalt plaqued 1986
- Uranium; Gilbert Labine's discovery of pitchblende at Great Bear Lake in 1930 led to the opening of Canada's first uranium mine; Port Radium plaqued 1978
- Nanaimo; first commercial coal mine in British Columbia, opened in 1852; 1924; Nanaimo 1927
- Nineteenth Century Shipbuilding at Québec; 25 shipyards built some 50 ships per year in the mid-19th century; 1957; Québec 1981
- Noorduyn Aviation Company's *Norseman*; a high-wing aircraft designed for bush flying in 1935; 1974; Dorval 1979
- Northwest Territories and Yukon Radio System; pioneer in radio communications over land as well as in the extreme conditions of the North; 1996; no plaque in place, Yellowknife or Dawson recommended
- Oil and Gas Extraction; Leduc was major Alberta oilfield in 1947-53 - replaced Turner Valley; 1955; Leduc, no date given
- Origins of Coal Industry in Alberta; this industry began in 1874; 1926; Lethbridge 1928
- Pacific Cable; initiative of Sandford Fleming - completed in 1902; 1927; Bamfield (B.C.) 1930
- Pulp and Paper Industry in Canada; one of the most important industries of 20th century Canada; 1987; no plaque in place, no recommended site

Railway Rolling Stock; representative carriages of the Canadian Railway Historical Association; 1961; Montreal, no date given

Shipbuilding in New Brunswick; a shipbuilding centre of importance in terms of the numbers of vessels built; 1995; no plaque in place, St. Martin's recommended

Shipbuilding in Nova Scotia; this industry grew with settlement in the 18th century; 1960; Yarmouth 1961

Soulanges Canal; built in 1892-99 to replace the old Beauharnois canal of 1842-45; 1929; Pointe-des-Cascades 1935

St. Laurent Class of Canadian Warship; first major vessels to be completely Canadian in concept and design; 1997; no plaque in place, Halifax recommended

System of Tide Gates (Aboiteaux); unique invention used by Acadians for more than three centuries to facilitate the drainage and cultivation of marshlands; 1997; no plaque in place, Memramcook (New Brunswick) recommended

Transatlantic Wireless; first West to East transatlantic message to England in 1902; 1938, Glace Bay 1951

Transportation in the Yukon; paddlewheeler, railway and air travel networks; 1967; Whitehorse 1981

W.D. Lawrence; Canada's largest square-rigged ship built in 1872-74; 1955; Maitland (Nova Scotia) 1965

Wabana Iron Ore Mines; Bell Island mines were a major source of ore, from 1895 to 1966; 1988; St. John's 1991

Welland Canal; completed 1829-33, linking Lake Erie to Lake Ontario - reconstructed in 1841 (i.e. the First and Second Welland Canals); 1924; St. Catharines 1924

White Pass and Yukon Railway; from Skagway to Whitehorse - completed Yukon rail access to the West Coast; 1986; Whitehorse 1988

Williamsburg Canals System; built 1844-56 as part of Great Lakes navigation system; 1929; Morrisburg, Ontario, 1978

Postscripts:

(1) The Register notes that a total of 847 Historic Sites were designated between 1919 and 1998. A total of 144 (or 17%) of them have been regarded here as engineering-related.

(2) Over this same period, the Board approved the nominations of 557 as Persons of National Historic Significance. The first list - the engineers - included 13 names (or 2.3% of the total), while the second list - the non-engineers - included 19 names (or 3.4% of the total).

(3) Over this same period, the Board approved 324 Events and Other Designations of National Historic Significance. Of these, a total of 82 (not including the seven specific areas of mining) (or 25%) have been considered relevant to engineering.

(4) To the above should be added two further HSMBC designations, both resulting from recommendations made recently to the Board by the Engineering Institute of Canada.

The first, in 1999, as an Event of National Historic Significance, was the design and construction between 1854 and 1859 of the Victoria Tubular Bridge across the St. Lawrence River at Montreal. The world's then-largest bridge, it was built under exceptionally trying conditions for a rigorous service life using techniques new to bridge construction.

The second, in 2001, as a Person of National Historic Significance, was Sir John Kennedy, whose engineering achievements included the building of the modern port of Montreal and the establishment of the Canadian Engineering Standards Board, now the CSA. Sir John was one of only a half-dozen Canadian engineers who received the accolade of knighthood in recognition of their achievements.

The erection of commemorative plaques is currently under discussion with Parks Canada.
