

CHARLES BABBAGE INSTITUTE

CENTER FOR THE HISTORY OF INFORMATION TECHNOLOGY

NEWSLETTER

Vol. 27 No. 2

Fall 2005

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SHOT and HSS Meet in Minneapolis

Willis K. "Bill" Drake (1923-2005)

James W. Birkenstock (1912-2005)

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The Charles Babbage Institute for the History of Information Technology is sponsored by the University of Minnesota and the information technology community.

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Thomas J. Misa Selected as New CBI Director

Professor Thomas J. Misa, noted historian of technology, signed on to become the next director of the Charles Babbage Institute of the University of Minnesota effective July 1, 2006. Professor Misa will serve as tenured member of the Department of Electrical and Computer Engineering and hold the ERA Land-Grant Chair in History of Technology as a member of the faculty of the Program in History of Science and Technology.

For the past 18 years, Professor Misa has been on the faculty of the Illinois Institute of Technology. During his years of teaching and research, he wrote two books and edited two others. Perhaps his best-known work is *A Nation of Steel* (Johns Hopkins University Press, 1995), for which he won the prestigious Dexter Prize of the Society for the History of Technology (SHOT). In this work, Professor Misa explores the complex interactions between steelmaking and the rise of the industries that have characterized modern America. This is a wide-ranging study that describes the unprecedented demands for massive quantities of steel rails in the 1870s and 1880s, examines how urbanization led to changes in steel production that made possible the first American skyscraper, highlights the increasing role played by the new science of metallurgy, and shows how the demands of automobile makers gave rise to production of large volumes of high-quality steel. *A Nation of Steel* is not just a complex history of a complex industry, it is also an inquiry into the relationship between technologically based industry and modernity and the relationship between technology and American culture.

In awarding the Dexter Prize to Professor Misa, the SHOT Prize Committee stated that:

Thomas Misa's *A Nation of Steel*, written with style and analytical rigor, brings fresh insights to a major story of industrialization: the development of the steel industry in the United States from the railroad boom following the Civil War to the burgeoning car culture in the 1920s. Misa reinvigorates this history by employing an innovative methodology that ties an analysis of producer-consumer interactions in five sectors of the steel industry to major social and economic events in American history...Misa's innovative approach allows him to treat this wide-ranging technical, business, and social history in a remarkably short compass and integrate it with the broader scope of American history. In explaining how the United States became a nation of steel, Misa creates a new form of contextualism in the history of technology.

In *Leonardo to the Internet: Technology & Culture from the Renaissance to the Present*, Misa's second major book, he offers detailed portraits of the inventors and users of technology. For the 20th century, Professor Misa examines the introduction of mass-produced consumer goods and their impact on daily life and modernist sensibilities, the rise of the military-industrial complex during World War II, the technological innovations generated by the command-and-control economies of the Cold War, and the emergence of a technology-oriented global culture since the 1970s. In the last of these topics, Professor Misa explored topics of great interest to the community affiliated with

the Charles Babbage Institute. Some of these themes are taken up by Misa and his co-authors in the two edited volumes *Modernity and Technology* (MIT Press, 2003) (co-edited with Philip Brey and Andrew Feenberg) and *Managing Technology in Society: The Approach of Constructive Technology Assessment* (Pinter, 1995) (co-edited with Arie Rip and Johan Schot).

In addition to these works, Professor Misa has published some two dozen articles. Of special note is his study “Military Needs, Commercial Realities, and the Development of the Transistor, 1948-1958” (1985), which won the IEEE Life Members Prize in Electrical History in 1987. For the last five years, he has been an active member of the “Tensions of Europe: Technology in the Making of 20th Century Europe” research group. Professor Misa serves on the U.S.-European Coordinating Committee for this group, as the U. S. coordinator, and is co-leader of the group’s research theme on “Narratives on European Cities.” With respect to this latter theme, he and Mikael Hård are editing a book manuscript entitled *Urban Machinery: Defining and Designing Modern European Cities*.

Professor Misa is well-known especially to scholarly audiences in the United States and Western Europe, because of his many presentations at meetings, lectures at universities and colleges, and a number of cross disciplinary lectures and talks to more popular audiences. The connections he enjoys with researchers and technical personnel around the world will serve him in good stead as director of CBI and redound to the credit of CBI as well.

He received his Ph.D. in History of Technology from the University of Pennsylvania (1987), where his dissertation advisor was the renowned Professor Thomas Parke Hughes. Professor Misa obtained his bachelor’s degree in Applied Biology from the Massachusetts Institute of Technology (1981).

We look forward to Professor Misa’s arrival on campus. CBI will have an enthusiastic and able director and the Program in History of Science and Technology will have a world-class faculty member. We are grateful to all those who helped to bring Thomas Misa to the University of Minnesota.

Arthur L. Norberg

CBI Annual Report

July 1, 2004 to June 30, 2005

CBI engaged in work on a number of major projects during the year, bringing a couple to completion and nearing completion of others. Of the latter, the most significant is the NHPRC-sponsored Internet2 project, entitled “Documenting Internet2: A Collaborative Model for Developing Electronic Records Capacities in the Small Archival Repository,” because it signifies CBI’s entrance into the world of born-digital records. CBI Archivist Elisabeth Kaplan developed and led this project of several University of Minnesota and University of Michigan archivists in studying the appraisal techniques of born-digital records for smaller repositories, using the digital records of Internet2 and CBI as the basis for the study. Meanwhile, CBI Director Arthur Norberg and CBI Associate Director Jeffrey Yost completed book manuscripts and saw these projects through publication. The books—*Computers and Commerce* by Norberg and Yost’s *The Computer Industry*—appeared in May and June 2005, respectively.

This year was something of a transition year as CBI Director Arthur Norberg announced his retirement and the University of Minnesota conducted a search for the new Director of CBI who will concurrently hold the ERA Land-Grant in History of Technology and be Professor in the Program in History of Science and Technology. CBI staff, especially the director, spent significant time reviewing dossiers and interviewing candidates for the position. We expect that the person selected will assume the duties of director of CBI early in the calendar year of 2006.

While Arthur Norberg officially retired from the University of Minnesota on August 31, 2005, he will continue to serve as director of CBI until the arrival of the new director in Fiscal Year 2006.

Historical and Archival Research

Archival Research: Internet2 Project

As reported in our Spring 2005 *CBI Newsletter*, the primary goal of the project has been to lay the groundwork for implementation of a sustainable electronic records program at the Charles Babbage Institute, consistent with CBI’s collection scope and with professional archival and technological standards. Tangible outcomes of the project will consist of:

- An identified set of valuable archival records from Internet2 (I2);
- A blueprint for implementation of an electronic records repository hosted by the University of Minnesota Libraries;

- An understanding between the University of Minnesota Libraries and Internet2 that CBI will be the repository of choice for long term storage, preservation and access to the records of Internet2;
- Guidelines and "lessons learned" for collaborative electronic records programs that will be of use to other small-scale repositories.

Some of the lessons learned in this project suggest much needs to be done before the acquisition process becomes a daily routine. These lessons learned include the following.

- Electronic records, and electronic records programs, bear little resemblance to electronic records research projects of the past decade.
- A purist approach to appraisal methodology would not work in the digital context, and functional analysis appears the best framework to guide other decisions.
- Selection becomes far less important in the digital world and therefore the very granular approaches to selection that archivists have used for many years must be set aside.
- As selection diminishes in importance, capture of content in platform independent, open source contexts becomes paramount.
- It is not all about the digital. Organizations that communicate in primarily digital means are not necessarily just digital versions of familiar traditional organizations.
- Descriptive conventions will change, but perhaps not as radically as we had assumed. The traditional finding aid components (historical note, scope and content, information about provenance) are as important or even more important to capture for digital collections.

A full report will be available in late fall 2005.

Historical Research: Two New Computer Industry History Books from CBI

Computers and Commerce by Arthur Norberg began as a confined study of Engineering Research Associates (ERA), a St. Paul, Minnesota, company associated with the U. S. Navy. ERA spent six years as an independent company, but financial difficulties led to the decision to sell the company to Remington Rand, Inc. Once inside Remington Rand, there were repeated interactions and difficulties with another Remington Rand acquisition, the Eckert-Mauchly Computer Company. It soon became obvious that to adequately tell the history of ERA both as an independent company and a division inside Remington Rand, it would be necessary to recount the histories of Eckert-Mauchly and Remington Rand. Much has been reported about Eckert and Mauchly and their monumental attempts to design, build, and market the Univac. Reevaluating these reports and adding substantial information about the design and management activities of Eckert-

Mauchly, Norberg provides a more complete and balanced account of this firm, making comparison of it with other new and established firms more cogent. The completed work is the story of these three firms from 1946 to 1957. By 1957, Remington Rand had become Sperry Rand, the two computer operations were situated in a new division—the Univac Division, and many of the principals from ERA had left to found or participate in other computer company startups.

Jeffrey Yost's latest book, *The Computer Industry*, is a synthetic history of the electronic digital computer industry from its beginnings in the 1940s to the present. It also examines the technical and particularly the business and organizational prehistory in the first half of the twentieth century, and how this contributed to the growth of the post-World War II history of computing. As the story unfolds, he recounts and analyzes the advent of the mainframe industry, with reviews of the larger and more influential firms in this sector, as well as the advent and growth of mini-computing and supercomputing. Yost also tells the story of the rise of the software and services sectors, the personal computer hardware and software sectors, and networking, including Cisco Systems beating the odds to successfully implement a rapid acquisition and integration strategy in a highly innovative technical field. To help engage contemporary readers who are not historians, he included a section on looking ahead. In this survey, intended particularly for college students, Yost drew extensively from secondary literature, but also made use of both oral histories (particularly oral histories with software industry leaders that he conducted) as well as several CBI archival collections (such as the William Norris Papers, the Control Data Corporate Records, and the C-E-I-R collections).

Late in the fiscal year, Yost also began work on new book project on the history of the U.S. computer services industry from the mid-1950s to the present. This monograph will begin by examining the organizational capabilities of some leading U.S. office machine companies during the pre-digital period (IBM, Burroughs, and Remington) in order to gain perspective on how firm and industry level skills, knowledge, and resources transferred to the digital computer services area after World War II. The study will document and analyze the growth and rapid change in the computer services industry during the 1950s and 1960s, (including the pioneering digital computer service firms and service divisions/operations of mainframe manufacturers); the subsequent success of focused providers that took the trade to new heights; the role played by industry trade organizations (ADAPSO/ITAA), the broadening of services in both scale and scope, and co-existence of industry giants and small-scale firms in the era of ubiquitous computer networking. Yost will also analyze these trends within the context of the growing globalization of the trade in recent years and the rapid acceleration of “offshoring” to India and other developing countries. While the book will be focused on the history of strategy and execution within firms, it will also provide a macroeconomic look at the industry’s evolution and tackle the challenging issue of defining the trade at different periods of time given the fast changing technology and the increasingly porous boundaries of IT firms’ various businesses (particularly over the past decade). Throughout, the book will situate the history of the computer services within the larger history of information technology systems and will postulate why services (and the humans that produce them), despite their critical role in making computer applications

possible for corporations, organizations, and individuals, have been marginalized in the literature relative to other technological components of such systems—hardware and software products.

Oral Histories Conducted During FY 2005

Conducted by Jeffrey Yost

James Bidzos OH 376

Martin Hellman OH 375

CBI/Tomash Fellow

Marie Hicks, 2005-2006 Tomash Fellow

The Charles Babbage Institute selected Marie Hicks as the 2005-2006 Adelle and Erwin Tomash Fellow. Ms. Hick's dissertation investigates the development, implementation, and use of computing technologies in British government offices from the end of World War II through the early 1970s. The computerization of British civil service offices established new modes of information processing and new categories of office labor. Her research examines how the earliest office computers were integrated with labor, and how they fundamentally changed the work process. She plans to argue that the goal of increasing productivity, a major factor in the installation of early British office computers, significantly shaped the social and political, as well as the technological, context of this change. The attractiveness of expensive office-automating computers in this period was predicated, in part, on the notion of a gendered workforce of ostensibly tractable and inexpensive female input and operator staff. Managers and technology professionals installed computer technology in office environments, (re)gendering them feminine in conversation with the new labor needs of the machines and the cultural perception of women as young, deskilled, low-cost, high-turnover secretarial workers. At the same time, computer developers and office managers promoted the image of computerization as a tool to increase productivity and modernize Britain.

Archives Activities

Digitization project

This spring we embarked on another digitization initiative designed to enhance access to images from the CBI collections. Working with the Libraries' Digital Collections Unit, we hope to add over 1000 scanned images and descriptive information to the website in the coming year.

Collection development

This year we took the leap into the born-digital world. Collection development efforts have focused on establishing the infrastructure (partnerships, policies, information architecture, skills) that will enable us to consider digital materials for addition to the CBI collection. Our commitment to "traditional" acquisitions continues.

Acquisitions

We acquired two particularly significant collections in the past year and are in negotiations for others, which we hope to report in the coming months.

In spring 2005 we received the first installment of Willis K. "Bill" Drake's papers, a donation from his daughter, Nancy Drake. Mr. Drake began his career with Engineering Research Associates in 1947. He was a founder of the Control Data Corporation, and in 1969 he founded the Data Card Corporation. The collection will be processed in the coming year and a detailed finding aid made available to interested researchers online. A preliminary review of the materials indicates that their focus is on the Data Card Corporation and Mr. Drake's other professional activities.

Another addition to the collection is a complete set of twenty animated 8 mm films comprising the Computer Systems Fundamentals series, released in 1974. This series was designed to provide undergraduates with a fundamental understanding of data processing concepts, by means of humorous animated sequences. Titles include, "Computers and Imagination," "Computers and Logic," and "Principles of Virtual Storage." The series was developed in the late 1960s by Edutronics which was later acquired by Control Data Corporation, and it was never marketed. While still viewable, the films will need reformatting before they can be played for researchers. We are grateful to Professor Joseph Schwebel who preserved the set and donated it to CBI in the spring. Mr. Schwebel recently retired after 25 years as a faculty member in the Quantitative Methods and Computer Science Department at the University of St. Thomas in St. Paul, Minnesota.

Other donations this year have included accretions to print materials to CBI's serials and reference collections. We are as always grateful to all of the individuals and organizations whose contributions strengthen the CBI collections.

Finding aids

This was a banner year for completing descriptive guides to collections. The following finding aids are newly available online:

Association of DATA Processing Service Organizations (ADAPSO) Records (CBI 172)

And many from the Control Data Corporation Collection (CBI 80):
Acquisitions, Subsidiaries, and Joint Ventures, 1952-1991 (Series 1)
Annual and Quarterly Reports, 1958-1990 (Series 22)
Corporate Administration, 1957-1991 (Series 6)
Corporate Identity, 1961-1987 (Series 20)
Executive History Project Records (1980), 1957-1991 (Series 23)
Executive Papers 1956-1991 (Series 8)
Executive Papers - William C. Norris (Series 9)
Facilities, 1959-1983 (Series 21)
Financial Records, 1957-1991 (Series 10)

Legal Records, 1919-1983 (Series 11)
News Releases, 1957-1990 (Series 13)
Newspaper and Magazine Articles, 1955-1984 (Series 14)
Personnel Documents and Reports, 1957-1990 (Series 15)
Planning Documents and Reports, 1957-1991 (Series 16)
Product Literature, 1955-1989 (Series 17)
Product Manuals, ca. 1957- ca. 1991 (Series 18)
Serial Publications, 1959-1991 (Series 19)

Reference statistics

Reference statistics for 2004-2005 demonstrate a fairly steady volume of research as compared to the previous two years. Some sample statistics:

Patrons served (2003-2004)
254 individuals (personal contacts)
960 transactions
4140 oral histories downloaded
15651 copies made
737 boxes retrieved

Patrons served (2004-2005)
266 individuals (personal contacts)
920 transactions
3098 oral histories downloaded
9372 copies made
583 boxes retrieved

Oral Histories Published (added to online database) During FY 2005

James Bidzos	OH 376
John J. Cullinane	OH 349
Martin Hellman	OH 375
Donn B. Parker	OH 347
Willis H. Ware	OH 356
Robert E. Weissman	OH 344
Sam Wyly	OH 374

Use of the collections

Supporting scholarship (selected examples)

Dr. Daniel Garcia-Swartz, an economist with LECG (<http://www.lecg.com/>), visited CBI several times this year to conduct research for a project focused on the timesharing industry and the early history of the Internet. Dr. Garcia-Swartz is working with Professor Martin Campbell-Kelly, Department of Computer Science, University of Warwick, UK, on the project. An article is expected in the coming year.

Professor David McKendrick, Durham Business School, University of Durham, UK, visited the CBI archives to gather information for his research into the evolution of different segments of the storage industry and the reasons for success or failure of storage industry firms.

Professor Alan Booth and research fellow Dr. Louise Curth, Department of History, University of Exeter, UK, visited the CBI archives to conduct research in the Burroughs Corporation Records on the computerization of British banks since the early 1960s.

Professor Osamu Uda, Nihon University, Tokyo, Japan, visited the CBI archives in March to continue his research on IBM's global market strategy in the 1960s and 1970s, particularly the relationship between the company's U.S. headquarters and its subsidiary in Japan.

K-12 students

The History Day theme this year was “Communication in History: The Key to Understanding.” Several students used the CBI collections for their History Day projects. PLATO was a topic of specific interest.

Journalists and media

Media use of the collections continues apace. We provided several international, national and regional media outlets with materials for use in publications including *Scientific American* (Germany), *l'Ordinateur* (France), *Open Enterprise Magazine* (Japan), Fox SportsNet, *Minneapolis/St. Paul Magazine*, *Minnesota Monthly*, and *IEEE Annals of the History of Computing*.

University initiatives

Designers for a new installation at the University of Minnesota, the “Wall of Discovery,” spent several days in the archives identifying photographs and other materials from CBI to include in the project. The Wall of Discovery is part of the Scholars Walk project, a multi-faceted permanent public installation honoring the noteworthy and creative accomplishments of University of Minnesota faculty and students.

Exhibits

The archives loaned several photographs and artifacts, and contributed research assistance, for an exhibit at the Minnesota State Fair's Wonders of Technology Building. The exhibit, which focused on Minnesota innovations, was created by Twin Cities Business Monthly Magazine.

Archives Staff news

In June 2005, Beth Kaplan concluded a two year assignment as Acting Director of Archives and Special Collections at the University of Minnesota Libraries.

Kate Hoa V. Flanagan, a participant in the University of Minnesota Libraries' resident librarian program, spent the second rotation of her residency in the Charles Babbage Institute. She worked on several projects, including processing collections and preparing finding aids, and was introduced to reference in the archives setting. Kate has left the program to begin work on her PhD in Library and Information Studies at the University of Wisconsin—Madison in September 2005.

Carol Zinda, a science and engineering librarian at the University of Minnesota, who serves as the liaison between the Libraries and the History of Science and Technology Program spent one day a week at CBI for six months. Carol's main project was to conduct an environmental scan of CBI's presence on campus; assessing awareness of the collection and the institution among a variety of sectors of the university community, through interviews and surveys. Carol's report provided concrete suggestions for how we might improve awareness on campus of our resources.

This year we saw the departure of three long-term CBI student assistants. David Berge, who joined the CBI staff in the summer of 2000, graduated in May of 2005. Both Josh Knatterud-Hubinger and Amanda Schwarze joined the CBI staff in January of 2002. Josh graduated in December 2004 and Amanda graduated in May 2005. These students provided countless hours of work processing collections such as the Diebold Client Records, the ADAPSO Records, the Auerbach Associates Market and Product Reports, and the Control Data Corporation Records. They also encoded EAD finding aids, retrieved and re-shelved many, many archival materials, and made tens of thousands of photocopies for our researchers. We miss them and wish them all the best of luck in the future.

Teaching

Norberg

Fall 2004	HSci4321/CS4921 History of Computing
	HSci 8930 Seminar in History of Computing
Spring 2005	HSci 3331/5331 Technology and American Culture

Publications

Norberg, A. L., *Computers and Commerce: A Study of Management and Technology in the Engineering Research Associates, Inc., Eckert-Mauchly Computer Corporation, and Remington Rand, 1946-1957* (Cambridge, MA: MIT Press, 2005).

Yost, J. R., *The Computer Industry* (Westport, CT: Greenwood Press, 2005).

Yost, J. R., "Computers and the Internet: Braiding Irony, Paradox, and Possibility." In Carroll W. Pursell, ed. *Companion to American Technology* (Oxford: Blackwell, 2005): 340-360.

Presentations, professional service, conferences attended:

Kaplan, E.

“Documenting Internet2: Report to the Profession,” Chicago, Midwest Archives Conference (MAC), April 2005

Co-chair, Society of American Archivists (SAA), 2005 program committee

Member, advisory board, Lemelson Center, Smithsonian Institution

Member, History Committee, Association of Computing Machinery (ACM)

Society of American Archivists (SAA) annual meeting

Seib, C. A.

Nov 2004 presentation at Friends of the Libraries “First Fridays” event: “Calling the Election”

“Documenting Internet2: Report to the Profession,” Chicago, Midwest Archives Conference (MAC), April 2005

IEEE Annals of the History of Computing – “Events & Sightings” correspondent
EAD implementation project advisory board, University Libraries, University of Minnesota

Yost, J. R.

Society for the History of Technology (SHOT), Annual Meeting

Business History Conference, Annual Meeting

PC Software Applications Conference, Computer History Museum (CHM)

Charles Babbage Foundation (CBF) Annual Trustees Meeting

Editorial Board, *IEEE Annals of the History of Computing*

Article Editor, *IEEE Annals of the History of Computing*

International Federation of Information Processing Societies (IFIPS), Working Group on the History of Computing

Internet2 Project: 21-month report

Since fall of 2003 we have reported regularly on the grant to CBI from the National Historical Publications and Records Commission, “Documenting Internet2: A Collaborative Model for Developing Electronic Records Capacities in the Small Archival Repository” (NHPRC grant number 2004-036). The project formally concluded on August 31st 2005. Deliverables as laid out in the project proposal and analysis of findings will be posted on the project website in early October 2005.

To recap, three fundamental questions provided the impetus for the project. First, we wanted to know, what options are available to a traditional, small-scale archives, such as CBI, when the core documentation in its primary collecting area is no longer created in traditionally manageable formats? Second, we asked, what will it mean for CBI’s collecting mission if the stable, structured organizations, to which we are accustomed, become fluid, dynamic, collaborative entities? And finally, how will we adapt our professional methods to accommodate these changes?

Project goals and activities are described in detail in the spring of 2005 issue of the Newsletter. They include a set of “lessons learned” that will underlie implementation decisions at CBI and, we hope, help to inform decision making at other small scale archival repositories. Here then, in no particular order, is our list of lessons learned. Our next report will address their implementation.

Electronic records, and electronic records programs, bear little resemblance to electronic records research projects of the past decade.

While we soon realized that a purist approach to appraisal methodology would not work in the digital context, we came to view functional analysis as the best framework to guide other decisions.

Diminishing storage costs, on the one hand, and increasingly robust and sophisticated search tools, on the other, indicate that selection is no longer the cornerstone of archival practice. These trends (more, cheaper storage options, and more, cheaper, available search tools) are expected to continue.

Selection becomes far less important in the digital world and therefore the very granular approaches to selection that archivists have used for many years must be set aside.

As selection diminishes in importance, capture of content in platform independent, open source contexts becomes paramount.

It most definitely takes a village. Archivists cannot be effective in the digital realm without collaborators. Equally important -- effective collaborations are difficult to achieve and sustain.

Assumptions about analogies between modes of communication in the paper world and the digital world do not always obtain. Email, for example, is not necessarily the correct analog to paper correspondence and may not have the same level of importance.

Newer forms of communication – such as Powerpoint presentations – may take on more significance and shouldn’t be dismissed as a potentially important form of documentation.

New organizational models will drive new forms of communication, and therefore new forms of documentation.

It’s not all about the digital. Organizations that communicate in primarily digital means are not necessarily just digital versions of familiar traditional organizations.

Digital archives projects will be unique. Therefore, archivists need to strive for adequacy, not perfection, in documentation projects.

Because of the uniqueness factor, archivists need more than ever to focus on return on investment.

Descriptive conventions will change, but perhaps not as radically as we had assumed. The traditional finding aid components (historical note, scope and content, information

about provenance) are as important or even more important to capture for digital collections.

Records management strategies within digital organizations will impact the documentation.

Requirements (functional requirements, records management guidelines, etc.) are especially difficult to implement in decentralized collaborative organizations.

Analysis of functions, and workflow, not records, will underpin adequate documentation.

Soft skills – the ability to interact with records creators on their terms – are increasingly important for archivists.

Documenting active organizations means defining relationships for the future. It may be possible to engage records creators in the project, but it will be difficult to sustain these relationships. Archivists need to think strategically about how to make the most of these connections.

Finally, it can be done!

Elisabeth Kaplan

SHOT and HSS Meet in Minneapolis

The Society for the History of Technology and the History of Science Society held their annual meetings in downtown Minneapolis at the Hyatt from November 3-6, 2005. This, the first joint meeting of the two organizations since a meeting held in Madison, Wisconsin in 1991, brought hundreds of scholars from around the nation and the world to the Twin Cities and included many interesting sessions in wide ranging areas of and approaches to the history of technology and the history of science.

The modern history of information technology was well represented as there were several dedicated sessions on different aspects on the history of computing, and a number of other papers on computer/software history that were given as part of thematic sessions that explored a range of technological and scientific topics. Particularly exciting were the large number of papers on international computing/software. SHOT sessions on the history of computing included: “Use and Usability in Personal Computing: International Perspectives,” and “Touch and Control: Human-Machine Interfaces as Co(a)gents in 20th Century Consumption Technologies.” With the former, James Sumner spoke on home computers and user identity in Britain, Martin Campbell-Kelly on the evolution of spreadsheet usability, and Frank Veraart on the use of PCs in printing and publishing in the Netherlands. With the latter Heike Weber gave a presentation on operating controls from mechanical to digital eras, and Stefan Schmitt on user interfaces in video gaming controllers.

HSS, meanwhile, had a session on scientific computing entitled, “The Work and Organization of Technical Computing Facilities.” As part of the session Joe November spoke on LINC and biological research, Dina Dalouka on electrical power networks and scientific ontologies in the early history of computing, past Tomash Fellow Atsushi Akera on terminating the Electrical Computer Project at the IAS, and Robert Seidel on decentralization of computing in high energy physics.

A few examples of the many strong papers given on the history of computing as part of sessions offering perspective on a range of technologies were: Ross Bassett, “Facing Two Ways: The Indian Institute of Technology Kanpur, American Technical Assistance, and the Indian Computing Community, 1961-1980,” and Kevin Borg, “The Diagnostic Fix: Computerization’s Impact on the Auto Repair Shop,” and CBI Tomash Fellow Marie Hicks, “Women’s Work and the Computerization of British Offices after the Second World War.”

On Saturday, November 5th the special interest group (SIG) for Computers, Information, and Society held a luncheon meeting. This SHOT SIG, from its founding more than a dozen years ago, has been led by Paul Ceruzzi of the National Air and Space Museum. This year marked the largest attendance ever for the SIG, as more than 40 scholars were present. At the start of the meeting Ceruzzi announced that he was resigning as head of the SIG and would be turning the duties over to Thomas Haigh of the University of Wisconsin, Milwaukee. Haigh began the meeting by making a special introduction of the newly announced CBI Director Thomas Misa (see related article on Professor Misa). Dr. Misa, currently a professor at Illinois Institute of Technology will begin as CBI Director on July 1, 2006, and will be doing consulting work for the Institute in the first half of the year. Professor Misa discussed his past and ongoing research and the importance of CBI and others engaging in more scholarship on the history of the use and societal impact of computing technology, a critical topic that has been underrepresented in the historical literature.

In addition to the two conferences the *IEEE Annals of the History of Computing* held their Editorial Board meeting at the Charles Babbage Institute led by Editor-and-Chief David Alan Grier. Board member and CBI Associate Director Jeffrey Yost served as local host, and he and CBI Acting Archivist Carrie Seib gave the Board a tour of the CBI’s facilities and archival storage caverns immediately following the meeting.

With the two conferences and the *Annals* board meeting in Minneapolis, a number of historians of information technology took the opportunity to extend their stays and spend some days before and/or after the conference to engage in research at CBI. More than a dozen historians conducted multiple days of research in the days before and after the conference on a range of topics that addressed the business, institutional, technical and social history of information technology. All told, more than 150 boxes were retrieved for researchers and thousands of photocopies were made.

Jeffrey R. Yost

Willis K. “Bill” Drake (1923-2005)

The Charles Babbage Institute lost a wonderful friend when Bill Drake died on August 8, 2005 after a short illness. Bill was a founding member of the Charles Babbage Institute and the Charles Babbage Foundation, which he served as President and member of the Executive Committee and Development Committee. During the 1980s, he served as a Regent of the University of Minnesota, helping to smooth the way of CBI in the University. Bill was also one of the two principal personal contributors to the ERA Land-Grant Chair for the History of Technology, which is used to support the director of CBI.

A longtime entrepreneur in the computer industry, he began his career with Engineering Research Associates (ERA) in St. Paul, MN, where he was first a technical writer and then a sales engineer, a position he continued at Remington Rand after they purchased ERA. With the founding of Control Data Corporation, he joined the new firm as Director of Marketing, before going out on his own as a consultant. In the second half of the 1960s, Bill was a

Group Vice President at Dataproducts Corporation in California, one of whose founders was Erwin Tomash founder of the Charles Babbage Institute. After that, he returned to Minnesota in 1969 and founded Data Card Corporation, where he served as President, CEO, and Chairman of the Board successively from the founding to his retirement in 1983. Over the years, Data Card made mass issuance of credit cards economical by inventing systems for high-volume plastic card personalization – forever changing the way consumers conduct transactions. Today, Data Card’s high-volume card issuance solutions outsell all other brands combined, and is a \$300 million company.

Bill served on many corporate and non-profit boards of directors, providing guidance and help to entrepreneurs and to public spirited citizens in educational and social organizations, and aided in the founding of some 46 companies in the high technology area. He was elected into the Minnesota Business Hall of Fame, and served under Presidents Carter and Reagan on the President’s Small Business Council.

Possessed of a contagious optimism, Bill’s sparkling personality livened any meeting he participated in over the years. No obstacle was too high; no objective unreachable. If they turned out to be difficult, he suggested another path to achieve the aims of the group. Bill was a constant source of encouragement and support for the 25 years he was associated with CBI, an association that ended only with his death. We will miss him.

Arthur L. Norberg



Willis and Mildred Drake (Center) at celebration recognizing their contribution to the ERA Land-Grant Chair. University of Minnesota Provost Leonard Kuhi left and IT Dean Ettore Infante right. 1989.

James W. Birkenstock (1912-2005)

The Charles Babbage Institute lost another dear friend when James Birkenstock died on May 12, 2005. Jim was a long-serving member of the advisory group to the Charles Babbage Institute and a Trustee, Director, and an early president of the Charles Babbage Foundation. When he served in these roles, he was retired from the IBM Corporation, but represented CBF to the corporation. In the beginning of CBF, Jim approached executives he knew at a number of major companies to support CBF and CBI. He was very successful at this fundraising. He was a steady source of advice on planning, programs, and financial development. We were proud to take his advice. After becoming Trustee Emeritus in 1998, Jim and his wife of 70 years Jean L. Birkenstock continued to support CBI through a substantial annual contribution to the University of Minnesota.



Mr. Birkenstock joined IBM Corporation in 1935 and held a number of posts in the sales field, once being branch manager of the St. Louis branch. In 1945, he moved to World Headquarters in New York, where he served in a number of positions, eventually becoming executive assistant to Thomas Watson, Jr. President of IBM. Jim was deeply involved in the preliminary planning leading to IBM's first electronic computer, the IBM 701. Jim was appointed an IBM Vice President in 1958 and went on to lead the product planning and market analysis division. From 1958 to 1970 he was vice president for commercial development. In 1966, the IBM World Trade Corporation elected him a director. He finished his career at IBM from 1970 to 1972 as vice president for corporate relations. In the late 1990s, Jim wrote a memoir about his life, especially his years with IBM, and published it in the *IEEE Annals of the History of Computing* January 2000 issue. The memoir is also on the *Annals* website <http://computer.org/annals/>.

In 1973, Mr. Birkenstock founded Intercal, Inc., a management consulting firm. Over the next decade, he was a director of a number of major companies in the United States, served on the President's Commission on the Patent System. An avid golfer from his teenage years, he and Jean owned a second home in Florida in an area called Village of Golf, with over two dozen golf courses surrounding the area. Jim was a great man and a warm friend.

Arthur L. Norberg

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Featured Photographs: Mosaic Research Group Records

It is well known that the first electronic digital computers in the United States were developed during and immediately after World War II. It is less well known that the birth of computing in the Soviet Union occurred during roughly the same time period. The Soviet Union’s first electronic digital computer was designed and built between 1947 and 1951. By the mid-1950s, digital computers were being designed and built by several Soviet scientists and teams of researchers.



The story of both the development of computing in the Soviet Union and the lack of knowledge about it in the West emerges in the records of the Mosaic Research Group at the Charles Babbage Institute. The Mosaic Research Group was established in 1977 at Princeton University. Professor Seymour Goodman brought together a multidisciplinary group of faculty and students with expertise in international studies and technology assessment to study developments in the information technologies abroad, focusing on the Soviet Union.

In order to support their work the Mosaic Group gathered an enormous volume of material, including declassified CIA reports, industry reports from official visits to the Soviet Union, and the published materials collected on those trips such as technical reports, equipment reviews, brochures, manuals, and photographs. The group continued to gather material and conducted site visits and interviews during their own trips to the Soviet Union in the 1980s. Much of the collection is in Russian (some of which is translated to English) and there are also some original English language materials.



*"Rapid Responding Electronic Computer"
Russian language brochure, 1958, and translation*

The Mosaic Group Records are currently being processed and will be available for research in late 2005.