

ARNOLD A. COHEN

Born August 1, 1914, Duluth, Minn.; an employee of Engineering Research Associates (ERA) from its inception in 1946, and a founder of AFIPS; his IEEE Fellow citation read: "For pioneering achievement on computers and storage devices, and sustained service to the profession in this field. "



Education: BEE, University of Minnesota, 1935; MS, University of Minnesota, 1938; PhD, physics, University of Minnesota, 1947.

Professional Experience: development engineer, electron tubes, RCA Corp., 1942-1946; computer development engineer, technical director, Engineering Research Associates Inc., (ERA),¹ 1946-1971; assistant dean, Institute of Technology, University of Minnesota, 1971-1979; senior fellow, Charles Babbage Institute, 1980-present; member, board of directors, Charles Babbage Foundation, 1980-present.

Honors and Awards: national chair, IRE Professional Group-Electronic Computers,² 1960-1962; member, board of directors, AFIPS, 1960-1965; member, scientific advisory board, National Security Agency, Ft. Meade, Md., 1960-1974; Valuable Invention Citation, Minnesota and American Patent Law Association, 1962; fellow, IEEE, 1964; member, advisory board, Chemical Abstracts Service, 1969-1972; IEEE Centennial Award, 1984.

Cohen joined RCA in 1942, working in gaseous electron tube development, largely for military use, later for other applications. His first contact with the computer field came when he joined ERA in 1946. He was first assigned to information storage problems, under ONR sponsorship, initially analyzing the feasibility of storing information on beams of charged particles. Then, he worked on the development of selectively alterable digital storage on magnetic drums; the patent that resulted turned out to be basic in the field. He then led system design of the ATLAS I magnetic drum computer for the National Security Agency (a later commercial version was called the ERA 1101). ATLAS I, which was delivered in December 1950, is believed to be the first stored-program electronic digital computer actually shipped to a customer site. Cohen was also responsible for the ATLAS II system design (commercialized as the Univac Scientific 1103 after the Remington-Rand merger in 1952). ATLAS II had both CRT and magnetic drum storage. Variations on these systems, including a magnetic core memory at an early date, were built and delivered for specific requirements, mostly military. The commercial 1103A which followed incorporated powerful new system features, in addition to core and drum storage.

An important aspect of ERA's business was to conduct digital systems work for outside customers, in response to requests for proposals, or as unsolicited proposals. Cohen had responsibility for much design and development in these areas. One early effort (1949-1950) led by him was a design study for IBM that called for a magnetic drum computer with punched-card input and output, for commercial applications. Although this work resulted in a massive system patent that was assigned to IBM, a parallel design program within IBM prevailed, ultimately producing the IBM 650.

¹ Cohen served in this position in several successor companies, through to Sperry Rand Corporation, St. Paul MN.

² Now IEEE Computer Society

ERA was acquired in 1952 by Remington-Rand, which had a development group of its own in Connecticut, and which had in addition picked up Eckert-Mauchly Corporation in 1950. This brought together, as the Remington-Rand Univac division, three development and manufacturing locations, and an assortment of marketing groups. Cohen continued to be actively engaged in various phases of technical management, including system planning, government relations, and marketing support.

In 1971 Cohen joined the staff of the dean of the Institute of Technology at the University of Minnesota, as assistant dean for industry and professional relations. Upon retirement from the dean's staff in 1979, he became active in helping to form the Charles Babbage Institute for the History of Information Processing, which has since become a part of the University of Minnesota. He has been a senior fellow at CBI and is a member of the Charles Babbage Foundation's board of directors.

BIBLIOGRAPHY

Biographical

Armer, Paul, et al., "Reflections on a Quarter Century: AFIPS Founders," *Ann. Hist. Comp.*, Vol. 8, No. 3, July 1986, pp. 225-256.

Tomash, Erwin, and Arnold A. Cohen, "The Birth of an ERA: Engineering Research Associates, Inc., 1946-1955," *Ann. Hist. Comp.*, Vol. 1, No. 2, 1978, pp. 83-97.

Significant Publications

ERA Staff (Arnold A. Cohen, contributing author), *High Speed Computing Devices*, McGraw-Hill, 1950; reprinted in Charles Babbage Reprint Series, MIT Press, Boston, Mass., 1983, with introductory chapter by Cohen.

UPDATES

Portrait added (MRW, 2012)