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Book Reviews

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BOOK REVIEWS

An Introduction to Electronic Data Processing for Business, LEONARD W. HEIN.
Princeton: D. Van Nostrand Co. Inc., March 23, 1961. \$7.50.

Professor Hein has made a useful addition to the available literature on electronic data processing. In the opening pages, the author has specified his proposed audience and limited the scope of his endeavor. The book has been prepared as a text for students rather than as a reference volume for the advanced programmer. Its objective was to treat only the parts of the data processing system that deal with the data after they are in some language acceptable as an input and only to the point of computer output.

Professor Hein appears to have accomplished what he set out to do. The sections contrasting present procedure with the manner in which data were previously processed should be quite helpful to the reader. Indeed every effort is made to assist the college student or business executive eager to obtain some understanding of computers and data processing. Professor Hein, for example, discusses the internal working of the computer before any mention is made of how the information is programmed into the machine. This departure from normal order appears justified in that it makes the subject matter somewhat easier to comprehend. As an additional aid to the student, each chapter is followed by a number of review questions, and problems are introduced at the appropriate time. The book is clearly and effectively written and the diagrams and charts are presented in a way that enlightens rather than confuses the reader. At the same time, the text does not needlessly oversimplify in the desire for clarity.

The author makes the students aware of the latest advances in computer technology. He shows that second generation computers are more useful as well as more complex. In the final chapter, a number of advanced programming concepts are discussed. Despite the need to use some sort of model computer, the author has succeeded in his attempt to prevent the book from appearing as an advertisement for any single firm. In an industry where many manufacturers are offering a variety of machines, such a procedure seems both ethically and pedagogically desirable. Also, worthy of note is the author's emphasis on the fact that the various computers differ in degree but not in kind. Skill obtained in the programming of one computer, he maintains, is transferable.

The preceding paragraphs indicate that the author achieved his stated objectives. The only question is whether these objectives were too narrowly defined. A treatment of electronic data processing might discuss at greater length the many ways in which management could benefit from more complete information made available in a shorter period of time. Although this topic is given passing mention, a beginning student would not understand the importance of improving the quality and accuracy of the information transmitted throughout the firm. In addition, adequate attention is not given to what might be considered the economies of data processing. Mention is frequently made of the fact that

computer time is expensive. Further elaboration on the subject of relative costs and possible savings would be helpful. The very considerable problems, human as well as machine, associated with the introduction of a data processing system appear to the reviewers to deserve more attention. In the proposed discussion of the economies of data processing, some other uses of the computer might be considered. If the author wished to restrict himself to a discussion of data processing as it affects the computer, he should have provided references to material dealing with the above mentioned topics.

Despite these criticisms Professor Hein is to be congratulated on having defined his objectives and then achieved them. This in itself is no minor accomplishment. The material which the reviewers believe should have been included in the book is available from other sources. Mr. Hein, however, has made a contribution in an area in which the beginning student has previously been at a marked disadvantage.

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Proceedings of the 1959 Computer Applications Symposium, Sponsored by Armour Research Foundation of Illinois Institute of Technology. Chicago, Illinois; 1960. 155 pp. \$3.00.

These proceedings consist of a series of 14 articles and two panel discussion reports. Generally speaking, this book makes good reading material, for the most part without special appeal to either mathematical or engineering background. Furthermore, it shows to those unfamiliar with computer applications, some of the most common uses in both the commercial and military field. It further brings out that although most of the investment capital required to develop such small (Tactical Situation Display Indicator) and large scale (TACAN SYSTEM) data processing devices was made available by the government in the form of defense spending, the dynamic society around us wasted no time to make use of such hardware for business and management, (Share Holder Record-Handling, Inventory and Inventory Control, Market Research) for engineering design, (Electronic Building Block Design) and for scientific applications, scientific design procedures, industrial applications (Automatic Programming of Numerically Controlled Machine Tools), as well as for traffic control (Air and Ground), safety, etc. These articles show for the most part the use of computers in relief of man's routine and time-consuming activities. However, the solution to one problem is often the source of new problems. A number of these problems are brought out in these articles, some of which are encountered when man attempts some of the above applications.

A problem area lacking in these proceedings, is the true total estimated difference in dollars between a man activity as compared to that activity when performed by the computer. The difference in cost between a computer and a man-made job should include the programming cost, which nowadays may be exceeding several times the price of a computer. Without specifically relating to

this problem, the papers show that continuous effort is being expended in order to reduce "programming" time in various ways ("Current Developments in Common Language Programming"). Another area not specifically emphasized is the man-machine relationship, the need for skilled personnel, although some of the psychological problems brought about by these computers are discussed.

Some of the articles relate to applications of particular EDPM's like IBM, Burroughs, Bendix, RCA, Remington Rand, etc. More generalized approaches, however, and common problems as well as suggested avenues of development are presented in "Current Developments in Common Language Programming" and "The International Algebraic Language and The Future of Programming." And the "comparative" article on "Some Aspects of Computer Technology in the USSR" is worthy of reading even though lacking the more recent developments.

It is also the feeling of the reviewer that, with all these new devices, we shall be living in a "computer crazy" era for a while, since the trend is in the direction to rely upon a computer for most of man's decisions. Several agencies, commercial and military, acquire EDPM for prestige and quite often these expensive machines are very inefficiently used. Once this wave has passed we should witness more and more useful computer applications. Some problems that remain to be solved are to satisfy the actual requirements that customers need and not merely the extensive use of EDPM.

It may be pointed out that most of the information contained under one cover in these Proceedings is available in various magazines (Datamation) and professional group proceedings (IRE) as well as weekly papers (Electronic News) with more recent developments. This series of articles is recommended for reading by members of management, and even management scientists. There is still need for a series of articles for the "man in the street," such that he be aware on how much these so-called "Electronic Brains" affect his everyday life.

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BOOKS RECEIVED

(Inclusion of books in this list does not preclude their subsequent review.)

- The Consulting Engineer* by M. STANLEY. New York: John Wiley and Sons, Inc. 1961, 258 pp., \$4.95.
- Cost Reduction Guide for Manufacturing Management* by H. C. MORSE AND E. E. WYATT. Chicago: Wyatt and Morse, Inc. 1961, 244 pp., \$18. (Distributed by Hitchcock Pub. Co., Wheaton, Ill.)
- Economics and American Industry* by L. W. WEISS. New York: John Wiley and Sons, Inc. 1961, 548 pp., \$7.50.
- Modern Production Management* by E. S. BUFFA. New York: John Wiley and Sons, Inc. 1961, 636 pp., \$10.25.
- Programmed Learning, Evolving Principles and Industrial Applications* by JEROME P. LYSAUGHT (Editor). The Foundation for Research on Human Behavior. Ann Arbor, Michigan: Lithoprinted Braun and Brumfield, Inc. 1961, 179 pp., \$3.00.
- Sequential Decoding* by J. M. WOZENCRAFT AND B. REIFFEN. New York: John Wiley and Sons, Inc. 1961, 73 pp., \$3.75.
- Supervisors in Action* by J. J. FAMULARO. New York: McGraw-Hill Book Company, Inc. 1961, 238 pp., \$4.75.
- Transistor Logic Circuits* by R. B. HURLEY. New York: John Wiley and Sons, Inc. 1961, 363 pp., \$10.00.
- Transmission of Information* by R. M. FANO. New York: John Wiley and Sons, Inc. 1961, 389 pp., \$7.50.
- Wholesaling in Marketing Organization* by D. A. REVZAN. New York: John Wiley and Sons, Inc. 1961, 656 pp., \$10.50.

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