Harold Chestnut (1918-2001)

On 29 August 2001, Harold Chestnut died at the age of 83 in Schenectady, NY, the town in which he spent essentially all of his long and productive life. He earned B.S. and M.S. degrees in electrical engineering from MIT in 1939 and 1940 and received honorary doctorates in engineering from Case Institute of Technology in 1966 and Villanova University in 1972. He began a lifelong career in the control field with the General Electric Company in 1940. During World War II, he was both a student and instructor in GE's well-known Advanced Engineering Program.

Chestnut's early control work concerned stability issues in electric power systems. The design and manufacturing of electric power system components, generators, transformers, motors, and the like, was a major part of GE's activity then and now. During World War II, he moved into the aeronautics and ordinance divisions and remained there until 1956. In 1951, he coauthored, with R.W. Mayer, *Servomechanisms and Regulating Systems Design, Vol. 1*, the leading text in the field for many years. He later wrote a second volume, as well as *System Engineering Tools* and *System Engineering Methods*.

Dr. Chestnut was active in the formation of the International Federation of Automatic Control (IFAC), which grew out of discussions started in 1956 among representatives from West Germany, the U.S.S.R., France, the United Kingdom, Poland, and the United States. He was IFAC's first President in 1957-1959 in a cold-war compromise that gave the United States the first presidency and the U.S.S.R. the first International Congress in Moscow in 1960.

In 1961, Dr. Chestnut served as Co-chair of the Honorary Editorial Advisory Board of *Automatica, The International Journal on Automatic Control and Automation,* which later became the official journal of IFAC. He also was Editor of a John Wiley book series on systems engineering and analysis.

Dr. Chestnut continued with GE until he retired in 1983. Major assignments included Manager of the Systems Engineering and Analysis Branch of the Advanced Technology Laboratory working on a wide variety of technical problems such as reliability issues in rapid transit and the Apollo mission to the moon. Later in his career, he returned to the field of electric power, with a focus on power systems automation.

Following retirement, Dr. Chestnut concentrated on one of his longtime passions in the control field: the potential for control concepts to provide insight into problems of international stability. His dedication to the use of control concepts in societal problems arose from his success in working with representatives from many countries to set up IFAC and with proud representatives from various U.S. engineering societies to set up the American Automatic Control Council (AACC). Two years before his retirement, Dr. Chestnut received the prestigious Honda Prize for ecotechnology and with it a substantial financial award. After retirement, he used this fund to create the "SWIIS Foundation," a private foundation devoted to identifying and implementing "supplemental ways to improve international stability." He devoted the last productive years of his life to this effort.

Before 1963, Dr. Chestnut chaired the American Institute of Electrical Engineers (AIEE) Technical Committees on Automatic Control and on Systems, Man, and Cybernetics. He was President of the Control Systems Society after the AIEE and the Institute of Radio Engineers (IRE) merged in 1963 to form the IEEE and later had several other leadership roles in the IEEE, culminating in his term as IEEE President in 1973. He was a Fellow of the AIEE, the Instrumentation, Systems, and Automation Society, and the American Association for the Advancement of Science. He was elected to the U.S. National Academy of Engineering in 1974, and he was selected as a Case Centennial Scholar in 1980. He won the IEEE Centennial Medal in 1984 and the AACC Bellman Heritage Award in 1985.

On the personal level, Harold Chestnut is remembered as a quiet but persistent man. Once he determined something ought to be done, he worked until he found a way to make it happen. He viewed life as one large control system that needed to be nudged from time to time to keep it running smoothly and on course. He was a devoted family man who enjoyed hiking and sailing with his family, especially at their cottage on Schroon Lake in the Adirondacks.

Harold Chestnut will be long remembered for his technical contributions to the field of systems and control, for his leadership in getting people from diverse backgrounds to work together, and for setting up institutions that foster ongoing cooperation for the solution of engineering and societal problems.

(These remarks are based, with permission of the editor, on a notice prepared by Stephen Kahne for publication in *Automatica*, with additional contributions from Gene Franklin, William R. Perkins, Leonard Shaw, and Austin Spang.)