

IEEE History Center

ISSUE 88, March 2012

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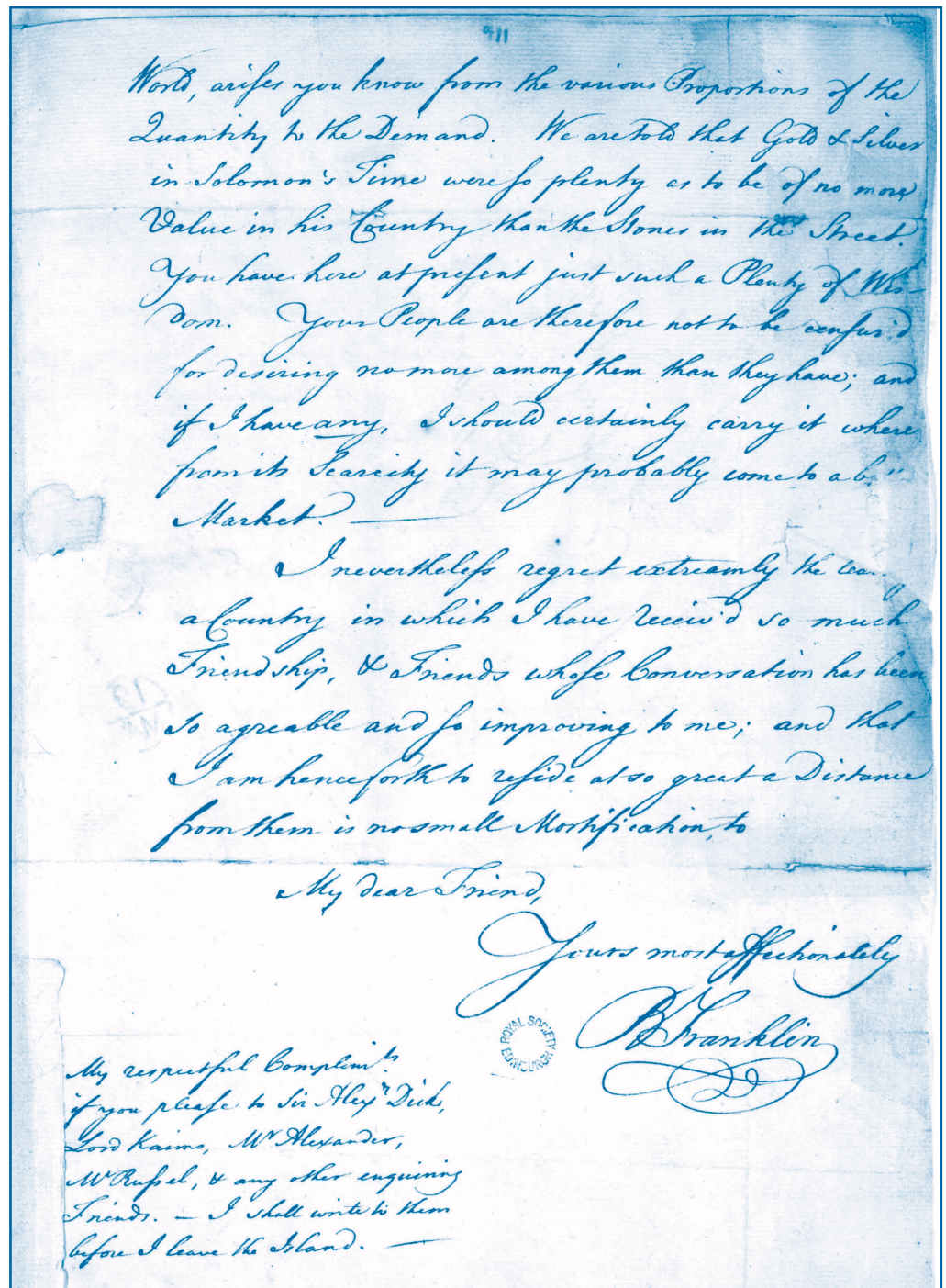
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Signature page of Benjamin Franklin's letter of 19 May 1762 to Scottish philosopher David Hume thanking Hume for the news that Franklin's paper on preserving buildings from damage by lightning had been accepted by the Philosophical Society. The Royal Society of Edinburgh presented the IEEE Archives with a facsimile copy in thanks for IEEE's efforts to preserve the estate of James Maxwell.



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—once in hard copy (March) and twice electronically (July and November) by the IEEE History Center.

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By Michael Geselowitz, Ph.D.

With the hiring of Dr. Alexander Magoun as Outreach Historian (see page 4), the staff of the IEEE History Center is up to full force to carry out the various activities that are part of our mission to preserve and disseminate knowledge about the heritage of IEEE, its members, their professions, and—especially—the IEEE-designated technological fields that built the modern world. And, as you will see from this issue our newsletter, what a year for those activities 2012 is shaping up to be!

The Milestones program continues to grow strongly (see page 7). As always, you can learn about new and former Milestones

on the IEEE Global History Network (GHN). 2012 IEEE President Gordon Day, based on his experiences as President-Elect last year, has expressed particular interest in attending Milestone dedications. He has also expressed satisfaction that he is the 50th IEEE president, since 1 January 2013 will be the 50th anniversary of the formation of IEEE from the merger of AIEE (founded 1884) and IRE (1912). Although we date IEEE's origins to those of the AIEE, the oldest predecessor organization, you can look for some interesting institutional history items over the course of the year. Relatedly, 2012 is the Centennial of *Proceedings of the IEEE*, since it was the direct successor to *Proceedings of the IRE*. Be

SUBSCRIPTION INFORMATION

The IEEE History Center newsletter is available free to all persons interested in technological history – whether engineers, scholars, researchers, hobbyists, or interested members of the public. It is published in hard copy in March, and in electronic form in July and November of each year.

To subscribe to the IEEE History Center's free newsletter, please send your name, postal mailing address, e-mail address (optional if you wish to receive the electronic versions), and IEEE member number (if applicable – non-

members are encouraged to subscribe as well) to ieee-history@ieee.org

Current and past issues of the newsletter can be accessed at: www.ieee.org/about/history_center/newsletters.html

The IEEE History Center is a non-profit organization which relies on your support to preserve, research, and promote the legacy of electrical engineering and computing. To support the Center's projects – such as the Global History Network, Milestones, and Oral History Collection, please click the "Donate Online" tab at www.ieee.org/donate or www.ieeefoundation.org/

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 ieee-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; one issue (March) in paper, the other two (July and November) electronically. The circulation of the paper issue is 4,800; the circulation of the electronic issues is 22,500. 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

Quarter Page	\$150
Half Page	\$200
Full Page	\$250

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

sure to catch our special series of historical articles we are preparing for *Proceedings*.

The Oral History program is doing fine as well. This year, we will be focusing on working with the IEEE Electromagnetic Compatibility Society (EMC) on shoring up our collection in their technical area. This work is funded in part by a generous gift from Don Heirman, a past EMC president. In the process, we will also be working with EMC to pilot ways that IEEE societies and other organizational units can best take advantage of the archive platform on the GHN in order to preserve their papers and those of their past officers.

Also strong is our reputation as the go-to clearinghouse for information on the history of electrical, electronic and computer technologies. Most of these reference requests concern education, either formal or informal. Besides students, scholars, authors and journalists, documentarians have been increasingly turning to us (see page 6). And in addition to helping others get the word out, our own program of e-books is also growing.

We are expanding our pre-university activities this year. With our partner Rutgers University, we are giving a series of workshops to high school social studies teachers to help them integrate history of technology into their courses. In return, they will assist us in developing curricular material to be made available worldwide through the education portal on the GHN.

The newest and potentially most important development in 2012 lies in the realm of undergraduate university education. The History Center has long been involved in this area through its partnerships with Rutgers and, more recently, the University

of California, Merced. Now, the History Center, under the guidance of the IEEE History Committee and its new chair Lyle Feisel (see page 4), has received a seed grant from the IEEE New Initiatives Committee to do a market study to see if IEEE should be in the business of supplying to universities on-line courses in the history of engineering and technology.

Such distance learning is a major global trend in higher education, and we are uniquely positioned to play a role in the area of history of technology. IEEE could serve the profession by helping engineering schools, departments and institutes who lack the resources to satisfy accreditation requirements for engineering students to understand the social context of their endeavors. At the same time, such program could serve as a source of revenue for the History Center and as a model for other IEEE organizational units (as the GHN has been in the wiki field). In addition, one could imagine lectures prepared for such courses re-purposed for the pre-university and member continuing education audiences. Stay tuned for more developments.

None of these activities would be possible, or course, without the assistance of you, our loyal donors. The March newsletter represents our annual opportunity to thank you all collectively—and once again individually (through the publication of our Honor Roll of Donors)—for your support. We are gratified in the faith this shows in our programs, and I urge you to continue to generously to continue to help us carry our important mission.

HISTORY COMMITTEE ACTIVITIES

HISTORY COMMITTEE CHAIR LYLE FEISEL

The incoming Chair of the 2012 IEEE History Committee is Dr. Lyle Feisel. Dr. Feisel has long been active in IEEE, and is a Fellow of the IEEE and American Society for Engineering Education (ASEE). He served as vice president of IEEE Educational Activities from 2000 to 2003, and is a member of the board of the IEEE Foundation. Most recently, Dr. Feisel was Chair, and then member of, the IEEE Life Members Committee.

Dr. Feisel received the B.S., M.S., and PhD. Degrees in Electrical Engineering from Iowa State University. Professionally, he served on the faculty of the South Dakota School of Mines and then as the Founding Dean of Engineering at the State University of New York at Binghamton. He is Dean Emeritus of the Thomas J. Watson School of Engineering and Applied

Science at SUNY.

Among the awards and recognitions he has received are The IEEE Centennial Medal, Millenium Medal, and an IEEE Region 1 Award for Innovative Leadership in Engineering Education, the Western Electric Fund Award, the Meritorious Service Award and the Achievement Award of the IEEE Education Society, the Ben Dasher Award, the Ronald J. Schmitz Award, the Iowa State University Professional Achievement Citation in Engineering, and the New York State Society of Professional Engineers Award for Achievements and Contributions in the Field of Education. In 2002, he was named New York State Engineer of the Year, the highest honor awarded by the New York State Society of Professional Engineers.

TOWARDS HISTELCON 2012

By Dr. Jacob Baal-Schem, IEEE History Committee member and member of HISTELCON 2012 Committee

The series of HISTORY of Electrotechnology CONferences was originally launched in 2008 by IEEE Region 8 in Paris, France, with an audience of about sixty persons and forty-seven presentations, mainly on the history of modern telecommunications. This conference was held on 11-12 September 2008 and was organized and co-chaired by the late Jean-Claude Boudenot. It was followed in 2010 by HISTELCON 2010, dedicated to "A Century of Broadcasting" and organized by the IEEE Spain Section (assisted by the Telefonica company) held on 3-5 November 2010 in Madrid, headed by Conference Chair, Olga Pérez Sanjuán, of AEIT, Spain, and Technical Program Chair, Antonio Pérez Yuste, of UPM, Spain. Out of eighty-five technical papers received, sixty papers were presented during twelve sessions to an attendance of one hundred and twenty participants.

For 2012, HISTELCON has joined forces with the IEEE History Committee and History Center, to organize a joined event in Pavia, Italy, on 5-8 September 2012.

The theme for HISTELCON 2012, "The origins of elec-

rotechnologies," relates specifically to the site of the conference - the University of Pavia and the Museum of Electrical Technology - where Alessandro Volta was a Professor for 35 years. Professor Antonio Savini, Chairman of the Conference and Professor Brian Bowers, Chair of the Technical Program Committee, intend to present a comprehensive view of the origins and early developments of technologies, milestones in their histories, and the scientists and technologists who contributed to their development. Holding presentations in the Museum will provide the perfect environment to discuss ways for the presentation and illustration of scientific items to the general public. An International Program Committee will strive to bring a plethora of views to participants of different backgrounds – engineers, historians, museum curators, etc. This intended mix of audience has resulted in the past, and will result again, in an interesting exchange of views towards the enlargement of the visibility of science and engineering to public.

This special meeting in Pavia will certainly be of interest to participants who are invited to visit the website www.histelcon2012.org or contact the Conference secretariat info@histelcon2012.org

STAFF NOTES

NEW HISTORIAN HIRED

Last year, you read of the retirement of long-time IEEE History Center historian Rik Nebeker.

Now the History Center is proud and happy to announce that it is up to its full contingent with the hiring of Dr. Alexander Magoun. Effective Monday, 16 January 2011, Alex joined the staff as Outreach Historian.

Alex has his BA in History from Trinity College (CT), his MA in History from the University of East Anglia, and his PhD in American History from the University of Maryland, where he studied with noted historian of technology Robert Friedel, the founding director of the IEEE History Center. Alex is an expert on the history of television, was the director of the revived David Sarnoff Library, and most recently has been working as a consulting historian. He is the author of *Television: The Life Story of a Technology* (Johns Hopkins University Press, Baltimore, 2009). He has a wide range of experience in the public history of technology relevant to IEEE's historical activities, including organizing archives, launching a web site, hosting documentaries, conducting oral histories, fundraising, and developing school programs. Alex also has direct knowledge of and experience with IEEE, having served on the IEEE History Committee, consulted for the IEEE History Center, and—while at Sarnoff—received a grant from the IEEE Foundation.

As with all of the History Center staff, Alex will be participating in our full range of activities as a team member. Initially he will also have primary responsibility for the STARS program. As readers of this newsletter should know, STARS is a compendium

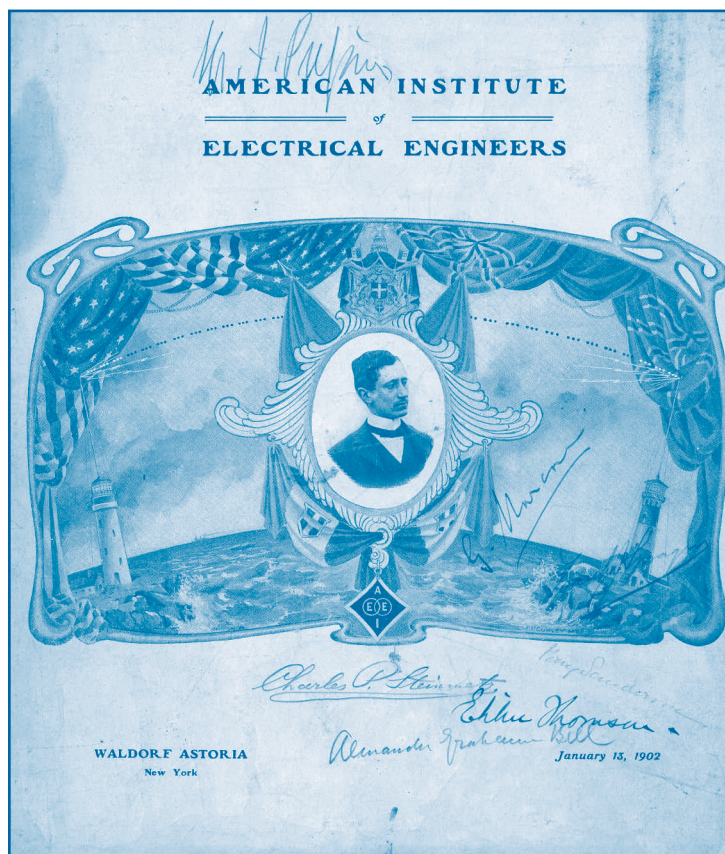
of peer-reviewed articles on the IEEE Global History Network concerning the history of major developments in electrical and computer science and technology. Although written for a general audience, these articles are meant to provide authoritative information, valuable in itself, but also useful as starting points for further investigations. The main STARS page can be found here: www.ieeeeghn.org/wiki/index.php/Special:STARS. If you feel that you or someone you know would be a good author for a STARS article, please contact Alex at a.b.magoun@ieee.org.



Alex Magoun (left) discusses radio history at a New Jersey Science Convention

A TREASURE OF THE IEEE ARCHIVES

The IEEE Archives, one of the core functions of the History Center, holds a variety of treasures documenting the history of IEEE and its predecessor organizations: the American Institute of Electrical Engineers (AIEE) and the Institute of Radio Engineers (IRE). One of the most interesting, not to mention unique, items is the four-page program for the 1902 AIEE Annual Dinner. The program lists the speakers. It gives the extensive menu of the courses and dishes to be served, an array far more elaborate than would likely be served today. One notable item on the menu is the intriguing and appropriately named "potage electrolytique." It has a cover picture of the guest of honor—the Italian/British radio pioneer Guglielmo Marconi. But what makes it a true gem is that the program is autographed, and not just by Marconi, but by a who's who of giants of the early years of our fields—Charles Steinmetz, of General Electric and electrical theory fame; Alexander Graham Bell, telephone inventor; Elihu Thomson, electric light inventor and co-founder of one of the two predecessor companies to GE; Frank Sprague, pioneer of the first electric streetcar; Michael Pupin, inventor of the loading coil. All except Pupin served as president of the AIEE; Steinmetz was the incumbent. In addition to these men, there is a signature on the lower right that the staff of the History Center has been unable to identify. If anyone reading this note can identify this mystery engineer, please let the History Center know. www.ieeeahn.org/wiki/images/c/c5/Annual_Dinner_of_the_AIEE_%281902%29.pdf



GHN UPDATE

FIRST HAND HISTORIES

Recently submitted are five first hand histories: two by Anthony J. Iacono and three by Russell E. Theisen. Iacono's two accounts relate to the work that he performed on aircraft, which include his solving a problem related to the Fuel Quantity System on the A6E aircraft, and a brief anecdote about Iacono's work during a particularly hot scenario while performing an EMC Safety of Flight Test.

Theisen worked for IBM during 1963 and 1964 and his first-hand accounts discuss his role in the development of the IBM 360-20, his suggestion for a "cookbook" list of replacement parts for IBM machines that need to be serviced, and his use of an oscilloscope to solve a problem with excessive noise in data transmission.

Iacono's and Theisen's accounts can be viewed, along with all the other First Hand Histories on the GHN here: www.ieeeahn.org/wiki/index.php/First-Hand:List_of_First_Hand_Histories

To submit your own First Hand History, log in to the Global History Network and visit the First Hand History landing page: www.ieeeahn.org/wiki/index.php/Special:FirstHandHistories

IBM 1800

Submitted by IEEE Senior Member Steve Wixon is a history of the IBM 1800 computer, introduced in 1964. Designed for real-time data acquisition, the IBM 1800 sold about 2,000 units and had applications spanning many fields including power plants, oil refineries, and biomedical institutions. A testament to the machine's longevity, Pickering Nuclear was using physical IBM 1800s until 2009, and an emulated IBM 1800 is still in use today. This article covers both the technical background of the 1800 and its field applications, and includes a great deal of additional reading in the form of dozens of supporting primary archival documents. To view the IBM 1800 article, go to: www.ieeeahn.org/wiki/index.php/IBM_1800

SAN JOSE STATE UNIVERSITY HISTORY OF COMPUTING COURSE

In the Fall of 2011 the IEEE History Center partnered with Ron Mak from San Jose State University and his History of Computing course. The final project of the course was to write an article on the Global History Network detailing the history of an important topic in computing. These articles are as follows: "The

encryption war of WWII: the Enigma encryption machine", "History of Memory and Storage Systems", "Past programming languages and their influences on today's languages and programming paradigms", "Internet and Social's Influence on Programming Evolution", "The History of Natural Language Processing", "Evolution of Social Networking", "History of Loss-less Data Compression Algorithms", "Why Instruction Sets No Longer Matter", and "Biology and Computers: A lesson in what is possible". These articles can be viewed here:

www.ieeeeghn.org/wiki/index.php/SJSU_Fall_2011_Articles

LARSON COLLECTION VIDEOS

In the 1980s and early 1990s, after his retirement, Dr. Clarence E. Larson conducted video interviews with some four dozen of his fellow pioneers in atomic energy and tangential fields, which were taped by his wife Jane Larson. Recently the IEEE History Center has posted two more of the interviews on the Global History Network. These interviews are with David Packard, co-founder of Hewlett Packard and U.S. Deputy Secretary of Defense from 1969 to 1971, and Bertrand Goldschmidt, the last surviving French participant in the wartime development of nuclear energy, and personal assistant to Marie Curie. To watch these interviews, as well as the other interviews in the Larson Collection, go here: www.ieeeeghn.org/wiki/index.php/Archives:Clarence_E._Larson_Collection



Innovation doesn't just happen.
Read first-person accounts of
IEEE members who were there.

IEEE Global History Network
www.ieeeeghn.org

IEEE

RAISING THE VISIBILITY OF IEEE'S PROFESSIONS: THE HISTORY CENTER ADVISES ON DOCUMENTARIES

As mentioned in the November 2011 History Center newsletter, the IEEE History Center frequently advises documentary filmmakers all over the world, thus helping to bring the heritage of electrical engineering and computing to national and international audiences and raising the visibility of IEEE's fields of interest. History Center staff advised Lion Television, an award-winning film company, on a documentary about the grid—a portion of the four-part series "America Revealed"—which will air on the Public Broadcasting Network on 11 April at 10:00 pm. The series portrays the movements and communications that miraculously come together to manufacture goods, transport people and materials, grow tons of food, and power our society.

In November 2011, Darlow Smithson Productions, London, England, requested permission to use audio clips from the History

Center's oral history of Norman Ramsey—known for his development of the separated oscillatory field method of measurement and for his work in magnetic resonance—in a documentary Darlow Smithson is producing for National Geographic.

Italy's national public broadcasting service, the RAI, is using video and still images of Carl Hammer, a Sperry-Univac executive and computer pioneer, for a documentary it is producing on the Beale Code. Hammer's oral history on the IEEE Global History Network can be found at www.ieeeeghn.org/wiki/index.php/Carl_Hammer and Norman Ramsey's oral history can be found at: [www.ieeeeghn.org/wiki/index.php/Oral-History:Norman_Ramsey_\(1995\)](http://www.ieeeeghn.org/wiki/index.php/Oral-History:Norman_Ramsey_(1995))

IEEE PACKET SPEECH MILESTONE CELEBRATED AT MIT LINCOLN LABORATORY

by David Walden, Corresponding Member, IEEE History Committee

In 1971 Jim Forgie of MIT Lincoln Laboratory did experiments with the two-year old ARPANET that showed the feasibility of sending speech over that first packet-switching network. At the time, in the context of traditional dial-up full-duplex telephone communications, many people doubted that packetized speech, in which packets flow over varying network paths with varying time delays, could work. In 1974 the Advanced Research Projects Agency (ARPA) began a multi-institution packet speech program, lasting through 1982, that firmly demonstrated the utility of packet speech. This was the initiating technology of what we know today as Voice over IP and capabilities such as Vonage and Skype.

On 8 December 2011, a Milestone was dedicated at MIT Lincoln Laboratory, which had been the central player in the ARPA packet speech program. The plaque citation reads:

First Real-Time Speech Communication on Packet Networks, 1974-1982 In August 1974, the first real-time speech communication over a packet-switched network was demonstrated via the ARPANET between MIT Lincoln Laboratory and USC Information Sciences Institute. By 1982, these technologies enabled Internet packet speech and conferencing linking terrestrial, packet radio, and satellite networks. This work in real-time network protocols and speech coding laid the foundation for voice-over Internet Protocol (VoIP) communications and related applications including Internet video conferencing.



L to R: Cliff Weinstein, Lincoln Lab Human Language Technology, Peter Staecker, IEEE President-Elect, Karen Panetta IEEE Boston Section Chair, Gilmore Cooke, IEEE Boston Section Historian, and Eric Evans, Director of MIT Lincoln Laboratory with the Milestone Plaque

This IEEE Milestone in packetized speech was sponsored by IEEE Signal Processing Society and the Boston section of IEEE. The public dedication was attended by more than one hundred people including many of the 1974-1982 participants, several of whom came from across the country. Welcomes were given by Karen Panetta, IEEE Boston Section Chair; Mostafa Kaveh, IEEE Signal Processing Society President; and Eric Evans, director of MIT Lincoln Laboratory.

Cliff Weinstein, leader of Lincoln Laboratory's Human Language Technology group and himself a key member of the 1974-1982 research, sketched the history of the effort, from Jim Forgie's early feasibility study; through the milestone years; and to Bob Gray's July 2005 paper in the *IEEE Signal Processing Magazine* which brought the 1974-1982 work to the attention of a 21st century audience. Weinstein emphasized the multi-institutional composition of the research effort: you need people at other locations to demonstrate long distance, packetized two-person telephone conversations and teleconferencing. In addition, the different institutions had different computers and end-user equipment and helped develop the necessary network protocols enabling communication among varied devices. Cliff also played an audio tape from May 1978 of an early demonstration of a voice conference among the Lincoln Laboratory in Massachusetts and USC Information Sciences Institute and Culler-Harrison Inc., both in southern California. Bob Kahn, ARPA program manager when the packet speech project was initiated, was the keynote speaker. He too emphasized how many people from how many places participated in the program. He also noted that part of his purpose in creating the speech program was to show the importance of packet technology. The ARPANET had been created to demonstrate packet switching, and it could transmit data of many types. Bob described changes that had to be made to the internal ARPANET algorithms and its external interface to allow high bandwidth, low-delay speech. Also, TCP (which originally contained both the TCP and IP functions) was split into TCP and IP which enabled applications such as packet speech (and its protocols) to communicate directly with IP. A goal was 1Kbps speech at a time when 4.8Kbps or 2.4Kbps speech were regarded as minimums. This goal was reached, partly because packet speech did not require a full duplex connection (saving 50 percent immediately) and packets did not have to be sent during silences, etc., saving an additional significant percentage. Finally, Bob noted that there are still possibilities for improving the way speech is transmitted over the Internet, and he envisions a time when speech may be the primary user interface to computers.

The formal session ended with Peter Staecker, 2013 IEEE president, and Eric Evans, director of Lincoln Laboratory unveiling the plaque and handing out miniature versions of the plaque to participants in the 1972-1984 research.



IEEE President-Elect Peter Staecker speaking at Packet Speech Milestone Ceremony

IEEE MILESTONES IN ELECTRICAL ENGINEERING AND COMPUTING APPROVED

The IEEE Board of Directors has approved the following IEEE Milestones in Electrical Engineering and Computing. Where the dedication ceremony dates have been scheduled, they are given, and the Region and Section where the milestone plaque is located is given in parentheses. IEEE Milestones show the geographic diversity of the history of the profession, and that innovation knows no boundaries.

For more information on these achievements, we invite you to view the Innovation Map on the IEEE Global History Network www.ieeeahn.org/wiki/index.php/Map

Readers can also find a list of all milestones which have been dedicated at: www.ieeeahn.org/wiki/index.php/Milestones:List_of_IEEE_Milestones.

In addition to celebrating and publicizing the heritage of IEEE technologies, the Milestone dedications offer a unique opportunity to document these technical achievements and make their history available on-line via the Global History Network.

As of this writing, IEEE has approved 126 Milestones and dedicated 116. These numbers are constantly growing because of the activities of the History Committee and the Board of Directors. By the time this issue goes to press, we expect there to be more.

Milestones approved:

- 2009-09 First Reliable HV Fuse (R4 – Chicago Section)
- 2009-04 Raman Effect (R10 – Central India Section)
- 2009-05 Bose experiments in radio (R10 – Central India)

- 2009-06 Bar Code (R2 Philadelphia Section)
- 2010-03 G3 Facsimile (R10 – Tokyo Section)
- 2010-04 Field Effect Electron Microscope 31 January 2012 (R10 – Tokyo)
- 2010-10 LORAN (R1 – Boston Section)
- 2010-11 Whirlwind Computer (R1 – Boston Section)
- 2011-02 B&O Railroad electrification [Johnston] (R2 – Baltimore Section)

Looking back at the year 2011, which was a very successful year for the IEEE Milestones Program, there were ten dedication ceremonies held:

- 2009-07 Eel River HVDC Converter (R7) 24 February 2011
- 2009-12 Mercury Spacecraft controls 24 February 2011 (R5)
- 2010-01 SPICE Circuit Simulation Program 20 February 2011 (R6)
- 2010-05 Discovery of Superconductivity 8 April 2011 (R8)
- 2008-18 Marconi's First Wireless Experiments, 1894-95 29 April 2011 (R8)
- 2010-06 Pearl Street Station, 10 May 2011 (R1)
- 2010-08 Lunar Module 20 July 2011 (R1)
- 2009-13 First Satellite Broadcast to the Public, 18 November 2011 (R10 – Tokyo Section)
- 2010-09 Real-Time Packet Switching 8 December 2011 (R1 – Sig Proc Soc.)
- 2010-02 Apollo Guidance Computer 13 December 2011 (R1 Boston Section)

THINGS TO SEE AND DO

ARTEFACTS 2012 CONFERENCE, EDINBURGH, SCOTLAND

ARTEFACTS is an international network of academic and museum-based scholars of science, technology and medicine interested in promoting the use of objects in research. The next conference will be held in Edinburgh, Scotland, 7–9 October 2012, at the award-winning refurbished National Museum of Scotland. The Scottish government aims to hold a referendum on national independence and the theme of the conference echoes this issue. It aims to discuss national styles and identity, and scientific, technical and medical artefacts in a global context. Topics cover questions such as:

- Between inventors and the nation: who makes and owns artefacts?
- Do artefacts embody national styles or distinct communities of practice?

- Do artefacts reflect particular national attitudes on the relationship between science and technology?
- Do artefacts act as signifiers of nationhood and how are they enlisted in the construction of nationalist agendas?
- National, international or local: how do museums aim at audiences through artefact's stories?

ARTEFACTS conferences are friendly and informal meetings with the character of workshops. Each contributor is allocated a 20 minutes slot plus time for questions and discussion. Contact Klaus Staubermann at k.staubermann@nms.ac.uk by 30 April 2012. Please remember that the focus of presentations should be on artefacts.

VINTAGE COMPUTER FESTIVAL

The Vintage Computer Festival East returns on 5-6 May, 2012, at the InfoAge Science Center in Wall, New Jersey, U.S.A. VCF East 8.0 features lectures and classes in the morning, a hands-on exhibit hall in the afternoon, and a book sale, consignment, food, museum tours, prizes, and more, all day long. This year's keynote speakers are Dr. Thomas Kurtz, who co-invented BASIC (Saturday) and Daniel Kottke, who was Steve Jobs' college friend, India travel companion, and an original Apple II/III/Macintosh engineer (Sunday). The afternoon exhibit hall will feature 20-30 demonstrations of minicomputers, S-100 homebrew systems, and 8-bit microcomputers, along with peripherals such as punch card machines, teletypes, tape drives, etc. – all live and running. Tickets are sold on-site for just \$10/day, \$15/weekend, and free for children. Proceeds benefit the grassroots, all-volunteer science museum. Details are frequently updated at www.vintage.org/2012/east/ and www.facebook.com/vcfeast8. To participate or for questions, please contact event producer Evan Koblentz at evan@snarc.net or (646) 546-9999.

EDISON MENLO PARK SITE TO REOPEN

The Edison Museum, the site of Thomas Alva Edison's Menlo Park Laboratory in Edison, New Jersey will re-open on 9 June 2012, after a major renovation. The renovation includes a comprehensive exhibit on the history and significance of Menlo Park, and has addressed Americans with Disabilities Act (ADA) compliance.

The site is an IEEE Milestone in Electrical Engineering and Computing, bearing a plaque with the citation:

Between 1876 and 1882 at Menlo Park, New Jersey, Thomas Edison developed the world's first industrial research and development laboratory devoted to developing new technology. At this laboratory, Edison and his staff developed the first system of incandescent electric lighting and electric power generation, invented recorded sound and produced a commercially successful telephone transmitter.

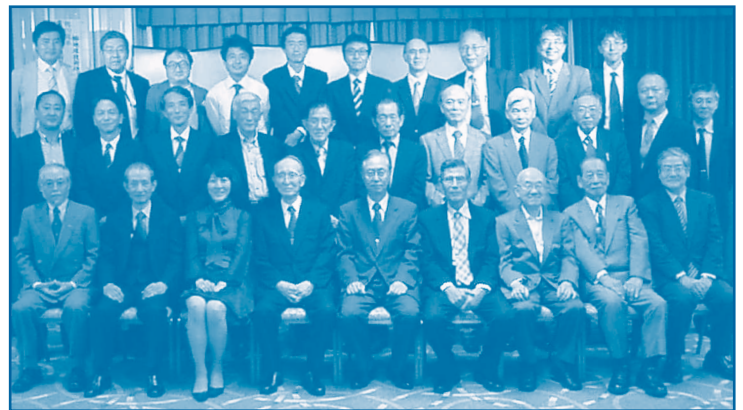
The Museum is at 37 Christie Street, Edison Township, NJ, U.S.A. The renovation is a joint effort by the non-profit Edison Memorial Tower Corporation (EMTC), the Township of Edison, and the State of New Jersey. www.menloparkmuseum.org, info@menloparkmuseum.org or 732-494-4194.

WORLD ELECTRICAL TECHNOLOGY HERITAGE

TWENTIETH ANNIVERSARY CELEBRATIONS OF THE IEEE HISTORY COMMITTEE

In commemoration of its twentieth anniversary, the History Committee of the Institute of Electrical Engineers of Japan (IEEJ) held a ceremony on 25 October 2011 in Tokyo, Japan. About forty distinguished guests attended, and many messages from other institutions – beginning with a letter from the IEEE History Committee and the IEEE History Center --were introduced. During the ceremony, the attendees shared the memories of the committee's activities in the past twenty years, such as database construction, the giving of awards, oral history collection, and the Maui Meetings between IEEE and IEEJ.

At the end of the ceremony, the chairman expressed his determination to activate additional activities and to continue the mission of promoting electric technology literacy to the public.



GRANTS AND FELLOWSHIPS

JON LINDSAY IS THE 2011 IEEE LIFE MEMBERS' PRIZE PAPER AWARD WINNER FROM SHOT

The Society for the History of Technology has awarded Jon R. Lindsay the 2011 IEEE Life Members' Prize Paper Award for his paper, "War Upon the Map: User Innovation in American Military Software," which appeared in the July 2010 edition of *Journal of Technology and Culture*. Lindsay has researched and written extensively on the use of technology and information by the military.

The IEEE Life Members' Prize in Electrical History was established by the IEEE Life Members, who fund the prize, and is

administered by the Society for the History of Technology. The prize recognizes the best paper in electrical history published during the previous year. Any historical paper published in a learned journal or magazine is eligible if it treats the art or engineering aspects of electrotechnology and its practitioners. Electrotechnology encompasses power, electronics, telecommunications, and computer science. The prize consists of a cash award of \$500 and a certificate.

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BELL LABS MEMOIRS:

Voices of Innovation



EDITED BY A. MICHAEL NOLL
AND MICHAEL GESELOWITZ

The innovative spirit and creative energy of Bell Labs during the directorship of William Baker are described in this new book through first-hand accounts by twelve people who worked there:

John Pierce: father of communications satellites

Manfred Schroeder: speech encoding

Walter Brown: developer of silicon semiconductors

Carol MacLennan: computers and the Ulysses spacecraft

Alan Chynoweth: materials research

David Dorsi: laboratory glassblower

Edward Zajac: submarine cables and economics research

Edwin Chandross: optical memories and organic materials (inventor of the now-ubiquitous light stick)

Italo Quinto: chauffer to William Baker;

Mohan Sondhi: inventor of the adaptive echo canceller

William Keefauver: Bell Labs' general patent attorney

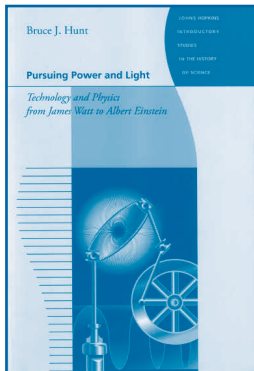
and **William Baker** himself.

Through their eyes and words, the culture of Bell Labs comes to life.

Research done at Bell Labs led to many devices and techniques that helped build our present world. Acoustic cameras, adaptive predictive coding, block diagram compilers, cryptography, diamond crystal research, digital communication, echo research, inverse filtering, light-emitting diodes (LEDs), magnetic bubble memories, microwaves, organic field effect transistors, pulse code modulation, synthetic speech, transistors, traveling-wave tubes, and vocoders are among the topics recalled by the contributors to this book.

HUNT, BRUCE J.

Pursuing Power and Light: Technology and Physics from James Watt to Albert Einstein, Johns Hopkins University Press, 2010



Bruce Hunt's *Pursuing Power and Light* concerns the history of technology and the history of physics from the late 18th century into the 20th century. In some historical periods, technology and natural philosophy, or science as it became known, followed largely separate courses. But, as this book makes clear, in the 19th century the most important advances in technology and the most important advances in physics were closely related.

The book begins with a chapter on the steam engine and the birth of thermodynamics. There follow two chapters on energy, entropy, and kinetic theory. The fourth chapter deals with early investigations of electricity and its application in telegraphy. The next chapter concerns electromagnetism and culminates in the theoretical work of James Maxwell and the demonstration of electromagnetic waves by Heinrich Hertz. Electric power and light, especially the work of Thomas Edison, is the subject of the sixth chapter. The final chapter, called "Into a New Century", presents some topics, including the discovery of the electron and of radioactivity, that became extremely important in the 20th century.

Bruce J. Hunt, who is on the faculty at the University of Texas at Austin, has done a great deal of work on the relationship between science and technology in the 19th century. The book is in the Johns Hopkins Introductory Series in the History of Science. It is abundantly illustrated, and there is an eight-page appendix on suggestions for further reading.

Available from John Hopkins University Press, 2715 North Charles Street, Baltimore, MD 21218-4363; www.press.jhu.edu, hardback \$45.00 ISBN 9780801893582, paperback \$20 ISBN 9780801893599, 192 pp.

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