The Charles Babbage Institute
For the History of Information Processing
Sponsored by AFIPS and the information processing community.
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The Charles Babbage Institute Newsletter

Volume 7, Number 1 Fall 1984

CBI ANNUAL REPORT OF ACTIVITIES

THE CHALLENGE

Among contemporary institutes, the Charles Babbage Institute (CBI) is the only group dedicated to documenting the history and impact of information processing and its industry throughout the world. The challenge before CBI is how to employ the information acquired to

- Promote public understanding,
- Lead the research field, and
- Provide resources for research, writing, and planning.

Such study by CBI and others will lead to a better understanding of the place of the computer in our society, the evolution of information processing and its industry, and the push-pull relationship between society and the development of information processing.

Meeting this challenge requires

- A National Strategy for appraisal and preservation of records related to information processing;
- Analysis of historical developments and their publication in various forms;
- Acquisition of records and oral histories;
- Synthesis of data found in many sources to provide a base for research and further acquisition of records.

FISCAL YEAR PROGRAM EMPHASES

During the past year, CBI aggressively pursued each of these needs. With the addition of an archivist to the staff at mid-year, we acquired the talents of a specialist in the records of large organizations. This talent, added to the experience of the staff in the history of business and technology, made it possible to initiate projects to

- Appraise the business and technical records of a large firm
- Organize the CBI collection for ready use
- Develop an information file to supplement acquisition and research.

Archives Development:

In its early years, while there is a significant need to provide more resources for historical study, CBI places most of its effort on development of national collections of information sources. In the last year, this resulted in a number of new collections of manuscripts being added to the CBI archives. Five major collections came to CBI, as well as other items; ten inquiries are at the transfer stage, most of which will come to CBI; and approximately 400 linear feet of technical materials have been processed and are easily retrievable for research.

As a further aid to research CBI actively continued

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CBI ANNOUNCES PREDOCTORAL FELLOWSHIP AND PROFESSIONAL INTERNSHIP FOR 1985-86

CBI is accepting applications for a **Graduate Fellowship** to be awarded for the 1985-1986 academic year to a graduate student whose dissertation will address some aspect of the history of computers and information processing. Thesis topics may be chosen from, but are not limited to, the infrastructure of the information processing industry, and specific technological developments in the information sciences, including both hardware and software. Proposals which deal with the economic and organizational milieu of the developments, or with the economic, legal or social history of computing are especially encouraged.

There are no restrictions on the location of the academic institution which will be the venue for the Fellowship. Residence can be at the home academic institute, other research facility where there are archival materials, the Babbage Institute, or some combination of these. The stipend will be $5,000 plus an amount up to $2,500 for tuition, fees, travel, and other research expenses. Priority will be given to students who have completed all course work and have completed all requirements for the doctoral degree except the research and writing of the dissertation. However, even incoming graduate students will be considered. Fellows may

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reapply for up to two one-year continuations of the Fellowship.

Applications should include biographical data and a research plan or design. Applicants should arrange for three letters of reference, certified transcripts of college credits and GRE scores (or their equivalents abroad) to be sent directly to the Institute.

The **Professional Internship** is to be awarded for a period of three to nine months between June 1, 1985 and May 31, 1986. It is available to professional staff interested in an introduction to the history of information processing. Appropriate applicants might include, but are not limited to, historians and social scientists interested in the history of information processing and its infrastructure, academics interested in preparing new courses in this history, records managers and archivists interested in related archival problems.

Residence is required at the Babbage Institute, on the University of Minnesota campus. Interns are required to conduct a research project under the direction of the Institute staff. Support services include desk, secretarial and photocopy service, and telephone budget for Institute-related activities.

The stipend for the Intern Fellowship is $1,000 per month. Interns may receive additional outside support from government, industry, or academic institutions, but must devote their full time to the history of information processing while the Internship is in effect.

Applications should include biographical data, a statement of research interests, a proposal of dates during which the Internship would be held, and the names, together with telephone numbers and addresses, of three references.

Applicants for the Predoctoral Fellowship and the Professional Internship should send their materials to The Charles Babbage Institute, University of Minnesota, 104 Walter Library, 117 Pleasant Street S.E., Minneapolis, MN 55455, U.S.A. by January 15, 1985. No special application forms are required. Dependent upon funding one or both of these awards may be made.

VOLUMES V AND VI OF THE CBI REPRINT SERIES FOR THE HISTORY OF COMPUTING NOW AVAILABLE

Punched Card Methods in Scientific Computation by W. J. Eckert and *Calculating Instruments and Machines* by Douglas R. Hartree are the first volumes of the Charles Babbage Institute Reprint Series for the History of Computing to be released under the joint publication effort of Tomash Publishers and MIT Press.

Punched Card Methods in Scientific Computation, first published in 1940 by the Thomas J. Watson Astronomical Computing Bureau, paved the way for computing in the 1940s. It applied the idea of machines which could read and record numbers to the field of scientific calculation previously dominated by logarithms and other tables of functions and hand operated machines for adding, subtracting, multiplying, and dividing numbers. A new introduction by J. C. McPherson is included in the edition. This book is volume V in the reprint series. $25.00

The reprint of *Calculating Instruments and Machines* also includes Hartree's inaugural Cambridge lecture, *Calculating Machines: Recent and Prospective Developments and Their Impact on Mathematical Physics*. This difficult to obtain lecture makes ideal preliminary reading for the main set of lectures presented in *Calculating Instruments and Machines*. In these, Hartree provided the first comprehensive survey of the signficant developments in computation that were going on at the time— the main directions of development in storage systems, serial machines, and parallel programming and coding, and particularly with high-speed automatic digital machines that were precursors of the modern stored program computer. *Calculating Instruments and Machines* was originally published in 1949 by the University of Illinois Press. It is volume VI in the Reprint Series. $30.00

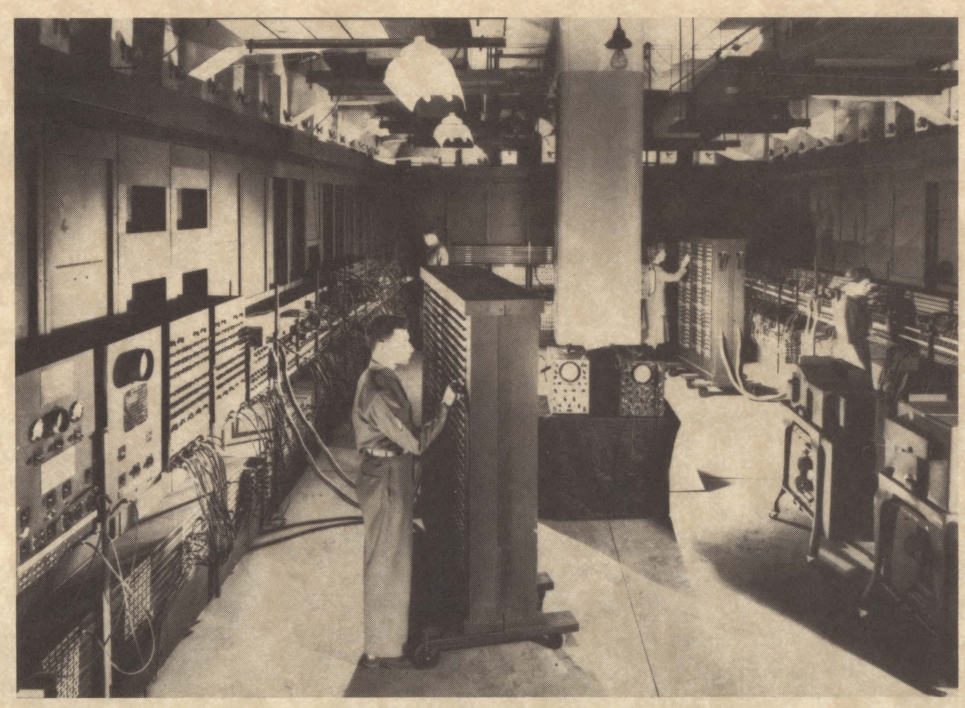
These books may be ordered from The MIT Press, 28 Carleton Street, Cambridge, Massachusetts 02142. There is a $1.25 postage and handling charge. Members of the CBI Friends organization may obtain them at a 20 percent discount by ordering them from the Charles Babbage Institute.

NEW DIRECTOR OF THE IEEE HISTORY CENTER APPOINTED

Ronald R. Kline of the University of Wisconsin-Madison has been named to follow Robert Friedel as Director of the IEEE Center for the History of Electrical Engineering.

Dr. Kline received the B.S.E.E. degree from Kansas State University, Manhattan, in 1969. After graduation, he worked as a field engineer and systems analyst with General Electric Ordnance Systems, Pittsfield, Massachusetts, from 1969 to 1977. He then returned to school, earning the M.A. degree in the history of science from the University of Wisconsin-Madison in 1979. In that year he was awarded the IEEE Fellowship in Electrical History, completing his Ph.D. in 1983. Dr. Kline's dissertation was on the life and career of Charles Proteus Steinmetz.

The Center for the History of Electrical Engineering was established as an office of the IEEE in 1980 to promote the study and understanding of the history of electrical science and technology. Its activities include archival and bibliographic services, oral history and documentation projects, exhibits, research and publication.



A 1946 photograph of the ENIAC, from a Honeywell trial exhibit. Pictured from left to right are Goldstine, Spence, Jennings and Bartik.

ENIAC TRIAL RECORDS AVAILABLE IN CBI ARCHIVES

The trial of Honeywell vs. Sperry Rand and Illinois Scientific Company ranks as one of the most important legal battles of the computer industry and the history of computing. The case, filed in 1967, invalidated the ENIAC patent (owned by Sperry) and raised questions about Eckert and Mauchly's claim as the inventors of the first electronic digital computer. The court case continues to be the subject of articles, and researchers interested in pursuing the issues raised by the litigation now will be aided by a collection of records recently donated to CBI.

This collection consists of over 26 linear feet of early public exhibits assembled by the legal staff of Honeywell. Most of the records are copies of original documents dating prior to 1953. The collection includes correspondence, technical drawings, reports, publications, photographs, and films, all arranged by exhibit number. Normally this arrangement would present an impossible access situation for researchers, but because the case was one of the first to use a computer to index exhibits, researchers will have a relatively easy time finding material pertinent to their interests. Honeywell has provided CBI with a microfiche copy of the index, which not only provides access to the exhibits and trial transcript held by CBI, but also gives descriptive information on the post-1952 exhibits that were disposed.

While all of the records were collected to support the case against Sperry, the usefulness of the records is not limited to research on the ENIAC trial. The collection is rich in correspondence of early computer designers, including John W. Mauchly, J. Presper Eckert, John V. Atanasoff, John von Neumann, Herman Goldstine, and others. A substantial part of the collection contains technical information on the ENIAC, EDVAC, BINAC, and the Atanasoff-Berry Computer. This includes technical drawings, patent files, and progress reports. Also included are a number of photographs of the Atanasoff-Berry Computer, with shots of various components as well as the entire computer. Researchers will also be interested in film footage (1946) which was produced in preparation of a news reelstory of the ENIAC.

Unfortunately, the ENIAC trial collection shares a fate common with many modern manuscript collections: it has a limited life. The records were assembled for immediate use, not with long-term preservation in mind. Photocopies dominate the collection, and many of these were so poorly made that they had to be retyped so the lawyers could read them. Most of the technical drawings were copied utilizing a process commonly used for architectual drawings, and these also have a short life. It is likely that even under proper storage conditions, components of the collection will show deterioration within 10 to 15 years. Microfilming the collection would preserve the information and make the collection accessible to researchers not able to visit CBI, but the faint images and poor contrast of the records make the collection difficult, if not impossible, to film.

Researchers are encouraged to contact the CBI archives for further information about the trial exhibits collection and other material from the ENIAC lawsuit.

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conducting oral histories, especially in two areas. First, in our attempts to add to the wealth of oral history information already available, we continued our emphasis in the 1960s, focusing on the entry of large firms into hardware production and on the founding of new software firms. Second, another series explored the contributions of two early academic computing laboratories. A total of thirteen interviews were recorded this year, bringing the total number of interviews available at CBI to 87. Eight more interviews were opened for research this year. The total number of open interviews is now 43. The remaining 44 are in various stages of processing.

Besides soliciting and processing collections of material, CBI staff pursued several other long-term projects to enhance collection development everywhere. First, CBI initiated a study of high-technology business records to learn more about the nature of these records and their differences from other business records collected in the past. This project involves interaction with corporate people to understand the types of records generated and an analysis of the records that survive from earlier decades. We are using the Twin Cities as a base of study because of the ease of access. We expect to broaden our activites in these studies as time passes.

Second, for several reasons, CBI analyzed its own automation needs, from word processing to data management. This study was performed to aid in the selection of equipment and software for CBI's automation needs.

Third, as a corollary to collection development and an understanding of the types of records that should be saved, CBI designed a workshop proposal to bring a group of computer scientists, historians, and archivists together to discuss what types of records are generated as a new computer system is developed in industry. Armed with an appreciation for the types of records that are created in the process, archivists will be in a better position to search for important records of significant projects.

Information File:

The information file of people, events, and firms grows daily. Using an earlier study commissioned by CBI—the Lutze survey of industry geneologies, we constructed

- several charts of mergers, spinoffs, and changes in the industry.

One of these was published in a Minneapolis business newspaper and is receiving wide publicity. This work will continue until we have charts that cover all the companies in the industry, at least to 1972. Such charts become the basis for seeking information about people and companies to add to our file, allowing better decisions about materials to be sought for the archives.

These latter two projects are, in a sense, continuing projects, whose results contribute to CBI's ability to provide information and analyses to our sponsors and the public. At this stage, it is most helpful in allowing us to increase the ratio between the number of inquiries made and the acquisition of significant materials.

SERVICE TO OTHERS

In an effort to provide information to several communities, CBI staff

- published 4 Newsletters
- published 8 articles
- spoke to 17 organizations around the country
- visited or met with members of 73 companies and universities
- published Volume 4 of the CBI Reprint Series
- taught courses on the University of Minnesota campus.

The information contained in these presentations, which are intended to reach all the communities of interest to CBI, covered the activities of CBI, articles on historical events that occurred over the last 100 years, and progress in CBI projects (noted above).

The number of requests for help continue to increase as the Institute's collection grows and becomes better known. This year CBI received over 100 requests for reference help. These requests varied from simple requests for photographs to illustrate forthcoming publications to substantial questions about historical events, people and resources. CBI was able to answer all of them, though with differing degrees of depth.

Detailed information about each of these areas of collection development and public activities are available from CBI.

OBJECTIVES FOR FY 1985

The challenge for CBI has both long- and short-range aspects. The long-range aspect requires a continuing and primary program of archival development to ensure appropriate resources for investigating the evolution of information processing. Hence, it is important that we continue the primary activities of national collection development and advertisement of the content of newly obtained resources. We expect, especially, to add substantially to the records holdings of CBI and to conduct approximately 12 interviews. To publicize these materials, CBI will publish 4 Newsletters. They will include information on archives around the world and news about the research and publishing activities of people involved in the field.

With the results of this long-range program, it is possible to address several possibilities with short-range time scales. During the coming year, CBI staff, in consultation with a number of people in industry, govern-

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FRIENDS OF CBI

CBI offers this special acknowledgement to the individuals listed below who support the programs of the Institute through their membership in the "Friends of CBI."

Sustaining Colleague Members: Mr. J. R. Woodhull and Mr. Charles A. Zraket.

Colleague Members: Mr. J. Scott Hamilton, Mr. Robert D. Schmidt, Applied Data Research, Inc., Association of Data Processing Service Organizations, and Automatic Data Procesing, Inc.

Participating Associate Members: Ms. Bernice Arnold, Professor Joseph Bordogna, Dr. Allan G. Bromley, Mr. Don A. Christensen, Mr. Harvey G. Cragon, Mr. Charles A. Dickinson, Mr. Richard D. Dotts, Dr. Grady Early, Mr. Les Earnest, Mr. Bruce Francis Elchison, Mr. Robert P. Everett, Dr. John W. Fendrich, Professor Bernard A. Galler, Mr. Martin Goetz, Dr. George E. Gourrich, Mr. Jerrier A. Haddad, Commodore Grace M. Hopper, Dr. James W. Hunt, Dr. George T. Jacobi, Mr. Amos E. Joel, Jr., Mr. Kenneth W. Kolence, Ms. Helen L. LaFlare, Katharine Kyes Leab, Mr. David P. Moffett, Professor Allen Newell, Mr. John E. Parker, Mr. Byron E. Phelps, Dr. Mina Rees, Mr. Leland P. Robinson, Mr. William Scholer, Science Museum in London, Mr. Andrew Scott, Mr. Aaron Seidman, Mr. Craig Solomonson, Mr. Thomas B. Steel, Jr., Professor Ryota Suekane, Mr. Garry J. Tee, Mr. Paul D. Weiser,and Mr. Irving L. Wieselman.

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CBF DIRECTOR AND TRUSTEES ELECTED

This past year the Charles Babbage Foundation elected eight individuals to join the Trustees of the Foundation. One of the new Trustees, Mr. Richard Seaberg, was also elected to serve on the Board of Directors of the Foundation.

Dr. Lewis M. Branscomb, vice president and chief scientist of International Business Machines Corporation and a member of its Corporate Management Board, is responsible for guiding the Corporation's scientific and technical programs to ensure that they meet long-term needs. Dr. Branscomb began his career as a research physicist for the National Bureau of Standards in 1951 and was appointed director in 1969 before accepting a position at IBM in 1972. Among his many affiliations, Dr. Branscomb is a member of the National Academy of Engineering, The National Academy of Sciences and the National Academy of Public Administration.

John Diebold is an internationally acknowledged leader in the fields of management and technology. He is chairman and founder of the management consulting firm, The Diebold Group, Inc., which he established in 1954. The activities of the firm are based on understanding the significant changes of our times and in assisting organizations in dealing with the effective use of advanced technologies, social, economic and political changes and the application of management techniques to the public sector. Mr. Diebold is a pioneer in the field of automation. His first book, *Automation*, published in 1952, introduced that word to general usage and originated many of the concepts which are today accepted as basic in the fields of both automation and management.

Commodore Grace M. Hopper is well known for her pioneering work and leadership in the computer field. After joining the Navy in 1943 she was assigned to the Bureau of Ordnance Computation Project at Harvard and began work on the Mark I. Following a three-year faculty appointment at Harvard Commodore Hopper joined the Eckert-Mauchly Computer Corporation and was involved in designing software for the first UNIVAC. It was during this time that she began working on initial developments for what later became known as COBOL. In 1967 the Navy recalled her to active duty to work on standardizing high-level languages.

Dr. Mina Rees became head of the Mathematics

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Branch of the newly organized Office of Naval Research in 1946 after wartime work in the Office of Scientific Research and Development. She was the Navy's representative during the immediate post-war years in the efforts by a number of government agencies to provide financial support and some guidance to the work going on in the United States that led to the successful development of stored program electronic digital computers. She left Washington in 1953 to become dean of the faculty of Hunter College. When the City University of New York was established in 1961, she organized the University's Graduate School and University Center of which she is now president emeritus.

Douglas T. Ross began his career in the computer science field as a member of the research staff of the Electronics Systems Laboratory at MIT in 1952. From 1952 to 1969 he participated in instruction and research activities at MIT in various capacities; he served as head of the Computer Applications Group, was a lecturer in the Electrical Engineering Department, project engineer for the MIT Computer-Aided Design Project, and directed the AED language and compiler development. Currently, he is Chairman of the Board of Directors of SofTech, Inc., a company he founded in 1969. Mr. Ross is the author of many published articles and of a book entitled, *Introduction to Software Engineering with the AED-0 Language.*

Lawrence J. Schoenberg founded AGS Computers, Inc. in 1967 and since then has held several executive positions including Chairman of the Board and Chief Executive Officer. He also has held management positions with IBM, Litton Industries and Computer Sciences. Mr. Schoenberg is an active member of a number of professional organizations and has served as an officer in ADAPSO and the Software Industry Association.

Richard L. Seaberg is president and chief executive of Sperry Corporation's Defense Products Group. He previously worked for Honeywell and Eastman Kodak in areas of industrial engineering, marketing, contract administration and program management. Mr. Seaberg joined Sperry's Twin Cities operations in 1967 as a marketing manager. In 1972 he was named vice president of marketing for Defense Systems and in 1977 was promoted to vice president and general manager of the Defense Systems Division.

Herbert A. Simon is one of the founding fathers of artificial intelligence and cognitive science and has made research contributions to these fields for nearly thirty years. Computer simulation of human thinking has served as a principal research tool for understanding how people make decisions, solve problems and learn. His research has won him many honors including the Distinguished Scientific Contribution Award of the American Psychological Association, the Allan Turing Award of the ACM, and the Alfred E. Nobel Memorial Prize in Economic Sciences. Professor Simon is currently Richard King Mellon University Professor of Computer Science and Psychology at the Carnegie-Mellon University.

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