Understanding the Slide Rule, Graesser, 1968

The text seems to be aimed at students who have some need for a mechanical aid in calculating but who may have only a rudimentary background in mathematics. According to the Preface, "Topics needed from algebra are introduced so that the book may be studied with only a background of arithmetic. No knowledge of trigonometry is assumed. The trigonometry used is explained in the book." The first four chapters cover Directed (signed) Numbers and Equations, Powers and Scientific Notation, Computation with Approximate Data (significant figures and precision in calculation), and Common Logarithms. Use of the slide rule is introduced only in Chapter Five. While the book could be useful either in a classroom environment or in self-study, its strength probably lies in the latter application.

As indicated above, the author emphasizes an understanding of the background and processes of calculation; there is essentially no use of practical or applied examples or exercises, only purely numerical ones. In each chapter concrete, specific rules are developed and stated for both mathematical operations, and for the use of various scales to obtain calculation results. These rules and their use is an integral part of the text's approach to learning. Answers to all end-of-chapter problems are provided.

No specific slide rules or manufacturers are recommended, but, in a separate section at the front of the book, illustrations are provided of Dietzgen's 1779 Pocket Log, 1738 Decimal Trig Log Log, and N1725 Vector Log Log; Pickett's 902 Simplex Trig, 1011 Standard Trig/Exponential, and Model 4 Vector Log Log; and K&E's 4181 Log Log Duplex Decitrig. Illustrations of scales in the chapters are almost non-existent, and where included, are simply generic line drawings. The scale set covers all slide rules commonly in use, including all the usual scales plus hyperbolic trig scales and the Pythagorean scale.

The convenient set of rules developed in the text is summarized as an addendum. There is a well-organized 4 and one half page index.

Steve K. Seale. 2013