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Hugh J. Miser, Editor

Reviews

LOUIS A. ALLEN, *The Management Profession*. McGraw-Hill Book Co., New York, N. Y., 1964, 375 pages, $8.50

THE president of Louis A. Allen Associates, Inc., tells us that one of the purposes of his book is to provide students of management with "an up-to-date summary of what managers in leading companies in the world are actually thinking and doing in the practice of their demanding tasks." The first part of the book leads to the conclusion that management is an art, has not yet become a science, and should become a profession as quickly as possible. The remainder of the book explains that management consists of planning, organizing, leading, and controlling. Now this structure is hardly novel (although the author claims to have developed it), and much of the detail has a familiar sound (although the author permits one to conclude that it is the result of his firm's "research"). The book consists entirely of conclusions supported only by an occasional anecdote.

Possibly such a book might interest the readers of *Operations Research* in two ways. First, in view of the state of our knowledge of managers and management, it is most important for those in operations research to be equipped with a rich variety of hypotheses that sensitize them to their phenomena. The sections of this book that deal with the natural leader and with decentralization may well provide interesting hypotheses that will help prepare the observer's mind for making sense of the complex world of management. Second, the book provides one sort of indication of the penetration of operations research and related activities into the thinking of experienced students of management—the conclusion appears to be that it has been minimal. Computers are mentioned several times, there is a superficial description of PERT, and statistical analysis rates a very short paragraph at the end of the chapter on forecasting. The behavioral sciences are thoroughly neglected, although Likert's idea of participative management creeps in unannounced (page 267).

Yet the book has all the superficial trappings. Knowledge is presented in terms of principles ("Allen's First Principle," "The Allen Principles of Planning"). The author speaks of what he has done as research that has been validated (the meaning of validation is vague, but seems to include a critical review by a minimum of 12,500 managers). The development of jargon is well advanced ("radic groups," "centric groups," and the "Louis A. Allen Common Vocabulary of Professional Management"). The MARCH AND SIMON volume, *Organizations*, appears in the bibliography, but here is a first-class example of the lack of operationality and empirical emptiness that they found to characterize much of the literature of management.

However, one must still be thankful that those with wide experience in management do make serious attempts to organize and record what they have distilled from this experience. We cannot expect these men to be scientists, yet we must hope that they will not always share Mr. Allen's seeming innocence of what is happening in the related sciences. If only they would record what they have observed, rather than obscure their great experience in unfortunate posturing as founders, systematizers, and phrase makers.

WILLIAM T. MORRIS
The Ohio State University

JEROME BRACKEN and ARTHUR SCHLEIFER, JR., *Tables for Normal Sampling and Unknown Variance: The Student Distribution and Economically Optimal Sampling Plans*, Division of Research, Graduate School of Business Administration, Harvard University, Boston, Massachusetts, 1964, 207 pages, $8.00

THIS book has enormous potential value, which the reviewer hopes will be realized. The authors have addressed it to those who wish to use statistical decision theory (SDT) in problems involving sampling from normal distributions. With the aid of these tables, one can determine the posterior (marginal) distribution of the mean of a normal distribution on the basis of a sample if the prior distribution is of a standard type (viz., if the marginal distribution of the inverse variance h is gamma-2 and the conditional distribution of the mean μ, given h, is normal). One can also determine the optimal sample size in certain common special cases (e.g., when utility depends on the unknown mean of the normal distribution). The number of such potential users is increasing rapidly, owing notably to the efforts of Departments of Business Administration and Operations Research in developing and disseminating SDT methods and techniques.

Many of the potential users, with a pragmatic rather than a mathematical background, might have preferred a cookbook guide to the tables, with many examples. Instead, the authors have chosen to provide a 40-page textbook, sketching the theoretical basis for the tables' use, and giving a few examples. The reviewer suspects that the cookbook approach was abandoned because of the tremendous variety of problems for which the tables may be used. Although the 'textbook' is not entirely self-contained, it is consistent in notation with *Applied Statistical Decision Theory*, by HOWARD RAIFFA AND ROBERT SCHLAIFER [sic], Graduate School of Business Administration, Harvard University, 1961, to which it frequently refers.

Interestingly enough, Bracken and Schleifer make no mention of a much broader class of applications for their tables. Quoting from paragraph 5.6.4 of Raiffa and Schlaifer:

> Because no really convenient way of determining optimal size has been found except in the case where the sample observations are normally distributed with known precision and the prior distribution of the process mean is normal, it is natural to inquire whether [the above results] can be used to find an *approximation* to optimal sample sizes in other cases ... [Without a systematic investigation, we have found] empirically that an approximation of this kind will very often be astonishingly close to [achieving] the true optimum [expected net gain].

The volume under review, of course, removes the above-quoted restriction to processes with known precision. More importantly, it provides a convenient and very general method for estimating optimal sample size regardless of the exact form of the underlying distribution. The most efficient procedure for so using the tables will surely be a subject for considerable future investigation; here a cookbook would have been even more valuable, and probably even more impractical.

On the esthetic side, the book is attractive and the typography clear (though not large). It may safely be assumed that the table entries are correct; the reviewer, at least, is completely convinced by the description of the computation methods. Most of the tables were listed from computer printouts, and all were spot-checked using independent computational methods.

This book will eventually become a standard, and be found on every statistician's bookshelf.

[*Note:* The authors have informed the reviewer that the computer programs (reference 2 in the volume under review) will be published as a Technical Report of the Logistics Research Project at the George Washington University, Washington, D. C.]

JOHN P. MAYBERRY
Department of the Air Force

MORRIS J. SOLOMON, *Better Plant Utilization in India—A Blueprint for Action*, Asia Publishing House, London, England, 1963, 69 pages, no price

IN THIS little book SOLOMON tries to guide industrial managers and government planners in India toward more effective utilization of plant by application of some elementary types of quantitative analysis and common sense. He acknowledges the dominance of limiting factors that are social and psychological in character, but argues that much can be gained despite them, and certainly by overcoming them. Recognizing the different relative costs of equipment and labor and the lack of capital and foreign exchange in India as compared with the U.S., he considers a number of ways of increasing the productivity of existing plant: for example, multishift operations, reduction of machine waiting, and speed-up of pace of labor. He provides simple illustrations of how costs and benefits can be estimated and compared, and suggests how programs for improvement might be implemented. Gains obtained in specific applications are cited, but are not discussed in any detail.

Finally he cites the implications of such efforts to Indian planners and makes specific suggestions as to how they can encourage the quest for better plant utilization. These suggestions range from protection of markets and restriction of entry to conducting a census of potential production for each industry.

The book is a fine example of how well OR practitioners can write for managers, and of how significant content and simplicity of style can be wedded. One cannot help but hope that such an effort obtains some of the response it attempts to evoke.

RUSSELL L. ACKOFF
University of Pennsylvania

VICTOR G. HAJEK, *Project Engineering: Profitable Technical Program Management*, McGraw-Hill Book Co., New York, N. Y., 1965, 206 pages, $8.50

IF ONE takes the primary title of this book—*Project Engineering*—at face value, then the author's treatment of the subject in a basic or 'primer' fashion is very good. The coverage is also good, going from interpretation and analysis of hardware specifications to contract types and clauses, scheduling and PERT, cost estimating and negotiation; and finally, it includes brief treatments of the subjects of engineering design, reliability, production and quality control, and test and support functions.

The case example used in the book to describe these areas—a shipboard radar landmass simulator—is quite limited in character, perhaps for reasons of publication necessity. The importance of technical project management participation in contract negotiations is well—and properly—emphasized in Chapter 9. However, the treatment of such subjects as PERT/COST, incentive contract structuring, and project organization problems is inadequate by the standards of 1965.

The subtitle of the book is *Profitable Technical Program Management*, but readers who assume this implies coverage of the larger subject of program or system management will not be satisfied. A book covering the full scope of modern program or systems management, including formal approaches to project definition, systems and tradeoff analysis, PERT/COST, configuration management, the intricacies of technical and organizational interfacing, data requirements, etc., has yet to be written. Perhaps the early part of 1965 is too soon.

ROBERT W. MILLER
United Research, Inc.

Books Received

JEROME BRACKEN AND CHARLES J. CHRISTENSON, *Tables for Use in Analyzing Business Decisions*, Richard D. Irwin, Inc., Homewood, Illinois, 1965, 295 pages, $6.50 (spiral binding).

ELWOOD S. BUFFA, *Modern Production Management, Second Edition*, John Wiley and Sons, New York, N. Y., 1965, 770 pages, $8.95.

PETER CALINGAERT, *Principles of Computation*, Addison-Wesley Publishing Co., Reading, Massachusetts, 1965, 208 pages, $7.75.

DONALD E. CARR, *The Breath of Life: The Problem of Poisoned Air*, W. W. Norton & Co., New York, N. Y., 1965, 175 pages, $3.95.

DIMITRIS N. CHOROFAS, *Systems and Simulation*, Academic Press, New York, N. Y., 1965, 519 pages, $14.50.

L. R. CONNOR AND A. J. H. MORRELL, *Statistics in Theory and Practice, with Special Reference to Published Statistics, Fifth Edition*, Sir Isaac Pitman & Sons, Ltd., London, England, 1965, 271 pages, 30 shillings.

LEE J. CRONBACH AND GOLDINE C. GLESER, *Psychological Tests and Personnel Decisions, Second Edition*, University of Illinois Press, Urbana, Illinois, 1965, 359 pages, $7.95.