

Center for the History of Electrical Engineering

Newsletter No. 26 Spring 1991

Center Sponsors Conference on Technological Competitiveness

The Center is sponsoring an international conference on Technological Competitiveness in the Electrical and Electronics Industries: Historical and Contemporary Perspectives. The conference will run from October 10-13, 1991. The first two days will be held at the Ramada Renaissance hotel in East Brunswick, NJ and the last two days on the New Brunswick campus of Rutgers-The State University of New Jersey. The objective of the meeting is to bring together historians and engineers to discuss their mutual interests and differing perspectives on this timely topic. The conference is made possible by the generous support of the Alfred P. Sloan Foundation, the IEEE, and Rutgers University.

Registration is \$60.00 in advance, \$75.00 at the door. The registration fee is reduced by \$15.00 for each of the following affiliations that apply: IEEE (member or staff), Rutgers (any affiliation), registered student, retired. A limited number of hotel reservations are available at the Ramada-Renaissance at a special rate of \$79.00 plus taxes per night. To register,

make hotel reservations or obtain additional information, please contact the Center's Staff Assistant, Michael Ann Ellis. You may use the registration form found on page 11 of this newsletter. Seating is limited, so we advise early registration.

Preliminary Program:
(Revisions are expected.)

• Thursday, October 10: 7:30 - 10:00 PM

IEEE Introduction
Rutgers Introduction
Keynote Address
Reception

• Friday, October 11: 9:00 - 11:30 AM *Electrotechnology in Competition*

Anne Milbrooke (United Technologies),
Technological Systems Compete at Otis:
Hydraulic versus Electric Elevators
Ulrich Wengenroth (Deutsches Museum),
How They Won the Market: Electric Motors
in Competition with Steam Engines and Gas
Motors, 1890-1925

Arne Kaijser (Stockholm), Energy Systems
in Competition

[To be selected], Commentator

• 1:00 - 3:00 PM- *Power: Studies from France*

Alain Beltran (Institut d'histoire du
temps present), Electricity in Postwar
France: Political Choices, Monopoly,
and Competitiveness

Gabrielle Hecht (Pennsylvania),
Technological Competitiveness and
Technological Design in the French
Nuclear Power Industry, 1945-1969

Steven Kline (Pacific Gas and Electric),
Commentary

• 3:30 - 5:30 PM - *Power: Studies from the United States*

Mark Rose (Florida Atlantic), Urbanizing
Electrical Technology: The Political-
Geography of Non-Competitiveness,
1880-1940

Richard Hirsh (Virginia Tech), Technological
Stasis and Technological Reinvigoration in
the American Electric Power Industry
Peter Kushkowski (Northeast Utilities),
Commentary

• 7:30 - 9:30 PM *Electrical Manufacturers*

W. Bernard Carlson (Virginia), National
Markets and Capital: Competition Among
Electrical Manufacturers in
the United States

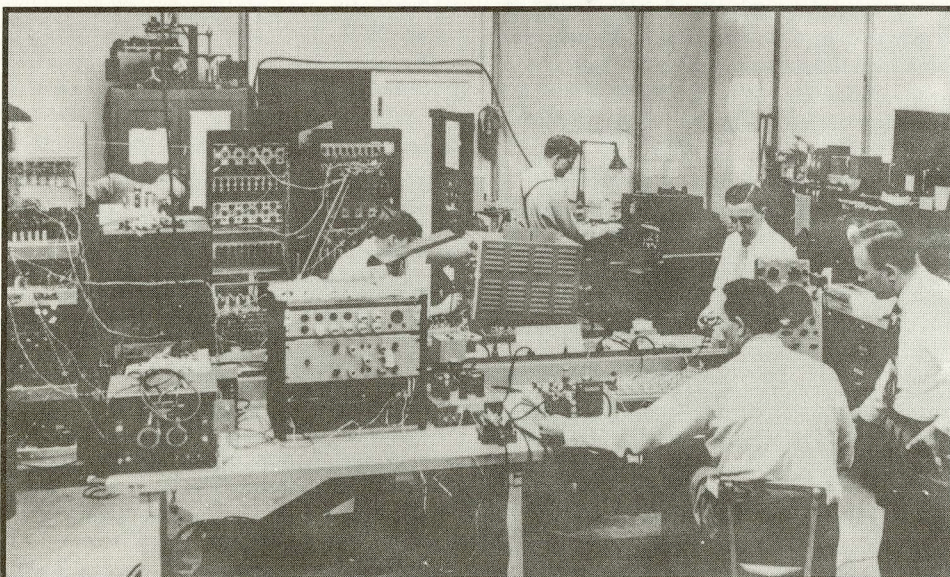
Leonard Reich (Colby), Lighting the Path to
Profit: GE's Control of the Electric Lamp
Industry, 1892-1941

[To be determined], Commentary

• Saturday, October 12: 9:00 - 11:30 AM *Military-Industry Interactions*

Stuart W. Leslie (Johns Hopkins), The
Military and the Postwar American
Electronics Industry

(continued on page 2)



Development of one of the first computers at Engineering Research Associates, circa 1950 at the St. Paul Minnesota Plant -- Courtesy of the Charles Babbage Institute

Staff Publications

Center Director William Aspray has recently published a book, entitled John von Neumann and the Origins of Modern Computing (Cambridge, MA and London: MIT Press, 1990, \$35 hardcover). The book gives a detailed description of the contributions to the computing field of the Hungarian-born American mathematician John von Neumann (1903-1957), based upon the first full use of the extensive archival record left by von Neumann and his colleagues.

The book gives detailed coverage of von Neumann's contributions to the development of the stored-program concept and the construction of one of the first stored-program computers at the Institute for Advanced Study in Princeton. However, von Neumann was interested in computers primarily for their potential to advance the frontiers of science, so detailed consideration is also given to numerical weather forecasting and other scientific applications, and to the reshaping of numerical analysis to enable the computer to effectively carry out these scientific computations. Lengthy discussion is also given to von Neumann's pioneering work in the theory of computing and his efforts to understand the relation between the computer and the brain. An introductory chapter describes von Neumann's contributions in mathematics, quantum mechanics, and economics, while a concluding chapter looks at von Neumann as scientific consultant and statesman.

The Center is grateful for the support provided to this project by IEEE, the National Science Foundation and the Charles Babbage Institute.

Associate Director and Curator Joseph N. Tatarewicz has had three recent publications. The first, Space Technology and Planetary Astronomy. (Bloomington: Indiana University Press, 1990) discusses how the United States struggled to respond to the success of Sputnik in the area of solar system exploration. When planners at the newly formed space

agency went looking for expertise on the moon and the planets they discovered that astronomers had long since turned their telescopes away from the planets and toward the stars. NASA had to conjure into being an entire scientific and technological system of sophisticated instruments and highly motivated people to use them. From an obscure backwater of astronomy, the study of the planets became a tool to be used for state ends, and at the same time state programs were used by the planetary enthusiasts to pursue their own ends. The story of the precipitous rise and decline of planetary astronomy is a fascinating case study of science in an age of state-managed research and development, and demonstrates that the lines between science, technology, politics, and society are anything but fixed and impermeable.

Tatarewicz was also a contributor to Robert W. Smith, et. al., The Space Telescope: A Study of NASA, Science, Technology, and Politics. (New York: Cambridge University Press, 1989.) wherein the history of the Space Telescope is set in the context of post-World War II science and technology and the biggest kind of "Big Science"—scientific projects of a vast scale that involve thousands of people, require massive amounts of federal funding, and are as much political and managerial efforts as they are scientific and technical ones. The book, which appeared shortly before the Hubble Space Telescope was launched, reveals the complex interactions that took place between the scientific community, government, and industry, and the great range of personalities and forces—scientific, technical, political, social, institutional, and economic—that played a role in the telescope's history.

Lastly, Tatarewicz supplied the chapter "Space Technology and Planetary Science, 1950-1985," to Martin J. Collins and Sylvia D. Fries, eds., A Spacefaring Nation. Perspectives on American Space History and Policy. (Washington, D.C.: Smithsonian Institution Press, 1991.) ■

(continued from page 1)

Arthur L. Norberg (Charles Babbage Institute), Government and Industry as Unwilling Partners: The Case of DARPA
Robert Smith (National Air and Space Museum), Big Science and Competitiveness
Charles Zracket (MITRE), Commentary

• 1:00 - 3:30 PM - *Electronics*

John Peter Collett (Oslo), Reflections on the Electronics Industries
Yuzo Takahashi (Tokyo University of Agriculture and Technology), Progress in the Electronic Components Industry in Japan After World War II

Lennart Stenberg (Lund), Technological Strength Needs and Feeds a New Research Infrastructure

James Gover (Sandia Laboratories), Commentator

• 4:00 - 6:00 PM - *Computing*

Martin Campbell-Kelly (Warwick), ICL and British Government Management of Key Industries Against Foreign Competition

Donald Mackenzie (Edinburgh) and Boelie Elzen (Twente), Supercomputing: The Dialectic of Autonomy and Network Building

Emerson Pugh (IBM), Commentator

• Sunday, October 13 8:30 - 10:30 AM - *Radio*

Susan Douglas (Hampshire), Oppositional Uses of Technology and Corporate Competition: The Case of Radio Broadcasting

Margaret Graham (Institute for Research on Learning), RCA and the Japanese Electronics Industry: The Strategic Impact of Licensing

Kerns H. Powers (consultant), Commentary

• 10:45 AM - 1:15 PM - *Communications*

Frank Thomas (Max Planck Institute, Koln), The German Long-Distance Cable Company and the Restrictions of Competitiveness within a Closely Coupled Technology, 1921-1945

Kenneth Lipartito (Houston), The Strategy of System Building: Bell Confronts the American South

Pascal Griset (Centre national de la recherche scientifique), The Centre national d'etude des telecommunications and the Competitiveness of French Telephone Industry, 1945-1980s

Amos Joel (consultant), Commentator ■



CENTER ACTIVITIES



Electrical Engineering Milestone SHOSHONE TRANSMISSION LINE

In late 1906 the Central Colorado Power Company began construction of a hydroelectric plant at Shoshone Falls on the western slope of the Rockies. Less than three years later the Shoshone Hydroelectric Plant was providing power to the city of Denver. (The plant, which was one of the earliest on the Colorado River and which is still in operation, is included in the National Register of Historic Places.) The electric power reached Denver by means of a 153-mile-long transmission line, which the IEEE has recently named a national Electrical Engineering Milestone.

The Shoshone Transmission Line is an exceptional achievement in a number of respects: its length, the ruggedness of the terrain over which it runs, its high altitude—its average altitude is 10,000 feet, and in one of its three crossings of the Continental Divide it reaches 13,500 feet—and the extreme weather conditions under which it operates—it is exposed to winds as high as 165 mph, temperatures as low as -52° F, and lightning an average of 130 times a year. The line is also noteworthy in being one of the first to operate at as high a voltage as 90 kV.

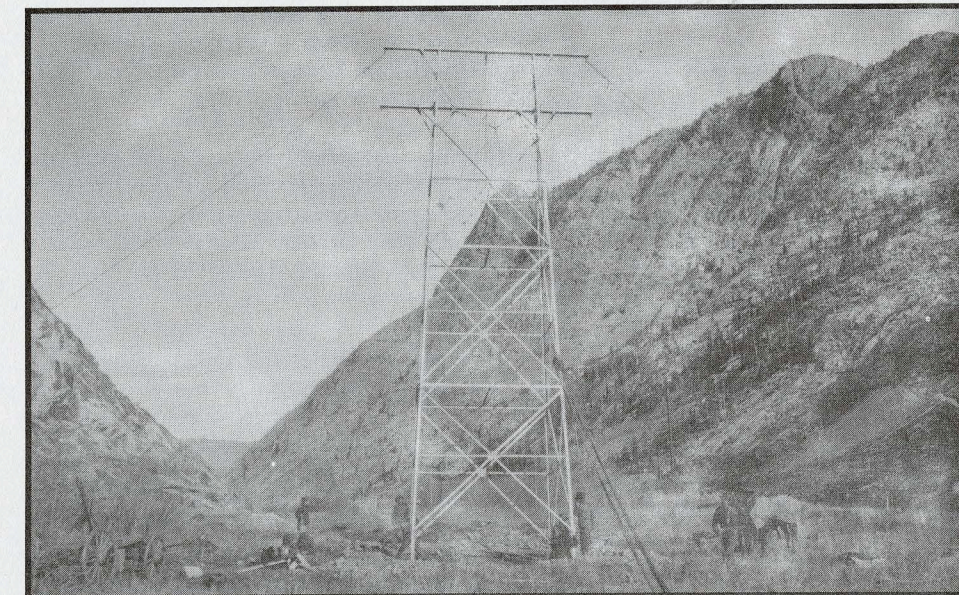
A dedication ceremony will take place on 22 June 1991 at the Georgetown Hydroelectric Generating Plant at Georgetown CO, which was one of the original plants joined by the transmission line into a large network for the state. The ceremony, sponsored by the Public Service Company of Colorado and the Denver Section of the IEEE, will include talks on the history of the transmission line, the development of the system, and operations of the system today. ■

IEEE/SHOT Prize in Electrical History

Submissions are now being accepted for the IEEE Life Member Prize in Electrical History. Administered by the Society for the History of Technology, the Prize was established by the History Committee of the Institute of Electrical and Electronics Engineers (IEEE) and is supported by the IEEE Life Member Fund.

A cash prize of \$500 and a certificate are awarded annually to the best paper in electrical history published in the previous year. Any historical paper published in a learned journal or magazine is eligible if it deals with the art or engineering aspects of electrotechnology and its practitioners. Electrotechnology encompasses power, electronics, telecommunications, computer science or, indeed, any field represented by an IEEE technical society. The cash portion of the prize will be shared among all joint authors; individual certificates will be presented to each joint author.

Anyone, including authors, may nominate papers for the Prize. Submit three copies of papers published in 1990 by 15 May 1991 to William Aspray, Chair, IEEE Life Members' Prize in Electrical History Committee, at the Center for the History of Electrical Engineering. ■



One of the original Towers of the Shoshone Transmission Line

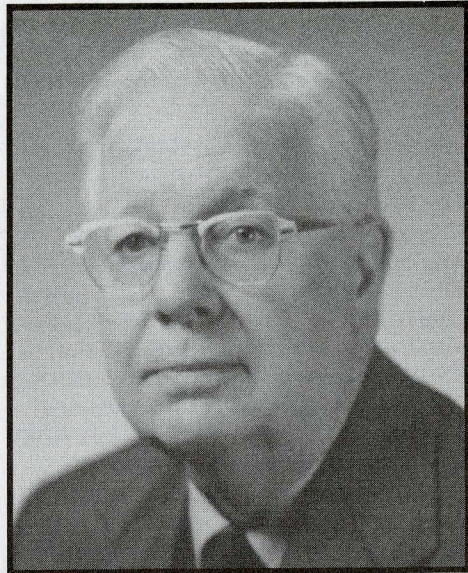
IEEE Fellowship Awarded

The 1991-92 IEEE Fellowship in Electrical History has been awarded to Gabrielle Hecht, an advanced graduate student in the Department of History and Sociology of Science at the University of Pennsylvania. Her dissertation is on the political, economic, social, cultural, and technological processes that were involved in the development of nuclear energy in France in the period 1945-1969. Ms. Hecht holds a bachelor's degree in physics from MIT and has held several other distinguished fellowships in the past. ■

Center Has New On-Site Fax Number

The Center for the History of Electrical Engineering has continued upgrading its offices in New Brunswick. Part of the improvement includes the dedication of a phone line for data communication. The Center now has a fax machine on the premises connected to this line. Faxes may be sent by dialing (908) 932-1193. ■

Publications



Thomas J. Higgins

We are pleased to resume printing our New Publications column with this issue of the newsletter. We want to take this special opportunity to thank Professor Thomas J. Higgins of the University of Wisconsin for his diligent effort over the past few years in providing the Center with bibliographic citations. This column would not have been as rich without his contributions.

Professor Higgins, an AIEE Fellow since 1957, has been a distinguished figure in electrical engineering for over fifty years. He has worked in industry and as a consultant, but his principle achievements have come in the university setting. He has published over 220 papers on circuit theory in scientific and technical journals, in addition to his many contributions to electrical engineering education. He has supervised 55 Ph.D. and 147 M.S.E.E. theses since he began teaching in 1941. Of the twelve different courses he has taught, he developed seven. He has edited the manuscripts for over 120 textbooks in electrical engineering and written more than 350 reviews. In recent years, he has found more time to pursue his interest in the history of electrical engineering. His historical work goes beyond his bibliographic contributions to the Center. He has just completed, with colleagues Vincent Rideout, James Skiles and Jon Harkness, a history of the Electrical Engineering Department at the University of Wisconsin. It should appear in book form this fall.

Among the many honors bestowed upon Professor Higgins are the George Westinghouse Award of the ASEE for "outstanding teaching of engineering" in 1954, the Benjamin Smith Reynolds of the College of Engineering of the University of Wisconsin for "excellence in teaching of future engineers" in 1963, the "Annual Appreciation Award" of the IEEE Systems, Man and Cybernetics Society in 1971, and the IEEE Centennial Medal in 1984. Add to these our heartfelt and ongoing appreciation for his tireless work for the Center. ■

Books

Ezrahi, Yaron. The Descent of Icarus. Science and the Transformation of Contemporary Democracy. Cambridge, Mass.: Harvard University Press, 1990. 021xii + 354 pp., \$35.

While this book does not explicitly concern electrical science or technology per se, it nonetheless has much to say by implication. Ezrahi shows how governments, particularly the liberal-democratic governments of the West, have used science and technology as political resources to construct political authority and justify the exercise of political power. The book is in three parts: first, concerning the political functions of science in the liberal-democratic state; second, reviewing and analyzing appeals of the last two centuries to scientific and technological metaphors for understanding and justifying political action and authority; and third, the decline of such metaphors and appeals in the late twentieth century (which the author interprets as indicative of a decline in the cultural authority of science and technology). This is primarily a work of political science, but one that is historically well-informed, draws on and cites a variety of rich resources, and offers a provocative thesis.

Peter Robin Morris, A History of the World Semiconductor Industry. Institute of Electrical Engineers History of Technology Series, vol. 12. London: Peter Peregrinus, 1990. ix + 171 pp., \$64.

Professor Morris's book is a welcome addition to the literature on the history of semiconductors. It is more up to date than Braun and MacDonald's Revolution in Miniature, as well as providing better coverage of the global scene and of the

industry. The title is a bit of a misnomer, for half of the book is devoted to a historical survey of the technology (not the industry). The descriptions are sparing and written for the trained engineer, but they are uniformly clear. Technical topics include historical surveys of the development of thermionic tubes, early research in semiconductors, development of the transistor, and major processes used in semiconductor device fabrication. Separate essays review the semiconductor industries in the United States, Japan and South Korea, and Europe.

P.R. Morris is retired from Southampton Institute of Higher Education, where he was a senior lecturer in the Department of Systems and Communications Engineering. Before this, he worked as a semiconductor engineer in both the American and British industries.

David E. Nye, Electrifying America: Social Meanings of a New Technology, 1880-1940. Cambridge, MA: MIT Press, 1990. xv + 479 pp., \$29.95.

David Nye has written an impressively researched and wide-ranging history of the cultural significance of new electrical technologies for Americans up to WWII. Although Nye briefly discusses communications technologies, his main focus is on electric light and power. Nye's interest lies not in the technical reasons for adopting electricity or the technical consequences of its use, but in the symbolic meanings that Americans attached to the new technology, that is, how American culture received and shaped electricity and how electrical technologies in turn helped transform modern culture.

Nye begins with the electrification of Muncie, Indiana, the city made famous by Robert and Helen Lynd's Middletown. Middletown serves as Nye's home base, to which he returns frequently in his wide travels through the many facets of American culture, visiting world's fairs, novels, utopian literature, advertising, painting and photography. After sketching the impact of electrification on Muncie, Nye examines the widespread initial adoption of electric lighting for symbolic rather than functional purposes, most dramatically in world's fairs but also in the advertising signs that turned Broadway into the Great White Way.

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Electrifying America also includes chapters on the impact of trolley systems on urban life, the adoption of electricity in homes and factories, and rural electrification. Nye concludes by examining the modernist aesthetics and the vision of an electrified future articulated in the Chicago and New York world's fairs of the 1930s.

Harold M. Sapolsky, Science and the Navy: The History of the Office of Naval Research. Princeton, NJ: Princeton University Press, 1990. xv + 142 pp., \$24.95.

The Office of Naval Research (ONR) has long been a major sponsor of university research. Indeed, in the period from its establishment in 1946 until the mid 1950s ONR was the principal Federal agency supporting academic science. In this period ONR, not called upon to show the relevance to defense needs of the research it supported, was able to revitalize basic research in a wide range of scientific disciplines. In the course of subsequent decades, however, political pressures compelled ONR to become an applied research agency focused on the Navy's short-term needs.

The author of this volume describes this evolution, not only providing an institutional history, but also discussing the effect of ONR support on universities and the contribution of basic research to national security. In addition, he compares ONR with NSF, NIH, and other funding agencies in various respects, such as administrative procedures and the effects of the political pressure for relevant research, and he outlines the history of the Naval Research Advisory Committee, which was created in the same law that established ONR.

Harvey M. Sapolsky is Professor of Public Policy and Organization at the Massachusetts Institute of Technology and author of The Polaris System Development: Bureaucratic and Programmatic Success in Government (Harvard University Press).

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(continued from page 7)

Staff Notes

We are pleased to report two personnel changes at the Center. Andrew Goldstein, the Center's Research Assistant, has been promoted to the position of Researcher. He will continue to be responsible for most reference service but will also be assuming more responsibility for independent research projects.

The Center has recently hired Michael Ann Ellis as Staff Assistant. Ms. Ellis will be responsible for managing our office. She brings to the position a rich and varied background in the retail, fashion, and publishing industries.

In November 1990, Eric Schatzberg gave a paper on "Interpretation and Engineering Design" to an international conference on Technological Development and Science in the 19th and 20th Centuries held at the Technical University of Eindhoven in the Netherlands. Dr. Schatzberg's paper was

part of a session on the nature of technological knowledge.

Dr. Schatzberg also organized a session for the annual meeting of the American Association for the Advancement of Science in Washington in February, titled "Technical Change and the State in the Twentieth Century: Case Studies." He contributed a paper to the session on the U.S. Army's role in promoting the shift from wood to metal airplanes before WWII. The other papers in the session examined the origins of the French nuclear power program and the development of India's first satellite.

In December 1990 William Aspray gave a lecture tour in eastern Europe, sponsored by the IEEE Life Member Fund. Dr. Aspray lectured at the Hungarian Electrotechnology Museum and the John Von Neumann Computer Society in

Budapest, the Polytechnic University in Bucharest, The Serbian Academy of Sciences in Belgrade, and the Czech National Technical Museum in Prague. His lectures covered the history of electrical engineering over the past century and the work of the Hungarian-American scientist John Von Neumann. Dr. Aspray also visited with IEEE members in these countries and visited sites and institutions, such as the Nikola Tesla museum in Belgrade, associated with the history of electrical engineering.

In December 1990 Dr. Aspray also presented one of three keynote papers at a conference on the Technical History of Electrical Technologies at the Deutsches Museum in Munich. His paper was on needs and opportunities in the history of computing. ■

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MEETINGS

Social Mastery of Technology

A four-day international colloquium on "The Social Mastery of Technology" is being conducted by the CNRS Research Group in Industrial Economics in Lyon, France, September 9-12, 1991. The colloquium, sponsored by UNESCO and the French Ministry of Science and Technology, will address the past, present, and future events in: the history of the science of techniques and general theories of techniques, the multidimensional, multidisciplinary character of the technical system and its interdisciplinary approaches, and the social mastery of techniques. Each of these topics will receive one day's attention. The fourth day will be opened up for discussion on the subject of "The Social Mastery of Technology: the Global Challenges." Journalists from the press, radio, and television as well as representatives from private and state enterprises and national and international organizations are invited to participate in this final discussion. The conference will be conducted in French and English with translation, in some cases, into other languages. For further information, contact Michèle Joubert, MRASH, 14, avenue Berthelot, 69363 - LYON cedex 07 - France. ■

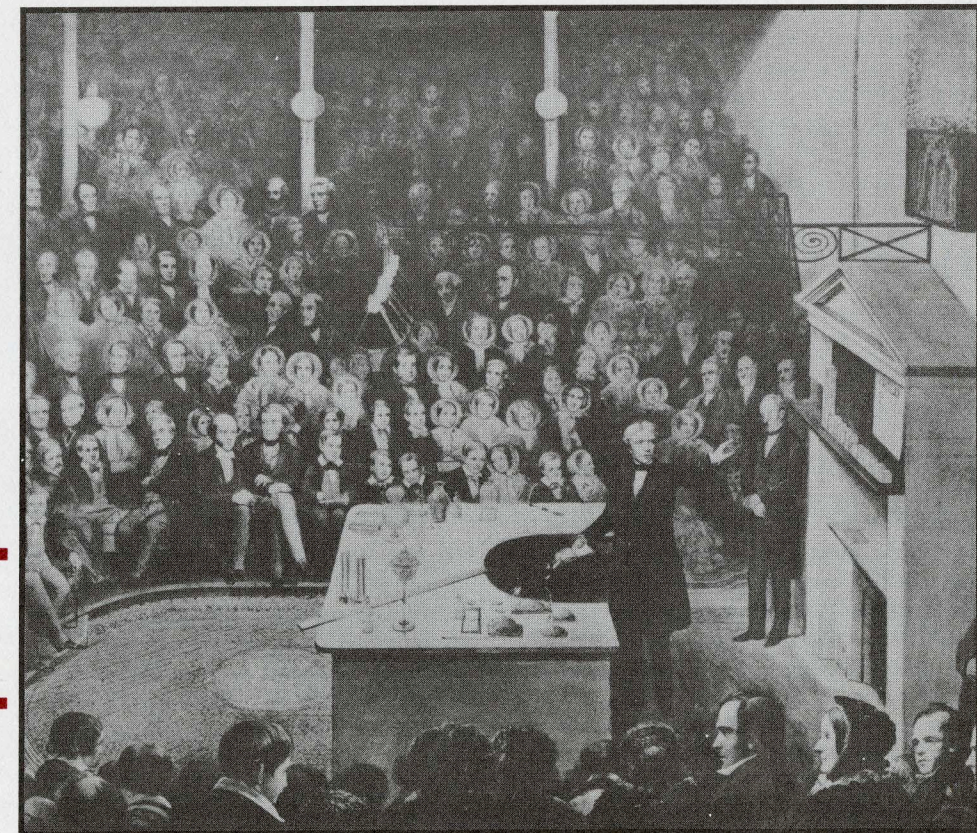
Babbage and Faraday Conference

The Newcomen Society, the British Society for the History of Science, and the British Society for the History of Mathematics are organizing a conference to discuss the lives and works of Charles Babbage and Michael Faraday, the bicentenary of whose births fall in 1991. The conference will be held at Cambridge, England between Friday, July 5 and Sunday, July 7, 1991. The first day and a half will be devoted to papers on Babbage and the rest of the conference will feature the papers on Faraday, including one by former IEEE History Fellowship winner Dr. G.J.N. Gooday. Additionally, a play about Babbage by the noted computer scientist, Maurice Wilkes, will be performed. Registration fees range from £13 to £115, depending on accommodations selected and registrant's student status. For further information, contact Dr. J.M. Wheeler, 131 Richmond Road, Cambridge CB4 3PS, United Kingdom. ■

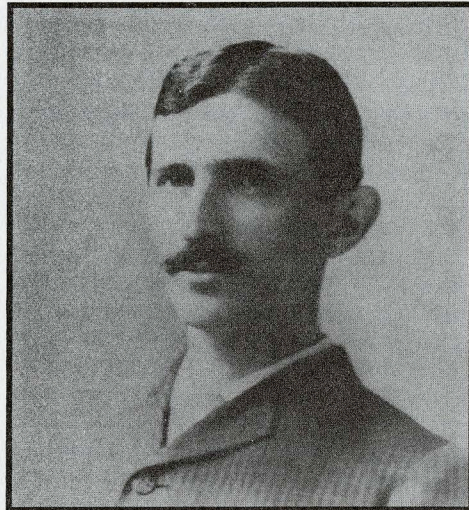
IEE Commemorates Babbage

Another event is scheduled to commemorate the 200th anniversary of the birth of Charles Babbage, this one between July 1 and July 3 in London. It is a collaboration of the Institute of Electrical Engineers (IEE) and the National Science Museum, in association with nine other science and history organizations including the History of Science Society. For further information and a registration form, send name, address, telephone, and fax numbers to: The Bicentennial Conference on Computing, IEE Conference Services, Savoy Place, London WC2R 0BL, United Kingdom. ■

Michael Faraday
lecturing on his experiments



Tesla Museum Holds Symposium



Nikola Tesla

Registration will cost \$150 (US Dollars). Further information, and registration forms, are available by contacting the Serbian Academy of Sciences and Arts, or the Center for the History of Electrical Engineering.

The symposium is being sponsored by The Nikola Tesla Museum, the world's leading center of Tesla scholarship. The museum was established in 1952 and opened to the public on October 20, 1955. Six permanent exhibits are featured. Two of them are devoted to Tesla's life and personality, while the other four explain his work through functioning models of his inventions. The museum's principal attraction, however, is its voluminous archives. It was Tesla's wish that his personal effects be housed in Yugoslavia, and through the assiduous efforts of his nephew, the minister Sava Kosanovic, they were brought to Belgrade from New York. The collection, including over 12,000 pages of personal and biographical data, 70,000 pages of Tesla's correspondence, 31,000 pages concerning his scientific work, 5000 original drawings and plans, 1000 photographs, and a selection of certificates, diplomas, newspaper references, etc., now resides at the museum. A reading room, containing volumes from Tesla's library, is available for use by visitors.

The staff members of the museum are knowledgeable and devoted students of Tesla's contributions to electrotechnology. The Director, Dr. Aleksandar Marincic, is a professor of telecommunications in the Electrotechnical Faculty of the Technical University of Belgrade. He has studied Tesla's work, particularly that on high frequency currents and radio, for over 30 years. Mr. Branimir Jovanovic, the museum's curator, has been working in the museum for nine years. He graduated from the Faculty of Mechanical Engineering, but later earned MA's in both history and philosophy. His current work concerns the mechanical aspects of Tesla's work. He is assisted by Ms. Zorica Civric who has been with the museum for two years. Her education at the Electrotechnical Faculty has prepared her for her work studying Tesla's labors in the field of power engineering. Translations into English, as well as organizational duties, are performed by the museum's secretary Mrs. Dubravka Smiljanic.

The museum is an essential stop for serious Tesla scholars and an interesting cultural attraction for any visitor to Yugoslavia. More information is available by contacting the Nikola Tesla Museum, Knez Mihailova 35, 11000 Belgrade, Yugoslavia, Tel. (38) 11-639008.■

Hungary, Cuba, Finland, and Bulgaria. The program will be in English and Russian. Registration fees range from \$30 to \$65. For further information, contact the Institute for Science Studies, Bulgarian Academy of Sciences, 4 Serdika St., 1000 Sofia, Bulgaria (tel. 359-288-3886).■

Science Discovery

A conference on the general theme of "Science and Discovery" will be held in Madrid, Spain June 25-28, 1991, to commemorate the quicentennial of the European discovery the New World. The History of Science Society and the Spanish and Latin American Societies for the history of science are the joint sponsors. The organizing committee welcomes suggestions of paper or session

topics on any relevant subject but recommends that potential contributors focus on one of the following "representative themes": archival sources for new world science; the cultural impact of discovery; comparative perspectives on European science and New World societies; the Earth redrawn (time, space, and measurement); life and death in the tropics; and political independence and scientific and technological dependence. Inquiries or suggestions for paper or session topics from U.S.-based individuals should be addressed to Prof. Michael R. McVaugh, Department of History, University of North Carolina, Chapel Hill, NC 27514, or Prof. Seymour Mauskopf, Department of History, Duke University, Durham NC 27706.■

This year marks the 135th anniversary of the birth of Nikola Tesla. In commemoration, the 4th International Nikola Tesla Symposium is being conducted from September 23-25, 1991, in Belgrade, Yugoslavia. A first call for papers has been released specifying suggested topics and a deadline for submissions. The symposium is to be conducted in English. The deadline for submission of paper proposals is April 29, 1991, and accepted papers must be completed by September 1, 1991.

International Summer School on Science Studies

The Institute for Science Studies at the Bulgarian Academy of Sciences is organizing its 8th biannual International Summer School on Science Studies. The sessions, to be held June 3-8, 1991 near Varna, Bulgaria, will address the topic 'Science in a Democratic Society.' Co-sponsors for the summer school include prominent eastern European centers for the study of science, technology, and society based in Moscow, Budapest, Berlin, Prague, and Warsaw. Past summer schools have attracted noted scholars and graduate students from the Soviet Union, Czechoslovakia, Poland, Germany,

ANNOUNCEMENTS

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. Mailing address: Rutgers-The State University, 39 Union Street, New Brunswick, NJ 08903. Telephone: (908) 932-1066.

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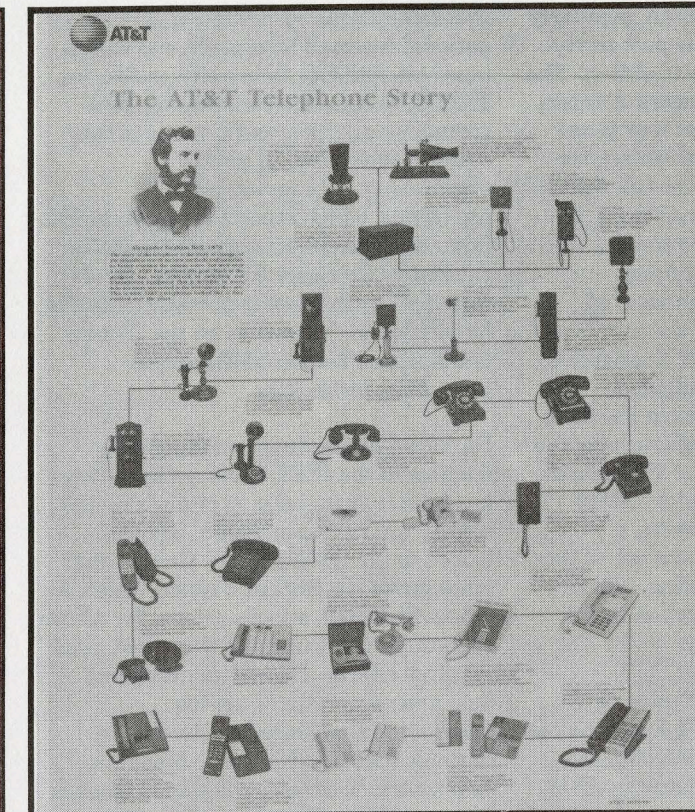
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The Newsletter is made possible by a grant from the IEEE Foundation.



AT&T Poster Shows development of the telephone

AT&T Poster Released

The AT&T Archives announces the "AT&T Telephone Story" poster. This full-color poster traces the history of the company's telephones through pictures and captions of 35 sets starting with Alexander Graham Bell's first instrument and continuing through AT&T's latest consumer and business products. It is 22" by 28" and suitable for framing. The new poster is a revival of a company tradition; AT&T last issued a telephone story poster in 1976. Copies of the poster are \$12 each postpaid, payable by check to the "AT&T Archives." Posters may be ordered by writing to Poster, AT&T Archives, PO Box 4647, Warren, NJ 07059-0647.■

Technological Competitiveness Conference Oct 10-13, 1991

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Electrical Engineering History Studied in Japan

Electrical engineering in Japan, popularly seen as a phenomenon of the past thirty years, has a long and proud tradition. The Institute of Electrical Engineers of Japan was established in 1888, just four years after the IEEE's predecessor society, the AIEE. The IEEJ, which covers all fields of electrical engineering, has now, as a consequence of the society's recent centennial, established a standing technical committee on the history of electrical engineering. The committee will study and write on electrical engineering in Japan primarily, but it will also consider international efforts in the field. Subjects planned for coverage include: the present status of the study of the history of electrical engineering, history of the education of electrical engineers, a database of artifacts and literature of the history of electrical engineering, and evolution of the home production in the Japanese electrical industry.

The committee, chaired by Professor T. Okoshi of the University of Tokyo, consists of sixteen members, many of whom are engineers in the electrical industry. Two are with utilities, five with manufacturers, one with a railway, two in

communications/broadcasting, one with a national research laboratory, one with a museum, and four university professors. They have organized an investigation committee on the present status of the study of the history of electrical engineering. The investigation committee, which reports to the Technical Committee on the History of Science, is chaired by Professor K. Tanaka. Other historical work is being carried out by the Investigation Committee on the History and Future Prospect of Electrical Insulation Technology.

Dr. Yuzo Takahashi, a corresponding member of the IEEE History Committee, has been instrumental in organizing the history committee in Japan. He has looked to the IEEE History Center, and other groups in Britain, France, Germany, Hungary, Brazil, and elsewhere, for advice and support in launching these historical research efforts. He invites additional help and cooperation from his international colleagues. Direct correspondence to Masahiro Maejima, Science and Technology, National Science Museum, Ueno Koen 7-20, Taito-Ku, Tokyo 110, Japan.

University of Bucharest Accepting Donations

The University of Bucharest is accepting donations to rebuild its 300,000-volume library that was destroyed in the revolution of December 1989. Those who wish to donate books and journals to help restock the library should send materials to: Rumanian Library, 200 East 38th Street, New York, NY 10016. The Rumanian Foreign Ministry and Rumanian Embassy will arrange for their shipment to eastern Europe without additional charge. Please label shipments in bold letters, "FOR DONATION TO BUCHAREST LIBRARY."

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National Endowment for the Humanities Grants

The National Endowment for the Humanities is pleased to announce the availability of grants under the category of Humanities, Science and Technology for the support of research that brings to bear the knowledge, methods, and perspectives of the humanities on the subjects of science, technology, or medicine. Historical studies and studies of current topics are eligible. However, studies of current science, technology, or medicine must deal with fundamental issues in the humanities. Individuals and institutions are eligible to apply. Applicants may request support for full or part-time salaries, travel, and other costs of conducting research for periods of from one to three years. This category of support is for projects that, because of their intellectual scope and consequent size, duration or complexity, cannot be accomplished through individual one-year fellowships. Application materials are available from Daniel Jones, Program Officer for Humanities, Science, and Technology, Room 318, National Endowment for the Humanities, Washington, DC, 20506, Tel (202) 786-0210. The next deadline for receipt of applications is October 15, 1991.

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