ChE book review

Technical Career Survival Handbook. 100 Things You Need to Know

by Peter Y. Burke P.E.,

London: Academic Press/ Elsevier, 2017, ISBN: 978-0-12-809372-6, 267 pages, 6×9 inch paperback, $44.95 at Amazon

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Peter Burke is a mechanical engineer who had a very diverse career averaging five years with each employer. In this book he uses his career, the careers of friends, and literature data to explore technical (mainly engineering) careers. The book is divided into five parts containing 100 very short "chapters," the last one being a glossary. There is also a list of Further Reading and a useful index.

The chapters can be divided into three groups based on the author's personal experience and interest in the topic. In the most interesting chapters he tells stories of his and other engineers' experiences. Some chapters where he does not tell stories are partially rescued by data of interest to engineers; however, a number of chapters have neither stories nor data.

Part I on Preparing for the Work Force has a dearth of stories. Because this section is generally uninspiring, I cannot recommend this book for new graduates. Selinger's book *Stuff You Don't Learn in Engineering School*, IEEE Press, 2004, is more appropriate for new graduates.

Chapter 5 has a story about the author's brother who found after several years as an engineer that his interest in numbers instead of theory meant accounting was a better fit than engineering. I have seen the same confusion in students. Advisors should suggest accounting to struggling engineering students who were good in math in high school. In chapter 14 Burke quotes an interesting report on 10 cities with booming manufacturing. In chapter 16 on women engineers he has collected interesting data including U.S. Census Bureau data that one in five female engineering and science graduates leave the technical work force compared to one in 10 males.

Part II on employment challenges starts with a number of uninspired short chapters that essentially define terms such as part-time and temporary work. Chapters 29 and 30 show what could have been done to make Part II more interesting. Chapter 29 has an example of an engineering job description and 30 has average salaries for different types of engineers (ChE are second in mid-career salary behind petroleum engineers). Chapter 34 has flow charts of company organizations that may help new engineers navigate internal politics. The author's personal experiences with privately owned companies (38) and foreign owned companies (43) led him to suggest caution when considering working for these companies. Having worked in union and nonunion shops, the author gives a very balanced presentation on the advantages and disadvantages of unions (Chapter 49). Chapter 50, Utilities, contained the biggest surprise in the book. Because the author's company worried that the low bidder on a contract was too low and might go bankrupt in the middle of the project, his company worked with the low bidder to come up with a more realistic bid and then accepted that bid. Chapter 56 on telecommuting closes with the observation, "I prefer to work in the office for focus, fewer distractions, the available IT support, and interfacing with coworkers."

The author had considerable experience on job searches for experienced engineers (Part III). Although resumes are an overworked topic, his example resume (58) is useful for experienced engineers. Since the author was a headhunter for a short period, his Chapter 59 on working with headhunters and 62 on counteroffers—"the headhunter's worst nightmare"—contain excellent advice.

Part IV discusses many job aspects such as industry standards (Chapter 68) that are not usually covered in ChE curricula. Do our graduates know enough about OSHA requirements and the ASME Boiler and Pressure Code? Are they aware of the personal protection equipment that should be used in different workplaces (Chapter 73)? Are they trained in using commercial scheduling software (75)? Do they know the importance of specifications such as scope of work (Chapters 78 and 83)? And why do so few ChE graduates become professional engineers (PE)(72)? The author is a PE and clearly thinks the benefits of becoming a PE were worth the effort. Finally, chapter 99 is a summary of good advice, much of it useful in an academic environment. I believe the main use of this book in ChE departments is to push curriculum committees to consider items that textbooks often do not cover.

Since only about 30 of the 100 chapters appear to be useful, the reader needs to be selective. The cost of $44.95 for 267 pages at first seems not unreasonable, but the publisher has designed the book with an enormous amount of white space—approximately 29% of the numbered pages. ❐