

## **Practical Use of the Slide Rule – College Outline Series, Calvin Bishop, 1947**

According to the Preface, the purpose of this text is to 'explain by easy and reliable methods how one can use the slide rule to perform accurate mathematical calculations.' The presentation is aimed at college freshman-level students of science and engineering. The author maintains that his methods are "...suitable for both classroom work and for home study."

The text consists of two parts. Part I (41 pages) gives a detailed exposition of the use of the Mannheim and Polyphase slide rule. Routine operations such as multiplication; division; squares, cubes and their roots; trig operations; and logarithms are discussed in sufficient detail but essentially no theory is provided. In the six page discussion on logarithms, the application to slide rule construction and use is generally discussed, but there is no elaboration of theory.

Part II (47 pages) provides illustrations and charts of operations for: the K&E 4071-3 Polyphase Duplex Trig, the K&E 4080-3 Log Log Duplex Trig, the K&E 4083-3 Log Log Duplex Vector, the Post (Hemmi) 1461 Log Log Vector, and the Langsner Industrial Slide Rule. The charts for each rule are well done and each can serve as a kind of 'mini-manual' or 'cheat sheet' to remind the user how to use all the various scales on these rules. The chart on the Post-Hemmi rule is interesting because it provides instructions on the use of the rule's relatively uncommon Gudermanian (Ge) scale.

The examples and exercises in both Parts I and II are generally purely numeric and not applied in nature (except for those involving the Langsner rule which are all applied, as you might expect). Appendix A adds another seven pages of numeric exercises, but Appendix B provides 31 pages of well-designed applied exercises in mensuration, trigonometry, mechanics, civil and electrical engineering, chemistry, and thermodynamics. The text includes no index. This is annoying but not devastating, due to the design of the book and its Table of Contents.

In summary, Bishop presents a well-done set of instructions on 'how' to use slide rules of relative complexity, and accompanies those with useful example exercises, both pure and applied. There is, however, little theoretical information supplied.