

AN ENGINEER'S ALPHABET

Gleanings from the Softer Side of a Profession

Written by America's most famous engineering storyteller and educator, this abecedarium is one engineer's selection of thoughts, quotations, anecdotes, facts, trivia, and arcana relating to the practice, history, culture, and traditions of his profession. The entries reflect decades of reading, writing, talking, and thinking about engineers and engineering, and range from brief essays to lists of great engineering achievements. This work is organized alphabetically and more like a dictionary than an encyclopedia. It is not intended to be read from first page to last, but rather to be dipped into here and there as the mood strikes the reader. In time, it is hoped, this book should become the source to which readers go first when they encounter a vague or obscure reference to the softer side of engineering.

Henry Petroski is the Aleksandar S. Vesic Professor of Civil Engineering and a professor of history at Duke University. He has written broadly on the topics of design, success and failure, and the history of engineering and technology. His fifteen books on these subjects include *To Engineer Is Human*, *The Pencil*, *The Evolution of Useful Things*, *Success through Failure*, and *The Essential Engineer*. In addition to his books, which have been translated into more than a dozen languages, Petroski has written numerous general-interest articles for publications including the *New York Times*, *Washington Post*, *Los Angeles Times*, and *Wall Street Journal*, and he writes regular columns for both *American Scientist* and *ASCE Prism*. Petroski is a Distinguished Member of the American Society of Civil Engineers and is a Fellow of both the American Society of Mechanical Engineers and the Institution of Engineers of Ireland. He is an elected member of the American Academy of Arts and Sciences, the American Philosophical Society, and the U.S. National Academy of Engineering.

Other Books by the Author

To Engineer Is Human: The Role of Failure in Successful Design
Beyond Engineering: Essays and Other Attempts to Figure without Equations
The Pencil: A History of Design and Circumstance
The Evolution of Useful Things
Design Paradigms: Case Histories of Error and Judgment in Engineering
Engineers of Dreams: Great Bridge Builders and the Spanning of America
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To Stephen and Laura

Preface

This abecedarium is one engineer's collection of thoughts, quotations, anecdotes, facts, trivia, arcana, and miscellanea relating to the practice, history, culture, and traditions of his profession. The entries, which represent the distillation of decades of reading, writing, talking, and thinking about engineers and engineering, range from brief essays on concepts and practices that are central to the profession to lists of its great achievements. This book is at the same time an anthology, a commonplace book, and a reference volume.

My approach in composing the entries has generally been to convey as much information in as little space as possible, to create more of a dictionary-like than an encyclopedia-like sense of the topic under discussion. In no case is an entry meant to be definitive or exhaustive, and so references to further information are provided freely. However, I have included no references to the World Wide Web, not only because web sites can come, go, and change so unpredictably, but also because it can be easier to query a reliable search engine than to type in correctly a long web address.

This volume is not intended to be read from first page to last, but rather is meant to be dipped into here and there as the mood strikes the reader, with the alphabetical arrangement promoting serendipity. In time, it is hoped, this book will become the source to which readers come first when they encounter a vague or obscure reference to something related to the softer side of engineering. To minimize the need to follow cross-references, some especially relevant information is paraphrased, rather than repeated verbatim, in separate entries. An index of proper names is included to aid the reader seeking to locate references

to individual engineers and to specific engineering institutions, organizations, projects, or landmarks.

Many of the entries in this volume may seem woefully incomplete, even by dictionary standards; I encourage readers to send me additional information that could help flesh out a topic in a possible future edition. Suggestions for additional entries are likewise welcome. I also would appreciate hearing about any inaccuracies that may have crept in and persisted throughout the writing and production process. I can be reached through the Department of Civil and Environmental Engineering, Duke University, Box 90287, Durham, NC 27708, or via e-mail at petroski@duke.edu. Needless to say, any errors that are here are my responsibility alone.

Some of the entries in this compendium were published first in my “Refractions” column, which appears in each issue of *ASEE Prism*, the magazine of the American Society for Engineering Education. A few other entries first saw the light of day as short essays in the *Wall Street Journal* and other publications. But the overwhelming majority of the material contained herein is original with this volume.

I am grateful to Peter Gordon and his colleagues at Cambridge University Press who embraced this project with enthusiasm. I am indebted to Michael Fisher, an early reader, for his persistent encouragement and for his good sense about what to leave out of a book like this. And, as always, I am grateful to my wife, Catherine, for her sympathetic reading of the manuscript in its earliest form and for her critical reading of it in its latest. Having lived as the spouse of an engineer for forty-five years (and as a daughter and a mother of engineers), she has developed a keen sense of the beast and its professional habits.

*Henry Petroski
Arrowsic, Maine
Summer 2011*