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“Engineering Stories”

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Abstract

This paper formed the basis of an oral presentation by the author in May 2018. The various stories have no unifying theme (except that they are related to engineering) and are presented in pairs in order to demonstrate how similar or different their objectives can be.

Time-wise, the various pairs have been drawn from the mid-19th century until quite recently, from two railway workshops, through sister-steamboats, to space-related research applications. They are also representative of the regions of Canada. Their treatment has been brief and factually, rather than argumentatively, historical. Fewer illustrations appear in this paper than were used in the presentation.

About this Series

Principally, the Cedargrove Series is intended to preserve some of the research, writings and oral presentations that the author has completed over the past half-century or so but has not yet published. It is, therefore, the modern-day variant of the privately-published books and pamphlets written by his forebears, such as his paternal grandfather and grandmother and his grandfather's brother John.

About the Author

He is a graduate in mechanical engineering and the liberal arts and has held technical, administrative, research and management positions in industry in the United Kingdom and the public service of Canada, from which he retired over 30 years ago.

He became actively interested in the history of engineering on his appointment to chair the first history committee of the Canadian Society for Mechanical Engineering in 1975 and served both CSME and the Engineering Institute of Canada in this capacity for varying periods until 2003. He has since researched, written and edited historical material for both organizations and for the Canadian Society of Senior Engineers. He is a past president of both CSME and EIC.

Introduction:

Parts of this paper were presented orally by the author to the Ottawa Kiwanis SAGE Group on 9 May 2018. The intention was to demonstrate to the Group the variety of Canadian engineering, but in a different form from the author's earlier presentations to it. There was no unifying theme this time, and the stories were told in related pairs. They also jumped around chronologically. However, the original collection was too long for the allotted speaking time and had to be shortened. This paper, however, includes all of the original stories, but only a few of the illustrations used in the presentation.

Two Railway Workshops:

The earliest railway locomotives, cars and rails were imported into Canada from Britain and the United States. James Good built the first locomotive in Canada in 1853 in Toronto.

The Grand Trunk Railway began construction of the first major railway workshop in Canada 1854, at Point St. Charles, Montréal, alongside the Lachine Canal and not far from the soon-to-be-completed Victoria Bridge. The plant, which replaced a smaller one at Longueuil, opened in 1857 and became a series of buildings between then and 1890 when, as has been noted in an account of this railway's growth:

The Grand Trunk shops at Point St. Charles, Montréal, were a virtual steam city, sprawling over thirty acres, with iron foundry, rolling mill, wheel mill, smithy and thousands of boilermakers, machinists, electricians, moulders, pattern makers, pipe fitters, metal workers and carpenters.

Its machine shop was huge. The railway's main line ran through the plant. Housing for its workers and their families was built nearby.

Its main jobs were the construction, overhaul, repair and re-manufacturing locomotives and rolling stock, including sleeping and passenger cars and a variety of types of box and freight cars. But for much of the steam era, the Grand Trunk could not supply all of its locomotive needs internally and had to buy quite a few from the Canadian Locomotive Company in Kingston and the Montréal Locomotive Company. Nevertheless, during the steam era, PSG built over 700 locomotives, beginning with the *Trevethicks*, one of which pulled the Prince of Wales' car when he came to open the GTR's Victoria Bridge in 1860, and the *Moguls*, which were designed by its long-time superintendent Herbert L. Wallis.

During both World Wars, Point St. Charles - like so many other Canadian manufactories - made ammunition and armaments.

However, by the middle of World War I the Grand Trunk's financial picture was deteriorating and this continued until 1923 when the Dominion Government came to the rescue. The GTR and its subsidiaries became part of the Canadian National Railway Company which, later in the 1920s, modernized the PSG Shops.

