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Use of CBI's Research-Grade Oral Histories from CBI

By Arthur L. Norberg

The CBI archives contains over 330 research-grade oral history interviews with computer scientists and engineers, entrepreneurs, and government figures. Most of these oral histories are readily available, and many can be downloaded from the CBI Web site. In fact, hundreds of electronic copies are downloaded each month. But what is a research-grade oral history, and how is it used in research and writing? The content of oral histories range from the random and autobiographical, for which the interviewer engages in little or no preparation and asks few questions, to recordings of speeches and seminars chosen by the "interviewee," to carefully planned interviews, for which the interviewer engages in significant preparatory research on the life and work of an individual to formulate meaningful questions that can elicit important information on events, technologies, and organizations. This third type is a research-grade oral history. The intent of this task, where preparation time far exceeds the actual recording time, is to examine in-depth a person's work and accomplishments over a significant portion of their life. By exploring several topics, the material gained can be used in a number of ways to interpret the history of information technology. To successfully produce such interviews, the interviewer must be knowledgeable about the range of activities of the interviewee, the kind of computing and institutional activity of the interviewee, as well as pertinent technical and institutional context. CBI oral history interviews vary from one to fifteen hours, depending on many factors (availability of time, goals established for the interview, etc.).

Certain efficiencies can be achieved if several interviews are recorded with people who were all associated with an activity or organization under study for a particular research project. Several of CBI's major research projects included oral history components to advance knowledge in a specified area and take advantage of such efficiencies. During the Engineering Research Associates, Inc., study, thirty-one interviews were recorded, transcribed, and edited. Forty-seven people were interviewed for the DARPA/IPTO project, and these are also now available. Some of these IPTO interviews are the most heavily used in CBI's collection. So far, as part of the ongoing Software History Project, 21 interviews have been recorded. Some of these are already available to researchers, others will be in the near future. Former CBI Associate Director William Aspray interviewed 7 people for his biographical research project on John von Neumann. Historical researchers outside CBI have also donated oral histories after completion of their research project. For instance, after completing her book on the history of the Eckert-Mauchly Computer Company, Nancy Stern deposited interviews taken with principal figures in this history.

While I have identified the general subject area of CBI oral histories that extended from major research projects, the range of topics deserves further explication. The DARPA/IPTO project interviews were devoted primarily to four topics: management at and funding by IPTO, time-sharing and networking projects, artificial intelligence research, and institutions funded by IPTO. The operations of the IPTO office did not leave behind an adequate paper trail of activities, decision-making processes, and evaluations of results. CBI historians were able to piece together a remarkable story of program development from printed records, but needed to turn to participants for information about the decision-making processes and evaluations. To enable future researchers to have better knowledge of the individuals who made these decisions and evaluations, we recorded much personal data regarding education, past associations, and experience. In the beginning, this data gathering had an unforeseen importance. Over time, the surviving volume of (at least available) records became smaller. As a result, checking personal recollections against documents, when it was possible at all, seemed almost random. At this point, confirmed recollections of the early years at IPTO were compared against those of people in the later years. Making allowances for changes in DARPA over two decades and for personality differences, the information gained in the interviews substituted for the lack of records.

From this example we can draw one or two universal cautions about the use of oral history in research and writing. First, accounts of past events in oral histories should not be taken at face value. As time passes, all of us tend to forget details and then exaggerate our role in an event. We tend to embellish our role at the expense of the role of others. Since individual biases and the accuracy of accounts vary from case to case, checking details against the recollections of others or with contemporary documents is essential. Second, members of a community sometimes recount stories to each other so many times over the years, a consensus develops that is believed even though it is at least in part counterfactual. I saw this in two communities, one in the interwar development of the electronics industry on the West Coast and one in the Cold War nuclear physics community in California. To understand when this has happened, repeated questioning of participants against contemporary documents is necessary to try to find variations that can be elaborated until people remember differently, if they will. This kind of preparation and doggedness improves the quality of oral histories, and provides better material for later research and writing.

At the outset of CBI's ERA series of interviews, this community story issue and concern about the lack of records for comparison had to be addressed. Through a diligent search, we unearthed a body of records from various sources (these records are now part of the Sperry Collection at the Hagley Museum and Library), allowing us to check the community story. In this case, the community story was remarkably correct in the details as well as the overview of the company and personnel. ERA had a particularly interesting connection with the 3M research people that helped both sides in the development of new magnetic tape and drum products, and we interviewed several people from 3M to fill out the story.

Returning to the IPTO project, the records, publications, and reminiscences about time-sharing and networking development are voluminous. Here a rich story could be told. Given the subsequent success of the Internet, this cache of interviews provides many details about the background of networking development. The publications provide only the results of the story. The attention paid to the Internet development in a wide range of publications, and the penchant of writers to rely on interviews of all types, has brought these CBI interviews to wide notice and use. These oral histories were used to good effect by myself and Judy O'Neill in our history of IPTO. In addition, these oral histories were at least a starting point for Katie Hafner and Matthew Lyon's book *Where Wizards Stay Up Late*, a popular history of networking. More recently, Mitchell Waldrop used these and many other CBI oral histories in his voluminous study of J. C. R. Licklider and his times (*The Dream Machine*). Waldrop very generously paid tribute to the value of CBI oral history interviews in his bibliographic essay at the end of the book. Janet Abbate found these oral histories helpful in her elegant study of Internet history *Inventing the Internet*. These are but a few examples where use of CBI oral histories added to our understanding of networking history.

The oral histories focused on artificial intelligence (AI) research sponsored by IPTO proved very helpful in tracing the planning for projects and the relations among research efforts at different institutions. Little work had been done on the history of AI when these interviews were recorded in the late 1980s. The interviews provided a trace of projects and personnel, and led us to the most significant papers in the field. The interviews also yielded information on institutional development in those centers that pursued AI research.

A quite different story about the need for oral histories emerged from William Aspray's von Neumann study. For this project, Aspray believed he needed to interview only seven people. Since academic scientists tend to accumulate a significant number of records and publications about their work, in contrast to corporate scientists, engineers, and entrepreneurs, oral histories fill a very special niche here. The interviews help with details about educational experience, problem selection, relationships, controversies, role definition, and confirmation of the written record where there is discrepancy. When he recorded these interviews, Aspray had already completed an enormous amount of archival research and the interviews show his erudition in the questions asked of the subjects.

Well over half of the CBI oral history collection reflects CBI's focus on the computer industry. Among interviews with corporate leaders, the collection contains material on Bolt, Beranek, Newman (11 interviews), Burroughs (10 interviews), CDC (58 interviews), Dataproducts (5 interviews), General Electric (9 interviews), Honeywell (3 interviews), IBM (42 interviews), International Computers Limited (4 interview), National Cash Register (12 interviews), Remington Rand (23 interviews), Systems Development Corporation (3 interviews), and 3M (3 interviews). Other interviews at least touch upon developments at 30 other companies. While the majority of companies are from the hardware side of the industry, the number of interviews on the software and

services trades is significant, and is rapidly growing as work on the Software History Project continues.

CBI oral histories frequently are cited in articles and books by people not connected with the Institute. To provide anywhere near a representative list would overburden the reader. Four examples provide a flavor of the citations that contain references to use of CBI oral histories. Two articles in recent *Annals of the History of Computing* issues are Gray and Smith on Univac (Vol. 20, 1998) and Aspray on academic computing history (Vol. 22, 2000). Steve Lohr in his recent book *Go To* (2001) employed several oral histories that provide information on educational experiences of some influential individuals from the software field. Michael Hiltzik's *Dealers of Lightning* (about Xerox PARC) used some of the CBI DARPA/IPTO interviews that detailed activity at PARC.

More information on CBI oral histories can be obtained from the CBI web site.

Charles Babbage Foundation Holds Symposium in San Jose

By Jeffrey R. Yost

The Charles Babbage Foundation (CBF) held a symposium, *Ensuring the Future of the Past*, at the Silicon Valley Convention Center (San Jose) on Friday, May 10th and Saturday, May 11th to formally announce its intention to broaden the organization's scope and bring together leading industrialists, scholars, journalists, and others to speak on projects and issues regarding information technology and its history. Approximately 100 individuals from the information technology community attended the event.

CBF Chair James Cortada kicked off the symposium by providing a brief introduction to the record of accomplishment of the Charles Babbage Foundation and the Charles Babbage Institute. He paid special tribute to Erwin and Adelle Tomash, the founders of the two organizations. Cortada, who moderated the first day of the event, then turned things over to CBF Board Member and BEA Systems founder and Chief Technology Officer William T. Coleman who spoke in greater detail about CBF's history and future plans.

Coleman highlighted the role CBF has played in partnering with the University of Minnesota to support the Charles Babbage Institute. In addition to relating the foundation's financial support to CBI, he emphasized CBF's role as an advisor to the Institute. Coleman highlighted the CBF Software History Task Force that was convened several years ago to address the neglect of software history relative to studies on computer hardware. The final report of the Task Force provided key components

forming the basis for a CBI proposal for a \$488,000 NSF-sponsored project entitled “Building a Future for Software History.” The Knowledge and Distributive Intelligence Directorate of the NSF fully funded the project and CBI is now engaged in the final year of work on this three year initiative to build infrastructure and electronically disseminate resources for studying software history.

Coleman also addressed CBF’s plans to play a more direct role in helping to coordinate work between organizations that are wholly or partially involved with the preservation of information technology archives and artifacts, and conducting historical analysis in this field. Among other possibilities, he discussed the plans CBF has to create a portal bringing together a wide range of digital resources on the history of information technology.

Charles Babbage Institute Associate Director Jeffrey Yost then spoke on CBI’s twenty-five years of leadership in preserving documentation and conducting and fostering historical analysis on the history of computing, software, and networking. He detailed the scope of CBI’s archival materials, its past and current research projects, publications, and the Tomash Fellowship program. He emphasized how this program, along with the Institute’s record of collaborating with other organizations on projects and events, has been critical to building a vibrant scholarly community to advance research on the history of information technology.

To round out the first day, Keynote Speaker and the CEO of Google Eric Schmidt gave a presentation entitled, “Google Should Not Be an Anomaly: A Blueprint for Inventing and Building Innovative and Successful User-centric Products.” He detailed the scope of the Google search engine and its operation. He stressed that the key to successful high technology firms, like other types of companies, is to develop great products, and he emphasize the flawed practice of many “dot.coms” of putting marketing ahead of product development. He also emphasized the small workgroups of Google as important to the firm’s success. Schmidt’s presentation was followed by a short but lively discussion focused on Google’s technology and management.

The second day of the symposium was chaired by CBF Trustee Tom Rindfleisch, Director Emeritus of Lane Medical Library at Stanford Medical School, and a Fellow of the American College of Medical Informatics. He broadly characterized a number of issues regarding digital resources and introduced each of the day’s speakers beginning with Mitchell Waldrop.

Waldrop presented highlights from his recent book, *J. C. R. Licklider and the Revolution That Made Computing Personal*. The first part of his talk focused on Licklider’s leadership role with the IPTO, and the development of the ARPANET. He then shifted to discuss his methodology and challenges he overcame, such as the paucity of archival documentation on Licklider. He emphasized the particular importance of CBI oral histories with Licklider and other key IPTO figures to his research. Finally, Waldrop related Silicon Valley’s focus on the future as both a factor in its success as well as its Achilles’ heel.

Henry Lowood, Curator of Special Collections at Stanford University Library, spoke next on the building of the library's Silicon Valley Archives. He related how this was a relatively traditional archives until about four years ago, but since has engaged in a number of new media projects. One that he described is the Silicon Valley Oral History Project to video tape interviews with pioneers in information technology from the region. Lowood also discussed his project on the history of computer game design, entitled "How They Got Game." This project, funded by Stanford University's Humanities Laboratory, has developed a host materials on the history of computer gaming that are now available on the project Web site:

http://www.stanford.edu/group/shl/research/how_they_got_game.html

Lowood's colleague, Timothy Lenoir, a professor of the history of science and technology at Stanford University, then expanded and broadened the discussion of using new media to create resources and conduct historical research on science and technology. He emphasized the importance of using new technology to create and extend collaborations between historians; and scientists and technologists in academe, industry, and government. More specifically, he described the use of the Web and networking technologies to create "collaboratories" through forums and focus groups, interactive timelines, interactive genealogies, and video conferencing.

Brewster Kahle of the Internet Archive followed. He described his work and the resources of the "Wayback Machine," a massive resource that continually takes, preserves, and makes accessible snapshots of the World Wide Web. While this is a valuable tool for researchers, Kahle stressed the need to balance this resource with published and unpublished materials documenting our culture and history. He indicated that costs and copyright issues have been cited as the primary road blocks, but argued the expenses were modest and that the ownership hurdle could also be overcome.

The Executive Director of CRA, William Aspray, concluded the symposium by moderating a discussion of the panel of the Saturday morning speakers. He asked several questions of the panel, including assessing the relative value of future investments in bricks and mortar libraries and archives versus funding digital-only resources.

After lunch, many in attendance took a bus to the Computer History Museum in Mountain View. The museum's Board Chair Len Shustek gave a brief informal address about the museum's history, current displays, and future plans. This was followed by a tour of the museum's vast and impressive collection of computers and related artifacts ("Visible Storage").

NSF/KDI Workshop in New Orleans

CBI Associate Director Jeffrey Yost and Software History Project Manager Philip Frana participated in a National Science Foundation-Knowledge and Distributed Intelligence (KDI) Principal Investigator workshop April 26-28 in New Orleans. The workshop was organized to exchange information on interdisciplinary research—including CBI's project "Building a Future for Software History"—sponsored by KDI. KDI focuses on achieving new paradigms for acquiring information and knowledge, harnessing new communication and networking technologies, and disseminating resources to new as well as established research communities.

The agenda for the meeting was three-fold. The first part of the workshop addressed goals set for interdisciplinary research and the construction of appropriate metrics for cross-disciplinary collaboration. The second part considered individual projects' research findings and assessed difficulties in scientific collaboration. The third part involved discussion of future directions for interdisciplinary research and possibilities for fostering new initiatives. The workshop included short talks on NSF goals, organization, and interdisciplinary research findings by Michael Lesk, Division Director, Information and Intelligent Systems, National Science Foundation; Wesley Shrum, Professor of Sociology and Director of Graduate Studies, Department of Sociology, Louisiana State University; and National Science Foundation program director Susan Iacono.

A large share of the workshop was given over to small group discussion of project objectives, activities, and results. Participants shared ideas about appropriate tactics in computer-mediated communication, including the idea of research "infiltrators" who attain some measure of expertise in a second field, and the possibility of a new class of experts gifted in two widely disparate "sub-disciplines." While recognizing many benefits for graduate students developing expertise in new interdisciplinary areas, some participants voiced concerns regarding the lack of a reward structure for those between established disciplines. Others talked about the serious challenges in perception faced by advanced students who entertain multiple allegiances in research.

In small group discussions Yost and Frana discussed how the Software History Project had built new resources for studying the history of computer software, how it captured opportunities for meeting the needs of wide constituencies of researchers, and how the careers of the project participants, including graduate research assistants, were advanced through conducting the work of the project. They also fielded questions about prospects for preservation of electronic communications—research notes, project Web sites, software tools—for use by scientists and historians in the future.

Philip L. Frana

CBI Archivist Promoted

The Charles Babbage Institute is pleased to announce that CBI Archivist Beth Kaplan was promoted from Assistant to Associate Librarian with continuous appointment this April by the University of Minnesota. This promotion is in recognition of her strong record of service, publication, and overall job performance.

Before coming to CBI in July 1999, Beth served as Collection Archivist at Iowa State University of Science and Technology, and earlier, held positions at the MIT Archives and the John F. Kennedy Library. Her numerous accomplishments at these posts have only been surpassed by her many achievements at CBI.

Beth has brought in many important collections, including: the William C. Norris Papers, Martin L. Goetz Papers, the ADR Software Division Records, Robert V. Head Papers. She also has shown leadership in applying the latest information technology to enhance accessibility and functionality of CBI resources, as exemplified by the oral history database and Burroughs image database (sponsored by Unisys).

Beth also has excelled in providing leadership and service to the broader archival field. She has been a regular contributor to the archival literature, writing important articles in *American Archivist*, and other journals, on topics related to the role of archives in the construction of history, memory, and identity, and the history of visual literacy and visual language. She is a frequent referee of library and archives sponsored project proposals and serves as review editor of *American Archivist*.

Early this year Beth was awarded a three-month research leave by University Libraries to conduct a study of the response of archivists to computers and related information technology in the early post-war era (see article in *CBI Newsletter* 24:2). More recently, she was awarded a \$10,000 research fellowship from the National Historical Publication and Records Commission to provide additional support for this project.

CBI congratulates Beth on her promotion and is very grateful for her many contributions to the Institute, University Libraries, the University of Minnesota, and the national and international archival community.

Jeffrey R. Yost

News From the Archives

Collections Received

AFIPS, IRE, and General Kinetics, Inc. donation

Incoming collections this spring included a large donation of materials from Walter Anderson, whose career included 19 years with General Kinetics, Inc., and lengthy service to professional associations during critical times in their history. The papers will be divided between the Walter L. Anderson Papers (CBI 28) and the AFIPS Records (CBI 44).

The General Kinetics (GKI) materials will be added to the Anderson Papers. GKI, one of many offshoots of Engineering Research Associates, was incorporated in November 1954. Anderson was a member of the founding group, which included William B. Goggins, Robert P. Gutterman, Alfred E. Roberts, and Franklin McCutchen. Anderson kept a variety of materials for his own ready reference during that period and the files provide detailed documentation of the company's history.

Portions of the AFIPS materials will be added to CBI's existing AFIPS collection, while those materials documenting Anderson's particular contributions will be added to his personal papers collection. AFIPS materials document Anderson's long involvement with the organization, including his service as president from 1972-1973. They provide valuable information about developments such as the 1972 USA – Japan Computer Conference, which was intended to be the first of several international joint computer conferences, and the decisions leading to the establishment of the National Computer Conference, which replaced the Spring and Fall Joint Computer Conferences.

The donation also includes materials, dating from the mid-1950s to the mid-1960s, that document Anderson's service to the IRE through its merger in 1964 with the AIEE to form the IEEE. Among other posts, Anderson served as national chair of the IRE Computer Group.

New oral histories available in full text on CBI Web site

The following oral history interviews, conducted by CBI historians, are now available in full text on the CBI Web site: Mark McCahill; William McGee; Donald E. Knuth; Peter Patton; Donald D. Chamberlain; Edsger Dijkstra; Ben Persons; Herb Pelnar; Adelle Tomash. Oral histories are at www.cbi.umn.edu/oh/

Wanted: issues of *Research & Education Networking*

Research & Education Networking, a monthly newsletter established in 1990, featured subjects relating to the development, use, and impact of computer networking for research and educational purposes. The newsletter featured analysis of development of

the Internet, networking, electronic publishing, and other issues of interest to the academic, library, government, computer, and communications communities. In 1993, the serial was reformulated as *Internet World*, a magazine geared toward a more popular audience.

Some of the most important materials in the CBI archives are serials that were published in short runs and disappeared quickly from the scene. These serials provide snapshots of unique and brief periods in the history of information technology that are not easily documented by other means.

We hope to acquire the full run of *Research & Education Networking* and welcome donations of any issues. Please contact CBI archivist Beth Kaplan at kapla024@tc.umn.edu

Software History Center's ADAPSO Reunion

The Software History Center held a reunion of ADAPSO on May 3-4, 2002, to provide an opportunity to socialize and record perspectives of ADAPSO activists on the early software industry. The event was co-sponsored by the Smithsonian's National Museum of American History, *IEEE Annals of the History of Computing*, ITAA, and the Charles Babbage Institute. On May 3 the SHC arranged for approximately 15 oral histories to be conducted by the half dozen historians of computing that attended and participated in the reunion. This important set of oral histories on the software industry will be donated to CBI and made available to researchers in the near future.

That evening the Software History Center held the reunion banquet. Former New Jersey Senator Frank Lautenberg gave a keynote address, providing a number of interesting anecdotes about or related to ADAPSO or the early software industry.

On Saturday, May 4, a plenary session was conducted by Software History Center President Luanne Johnson. She spoke on the background, purpose, and accomplishments of the Software History Center before turning the stage over for brief statements by representatives from each of the co-sponsoring organizations. CBI Associate Director Jeffrey Yost spoke on the "Five Senses of CBI," briefly outlining the Institute's sense of: purpose, programs, products/services, community, and possibilities/future directions.

This was followed by morning and afternoon workshop sessions on key groups or issues within ADAPSO. Each of the workshops were moderated by a principal ADAPSO leader directly involved with the particular workshop area or theme. Each workshop was co-moderated by one of the computer historians in attendance. The different sessions included: Accounting Issues, ADAPSO Conferences, Banking Litigation and Issues of

the 1960s, Big Eight Accounting Firms, Contracts Reference Directory, IBM Relations Industry Image, Industry Roundtables, Intellectual Property Issues, and Telecommunication Issues. The transcripts of all the workshops will be distributed to each of the ADAPSO Reunion attendees/participants.

Between the two groups of sessions, attendees were treated to a lunchtime address by leading computer historian Martin Campbell-Kelly. Campbell-Kelly gave a brief background on his soon to be published book on the software industry as well as provided a discussion of the historiography of software.

The Charles Babbage Institute is grateful to the Software History Center's Luanne Johnson and Burt Grad for organizing this successful event, repeatedly encouraging those who may have historically significant records to contact CBI, and for donating the oral histories conducted at the reunion to the Institute.

Jeffrey R. Yost

Blake Archive Project Records Find a Home at CBI

CBI is delighted to announce the acquisition of the project records of the Blake Archive, a groundbreaking hypermedia project of the Institute for Advanced Technology in the Humanities (IATH), a research unit of the University of Virginia.

The Blake Archive has been supported by the Library of Congress and the Preservation and Access Division of the National Endowment for the Humanities, among others, and is an ongoing project of IATH and its editors. (The Blake Archive can be viewed and searched at <http://www.blakearchive.org>) The Blake Archive, which first went online in 1996, is an international public resource that provides access to high-quality digital representations of the works of William Blake, the originals of which are widely dispersed and difficult to access. It represents one of the earliest and most influential examples of electronic scholarship, establishing standards for electronic editing, site construction, and digital reproduction, serving as the model for subsequent projects. The Blake Archive currently receives an average of 1600 site visits per day.

Envisioned as an all-in-one edition, catalogue, database, and set of scholarly tools capable of taking full advantage of the opportunities offered by new information technology, the Blake Archive project began as (and remains) an innovative collaboration between humanists and technologists. Humanists (Morris Eaves, University of Rochester; Robert Essick, University of California, Riverside; and Joseph Viscomi, University of North Carolina at Chapel Hill) had worked together on two volumes of the new 6-volume Blake Trust edition of Blake's illuminated books. Technologists involved a variety of specialists directed by Dr. John Unsworth at IATH.

While the Blake Archive is historically significant among electronic scholarship projects for a variety of reasons -- including its early start, its pioneering use of technology, its collaborative structure -- the project is also unique in that the complete record of its development, from its inception to the present, has been meticulously preserved. These project records include grant proposals, meeting minutes, project participants' correspondence, the public "Blake update" message board, screen captures from the 1995 HTML demo forward, user comments, and technical materials documenting the development of the Blake Archive Document Type Definition. Together, these records capture aspects of information technology history that would not have been documented. These include the phenomenon -- unique to our time -- of "book-people" transitioning from traditional to electronic publishing, the nature of online collaborations and distance-editing, the development of technological standards for electronic scholarship, and the responses of users to an innovative online product.

The Blake Archive project records will be processed and made available for research at CBI this summer.

Elisabeth Kaplan

Recent Publications

Akera, Atsushi. "Volunteerism and the Fruits of Collaboration: The IBM User Group, SHARE" *Technology and Culture* 42:4 (2001) 710-736.

Akera, Atsushi and Frederik Nebeker. *From 0 to 1: An Authoritative History of Modern Computing* (New York: Oxford University Press, 2002).

Atkinson, Paul. "The (IN)Difference Engine: Explaining the Disappearance of Diversity in the Design of the Personal Computer" *Journal of Design History* 13:1 (2000) 59-72.

Beranek, Leo. "Roots of the Internet: A Personal History" *Massachusetts Historical Review* 2 (2000) 55-75.

Broy, Manfred and Ernst Denert. *Software Pioneers: Contributions to Software Engineering: SD&M Conference 2001* (Berlin: Springer, 2002).

Brown, Barry, Nicola Green and Richard Harper. *Wireless World: Social and Interactional Aspects of the Mobile Age* (New York: Springer, 2002).

Burnham, Van and Ralph H. Baer. *Supercade* (Cambridge: MIT Press, 2001).

Gawer, Annabelle and Michael Cusumano. *Platform Leadership: How Intel, Microsoft, and Cisco Drive Industry Innovation* (Cambridge: Harvard Business School Press, 2002).

Gerovitch, Slava. *From Newspeak to Cyberspeak: A History of Soviet Cybernetics* (Cambridge: MIT Press, 2002).

Malone, Michael. *Betting It All: The Entrepreneurs of Technology* (New York: Wiley, 2002).

Pang, Alex Soojung-Kim. "The Making of the Mouse" *American Heritage of Invention & Technology* 17:3 (2002) 48-54.

Richards, Sally. *Inside Business Incubators & Corporate Ventures* (New York: Wiley, 2002).

Stauffer, David. *Business the Sun Way: Secrets of a New Economy Megabrand* (Oxford: Capstone, 2002).

Thomas, Douglas. *Hacker Culture* (Minneapolis: University of Minnesota Press, 2002).

Wells, Wyatt. "Certificates and Computers: The Remaking of Wall Street, 1967 to 1971" *Business History Review* 74:2 (2000) 193-235.

Williams, Rosalind. "All That is Solid Melts Into Air: Historians of Technology in the Information Revolution" *Technology and Culture* 41:4 (2000) 641-668.

Compiled by Jeffrey R. Yost

75 years ago

(See photographs in PDF with graphics version of *CBI Newsletter*.)

In 1927, the Burroughs Adding Machine Company acquired an approximately 500-acre tract of land on Crooked Lake near Brighton, Michigan (40 miles from Burroughs headquarters in Detroit) to be used as a recreation area for Burroughs employees. The recreation area, called Burroughs Farms, was opened for use on May 28, 1927. Standish Backus, president of the company, gave a welcoming address at the opening ceremony. In his address, as described in the June 20, 1927, *Burroughs Bulletin*, Backus noted that Burroughs Farms had been purchased for the use of all Burroughs people, and said, "We hope that it will add to your health and happiness, subtract from your tribulations, multiply your pleasures and divide your worries."

Early improvements to the recreation area included clearing underbrush and building roads, setting up a campground near the lakefront, installing a nine-hole golf course,

building a dozen cottages and a pavillion, refinishing a farmhouse on the property as a clubhouse, and erecting shooting traps, a rifle range, and targets for archery practice. The Burroughs Corporation owned the recreation area for 54 years.

Carrie Seib