1988 in Review

Through a variety of projects in 1988, the IEEE History Committee and the Center for the History of Electrical Engineering continued to promote the study and understanding of the history of electrical science and technology among engineers, historians, and the general public.

Awards. The History Committee and the IEEE Life Member Fund Committee co-sponsored two awards in 1988.

The IEEE Life Members' Prize in Electrical History is awarded annually for the best paper in electrical history published in a scholarly journal during the previous year. Ronald R. Kline, Cornell University, received the 1988 Prize for his paper, "Science and Engineering Theory in the Invention and Development of the Induction Motor" [Technology and Culture 28, no. 2 (April 1987): 283-313]. The Prize was established by the History Committee and is supported by the Life Member Fund and administered by the Society for the History of Technology.

The Life Member Fund Committee also continued its annual support of the IEEE Fellowship in Electrical History, which is administered by the History Committee and the Center. The Fellowship for the 1988-89 academic year was awarded to Michael Gunderloy, a Ph.D. candidate in the history of technology at Rensselaer Polytechnic Institute. Mr. Gunderloy is researching the history of computing at the National Bureau of Standards.

Electrical Engineering Milestones. The IEEE Electrical Engineering Milestones Program recognizes achievements of local, regional, national, and international significance in electrical engineering history. This program is administered by the Center and sponsored by the IEEE History Committee. One international and three national Milestones were added in 1988. These include

- Demonstration of practical telegraphy, Morristown, NJ, 1838 (see Newsletter No. 17)
- Ames Hydroelectric Generating Plant, Ames, CO, 1891 (see Newsletter No. 18)
- Commercial manufacture of transistors, Allentown, PA, 1951 (see page 7)
- Benjamin Franklin's work in London, 1757-1775 (to be dedicated in 1989)

Representatives from the IEEE, government, and industry participated in the public dedication ceremonies, which were covered by local press, the IEEE Institute, and the Center's Newsletter.

Exhibits. The Center's exhibits program continued to be an important part of the effort to increase awareness of the technical, social, and cultural heritage of electrical engineering. During 1988, "Edison after the Electric Light: The Challenge of Success" (see Newsletter No. 14) completed its two-year U.S. tour, traveling to science and technology museums in New York, North Carolina, Pennsylvania, and Indiana. The exhibit was co-curated by the Center and the Division of Electricity of the National Museum of American History, Smithsonian Institution.

Friends of the IEEE Center for the History of Electrical Engineering. The number of Friends doubled in 1988 and the geographical distribution of the Friends continued to expand. In 40 U.S. states and 14 countries, more than 400 IEEE members and non-members alike showed their support for the Center's work by making their annual contribution to the Friends Fund of the IEEE Foundation. This funding is targeted for exhibits, publications, and other special projects above and beyond those made possible by the IEEE Life Member Fund.

Information Services. The Center serves as a clearinghouse for information on all aspects of electrical engineering history. The staff answered over 200 inquiries during 1988.

Joint History Committee/Life Member Fund Committee Projects. Three requests for funding of history projects...
were received by the Life Member Fund Committee and were referred to the History Committee for evaluation. Based on the History Committee’s recommendations, the Life Member Fund supported the following:

"Heinrich Hertz: The Beginning of Microwaves," an exhibit, organized by John Bryant of the Microwave Theory and Techniques Society, of replicas of Hertz’s original equipment (see Newsletter No. 17). Dr. Bryant is also a member of the History Committee.

An archival and oral history project, coordinated by Professor Thomas J. Mosa of the Polytechnic Institute of New York, to document the career of Marvin Curnen. When completed, a guide to this material will be placed in the Center for the History of Electrical Engineering.

The Newsletter reports on the activities of the Center and on new resources and projects in electrical history. It is published three times each year by the Center for the History of Electrical Engineering, Institute of Electrical and Electronic Engineers, 345 East 47th Street, New York, NY 10017 (212-705-7500).

IEEE History Committee 1989

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Charles R. Wright

Center for the History of Electrical Engineering

Joseph E. Buck, Acting Director
Lloyd Battle, Research Assistant
Craig Semmel, Research Assistant

The Newsletter is made possible by a grant from the IEEE Foundation.


Publications. The Center issued a special publication in 1988, Recent Titles in Electrical History: A Selective Bibliography, 1982-1985. The 54-page bibliography lists nearly 900 books, articles, and those arranged by subject and indexed by author. In addition, the Newsletter, published three times each year, continued to report on the activities of the Center and on new resources and projects in electrical history.

Special Projects. Progress was made on a guide to oral history collections relating to electrical science and technology (see Newsletter No. 19). The guide is based on the results of a survey, conducted with support from the IEEE Life Member Fund, of 238 repositories in the U.S. Descriptions of more than 120 interviews were entered into a database and editing and verification of the information was begun. It is planned to publish the guide late in 1989.

The Center’s participation in the Laser History Project continued as the Project came to a close late in 1988. The Center completed a survey covering in companies and research institutions involved in the development of the laser concerning their archival holdings.

An international project jointly sponsored by the Center and the American Institute of Physics Center for History of Physics also concluded in 1988. The Center received two reels of microfilm of a collection of the letters of American physicist Sir Richard Threlfall (see Newsletter No. 16). As the first professor of physics at the University of Sydney (1861-1898), Threlfall was involved in developing the first Australian courses in electrical engineering. He also served as a consultant to electrification projects in many Australian cities. The microfilming project was headed by Prof. R. N. Home, Dept. of History and Philosophy of Science, University of Melbourne.

Staff Activities. Joyce E. Bedi, Acting Director of the Center for the History of Electrical Engineering, presented a paper on the Center’s activities, focusing on the Electrical Engineering Milestones Program at the Fourth National Conference on Engineering Heritage. Sponsored by the Institution of Engineers, Australia, the Conference was held in Sydney in December. Ms. Bedi also continued her involvement with the Society for the History of Technology (SHOT) and the American Institute for Conservation (AIC). Since 1986, she has chaired the Selection Committee for SHOT’s Dibner Award for Excellence in Exhibits of the History of Technology and Culture and she has served as editor of Antiquarian, the newsletter of SHOT’s Technology Museum Special Interest Group, since 1984. During 1988, Ms. Bedi was named the AIC Photographic Materials Group representative to the planning committee for a joint AIC/Smithsonian traveling exhibition on conservation.

Craig Semmel, one of the Center’s Research Assistants through the Northeastern University Cooperative Education Program, was accepted into the Undergraduate Honor’s Program at Northeastern. He is working on a study of Boston’s elevated electric railroad.

Visitors. The Center welcomed 25 visitors and researchers from six countries during 1988. The archives and research collections are open by appointment to engineers, historians, students, and others engaged in historical research and publications. The Center’s staff is also available for general consultation on historical projects.

System Development Foundation Records at Stanford

Roxanne Nilan, Curator, Stanford University Archives

The Stanford University Libraries have acquired the archival records of the System Development Foundation (SDF), a major institution in the history of computer and information science and sponsor of various research programs at Stanford University during the last decade. SDF, which ceased operations on June 30, 1988, has been the beneficiary of a major gift to fund for archival projects to make these resources accessible to scholars and for a twenty-year program which will create additional historical records in related areas of the history of computing. These collections enhance the Libraries’ Stanford in the Silicon Valley Project, which has made Stanford a major repository for the intellectual and institutional history of science. Total SDF awards to the Libraries come to more than $30,000.

The System Development Foundation was originally founded as the System Development Corp. in 1956; it was a spin-off from the Rand Corp. SDC specialized in developing computational development, programming, and training related to aerospace and military programs such as the SAGE (Semiautomatic Ground Environment) system. In 1969, the not-for-profit corporation was transformed into a profit-making enterprise and expanded its activities into commercial ventures such as information and database services. Burroughs Corp. purchased SDC in 1980, and the proceeds from the sale became the basis for the System Development Foundation, which, until its closing last year, was a leading grant-awarding institution in computer science.

Stanford has been one of the principal beneficiaries of SDF grants, receiving substantial funding for the Center for the study of Language and Information (CSLI) and the Center for Computer Research in Music and Acoustics (CCRMA), as well as other smaller grants. SDF has also funded important programs at the University of California, California Institute of Technology, Massachusetts Institute of Technology, and Rand Corp. By concentrating its grants in such fields as computational linguistics, computer music, and robotics, the Foundation has made a significant impact on current directions in research.

The records given to Stanford document not only the workings of the Foundation, but also the institutional and intellectual development of computer science since the founding of SDC in the mid-1950s. The collection includes administrative records, annual reports, board minutes, financial information, grant files, and extensive subject files. Projects funded by SDF were followed closely by the Foundation, and these files document the evolution and results of research carried out at many institutions.

Two grants awarded to the Libraries by SDF will make it possible for process, catalogue, conserve, and enhance the collection. The first grant provides for archival processing, indexing, and physical conservation; it will result in the preparation of a guide to the collection for use by scholars. Information about the collection will also be added to the database of the Research Libraries Information Network (RLIN) and thus will be available to scholars across the country.

The second SDF grant provides for a System Development Archives and History Project, which will guide the long-term expansion and enhancement of archival programs relating to the activities of SDC and SDF. The Project will include such activities as the publication and distribution of a guide to the SDF collection at Stanford; a published survey of related archival resources held elsewhere, oral history interviews, the acquisition and processing of additional archival material, stipends and fellowships in support of visiting scholars, and a major exhibition in 1998. The Project, which will benefit from the guidance of an advisory committee composed of librarians, archivists, and historians of science, is scheduled to begin in September 1990 and continue for a period of two decades.

For more information on the System Development Foundation records, contact the Stanford University Archives, Cecil H. Green Library, Stanford University, Stanford, CA 94305 (415-723-4054).
New Publications...

The Newsletter's "Publications" section was prepared with the assistance of Prof. Thomas Vogel of the University of Wisconsin.


Povey and Earl state that they "wish to bring back to the telephone instrument an interesting and entertaining piece of history, all indulgences have been omitted" (ix). Also, the authors strove for a "truly international standpoint" in their writing. This richly-illustrated book, then, serves as a chronological catalogue of telephones from around the world.

Povey and Earl begin their story with Charles Bournou's 1834 ironing machine. "I wonder whether anyone could articulate speech, and move on to Philip Rees's public demonstration of his 'telephone' in 1860. They then focus on the work of Alexander Graham Bell and his contemporaries. After this introduction, the authors devote individual chapters to improvements in transmitting and receiving radio signals, and classification of shapes and sizes for telephones in the late 19th century.

Two chapters discuss present-day telephone usage: The first introduces the telephone's early use as a medium for broadcasting music, theater, news, and religious services. The French Telegraph, demonstrated in Paris in 1811, broadcast speech into a Victor Smith telephone, which was installed in 1895, Ruben's "Telephones," that began broadcasts in 1899, and the Wilmington, Delaware, service, "Tel-munic," started in 1906. These telephone services are highlighted.

The final chapter examines the international and external changes in telephones as networks expanded in the early 20th century. The introduction of central control allowed for all telephones on an exchange, methods of calling, switching systems, and the evolution of the dial are discussed, and World War II, military telephones are examined. Vintage Telephones concludes with illustrations of changing telephone design, from the ornate to the desk phone of the 1970s. Povey and Earl end their narrative at this point, stating, "The repercussions from the introduction of plastic and the one-piece telephone case, have lasted until the present day. Instruments designed before these developments can justifiably be described as "vintage." (p. 191).

Peter Povey and Reginald Earl are both former Curators of the British Telephone Museum in Oxford, England. Vintage Telephones is the eighth volume in the Institution of Electrical Engineers' History of Technology Series.

Other Recent Books


Articles


Special Issues

IEEE Spectrum, Vol. 25, No. 11, 1988. Spectrum's 25th-anniversary issue looks at developments in electrical engineering technology and at changes in the engineering profession since the magazine's founding in 1963. A large section of the issue is devoted to "Classic Case Histories" which cover the transistor tunnel, digital scopes, the PDP-8, the Pacific Integrate, fiber optics, compact discs, the 1-Kbit DRAM, and VCRs.
The new transistor, an amazingly simple device capable of performing many of the functions of an ordinary vacuum tube, is about to become a full-fledged member of the Allentown Plant's family of electronic products.

The Electroncile of the Western Electric Allentown Plant, October 1951.

In October 1948, the Western Electric Co. formally opened the Allentown (Pennsylvania) Works specifically for the manufacture of electronic components. A branch of Bell Labs was established at the Works, combining the talents of Bell device-development engineers with Western Electric manufacturing engineers. Under the direction of V.L. Ronchi, this team orchestrated the transition from experimentation to production. The transistor went into commercial manufacture in October 1951.

On 18 April 1989, transistor manufacturing at Allentown was dedicated as an Electrical Engineering Milestone by the IEEE. Harold Nigh, Allentown Works General Manager, hosted the ceremony held at the Works. The program included talks by M. Ayman Shibly, IEEE Lehigh Valley Section Chairman, on the Milestones program; Joseph Daddona, Mayor of Allentown, on the impact of the transistor and AT&T on Allentown; Mike Thompson, AT&T Product Marketing and Development Vice President, on the impact of the development of the transistor on society. Anna Kopes, who worked on the first transistor production line, recalled the trials to perfect the device and the difficulties encountered in the early days.

The Newsletter of the IEEE Center for the History of Electrical Engineering is sent three times a year free of charge to engineers, historians, and others with an interest in the history of electrical science and technology. If you have not already done so, please complete the form below and return it to the Center to be certain of receiving future issues.

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Please send information on becoming a Friend of the Center —
Exhibitions and Museums ...

Trolley Museums Mark Anniversaries

Shoreline Trolley Museum, East Haven, CT

One of the most important artifacts in the Shoreline Trolley Museum’s collection is an early electric freight locomotive from the Derby Horse Railway. The locomotive was built in 1887-88 by the Pullman Palace Car Co. and its 75-HP motor was provided by the Van Depoele Electric Light Co. The Derby Horse Railway operated between Ansonia and Derby, Connecticut, from July 1888 until the fall of 1889. Passenger service continued on the railway’s line into the 1930s. After being withdrawn from service, the locomotive was moved into storage and displayed at various locations, including the New York World’s Fair in 1939. Then, in 1982, it was purchased at auction by John Stevens, a former Branford Electric Railway Association (BERA) president. Stevens donated the locomotive to the Shoreline Trolley Museum.

In honor of its 100th anniversary, volunteers at the museum restored the locomotive’s body and the BERA received a $10,000 grant from the State of Connecticut to rebuild the Van Depoele motor. The motor restoration was completed by the Schultz Electric Co. of New Haven. Last May, after 99 dormant years, the locomotive was running again. It is currently on display at the museum.

The Shoreline Trolley Museum is located at 17 River Street, East Haven, CT 06512 (203-467-6927).

Seashore Trolley Museum, Kennebunkport, ME

Fifty years ago, the Seashore Trolley Museum was founded with a single artifact—car no. 31 of the Biddeford & Saco line. As the principal activity of the New England Electric Railway Historical Society, Inc., also formed in 1939, the Museum’s original goal was the preservation of streetcars. Today, the collection is international in scope and includes all types of transit vehicles, from horse-drawn omnibuses to rapid transit subway and elevated cars. Support vehicles, such as overhead wire repair trucks, are collected as well.

To celebrate its 50th anniversary, a season of special events is planned at the Museum. In-depth guided tours of the collection will give visitors the opportunity to learn more about their specific interests. For example, trackless trolleys and PCC cars will be featured on 6 May, subways and elevated cars on 20 May, and interurban cars on 3 June. Tours with a geographical focus will also be held; 10 June is New England Day, 17 June is Boston Day, and 24 June is Overseas Day. Details of the 50th Anniversary Celebration scheduled for 1-4 July will be available shortly.