Operations Research

Publication details, including instructions for authors and subscription information:
http://pubsonline.informs.org

The Analyst's Bookshelf

To cite this article:
(1973) The Analyst's Bookshelf. Operations Research 21(4):1014-1015. https://doi.org/10.1287/opre.21.4.1014

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Reviews

A. ROSS ECKLER and STEFAN A. BURR, *Mathematical Models of Target Coverage and Missile Allocation*, Military Operations Research Society, 101 South Whiting Street, Alexandria, Va., 1972, 254 pages, $7.50 (paper).

THIS BOOK would be valuable even if it had been done poorly, simply because of the long-standing need for a reference work in an area that has been the object of considerable attention for decades. Much of the unclassified work in this area has not heretofore been available, and another large quantity has been scattered throughout several journals. The fact that the book is actually well organized and well written is a bonus.

The subject of the book is the attack and defense of a stationary target or group of targets, except that the offense is permitted to attack the defense system itself in the last chapter. The authors proceed by first introducing some descriptive models relating attacker and target parameters to a kill probability, then spend most of the book discussing optimization problems, max min problems, and two-person zero-sum games that arise in defending a group of identical targets, and finally present the more modest results that are available for targets of different values. The presentation is usually lucid, and enough of the mathematical results are given to permit application without further appeal to the 138 references. The only annoying feature of the book is the occasional use of "it can be shown that," followed by a nonobvious result with no references given; if such results are actually unpublished work by one of the authors, then that fact should be stated.

MORS is to be commended for sponsoring and publishing this book. It belongs on the bookshelf of everyone engaged in working missile defense problems.

A. R. WASHBURN
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H. GEBELEIN, *Statistische Modellbau- und Untersuchungstechnik* (Statistical Modeling and Research Techniques), Verlag Berliner Union GMBH, Stuttgart, West Germany, 1972, 223 pages, (paper).

THE AUTHOR presents expertly and meticulously elaborated analyses of lottery drawings (three years' weekly drawings of the West German State Lottery Block). By means of elementary operations (ranks, sums, differences, averages) he arrives at 45 distributions whose mean, variance, skewness, and correlation are given; this is conceived as a parts list of 45 components for statistical model building. The resultant 'tool kit' enables one to simulate stochastic processes by artificial sequences derived from random numbers by rank and order.

This appears to be a sound idea and it proves fruitful in various ways: a very complete set of combinatorial formulas for rank statistics is offered, some of which may not be found elsewhere. Further, the author displays a high degree of serendipity in illustrating quite involved statistical laws and phenomena by comparatively elementary means. Finally, many examples taken from the author's impressive industrial practice demonstrate the usefulness of statistics of rank and order.

The book is written in a quite unconventional fashion, much more like a very individualistic monograph than a standard reference book for intermediate reading. The reviewer is of the opinion that the contents of the book, which is aimed at engineers and economists, does not warrant such capriciousness. Also, as regards standard notations, list of references, subject index, and the like, ample room is left for improvement. Since Dr. Gebelein's book has significant merits overall, this hopefully may be done at the occasion of a second edition, perhaps in English.

H. W. Von Guerard
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Books Received

Robert Z. Aliber, *The International Money Game*, Basic Books, New York N. Y., 1973, 236 pages, $6.95 ($3.50 in paper).

K. B. Athreya and P. E. Ney, *Branching Processes*, Springer-Verlag, New York, N. Y., 1972, 287 pages, $24.10.

M. J. Beckmann, H. P. Kunzi, and R. Landtwing, *Mathematik für Ökonomen II: Lineare Algebra*, Springer-Verlag, New York, N. Y., 1973, 160 pages, $4.10 (paper).

David D. Bedworth, *Industrial Systems: Planning, Analysis, Control*, The Ronald Press, New York, N. Y., 1973, 504 pages.

George E. P. Box and George C. Tiao, *Bayesian Inference in Statistical Analysis*, Addison-Wesley, Reading, Mass., 1973, 588 pages, $16.95.

Jerome D. Braverman and William C. Stewart, *Statistics for Business and Economics*, Ronald Press, New York, N. Y., 1973, 482 pages.

R. Bureau, editor, *The Organization of Logistic Support Systems*, American Elsevier, New York, N. Y., 1972, 593 pages, $45.00.

W. G. Byrnes and B. K. Chesterton, *Decisions, Strategies and New Ventures*, George Allen & Unwin, London, England, 1973, 195 pages, £4.25.

I. I. Gihman and A. V. Skorohod, *Stochastic Differential Equations*, Springer-Verlag, New York, N. Y., 1972, 354 pages, $27.90.

Isaac N. Gibra, *Probability and Statistics for Scientists and Engineers*, Prentice-Hall, Englewood Cliffs, N. J., 1973, 596 pages, $16.50.

Edward G. Goldberg, *A Guide to Marine Pollution*, Gordon and Breach, New York, N. Y., 1972, 168 pages, $10.00.

Y. Haitovsky, *Regression Estimation from Grouped Observations*, Hafner Press, New York, N. Y., 1973, 94 pages, (paper).

N. A. J. Hastings, *Dynamic Programming with Management Applications*, Crane, Russak & Co., New York, N. Y., 1973, 173 pages, $11.50.

D. M. Himmelblau, editor, *Decomposition of Large-scale Problems*, North-Holland/American Elsevier, New York, N. Y., 1973, 571 pages, $34.75.

T. C. Hu and Stephen M. Robinson, editors. *Mathematical Programming*, Academic Press, New York, N. Y., 1973, 295 pages, $8.75.

Russell C. Koza, *Mathematical and Operations Research Techniques in Health Administration*, Colorado Associated University Press, Boulder, Col. 1973, 324 pages, $10.00.

Ronald Larsen, *Functional Analysis—An Introduction*, Marcel Dekker, New York, N. Y., 1973, 497 pages, $19.50.