



THE ENGINEERING INSTITUTE OF CANADA

and its member societies

L'Institut canadien des ingénieurs

et ses sociétés membres

EIC's Historical Notes and Papers Collection

(Compilation of historical articles, notes and papers previously published as
Articles, Reports, Working Papers or Journals)

ENGINEERING HISTORY PAPER #115

“Sources of Engineering Historical Information”

by Andrew H. Wilson

(previously produced as Cedargrove Series #73/2024 – Apr 2024)

EIC HISTORY AND ARCHIVES

© EIC 2024

THE CEDARGROVE SERIES OF
DISCOURSES, MEMOIRS AND ESSAYS

#73/2024

SOURCES OF HISTORICAL INFORMATION

ABOUT ENGINEERING

by Andrew H. Wilson

April 2024

Abstract

The history of engineering (in Canada and elsewhere) is seldom the only or main subject of a book or lengthy paper. More often, it is included as part of a book's material/scope, and its presence is not always obvious to the reader. But some books, principally on other subjects, can actually be goldmines of the history of engineering and engineers.

The main purpose of this paper is to draw attention to some dozen or more of these 'goldmine' sources, where the historical content has been included, but not necessarily obviously, and can be useful historically, or where misconceptions/errors can be corrected.

About the Series

Principally, the Cedargrove Series is intended to preserve some of the research, writings and oral presentations that the author has completed in the last half-century or so, but has not yet published.

About the Author

He is a graduate in mechanical engineering (1949) and the liberal arts (1954). Now in his mid-nineties, he earlier held technical and administrative positions in industry in the United Kingdom and technical, administrative, research and management positions in the Public Service of Canada, from which he retired almost forty years ago. He became actively interested in the history of engineering on his appointment in 1975 to chair the first History Committee of the Canadian Society for Mechanical Engineering (CSME). He was later president of CSME and of its 'parent,' the Engineering Institute of Canada (EIC). He also chaired the CCPE's Canadian Engineering Manpower Council (CEMC) and the Canadian Association for the Club of Rome (CACOR), as well as the History Committees of CSME and EIC.

To set the Scene...

Engineering's history, in Canada and elsewhere, is mostly the province of the dedicated amateur. The professionals usually find much more of interest in political and economic matters. As a result, engineering's influence - here and elsewhere - is usually ignored in formal histories. The usual reason given for this is a lack of understanding of matters associated with it. This paper's intent is simply to help those who may just be interested find new sources of historical information on engineering that may not be considered useful initially.

The text that follows will list (only) a few of these potential sources and suggest how their value may be increased. This will also be the official **Source** list for this paper

Biographies...and the stories of specific cities and towns...

These are obvious sources, although the subjects of the biographies usually have principal connections to some other activity, such as business or politics.

One of those I found particularly useful was the biography of C.D. Howe, *The Life and Times of Clarence Decatur Howe*, by Leslie Roberts, Clarke, Irwin & Company Limited, Toronto, 1957.

Under *City/Town Stories* I would list the book on *Historic Amherst* by Pauline Furlong, Nimbus Publishing, Halifax, 2001, which includes information about the origins and growth of the well-known Robb Foundry and Engineering Company of Amherst.

Books solely about engineering...

These should obviously be included! The problem is that they are often used to commemorate an occasion important for engineering, but are then set aside and forgotten only a short time after their publication.

For example, *Mind, Heart and Vision, Professional Engineering in Canada, 1887 to 1987*, by Norman R. Ball, National Museum of Science and Technology, Canada, 1987, which was specially written by the author as part of the commemoration of the Centenary of Engineering as a Profession in Canada.

Also, *From Steam to Space: Contributions of Mechanical Engineering to Canadian Development*, edited by Andrew H. Wilson, 1996, which was specifically written (by a dozen or more authors) to commemorate the first 25 years of the existence of the Canadian Society for Mechanical Engineering.

Also, *Engineering in Plain sight: An illustrated field guide to the constructed environment*, by Grady Hillhouse, No Starch Press, San Francisco, 2023, which included projects of current interest in civil engineering, written by a 'science communicator,' for the lay person.

Books about specific engineering projects and achievements...

Again, these should obviously be included, of which the following are merely examples!

For example, *Michelangelo and the Pope's Ceiling*, by Ross King, Penguin Books, New York, 2003, which tells the story of the painting of the ceiling of the Sistine Chapel in Rome - in truth, an *engineering* achievement. (It posits, for example, that Michelangelo painted the ceiling standing up, on a scaffold, not lying on his back!).

Also, *The Engineering Book, from the Catapult to the Curiosity Rover, 250 Milestones in the History of Engineering*, by Marshall Brain, Sterling, New York, 2015.

Also, *30,000 Years of Inventions, breakthroughs, discoveries and accidents that changed human history*, by Thomas J. Crasughwell, Black Dog & Leventhal, New York, 2012. (This encyclopaedic book, and others in this category, provide an opportunity for checking on the histories of individual engineering achievements.)

Also, *Engineers of Victory, the problem solvers who turned the tide in the Second World War*, by Paul Kennedy, Harper Collins, Canada, Toronto, 2013

Also, *A Century of Innovation: Twenty engineering achievements that transformed our lives*, by George Constable and Bob Somerville, Joseph Henry Press, Washington, and the National Academy of Engineering, 2001.

Also, *Chip War, The fight for the world's most critical technology*, by Chris Miller, Scribner, New York, 2022. A treatise on the electronic revolution that began with the transistor.

Also, *Nucleus, The history of Atomic Energy of Canada Limited*, by Robert Bothwell, University of Toronto Press, 1988.

Also, *Song of the Clyde, a history of Clyde shipbuilding*, by Fred M. Walker, Thorsons Publishing Group, Cambridge, 1984.

Also, *The Shock of the Old: Technology & Global History since 1900*, by David Edgerton, Profile Books, London, 2019.

Also, *Engineer's Witness: A photographic Panorama of Nineteenth Century Engineering Triumphs*, by Ralph Greenhill, The Coach House Press, 1985.

Also, *The Encyclopedia of Ships*, General editor Tony Gibbons, Silverdale Books, Leicester, England, 2001.

Letters...

For example, *The Shackleton Letters: Behind the Scenes of the Nimrod Expedition*, by Regina W. Daly, The Erskine Press, Norwich, 2009. This book publishes letters between Shackleton and several other people during that Expedition, reminding us that we should not forget that the *correspondence* between participants in an engineering project may reveal important information about it and its history.

Specialist books...

For example, *Lines of Country: An Atlas of Railway and Waterway History in Canada*, by Christopher Andreae, The Boston Mills Press, Erin, Ontario, 1997. This very big book, with its hundreds of maps, photographs and descriptions provides an almost complete overview of the development of railways in Canada. It took two decades to produce.

Also, *Spanning Time: The bridges of Ottawa-Gatineau*, by Adriana David, Ottawa Press and Publishing, 2023. Subtitled, "A Northern City where three Rivers Meet," it provides details of the bridges (of all sizes and functions) crossing them.

Also, *Knowing what we know: The transmission of Knowledge*, by Simon Winchester. Really a text on epistemology, in which the reader should have an interest.

Also, *Faraday, Maxwell and the Electromagnetic Field, How two men revolutionized physics*, by Nancy Forbes and Basil Mahon; a physics textbook, not for the non-scientist!

Also, three books by Judith Dupre:

- (1) *Churches*, Harper Collins, 2001, stories of the building of cathedrals and other churches in mediaeval and later times,
- (2) *Skyscrapers*, a history of the world's most extraordinary buildings, Black Dog & Leventhal, New York, 2008. Describes the construction of something like 150 separate buildings from around the world - from the Washington Monument to Burj Dubai,
- (3) *Bridges*, a history of the world's most specular spans, Black Dog & Leventhal. Describes historically the building of bridges around the world, from the Pont du Gard, Nimes, France in 18 BC to the Danjiang Bridge, Taiwan, circa 2020 AD.

Lastly...

For example, the book, *The Power of Geography, Ten maps that reveal the future of our world*, by Tim Marshall, Scribner, New York, 2021. This book reminds us that, as well as history, *geography* can play a defining role in engineering, and should never be overlooked. Mountains and deserts, rivers and railways, and of course climate are all such considerations.