

The Slide Rule, A TutorText, Saffold and Smalley, 1962

First of all, this is a programmed learning text, not a normal textbook. If you don't know what that means, an explanatory note is in order.

Programmed learning was a tool first implemented in the 1960's. It uses three elements: (1) information delivered in small bites, (2) self-paced learning, and (3) immediate feedback to the student, both positive and negative. When employed in book form, it will take a form in which a small piece of information, perhaps a paragraph or two, is presented followed by a test question or problem on that information. Depending on the student's answer to the problem, he/she will then be directed to jump to some other (not usually the following) page on which their answer, correct or not, will be discussed and explained. This will be followed by the presentation of another small block of information, another test question, and another jump to a page on which the student's answer is discussed. In this way, the student proceeds through the book, not sequentially page after page, but jumping around forward and backward as the text dictates. Some pages may never be read, depending on the student's answers to the questions or problems. Such a book cannot be usually read sequentially from front to back because the information within it is not presented sequentially. A programmed learning text is by definition a self-study aid and cannot be practically used in a classroom setting.

The Preface to the Saffold & Smalley text cites the slide rule's benefit for "...students, technicians, engineers, scientists, statisticians, and businessmen...", and explains that their book assumes "...the reader has only an elementary knowledge of simple arithmetic, algebra, and plane geometry."

The text covers the logarithmic background for slide rule construction and use adequately. The exercises and problems included are a mixture of purely numeric and applied. Two separate chapters are devoted to very applied word problems in the areas of science and engineering. The text addresses the precision of slide rule calculations in an interesting and most useful way by making that issue an integral part of problem solving. As an example, one problem asks if a certain roll of steel can be shipped in an aircraft which can accept only 1600 pounds of additional weight. Details and measurements of the steel are given to allow the weight of the roll to be calculated and the results indicate that the roll weighs slightly less than 1600 lbs. But the text then shows how inherent uncertainties in the calculations and numbers used could cause the roll to actually weigh more than the 1600 lbs. This attention to the importance of the uncertainty in calculations is continued through other example problems. It is an excellent way to deal with this issue; rarely handled as well in other slide rule instruction texts.

No specific slide rules or manufacturers are recommended. The scale set used is generally that encountered in Mannheim/Polyphase rules, although Log-Log scales are referred to at one point.

There are no addenda or appendices. The index is a little over one page in length and is of limited value.