

CONTENTS

	Page
I. Introduction	9
II. Historical Data	9
III. Slide-rule Construction	9
3. Main components	9
4. The stock	10
5. The slide	10
6. The indicator	10
7. Material and graduations	10
IV. Slide-rule Scales	11
8. Identification and length	11
9. The scales and their use	11
V. Slide-rule Models	12
10. Classification	12
VI. Selecting the Slide Rule	13
11. Length and model	13
12. Engineering students	13
VII. Adjusting the Duplex-type Slide Rule	13
13. Stock adjustment	13
14. Indicator adjustment	13
VIII. Care of the Slide Rule	14
IX. Manipulating the Slide Rule	14
16. Slide settings	14
17. Indicator settings	15
X. Logarithms	15
18. Definition	15
19. Bases for logarithms	15
20. Common logarithms	16
21. The characteristic	16
22. Laws of logarithms	17
XI. Theory of the Slide Rule	17
23. "Gunter's line"	17
24. Multiplying	18
25. Dividing	19
26. Second scale	20
XII. The C and D Scales	20
27. Introduction	20
28. Graduation	20
XIII. Reading the C and D Scales	21
29. Introduction	21
30. Setting numbers	22
31. Reading numbers	22
XIV. Accuracy and the Slide Rule	22
32. Accuracy of results	22
33. Precision in measurement	22
34. Factors affecting accuracy	23

CONTENTS

	Page
XV. Multiplying and Dividing — The C and D Scales	23
35. Similarity of the simple scales	23
36. Multiplying	24
37. Dividing	25
XVI. Locating the Decimal Point	26
38. Introduction	26
39. The inspection method	27
40. The powers-of-10 method	27
41. The logarithmic-characteristic method	28
42. The point-position number method	31
XVII. Combined Multiplication and Division — the C and D Scales	31
43. A problem of the type $\frac{a \times b}{c}$	31
44. Decimal place	32
XVIII. Ratio and Proportion with the Slide Rule	33
45. Ratios and proportions	33
46. Proportion method	33
47. Decimal place	34
XIX. The Folded Scales — CF and DF	34
48. Introduction	34
49. Multiplying and dividing by π	34
50. The primary use	34
51. Decimal place	35
XX. The Inverted Scales — CI and CIF	35
52. Introduction	35
53. Reciprocal relationships	35
54. Theory of the inverted scales	36
55. Multiplying — the CI and D scales	36
56. Dividing — the CI and D scales	37
57. DI and CIF scales	38
58. Decimal place	38
XXI. Combined Operations	38
59. Introduction	38
60. Principles	39
61. Problem types	39
62. π as a factor	41
63. Setting problems with the folded scales	41
64. Center-drift method	41
XXII. Squares and Square Roots — The A and B Scales	42
65. The A and B scales	42
66. Involution and evolution	42
67. Squares and square roots	43
68. Decimal place — squaring	43
69. Square roots	43
70. Decimal place — square roots	45
71. Combined operations	45

CONTENTS

	Page
XXIII. Cubes and Cube Roots — The K Scale	46
72. The K scale	46
73. Position of the K scale	46
74. Cubes and cube roots	47
75. Decimal place — cubing	47
76. Cube roots	47
77. Decimal place — cube roots.	49
78. Combined operations	49
XXIV. Logarithms and the L Scale	50
79. Graphic table of logarithms.	50
80. Powers and roots	50
XXV. The Trigonometric Scales — S, ST, and T	51
81. Introduction	51
82. Position of the scales	51
83. Sine scales	51
84. Solving problems with the sine scales	52
85. Cosines	53
86. Secants and cosecants	54
87. Summary of the S scale.	54
88. Mannheim slide rules	54
89. Tangent scale	54
90. Tangents	55
91. Cotangents	56
92. Trigonometric functions for very small angles	56
93. Combined operations	56
XXVI. The Log Log Scales.	57
94. Introduction	57
95. Description of the scales	57
96. Reading the LL scales	59
97. Basic operations.	59
98. Raising a number to a power	60
99. Extracting roots	62
100. Numbers beyond the limits of the LL scales	62
101. Finding exponents	62
102. Logarithms to any base	63
103. Powers of e	63
104. Natural logarithms.	64
105. The hyperbolic functions	64
Problem Sheets	67