

## CBI Sponsors Meeting of Archivists and Historians

With the increased interest in the history of computing in recent years, the number of archivists, historians, and curators participating has grown rapidly. This larger community provides the opportunity to address the critical issues in the field in a systematic way, but also introduces the problem of how to keep a larger community informed about who is working on what. With these concerns in mind CBI director Arthur Norberg called a meeting of historians, archivists, and curators actively involved in the history of computing to transfer information about interests in the field, to describe the programs and interests of CBI, and to gain a general appreciation of the important historical issues and the records needed to support historical research. The response to the invitation to the meeting was overwhelmingly positive, and twenty-one people attended the meeting in Philadelphia on May 9, 1986.

The meeting began with a series of descriptions of some of the active institutional programs and statements of their needs. Bruce Bruemmer described the CBI Archives and some of CBI's historical research. William Aspray discussed CBI's work on a national collecting strategy. Colin Burke characterized his needs in conducting historical research on early computing at NCR. Emerson Pugh presented his experiences writing a book on magnetic core memory and his participation in the IBM technical history project. Helen Samuels discussed some of the current research on documentation strategies and illustrated it by her experiences at the MIT Archives. Uta Merzbach recounted her curatorial experiences in computing over the past two decades at the Smithsonian's National Museum of American History. Oliver Strimpel outlined the collecting policies of the Computer Museum. Michael Nash reviewed his experiences working with the Sperry Corporation on their donation of business records to the Hagley Museum. Paul Ceruzzi discussed work underway to pre-

pare an exhibit on computers in aerospace at the Smithsonian's National Air and Space Museum.

The group then engaged in an open and wide-ranging discussion of historical and especially archival issues, in which they discussed problems encountered in their own work and possible solutions. Topics that came under discussion include: the skewing effect of business records collected by company legal departments, the importance of preserving working computer artifacts, the problems associated with company histories written by company employees, access to business records by historians and archivists outside the company, the relationship between issues of interest to historians and the records that are being saved, strategies for selecting and controlling records to document computer history, and historical and archival differences between hardware and software.

The group generated a list of some of the greatest immediate needs for the history of computing. These include: preservation of the archives of professional societies; a thesaurus providing a standard set of descriptors for the field; more oral history, especially in the corporate context; an accurate and comprehensive textbook on the history of computing; a catalog of available artifacts; additional emphasis on software companies; broadening the community of scholars, especially historians, involved in the field; a good historical study of computing as a model of development of science and technology in the mid-twentieth century; a conference on critical issues in the history of computing similar to those that have been held for other historical fields; better appraisal techniques for the history of computing; a database of machines which extends the Weik survey; a series of chronological historical surveys of various aspects of computing; a guide to the resources in collections; a collection of overview data held by the consulting houses on the computer industry made

available for historical research; a series of historical studies on the impact of computers on the sciences; and a greater use of computers in doing the history of computing.

There was insufficient time to discuss who would undertake these projects and how they could best be conducted, although it was generally accepted that they would require the efforts of the entire community. There was also a consensus that meetings where common problems can be shared and discussed informally are of great value and should occur at least occasionally in the future. □

### Guide to CBI Oral History Collection Now Available

CBI has recently completed a guide to its oral history collection. The collection contains over 140 interviews focused on computer and communications technology and their business and institutional contexts in the period since 1935. The interviews range over five general areas: technical development and management within the U.S. computer industry; computing in academic institutions; the role of the U.S. government in computer development; the international computing field; and the relations between mathematics and computing.

The introduction to the guide describes the general content of the collection, procedures followed in preparing the oral histories, and regulations and procedures for use of the collection. Each interview is abstracted, and information is provided about the availability of tapes and transcripts, copyright, and conditions on use. An index lists proper names and other important subjects that appear in the abstracts. Copies of the guide are available at a \$5.00 charge by writing to the Babbage Institute. □

## Recent Collection Acquisitions

A number of important record collections were donated to CBI during the spring. Of equal significance to the computer literature collection donated by the National Bureau of Standards (see separate article) was a series of donations relating to the Conference on Data Systems Languages (CODASYL). CODASYL was originally formed in 1959 to standardize the languages used in computer programs, and was responsible for the development of COBOL (Common Business-Oriented Language). While minutes, correspondence, and reports of CODASYL were routinely circulated, inactive CODASYL files usually found their way to the record storage areas of member corporations or were destroyed. In an effort to preserve CODASYL records, Jan Prokop, vice-president of Lexington Data Systems and the current chairman of the CODASYL executive committee, donated a collection of early records and urged others to send CODASYL material to CBI.

Other CODASYL donations were received from C. Alex Calder of the Norfolk Southern Company, and Thomas Harris of Digital Equipment Corporation. CBI's efforts to uncover records left by the late Charles Phillips, an early figure in CODASYL's history, resulted in a donation of records pertaining to Phillips' work with CODASYL. These had been saved by Oliver Smoot of the Computer and Business Equipment Manufacturers Association (CBEMA). CBI now holds approximately 20 cubic feet of CODASYL records which will be processed and organized in the near future.

The Systems Development Corporation donated a large collection of product literature and manuals from its library in Santa Monica. Stephen Gilheany of the Image and Signal Processing Division and Patricia Burwell of the Corporate Computer Program Library were instrumental in arranging to have this collection sent to CBI. Additional donations of manuals and reference material were received from Auerbach Publishers and the University of Minnesota Computer Center.

CBI's photograph collection received several excellent additions. Margaret Butler, who was involved in last year's "Pioneer Day" at the National Computer Conference, donated copies of photographs of early computers and personnel at Argonne National Laboratory and the University of Illinois. Alden Allen gave a

collection of photos and other records relating to Sperry's magnetic drums. The archives of the Commonwealth Scientific and Industrial Research Organization donated this photo of the CSIRAC, along with other material describing the first electronic computer produced in Australia.



Treavor Pearcey in front of the CSIRAC, Australia's first computer. The photograph (circa 1950) was recently received from the CSIRO Archives (Series 447, M36).

Other donations included product literature relating to early computer peripherals produced by Wharf Engineering Company (U.K.), donated by Andrew D. Booth; records from C-E-I-R, donated by the company's former president, Herbert W. Robinson; literature relating to the Univac File Computer, donated by David Gibbons; and Engineering Research Associates records, donated by Walter Anderson, a former ERA employee. All of these records are available for research use at CBI. □

## Bureau of Standards Donates Literature Collection

In the late 1950s the National Bureau of Standards (NBS) was charged with the task of following developments in computing. In response, the Bureau began to index and abstract books, journals, reports and other literature covering a broad range of computer-related topics

beginning in the late 1950s. Eventually the enormity of the task forced the Bureau to abandon this work in 1975, leaving behind a valuable set of computer literature. Faced with the need for more shelf space, the Bureau began to consider disposing the collection. A number of individuals within NBS, including Shirley Radack of the Institute for Computer Sciences and Technology, recognized the historical significance of the literature and began to search for alternatives to destroying the collection.

The Smithsonian Institution's Air and Space Museum was offered the entire set, but owing to the size of the collection (nearly 250 cubic feet), its staff decided to acquire only the portion up to 1961. Radack contacted CBI about the remaining portion, and after close inspection CBI willingly agreed to accept it. In May, CBI's Archivist and NBS staff packed 184 cubic feet of literature and shipped the collection to Minneapolis.

The collection contains reports and publications from corporations, government agencies, and academic computing centers. The strength of the collection is the material from the 1960s, a period in which bibliographic control of computer literature was just beginning to be established. Consequently, researchers should have an easier time locating much of this computer literature. The scope of the documents ranges from technical reports on specialized software to the application of computer technology to the humanities. Some subject areas are particularly well-represented, including automatic language translation, library automation, information retrieval, standards, and education.

The most valuable part of the collection is the series of indexes and abstracts that were developed at NBS. They provide annual author, institutional sponsor, title keyword, and report number indexes to all of the reports acquired in the year of the index. Unfortunately, all of the indexes prior to 1969 were lost, and the remaining indexes and abstracts are photocopies. CBI had hope to compile one index from the annual indexes, the machine-readable version of the indexes are no longer available. The indexes also suffer from incomplete data; some items that were indexed cannot be found in the collection. Likewise, there is

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material found in the collection that was never indexed.

In spite of these problems, there is no doubt that the collection will be useful to researchers. CBI continues to analyze the collection, and it is hoped that the material from 1962 to 1968 will be indexed at some time in the future. As the value of this collection becomes more apparent, the Bureau will have the gratitude of an increasing number of historians for its work in preserving this historical resource. □

### Sponsorship of CBI

During the past year, several sponsors made substantial gifts to promote CBI's archival and research program called the National Collecting Strategy. This program will: provide sufficient historical analysis to facilitate the identification of appropriate records that adequately describe the development and application of the digital computer; assess the universe of records, both those already available in repositories and those still in private hands; develop appraisal guidelines that can be used in all the different personal and institutional situations in this history; and evaluate the methods used and the reports produced and, subsequently, designing a National Collection Strategy to appraise and preserve the necessary documentation for research into the history of this new technology.

AT&T Foundation contributed \$50,000 to this effort. The IBM Corporation contributed \$25,000. As a matching gift to these, the Andrew W. Mellon Foundation awarded an additional \$25,000.

Several sponsors granted unrestricted monies for general operations support. AFIPS contributed \$66,000 this year. Other major contributors were: Burroughs Corporation, Dataproducts Corporation, Sperry Corporation, and Arthur Young & Co.

CBI's work would be impossible without this support and we are happy to acknowledge it here. □

### NSF Supports CBI Research on Von Neumann

The National Science Foundation Program in History and Philosophy of Science has awarded CBI Associate Director William Aspray a two-year grant to research and write on John von Neumann's Development of the Computer as a Scientific Instrument. The grant will enable him to thoroughly review archival resources and published literature, collect additional archival material including oral histories, and write a scholarly history.

Seven historical issues will be considered: the change that arose in numerical methods in the period 1945-1957 to accommodate the computer; the changing role of computation in the sciences as the punched card tabulator, the differential analyzer, and the desk calculator were replaced by the stored program computer; the changes in the scientific and the technological disciplines to which the computer was applied; the importance of the Institute for Advanced Study as an international center of scientific computation; the importance of the Institute and Princeton University as an educational leader for a new group of computer-oriented scientists and mathematicians; the role of von Neumann in scientific research on the IAS and other early computers; and the establishment of computing as a mathematical science. The project will not consider von Neumann's role in the design of computing equipment, which has been investigated by many other scholars.

Aspray welcomes any information about archival materials related to this project and about people involved in scientific computing in the period up to 1957, whether or not they knew von Neumann. □

### Computer History Sessions at Joint Meetings in Pittsburgh

The History of Science Society, Philosophy of Science Association, Society for the History of Technology, and Society for the Social Study of Science will hold their annual meetings jointly in Pittsburgh from October 23-26. Several sessions will consider topics related to the

continued on page 6. . .

### Friends of CBI

CBI offers this special acknowledgment 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.

**Colleague Members:** Mr. Charles A. Zraket.

**Participating Associate Members:** Ms. Bernice Arnold, Dr. Allan G. Bromley, Mr. Don A. Christenson, Dr. Arnold A. Cohen, Mr. Harvey G. Cragon, Dr. Grady Early, Mr. Bruce F. Elchison, Dr. John W. Fendrich, Dr. George Gourrich, Mr. Jerrier A. Haddad, Mr. J. Scott Hamilton, Mr. L. C. Hobbs, Rear Admiral Grace M. Hopper, Mr. Louis Horwitz, Dr. George Jacobi, Professor Aravind K. Joshi, Mr. Kenneth W. Kolence, Mr. John W. Lacey, Dr. Will E. Leland, Ms. Sandra K. Nelson, Professor Allen Newell, Mr. John E. Parker, Mr. Byron Phelps, Dr. Mina Rees, Mr. Michael J. Samek, Science Museum of London, Mr. Andrew Scott, Professor Ryota Suekane, Mr. Garry J. Tee, Mr. Paul D. Weiser, Mr. Irving Wieselmann.

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## MEMBERSHIP PROGRAM:

Your membership assists CBI's effort to assure the existence of an accurate record of the information processing field's evolution. If you are not currently a "Friend of CBI," please consider becoming one.

A Babbage Associate \_\_\_\_\_ \$30 donation \_\_\_\_\_ besides supporting the work of CBI you will receive:

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- a 20% discount on the CBI Reprint Series for the History of Computing.

A Babbage Participating Associate \_\_\_\_\_ \$75 donation \_\_\_\_\_ besides supporting the work of CBI you will receive:

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 Participating Associate—\$75       Sustaining Colleague—\$500  
 My company has a matching gift program or might be willing to support the work of CBI

My check for \$ \_\_\_\_\_ is enclosed payable to the Charles Babbage Foundation which is the support arm of CBI.  
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Name \_\_\_\_\_  
(Please show Prof., Dr., Mr., Ms., as appropriate)

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I am interested in the history of information processing:

- From the standpoint of someone involved in information processing.       Both of the above.  
 From the standpoint of a practicing historian.       For other reasons (Please state reasons).

Return to the Charles Babbage Institute, University of Minnesota, 103 Walter Library, 117 Pleasant Street S.E.,  
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## COMPUTING IN THE TWENTY-FIRST CENTURY

A Symposium on Computing and Society, Past and Future

In Celebration of the 40th Anniversary of the  
Founding of Engineering Research Associates, Incorporated

Organized by

*The Charles Babbage Institute, University of Minnesota*

Sponsored by

*The Sperry Corporation*

September 9 and 10, 1986

Minneapolis, Minnesota

Computing in the Twenty-First Century, a symposium celebrating innovation in computer technology, is a tribute to the industry's growth, its betterment of everyday life and its potential for the future. Looking to the future necessarily involves looking back at the roots of computer science. The symposium also will commemorate the 40th anniversary of the founding of Engineering Research Associates, Inc., (ERA) and its contributions to the computer industry. As the first digital computer company in Minnesota, ERA is parent to more than 100 computer firms. During the past 40 years, dedicated professionals defined the principal issues in computing—speed, storage capacity, capabilities and applications. Simultaneously, entrepreneurs sought ways to market the new products. Together, they created a revolution. The growing sophistication and pervasiveness of the computer of today, in combination with the formulation of the philosophy of artificial intelligence, has the industry on the threshold of another revolution. With such rapid growth potential, many questions are raised about the future. Computing in the Twenty-First Century will present today's computer industry leaders addressing these issues and more during the two-day symposium, designed for senior managers with high technology firms, researchers, engineers and academicians. Attendees will become more aware of the industry's new dimensions, how it is transcending regional and national environments, and what entrepreneurial initiatives are needed to perpetuate its growth.

### TUESDAY, SEPTEMBER 9, 1986

7:30 Registration

8:30 Opening Remarks

Edwin D. Decker, *President, Sperry Defense Products Group*

Kenneth H. Keller, *President, University of Minnesota*

#### Session One

*Chair: Willis K. Drake, Regent, University of Minnesota*

9:00 "The Legacy of Engineering Research Associates, Incorporated"

John A. Rollwagen, *Chairman and Chief Executive Officer, Cray Research, Inc.*

9:30 "Computer Entrepreneurship in the Middle of the Twentieth Century:  
Engineering Research Associates, Inc."

William C. Norris, *Chairman Emeritus, Control Data Corporation*

10:15 Break

*Chair: Arthur L. Norberg, Director, The Charles Babbage Institute, University of Minnesota*

10:30 "High Technology: Problem Solving in the 21st Century"

Daniel P. Siewiorek, *Professor, Department of Computer Science and Electrical Engineering, Carnegie-Mellon University*

11:45 Lunch

"Applying Tomorrow's Technology Today"

Gerald G. Probst, *Chairman and Chief Executive Officer, Sperry Corporation*

#### Session Two

*Chair: Ettore F. Infante, Dean, Institute of Technology, University of Minnesota*

1:00 "Ciphers and Society"

Donn B. Parker, *Senior Management Systems Consultant, SRI International, Inc.*

2:15 "The Changing World of Research and Learning"

Donald L. Bitzer, *Professor of Electrical Engineering, University of Illinois, Champaign-Urbana*

3:30 Break

3:45 "The Computer in America's Businesses"

Fred W. Weingarten, *Program Manager, Communications and Information Technologies, Office of Technology Assessment, U.S. Congress*

### ERA CELEBRATORY DINNER

6:00 Reception

7:00 Dinner

"Facing up to Foreign Competition: Can We Succeed?"

John L. Diebold, *Chairman, The Diebold Group, Inc.*

### WEDNESDAY, SEPTEMBER 10, 1986

#### Session Three

*Chair: Pat Corbin, Senior Technical Manager, Knowledge Systems Center, Sperry*

9:00 "Beyond Programming-in-the-Large: The Next Challenge for Software Engineering"

Mary Shaw, *Chief Scientist, Software Engineering Institute, Carnegie-Mellon University*

9:45 "Artificial Intelligence Research: The New Wave"

Woodrow Bledsoe, *Vice President, Microelectronic Computer Technology Corporation*

10:30 Break

10:45 "The Half Micron Apocalypse in Very Large Scale Integration"

Dennis D. Buss, *Vice President, Semiconductor Group, Texas Instruments*

11:30 "Supercomputing: Needs at the Frontier"

Lloyd Thorndyke, *President and Chief Executive Officer, ETA Systems, Inc.*

12:15 Summary and Closing

Arthur L. Norberg, *Charles Babbage Institute*

#### ERA Reunion Session

1:00 Luncheon.

Greetings and introductions.

Short tributes, anecdotes, rebuttals.

Participants: All.

Discussion starters: Five charismatic ERA types.

Moderator: Erwin Tomash.

3:30 Conversation and refreshments.

Exhibits. Videotapes. No speeches.

5:30 Adjournment. Until 1996?

There will be a hospitality room for ERA people during the entire two-day symposium.

REGISTRATION FORM  
Computing in the Twenty-First Century  
September 9-10, 1986, Radisson South Hotel, Bloomington, Minnesota

Name \_\_\_\_\_  
Organization \_\_\_\_\_  
Address: Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Telephone No. \_\_\_\_\_

Full Symposium—\$125 (includes lunch and ERA dinner, Sept. 9) \$\_\_\_\_\_  
ERA Celebratory Dinner only—\$50 (Keynote speaker: John Diebold) \$\_\_\_\_\_

ERA REUNION SESSION

Please register me for the ERA Reunion \$60/person, Sept. 10 (Includes dinner sept. 9 and lunch Sept. 10.) \$\_\_\_\_\_

TOTAL \$\_\_\_\_\_

Please send me more information about the special ERA reunion on September 10.

Return registration form and a check payable to "Computing in the Twenty-First Century" to:  
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Registrations must be received by mail *only* before August 25, 1986.

If you have questions, please call (612) 624-5050.

No cancellations will be accepted after September 2, 1986.

Hotel Accommodations

A number of hotel rooms have been reserved for symposium attendees for the nights of September 8-9, 1986, at the Radisson South Hotel, 7800 Normandale Blvd., Bloomington, Minnesota 55435.

The room costs are \$65 for single or double room, and \$75 for Plaza Tower single or double room. Reservations should be made directly with the hotel.

A credit card number must accompany the reservation request.

For reservations, call Toll-free: 1-800-228-9822; in the Twin Cities area, call 835-7800

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history of computing. Sylvia Doughty Fries (NASA History Office) will chair a session on "Key to the History of Science and Technology in Postwar America." Paul Ceruzzi (National Air and Space Museum) will speak on "Electronics Technology and Computer Science—A Coevolution"; Robert D. Friedel (Maryland) on "Mastering Complexity: The Transformation of Electronics"; and Michael McMahon (Philadelphia), "Politics and the Shaping of Technology: NASA, Space Electronics, and the Apollo Computer". David Lewis (Auburn) will comment. □

## CHARLES BABBAGE INSTITUTE NEWSLETTER

The Charles Babbage Institute, The Center for the History of Information Processing, is sponsored by AFIPS and the information processing community.

The Charles Babbage Institute Newsletter is a publication of the Charles Babbage Institute, University of Minnesota, 103 Walter Library, 117 Pleasant Street S.E., Minneapolis, Minnesota 55455, telephone (612) 624-5050. The Newsletter reports on Institute activities and other developments in the history of information processing. Permission to copy without fee all or part of this material is granted provided that the source is cited and a copy of the publication containing the copied material is sent to the Institute.

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CBI has a new telephone number:  
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