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"Engineering When I Was Very Young"

by Andrew H. Wilson
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Abstract

This paper deals quite briefly with the kinds of engineering projects that were being carried out in Canada and throughout the world during the early years of the Great Depression.

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 25 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 has been active ever since in research, editing and writing on behalf of that Society, the Engineering Institute of Canada and the Canadian Society for Senior Engineers. He has also served as president of EIC and CSME.

Introduction

This paper has its origin in a talk delivered by the author to the Ottawa Kiwanis SAGE Group - retired men, average age 82 - at Woodroffe United Church on 19 November 2013. It deals very briefly with some of the engineering projects that were being pursued in Canada and in various parts of the world during the years from 1928 until 1932 - the early years of the Great Depression. Projects under way did not necessarily stop during these years. On the other hand, some took longer to complete; others were finished more quickly. Some were not begun.

The text that follows is a little longer than the one that was delivered orally. Some of the illustrations used have been added.

The Text.....

As it happened, I was born in 1928. By 1932 the Great Depression was in full swing. No doubt others in the audience would remember these years, although their recollections of them might be quite different from mine.

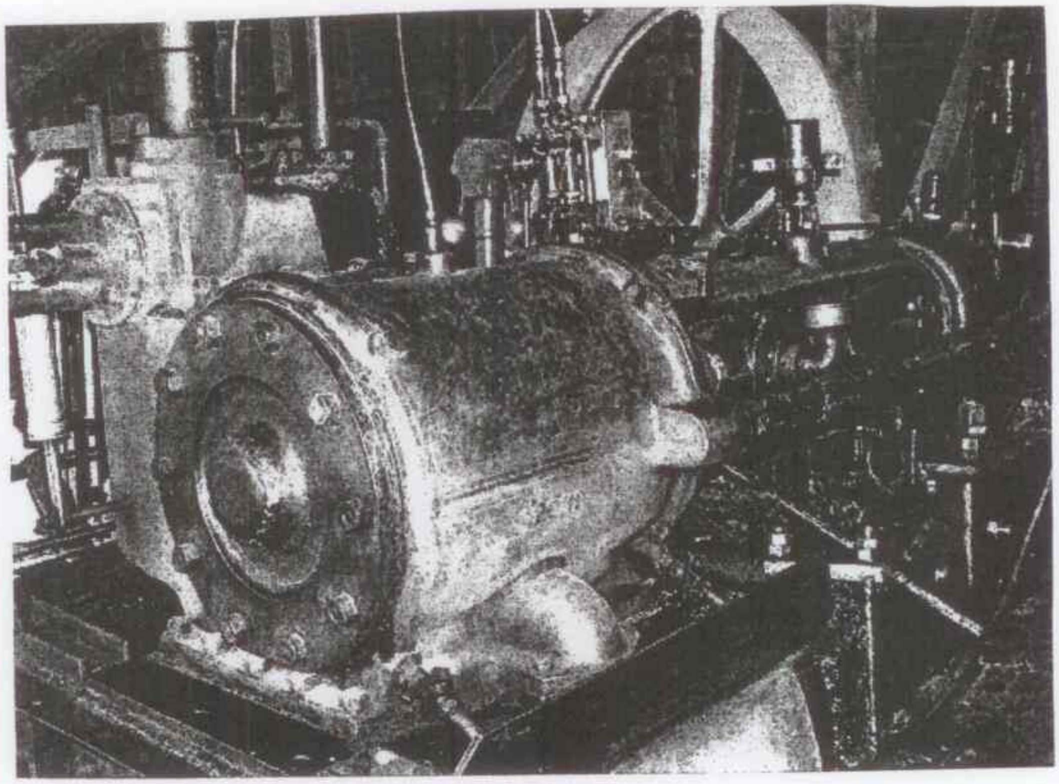
I was born in Scotland, not in Canada, but still experienced the Depression. My father was in business. My mother had taught school up until she married. Her university major was history, which helps explain in part how I became fascinated with its study. My earliest interest in engineering began around 1932. It was awakened when I became familiar with the diesel engine that provided power for the machinery in my father's feed store and was housed at the back of the building. It was a Ruston & Hornsby single-cylinder horizontal engine, with a bore of around eight inches and a two-foot stroke, a power take-off, and a four-foot diameter flywheel. I don't remember its working speed.

The engine was started using compressed air and happily made its characteristic diesel thumping noise during every working day. I was taken occasionally to watch it work, held firmly by the hand. My ambition at the age of four was to be allowed to start it. But this had to wait until I was an apprentice in a marine engine plant that made very much larger Burmeister & Wain multi-cylinder ships' diesel engines, ones that had three-foot bores, six-foot strokes, huge flywheels, and turned at something like 80 rpm.

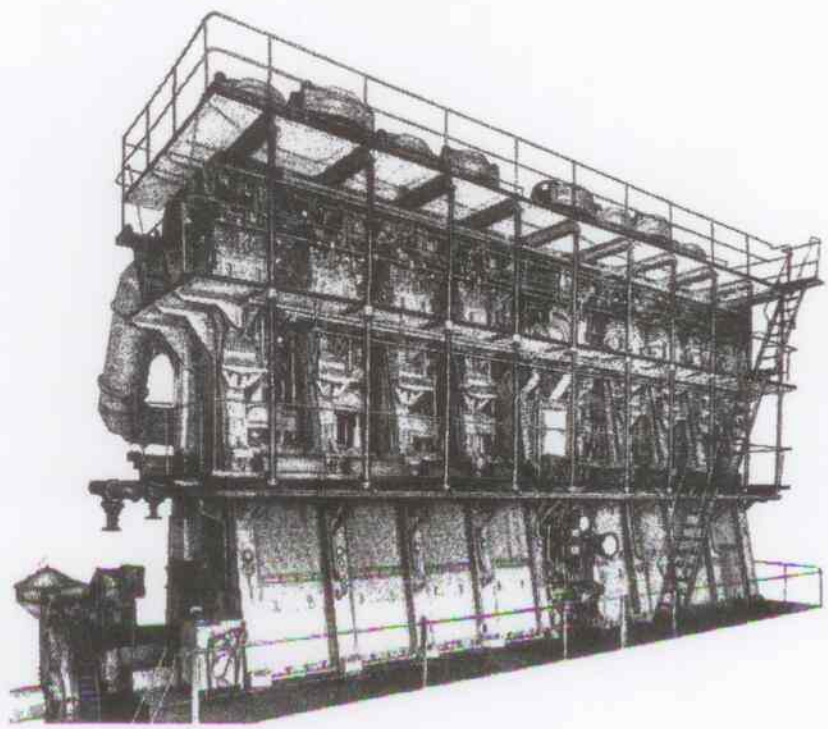
The fact that there was a Depression in progress in Canada during the period I am talking about did not mean there was no engineering going on either there or elsewhere. But the effects of over-production in the primary sector were being felt internationally. No one was buying. The products of secondary industries in this country were hard to sell. Immigration ceased for the duration. Emigration did not.

Some evidence of the effects of the Depression among Canadian engineers - though less severe perhaps than in some other groups within the workforce - can be found in the membership statistics of the Engineering Institute of Canada, the national society to which most engineers belonged at that time. Corporate (or professional) membership in 1928 was around 3,500. By

A Ruston engine……



And a Burmeister & Wain…



1932, it had fallen to 3,100, or by around 11 percent. However, the figure for 1932 included 300 or so members who had applied to the Institute's program of help in finding jobs. Numerically, the largest drop was in the membership living abroad, mostly in the United States, followed by Ontario, British Columbia, the Prairies, Québec and the Maritimes. Indications were that plants in the manufacturing sector were the most affected, and that a goodly number of these were branch plants.

In a world-wide engineering context, **1928** was the year in which: the first regular aeroplane flights between Europe and Australia began; the first colour motion picture and TV broadcasts were made in the U.S. and in England; sliced bread was sold for the first time; penicillin was discovered; the German dirigible *Graf Zeppelin* flew the Atlantic and later set a flight distance record of 4,000 miles; the first autogyros (predecessors of the helicopter) flew in Europe and the United States; the first *Plymouth* automobile came off the line in Detroit in June (and 58,000 of them were to be shipped before year-end); an iron-lung respirator was used for the first time in a polio case in Boston; cartoon character Mickey Mouse was 'born'; the only major engineering disaster was the failure in March of the St. Francis Dam, north of Los Angeles in California, in which 600 people lost their lives, although one of the Florida hurricanes killed 3,000 in September; W. L. Mackenzie King was Canada's prime minister; and Herbert Hoover won the U.S. presidential election in November. If your father drove a Buick in 1928, it would likely have looked like this one…

Uncle Jimmy's car…

actually a 1926 Buick