



B O O K S

The best of the last century

A Century of Innovation: Twenty Engineering Achievements That Transformed Our Lives

George Constable and Bob Somerville for National Academy of Engineering, US \$45 hardcover, ISBN: 0-309-08908-5, 256 pages, Joseph Henry Press

The authors reveal engineering secrets that will fascinate engineers and non-engineers alike. The last century of the millennium was one of tremendous ingenuity and invention. In 1900, the average life expectancy of a male in North America was 47 years, so the authors set out to describe the role engineers played in extending this to 77 years by 2000.

The book is written in a modular format so chapters can be read in any order. Every chapter features a personal reflection by a notable engineer, including Bill Gates, father of the PC; Bill Anders, Apollo 8 astronaut renowned for his Earth-rise photograph; and Wilson Greatbatch, inventor of the implantable cardiac pacemaker (inventor of the first pacemaker was Jack Hopps, P.Eng., of the National Research Council of Canada). There are also a poster and timeline that name many other engineers who have significantly changed our lives.

Like a good novel, the book delves into myriad exciting details that would be trivialized by merely cataloguing each in turn—it leaves the reader curious to probe deeper. The stories are easy to read, and

well illustrated with highly visible engineering feats presented for us to appreciate anew.

Unlike most engineering histories, the book ignores the marvels of steam, both on land and sea. Steam came of age in the 19th century, and although several of our modern innovations were born then, they matured in the 20th. Electricity tops this top 20 list—without it, over half of the other innovations could not have been created.

In 1895, Thomas Edison predicted that the wonder of the 20th century would be the automobile, and by 1900 there were 10,000 cars, 75 per cent of which were electric! The second chapter looks at the exponential growth achieved by another great innovation: the assembly line. Hydraulic brakes appeared in 1922, flashing turn signals in 1935, and “air conditioning” in 1939. Engineering also entered our homes as never before. Chapter 15 reveals that General Electric sold its first electric toaster in 1909, while a civil engineer produced the first (wagon-mounted) vacuum cleaner in 1901, and the first microwave, which weighed over 340 kg, in 1947.

Share the authors’ engineering pride, buy a second copy for your office or donate one (or more) to a local school library. It’ll be well worth it.

Reviewed by Peter Broad, P.Eng., a London, ON-based consultant for the environmental and resource industries in Canada and overseas.



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