Saul Rosen

Born February 8, 1922, Port Chester, N. Y; died June 9, 1991, West Lafayette, Ind.; chief software designer for the Philco Transac S-2000, the world's first transistorized computer

Education: BS, City College, 1941; MA, University of Cincinnati, 1942; PhD, University of Pennsylvania, 1950.

Professional Experience: instructor, mathematics, University of Delaware, 1946-1947; lecturer, University of California, Los Angeles, 1948-1949; assistant professor, Drexel Institute of Technology, 1949-1951; Burroughs Corp.: associate research engineer, 1951-1952, manager, Eastern Applied Mathematics Section, Electrodata. Division, 1956-1958; assistant professor, University of Pennsylvania, 1952-1954; associate professor, Computational Laboratory, Wayne University, 1954-1956; Philco Corp.: manager, Computer Programming and Service, 1958-1960, consultant, Computer and Programming Systems, 1960-1962; Purdue University: professor, mathematics and computer science, 1962-1966 and 1967-1991; director, Computing Center, 1968-1987; professor of engineering, associate director of computing, State University at Stony Brook, 1966-1967.

Honors and Awards: ACM Distinguished Service Award,[1] 1984.

Born in Port Chester, N.Y, Rosen graduated from the City College of New York in 1941 with a BS in mathematics. He received an MS in mathematics from the University of Cincinnati in 1942 and then served in the Army Signal Corps in Europe until 1946. After the war he attended the University of Pennsylvania, where he earned his PhD in mathematics in 1950; after two years at Drexel and a year at Burroughs, he returned to the Moore School of Electrical Engineering, working on the successor machines to ENIAC. In 1954 he left Philadelphia and spent two years at Wayne (now Wayne State) University in Detroit. He returned to Philadelphia in the fall of 1956 as manager of the Eastern Applied Mathematics Section of the ElectroData Division of Burroughs Corporation. The work of this section would now be called software support.

In 1947 he became involved in the activities of the fledgling Association for Computing Machinery, first on the languages committee that eventually led to Algol, and then as first managing editor of the *Communications of the ACM.*

In the spring of 1958 he declined an offer from his employer, the ailing Burroughs Corporation, to move to California, and instead joined the Philadelphia-based Philco Corporation to be manager of programming systems at $18,000 per year. Philco was about to enter the general-purpose scientific computer field with its as yet unbuilt Transistorized Automatic Computer, TRANSAC S-2000. In many ways it was considered at that time to be a modern version of the IAS computer. It was to be faster and more powerful than the IBM-704 or the IBM-709 and would have all the advantages that transistors gave over vacuum tubes.

[1] For his continued dedication to extending the frontiers of computer science."

Rosen had misgivings about Philco's ability to successfully attack IBM head—on but felt that, although the programming management task he himself had undertaken was extremely difficult, he could handle it and handle it well. He later wrote (1991) that he was probably “Quixotic,” a word which he applied to the whole Philco computer effort.

Just before his death Rosen finished writing, from memory, a detailed account of his career at Philco, “Philco: Some Recollections of the Philco TRANSAC S-2000.”

In it he summarized his two years at Philco in these words. “I had started from scratch and had built up a good programming systems department. We had designed and built and delivered software products, an assembler, a Fortran compiler, subroutine libraries, and service routines that were being used by ... customers on a daily basis. I received praise and good increases in pay from Philco management.”

He left Philco in 1960 chiefly because he had lost confidence in Philco's long-term prospects in the computer field. He remained in the Philadelphia area, working as an independent consultant. In 1962 he joined the initial faculty of the Computer Sciences Department at Purdue University, a department that is the oldest such department in the US, and probably in the world.

For one year in the mid-1960s he was a professor of engineering at the Computing Center of the State University of New York at Stony Brook, returning to Purdue in the fall of 1967, as a faculty member and director of the Purdue University Computing Center until 1987, and a member of the faculty until his death.

He wrote extensively on practical systems programming, and in 1967 produced his major book, *Programming Systems and Languages,* a carefully selected collection of articles from computer journals and conferences ranging from the historical to the technical details of preparing compilers and operating systems. In one chapter, Rosen organized excerpts from the series of opaque IBM manuals concerning Operating System/360 into a comprehensible description, the first available at that time. Rosen demonstrated his interest in the history of computing in his introduction to the book, which is a historical survey of programming systems and languages.

In 1979 he participated in the founding of the AFIPS *Annals of the History of Computing,* contributed to it, and served as one of its editors for the rest of his life. Most recently he was studying and writing about the controversies surrounding the invention of the automatic electronic digital computer. In 1991 *Computing Reviews* published his “The Origins of Modern Computing,” in which he retold the story of the start of ENIAC and EDVAC, and critically reviewed the publications, both contemporary and current, that deal with their history. Because of the widely differing interpretations of the events of this era, the editors of *Computing Reviews* felt it necessary to attach eight responses, both pro and con, to this paper.

His professional memberships included the Institute of Electrical and Electronic Engineers and ACM, from which he received the Distinguished Service Award in 1984.

BIBLIOGRAPHY

Significant Publications

Rosen, Saul, ed., *Programming Systems and Languages*, McGraw-Hill, New York, 1967.

Rosen, Saul, "The Origins of Modern Computing," *Computing Reviews*, Vol. 31, No. 9, Sept. 1990, pp. 449-481.

Rosen, Saul, "Philco: Some Recollections of the Philco TRANSAC S-2000," Purdue University Computer Sciences Department Report, CSD-TR 91-051, June 1991.

UPDATES

Portrait added (MRW, 2013)