



Jordan Baruch

JORDAN BARUCH

1923–2011

Elected in 1974

*“For contributions to technology transfer to industry,
noise control systems, and application of computer technology.”*

BY LEO L. BERANEK

JORDAN JAY BARUCH was born August 21, 1923, in New York City and grew up in Brooklyn. Both his father and grandfather were in the wholesale fur business until the collapse of that business in the 1940s. Jordan’s father then sought other opportunities, becoming a stockbroker in a small Wall Street firm. Jordan already knew how to read when he entered Midwood Elementary School (PS 99) and graduated eighth grade as an honor student in January 1936. At James Madison High School he participated in the after-school activities of the Microscope Club. One of his projects on hydroponics was selected to be exhibited in the New York World’s Fair. A talk of his, based on another high school project, “On the Action of Ions on Cardiac Muscles—A Home Made Kymograph,” was named “Best of the Session” by the Science Congress of the American Institute. The kymograph was made up of parts that Jordan bought from junk pushcarts. During these years, Jordan was an enthusiastic Boy Scout, becoming an Eagle Scout. Later in life he was a Boy Scout leader.

In 1940 he entered Brooklyn College. In his freshman physics class, Jordan’s professor announced there would be gender-segregated seating in alphabetical order. Jordan Baruch, the first male, sat next to Rhoda Wasserman, the last female. Jordan invited Rhoda to the BioMed Society Dance. Four years

later, in June 1944, when he was a private first class in the U.S. Army, they were married. Their marriage lasted 67 years.

In December 1942, at the age of 19, Jordan enlisted in the U.S. Army, dropping out of Brooklyn College in his junior year. He was offered a place in the Army Specialized Training Program (ASTP) at the Massachusetts Institute of Technology. He enjoyed MIT until the program came to an end. Fortunately, the participants were assured they would be welcomed back at the end of the war. Jordan did reenter MIT in February 1946, immediately after he was discharged from the Army.

When the ASTP came to an end, Jordan was assigned to the Army Signal Corps. He served in both the European and Pacific theaters of operation. When the war ended in Europe, he was sent to Japan. He became very seasick on the long ocean voyage. He wrote home to his young wife Rhoda that, when he returned, he would have nothing in the house that moved—neither a rocking chair nor a porch glider. It is surprising that after his discharge in February 1946, he became an avid sailor, first learning in a tech dinghy and later owning a sequence of sailboats, each bigger than the previous. He taught many of his friends to sail, as well as his children and grandchildren. Favorite vacations involved charters in the Caribbean with friends and “bumping into” old Cambridge friends on some sparsely populated island.

Jordan’s prize war story was during the Battle of the Bulge. One of the repeater amplifiers along the line failed. He drove at top speed to the nearest Army supply depot to obtain a replacement, only to learn that they did not have the part. A Marine supply depot was not far away. Jordan went there, learned they had the part, but they refused to give it to him without a written request. He threatened and, by hook or by crook, got the part. Communications were quickly restored to General Patton’s headquarters to announce the end of the war in Europe. Jordan received a medal. There were other brave exploits, and Jordan ended his service with a box of medals and the rank of technical sergeant. One of his most memorable and nightmarish experiences in the war was to witness the liberation of the Buchenwald concentration camp in 1945.

After the war, under the G.I. Bill, Jordan attended MIT as an electrical engineering student, beginning in his junior year. He received his bachelor's and master's degrees in 1948. For his master's thesis he designed a high-speed polariscope for analysis of dynamic stresses, while a co-op student at General Radio Company. When he took Professor Leo Beranek's course, "Acoustics 101," in the electrical engineering department, he became very interested in the subject and asked so many questions during class that he had to be told to give the others a chance.

With his master's degree, his G.I. Bill money would run out and he was prepared, reluctantly, to leave MIT. Jordan was forever grateful for Beranek's help. Professor Beranek encouraged him to go for his doctorate and arranged for him to get the Armstrong Cork fellowship and other assistance. He received scholarships in the MIT Acoustics Laboratory during the next two years. Jordan had already taken most of the courses in the electrical engineering department, so he chose to register jointly in three departments: electrical engineering, mechanical engineering, and physics. He became Beranek's first doctoral student. His thesis work was in the Acoustics Laboratory, where he set up a novel means for measuring the sound isolation of building partitions. Defense of his thesis exam involved a committee with members from all three departments. One committee member said that Jordan was a stellar candidate and answered questions in all three fields, not responding incorrectly to any. Jordan was appointed an assistant professor of electrical engineering at MIT the next year. During that year he invented what became known as the Baruch-Lang loudspeaker, which he patented. It was a corner loudspeaker, with 4-inch loudspeakers in a vented half-a-cubic-foot box. It received much acclaim, and several thousand were sold.

The firm Bolt and Beranek was formed in 1948 and was subsequently renamed Bolt Beranek and Newman (BBN). The business grew rapidly, and in the summer of 1951 Jordan became a full-time employee. He seemed to know everything and was quick to offer help to anyone on an eclectic array

of subjects, from health and gardening to automobiles and electronics equipment. He assisted in carrying out a number of consulting jobs. This led to his invention of a structure for reducing noise in ventilating ducts, called SOUNDSTREAM. This patented design was licensed to two manufacturers. In 1952, Jordan and Sam Labate were admitted into the partnership, although the firm's name was not changed. In December 1953, with 39 employees, the company was incorporated. Bolt was named chairman, Beranek president, Labate vice president, and Baruch treasurer. Government contracts started to pour in from the U.S. Army, Navy, National Institutes of Health (NIH), National Science Foundation, and U.S. Department of Defense. BBN grew quickly. The U.S. government decided to make the BBN contracts uniform and set up a contract conference at BBN. Government procurement regulations involved a number of volumes that occupied a 3-foot shelf. Jordan, with his photographic memory, sat down and read the entire set. When the contract negotiators arrived, they found him to be better informed than they were. At the end of the second day, the government people came out of the meeting obviously overwhelmed by Jordan's proficiency. Soon BBN had more government contracts than any other firm in New England.

In 1961 it became apparent that BBN needed cash for expansion. As treasurer, Jordan worked with the auditors to produce a prospectus. An investment banker had to be selected, and Jordan and Beranek interviewed several candidates. On June 27, BBN made its initial public offering with Hemphill Noyes as the winner, taking BBN public at \$12 a share.

While at BBN, Jordan was a consultant to NIH. In addition to acoustical consulting for the new clinical center, he designed a colorimeter for monitoring blood during cardiac surgery and developed a novel lighting system used in neurosurgery. He designed other instruments for the medical fields. His friend at NIH and director of the clinical center, Dr. Jack Mazur, persuaded him to work on a computer system for medical records.

Jordan took an interest in the new computer field that BBN was pioneering and that was called "time sharing." With time sharing, many operators could use a single computer, sharing data as needed. Baruch soon envisioned this as a means of bringing computer technology to bear on medical practice. In 1962, contracts were obtained from NIH and the American Hospital Association to install a demonstration computer system for the information processing needs of Massachusetts General Hospital (MGH) in Boston. As Professor Octo Barnett, director of computer science at MGH, has written: "BBN's time-sharing technology was at the cutting edge of computer science, and its use at MGH was one of the first demonstrations of the potential power of remote access to a real, online data base." With Baruch as parent, the system allowed nurses and doctors to create and access patients' records at a number of hospital stations, all connected to a central station. When Jordan was installed as a regent of the National Library of Medicine, he was introduced as the father of medical informatics.

Hospital use of computers looked so promising that in 1966 General Electric set up a new department to merchandise hospital computer systems, called MEDINET. G.E. hired Baruch as department general manager, and he left BBN to go to the new building in Watertown, Massachusetts. Unfortunately, after a period of time, G.E. mandated that a Digital Equipment Corporation computer could no longer be used (like the one in use at MGH). Instead, Jordan was required to adapt a midrange G.E. computer system for the project. This was a computer that G.E. had been unable to sell. Jordan and the staff members he had hired tried desperately to modify it in a reasonable length of time but found it impossible. Baruch developed, specifically for MEDINET, a computer programming language called FILECOMP. In 1968, Jordan left General Electric.

From 1968 to 1970, Jordan was president of Educom, a consortium of 100 colleges and universities. Educom's goal was to help institutions adopt networking, computation, and storage in the four principal college and university application areas: administrative systems, teaching and learning, research,

and community services. Jordan was particularly interested in a system for sharing library resources, using microfiche technology. The universities were not ready to enter this cooperative venture. In 1970 he resigned so that he could work full time as an independent consultant.

From 1971 to 1974, Baruch was a lecturer in business administration at the Harvard School of Business Administration, where he could develop his ideas about the management of technological innovation. His success there led him to Dartmouth College, where he held a joint professorship at the Tuck School of Business and the Thayer School of Engineering from 1974 to 1977.

In 1963, Jordan had joined a group of 30 leading citizens from the Boston area who applied for a license to operate a television station on Channel 5 in Boston. They were successful, and the station went on the air in 1972. It was featured in a two-page article in the *New York Times* as “probably the best television station in the U.S.” In 1982 the station was sold to MetroMedia, and Jordan’s share in the receipts made him well off. Afterward, he joined with his longtime friends Isaac Auerbach and William Poorvu, as well as Howard Stevenson from the Harvard Business School, to form an investment firm—The Baupost Group. Under the leadership of Seth Klarman, it has been highly successful. Jordan remained a partner until he died.

While Jordan was at Dartmouth, he was invited, along with other experts from around the country, by Under Secretary of Commerce Sidney Harman to participate in a seminar in Washington, D.C., to discuss the federal government’s role in fostering innovation. As Harman relates in his memoir, *Mind Your Own Business* (Crown Business, 2003), Baruch stood out above the others, and Harman invited him to join the Carter administration as assistant secretary of commerce for science and technology. He moved to D.C. in 1977.

In his new position, Baruch aimed to foster innovations and competitiveness in the United States. He led efforts to modernize the Patent and Trademark Office, to transfer and expand the Bureau of Standards into the National Institute

for Standards and Technology, and to examine industrial innovation. While at the Commerce Department, he worked with eminent industry leaders to establish the Commerce Technical Advisory Board, and they provided President Carter with an "Innovation Study" useful for that and subsequent administrations.

Early in the administration, Baruch went on an Institute of Electrical and Electronics Engineers (IEEE) mission to China to visit business fairs and factories. When, shortly after that trip, the United States and China were about to sign an agreement about transfer of science and technology, Baruch voiced his concern that without management reform there would be little advancement in productivity and the standard of living of the Chinese people. His concern was based on observations he and his colleagues had made on the IEEE visit. The Chinese were very responsive and followed Baruch's recommendation to establish a school of management jointly with the United States. Baruch was authorized to help hire staff, including American professors and case writers for the new school in Dalian, China. It was the first example of management education in the People's Republic of China.

Professor Bill Dill, first dean of the faculty at the National Center at Dalian University of Technology, as it came to be called, wrote of how the programs had grown, "built solidly on the conceptual foundation and guidelines for implementation that Jordan provided" (letter to Rhoda Baruch, Nov. 29, 2011). He recalled that Jordan had negotiated for a computer from Control Data Corporation and for a Xerox copier to be provided for the Dalian campus, the first such machines for that part of the world. In writing about Baruch's 1979 mission to China, Bruce Merrifield, who followed Jordan in the same position at the Commerce Department, referred to it as a "critical turning point for the country" (letter to Rhoda Baruch, Nov. 18, 2011). Merrifield wrote that "most of China's leaders are graduates of that school."

Another major achievement of Baruch while at the Commerce Department was the establishment of the Binational Research and Development Foundation (BIRD-F)

in Israel, which Merrifield stated “may have been of even greater significance” than the Chinese management school. In addition to being a primary engine for the remarkable Israeli economy, BIRD-F became the model for similar programs in India, Chile, Finland, Ireland, and Iceland. Much of this was done under Merrifield, but the initial model was Baruch’s. Merrifield wrote: “BIRD-F has now become the primary model which incrementally will be assisting some 80% of the world’s 7 billion population, living in underdeveloped countries, to develop their economies as well! What a legacy!”

After leaving Commerce, Jordan established a consulting firm in Washington, D.C., called Jordan Baruch Associates. The firm has served industry and government in the planning, management, and integration of strategy and technology. Jordan also served on the Board of Regents of the National Library of Medicine. He was involved in efforts to develop industry strategies and to increase innovation in India, Indonesia, and Israel. Baruch told of a humorous incident: “I was involved in starting another management school in the country Jordan despite the fact that ‘Baruch’ is a Hebrew word well known in the Arab world. At the end of the conference program, Crown Prince Hassan asked me, ‘Dr. Baruch, this has been wonderful. What can we do for you?’ I responded, ‘I’d like the school named for me.’ There was dead silence. Before anyone’s heart could stop I said, ‘Yes, I would like it called the Jordan Institute.’ Crown Prince Hassan just smiled and said, ‘Done.’ And that is what it is called.”

Baruch was associated with many organizations. In 1956 he was awarded the Outstanding Young Electrical Engineer Award from Eta Kappa Nu. He was a fellow of the Acoustical Society of America, the IEEE, the American Academy of Arts and Sciences, the American Association for the Advancement of Science, and the New York Academy of Sciences. His greatest interest was the National Academy of Engineering (NAE) to which he was elected in 1974 and served on 24 committees after 1982. Of these he chaired the following: General Engineering Peer Committee, Subcommittee on Educational Systems, Board on Telecommunications/Computer Applications, and Panel

on Techniques for Affordable Housing. In 2007 he received the NAE's Arthur M. Bueche Award for "the promotion of innovation and managing of science and technology nationally and internationally, thereby enhancing the economy of the U.S. and developing nations."

Finally, Jordan worked in Africa, India, Indonesia, and Jordan, and he was honored by China and Israel. He founded the Transatlantic Institute of the American Jewish Committee and was a member of the American boards of Ben-Gurion University and the Israel Oceanographic and Limnological Research Foundation. In 2005 he established at MIT the Jordan J. Baruch Fund to support undergraduates conducting research for the Undergraduate Research Opportunities Program in the School of Engineering and the School of Science. Recipients of the fund are known as Baruch Undergraduate Researchers. Jordan held 12 patents and authored many articles. He coauthored the book *The Innovation Explosion* (Free Press, 1997) with James Brian Quinn and Karen A. Zien. He served as president of his synagogue, Adas Israel, in Washington, D.C., and was appreciated as a member of his neighborhood book club in Chevy Chase, Maryland. He was also a member of the Cosmos Club for many years.

Jordan was a loving husband and partner for 67 years to Rhoda Wasserman Baruch; an active and caring father to Roberta Baruch (Bethesda Maryland), Marjory Baruch (Fayetteville, New York), and Lawrence Baruch (Parsippany, New Jersey). He passed on to his grandchildren a joy for life, a curiosity for understanding, a passion for tinkering, and an appreciation of art, science, and nature, while endowing them with a sense of responsibility for family and the world. His grandchildren (Mina, Solomon, and Sabrina Hsiang; Rebecca, Max, and Julia Ostrov; and Benjamin, Alexander, and Rachel Baruch) treasured their relationship with Grandpa.