

IEEE History Center

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STATIC FROM THE DIRECTOR

Normally, I use this column to draw attention to the key developments in our activities. However, I truly believe that this issue speaks for itself. Of course our ongoing activities continue to flourish. Milestones, oral histories (pg. 4), reference requests (pg. 3), and Rutgers activities (pg. 5) continue to go strong. The planning for our 2009 conference is in full swing (pg. 7). But the key event is the rolling out of our new web platform, the IEEE Global History Network (GHN).

As described in the GHN article in this issue (pg. 2), the Center's Outreach Historian, Dr. John Vardalas, and I got to unveil the IEEE GHN at IEEE Sections Congress 2008 in

Quebec City, Canada, in September. We had a chance to interact with hundreds of local IEEE leaders from around the world, and found that the enthusiasm for historical activities is as strong as ever. The Milestones Program continues to resonate at the section level, and there was great interest in the IEEE GHN.

Along with the support of IEEE and the IEEE Foundation, it is very much the generosity of you, our individual supporters, that enables us to serve the IEEE grass-roots membership so effectively. So let me take still one more opportunity to thank you, and to wish you and yours a joyous holiday season and a happy, healthy and productive new year.



History Center Outreach Historian and IEEE Global History Network manager Dr. John Vardalas shows the IEEE Sections Congress 2008 delegate from the newly formed IEEE Ghana Section how to preserve the history of the Section even as it is being created.

The newsletter reports on the activities of the IEEE History Center and on new resources and projects in electrical and computer history. It is published three times each year by the IEEE History Center.

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IEEE Global History Network Rolled out at IEEE Sections Congress 2008

On 20 September, at IEEE Sections Congress 2008 in Quebec City, IEEE unveiled the IEEE Global History Network (GHN), a new open-content portal developed by the IEEE History Center. With expected contributions from thousands, possibly tens of thousands of volunteers, IEEE expects the GHN to become the premier public record for preserving and interpreting the history of technological innovation.

The GHN portal at www.ieeeeghn.org allows IEEE members and other interested content contributors to share in the development of this major public resource – dedicated to the history of electrical and electronic engineering, computing, and related IEEE fields of interest. A joint-authorship feature allows members of a group, such as an R&D lab design team, to work together in order to tell the story of an activity or an invention. This feature will also allow IEEE organizational units (such as Sections and Societies) to preserve and present their heritage.

To contribute to the GHN, IEEE members need to log into the site (www.ieeeeghn.org) using their IEEE web account user ID and password. Other

continued on next page



IEEE Kerala Section Chair Amarnath Raja uses the IEEE Global History Network to record the history of some of the significant contributions made by fellow engineers in India.

NEWSLETTER SUBMISSION BOX

The IEEE History Center Newsletter welcomes submissions of Letters to the Editor, as well as articles for its "Reminiscences" and "Relic Hunting" departments. "Reminiscences" are accounts of history of a technology from the point of view of someone who worked in the technical area or was closely connected to someone who was. They may be narrated either in the first person or third person. "Relic Hunting" are accounts of finding or tracking down tangible pieces of electrical history in interesting or unsuspected places (in situ and still operating is of particular interest). Length: 500-1200 words. Submit to ieec-history@ieee.org. Articles and letters to the editor may be edited for style or length.

THE IEEE HISTORY CENTER NEWSLETTER ADVERTISING RATES

The newsletter of the IEEE History Center is published three times per annum with a circulation of 4,800 of whom approximately 3,700 reside in the United States. The newsletter reaches engineers, retired engineers, researchers, archivists, and curators interested specifically in the history of electrical, electronics, and computing engineering, and the history of related technologies.

Cost Per Issue

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Half Page	\$200
Full Page	\$250

Please submit camera-ready copy via mail or email attachment to

ieec-history@ieee.org. Deadlines for receipt of ad copy are 2 February, 2 June, 2 October. For more information, contact Robert Colburn at r.colburn@ieee.org.

potential contributors may ask for access through a separate link. Contributors will be able to create new entries and add to existing ones using written narratives, photos, drawings, diagrams, documents, and video and audio recordings.

We are particularly eager to hear from our supporters. So please visit the IEEE GHN today at www.ieeeahn.org! Just log in with your IEEE web account user ID and password, and have at it...and be sure to use the feedback feature to let us know what you think.

CENTER ANSWERS 3000TH REFERENCE REQUEST

The IEEE History Center fulfilled its 3000th reference request in August of this year, marking a substantial stage in its efforts to serve the general public and to raise the public visibility of the history and heritage of IEEE's technologies. Reference requests come in many forms, from IEEE members, IEEE staff, and non-members. Researchers and scholars, authors, government staffers looking for historical background on a technology-related question when preparing briefings for policy-makers (the Center received a flood of inquiries during the California electricity crisis of 2000-2001), as well as journalists checking facts for a story they are writing, or looking for biographical information on an electrical engineer, all come to the History Center. Other archives and museums, agencies of the United Nations, and people preparing exhibits also contact the History Center.

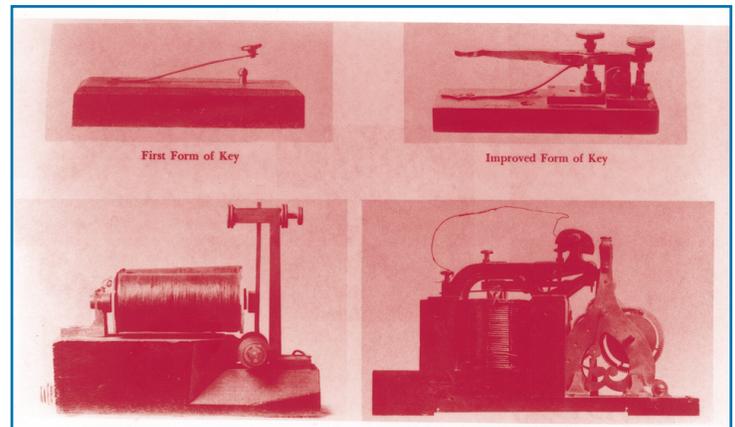
One of the ways the Center maximizes its public outreach role, and is able to make electrical and computing history visible to a large audience, is by assisting documentary film makers, who are frequent users of the Center's reference expertise. The BBC, the History Channel, "Modern Marvels," "History Detectives," "The American Experience," and Japanese television have all called upon the History Center's resources. The much-lauded PBS program "Tranistorized" made use of the Center's oral history interview with Nick Holonyak. These production companies often ask the Center to recommend experts in the field who could be interviewed for the documentary.

Scriptwriters from the television show "CSI" and production staff from the movie "Cinderella Man" consulted the Center for help in ensuring the historical technical details of particular scenes were correct and plausible. The main character in "Cindarella Man," boxer James Braddock (played by Russell Crowe), moonlights as an electrician. The scriptwriters wanted to know what tools and meters an electrician of the 1920s and 1930s would have carried in his toolbox.

Best-selling novelist Ken Follett (*Eye of the Needle*, *Pillars of the Earth*) used the Center's help for scenes and details in his novel *Jackdaws*. A member of Follett's research staff phoned looking for information on the French telephone system during World War II, as there would be a chapter in the novel where French Resistance fighters sabotage the telephone system in order to disrupt Nazi communications and movements. It was crucial for the credibility of the plot to know how long a delay this would have bought them, and

how long it would have taken to repair the damage. Not only was the Center able to help the researcher, but was able to put him in touch with a historian of technology who had attended a conference sponsored by the IEEE History Center, and who not only was an expert on the history of the French telephone system, but as a young man during the war, had in fact worked to repair the parts of the system destroyed by the Resistance. Thrilled to have a first-person source, Follett flew out to interview him and was so delighted with the unexpected material he obtained, that what had begun as a relatively minor plot element was expanded to become a major development in the story.

It is also a thrill to be able to assist major scholars and authors in the field of electrical and computing history. Talking to authors whose books are already on the Center's library shelves and who are recognized as central to the field is a fascinating way to give back to the field and to keep the circle of scholarship moving. David Shapiro, author of *Old Electrical Wiring*, which is one of the go-to books for answering reference requests pertaining the history of wiring or electrical distribution, contacted the Center to track down information on the history of certain IEEE standards.



Did one of these telegraph keys trigger an urgent call from the Pentagon?

Educational multimedia materials producers also contact the IEEE History Center for images as well as permission to reuse text, or excerpts of text, from Center staff-written material in their own DVDs and CDs.

Even the Pentagon has consulted the IEEE History Center. A Pentagon subcontractor artist was constructing a mural, when someone noticed that the army wired telegraph key he had in the picture was not the correct type. Urgently, the subcontractor called the History Center hoping we could supply an image of the correct telegraph key. (It's not every day one gets an urgent phone call from the Pentagon.) In order to be absolutely sure that the image we supplied him with was correct, we also referred him to some authors who were experts on the history of the telegraph.

What do people want to know about most? People are fascinated by Nikola Tesla, and questions about his life and work come in a lot. The history of surveillance is another frequent topic.

NEW ORAL HISTORY

Readers of this newsletter are familiar with the IEEE History Center's important oral history program that it carries out on behalf of IEEE. What might be less familiar is that the Center's host and other co-sponsor, Rutgers University, also has an oral history program. Just as the Center's oral history program seeks to preserve the memories of individuals who contributed to IEEE's technical areas and individuals who contributed to IEEE itself, so the Rutgers Oral History Archives serves multiple functions. Originally called the Rutgers Oral History Archives of World War II, it seeks to record the personal experiences of Rutgers University alumni and/or New Jersey residents who served on the home front and overseas during World War II and subsequent conflicts. However, as the state university of New Jersey, Rutgers expanded this project to include men and women who helped shape the history of Rutgers University as students, alumni, faculty, staff and in other roles, and also people with a story to tell about some aspect of New Jersey's proud history, its towns and cities, its diverse populations, organizations within the Garden State and/or social/cultural movements and

events. Recently, the IEEE oral history program and the Rutgers oral history program came together for the first time. At the request of Rutgers Oral History Archives Director Sandra Holyoak, IEEE History Center Director Michael Geselowitz joined her in co-interviewing Professor Elmer C. Easton, Ph.D. Prof. Easton, who is 89 years old, epitomizes those who helped shape Rutgers University. He was Dean of Engineering here from 1946 to 1974, an unmatched tenure during a period of unequalled growth. However, Prof. Easton is also an electrical engineer and a Life Fellow of IEEE, recognize for his contributions to engineering education. Ms. Holyoak was anxious for the IEEE History Center to provide expertise on the history of engineering and engineering education in conducting the interview, to make sure that the full range of memories of this important individual were captured. The interview was conducted on 14 August at Prof. Easton's home in Piscataway, New Jersey, a short distance from the IEEE Operations Center. The fascinating interview will be made available through both the IEEE and Rutgers web sites when it is processed.

IEEE ARCHIVES AND ARCHIVES POLICY

The IEEE Archives has been part of the IEEE History Center since the Center's establishment in 1980, though the Archives itself was established a decade earlier. The collection was first cataloged and arranged in the 1980s. It is richest in the records of the AIEE and the IRE, the two organizations that merged in 1963 to form the IEEE, and holds a substantial number of records dating from the merger to the 1980s. A succession of archivists have added to the collection over the years, but the collection is relatively weak on the last twenty-five years. The collection is regularly used by Center staff in their work for research, education, and answering reference requests. In addition to several hundred linear feet of institutional records, the archives holds the original master tapes of over 450 oral histories conducted by the History Center and the History Committee, more than 5000 photographs, and a variety of other material.

What IEEE and its archives has never had is an archives

policy—a statement of what the Archives collects and doesn't collect and how it goes about collecting material. This is important if the Archives is to serve as the ongoing institutional record of IEEE's history. Only in this way will needed material be available for future IEEE use such as the forthcoming 125th anniversary celebration. New IEEE archivist Dr. Sheldon Hochheiser has developed a draft archival policy for IEEE consideration to address these issues. The policy establishes procedures to select, obtain, and preserve historically valuable material. In particular, in conjunction with a concurrent effort elsewhere in IEEE to institute a formal records retention policy, it will provide a mechanism to assure that relevant records reach the archives from the originating IEEE departments. Dr. Hochheiser will be working with the IEEE History Committee and IEEE staff to move the initiative forward so that the IEEE Archives can better serve the future needs of IEEE members, staff, and outside scholars.

NEBEKER LECTURES FOR RUTGERS DISCOVERY DAYS

During the summer months, the Rutgers admissions office conducts a program called Discovery Days. Prospective students and their parents spend a day at Rutgers, touring the campuses, learning about the university, and attending lectures given by

Rutgers faculty to give examples of Rutgers classes. In June and July 2008 History Center historian Frederik Nebeker participated in this program, as he did in previous summers, by presenting a lecture from his class on the history of electrical technologies.

STAFF NOTES

HISTORY CENTER WELCOMES SEVEN GRADUATE RESEARCH ASSISTANTS FOR 2008-2009

The IEEE History Center is pleased to welcome the following Rutgers graduate research assistants for 2008-2009. These research assistants will be helping to write material for the Global

History Network, assisting the Center staff with other research, and providing archival support.

Leslie Doig is a doctoral candidate in the Rutgers history department. Her dissertation is titled "The Unexpected Costs of Revolution: Prosperity and Conflict in New England Merchant Families, 1770-1820"

Christopher Hayes is a returning graduate assistant, and is a fourth-year Ph.D. student majoring in U.S. history and minor in African-American history. His areas of interest are late-twentieth century black radicalism, particularly the Black Liberation Army, as well as imprisoned black radicals and the freedom movements they formed while held captive.

Nicholas D. Molnar is a doctoral student in history at Rutgers University, New Brunswick, New Jersey, and a staff member of the Rutgers Oral History Archives of World War II. He was graduated from Rutgers College in 2005 with a Bachelor's Degree, Magna cum Laude, and Highest Honors in History, receiving the sole Bevier Award Fellowship granted by Rutgers University that year. His interests include the social and cultural impact of World War II military technology. His current project involves the social construction of race and ethnicity in the Philippines and the United States in the twentieth century.

Matthew Roth is a fourth-year graduate student in the History Department, concentrating on twentieth-century American cultural history with a minor in the History of Technology, the Environment and Health. His dissertation topic is the cultural (agri- and otherwise) history of soy foods in America. He came to Rutgers after a sporadic writing career—writing on Disney and Amway for *The Baffler* and *InTheseTimes*—and time in an American Studies masters program at Columbia. He completed a BA in Anthropology at the University of Chicago, where he first became a vegetarian almost twenty years ago. And if that does not qualify him to write on soy, he has also had a hand in making tofu at a Virginia commune.

Sanjog Rupakheti was born and raised in Kathmandu, Nepal. He received his bachelors degrees in Anthropology, History and Asian Studies from Trinity College, Hartford, CT. He is currently in his third year in the doctoral program in History at Rutgers.

At Rutgers, he has South Asian history as his major field, and Global and Comparative History as his minor field. His primary focus lies in the social and economic history of Nepal, and his dissertation research examines state-making and the formation of caste and ethnic boundaries in the 19th century Nepal.

Emily Westkaemper received a B.A. in history and American Studies at the University of Virginia and is a Ph.D. candidate in twentieth century U.S. history at Rutgers, where she is teaching Women in American History I during the Fall 2008 semester. During the 2007-2008 academic year Emily held a six month predoctoral research fellowship at the Smithsonian Institution's National Museum of American History in Washington, D.C. She has previously served as a research assistant for the Papers of Elizabeth Cady Stanton and Susan B. Anthony at Rutgers. Her dissertation, "Martha Washington Goes Shopping: Mass Culture's Gendering of History, 1910-1950" examines advertisements, radio programs, films, department store displays, and consumer products that were created between 1910 and 1950 but which invoked previous eras. Depictions of the seventeenth through nineteenth centuries pervaded twentieth century American media, often prescribing domestic roles to sell products. However, women historians and business professionals greatly influenced popular culture's depictions of history, deploying the past in their activism to promote women's professional status.

Adam Zalma is a second year Ph.D. candidate in the History Department, studying 19th and 20th Century US History. He has an M.P.A. from the Woodrow Wilson School at Princeton University and spent nearly seven years in public policy related work for consulting firms and government agencies. He also spent about ten years on Wall Street on the 'buy side' as a High Yield Bond analyst. His preference for in-depth research and analysis, inadequately valued both on Wall Street and in government, led him back to academic pursuits. His research project revolves around the intersection of land use, land development, and landscape with urban and suburban culture, using Staten Island as a case study.

ALEJANDRO CASASEMPERE GARCIA'S REPORT ON HIS 2008 LIFE MEMBER INTERNSHIP AT THE IEEE HISTORY CENTER

As a telecommunications engineer, studying the history of electrical technology and computing has always been one of my personal passions and wishes. This was the main reason for applying for an internship at the IEEE History Center on the Rutgers University campus in New Brunswick, New Jersey (USA). This wonderful and busy period of time in the United States will be included in my master thesis on accessible systems and services for the information society, which I am writing in the School of Telecommunications Engineering at the Technical University of Madrid: "The Role Played by the White House in the Establishment of a Radio Monopoly in the United States: The Case of the Radio Corporation of America".

First of all, I would like to especially thank the invaluable help of the IEEE History Center staff: PhD. Michael N. Geselowitz, Staff Director of the IEEE History Center and Affiliated Faculty in the School of Arts and Science at Rutgers University; PhD. Frederik L. Nebeker, IEEE Senior Research Historian; PhD. Sheldon Hochheiser, IEEE Archivist; PhD. John Vardalas, IEEE Outreach Historian, and Robert D. Colburn, IEEE Research Coordinator.

It is mandatory to thank as well his time and exquisite guidance for PhD. Alexander B. Magoun, Executive Director of the David Sarnoff Library. Mr. Fred Carl, Director of InfoAge Science-History Center and Museum, and PhD. Paul Israel, Director and General Editor of the Thomas A. Edison Papers, have also contributed to

my research duty in a very kindly way.

Finally, I would like to thank its essential support to the Technical University of Madrid (UPM), to PhD. José Manuel Páez, ViceRector of International Relations, and to my advisor, PhD. Antonio Pérez Yuste, Director of the University President's Cabinet and Professor in Telecommunications Engineering.

This article shows all the developed tasks which have been carried out, from early July to last August, during the 2008 Life Member IEEE Internship at the IEEE History Center.

At the beginning, the IEEE staff provided me a comfortable office in order to search remarkable documents related to my Master Thesis topic in the Internet like, for instance, newspapers, the first Marconi's patents, both British and American, some images, the US Government Radio Acts of 1912 and 1927, as well as other interesting papers like the speech before the American Institute of Electrical Engineers in 1922 by Guglielmo Marconi.

Dr. Geselowitz arranged a meeting at Sarnoff Corporation with Dr. Magoun, who guided and helped me in focusing the best related bibliography. Besides, Dr. Magoun showed us the David Sarnoff Library and the original Radio Corporation of America laboratories. In addition, he sent me a document concerning a RCA conference held at David Sarnoff's office in 1919 and gave me a publication titled *Inventing the Future. 60 Years of Innovation at Sarnoff* as a present. He also uploaded a post about my visit at:

<http://davidsarnoff.blogspot.com/2008/07/ieee-researcher-visits-library.html>

The second visit outside the IEEE History Center was guided by Dr. Nebeker and it was to the New Brunswick Marconi Wireless Station. Unfortunately, nowadays we only can see the memorial park remembering the former radio station, which was the most powerful radio transmitter in the world during World War I. The next step in my research duty took place in Princeton University. In particular, I spent three weeks at Firestone Library, in the Rare Books and Special Collections Department of the Manuscripts Division. There, I was lucky to find the Edward J. Nally papers, the first President of RCA, which includes RCA official documents, books, personal correspondence, printed material, etc. I also looked into the Engineering Library and into the Mudd Manuscript Library about President Woodrow Wilson's papers but, unfortunately, the backbone of the collections founded there is mainly focused in his office as President of Princeton University instead of President of the United States. In any case, having the opportunity of studying in Princeton University was amazing.

Rutgers University was as useful as Princeton for my research purpose. There, I visited each library (Archibald S. Al-

exander Library in College Campus, Kilmer Library in Livingston Campus, Library of Science and Medicine in Busch Campus and Mabel Smith Douglass Library in Cook/Douglass Campus) trying to find some interesting bibliography like, for example: *Nexus: Strategic Communications and American Security in World War I* by Jonathan Reed Winkler; *The Navy and the Nation* by Josephus Daniels; *Woodrow Wilson and World Settlement* by Ray Stannard Baker; *The Life of Woodrow Wilson, 1856-1924* by Josephus Daniels; *Papers by Woodrow Wilson*, edited by Arthur S. Link; *The Cabinet Diaries of Josephus Daniels, 1913-1921*, by Josephus Daniels, edited by E. David Cronon; *The Invisible Weapon: Telecommunications and International Politics, 1851-1945* by Daniel R. Headrick; *The Continuous Wave: technology and American radio, 1900-1932* by Hugh G. J. Aitken and History of radio to 1926 by Gleason Leonard Archer.

Dr. Geselowitz arranged another meeting with Dr. Paul Israel of the Thomas A. Edison Papers, who helped me in finding some additional papers like *Congressional Hearings on Government Control of the Telegraph and Telecommunications, Mass Media, and Democracy* by Robert Waterman McChesney. In addition, I requested from the University of Pittsburgh Library the book *Our Navy at War* by Josephus Daniels. A week later they sent me the mentioned book to Rutgers University. However, I was not able to borrow the *Guide to the Josephus Daniels Papers, 1904-1954*, from Duke University Libraries.

Apart from other interesting bibliographical references, Dr. Hochheiser surprised me when he showed me a RCA's original photograph album from 1921 to 1923, which was donated by Edward D. Sabin, Shift Engineer at RCA, to the IEEE History Center, and taken when he was working on RCA.

My following visit was to the Belmar Marconi Wireless Station, the principal receiving station of the Marconi Wireless Telegraph Company of America at that time, with Mr. Fred Carl, the kind Director of InfoAge. He showed me Camp Evans, the Radio Technology Museum and their preservation tasks but, without any doubt, the most marvelous experience was spending a night in the original Marconi cottage.

I contacted the Franklin Roosevelt Presidential Library at Hyde Park, New York. Before going there, the expert staff told me that the only related document there was a letter dated the October 1st, 1914, from Secretary of the Navy Josephus Daniels to Assistant Secretary of the Navy Franklin Delano Roosevelt, which they nicely sent a copy of to me as soon as possible. I also contacted other important institutions like The Naval Historical Center, The National Archives and Records Administration and The Woodrow Wilson Presidential Library. The first one



Alejandro Casasepère García at the Edison Papers, flanked by Dr. Paul Israel and Dr. Michael Geselowitz.

confirmed to me that, according to a search of the National Union Catalog of Manuscript Collections, there is no personal papers collection for Admiral William H. G. Bullard, an expert in wireless communications. The second one told me that any information, if it is there at all, is dispersed among the records and finding it would require more detailed research than they were staffed to provide. Finally, The Woodrow Wilson Presidential Library sent me some interesting documents via the IEEE History Center staff, who forwarded them to me to Madrid, Spain, after my departure.

The last remarkable visit was to The Library of Congress in Washington, D.C. In the Manuscript Division at the James Madison Building, I searched the Unpublished Papers of Josephus Daniels, with especial interest to the personal correspondence, 1878-1948. In addition, I looked at the Admiral William

S. Benson's unpublished papers, finding some interesting correspondence among him, Daniels and President Wilson. It was a great experience working with a microfilm machine for the first time in my life.

With all the above, we can say that the U.S. Government pushed a radio monopoly with Secretary of the Navy Josephus Daniels as major involved celebrity, being the major commercial beneficiary Mr. Edward J. Nally, who designed the Radio Corporation of America, leaving afterwards his legacy to Mr. David Sarnoff in order to develop the biggest broadcasting company ever seen in the United States of America. I definitely believe that this internship has contributed in remarkable ways to complete my career as a Telecommunications Engineer and Researcher.

THINGS TO SEE AND DO

CALL FOR PAPERS: THE 2009 IEEE CONFERENCE ON THE HISTORY OF TECHNICAL SOCIETIES



5 – 7 August 2009, Philadelphia, USA

In 2009, the IEEE History Committee and the IEEE History Center will hold the eighth in a series of historical conferences. The 2009 IEEE Conference on the

History of Technical Societies will take place in Philadelphia, Pennsylvania, U.S.A. from Wednesday 5 August through Friday 7 August 2009. The theme of the conference will be the history of professional technical associations, a theme chosen because 2009 will be the 125th anniversary of the IEEE. The location is appropriate because the IEEE, then the American Institute of Electrical Engineers (AIEE), held its first technical meeting in Philadelphia in October 1884.

The conference will invite papers on the history of the engineering profession, particularly on the role of professional societies in engineering, and emphasis will be on the technical fields served by the IEEE. The historical papers will be presented in focused sessions over the two-and-a-half days in two tracks, though there could be one or more plenary sessions. The papers written for the conference will be a valuable contribution to researching the history of engineering organizations, a topic that deserves more attention than it has received. Presented papers will be eligible for inclusion in a conference proceedings volume to be published by IEEE. In connection with the conference there will be an IEEE anniversary celebration on Thursday 6 August from 6:00 pm until 11:00 pm, at the Franklin Institute,

home to the first AIEEE technical meeting.

Technical co-sponsors for the conference include the Department of Electrical and Computer Engineering of Drexel University, the Department of the History and Sociology of Science of the University of Pennsylvania, and the IEEE Philadelphia Section.

Please submit abstract and 1-page C.V., either electronically or in paper form, to Frederik Nebeker, IEEE History Center, Rutgers University, 39 Union Street, New Brunswick NJ 08901, U.S.A.; f.nebeker@ieee.org. The deadline for paper proposals is 13 March 2009. Additional information will be posted on the conference website (www.ieee.org/go/historyconference) as it becomes available. It is anticipated that registration material will be available 15 March 2009.

SYMPOSIUM ON CRYPTOLOGIC HISTORY

The Center for Cryptologic History announces a call for papers for its biennial Symposium on Cryptologic History. The Symposium will occur on 15-16 October 2009 in Laurel, Maryland, at the Johns-Hopkins Applied Physics Laboratory located in the Baltimore-Washington corridor. The theme for the Symposium will be "Global Perspectives on Cryptologic History". We will consider all proposals relating to any aspect of cryptologic history. The deadline for submission of proposals, to include a minimum two-page topic prospectus, a brief source list, and a biography, is 10 January 2009. Selected presenters will receive notification by 1 March 2009. For further information, contact Dr. Kent Sieg, symposium coordinator, at 301-688-2336 or kgsieg@nsa.gov.

ELECTRICAL TECHNOLOGIES IN THE MOVIES: ELECTRIC CLOCKS AND WATCHES

The first electric clocks, which date from about 1850, functioned in the same way as traditional pendulum clocks except that an electric circuit delivered an impulse to the pendulum whenever its amplitude fell below a certain level. So-called synchronous electric clocks, which began to be sold in the 1920s, depended upon the frequency of the AC power supply to keep time. Indeed, the fact that people were using electric clocks prompted power companies to regulate the frequency of the power more accurately. In the 1948 movie "Mr. Blandings Builds His Dream House", starring Cary Grant and Myrna Loy, an electric alarm-clock plays a prominent role.

A successful product of the 1930s was the clock radio. The movie "Groundhog Day" (1993) shows a clock radio, repeatedly and memorably, to indicate the start of the day, over and over again. A couple of times the main character of the movie, Phil Connors, smashes the clock radio. Two 1997 movies include close-ups of clock radios: "As Good as it Gets" and "Abre los ojos" ("Open Your Eyes"). In the latter, the clock radio wakes a person by repeating "Abre los ojos" with increasing volume. No doubt the greatest improvement to the clock radio was the introduction, by General Electric in 1956, of the snooze button. In the 2002 movie "Divine Secrets of the Ya-Ya Sisterhood" a woman who has been putting off marriage says something like "I've been hitting the snooze button on my biological clock for a long time."

The time clock, or punch clock, was first marketed in about 1890 by the Bundy Manufacturing Company. Bundy later merged with two other companies to form the International Time Recording Company. A further merger in 1911 produced the Computing Tabulating Recording Corporation, which in 1924 changed its name to International Business Machines (IBM). By then, time clocks were common in factories, offices,

and other work places. The 1927 Clara Bow movie "It" shows women at a nursing home punching in and out. In Charlie Chaplin's "Modern Times" (1936) a time clock forms part of the oppressive environment for factory workers. In the 1979 movie "Breaking Away" we see a young man starting work at a car wash. He is told "Don't forget to punch the clock, shorty." He hits the face of it with his fist, breaking the glass, and leaves.

It was the Hamilton watch company that introduced an electrically powered wristwatch in 1957. Called the Hamilton Ventura, it used the recently invented mercury button cell battery. Just four years later came the first electronic watch, the Bulova Accutron. An integrated circuit and a battery kept a tuning fork in motion and converted its vibrations to electrical impulses, which moved a tiny motor at the correct speed. Seiko, in 1969, was the first to market a quartz watch, an electronic watch with a quartz crystal, rather than a tuning fork, controlling the timing. When, just three years later, Seiko introduced the Pulsar watch, an electronic watch with digital readout, it attracted great attention.

James Bond wears one in the 1973 movie "Live and Let Die", and its digital display is shown close up. It was not long before other manufacturers offered digital watches. When Jake Blues, in the 1980 movie "The Blues Brothers", gets out of prison, some things are returned to him, the first of which is "one Timex digital watch, broken". The 1996 remake of "The Nutty Professor" shows the use of the alarm feature of a digital watch. In the 2001 movie "One Night at McCool's", a thief admires the Swatch he has stolen, saying it seems to have special features. The owner says that it has a stopwatch feature, but he never figured out how to use it.

As always, we would be grateful for reports from readers of other interesting movie scenes that involve electric clocks and watches. You may contact us at ieee-history@ieee.org.



Thomas Edison using a time clock in 1921.

GRANTS, FELLOWSHIPS AND INTERNSHIPS

HYUNGSUB CHOI IS 2008 IEEE LIFE MEMBERS' PRIZE IN ELECTRICAL HISTORY WINNER



Hyungsub Choi (October 2007): 758-782.

The Society for the History of Technology (SHOT) has awarded Hyungsub Choi the 2008 IEEE Life Members' Prize in Electrical History for his article, "The Boundaries of Industrial Research: Making Transistors at RCA, 1948-1960." *Technology and*

Hyungsub Choi received his Ph.D. in history of science and technology from Johns Hopkins University, where his research examined how the scientific knowledge created in one industrial research laboratory in New Jersey, U.S.A. metamorphosed into the technical know-how necessary for mass production, and

spread to other locations around the world. He is currently with the Chemical Heritage Foundation Center for Contemporary History and Policy, in Philadelphia, Pennsylvania, U.S.A.

Hyungsub was the winner of the 2006-2007 IEEE Life Member Fellowship in Electrical History.

The IEEE Life Members' Prize in Electrical History, supported by the IEEE Life Members' Fund and administered by the Society for the History of Technology, is awarded annually to the best paper in the history of electrotechnology—power, electronics, telecommunications, and computer science—published during the preceding year. Any article published in a learned periodical is eligible if it treats the art or engineering aspects of electrotechnology and its practitioners. The article must be written in English, although the journal or periodical in which it appears may be a foreign language publication.

GRANTS, FELLOWSHIPS, AND INTERNSHIPS

PROGRAMS OF SUPPORT FROM THE IEEE HISTORY CENTER

The IEEE History Center offers two programs of support annually for scholars pursuing the history of electrical engineering and computing: An internship for an advanced undergraduate, graduate student, or recent Ph.D., and a dissertation fellowship for an advanced graduate student or recent Ph.D. The internship and the dissertation fellowship are funded by the IEEE Life Members Committee. The internship requires residence at the IEEE History Center, on the Rutgers University Campus in New Brunswick, New Jersey, USA; there is no residency requirement for the dissertation fellowship.

IEEE Life Member Fellowship In Electrical History

The IEEE Fellowship in Electrical History supports either one year of full-time graduate work in the history of electrical science and technology at a college or university of recognized standing, or up to one year of post-doctoral research for a scholar in this field who has received his or her Ph.D. within the past three years. This award is supported by the IEEE Life Members Committee. The stipend is \$17,000, with a research budget of up to \$3,000.

Candidates with undergraduate degrees in engineering, the sciences, or the humanities are eligible for the fellowship. For pre-doctoral applicants, however, the award is condi-

tional upon acceptance of the candidate into an appropriate graduate program in history at a school of recognized standing. In addition, pre-doctoral recipients may not hold or subsequently receive other fellowships, but they may earn up to \$5,000 for work that is directly related to their graduate studies. Pre-doctoral fellows must pursue full-time graduate work and evidence of satisfactory academic performance is required. These restrictions do not apply to post-doctoral applicants.

The Fellow is selected on the basis of the candidate's potential for pursuing research in, and contributing to, electrical history. Application forms are available on-line at http://www.ieee.org/web/aboutus/history_center/about/fellowship.html. The deadline for completed applications is 15 February 2009. This completed application packet should be sent to the Chairman, IEEE Fellowship in Electrical History Committee, IEEE History Center, Rutgers, The State University of New Jersey, 39 Union Street, New Brunswick, NJ 08901-8538. Applicants will be notified of the results by 1 June 2009.

The IEEE Fellowship in Electrical Engineering History is administered by the IEEE History Committee and supported by the IEEE Life Members Committee.

IEEE History Center Life Member Internship

Scholars at the beginning of their career studying the history of electrical technology and computing are invited to contact the Center to be considered for a paid Internship at the Center's offices on the Rutgers University campus in New Brunswick, New Jersey.

The intern program seeks to provide research experience for graduate students in the history of electrical and computer technologies, while enlisting the help of promising young scholars for the Center's projects. The Intern generally works full-time for two months at the History Center on a Center project that is connected to his or her own area of interest. This time is usually during the summer, but other arrangements will be considered. Interns are also encouraged to consult with the Center's staff and its associates, and guided to research resources in the area. The internship is designed for those near the beginning or middle of their graduate careers, but advanced undergraduates, advanced graduates, and, on rare occasions, recent Ph.D.s will also be considered. Special consideration is often given to scholars from outside the United States who might not otherwise have an opportunity to visit historical resources in this country.

The stipend paid to the intern is US\$3,500, but additional funds may be available to defray travel costs, depending on the intern's circumstances. This internship is supported by the IEEE Life Members Committee.

There is no formal application form. To apply, please mail a curriculum vitae showing your studies in electrical history along with a cover letter describing the sort of project you would be interested in doing (see contact information below). The deadline for contacting the IEEE History Center is 1 March 2009.

IEEE and Rutgers are AA/EO employers. Women and minorities are encouraged to apply for all positions. The IEEE History Center is cosponsored by the Institute of Electrical and Electronics Engineers, Inc. (IEEE)—the world's largest professional technical society—, and Rutgers—the State Uni-

versity of New Jersey. The mission of the Center is to preserve, research, and promote the legacy of electrical engineering and computing. The Center can be contacted at: IEEE History Center, Rutgers University, 39 Union Street, New Brunswick, NJ 08901-8538, ieee-history@ieee.org, http://www.ieee.org/web/aboutus/history_center/index.html

EXTERNAL PROGRAMS OF SUPPORT

Research Assistance from the Bakken

The Bakken Library and Museum in Minneapolis, Minnesota, U.S.A. offers two kinds of assistance for the purpose of facilitating research in its collection of books, journals, manuscripts, prints, and instruments: Visiting Research Fellowships and Research Travel Grants. Visiting Research Fellowships up to a maximum of \$1,500 are to be used to help to defray the expenses of travel, subsistence, and other direct costs of conducting research at The Bakken. The minimum period of residence is two weeks. Preference is given to researchers who are interested in collaborating for a day or two during their research visit with The Bakken on exhibits or other programs. The next deadline is February 15, 2009 for fellowships to be used in 2009. Research Travel Grants up to a maximum of \$500 (domestic) and \$750 (foreign) are to be used to help to defray the expenses of travel, subsistence, and other direct costs of conducting research at The Bakken. The minimum period of residence is one week. Application may be made at any time during the calendar year. For more details and application guidelines, please contact: Elizabeth Ihrig, Librarian, The Bakken Library and Museum, 3537 Zenith Avenue So., Minneapolis, MN., 55416, tel 612-926-3878 ext. 227, fax (612) 927-7265, e-mail Ihrig@thebakken.org www.thebakken.org

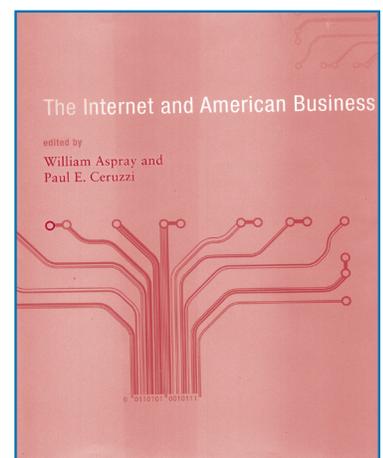
BIBLIOGRAPHY

ASPRAY, WILLIAM and CERUZZI, PAUL E. (*Editors*) *The Internet and American Business* MIT Press, 2008.

It is readily apparent that the Internet has become a central feature in business and commerce in the contemporary world. How did this come about? How have entrepreneurs and other businessmen attempted to profit from this new technology? And how has the Internet changed the ways in which businesses operate, reach their customers, and make a profit? Up until this book, these questions, if they have been discussed at all, have been the providence of journalists, bloggers and first-hand accounts. Scholars have largely confined their efforts to the Internet before its commercialization. Former IEEE History Center Director William Aspray (Now at the University of Texas—Austin) and Smithsonian Museum of Air and Space Curator Paul Ceruzzi are to be congratulated for commissioning and gathering a set of well-written essays in which historians and social scientists explore multiple aspects of these questions. Most of us pay a cable or telephone company to provide internet access, use Google on a regular basis, and shop at Amazon.com, but previously we knew little of how these

firms succeeded, in becoming large Internet businesses with massive customer bases, while thousands of other Internet businesses did not.

After a short introduction and a convenient introductory section by Ceruzzi on the internet until commercialization, the substance of the book follows, with essays by the various contributors grouped into five sections by topic. The first of these sections covers the internet itself as a business with articles on companies building businesses that provide internet access, web browser and email service; search engines and portals; and Internet-based software systems for other businesses. The second section treats commerce on the internet with sections on brick-and-mortar retailers, and web-only ventures (such as the infamous



pets.com) during the dot-com boom. The third section on industry transformation includes articles on how the internet has challenged traditional media businesses, a variety of non-media businesses, and finally an extremely intriguing article on reluctant and selective users of the internet including medical professionals and academics. The fourth section essays discuss how the internet affected a range of companies, and how some entrepreneurs sought business success through exploiting the internet's ability to host virtual communities. The fifth and final substantive section covers two major problematical areas—file sharing and the music industry on one hand and pornography on the other. The book then ends with two short essays, the latter of which, by the editors, offers suggestions for future research, among which they note that the need for similar studies of the Internet as business in other countries.

One interesting aspect of many in the book is how

close many of the essays come to the present in their coverage. Traditionally, historians wait until an episode is in the past, and its outcome known, before they feel that there is sufficient historical distance for them to successfully focus their analytical skills. (One example of this at the IEEE history center is the requirement that IEEE Milestones be at least 25 years old). The success of these essays suggests that historical analysis can offer much to our understanding of contemporary issues, which after all have their roots in history. Thus, this book has much to offer both to anyone interested in either the history of the internet, this central feature of our central technological society or its present function and future prospects.

Available from The MIT Press, c/o Trilateral, 100 Maple Ridge Drive, Cumberland, RI 02864. www.mitpress.mit.edu ISBN 978-0-262-01240-9. 592pp., index.

HELP MAKE HISTORY WITH THE IEEE FOUNDATION

By Karen Kaufman, Development Communications Manager, IEEE Foundation

Dues renewal for 2009 is now open. As you renew your IEEE membership for 2009 consider making a donation to the IEEE History Center.

The Center's support comes largely from the IEEE Foundation, the philanthropic arm of IEEE, through a memorandum of understanding with IEEE and through an endowment to the Center held by the IEEE Foundation. Rutgers, The State University of New Jersey supplies in-kind support. However, the Center also relies on grants and gifts not only for operations but also for increasing its endowment. These grants and gifts come from corporations, other foundations, and—especially—individuals. You can give personally, and ask your employer and other organizations with which you are associated to make or match contributions.

The History Center facilitates numerous programs to achieve its mission and that of the History Committee, which is to facilitate the preservation of, research into, and promotion of, IEEE's legacy. The Center serves IEEE members, the broader engineering community, the historical community, and the general public, including journalists, documentary filmmakers, decision-makers, university students, pre-university students, and educators. Your donation to the IEEE History Center Fund supports the Center's efforts to record, archive, and educate the public about the nature of technology and its relationship, both past and present, to society.

During 2008, efforts have focused on combining IEEE's history resources with the capabilities of the Web to create the IEEE Global History Network (GHN), a new open-content portal developed by the IEEE History Center. The site encourages and enables participation in IEEE's historical mission by promoting collaboration among individuals and organizations worldwide, especially the 365,000 IEEE members in 160 countries, and the organizational units that represent them. For more information visit the GHN portal at www.ieeeghn.org and read the related article in this newsletter.

Another effort worthy of your support is the 2009 IEEE Conference on the History of Technical Societies. See related article in this newsletter for more information. The IEEE History Committee and the IEEE History Center will hold this conference in Philadelphia in August as part of the year-long IEEE 125th anniversary celebration. Visit <http://www.ieee125.org/> for more information.

Anyone, anywhere, anytime can make a **donation online** to these and other programs specifically, or directly to the History Center Fund by visiting www.ieeefoundation.org. Just click on the Donate Online tab at the top of the web page. Once you register, you will be able to make a donation via credit card to one of several funds including IEEE History Center Fund.

U.S. members have until December 31st to make a charitable gift to the IEEE Foundation for a federal tax deduction for 2008. If you would like more information on the IEEE Foundation and your donation, please contact supportieee@ieee.org. If you wish to make a donation by a different method, please click on the appropriate link under the Ways to Give tab or via <http://www.ieee.org/organizations/foundation/waystogive.html>

Contributions are usually tax-deductible in the United States. For more information, visit the IEEE Foundation website at www.ieeefoundation.org.

To renew your membership, go to www.ieee.org/renewal. Instructions on retrieving web accounts can be found at www.ieee.org/webaccounts.

Thank you in advance for supporting the IEEE History Center and the history of the profession with your donation to the IEEE Foundation during dues renewal or any time throughout the year.

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