



STATIC FROM THE DIRECTOR

As I write these words, National Engineers Week (18 – 24 February 2001) is fast approaching, although by the time you read them it will have passed. This annual event enables engineers in the United States to work across disciplines to promote their profession. This promotion serves not just to make engineers feel good about themselves, and not just to trumpet their accomplishments to those who might set their salaries, but it furthers broader social issues as well: Issues such as technological liter-

acy, informed technological policy, and attracting the best and the brightest young people into engineering. IEEE is strongly involved in National Engineers Week through its IEEE-USA unit, which represents IEEE to the American Association of Engineering Societies. This year for e-week the AAES is running a series of newspaper ads based on the National Academy of Engineering's "Greatest Engineering Achievements" program (<http://www.greatachievements.org/>). Readers of this newsletter will recall that the IEEE History Center was very involved in putting that program together (see page 6).



Transatlantic Cable Station, Hearts Content, Newfoundland, courtesy Smithsonian Institution.

The IEEE History Center is, however, much more broadly and deeply involved in promoting engineering accomplishments than just publishing in one medium in one country during one week out of the year. The masthead of this newsletter reads "Preserving, Researching and Promoting the Legacy of Electrical Engineering and Computing." Although preservation and

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Following are the official citations of the three newest IEEE Milestones in Electrical Engineering and Computing:

Electronic Technology for Space Rocket Launches, 1950-1969, IEEE Canaveral Section

The demonstrated success in space flight is the result of electronic technology developed at Cape Canaveral, the J. F. Kennedy Space Center, and other sites, and applied here. A wide variety of advances in radar tracking, data telemetry, instrumentation, space-to-ground communications, on-board guidance, and real-time computation were employed to support the U.S. space program. These and other electronic developments provided infrastructure necessary for the successful landing of men on the moon in July 1969 and their safe return to earth.

Long-Range Shortwave Voice Transmissions from Byrd's Antarctic Expedition, 1934, IEEE Cedar Rapids Section

Beginning 3 February 1934, Vice Admiral Richard E. Byrd's Antarctic Expedition transmitted news releases to New York via short-wave radio voice equipment. From New York, the US nationwide CBS network broadcast the news releases to the public. Previous expeditions had been limited to dot-dash telegraphy, but innovative equipment from the newly formed Collins Radio Company made this long-range voice transmission feasible.

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IEEE HISTORY CENTER

Issue 55 March 2001

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IEEE Virtual Museum

The IEEE Virtual Museum (IEEE VM) continues on its path to becoming a world class web site for pre-college aged children who want to learn more about the history of science and technology. Over the last several months, the database providing the backbone of the site has been designed, as has the preliminary homepage. This has all of us here at the History Center very excited! Now we are focusing our energy on creating

top quality content and working with educators to ensure that the IEEE VM is properly reaching its target audience.

The content of the IEEE VM will be both technical and historical. Historical information will include information about the original concept of an item and answer basic questions such as, How does it work? Who invented it? Why? What came before it? What did it inspire afterwards? The broader societal meaning of each item will then be examined. What effect did this item have on those that used it? What need did it fulfill? How did it change popular culture or make life easier, more comfortable, or more enjoyable for those who used it?

It is the coupling of history and technology that will make the IEEE VM unique. The technical know-how of IEEE's engineer volunteers as well as the research and analytical skills of the historians here at the IEEE History Center offer a blend of talents that will provide exceptional breadth and depth to IEEE VM content.

The IEEE VM will go live in early 2002. In the meantime, please periodically check our progress by going to <http://www.ieee.org/museum>.

Conference on History of Telecommunications

The IEEE History Committee and the IEEE History Center at Rutgers University are organizing a Conference on the History of Telecommunications to be held at Memorial University of Newfoundland in St. John's on 25 – 27 July 2001. The

workshop-style conference will bring together the rare individuals who have a hand in both history and engineering, engineers—senior and junior—with an interest in history, and some historians who will benefit from exposure to the engineering perspective while also bringing a more purely historical analysis to the table for the benefit of the engineers. It will also bring in an unusual mix of historians, from cultural historians to business historians to historians of science. It will therefore foster interchange not only between the “two cultures” of science and humanities, but also within those cultures.

The IEEE is uniquely situated to organize such a conference. As the world's largest technical professional membership organization, with almost 400,000 members around the world, its members are active participants in the developments currently reshaping the global economy and society. The IEEE History Committee and its staff arm, the IEEE History Center are charged, by the Bylaws of IEEE, with promoting the dissemination of historical information in the fields covered by IEEE technical activities. Beginning in summer 1995, the IEEE History Committee, supported by the IEEE History Center, has sought to carry out part of its mission by holding a biennial conference on some topic in the history of electrical engineering and computing. The first conference, held in Williamstown, Massachusetts, set the precedent that the conferences would be small, workshop-like affairs with a one-track program. Its topic was the history of IEEE technologies in general. In June 1997, the second conference was held in Williamsburg, Virginia, and was limited in scope to the history of computing, and had about 40 attendees. Both conferences were deemed to be outstanding successes. Out of the Williamsburg confer-

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The newsletter reports on the activities of the 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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Surf City

History of Telecommunications is a web site that offers a detailed timeline and other information about telecommunications. It can be located at: <http://www.webbconsult.com/history.html>

Surfing the Aether is a great site that offers the history, decade by decade, of communications. It's a fun site with a great deal of history. The site is light on graphics and loads quickly. Make sure you have your speakers turned on, the sound clips are outstanding. You can locate it at: <http://www.northwinds.net/bchris/index.htm>

Mystery Photo Challenge:

The IEEE History Center maintains a photographic archive of more than 2,800 images. From time to time images are donated without any identification. Can you help identify pictures? We are looking for the description, year, manufacturer, purpose of equipment, etc. We now have a web page that features one photograph per month. You can e-mail us your answer at history@ieee.org or you can fill out an on-line form!

http://www.ieee.org/organizations/history_center/mystery.html ♦

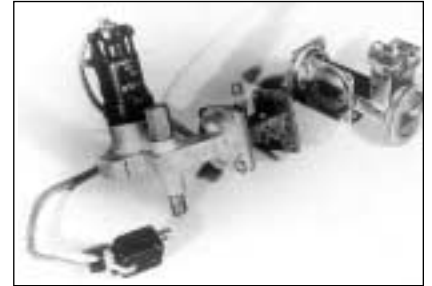


EXHIBIT ON “ASPECTS OF PRECISION MEASUREMENT”

An exhibit on the history of precision measurement was recently presented by the Foundation, Centre for German Communication and Related Technology 1920-1945. The Foundation is based in Diemen, Netherlands, and Arthur O. Bauer is Chairman. The former home of the station Radio Kootwijk housed the exhibit. In the 1930s Radio Kootwijk provided a telephone link between Holland and the Dutch East Indies (now Indonesia), and the remaining transmitters were available for investigation by those visiting the exhibit. On display were a wide range of electrical devices used for measurement, such as standard cells, compensators, voltmeters, and quartz resonators. Visitors witnessed demonstrations—using vintage apparatus as well as modern equipment—of the measurement techniques. ♦



3 New Milestones

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First Transatlantic Reception of a Television Signal via Satellite, 1962, IEEE France Section (Pleumeur-Bodou)

On 11 July 1962 this site received the first transatlantic transmission of a TV signal from a twin station in Andover, Maine, USA via the TELSTAR satellite. The success of TELSTAR and the earth stations, the first built for active satellite communications, illustrated the potential of a future world-wide

satellite system to provide communications between continents.

More information on the IEEE Milestones Program can be found at: http://www.ieee.org/organizations/history_center/milestones_program.htm ♦

Bibliography

The IEEE History Center is pleased to announce that — thanks to a generous arrangement by IEEE Press — two of our titles are once again available for purchase. *Engineers and Electrons*, and *Engineers As Executives* are available via the IEEE online store. (See page 18 for more information.)



FINN, BERNARD, ed., *Exposing Electronics*, Harwood Academic Publishers, 2000.

Artifacts of past technologies have long served an educational role in museums. Artifacts are important also in scholarly investigation of the past, especially when

they are viewed not in isolation but as material expression of the social, scientific, and technological forces that interacted to produce a technological system. The present volume is the second in a series—sponsored by the Deutsches Museum, the Science Museum of London, and the Smithsonian Institution—dedicated to illustrating object-oriented historiography.



The first essay, by Sungook Hong, elucidates the process by which John Ambrose Fleming arrived at the diode electron tube—an important elucidation since Fleming's invention is often seen as the beginning of electronics. In the next essay Alan Morton discusses J.J. Thomson's experiments relating to the identification of the electron, showing how Thomson's recollections a quarter century later did not accurately present his thinking at the time of the experiments. In the next two essays Hartmut Petzold discusses Wilhelm Cauer's work on an automatic calculating device in the 1920s and 1930s and David Rhees and Kirk Jeffrey explain the background and circumstances of Earl Bakken's transistorized cardiac pacemaker. An essay by Ross Bassett concerns the earliest microprocessors, making clear how problematic is any assignment of the title of "first microprocessor". Other contributions concern Seymour Cray's style of circuit design (by Paul Ceruzzi), I.I. Rabi's efforts to determine nuclear moments (by Paul Forman), and the relationship between private and public collecting of historical artifacts (by Bernard Finn).

Available from Harwood Academic Publishers, an

imprint of the Gordon and Breach Publishing Group, P.O. Box 32160, Newark, NJ 07201, 800 545-8398; <http://www.gbhap.com>, hardcover, ISBN 90-5823-056-2, \$54; softcover, ISBN 90-5823-057-0, \$23; xiv + 199 pp., index.

MATSUMOTO, EIJU, *"Hakaru" Sekai: "Tamashii no bakari" kara "denki no bakari" made (The World of Measurement)*, Tokyo: Tamagawa Daigaku Shuppanbu, 2000.



The author — now working for Yokogawa Denki Measurement Museum — provides an introductory history of measuring technology in Europe, the United States, and Japan. The author offers information on the development of measurement and measuring instruments in readable Japanese with pictures and printings.

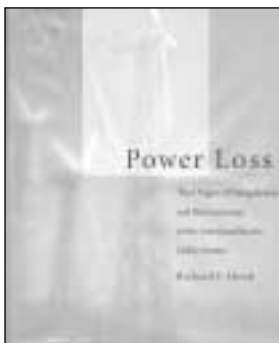
After describing a general outline of measurement in the first chapter, the author shows the establishment and the acceptance of the international standard of measurement, starting from metric system to *Système International d'Unités*. Here, the author indicates the difficulties of introducing the new measuring standard not only in Japan just after the Meiji Revolution, but also in the United States, and even in France. The third chapter shows three printed pictures from Meiji Japan and one drawing from the sixteenth-century Italy, each of which was used as the starting point of a story relating the topic of those pictures. And the fourth chapter describes and explains the various measuring instruments, from a Japanese balance in the Edo period, to the international standards for compact disc, and to the remote controllers for domestic electrical machines.

The book is filled with various topics, such as the establishment of submarine telegraph across the Atlantic, the acceptance of European standards of measurement by Meiji Japan, and the development of the measuring instruments for electricity, and the author invites the readers to the museum of the technological and institutional development of measurement, whose establishment the author is now working for.

Available from Tamagawa Gakuen Shuppanbu (Tamagawa University Press), Tamagawa Gakuen 6-1-1, Machida, Tokyo, Japan, (042) 739-8935, fax: (042) 739-8940, <http://www.tamagawa.ac.jp/sisetu/up>,

2,600 Yen, hardback, ISBN 4-472-40111-8, 214 pp, index.

HIRSH, RICHARD F., *Power Loss: The Origins of Deregulation and Restructuring in the American Electric Utility System*, MIT Press, Cambridge, 2000.



Anybody attempting to understand California's recent energy crisis, as well as the factors affecting electric power generation and supply in the United States and its ecological and economic ramifications will find *Power Loss* vital reading. Beginning with the "natural monopoly" and "ideology of growth" assumptions in which government, academia, and corporate interests coalesced to promote the growth of centralized power utilities and to protect them from competition at the beginning of the Twentieth Century, Hirsh shows how this theory proved inadequate to meet the electrical needs of the United States. By the 1970s, "natural monopoly" as a concept was being questioned by leading economists. Real world operating conditions — such as the propensity of large generating units to fail twice as often as smaller ones, thus requiring more expensive back-up units, as well as an apparent upward limit on economies of scale — cast further doubt on these assumptions. New thinking, such as demand-side management, conservation techniques, and the avoided cost of new plants forced the power industry to examine itself. Hirsh takes the reader carefully through the Public Utility Regulatory Policies Act of 1978 (PURPA), and how it opened the power generation business to independent utilities. Because power deregulation will shape the energy use and supply decisions of the next century in America, Hirsh's book is both important and timely.

Available from the MIT Press, Cambridge, MA, 800-358-0343, fax 617-625-6660, <http://mitpress.mit.edu>, \$50.00 cloth, ISBN 0-262-08273-X, 409 pp., index, charts, 37 illus.



ZIERDT-WARSHAW, LINDA, ALAN WINKLER AND LEONARD BERNSTEIN, *American Women in Technology: An Encyclopedia*, ABC-CLIO, Inc., Santa Barbara, CA, 2000.

This publication's introduction is a history of women, technology, patents and education.

Although enlightening, it focuses on a few single cases. The book contains more than 330 entries, covering individuals, professional societies, topics (i.e., agriculture, mathematics, textiles) and events. It begins with Acoustical Engineering, and a description of the discipline. It provides "See also" and Reference categories which direct you to women working in that discipline. Each piece is between 1/2 to a full page in length. The entry on the IEEE is elementary, with a brief history of its beginnings. Two shortcomings are the IEEE membership of 275,000. The IEEE membership is currently over 325,000. The second is their omission of the American Institute of Chemical Engineers. The entry on Thelma Estrin is factual and concise, as are the pieces on Grace Murray Hopper and Harriet Rigas. If you are looking for a quick reference guide, this is a good book. It provides URLs of related web sites, which is helpful. However, if you need detailed information, you will require other sources.

Available from amazon.com, \$75.00 (hardbound), ISBN: 1-57607-072-7; 420 pp, index.

SOLYMAR, LASZLO, *Getting the Message: A History of Communications*, Oxford University Press, Oxford, 1999.

Many IEEE members will be familiar with Professor Solymar's previous work, especially his Lectures on the Electrical Properties of Materials, an especially clear and readable engineering text. In *Getting the Message*, Solymar turns to the history of communications from ancient times to the 21st century. Solymar combines easy-to-comprehend descriptions of the various technologies used in communications with clear discussions of the social, cultural, political and regulatory contexts in which people have used these technologies. The book is profusely illustrated. Readers interested in the history of communications will find this book to be an accessible, interesting, and informative introduction.



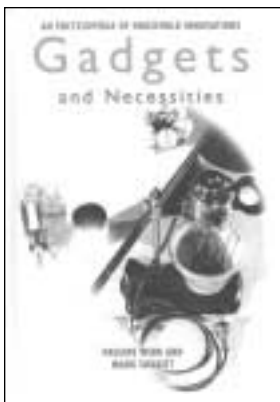
Available from Oxford University Press, \$45.00 (hardbound), ISBN 0-19-850333-4, 311 pp., index.

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Bibliography

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WEBB, PAULINE AND SUGGITT, MARK *Gadgets and Necessities: An Encyclopedia of Household Innovations*, ABC-CLIO, 2000



Gadgets and Necessities is a fascinating encyclopedia with a slightly misleading title. The entries are well-written, amply illustrated, and adequately researched, but it should be made clear that this is a historical encyclopedia rather than simply an encyclopedia. Further, it is a broad-ranging survey of household appliances and tools, their designs, and the institutions and individuals who

made them possible in the United State, Europe, and Japan. The authors survey the range of accoutrements found in the middle class home in the twentieth century, and touch upon kitchen, lawn and garden, and bathroom implements; major manufacturers and retailers such as Apple Computer, AT&T, Hamilton Beach, EMI, and Kmart; industry associations such as the National Electric Light Association, and the major movements in product design. Inexplicably, though, the authors claim that “an alternative title to this book could therefore be “Electricity and Desire.” While the electrical and electronic devices represented here predominate, there are many non-electrical entries as well, ranging from Brillo pads to bidets, with no attempt to treat them as special

cases or link them to the development of electrical technologies, though there is much good electrical history here. The reader interested in capsule histories of the most familiar types of household objects should be delighted with this book.

Available from the ABC-CLIO, Santa Barbara, CA, 805-968-1911 Fax: 805-968-8899, <http://www.abc-clio.com>, \$75.00, cloth, ISBN 1-57607-081-6, e-book 1-57607-383-1, 377 pp, index

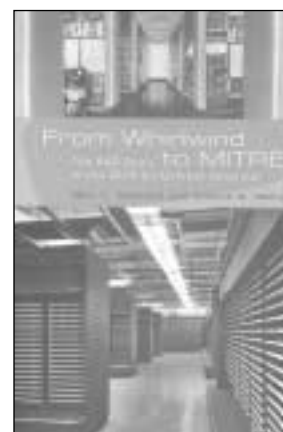
AES-S Magazine Special Issue

Readers of this newsletter will remember that 2000 was the 50th anniversary of the IEEE Aerospace and Electronic Systems Society (AES-S). For their anniversary, the IEEE History Center worked with them to collect oral histories and produce a travelling text-and-photo exhibit. Now the Society volunteers have put out a special “Jubilee Issue” of their magazine, with articles by experts tracing the history, current state, and future of their fields of interest. For more information on the AES-S and how to contact them, visit their Web site at: <http://aess.gatech.edu/>



REDMOND, KENT C. and THOMAS M. SMITH, *From Whirlwind to MITRE: The R&D Story of the SAGE Air Defense Computer* (Cambridge, MA: The MIT Press, 2000)

“It worked!,” exclaimed electrical engineer C. Robert Weiser after witnessing the Bedford tests on April 20, 1951. What had worked that day over Bedford, Massachusetts, was a new radar system capable of detecting “enemy” aircraft and transferring the data over telephone lines and into an electronic digital computer, the Whirlwind I, which then “almost instantaneously calculated and posted instructions directing the pilot of a ‘defending’ aircraft to his target.” This was a revolutionary break through in computing technology, one that the authors of *From Whirlwind to MITRE* contend spawned what by the end of the twentieth century had become the “multi-billion dollar worldwide” computer industry. But, as the Kent C. Redmond and Thomas M. Smith demonstrate, the new radar system merely opened up new possibilities. Within three days of the Bedford tests,



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the decision was made to construct the SAGE (Semi-Automatic Ground Environment) air defense system, “an unprecedentedly complex communications and data-processing system,” that for the first time provided the United States with a form of air defense. According to the authors, SAGE was no minor feat of ingenuity. It was, rather, “one of the major human accomplishments of the twentieth century.”

From Whirlwind to MITRE, part of the History of Computing series edited by I. Bernard Cohen and William Aspray, is the story of the development of SAGE but it is really two histories in one. On the one hand, it traces the development of SAGE from out of Project Whirlwind—an important story in and of itself. The decade-long work on SAGE produced a host of innovations in computer technology, such as “computer-driven displays, online terminals, time sharing, high-reliability computation, digital signal processing, digital transmission over telephone lines, digital track-while-scan, digital simulation, computer networking, and duplex computing,” all of which foreshadowed the modern computer era. This alone makes the book an important contribution to the history of technology and more generally of the 20th century. On the other hand, it is the history of the birth in the United States of the process known as R&D—research and development. Though SAGE sets the background for the history, the core of the story really lies here. For, as the authors argue it was the coming together of engineers, scientists, and the military in a mutually reinforcing endeavor that made SAGE possible and set the stage for a tradition that underscored many achievements in, not just computer technology, but in a vast realm of scientific and social areas over the course of the last fifty years, much, the authors suggest, to the benefit of us all.

Both historians, Redmond and Smith are mindful of the role contingency and coincidence play in human experience, which enriches their story. Had it not been for World War II or the Cold War that followed, it is unlikely that Project Whirlwind, the Bedford tests, SAGE, and the tradition of R&D would ever have seen the light of day. It was the intersecting of those tumultuous events with “the proper management of the scientific research and engineering development investigations” that, in essence, brought us the modern computer. Scholars and lay readers alike will find this book of interest.

Available from the MIT Press, Cambridge, MA, 800-358-0343, fax 617-625-6660, <http://mitpress.mit.edu>, \$49.95 cloth, ISBN 0-262-08201-7, 535 pp., index, charts, illus.

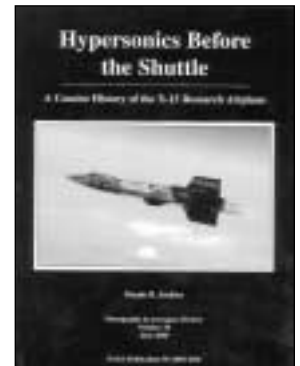
BOOKS

The NASA History Division of the U.S. National Aeronautics and Space Administration has been busy recently documenting the space programs of the U.S. and its rivals. Besides the larger books from their “NASA History Series” (which includes Reference Works, Management Histories, Project Histories, Center Histories, and General Histories), a selected handful of which we had chosen to review in our past newsletters, any of the shorter, more technical publications in their Monographs in Aerospace History series should also be of interest to our readers. Below are the entries from the past two years. All NASA publications are available through their Web site at <http://history.nasa.gov/what.html> (some reports are even available on-line). The Monographs can be ordered merely by providing a self-addressed, pre-stamped envelope.

BRASLOW, ALBERT L., *A History of Suction-Type laminar-Flow Control with Emphasis on Flight Research*. Washington, DC: NASA (Monograph in Aerospace History Number 13), 1999.

CHAMBERS, JOSEPH R., *Partners in Freedom: Contributions of the Langley Research Center to U.S. Military Aircraft of the 1990s*. Washington, DC: NASA (Monograph in Aerospace History Number 19), 2000.

JENKINS, DENNIS R., *Hypersonics Before the Shuttle: A Concise History of the X-15 Research Airplane*. Washington, DC: NASA (Monograph in Aerospace History Number 18), 2000.



LOGSDON, JOHN M., moderator, *Managing the Moon Program: Lessons Learned from Apollo*. Washington, DC: NASA (Monograph in Aerospace History Number 14), 1999.

MAISEL, MARTIN D., DEMO J. GIULIANETTI, and DANIEL C. DUGAN, *The History of the XV-15 Tilt Rotor Research Aircraft From Concept To Flight*. Washington, DC: NASA (Monograph in Aerospace History Number 17), 2000.

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Donors

*Our sincere
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grow our endowment.*

The Center continues to work hard to preserve and research the legacy of electrical engineering and computing and to spread the word to engineers, students, journalists, decision makers, and the general public. Great progress has been made in achieving financial stability with the establishment of an endowment for the Center. While we are working at further building the endowment, we still depend heavily on operating funds from our two main sponsors, IEEE and Rutgers University, and on project grants and annual contributions from companies, foundations, IEEE entities, and people like you. We need your ongoing support to continue our work on collecting oral histories, publishing technical and popular articles, organizing conferences, designing exhibits, recognizing milestones in electrical and computer history, and working with the media to reach a broader audience. Contributions from individuals sends the clearest possible message to institutional donors that the Center's work is valued by people with an interest in deepening our understanding of the role of electrical and information technologies in shaping today's world.

We have two programs through which individuals and organizations can help support the Center's activities: The Friends Program and the Partnership Program. The Friends Program is for annual gifts of \$25 to \$2499. These gifts, unless otherwise specified, are divided about equally between the endowment and the Center's operating budget, and make the donor a member of the Friends Program for the

operational year for which the donation is received. The Partnership Program is for one-time pledges of \$2,500 and more, and go directly to the Center's endowment. Partnership pledges can be paid in up to five annual installments, and the donor is a member of the Partnership Program throughout the period when the pledge is being fulfilled or until the completion of the current endowment campaign at the end of 2004, whichever is later.

Whether you give to the Friends Program or the Partnership Program, your gift is tax-deductible in the United States and its use is overseen by the Trustees of the IEEE History Center, a group of distinguished individuals appointed by the IEEE Foundation [see masthead, page 2]. The categories of giving are as follows:

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ELECTRICAL TECHNOLOGIES IN THE MOVIES: ELECTRICAL DEVICES IN THE BATHROOM

From the 1880s onwards, electricity has been used for lighting, ventilation, and heating in the bathroom. In the 1930s appeared an impressive new device: the electric razor. It was developed by the Canadian inventor Jacob Schick in the 1920s and early 1930s, and in the late 1930s, as Schick's razor became popular, other manufacturers developed competing products, such as the Remington Close Shaver, the Sunbeam Shavemaster, and the Philips Philishave (with a rotating blade behind a circular head). After World War II the movies often portrayed the electric razor as something the modern man used; three examples from 1954 are "The Long Wait" (Anthony "Quinn"), "Rear Window" (Jimmy Stewart), and "Sabrina" (Humphrey Bogart).

The view of those who preferred a straight razor or a safety razor was also presented in movies: in "Mr. Blandings Builds His Dream House" (1948) the husband explains why he

doesn't use an electric razor, and in "Bitter Moon" (1992) a French woman attributes the popularity of electric razors in the United States to the fact that Americans like things electric. A British misuse of the electric razor is shown by Rowan Atkinson in "Bean" (1997), when he uses it all over his face (including his forehead) and on his tongue.

Certainly the most prominent bathroom appliance in movies is the blow dryer. The device was glamorized in "The Seven Year Itch" (1955) when Marilyn Monroe uses it while leaning out of a window. In "Shampoo" (1975) Warren Beatty carries a blow dryer as the essential equipment of a hairdresser, and in "Saturday Night Fever" (1977) John Travolta shows obvious pleasure in using a blow dryer. Characteristically, Woody Allen fumbles with the device in "Play It Again, Sam" (1972). In the Rowan Atkinson film mentioned above, the blow dryer is also featured: Mr. Bean pulls it out

of his belt as if it were a gun in using it to dry a painting. Another non-standard use of the blow dryer occurs in "Father of the Bride" (1991), where it is used to dry out tulips after a snowfall.

Members of the IEEE Electromagnetic Compatibility Society would appreciate a scene in the James Bond movie "Octopussy" (1983): a hair dryer causes interference in the signal from a planted microphone. Some other electric devices in the bathroom have been shown in movies: an electric shaving-cream dispenser in "Rounders" (1998) and an electric toothbrush in "Private Benjamin" (1980) (where Goldie Hawn, during Army basic training, uses it to clean the latrine).

As always, we would be grateful for reports from readers of this newsletters of other interesting cinematic depictions of electrical technologies. You may contact us at history@ieee.org. ♦

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Staff Notes

Melissa Klapper is History Center Intern

The History Center is pleased that Melissa Klapper, who was a graduate assistant at the Center last semester, will be the 2001 History Center Intern. 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. Melissa will be assisting with the IEEE Virtual Museum project. ♦

IEEE History Center Publications

available via IEEE on-line catalog: <http://shop.ieee.org/store/> or by phone 1+ 800 678 4333; or fax 1+ 732 981 9667

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continued on next page

HH008	Aspray	Faraday, Edison, Steinmetz, Tesla, Marconi, Babbage, Armstrong, plus many others, in words and pictures. The setting is the engineering and scientific world in the 19th and 20th centuries, with emphasis on the United States.	\$19.00/\$14.60
		<p><i>Technological Competitiveness</i></p> <p>Successful management of a technological enterprise requires demanding business and technical skills. To find out what it takes to succeed and what role an engineering background plays in the process, historian of technology William Aspray interviewed thirteen senior executives from leading technological companies in Germany, Japan, and the United States. Among those interviewed are top-level executives at the major international corporations of Grundig, NEC, Motorola, and Magnavox. Also included are interviews with such entrepreneurial executives as Kazuhiko Nishi of ASCII, the inventor of the first laptop computer and the joystick used on Nintendo games; and Mitchell Kapor, one of the founders of the Lotus Corporation. These highly successful managers speak candidly and thoughtfully about their management philosophies, the problems they confront in their work, and the importance of having an engineering background to do their job effectively.</p>	

Static from the Director:

continued from page 1

research are clearly important—and fun for the staff to undertake—the order suggests that they are merely necessary steps toward the main goal: Promotion! While promoting the history of our fields turns out to be a little bit different than promoting our current technical activities, the two are of course closely related. Lost in the current buzz about how “technology” (read “the Internet”) is transforming the world is a time-depth and a perspective that for at least 150 years, engineers have been intimate and important members of society, and that engineering has been one of the great human endeavors throughout modern times (not even mentioning the technological achievements of ancient practitioners of architecture or mechanics which are sometimes referred to as “engineering,” even if they were not true engineering in the modern sense).

The Center attempts to reach many audiences throughout the world with

this message, using many media and through many programs. The strength of IEEE retaining its own historians to do this work is that we can work closely with the IEEE membership and take full advantage of their expertise and volunteer ethic. I would like to mention three examples.

One of the audiences we seek to reach is our fellow historians, to get them to better understand the role of our technologies in the historical developments of the 20th century. One way that we do this is by working with the IEEE History Committee to hold workshops that uniquely bring together historians and technologists to further their understanding of each other, and to explore in new and more meaningful ways the history of recent technological developments that are impacting global society. The next such workshop will be on the history of telecommunications, and will be held in St. John’s, Newfoundland, Canada, in July (see page 2).

The IEEE Milestone in Electrical Engi-

neering and Computing Program seeks to reach a broader audience than just historians. It too involves the engineers/IEEE Members at the local IEEE Section level, and hopes to get them more interested and informed about their history. The ultimate target, however, is the local general community. Through publicizing the Milestone dedication ceremony in the local media, the IEEE Section can help their neighbors better understand the contributions to society of engineering, not in the global abstract, but in concrete local terms. In that light, I am pleased to announce that at its November 2000 meeting, the IEEE Executive Committee has approved three new Milestones, two in the U.S. and one in France (see box on page 1).

Finally, I’d like to mention our new IEEE Virtual Museum initiative (see page 2). It will be our contribution to IEEE’s recent efforts to reach out to a totally new audience, pre-college students. The implications are multiple. Not only are these young people the future citizens and lead-

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Static from the Director:

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ers of the world, they are also the potential engineers and historians. Reaching them may be the most important mission we undertake.

I therefore look forward to keeping you informed on the IEEE Virtual Museum, the Milestones, our conferences, and our other programs in future issues of our newsletter. This issue also happens to contain our annual honor role of donors

(beginning page 8). It is the support of you, the individual Friend of the IEEE History Center, that makes all of these programs possible. Let me therefore take this one additional opportunity to thank you sincerely for all your help. ♦

Center Activities

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ence several of the papers were reworked and accepted by a major publishing house as an edited volume. In 1999 we followed a different format and acted as technical co-sponsors of a larger conference, ISTAS '99, but now we return to the workshop approach, and take on a critical topic that clearly calls for interaction between technologists, social scientists, and humanists: the history of telecommunications.

As telecommunications become

ever more important economically, politically, and socially, it is important to understand better their historical development. The variety of technologies is considerable, including, among others, telegraphy, telephony, radio, television, satellite communications, and computer networks. Yet there are a great many common themes, such as invention-push vs. market-pull; natural monopolies, government regulation, and international agreements; enabling technologies (such as microprocessors); establishment of standards; and a wide range of economic, political, and social

implications. St. John's is an ideal site for such a gathering. It was there on 12 December 1901 that Guglielmo Marconi received the first transatlantic radio signal, and Canada is planning major centennial commemorations. Nearby, at Heart's Content cable station, the first successful transatlantic cable landed on 27 July 1866. On the final afternoon of the conference there will be an excursion to that cable station for the 135th anniversary celebrations. More information can be found at http://www.ieee.org/organizations/history_center/cht2001.html. ♦



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