INDEX

- Abbreviations, p. 7
- Analysis of correlation between two variables, Appendix III (p. 69)
- Allocation of test specimens—probit method, Table 1 (p. 11)
- Analysis of fatigue data, p. 22
- Areas of the Normal curve, Table 28 (p. 61)
- Arithmetic mean, p. 5
- Average, sample, p. 5
- χ^2 /d.f. distribution, percentiles of, Table 30 (p. 63)
- χ^2 distribution, percentiles of, Table 27 (p. 60) χ^2 , p. 32
- Choice of distribution shape, p. 40
- Computations for fitting a response curve by method of least squares, p. 34, Table 16 (p. 34)
- Computation of significance tests, Table 20 (p. 46)
- Computation of standard deviation of values about fitted line, Table 17 (p. 36)
- Confidence coefficient, p. 5
- Confidence interval, pp. 5, 26, 27, 28, 42, Table 9 (p. 26), Table 10 (p. 27), Table 11 (p. 28)
- Confidence level, p. 5
- Confidence limits (see confidence interval)
- Constant amplitude tests, pp. 1, 9-13
- Constant life fatigue diagram, p. 14
- Construction of Weibull probability paper from log-log paper, Fig. 13 (p. 73)
- Correlation between two variables, Appendix III (p. 69)
- Cycle ratio, p. 4
- Definitions, p. 2
- Definitions relating to fatigue tests and test methods, p. 2
- Definitions relating to statistical analysis, p. 4
- Definitions relating to statistical analysis of fatigue data, p. 6
- Difference among k means, p. 47
- Difference between two means, pp. 21, 45
- Difference between two standard deviations, pp. 20, 44
- Distribution, p. 4, Table 27 (p. 60), Table 30 (p. 63), Table 32 (p. 65), Fig. 6 (p. 22)
- Distribution curves, Fig. 12 (p. 72), Fig. 6 (p. 22)
- Distribution shape, choice of, pp. 22, 40
- Estimate, p. 5
- Estimate, interval (see confidence interval)
- Estimate, point, p. 5

- Estimates of parameters, single stress level, pp. 18, 40, 76
- Estimates, mean rank—Weibull distribution function, Table 36 (p. 74)
- Estimation, p. 4, Fig. 14 (p. 76)
- Estimation, Weibull distribution function parameters, Fig. 14 (p. 76)
- Fatigue, p. 2
- Fatigue data (see analysis of), p. 22
- Fatigue life, pp. 2, 6, 27, 39
- Fatigue life for a stated value of per cent survival, p. 28
- Fatigue life for p per cent survival, p. 6
- Fatigue limit, p. 3
- Fatigue limit for p per cent survival, p. 6
- Fatigue notch factor, p. 4
- Fatigue notch sensitivity, p. 4
- Fatigue strength, p. 6, Fig. 8 (p. 51)
- Fatigue strength for p per cent survival at N cycles, p. 6
- Fatigue test data, Table 12 (p. 30), Table 13 (p. 31), Table 37 (p. 75), Table 38 (p. 75), Table 39 (p. 77)
- Fatigue tests, p. 1
- F-distribution, Table 32 (p. 65)
- F-ratio test, pp. 45, 47
- Frequency distribution, p. 4
- Gaussian distribution curve, Fig. 6 (p. 22)
- Group, p. 4
- Increasing amplitude tests, pp. 1, 13, Fig. 4 (p. 14), Fig. 5 (p. 15)
- Interval, pp. 5, 9
- Interval estimate, p. 5
- k-factors for S-N curves, Table 33 (p. 67)
- Least squares, method for fitting a response curve, Table 16 (p. 34)
- Level, confidence, p. 5
- Level, significance, p. 6
- Level, tolerance, p. 5
- Limits, confidence, p. 5
- Limits, fatigue strength at N cycles, p. 38
- Limits, method of computing, Table 19 (p. 38)
- Limits, tolerance, p. 5
- Maximum stress, p. 3
- Mean, confidence interval for, p. 19
- Mean, definition, p. 5
- Mean, confidence limits for, Table 10 (p. 27)
- Mean fatigue life, p. 27
- Mean, sample, p. 21

- Mean rank estimates: per cent of population failed corresponding to failure order in sample, Table 36 (p. 74)
- Means, confidence interval for, p. 42, Table 2 (p. 19)
- Means, differences between two, p. 45
- Means, differences among k, p. 47
- Mean stress, p. 3
- Mean, Weibull, Table 36 (p. 74), Fig. 15 (p. 77)
- Median, confidence limits for, Table 9 (p. 26)
- Median fatigue life, pp. 6, 26
- Median fatigue strength at N cycles, p. 6
- Median percentage of survivors for the population, Table 8 (p. 24)
- Median, sample, p. 43
- Medians, differences of group, p. 29
- Method of least squares, pp. 34, 35, Table 16 (p. 34)
- Minimum per cent of population exceeding median of low ranking points, Table 25 (p. 56)
- Minimum stress, p. 3
- Modified staircase test method, pp. 1, 13, 48, 49
- Moore rotating beam step test, Table 21 (p. 50), Table 22 (p. 51), Fig. 8 (p. 51)
- $u_{0.025}$ and $u_{0.975}$ for runs among elements in samples of sizes N_1 and N_2 , Table 31 (p. 64) Nominal stress, p. 2
- Normal curve, areas of, Table 28 (p. 61)
- Normal distribution curve, Fig. 6 (p. 22)
- Normal distribution of fatigue life, p. 39
- Normal distribution, k-factors for S-N curves, Table 33 (p. 67)
- Number of test specimens, minimum, pp. 16-21, Table 2 (p. 19), Table 3 (p. 19), Table 4 (p. 20), Table 5 (p. 20), Table 6 (p. 21), Table 7 (p. 21)
- Parameter, pp. 4, 18, 26, 40, Fig. 14 (p. 76), Fig. 16 (p. 77)
- Per cent of specimens having at least the indicated fatigue strength at 10⁸ cycles, Fig. 8 (p. 51)
- Per cent survival for a stated value of fatigue life, p. 27
- Per cent survival values at N cycles, confidence limits for, p. 37
- Percentiles of the χ^2 distribution, Table 27 (p. 60)
- Percentiles of the $\chi^2/d.f.$ distribution, Table 30 (p. 63)
- Point estimate, pp. 5, 26-29
- Population, p. 4
- Probability-stress-cycle curve, Fig. 1 (p. 10)
- Probability paper, pp. 33, 73
- Probit test—allocation of test specimens, Table 1 (p. 11)
- Probit test data, Table 15 (p. 34)
- Probit test method, p. 10
- Prot test, pp. 1, 15, 52, Table 23 (p. 52), Fig. 9 (p. 53)

- "Quadrant sum" correlation test, Appendix III (p. 69)
- "Quadrant sum," working significance level, Table 34 (p. 69)
- Range of stress, p. 3
- Rank test, pp. 25, 30, 31, Table 25 (p. 56), Table 26 (p. 58)
- References, p. 79
- Response curves, pp. 7, 18, 33, 34, 36, 38, Fig. 7 (p. 35), Table 16 (p. 34)
- Response or survival tests, pp. 1, 10, 12, 13, Fig. 2 (p. 11)
- Rotating beam tests, R. R. Moore, Table 21 (p. 50)
- Run test, Appendix II (p. 68)
- Runs along elements in samples of sizes N_1 and N_2 , Table 31 (p. 64)
- Sample, p. 4
- Sample average, p. 5
- Sample means, p. 21
- Sample median, p. 5
- Sample standard deviation, p. 5
- Sample percentage, p. 5
- Sample variance, p. 5
- Scatter diagram, Fig. 11 (p. 70)
- Selection of test specimens, pp. 16, 17, 19
- Significance level, p. 6, Table 34 (p. 69)
- Significance level, for "quadrant sum," Table 34 (p. 69)
- Significant, p. 5
- S-N curve for 50 per cent survival, p. 6
- S-N curve for p per cent survival, p. 7
- S-N curves, pp. 6, 7, 17, 19, 23, 25, 40, 41, Table 8 (p. 24), Table 25 (p. 56), Table 33 (p. 67)
- S-N diagrams, p. 3
- Staircase test method, pp. 1, 48, Fig. 3 (p. 12)
- Standard deviation, pp. 19, 44–46, Table 2 (p. 19)
- Standard deviation, confidence interval for, p. 42
- Standard tests, pp. 1, 9, 23, 25
- Statistic, p. 4
- Steady component of stress, p. 3
- Step test method, pp. 1, 13, 50, Fig. 4 (p. 14)
- Step tests, R. R. Moore rotating beam specimens, Table 21 (p. 50), Table 22 (p. 51)
- Stress, p. 3
- Stress amplitude, p. 3
- Stress concentration factor, p. 4
- Stress cycle, p. 2
- Stress cycles endured, p. 3
- Stress ratio, p. 3
- Survival tests, Fig. 2 (p. 11)
- Symbols, p. 7
- Test of significance, pp. 6, 18, 20, 29, 30, 31, 45, 46, 47, Table 20 (p. 46)
- Test procedures, pp. 8, 9, 10, 12, 13, 15, Fig. 3 (p. 12), Fig. 4 (p. 14), Fig. 5 (p. 15)
- Test specimens, minimum number, p. 16
- Test specimens, selection of, p. 16

Test-statistic, p. 6 Theoretical stress concentration factor, p. 4 Tolerance interval, pp. 5, 41, 42 Tolerance level, p. 5 Tolerance limits, p. 5 *t*-test, p. 45 *t*-values, Table 29 (p. 62) Universe, p. 4 Unpaired rank test, p. 30, Table 26 (p. 58) Values of t, Table 29 (p. 62) Variable component of stress, p. 3 Weibull distribution, p. 71 Weibull mean, Fig. 15 (p. 77), Footnote p. 78 Wöhler test method, p. 1