

Principles of Operations Research.

HARVEY M. WAGNER.

Prentice Hall, New Jersey, 1969. 1162 pp.

This mammoth book purports to cover the principles of operational research, but it is in fact a most comprehensive textbook of some of the mathematical techniques which are used in the subject. It falls into four major sections—linear models, network models, dynamic models and stochastic models. Within these four major sections the coverage is quite exhaustive, ranging from the basic simplicity of the simplex method through sensitivity testing, network algorithms, deterministic and probabilistic inventory models, dynamic programming, non-linear programming, Markov chains, probabilistic dynamic programming, waiting line models and computer simulation. The major emphasis in the book is on the deterministic problems of mathematical programming, which is covered comprehensively in over 700 pages. The author must be congratulated in producing a standard reference text written in a sparkling manner. Rarely has mathematics been cradled in such a clear verbal setting.

To what extent however does this book really cover the principles of operational research. There is some coverage of model building, which can be divided into the formulation of problems, building the model, performing and analysis, implementing the findings and updating the model; all this is disposed of in just over one page. For a book with this title, there is therefore a lack of adequate coverage of some of the important aspects of our discipline.

Of great value are the wonderfully extensive sets of examples which will no doubt be a source for harassed teachers for many years to come. Also welcome and of interest are what the author has called “Mind Expanding Examples”. These are daunting and one reflects that the approach of operational research is not to expand the mind, but also to shrink the problem to one which we can handle. It is perhaps in its approach to problems and its discussion of the reasons for, and methods of, building models that this book is most seriously deficient.

As a textbook of mathematical and stochastic techniques (there is no formal coverage of statistics) this book is highly recommended. Indeed it is difficult to think of any better or more extensive coverage of these parts of operational research.

PATRICK RIVETT

Aspects of Operations Research in Theory and Practice.

KNUT-ERIK WALLDEN.

Almqvist and Wiksell, Uppsala, 1969. 233 pp. Sw.Kr. 50.

This book can be described as a particularly good “curate’s egg” in the sense that all the parts are good, but the whole is rather unsatisfactory.