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# The Hall of Electrical History

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*Those who ignore history are bound to repeat it.*

—George Santayana, *The Life of Reason* (1905).

**M**ore than 1 million photographs dating back to the Edison era (1872–1892) plus the entire instruction book and technical reprint files of the former General Electric Company’s (GE) Advertising and Sales Promotion (A&SP) operation form the core of the Schenectady Museum, Hall of Electrical History (HOEH). In addition, the Schenectady Museum HOEH collection includes the papers of many prominent electrical pioneers, files of present as well as previous electrical periodicals, books, artifacts, movies, videos, and calendar art (Figure 1). On the basis of this material, the HOEH has published several books on the history of electrical technology and GE. But the story of how the HOEH came to be is a fascinating tale of fortuitous coincidence combined with the hard work of many dedicated volunteers.

### Origins

Thomas Edison founded the Edison General Electric Company in 1878. Shortly after, Elihu Thomson and Edwin J. Houston formed the Thomson-Houston Company. In 1882, those two companies merged to form GE, with its headquarters initially located in Schenectady, New York.

For the first 60 years of its early history, GE was organized around a set of core business functions—

engineering, laboratory operations, manufacturing, and finance. One of the core corporate functions was A&SP. This group was a complete in-house advertising agency with marketing, copywriting, art and photography, and publishing/printing capabilities. Over the years, A&SP had built up a massive library of technical publications and also maintained a centralized library of all photographs prepared for company use.

The talk of establishing an archive to preserve the company history periodically surfaced throughout the first half of the 20th century. On 24 July 1945, GE Chairman Owen D. Young wrote a letter to Corporate Secretary William W. Trench, suggesting such action. The idea even went as far as a budget request in 1956, but no action was ever taken.

In the late 1950s, the company embarked on a series of reorganizations aimed at streamlining operations and managing overhead cost. The centralized structure was replaced by a collection of semiautonomous, product-focused businesses. Responsibilities previously assigned to centralized corporate functions were distributed to individual businesses, which then tailored the size and sophistication of those functions to match the requirements in the markets they served.

One of the corporate functions eliminated in these reorganizations was A&SP. The concern about what would happen with the former A&SP archive of photographs and technical publications restarted the dialog about the creation of an independent home for this historical material, and

it was one of the main factors leading to the formation of the HOEH.

One of the other functions that traced its history to the earliest days of GE was the Elfun (ELectric FUNds) Society. Elfun was originally created as an exclusive investment club for corporate executives and upper-level managers. In one of his first speeches as GE chair, John F. (Jack) Welch challenged the Elfun Society to become more relevant to the business climate of the latter half of the 20th century. Elfun responded by refocusing its activities on volunteer activities by GE employees in the communities in which they lived and by eliminating some of its traditional exclusivity. This change was another factor in the eventual creation of the HOEH.

Schenectady itself had a key role in the saga of the HOEH. Schenectady is a very old city with a vast local history. It was founded by Dutch settlers in the mid-1600s and later was burned to the ground in 1690 during the French and Indian War. Rebuilt, it eventually evolved



Among the products of the HOEH are five books and a catalog of the photographic archive.

into a center for locomotive manufacturing, and in fact, it was the availability of an unused locomotive manufacturing facility that originally attracted Edison to the city.

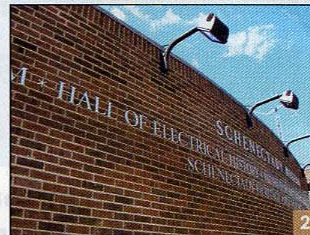
In the early 20th century, a museum was formed to house artifacts of the early days of Schenectady's history. By the 1980s, the museum had relocated to a new facility on Nott Terrace Heights, a hill overlooking downtown Schenectady. The building had been designed around a planetarium that had been donated to the museum and the citizens of Schenectady. But while the building and location were interesting, the museum was searching for something to distinguish itself from the hundreds of other local history museums around the United States.

### Organization of the Hall of History

One of the few corporate functions to survive decentralization was the research laboratory. In 1974, on the basis of the public urging of GE

Corporate Research and Development Director and GE Vice President Arthur M. Bueche, the Elfun Society established the Hall of History Foundation. With financing from Corporate Research and Development, the Elfun Foundation, and other GE components, the Hall of History embarked on a program of preserving many collections including the A&SP photograph and publication files. In 1985, the name was later changed to HOEH (Figure 2).

The research laboratory assigned one of its employees as curator of the photo collection and publication files and set aside office space in Building 5 of the GE plant in Schenectady, New York. In 1981, 4,000 ft<sup>2</sup> of storage space for artifacts and collections became available in another building on the Schenectady campus. In 1987, when the main library in the basement of Building 2, the former corporate headquarters building, was closed, the photograph collection was



The HOEH is today an arm of the Schenectady Museum.

moved to that space. In 1989, the offices and storage space were moved to the third floor of Building 28.

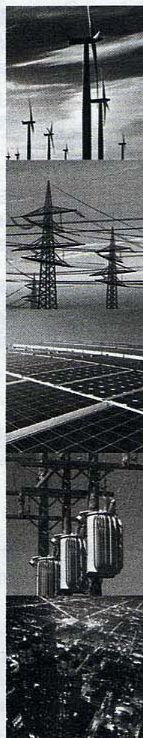
At the same time, the leadership of the Schenectady Museum saw that a marriage with the HOEH could provide the museum the unique focus that it needed. So, in December 1996, the two organizations merged, and the offices of the HOEH relocated to the Schenectady Museum building.

For years, one of the concerns Elfun had with the HOEH was that the collection was scattered around various buildings, all situated on GE's manufacturing campus. While this provided secure storage for the archive, it made the use of the archive rather difficult. There was no way to search through materials, and access was limited by the need for security of the adjacent manufacturing spaces.

By the late 1990s, activities at the Schenectady campus had been reduced to the point where many of the buildings were deemed surplus. Thus began a series of moves as buildings were demolished and the collection was shifted to free up space for GE activities. Gradually, the collection was relocated to the museum premises, with the last materials leaving the GE plant prior to the demolition of Building 28 in 1998.

### Mission

The Hall of History serves as a center for the gathering, preservation, and conservation of historical documents, artifacts, photographs, and memorabilia about the electrical industry. Its objective is to share



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this proud heritage with the world ... to tell the exciting and dramatic story of this industry—its achievements, world-wide contributions and the people who made it all possible.

The above mission statement, proposed on 10 October 1995 for the HOEH, defined its organizational focus. The photograph collection has been the source for many media publications (including *IEEE Industry Applications Magazine*) and public exhibits. The archives provided researchers with information not available elsewhere.

Many government, industry, and utility engineers have obtained maintenance and operating data for older electrical equipment and systems from the HOEH files pertaining to old instruction books and other publications. The artifact collection has been a source for many items used in local and remote exhibits.

While the formation of the HOEH came about with the sponsorship of GE, and in fact the first full-time curator was actually a GE employee, the real key to its successful creation was the volunteer effort provided by members of the Elfun Society. Literally, thousands of hours have been volunteered, mostly by senior Elfun (retired GE employees), to catalog and index items in the collection. Engineers and scientists, by training, use their fundamental technical skills to sort through the material, understand what each item represents, and then assign it an appropriate place in a master catalog, so that future researchers can actually find what they are looking for.

From its birth in 1974, the Hall of History operated as a cooperative institution complementing the operations of both local and remote archival organizations. In addition to the Schenectady Museum, cooperating local institutions included Union College, Rensselaer Polytechnic Institute, Schenectady Historical Society, and the New York State Archives.

#### HOEH Exhibits and Books

The collaboration between the HOEH and the Schenectady Museum has resulted in a series of exhibits. The most significant major exhibition celebrated the GE centennial and

opened with a dedication by GE CEO Reginald H. Jones on 19 June 1978. This exhibit celebrated a century of GE innovations, including the monitor-top refrigerator, the installation in 1903 of a 5,000-kW steam turbine (the largest unit at the time) at the Fisk Street Station of the Chicago Edison Company, and many innovations in both lighting and appliances. The exhibition included three historic movies: *Thomas A. Edison: Reflections of a Genius*, *Charles Proteus Steinmetz ... the man who made lightning*, and *You've Come a Long Way Baby* (GE from 1872 to 1978).

The idea of preserving the historic records and artifacts of the "electric age" grew in the minds of many Schenectady Museum associates. Cooperative projects between the museum and the HOEH continued into the decade of 1980–1990, with exhibits like *Amazing World of Electronics* (1983) and *Line and Waves*, which included the Schenectady Section of the IEBE in the consortium of sponsors.

In the first five years of its life, the HOEH produced four paperback volumes of GE history under the editorial guidance of Bernie Gorowitz and his committee of Elfun:

- vol. 1: *The Edison Era 1876–1892* (1976)
- vol. 2: *The Steinmetz Era 1892–1923* (1977)
- vol. 3: *On the Shoulders of Giants 1924–1946* (1979)
- vol. 4: *Pathways of Progress 1947–1978* (1980).

The first two volumes formed the basis for exhibits at the Schenectady Museum. In addition to these volumes, in 1977, the HOEH reprinted a paperback by Emil J. Remscheld titled *Recollections of Steinmetz—A Visit to the Workshops of Charles Proteus Steinmetz*, consisting of work done from 1923 to 1925, work prepared for the Edison Institute, and various other lectures and workshops. Also, a number of articles by John Anderson, IEEE Fellow and recipient of the 1997 IEEE Medal for Engineering Excellence, have been published in various IEEE periodicals.

Between 1980 and 2000, these four volumes were revised and expanded and republished as three hardcover books:

- *A Century of Progress—The GE Story, 1876–1978*

- *The General Electric Story—Heritage of Innovation 1876–1999*

- *The General Electric Story—A Photo History 1876–1986.*

In 1977, the HOEH commenced a program for interviewing prominent individuals who had made important contributions to technology or to the success of GE. Transcripts of these interviews are included in the HOEH collection. This activity is ongoing, and interviews have been conducted as recently as spring 2007.

#### The Photograph Collection

In 1981, the HOEH published *A Catalogue of the General Electric Photographic Archives*. This publication resulted from a project to catalog the photographs in the collection led by Union College Professor David E. Nye. Nye and his team organized the photographs into seven groups:

- industrial photographs—factories and employees
- the American scene—social photography dating back to the early part of the 20th century
- GE product photographs
- GE advertising photographs
- portraits and group photographs—some famous people, many not so famous
- GE activities outside the United States
- miscellaneous and scientific photography.

Copies of these photographs are available directly from the HOEH and many are available via the Corbis Corporation Library.

In 1985, Nye published a thorough study of GE photography up to 1930. Until this time, the treatment of the photograph collection and A&SP publication archives made it apparent that very few individuals appreciated the items "as a coded system of communication or as a form of ideology" (David E. Nye, *Image Worlds—Corporate Identities at General Electric, 1890–1930* (1985) p. 153, lines 29–30).

#### The Technical Books and Publications Collection

In 1987, a decision was made to close down the GE main library in the basement of Building 2, and a portion of its collection was handed over to the HOEH. The main book

**TABLE 1. SAMPLES OF TYPICAL HOEH FILES OF GE PUBLICATIONS, TECHNICAL JOURNALS, AND TRADE MAGAZINES.**

GE Company Periodicals		
<i>GE Review</i>	vol. 1, no. 1 (1903) to vol. 61, no. 6 (1977)	Bimonthly technical publication. Issues prior to 1934 have been indexed in a searchable database by title, author, and subject. Indexing is ongoing.
<i>GE Monogram</i>	vol. 1, no. 1 (1923) to vol. 66, no. 4 (1987)	Quarterly magazine for GE employees.
<i>GE News (Schenectady)</i>	vol. 1, no. 1 (1917) to vol. 68 (1985)	Weekly newspaper for local GE employees.
<i>Distribution</i>	vol. 1, no. 1 (1921) to vol. 31 (1969)	Quarterly technical magazine for GE and customer utility engineers.
<i>Industrial Engineering News</i>	1942 to 1961	Quarterly technical magazine for GE engineers.
<i>Industrial Power Systems</i>	vol. 1, no. 1 (1957) to vol. 27 (1984)	Quarterly technical magazine for GE and customer industrial engineers.
GE Product Information		
Instruction books	GEH 1-6533, GEI 1-100102	Large files for utility and industrial products such as motors, turbines, switchgear, transformers, protective relays, motor starters, drive systems. Some files are incomplete.
Renewal parts books	GEF 1-4615, GEG 715-30614	
Technical reprints	GER 1-3855	
Characteristic curves	GES 1-3688	
Technical Journals		
<i>AIEE Transactions</i>		vol. 1, no. 1 (1884) to vol. 46 (1927)
<i>IEEE IAS Transactions</i>		vol. 1, no. 2 (1963) to vol. 42 (2006)
<i>IEEE Proceedings</i>		vol. 51 (1963) to vol. 74 (1986)
<i>EEl Bulletin</i>		no. 1 (1933) to vol. 42 (1974)
<i>ASME Transactions</i>		vol. 32 (1910) to vol. 34 (1916)
<i>ASME Journal</i>		vol. 28 (1906) to vol. 91 (1969)
Trade Magazines		
<i>Electrical World</i>		vol. 2 (1889) to vol. 199 (1985)
<i>Electric Railways Journal</i>		vol. 56 (1920) to vol. 83 (1942)
<i>Electric Review London</i>		vol. 115 (1934) to vol. 197 (1975)
<i>Electric Light and Power</i>		vol. 6 (1928) to vol. 61 (1993)
<i>Gas Turbine World</i>		vol. 4 (1963) to vol. 26 (1985)

collection at the HOEH began with an initial set of over 2,000 technical books from the library and has been supplemented by additional volumes from the estates of deceased GE employees. The collection is indexed with a database that can be searched by author, title, and subject and contains some of the classic references in engineering, physics, and chemistry.

The collection also includes an extensive selection of both GE publications and technical and trade journals. Table 1 identifies a representative sample of the type of publication files available in the HOEH.

#### Visual and Databases Collections

The HOEH collection includes over 1,800 films, videos, and slide

presentations on various topics including product presentations, company announcements and press releases, facility tours, and laboratory exhibitions.

The collection is fully cataloged in offline computerized databases. These files eventually will be accessible by an online search. Future plans include digitizing additional images, oral histories, films, and selected documents.

### Collections of Personal Papers

The HOEH has been fortunate to acquire personal collections from a number of former GE engineers, scientists, and executives, many of whom have been discussed in previous "History" columns in this magazine. The effort to catalog and organize this material is ongoing. Individuals represented include Ernst Alexanderson, Arthur Bueche, Bruce Buckland, Charles Coffin, Charles Concordia, Thomas Edison, Irving Langmuir, Kenneth Mathes, Glenn B. Warren, Louis Navias, David Prince, Edwin Rice, Charles Steinmetz, and Elihu Thomson.

### Moving into the Future with the Schenectady Museum

In recent years, significant effort has been devoted to improving the quality of care provided for the collections. The A&SP collection has been completely rehoused. More than 250,000 photographic prints have been moved into archival quality storage with the help of two grants from the New York State Library. The museum copied 2,000 glass photographic negatives from Steinmetz's personal photo collection. With the assistance of a major grant from the National Endowment for the Humanities, the museum has preserved 81,000 photographic negatives in a special frost-free refrigerator and has put in place the infrastructure required to launch a digitization initiative to produce a searchable online database of 12,000 images from the collection. The database will also include search tools for paper collections and ordering instructions for purchasing copies of images.

Today, the HOEH collection combined with the Schenectady Museum's technical collection of artifacts forms the core of the museum's collection. This merger resulted from the timely and coincidental occurrence of a number of significant events, both within GE and the Schenectady community, and in the museum itself. More importantly, it happened because a dedicated group of volunteers, mostly retired engineers, saw value in making it happen and provided the necessary volunteer effort.

In 2004, the Schenectady Museum changed its mission, recognizing the

importance of technology collections to inspire a sense of wonder about extraordinary scientific and technological developments. The overall focus shifted to the importance of science, technology, engineering, and mathematics (STEM) education to develop the next generation of scientists and engineers. Interactive museum exhibits

educate and excite visitors about STEM and also include stories of the past and the present to give context, while allowing the visitor to imagine what is yet to be.

*Christopher G. Hunter is the archivist at the Schenectady Museum, and Robert L. Smith, Jr. is a Life Fellow of the IEEE.* IAS

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