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Director’s Desk

My basic theme in these columns is the expansion and vitality of computer history and the leading place of the Charles Babbage Institute. Imagine, for a moment, what scholarship might well look like a decade in the future: At an international meeting of the Society for the History of Technology, computer history will have a huge presence. Let’s say that, what, one-third of all the conference papers will have a prominent and meaningful connection to computer history. Since it’s difficult for U.S.-based scholars to travel overseas, you might fantasize about an international meeting having 60 people sign up for the annual SIGCIS day-long workshop and 50 people attend the annual SIGCIS lunch and book auction. You would anticipate that the scholarship in computer history already recognized by the annual SIGCIS–Computer History Museum book prize might be fully recognized by the wider scholarly society. You might dream that a computer history book would win SHOT’s prestigious Edelstein book prize. Of course, you would think to yourself, that’s all for the future . . .?

But—surprise—this future is today! As our article on this year’s SHOT conference in Copenhagen makes clear, computer history is having a massive impact right now. I counted 45 computer history papers at this year’s SHOT conference, in total, given at either the three full sessions organized by Tom Haigh under the auspices of SIGCIS or the entire day-long annual workshop held on Sunday plus the additional 17 computer history papers that were sprinkled into the regular SHOT program. Overall, SHOT sponsored 50 full sessions on an incredible variety of topics, from indigenous water control in Asia to Soviet-era spaceflight, with a total of 134 papers in the main SHOT program. Tipping the scale (just a bit) to include the SIGCIS Sunday workshop, you can see that one-third of the total conference papers were computer history. Oh yes, and that dream of a computer history scholar winning both the SIGCIS-CHM book prize and the SHOT Edelstein book prize also came to pass, with Eden Medina’s Cybernetic Revolutionaries: Technology and Politics in Allende’s Chile (MIT 2011) taking both honors. I had the honor and privilege to speak at the special plenary session held to honor her magnificent book.

One way or another, CBI happily shares in these achievements. We are especially proud of Eden’s work, since she is a former CBI-Tomash fellow. Come to think of it, nearly the entire top leadership of SIGCIS is composed of former CBI-Tomash fellows, with
Andrew Russell and Marie Hicks joining Tom Haigh. Looking down the program I counted no fewer than six additional Tomash fellows as well as three recent recipients of CBI’s Norberg travel grants. I repeat the observation that CBI is facilitating a “take off” in computer history.

We are also very pleased to report that CBI’s new full-time archivist is R. Arvid Nelsen. Attentive CBI watchers may remember his name, since he was also formerly the CBI Archivist. He did a spell in University Libraries management then decided to return to CBI. Arvid, as we’ve mentioned, brings a world of experience and many talents to the position, including his national leadership in the Rare Books and Manuscripts Section (RBMS). He is “returning” but not merely to his same position, since the University Libraries has also asked him to head up its efforts in digital archiving. In the past year or so, as “digital humanities” has taken off nearly everywhere you look, and as RBMS makes its own efforts to confront the challenge of digital archiving, we at CBI are truly fortunate to have Arvid on board once again. You may contact Arvid as before at <nels0307@umn.edu>.

Another essential partnership is that of the CBI Friends, our annual fund-raising appeal. For the basic CBI Friends membership of $100, we will be pleased to send you the four quarterly issues of IEEE Annals of the History of Computing “hot off the presses.” For those who join at the $250 level or higher, we’ll be happy to mail you (in addition to the Annals) our latest volume, Building the Control Data Legacy: The Career of Robert M. Price (CBI 2012), a 400-page illustrated oral history further described in this newsletter. It is the best existing historical source on the Control Data saga, and it can be yours today. However you choose to participate, you’ll have the significant satisfaction of contributing to the long-term growth and financial health of CBI and the field of computer history. Our thanks to our many Friends around the world!

Thomas J. Misa

Charles Babbage Institute: Glimpses of the Founding

When the history of computing itself becomes the subject for historians, the Charles Babbage Institute will play a prominent role in their narrative. The history of CBI has been explored already in a special issue of the IEEE Annals of the History of Computing in 2001 that honored the “Legacy of the Tomashes to Computing History.” When I came to CBI in 2006, I closely studied Arthur Norberg’s essay on the relationship between CBI and the Charles Babbage Foundation, then in a moment of transition. Bruce Bruemmer and Elisabeth Kaplan described building the CBI archives, including an incredible story about how the Edmund Berkeley papers came to CBI. Other articles by Bill Aspray, Jeffrey Yost, Mike Williams, and Martin Campbell Kelly added viewpoints to what is the
best readily available history of CBI in its formative years. A special issue of the *CBI Newsletter* from Fall 2003 contains a valuable essay by Arthur Norberg providing further insight on “Twenty-Five Years of the Charles Babbage Institute.” Also a 2006 oral history with Arthur Norberg, conducted by Bill Aspray and Jeffrey Yost, offers additional personal perspective.

Imagine my surprise, then, when I inspected the archival records that describe the behind-the-scenes activities from those early years. There is a unique and detailed—and sometimes unvarnished—perspective that researchers can get only by confronting the archival evidence. I was especially struck by the immense effort that went into securing a permanent home for CBI, one of the chief activities of those early years. Before I share some of my findings, perhaps I can offer an overview of CBI’s early history.

As the special issue of *Annals* makes clear, Erwin Tomash was the moving force and guiding light behind the creation of CBI. A veteran himself of the California and Minnesota computing scene, and later CEO of Dataproducts, a prominent manufacturer of computer peripherals, Tomash in the 1970s cast about for a way to gain insight into the momentous changes in the computing industry that he and his colleagues had brought about and seen first hand. He followed the lead of his well-placed advisors and created a research center for the history of computing, initially called the International Charles Babbage Society but by early 1978 known as the Charles Babbage Institute.
CBI set up offices in Palo Alto, California, at 701 Welch Road—at the edge of Stanford University and a stone’s throw from the venture capital district along Sand Hill Road—and began assembling the people and resources needed to get the new venture off the ground. One of the first tasks was securing a permanent home for the center, which would have research and archiving as its central mission. The short story about the search is that the universities of Minnesota and Michigan were the finalists—both received a visit by the site-selection committee. In the end, CBI came to the University of Minnesota in 1980. Arthur Norberg was hired as the first permanent director in 1981. CBI was soon enough off and running.

Over the years, computer history has flourished in significant measure because of CBI’s path-breaking activities in conducting oral histories, collecting archival materials, performing research, sponsoring the annual Tomash Fellowship, organizing conferences, providing travel grants, and supporting hundreds of researchers in many different ways. A vital partnership with the University of Minnesota’s library system, science and engineering college, and program in the history of science and technology has made for an unusually strong foundation. It is difficult to know how much of this remarkable history could possibly have been foreseen in those early years. But one thing is very clear: there was careful thought and systematic effort that went into site selection. I learned a number of lessons myself when examining the archival materials documenting this pivotal moment (Charles Babbage Institute records (CBI 73), especially box 15 for site selection).

My first archive-sparked surprise was the long list of universities that did not make the finalist’s round. Walter Bauer, a business colleague and friend of Erwin Tomash, took capable charge of the site selection committee. Bauer had organized Informatics, Inc., initially as a software subsidiary of Tomash’s Dataproducts. Bauer and his committee drew up a 25 page “proposal invitation” inviting university bids for establishing “a research and educational center devoted to the history of information processing,” with responses due in early February 1980.

No fewer than 39 universities were “considered as a host institution” and this was no casual list. Beside each university there was the name of an outstanding senior administrator or eminent computer scientist: at Yale, Perlis; at Stanford, Feigenbaum; at Chicago, Ashenhurst; MIT, Moses; North Carolina, Brooks. That is the notable figures Alan Perlis, Ed Feigenbaum, Robert Ashenhurst, Joel Moses, and Fred Brooks, who had recently published his classic book on the Mythical Man-Month (1975) about the IBM System/360. The Michigan bid was headed by Bernie Galler, the prominent computer scientist who was then taking up the inaugural editorship of Annals of the History of Computing; while at Minnesota the chief contact initially was Arnold Cohen, one of the ERA-Univac veterans and then a member of the engineering dean’s staff.
The proposals that rolled in to Bauer’s committee are something to consider. One oddity is that several universities invented their own name for the new entity, since the proposal invitation had seemingly left open the possibility that the Charles Babbage Institute would continue a separate existence (indeed the Charles Babbage Foundation was organized to provide a locus for governance and fundraising). For instance, in its proposal MIT suggested a Center for the History of Information Processing—to be known as CHIP (I). At the University of California–Irvine, CBI might have been closely connected with the pioneering figure in social informatics Rob Kling. Besides the two finalists Michigan and Minnesota, and the designated two alternates MIT and Wisconsin, the files contain full proposals also from Kansas, Illinois, University of Southern California, University of California–Irvine, Triangle Universities Center for Advanced Studies (North Carolina), Virginia Polytechnic, and Polytechnic Institute of New York. Stanford, for its part, had difficulties finding space.

The thickest proposal in the file was, as it turns out, the winning proposal. Roger Steuwer, the founding member of Minnesota’s program in the history of science and technology crafted a detailed 75-page proposal (in addition to three thick appendices) around the argument that CBI should move to Minnesota. I talked with Roger this week, and he remembers organizing faculty and administrators across the campus and far into the upper reaches of the university administration. His case in the proposal was startling in its specificity and clarity. He marshaled one line of evidence by reviewing the University of Minnesota’s strengths in history of science and technology (with four full-time faculty members); strong library and archive facilities; active support from faculty in computer science, electrical engineering, statistics, and the management school; as well as the wider attractions of the Twin Cities. Another forceful argument highlighted “the extraordinary depth and vitality of the computer industry” in Minnesota, with the presence of no fewer than fourteen computer companies, including Control Data, Sperry Univac, Cray Research and others. Roger also worked out the many details, offering specific and attractive plans for an administrative structure, cost-sharing, faculty appointments, and high-quality office and archival space.

That fateful spring of 1980, the site-selection committee made day-long visits to Minnesota and Michigan on April 17th and April 18th, respectively. In addition to Walter Bauer, the visiting committee included Paul Armer, James Birkenstock, Paul Berthiaume, and historian Robert Multhauf. Archivist Joan Warnow separately conducted an assessment of the two institutions. In the files there is a two-page single-spaced document, entitled “Summary After Site Visits,” that comes as close as archival records can reveal to the decision-making of the time. The document, undated and unsigned, records a close race between the two finalists (a quick vote done at the end of the second day, when members were running off to catch their airplanes home, did not result in a clear winner).

Considering the intellectual environment, Michigan got the nod for having the stronger computer science and library science programs as well as superior computing facilities. Minnesota got the clear nod, however, for its established program with four faculty in history of science and technology. (Michigan went so far as promising to hire an additional historian of science/technology if that might favorably tip the scales.) Minnesota showed the visiting committee offices and archival space (totaling 3,000
square feet) in the centrally located Walter Library, where, indeed, CBI was physically located until its move in 2000 to the newly opened Andersen Library, its present location. Minnesota also offered the space rent-free. Michigan, by contrast, “has no space on campus” and promised to help with arranging rental space nearby for a three-year term. The committee favorably noted Minnesota’s offer to “give us space indefinitely at no cost” as well as its offer to provide half-time support for an archivist and graduate-student assistant. Both universities saw the CBI director teaching courses part-time and accordingly offered half-time salary support.

In the end, as we know, the decision was in favor of Minnesota. There is a thick file of correspondence concerning the actual legal agreement that structured the CBI–Minnesota arrangement. As with much else, the devil’s in the details. I will take a careful look at this emerging—and evolving—relationship in a future issue of the *CBI Newsletter*.

Thomas J. Misa

CBI’s Computer Security History Project

We recently entered the second year of our three year National Science Foundation-sponsored project, “Building an Infrastructure for Computer Security History” and have been busy with research, conducting oral histories, and creating a project wiki. Over the past seven months we have interviewed computer security pioneers Rebecca Bace, David E. Bell, Steve Lipner, Roger Schell, Barry Schrager, Tom Van Vleck, and Steve Walker. Eldon Worley will be interviewed by Thanksgiving.

Roger Schell assembled the influential Anderson Committee of computer security experts and led a fundamental research effort for the Air Force in the first half of the 1970s, teaming with MITRE’s Steve Lipner and David E. Bell. Bell, in collaboration with Leonard LaPadula, developed the highly influential Bell-LaPadula mathematical model for security that has been central to “high assurance” computer security for the defense and intelligence communities for more than three decades. Lipner went on to lead an effort to design a high assurance system at Digital Equipment Corporation, and then joined Microsoft where he co-developed the software giant’s influential Security Development Lifecycle. Steve Walker, a computer security leader for the Defense Advanced Research Projects Agency and the National Security Agency in the 1970s and early 1980s, was central to the DoD Computer Security Initiative and to the launch of the Department of Defense Computer Security Center in 1981 (later renamed the National Computer Security Center). He founded Trusted Information Systems in 1983, one of the most important early firms in the computer security field—which ran the first Whitehouse.gov server, developed the Trusted Xenix operating system, and did pioneering work on firewall technology (TIS was acquired by Network...
Tom Van Vleck began working on MIT’s Compatible Time-Sharing System as an MIT undergraduate and went on to do system work in refining Multics, first at MIT and then at Honeywell Information Systems. Multics, which was developed by Fernando Corbató and colleagues at MIT’s Project Mac in the second half of the 1960s, was the first major operating system designed for security and became the model for the National Computer Security Center’s B2 trusted criteria.

In the early 1970s Barry Schrager led user group IBM SHARE’s committee of computer security experts, work that set the general parameters for IBM’s RACF and Schrager’s competing ACF2 (marketed by the firm he co-founded SKK)—both of which were fundamental tools for access control security of commercial systems in the second half of the 1970s. Through subsequent iterations, RACF and ACF2 (now owned by Computer Associates) continue to be important for authentication, authorization, and auditing functions in the commercial sector. Eldon Worley was the designer and longtime leader of IBM’s RACF. Rebecca Bace led an influential National Security Agency research program to fund academic centers of excellence engaged in path breaking work on computer system intrusion detection. She is one of the world’s leading experts on intrusion detection and has written the top textbook on the topic.

We will continue a full slate of interviews with computer security pioneers in 2013 on our way to completing more than 30 for the project. The complete transcripts of the Schell and Schrager interviews are already published online, while the other half dozen are in the process of being transcribed and edited and will be available in the near future.

Our graduate student Nic Lewis joined the project in September and hit the ground running. He has been doing excellent work in conducting research and developing and managing the project’s wiki. This has included creating historical entries for influential individuals, institutions, programs, publications, and conferences in the computer security field. Of particular note, Nic has created a graphical timeline for all the major computer security conferences, as well as a database of articles documenting the popular and business understanding of computer security. Much of the wiki content is internal for the project team and the advisory board at this point, but will evolve to become an important, freely available public resource for researchers in the future.

Jeffrey R. Yost
NEW CBI BOOK

Building the Control Data Legacy: The Career of Robert M. Price

We don’t ordinarily transform our oral history transcripts into 400-page books, profusely illustrated, professionally published, and publicly available on Amazon.com and at finer bookstores everywhere. But then this oral history with Bob Price, who rose through the ranks to succeed Bill Norris as Chairman and CEO of the Control Data Corporation, is not an ordinary one. Partly by design, and partly by luck, Building the Control Data Legacy (CBI 2012) is far and away the best source available anywhere to understand this leading 20th century computer company.

Bob and I agreed to begin a set of interviews, after we met and talked over the prospects at one of my public talks on “Minnesota’s Hidden History in Computing.” We began with a rough overall plan to cover his entire career, from his early experiences programming the first generation of stored-program computers in California, though his 29 years at Control Data, and onto his more recent activities teaching at Duke’s management school and advising start-up companies. We even touched on Control Data’s initiatives in what became known as corporate social responsibility. All in all, a promising plan.

We had several unusual resources to draw on. First was the set of several dozen oral histories already done with other executives and managers at Control Data, many of which are available on CBI’s online oral history database. A second unusual resource was having the entire Control Data Corporation archives at our finger tips. When we did segments on Control Data’s international operations, for instance, I was able to bring to our interview specific documents from the time. Bob often offered insights that were valuable in interpreting the business and financial strategies that shaped the documents themselves. And then there were Bob’s personal papers, with his own detailed memos and correspondence, astonishing “to do” lists from his days in international operations and as sales manager, and unvarnished “first drafts” of documents that later became part of the official company records.

About two-thirds of the way through what turned out to be 20 hours of recorded interviews, it dawned on me that this was not a normal oral history. We typically do a careful editing process and post a clean PDF on the oral history database. This set of interviews was much more, and I proposed that we create a book from these rich
materials. All along, I had been finding wonderful period photographs of the Control Data people, facilities around the world, and the company’s notable products. I selected 80 of the best photographs and assembled them with the finished transcript into a 400 page book. The book’s dust jacket includes further information on its contents.

The book tells a far more complex and compelling story about Control Data than anything else I know. The first chapter of Bob Price’s own book, The Eye for Innovation: Recognizing Possibilities and Managing the Creative Enterprise (Yale 2005), is probably the best introduction to Control Data’s diverse history. Many people turn to the adulatory biography by James Worthy, William C. Norris: Portrait of a Maverick (Ballinger 1987). Bob made a number of trenchant comments on Worthy’s perspective and interpretations, giving a more rounded view of Norris and his inimitable leadership style. We took particular care to document the early California-based programming activities that Bob himself was a part of, and its link to computer services that was a main theme of his career. One thing led to another and Bob connected us with Fred Laccabue, Hewlet-Packard’s “oldest employee” (before his retirement) and one of the Control Data engineers who had managed a complex and controversial project for the U.S. Air Force. In short order CBI’s associate director Jeffrey Yost conducted an oral history with him. Drawing on this and other research on the history of the Air Force’s Advanced Logistics System (Laccabue was the lead manager on this massive Control Data contract), Yost published a paper for the IFIP World Computer Conference in Brisbane, Australia. While Control Data is, to this day, best known for Seymour Cray’s stunning line of “supercomputers,” the oral history indicates that the company’s efforts in mass manufacturing of computer peripherals as well as its prescient effort in computer and information services were key parts of the company’s activities and financial picture.

You can purchase this valuable book on Control Data’s history at Amazon, Barnes and Noble, or order it through your local bookstore. You can also, if you haven’t done so already, join the CBI Friends at the $250 level or higher and we’ll be pleased to send you a copy. With more than 80 archival photographs and 15 thematically focused chapters, it is an essential book for your library.

Thomas J. Misa

News from the Archives

Happy to Be Back!
Greetings from the Archives here at CBI! I would like to first say that I am delighted to be back serving CBI’s collections and communities after two years supporting other units at the University of Minnesota Libraries. My return to the role of CBI Archivist also comes with an added role as Electronic Records Coordinator for the Department of Archives and Special Collections. In that capacity I am examining issues pertaining to the acquisition, processing, preservation, and accessibility of born-digital archival materials. This has been an area of interest and concern for donors and researchers associated with
CBI and many other collecting units in the Libraries for some time, so it is very exciting that we are taking this on. Currently, I am working on a training and education program for Libraries staff and a task force examining technical infrastructure requirements. More information will be made available as we build and expand our abilities and capacities for supporting this critical area of collections.

**Classes and Tours**
The fall 2012 semester kicked off with a great deal of activity! We have brought classes in to Andersen Library from the History Department and the History of Science, Technology, and Medicine Program. Students in each of these classes received hands-on experience with materials from CBI’s Control Data Corporation Records and the Edmund Berkeley Papers, learning about the scope of materials and subjects within archival collections and how one can piece together information from a variety of sources to create a comprehensive picture of a time period or issue. CBI, along with the other collecting units in Archives and Special Collections, also hosted a special event for the Friends of the Libraries and the Loft Literary Center that included a building tour and introduction to materials in special collections units by way of a “speed-dating” model. For CBI, I introduced participants to the Social Issues in Computing Collection that we started a few years ago and have been continuing to build.

**Acquisitions and Access**
All summer and fall we have engaged in a number of conversations with potential donors of new collections; some discussions are ongoing and some have borne fruit in terms of new collections at CBI. The history of Minnesota computing and agriculture come together in development materials for a product of Control Data Corporation: Swine Trak. We have received a number of periodicals, both issues to fill-in or extend existing runs of previously collected titles and some new and obscure titles.

*R. Arvid Nelsen*

**SHOT 2012**
The Society for the History of Technology (SHOT) held its annual meeting this year at the Copenhagen Business School (CBS), in Copenhagen, Denmark, from 4-7 October 2012. The SHOT meeting immediately followed the Fifth Tensions of Europe Conference, also meeting at CBS. Heading the local arrangements for both meetings was Lars Heide, the newly installed Editor-in-Chief of *IEEE Annals of the History of Computing*. Heide recently succeeded CBI’s own Jeffrey Yost.

The first night featured a plenary session entitled “Transnationalism and the History of Technology: Lessons from Tensions of Europe and Other Projects.” Eden Medina, a former CBI-Tomash Fellow who is now at Indiana University–Bloomington, was on the program three times, first for her thoughtful contribution to this opening plenary. Then
her recently published *Cybernetic Revolutionaries: Technology and Politics in Allende’s Chile* (MIT Press 2011) was awarded not only the SIGCIS–Computer History Museum book prize but also SHOT’s prestigious book prize. For this she was honored at the special Sidney Edelstein Book Prize Roundtable on Friday afternoon.

On Friday, October 5th, SHOT’s Special Interest Group for Computers, Information, and Society (SIGCIS) had its annual lunch, with Danish flair, as well as its book auction to help raise funds for graduate student travel to SHOT.


![Marie Hicks presenting Sally Deffor with a SIGCIS travel award. Photo courtesy of Tom Haigh.](Image)

There were three SIGCIS-sponsored sessions in the main SHOT program, organized by Thomas Haigh (University of Wisconsin–Milwaukee). “The Social Origins of Personal Computing” was chaired by John Laprise (Northwestern University in Qatar) with comment by Thomas Haigh and papers by Kevin Gotkin (University of Pennsylvania) “When Computers Were Amateurs: Hobbyist Computer Clubs, 1966–76” and Laine Nooney (Stony Brook University) “Home is Where the Game Is: Sierra On-Line and Women’s Computer Gaming.” The session “International Information Identities” was chaired by Daniel Holbrook (Marshall University) with comment by Marie Hicks (Illinois Institute of Technology) and papers by Petri Paju (University of Turku) “Composing a New Europe: IBM’s Electric Typewriter and European Reconstruction,” Ramesh Subramanian (Quinnipiac University) “Technology Policy and National Identity: The Personal Computer Comes to India,” and Christopher Leslie (Polytechnic Institute of New York University) “CSNET and the Internationalization of the Internet.” And the session “International Information Societies” was chaired by Pascal Griset (Université Paris IV, Sorbonne) with comment by Gerard Alberts (Amsterdam University) and papers by Giuditta Parolini (University of Bologna) “The Politics of the Statistical Tables for Biological, Agricultural and Medical Research,” Bernard Dionysus Geoghegan (Humboldt University, Berlin) “Claude Lévi-Strauss and the Technologies of Man: Cybernetic Reasoning and the Reform of the Human Sciences,” and Ksenia Tatarchenko (Princeton University) “A Plan for the Soviet Future: Programming, the Second Literacy.”


Thomas J. Misa

Exploring the Archives: Resources on Personal Computing

The following article is the ninth in a series highlighting materials in the CBI collections. The topics in this series have been chosen both for their historical significance as well as to call attention to materials/collections that may not be known to the research community.

The strength of CBI’s collections in mainframe computing is abundantly clear as the institute’s two largest collections are the records of two of the longtime mainframe giants: Burroughs Corporation and Control Data Corporation (each collection is over 350 cubic feet). Many other important collections—including the SHARE, Inc. (IBM) Records, Sperry Rand Corporation Univac Division Honeywell vs. Sperry Litigation Records, the Edmund C. Berkeley Papers, the Computer Product Manuals Collection, and the National Bureau of Standards Computer Literature Collection—help round out CBI’s unparalleled documentation of the history of mainframe computing. Less well known, is that CBI also has an abundance of important materials to study the history of personal computing. In scrolling through the online listing of CBI’s roughly 200 manuscript collections, perhaps only one small collection (less than a foot)—the Thomas Becker
Collection of Macintosh Monographs—stands out as clearly containing materials on personal computing. Even keyword searches (searching full-text of CBI archival finding aids) only yield a small portion of CBI’s materials on personal computing. This is because such searches do not capture our richest set of resources on personal computing: serials (magazines, journals, and newsletters). The earliest of these publications helped inspire pioneering electronic hobbyists to tinker with computers—the Altair 8800 and other “kits”—and in some cases, launch path breaking personal computer companies. 

The Homebrew Computer Club, which first met in March 1975 in Gordon French’s garage, is legendary for inspiring San Francisco Bay Area electronics hobbyists and fueling the early personal computing movement. There were other personal computer user groups in the mid-1970s, but none rivaled Homebrew in size or significance. Many first generation personal computer entrepreneurs, including Steve Jobs, Steve Wozniak, Adam Osborne, and Lee Felsenstein, attended early Homebrew meetings. At these meetings attendees inspected hardware systems, exchanged code, and networked with like-minded individuals. The organization’s publication, the Homebrew Computer Club Newsletter, helped the club spread the word and rapidly expand (it quickly outgrew French’s garage and met at ever larger locations, such as the auditorium at the Stanford Linear Accelerator Center). The Homebrew Computer Club Newsletter provides vivid documentation of this club’s activities and its scope in launching the personal computing revolution. CBI has many of the newsletters from Homebrew’s first five years (1975-1979), including issues dating back to September 1975 (see figure above).

Serials are not only critical resources to identifying and understanding technical and commercial origins in personal computing, but they also were important to shaping and reflecting the field’s continuing evolution. In some cases, such serials are invaluable resources for studying the social and cultural history of computing. One such newsletter held at CBI, The Amateur Computerist, could be invaluable to labor historians of information technology. This newsletter was launched in 1988 in the wake of a lost battle by Ford River Rouge factory laborers to push management to continue to offer computer programming classes. The Amateur Computerist provides an important glimpse into industrial labor perspectives on personal computing and how the United Auto Workers union supported “computers for the people” efforts. The publication also focused heavily on computers and factory automation issues. Perhaps counterintuitive, some of the early articles in the newsletter call for auto companies to invest more rapidly in automation, arguing simultaneously for reduced hours and greater benefits for workers that could extend from the resultant gains in efficiency. Such articles cite that the auto companies instead favored squeezing added labor and efficiency from their workers to reduce costs. Occasionally, arguments were also published that stressed that automation
would probably not help workers, as any gains would be retained by the companies rather than shared with workers. Automation discussions in The Amateur Computerist follow a broader trend of the newsletter in selecting critical issues for debate, and then offering contrasting labor-oriented perspectives. One such topic in an early issue was whether computer users should learn to program or not. The newsletter also regularly published labor inspired poetry as well as software code for short applications programs for various systems (such as the TRS-80 and Commodore 64). In the 1990s an increasing proportion of the articles concentrated on networking (including Usenet) and the Unix operating system.

Another important CBI serial holding is Dr. Dobb's Journal, a monthly publication that at its launch in 1976 was the first regularly published serial focused on microcomputer programming. It grew out of Bob Albrecht’s 1975 newspaper for his small company People's Computer Company (PCC). PCC hired Jim Warren to edit the publication that became Dr. Dobb's Journal of Computer Calisthenics & Orthodontia: Running Light without Overbyte in 1976 (stressing efficient coding in the subtitle, which was essential with the small memory of the earliest personal computers). Warren broadened the journal beyond its initial focus on implementing “Tiny Basic” (publishing an interpreter) to covering a range of consumer oriented programming topics and themes. Volunteer authors (which among others included Steve Wozniak and Gary Kildall) submitted much of the content for the journal. CBI holds a complete run of issues from 1976 to 1985.

Warren resigned as editor of Dr. Dobb's Journal after about 18 months to launch a major computer fair in San Francisco, California, which resulted in another publication: The Silicon Gulch Gazette. The West Coast Computer Faire was the largest computer exposition and conference of its kind when it debuted in April 1977. While the Altair 8800 and first Homebrew meetings (both in 1975) are frequently cited as the start of personal computing (other less influential computer kits and meetings occurred even earlier), the West Coast Computer Faire is arguably the event that launched personal computing industry on a substantial scale. This Faire was the first show to display the Apple II and the Commodore PET. The Silicon Gulch Gazette, a freely distributed newspaper style serial, was published by Warren’s West Coast Computer Faire starting in 1978. The publication focused on past and future Faires, thoroughly documenting these important expositions. CBI holds issues of this publication from 1978 to 1985.

CBI also holds numerous other personal computer focused serials. A partial list includes: Computer Reseller News, Reality Hackers, Computer User, Computer Hobbyist, MICRO, Microcornucopia, PC Buyers Guide, TRS-80 Microcomputer News, Microsystems, Apple Orchard, Call APPLE, Soft Talk, Commodore Microcomputers, Foghorn, Portable Companion, 80 Micro Programming, and Silicon Valley Reporter. Either CBI or the University of Minnesota has holdings in most of the high circulation personal computing serials such as Byte, PC Magazine, PC World, and MacUser.

Beyond serials, CBI holds a number of archival collections with significant materials on the technical, business, and institutional sides of personal computers and personal computer software. A particularly strong collection for studying the personal computer industry is the Market and Product Reports Collection. This large collection (114 cubic
feet) includes dozens of reports that address particular personal computer products, industry analyses, and sales figures for the United States and Europe.

A host of other CBI archival collections contain modest amounts of documentation on personal computers and personal computer software. These collections include books, serials, and manuals in the James W. Cortada Papers; reports on particular Russian systems in the Russian, Soviet, and Eastern Bloc Computing Collection; books and reports in the Michael S. Mahoney Papers; and company files in the Curt A. Monash Papers. Jim Cortada sends us a note that the original IBM Personal Computer announcement can be located, in his papers, in the 1981 newsletter of the IBM Austin facility (not Boca Raton) since “the division that owned that plant also owned the PC. I think that the bound volumes were in Orange so I would begin by looking at boxes 44-45.”

In addition to serials and manuscript collections, CBI also has more than a dozen oral histories related to personal computers, mostly on the design, development, marketing and business of personal computing software applications and services. These oral histories include the following interviewees: James Bidzos, Dan Bricklin, Gary Durbin, Ben Dyer, Bob Frankston, Grace Gentry, Jim Gray, Gary Harpst, C.A.R. Hoare, John Imlay, John Landry, Carl Machover, Mike Maples, Mark P. McCahill, Seymour Rubinstein, Robert E. Weissman, Lawrence Welke, and Sam Wyly.

Jeffrey R. Yost

Recent Publications


Blum, Andrew. Tubes: A Journey to the Center of the Internet (Ecco, 2012).


Steiner, Christopher. Automate This: How Algorithms Came to Rule the World (Portfolio/Penguin, 2012).


Compiled by Jeffrey R. Yost
CBI Photo Caption Contest

In the Spring 2012 CBI Newsletter we printed an unusual image as the inaugural entry for the CBI Photo Caption Contest. We invited readers to propose a historically accurate yet “entertaining and lively” caption. No contest is complete without fabulous prizes, and so we offered the winner their choice of a recently published CBI book, either Arthur Norberg’s Computers and Commerce or Jeffrey Yost’s The IBM Century.

You can view the inaugural image, complete with its official labels, in our online photo database <purl.umn.edu/62910>. “A woman dressed in a light colored dress printed with numbers that mimic MICR ‘machine readable’ numbers operates the card feeder. A facsimile of a check with enlarged MICR code hangs behind her,” was our dry and dusty tagline. (MICR is magnetic ink character recognition, a standard adopted by the American Banking Association two years before the photo was taken in 1960.) We liked the image well enough to include it prominently in an exhibit Arvid Nelsen did in conjunction with the CBI workshop that led to Gender Codes (IEEE-CS 2010). The image inspired the University Libraries’ ace designer Darren Terpstra to create a latter-day physical dress, visible at <www.cbi.umn.edu/genderedbits/>. Hunt around on the exhibit’s “Virtual Tour” for a full-screen image of the recreated dress.

Even if it’s not precisely an “early morning call from Stockholm,” we hope that David Hemmendinger is pleased to be the inaugural winner. The photo, as several of you pointed out, was from our Burroughs collection and was a publicity shot. David’s winning caption was “A machine-readable ad–dress for the world’s fastest electronic reader/sorter: The Burrough’s B-101.” David is professor emeritus of computer science at Union College, and has been active in SHOT meetings as well as with activities of the ACM History Committee. Somehow, we suspect that David has an attraction to that genre of humor known as “groaner jokes.” Honorable mention also to Pierre Mounier-Kuhn and David Alan Grier.

And because we had some fun in doing this, here is a second image that is (just as before) in need of a historically accurate yet entertaining and lively caption. For this round of fabulous prizes, we will include not merely the two original books by Norberg and Yost but also as an option for the winner a copy of Gender Codes: Why Women are Leaving Computing or the recently published Building the Control Data Legacy: The Career of Robert M. Price, the 432-page fully illustrated oral history that is described elsewhere in this newsletter. Please email your captions to <cbi@umn.edu>. Thanks for your suggestions and support!