Computer Industry Pioneer: Erwin Tomash (1921–2012)

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Computer industry pioneer and visionary cofounder (with his wife Adelle Tomash) of the Charles Babbage Foundation (CBF) and the Charles Babbage Institute (CBI), Erwin Tomash passed away on 10 December 2012. In the late 1940s, Tomash was an engineer at Engineering Research Associates (ERA), one of two firms that launched the US computer industry. He later founded and led Dataproducts Corporation, a Fortune 500 computer peripherals and core memory firm. Erwin and Adelle Tomash's insights and generosity in founding, supporting, and advising CBF and CBI have had a profound and continuing impact on the infrastructure for research and publication of scholarship on computer and software history.

Professional Career

Erwin Tomash was born in St. Paul, Minnesota, on 17 November 1921, to immigrant Jewish parents roughly a year after they moved the family from Moldavia, where his father had been a dried goods merchant. In his youth, Tomash attended public school as well as Hebrew school and also worked in his family's small grocery store. He was a student at Mechanical Arts High School in St. Paul and particularly enjoyed mathematics, history, and politics. He went on to complete a bachelor's in electrical engineering at the University of Minnesota, graduating in the spring of 1943. In his junior year Tomash met his future wife Adelle, who was a freshman at the university. Erwin and Adelle became engaged around the time of his graduation and got married soon thereafter.[1,2]

With the US at war, Tomash applied and was accepted to the US Army's officer recruitment program, becoming a second lieutenant in the Army Signal Corps. Tomash served with great distinction during World War II. He began in an Army Signal Corps Maintenance Unit, where he set up and serviced radar systems. Later he organized and managed an Army supply depot near Marseille, France, that supplied critical electronic components to battlefront locales. For the latter, Tomash was awarded a Bronze Star.[3]

After returning from the war, Tomash began graduate school at the University of Minnesota, but he left for an opportunity to join the Naval Ordnance Laboratory in late 1947. In 1948, disillusioned with military bureaucracy, he interviewed for and was hired as a junior electronics engineer at the ERA liaison office in Arlington, Virginia.[1]

ERA had been launched in St. Paul, Minnesota, in 1946 by a group of engineers who had worked on code-breaking for the US Navy during the war. In addition to other naval contracts, this corporation designed and built one of the first stored-program digital computers in the US, the Atlas, later commercialized as the ERA 1101.[4]

Tomash's first ERA assignment was conducting research that contributed to a seminal computing book, *High Speed Computing Devices* (ERA, 1950). Following this, Tomash frequently consulted on computation problems at the newly formed National Security Agency. During this time, he also completed a master's in electrical engineering at the University of Maryland. Soon key figures at ERA's headquarters encouraged Tomash to move to St. Paul, which he did in 1950. Tomash's first task in St. Paul was to work on ERA's Atlas II digital computer project. Many Atlas II development team members, including Seymour Cray, went on to become central figures at Control Data Corporation, a Minneapolis computer firm formed by engineers and managers leaving Sperry-Univac in 1957.[1] (ERA was acquired by Remington Rand in 1952. Remington Rand merged with Sperry Corporation in 1955 to form Sperry Rand, and its computer division was Sperry-Univac.)

Erwin Tomash viewed Remington Rand's 1952 acquisition of ERA with reservations, as did many at ERA. The changing environment at ERA in St. Paul, and Erwin and Adelle's frustration with harsh Twin Cities winters, led Tomash to seek out possibilities in Southern California. In 1953, the Tomash family moved to Los Angeles, and Tomash successfully ran the Remington Rand Electronic Computer Department sales office in Los Angeles.[1]

The 1955 merger with Sperry brought organizational upheaval to the combined firm. The uncertainty for how Sperry-Univac would be managed, coupled with the his desire to stay in Southern California, led Tomash to leave Sperry Rand in 1955 and join Telemeter Magnetics Corporation as vice president of marketing. This firm, launched several years earlier to pioneer coin-operated pay television, had shifted to concentrate

on computer memory. In late 1960 a leading magnetic-tape firm, Ampex, acquired Telemeter Magnetics and as the integration unfolded in 1961, Tomash became an Ampex vice president. Seeing problems at Ampex and wanting to free himself from the vulnerabilities of a being a salaried manager, Tomash quit Ampex and decided to launch a new company, or acquire a struggling company to turn around.[1]

In 1961 Willis Drake, Tomash's old friend from ERA, communicated the challenges of his employer—Telex—and specifically, its problematic Data Systems Division consisting of a disk file project in St. Paul and a computer printer project in Detroit. Tomash quickly saw this division as a great opportunity. In 1962 he invested his own money and secured additional funding from investment banks to take it over from Telex and form a new company, Data Products Corporation. Erwin Tomash established Dataproducts (renamed shortly after its founding) headquarters in Culver City, California.[1]

Just as Dataproducts was getting off the ground in 1962, Chief Executive Officer Erwin Tomash formed a strategic partnership with Walter Bauer, who was leaving TRW to start a computer services company but was having trouble raising capital. Bauer's enterprise became a wholly owned subsidiary of Dataproducts: Informatics General Corporation. Tomash's insight in recognizing the importance of the young computer services field proved highly lucrative for Dataproducts over the next half-dozen years. Informatics became one of the leading computer services firms and, based on its MARK IV file management package, the leading software products company in the world in the mainframe era. Between 1966 and 1970, Tomash orchestrated Dataproducts' divestiture in Informatics, resulting in roughly a $20 million dollar return on a small initial investment as Informatics went public in the late 1960s.[1,5]

The Dataproducts printer business took longer to get off the ground. Tomash shut down the Detroit operation and restarted it in California. He recalled that it took roughly 18 months before they had their hammer actuator printer in good shape. The early target market was the established computer giants, and Dataproducts emerged as the leader in the printer field for mainframe and minicomputers. In addition to its highly successful printer business, Dataproducts also entered the core memory business in 1966,

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which Tomash had had extensive experience with from his Telemeter Magnetics and Ampex days. By the early 1970s, Dataproducts, a dominant player in printers and substantial participant in the domestic and international core memory market, moved to a much larger facility in Woodland Hills, California.[1]

In 1971, after navigating Dataproducts successfully through many technical and managerial challenges, Tomash resigned as CEO, and Graham Tyson stepped in to lead Dataproducts. Tomash continued to stay active with the leadership of Dataproducts for another decade and a half, but by the mid-1970s, he pulled back from the extremely long work days dedicated to his firm to also enjoy other pursuits—most notably creating an infrastructure for computer history to thrive.[1]

Fostering a Discipline
Tomash not only achieved tremendous success in many roles (as engineer, sales manager, marketing manager, entrepreneur, and CEO) and with many technologies (mainframe computers, core memory, computer services, software products, and printers) in the computer industry, he also interacted and developed lifelong friendships with many other computer and software pioneers. In the mid-1970s, he reflected on the industry to which he had contributed and witnessed so much. He had seen computers grow from being primarily tools for big science to data-processing systems used throughout society for an ever-greater scale and scope of applications. Liking history from his childhood forward, he became increasingly interested in the history of computing technology and the IT industry. Up to that time, few practitioners and virtually no scholars had engaged in researching and writing this history. Furthermore, few public source materials existed on the topic to conduct research.

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Tomash considered the possibility of formally studying the history of technology and engaging in writing historical studies, as well as other ways he might have an impact on the history of computing. He spoke with a number of the leading figures in the history of science and technology as well as leaders in the archives community. During these encounters, he was advised that establishing an academic research center and archives would likely have the greatest impact. This was the genesis of Erwin and Adelle's founding of the International Charles Babbage Society in Palo Alto in 1978. In working with a number of computing pioneers, Erwin and Adelle planned for two organizations to evolve from this ''society'' in the near future. The first, an advisory and fundraising group, became the Charles Babbage Foundation (CBF) and the second, a computer history research center and archives to be housed at a selected university, became the Charles Babbage Institute (CBI).

Tomash headed the board of directors of the CBF, and Adelle served as the secretary and treasurer of the foundation in its early years. Tomash's contacts and respect in industry and academe resulted in several dozen leaders from the computer and software industries, and some of the top computer scientists in the world, serving as CBF trustees. A fraction of these individuals also served as members of the decision-making CBF board.

In 1980, a call for proposals was put out looking for a future home of CBI. With its well-established history of science and technology doctoral program and strong special collections library, the University of Minnesota won out over the 38 other universities under consideration. Arthur L. Norberg was hired as CBI's first permanent director. The institute, a partnership of the University of Minnesota's College of Science and Engineering (then called the Institute of Technology) and University Libraries, is a place where professional historians and archivists work together to conduct and facilitate research in computer history and maintain and curate a world-class archives.

From the beginning, Erwin and Adelle also established a fellowship for doctoral students conducting dissertation research on the history of computing. A CBI/Tomash Fellowship has been given to a leading graduate student studying computer history each year for more than three decades, and Erwin and Adelle have endowed the fellowship as a permanent program of CBI. The highly competitive Tomash Fellowship program has supported the work of many of the leading scholars in the history of computing.[6]

Tomash and Norberg also established CBI as a center of excellence for conducting research. Since its founding, CBI historians have led major research projects funded by the National Science Foundation, DARPA, National Endowment for the Humanities, IBM, and other funders. Historical research projects have been conducted on such important topics as academic computer centers, the computer industry, software, IBM Rochester, NSF Fastlane, and computer security. Major sponsored projects led by CBI archivists have been funded by the Society of American Archivists, ACM, and the National Historical Publication and Records Commission.

One of Tomash's original goals was that CBI would become a major computer and software history archives repository for historians, computer scientists, social scientists, students, and others interested in conducting research on computer and software history. Over the years, CBI's talented archivists have built a highly diverse and expertly selected set of materials. CBI's more than 200 collections include major corporate collections (Burroughs, Control Data), trade organization records (ADAPSO, IBM Share), professional organization records (DPMA, ACM), and the papers of prominent computer scientists and professionals and industry pioneers (Edmund Berkeley, Margaret Fox, Carl Machover, Willis Ware). CBI also holds more than 400 oral histories, most conducted by CBI historians as part of sponsored research projects. In 2000 CBI moved to its state-of-the-art facilities in the Andersen

Library, where scholars come from around the world to use CBI resources.[7]

Tomash's interest in computing and computational history also led to his developing a passion for book collecting in these areas beginning in the late 1970s. This passion resulted in an unrivaled collection of thousands of rare books on computing and computation, a portion of which (post-1930s books on computers) were donated to CBI in 2009. Tomash partnered with computer historian Michael Williams in developing an annotated, illustrated catalog of this unparalleled collection of early works (from the 12th to the early 20th century) on computation and mathematics.[8]

In the early-to-mid 1980s, Tomash's passion for books also led him to launch Tomash Publishers, a partnership with MIT Press that led to the Tomash/CBI reprint series. Early classic, difficult to obtain works (books, manuals, and proceedings) in computer history, mostly from the 1940s and 1950s, were reprinted as attractive hardbound volumes with introductions written by leading computer historians. In all, 16 volumes were published in the mid-1980s.[9]

Lasting Legacy

The unparalleled CBI archives, the past and present research of CBI staff and Tomash fellows, and the Tomash/CBI reprint series are among the legacies Erwin and Adelle left to computer history. For Erwin's great insight to see the possibilities for computer history when few did, and his dedication, generosity, and vision to create and support a permanent infrastructure for our field to prosper, our memories of him will always be deeply treasured and our gratitude beyond measure.
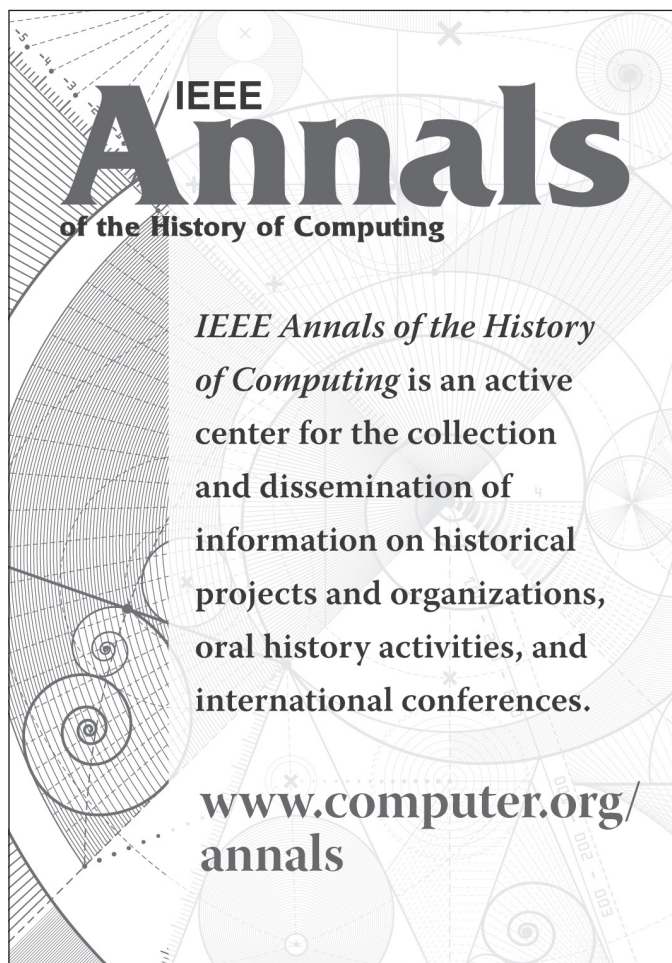
Tomash is survived by his wife, Adelle, two daughters, three grandsons, and five great grandchildren.

References and Notes

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