

out specific projects in the service sector. Most of the tools discussed are likely to be new to the reader, and should provide useful ideas to supplement the standard quality tool kit.

In three chapters, Part 4 discusses the very important issues of communication, co-operation and management style. It suggests strategies for developing a quality organization, likely problems that will be encountered on the quality journey, and how these might be overcome. Specific issues discussed include the problem of converting mid-management to Quality, motivators/demotivators such as the importance of management support and sloganeering, and how to improve, for example, training and communication.

The final three chapters gives specific recommendations to provide support for quality improvement. It discusses roles of management and staff, how to ensure that the critical success factors succeed, and some 'dos and don'ts'.

In summary, this is definitely an interesting, useful and readable book of ideas and experiences in quality in the service sector.

TIM STAPENHURST

Statistical Analysis of Reliability Data

M. J. CROWDER, A. C. KIMBER, R. L. SMITH and T. J. SWEETING

Chapman and Hall, London, 1991. xii + 250 pp. £25.00

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This excellent little book aims to provide an up-to-date coverage of the probability modelling and statistical methods for analysing reliability data. Within nine concise chapters all the basic and plenty of advanced material is presented. Topics such as regression and proportional hazards models, Bayesian methods, multi-variate models and repairable systems are all covered. There is a final chapter which looks at models for system reliability, which in places touches on issues related to systems design; but, with this exception, the book keeps closely to its title. It is concerned with the analysis of data. No criticism there: would that all books reflect their titles so well. However, it does mean this is a book for statisticians or operational researchers concerned with the data analysis in the initial stages of a study. Those concerned with reliability modelling for the design of systems will need to look for other sources of reference.

By and large the book focuses on data arising from hardware failures, i.e. the physical breakdown of systems. There is a slight mention of software reliability and no mention of human factor data. Were the book longer than its 250 pages, this would be a serious shortcoming because these latter data types have different characteristics to hardware failure data. But one cannot be comprehensive and concise at the same time. For the material it does cover, this book has few equals.

This is a book written by statisticians for statisticians: and for statisticians it is very well written. The authors hope that their writing is accessible to anyone who has taken at least one course in statistics. Perhaps: but the reader would need to have understood every last detail of that course and have a natural aptitude for statistics. Rather, I would see this as a third-year undergraduate or masters text. It is not an easy read for those without an interest in mathematical statistics. It will also be a central reference for all professionals working with reliability data, who need to dip into a standard work from time to time.

This is a very welcome addition to the literature: an essential purchase for those concerned with reliability data.

SIMON FRENCH