

# CHARLES BABBAGE INSTITUTE NEWSLETTER

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CENTER FOR THE HISTORY OF INFORMATION PROCESSING

## National Software Archives Initiative

by David Allison  
Smithsonian Institution

In February 1993, representatives of major historical and cultural organizations met with American software companies to discuss the need for a "National Software Archives" in the United States [see *CBI Newsletter* Winter 1993]. The discussion began with a simple reflection: Software is unquestionably among the most important contributions of recent generations to the history of mankind. Yet little thought or effort has been devoted to how it should be preserved for both short and long-term purposes.

Resolving this issue is important to corporations that create software. The United States is the premier producer of software for the global market, and these corporations need to know how to fulfill their responsibilities to maintain appropriate records. Before a nationwide archives is established, there are many questions to answer. Some examples of these questions are: What fraction of software and supporting records should be saved? What preservation standards should be adopted? Should manuals and marketing materials be preserved? What about videotapes or other media? Where would the archives reside? How will the archives be catalogued? How would the archives be used?

On October 15-16, 1993, a second meeting of representatives of major organizations was held in Seattle to discuss the formal establishment of a National Software Archives. Institutions participating included: The Smithsonian Institution, the Library of Congress, The Annals of the History of Computing, Stanford University, Microsoft, Apple

Computer, Hewlett Packard, and Word Perfect. Other institutions and corporations had previously expressed strong interest in the project, but were unable to attend this meeting.

Those attending the meeting agreed on a number of significant points. They agreed that a "National Software Archives" should be established and that it should not reside in a single institution. Rather, it should have elements housed in many different organizations, including software producing companies, universities, libraries, cultural organizations, and museums. While housed in many different organizations, one institution should serve as the coordinating institution for the project, and at least one full-time staff person should be hired to work on the project. This person should be involved in both educating participants and potential participants on the project and the procedures and standards necessary for participation.

## New Trustees of the Babbage Foundation

The Charles Babbage Foundation recently elected Arthur Norberg, former Director of CBI, and Montgomery Phister, Jr. as new trustees.

**Montgomery Phister, Jr.** received his bachelor's and master's degrees in Electrical Engineering in 1949 and 1950 from Stanford University, and his Ph.D. from Cambridge University in 1953. At Cambridge University he worked with EDSAC, one of the first electronic computers. Between 1953 and 1971 he worked as an engineer and executive in industry, acquiring experience in three different sectors of the data processing business: at TRW, Inc., helping sell computers for use in industrial process

The person should also be in charge of cataloging official entries into the collection. Funding for the position might come from contributions of participants in the project or from grant funding.

In conjunction with the Archives, a national reviewing body would be formed that included representatives of cultural and historical organizations, universities, industry associations, information

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## Gift from Analysts International

In the fall of 1993, Analysts International Corporation made a \$10,000 donation to the Charles Babbage Institute. The purpose of the gift is to support the production of this newsletter. We are grateful to Analysts International Corporation and Fredrick W. Lang, its founder and chairman of the board. □

control; at Scantlin Electronics, Inc., helping design and operate an on-line stock quotation service; and at Xerox Data Systems, as Vice President for Development, helping design and manufacture computer equipment.

In addition to his contributions to industry, Dr. Phister began teaching courses in computing in 1954, including a course in logic design at the University of California at Los Angeles. He was a Visiting Lecturer at Harvard University in 1974. In addition to contributing several papers in the computing field, he wrote *Logical Design of Digital Computers* (1958) and *Data Processing Technology and Economics* (1975). □

## Internet Access to CBI Catalog

Abstracts of most of CBI's archival collections and over 250 oral histories may be searched on the University of Minnesota library catalog (LUMINA) through telnet. The new address for the catalog is:

**pubinfo.ais.umn.edu**

After initial prompt screens, a LUMINA help screen will display a list of search commands. CBI's records can be located quickly by using a keyword search that limits results to archival records. Thus,

**k=ENIAC.su. and babbage.851** will search for all of CBI's archival entries with the subject term "ENIAC." Oral history projects can be found with a similar search. Thus,

**k=darpa.773.** will search for all the oral histories linked to CBI's project on the history of DARPA/IPTO. Please contact the CBI archivist if you encounter any difficulties with catalog access. □

## CHARLES BABBAGE INSTITUTE NEWSLETTER

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## SHOT Conference Session Report

The 1993 Society for the History of Technology (SHOT) Conference in Washington, D.C. included a session on "Information Processing in Transition." The session, chaired by Paul Ceruzzi of the National Air and Space Museum, featured papers by Martin Campbell-Kelly (University of Warwick), Joanne Yates (Massachusetts Institute of Technology), and Jan van den Ende (Delft University of Technology) and Kees Bertels (University of Leiden). Arthur Norberg (University of Minnesota) provided the commentary.

Martin Campbell-Kelly's presentation, "Data Processing and Technological Change: the Post Office Savings Bank, 1861-1930" described the origins and workings of England's Post Office Savings Bank. Campbell-Kelly showed that large-scale and increasingly sophisticated information processing was required to meet the demands of industry and commerce even before the advent of the office machine technology of the late 19th and early 20th centuries.

Joanne Yates's paper, "From Tabulators to Early Computers in the U.S. Life Insurance Industry: Co-evolution and Continuities," described the interaction of the users of tabulators and computers at the Prudential Life Insurance Company and the suppliers of the equipment. Yates showed the influence of the tabulator era on the early computer era and the influence of users in the insurance industry on tabulator development.

Jan van den Ende and Kees Bertels each presented part of their paper,

## Atanasoff Exhibit

by Alexander Vultchev  
National Polytechnical Museum

During October and November 1993, the National Polytechnical Museum of Bulgaria featured an exhibit devoted to the 90th anniversary of the birth of Dr. John Atanasoff, who was responsible for the Atanasoff-Berry Computer (ABC). The exhibit contained photographs, printed matter, and papers loaned especially for this celebration by the Atanasoff family. It showed the heritage of Dr. Atanasoff (his father was a Bulgarian emigrant), his life and work, and the history of the ABC. □

"Computers and Industrial Organization: Early Sources of 'Just in Time' Production in the Dutch Steel Industry," which described the use of computers in production planning at the Hoogovens Steel Company. Bertels and van den Ende demonstrated that the choice of computing technologies was closely related to the organization of the production planning department and that its "just-in-time" system contributed to the demand for new computer equipment rather than being a consequence of the evolution of computer technology.

Arthur Norberg began his commentary on the three papers by giving an overview of twenty years of studies of the history of information processing and putting these papers into this larger context. He noted that in the 1990s historians began to enlarge the focus from technology and the supply side of the field to its application and its impact. In comparing the session to one held four years earlier at SHOT, Norberg explained that while both sessions had focused on drivers for technology development from an international perspective, this year's session had added the user's perspective. He concluded that the papers materially contributed to a slowly developing well-rounded history of information processing. He called for the next stage to offer evidence on how institutions changed by the inclusion of digital computers in their operations, which would help us to understand the limitations of this highly touted technology and illuminate its effect on competitiveness. □

## Current Research

A wide range of activities are underway in the history of computing. We invite researchers to share their interests and current projects and research with our readers in future newsletters. Please contact Judy O'Neill at CBI for further information. □

### Director Update

The search for a new director of the Charles Babbage Institute continues. During the interim, the Associate Director, Judy E. O'Neill, is serving as Acting Director.

# Computer History Association of California

by Kip Crosby

Co-Founder, CHAC

The Computer History Association of California (CHAC) was founded in April 1993 as an educational organization which studies, preserves, protects and popularizes the history of electronic computing in the State of California. The Association publishes a quarterly newsletter called the *Analytical Engine*, devoted to the history which CHAC is mandated to preserve, and collects hardware, software and documents that are significant to that history. It also forms part of an informal network of institutions specializing in computer history in California and throughout the United States and corresponds electronically with computer historians worldwide through the USENET newsgroup *alt.folklore.computers*.

CHAC founders initially perceived a lack of organized interest in the history of computing, especially in California. However, as we probed this field and made connections, we discovered a technological subculture centered in a small number of established institutions such as the Charles Babbage Institute, the Computer Museum in Boston, the Smithsonian Air and Space Museum, and Kean College. Far from being ignored, the history of computing is emerging as a particularly vigorous specialty within the history of science and technology.

CHAC and the *Analytical Engine* reflect that vigor. Typical issues of our newsletter contain articles about the history of computing in California; book reviews; news of recent computer history and developments at other historical organizations; a letters column; a column of queries submitted by readers; and details of any acquisitions by CHAC. Technical queries are accepted from all over the world and routinely fill almost half of each issue. The newsletter is available electronically and in a paper version. *Engine* staff got a clear view of the task before them when the second issue, published in October 1993, was six times the length of the first one published only three months earlier! The latest *Engine*, which appeared in January,

filled fifty-two pages in its paper edition.

The newsletter's growth arises from a daunting variety of potential subjects: delivery of California's first IBM computer in 1953, pioneering use of supercomputers at Lawrence Livermore Laboratory, development of commercial hard disk storage at IBM San Jose, and histories of early micros like the IMSAI, SOL, Apple II, and Atari ST.

This variety is reflected in the broad range of topics included in the *Engine*. The October issue contained articles about the Smalltalk language developed at Xerox PARC in Palo Alto, and the early minicomputer game Spacewar; January features included a history of the IBM 701 (California firms ordered over half the machines produced) and a technical article on the Intel Intellec, a microcomputer years older than the widely promoted Altair. An issue planned for later this year has the theme "Social and Economic Impact of Computing in California."

Donations, including revenues from the *Engine*, have kept the Association solvent and permitted judicious acquisition of hardware, software, and reference materials. CHAC's computer collection now includes about twenty micros, notably an IMSAI 8080, a SOL-20, and almost every Apple from the One to the 128 Mac. Promised donations of two important minicomputers have been postponed repeatedly by chronic shortage of storage space, which CHAC now rents at commercial rates; every issue of the *Engine* reiterates a request for donated or cheap storage to solve this most pressing problem. With micros arriving or promised several times a month, the pressure is unrelenting.

Unfazed, the Association is looking ahead to the turn of the century when the "2000 problem," the inability of many older computers to cope with dates ending in "00", will result in mass decommissioning of mainframes. General-interest publications, including the *New York Times*, have highlighted this problem recently and emphasized inconvenience to users; but the historian must realize that the oldest, rarest, and perhaps most significant large computers

are precisely those most likely to be scrapped. By that time, CHAC hopes to establish a museum that will focus on the history of computing in California and be large enough to hold several mainframes. It will use the latest automated, animated and virtual displays to make that history vivid and impressive. The museum's ramp-up campaign, *INITIATIVE 1999*, has been publicized by the local computer press.

Such a task is too big for any one organization, and the CHAC has linked itself with other interested parties, including the Lawrence Livermore Computer Museum, the Intel Museum, the City of Sunnyvale, the Historical Computer Society (El Paso, TX) and officers of the (currently stored) Foothill Museum of Electronics.

Corporate support will obviously be required, and grant proposals are being developed, but CHAC's near-term emphasis is on grass-roots support. Association members will participate in computer trade shows during 1994 and in a joint exhibit with the Historical Computer Society at the Los Angeles Computer Fair in Pomona on March 18-20, 1994.

In short, CHAC is taking off with a roar, and early grumbles of "Why only California?" have tapered off to nothing. Last summer, we received complaints from both sides — one camp criticized us for limiting ourselves to California, the other wondered why we were bothering at all. By steering a middle course we have defined a task that is huge but addressable. Correspondents in other states are advised to drum up interest for a CHA in their own state, and at least one — the Computer History Association of Delaware — has already filed for incorporation.

With luck, the beginning of the new century will see not only the building of a museum in Silicon Valley, but the chartering of popular organizations across the country to promote and protect the history of electronic computing.

For further information, contact Kip Crosby, CHAC, 1001 Elm Court, El Cerrito, CA 94530-2602  
E-mail: [cpu@chac.win.net](mailto:cpu@chac.win.net) □

## SHOT History of Computing Group

The Society for the History of Technology (SHOT) Special Interest Group in Information, Computing, and Society held its annual meeting in Washington, D.C. on October 16, 1993. Paul Ceruzzi of the National Air and Space Museum chaired the meeting.

In addition to describing their wide-ranging activities and projects, the assembled members agreed to plan a joint proposal with the Military History interest group for the next SHOT meeting and expressed interest in a mini-conference on the History of Computing immediately prior to the next SHOT meeting. The group also discussed the declassification of U.S. government records for historical use. While some declassification is in process, historians need to maintain consistent pressure in order to get each originating agency to review its documents for possible declassification. Ceruzzi will work with other SHOT members on a draft statement that expresses the Society's views. Other items under discussion included the group's electronic discussion list and possible names for the group.

Ceruzzi agreed to remain the chairperson of the group for another year. To get further information about any of these items, the SHOT special interest group, or the electronic discussion list, contact him at:

National Air and Space Museum,  
Smithsonian Institution  
Washington, D.C. 20560  
Telephone 202 357-2828  
E-mail: nasem001@sivm.bitnet □

*Software Archives continued from page 1...*  
technology companies, and appropriate small firms or individuals. Because setting standards and procedures for cataloging and managing the collection should be a collaborative endeavor, this group would establish standards for the collection, review the selection of potential submissions, and review management of existing items in the collection. The body would meet at least once a year.

The group also agreed that the National Software Archives would

## History of Communication Technologies

by Pamela W. Laird  
Chair, *Mercurians*

The Mercurians are the Society for the History of Technology's (SHOT) special interest group on the history of communication technologies. The Mercurians began meeting in 1986 for the purpose of generating networks between people who share work and interests in the history of communication technologies, defining the field broadly. Although most participants are SHOT members, about a quarter have joined from other directions and areas of interest. The group's activities include publishing a semiannual newsletter (*Antenna*), meeting annually at SHOT's conferences, organizing paper sessions for SHOT meetings, and pursuing contacts between meetings. *Antenna* serves both as a clearing house for readers and an informal forum for their ideas. The editors welcome contributions including notices and queries about Mercurians' projects as well as short essays on their work. *Antenna* includes book reviews and other materials received from readers about conferences, museums, publications, archives, funding, and other pertinent materials. All interested persons are welcome at Mercurians' meetings, however the fee to receive *Antenna* is \$5.00 for a two year period (\$6.00 for delivery to Canada and Mexico, and \$8.00 elsewhere). Please make your check out to SHOT, specifying Mercurians on the memo line and mail to Pamela W. Laird, P.O. Box 6972, Denver, CO 80206. □

include only those software materials deemed to have very long-term or permanent significance to software companies, the information technology industry, or the history of the United States. The collection would begin with core software materials, such as source code, compilers, and actual products. However it would also include supporting materials. These include (where possible) hardware on which the software could be run (recognizing that the active life of hardware will probably be much

## Corbitt Promoted

CBI's Assistant Archivist, Kevin D. Corbitt, was promoted to Library Assistant III in recognition of his increasing duties and capabilities. Corbitt came to CBI in 1991 after graduating for the University of Wisconsin at Milwaukee. After familiarizing himself with CBI's operation, he undertook to improve reading room procedures and forms. Corbitt has organized some of CBI's largest collections, including the Data Processing Management Association Records, the Claire Schultz Papers, Corporate Product Manuals, and the market research reports and surveys, for which he developed a detailed database. Lately he has worked on the Calvin N. Mooers Records, a collection of 150 cubic feet of records relating to the founder of the Zator Company and developer of the TRAC programming language.

Of greatest benefit to CBI is Corbitt's work in enhancing access to CBI's oral history collection. In 1992 he was part of a special project to catalog the oral history collection on the Research Libraries Information Network, and continues such descriptive work today. He has reduced the number of closed interviews by contacting past interviewees to secure formal release forms, and in the process has reedited many oral history transcripts. Most recently Corbitt conducted an oral history of Calvin and Charlotte Mooers in order to aid the processing of their papers.

CBI's service to researchers is greatly enhanced by Corbitt's performance; the Institute is pleased to announce his promotion. □

shorter than that of the software); contextual materials, such as rights and contracts, development files and electronic mail documents, management and administrative information, and business plans; and collateral materials, such as manuals, support records, packaging, promotional materials, and oral and video histories with principal participants. Access to some portions of the archives may need to be restricted for proprietary reasons. The first area of

*Software Archives continued on page 5...*

*Software Archives continued from page 4...*

focus would be microcomputer software from U.S. based corporations.

An appealing marking system would be developed for identifying items that had been accessioned in the national software archive. This marking, and the associated product names, would be made suitable for display in corporations who participated in the project and whose products had been selected for inclusion in the collection. The marking would also be put on storage boxes or other media holding the materials included in the collection to distinguish the items from other corporate records.

The collection should be cataloged in an existing national bibliographic database, such as the Research Libraries Information Network (RLIN) database or the Online Computer Library Center (OCLC) database. Such databases are readily accessible to both participants and researchers. Cataloging conventions should follow current professional standards where possible (i.e. MARC standards), and new standards should be developed where required in conjunctions with current national efforts.

Cataloging in the collection would be on collection, sub-collection, and item levels. Most entries would be only bibliographic in nature, but some would include full text of items. Examples are

general descriptions of the software or major features, as might appear in press releases or general reports.

Obviously many questions remain to be answered. The group realized that resolving even the major issues will take several years. However all agreed that a start on the project should be made while the development of procedures and standards would evolve incrementally.

At the conclusion of the Seattle meeting, the participants agreed on a series of subsequent actions. First, the participants planned to get comments and responses to its proposals by discussing it over the Internet and circulating its report to many individuals and soliciting their comments. Second, the participants agreed gather additional information by exploring details related to staffing the project and cataloging the entries with the appropriate parties and asking respected experts to begin compiling lists of potential software materials that should be included in the collection. Third, the group planned to hold another meeting to develop the idea further, and to broaden attendance. The next meeting is scheduled for March 18, 1994 in San Francisco, CA. During this meeting and subsequent to it the group will develop specific plans for funding the implementation of the National Software Archives, with a planned start-up date of

early 1995.

Further information can be obtained from David Allison, National Museum of American History, Smithsonian Institution, Washington, D.C. 20560  
Telephone: 202 357-2038  
E-mail: dkallison@aol.com □

## International Summer School

The universities of Bologna, Uppsala, and California at Berkeley, along with the Research Center in History of Science and Technology of the Cite des Science et de l'Industrie (Paris) are organizing a two-week Summer School in July 1994. The international summer school is a biannual event that brings together specialists to develop topics in history of science and technology deemed interesting, timely, and appropriate to the location. The chief goal of the School is to promote collaborative research on an international level. The topic of the 1994 Paris Summer School is *Science and Technology after the Second World War*. It is open to graduate students, university professors, and researchers interested in the topic. Application deadline is March 31, 1994. For an application or more information contact: Dominique Pestre, CRHST, Cite des Sciences et l'Industrie, 75930 Paris Cedex 19, France. □

## Thirty Years Ago... IBM Announced System/360

A mock up of an IBM System/360 configuration as envisioned when the system was announced in April 1964. Note the inclusion of the 2250 Display Unit, which a press release touted as enabling "operators to see information that is stored on disk drives, foreground, in core storage, left, or on the drums and tapes in the background." One historical source notes that the "actual accomplishments of interactive displays were still so limited that product planners were at a loss to know which potential applications to emphasize." The expense of the 2250 limited its use primarily to computer-aided design (see Pugh, Johnson, and Palmer *IBM's 360 and Early 370 Systems* (1991). □



## Friends of the Charles Babbage Institute

CBI acknowledges the individuals and groups listed below for their support of CBI's programs through their membership in the 1994 CBI Friends Program. We invite our readers to join them by becoming a "Friend of CBI." Information about the program can be found in the *Fall Newsletter* or by contacting the Institute.

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Thank you all for your support. □

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