Investigation showed that the loop consisted of A30, J11, M4, K53, A30. When we checked back on the definitions it was found that the loop only existed because JUMP was given as an example of a computer operation, and so no action was taken.

This procedure was rather time-consuming on the computer, mainly because of the need each time a term was listed as being available to scan the remaining list to remove all terms to which it was a cross-reference. No attempt was made to speed up the procedure or to optimize the program since it was only going to be used a few times.

The first page of the output obtained from the final run is shown as Fig. 2. It can be seen that the order bears little relation to that of the final publication, illustrating the impossibility of listing the terms in an order so that no back referencing is required, and at the same time keeping related terms together.

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Book Review

Automation in Bankwesen, by HANS PETER BAUER, 1962; 151 pages. (Tübingen: *J. C. B. Mohr (Paul Siebeck)*, DM 14.50).

This book is obviously intended to be a guide for people at the managerial and higher levels in banking who are considering the possibilities of electronic computers in the European banking world. It assumes no prior knowledge of, or reading in, its subject-matter and, although much of its content is historical and refers to outmoded machines, the lessons drawn from this history are still valid and should save much catastrophic experimentation in European banking organizations.

The author has planned his book in two logical sections. The first is a general survey of the field in America. The author has made a general study of the progress of automation in the Bank of America, with reference to the bank's structure, policy and growth. He covers its introduction of "ERMA" and the IBM 702, taking into account the reasons for the installation of these systems, the staff reorganization necessary and the experience gained. In this part of his book he also deals with such vital questions as machine reliability and accuracy.

The remainder of the book is devoted to the possibilities of bank organization in Europe. Here the author is on his home ground in dealing with banking structures considerably more intricate than those in America.

He details those machines currently available and their likely application (this section of the book cannot help but be of limited value, as the machine market is constantly changing). He is particularly interesting on the economics of making an installation—both as regards the installation itself and the benefits accruing from it. He also makes many cogent remarks on the staffing aspect, particularly the "problem" of redundancy. Finally the author includes a thought-provoking section on future developments in bank automation, sections on the training and prospects of specialists in EDP, and the effect of automation on the total economy.

In total, this book is a worthwhile (indeed almost essential) addition to the library of any one interested in European banking.

Appendix—Translation of the Contents of the book.

INTRODUCTION: The problem.

1st Chapter: America

Survey

1. Bank of America
   Structure—Business policy—business economy and staffing problems—growth.
2. The automatic cheque accounting machine "ERMA"
   History of its origin—installation into the structure of the bank—data transmission—magnetic lettering—electronic accounting.
3. The electronic multi-purpose machine IBM 702
   Reasons for its purchase—integrated data processing: mortgage and consumer credits—consolidation of branch clearing systems—other fields of application—experiences and new plans.
4. Organization
   Planning and executive departments—distributions of powers and duties.
5. Technical questions
   Does the machine make mistakes? Maintenance.
6. The extent of automation.

2nd Chapter: Possibilities in Europe

1. Organizational questions
   The available types of machine—size and business structure of European banks—centralization—planning and organization.
2. Aspects from the point of view of business economy (prac. economics)—customer service—modern business management—economy—reduction of office and admin. costs—statistics and customer service—installation and operating costs—expenditure and profit—replacement.
3. Staff
   New categories—redundant staff.
4. Summary

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Book Review—Automation in Bankwesen (*continued from p.* 274)

3rd Chapter: New types of work
Introduction
1. Planning
   Two sides of the work—systems work—analysis of work to date—construction of the new—programming—detailed work processes—tests.
2. Organization.
3. Executive activities.
4. Programming: a new style of work
   Powers—pretraining—special characteristics—team work—satisfaction—responsibility and efficiency—company position

4th Chapter: Long-term aspects
Preface
1. The position of automation specialists.
2. Possibilities of extending automation bookkeeping—statistics—operations research—the automatic bank.
3. Promoting and restricting factors in development.
4. View of the future.

5th Chapter: Bank automation and the total economy
1. Industrial revolution.
2. Price stabilization.
3. Labour market.
4. Economic position.

FINAL CONSIDERATIONS: Automation—duties and aims

APPENDIX
1. The automatic electronic data processing machine.
   The construction of the electronic computer.
   Central control—input devices—output devices—external storage.
   The co-operation of the various components of the computer.
2. Bibliography.
3. Index.

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