CHEMICAL HERITAGE FOUNDATION

ROBERT E. FINNIGAN

Transcript of an Interview
Conducted by

David C. Brock

at

Los Altos, California

on

4 December 2001

(With Subsequent Corrections & Additions)

CHEMICAL HERITAGE FOUNDATION
Oral History Program
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(Signature) Robert E. Finnigan
Robert E. Finnigan

(Date) _____

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Chemical Heritage Foundation
Oral History Program
315 Chestnut Street
Philadelphia, Pennsylvania 19106

ROBERT E. FINNIGAN

1927 Born in Buffalo, New York on 27 May

Education

1949 B.S., United States Naval Academy
1954 M.S., electrical engineering, University of Illinois
1957 Ph.D., electrical engineering, University of Illinois

Professional Experience

United States Air Force
1949-1954 2nd Lieutenant, 1st Lieutenant with assignments to strategic Air Command, University of Illinois (student officer), U. S. Air Force Institute of Technology (Instructor), Ph.D. Special Student
1954-1959 Captain

University of California-Lawrence Livermore Laboratory
1957-1959 Head, Nuclear Reactor Control Group
1959-1962 Senior Scientist

Stanford Research Institute
1962-1963 Senior Research Engineer

Electronic Associates, Inc.
1963-1967 Director, Scientific Instruments Division, Palo Alto, CA

Finnigan Corporation
1967-1990 Founder, President, Vice Chairman, Senior Vice President
1990-present Vice Chairman Emeritus, Consultant

Honors

1975 Distinguished Alumnus Award, Department of Electrical and Computer Engineering, University of Illinois
1980 Alumni Honor Award for Distinguished Service in Engineering, College of Engineering, University of Illinois
1994 Pioneer in Analytical Instrumentation-Mass Spectrometry, Society for Analytical Chemists of Pittsburgh and Pittsburgh Conference on Analytical Chemistry

1999 Winston Churchill Medal of Wisdom
1999 Wisdom Hall of Fame
1999 Instrumentation Hall of Fame, Pittsburgh Conference on Analytical Chemistry and Analytical Chemistry Society
2002 Robert E. Finnigan Professorship established at Keck Graduate Institute of Applied Life Sciences, Clairmont, CA, by outside donors to Keck

ABSTRACT

Robert E. Finnigan begins the interview with a description of his family and childhood years in Snyder, New York. Finnigan developed an interest in military service and science while reading *The Dave Darrin Series* about a new recruit at the United States Naval Academy [USNA] and while building World War II model airplane replicas as a young boy. After entering the USNA in 1945, Finnigan became fascinated with electronics and realized that he wanted to continue his electrical engineering [EE] education at a graduate level, so he enrolled in an Air Force Institute of Technology program, which allowed qualified officers to enter graduate school after three years of service. While in the AFIT program, Finnigan met and married Bette E. Finnigan. In 1952, Finnigan became a "student officer" in EE at the University of Illinois at Urbana. After receiving his Ph.D. in 1957, Finnigan joined the Lawrence Livermore National Laboratory [LLNL], formerly the Lawrence Livermore Radiation Laboratory. While at LLNL, Finnigan worked on the development and application of nuclear ramjet reactors such as the TORY II-A and TORY II-C. Subsequent to working on ramjet reactors for five years, Finnigan decided to pursue process controls research at SRI [Stanford Research Institute]. At SRI, Finnigan became interested in the prospects for the quadrupole mass spectrometer as an advanced instrument for process control. As awareness of the quadrupole grew, Finnigan and his division were persuaded by EAI [Electronic Associates Incorporated] to leave SRI in order to start a process-systems group and quadrupole development. Finnigan remained at EAI, in the Scientific Instruments Division producing quadrupoles for academic and industrial use, for four years. In 1967, Finnigan resigned after EAI's attempt to sell the Scientific Instruments Division failed and EAI rejected his idea to venture into the GC-MS [gas chromatography mass spectrometry] market. Later that same year, Finnigan formed Finnigan Corporation with assistance from Roger Sant and T. Z. Chu. Via Finnigan Corporation, Finnigan continued to research and develop quadrupoles and GC-MS. Finnigan concludes the interview with a discussion of his hobbies and family, reflections on Thermo Instrument Systems' acquisition of Finnigan Corporation, and thoughts on the Finnigan Corporation of today.

INTERVIEWER

David C. Brock is Program Manager for Educational and Historical Services at the Chemical Heritage Foundation in Philadelphia. He is currently a Ph.D. candidate in the History Department, Program in the History of Science at Princeton University. In 1995, Mr. Brock received his M.A. in the History of Science from Princeton University and in 1992, he earned a M.Sc. in the Sociology of Scientific Knowledge from the University of Edinburgh.

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NOTES

1. Jonathan Swift, *Gulliver's Travels*, edited with an introduction and notes by Paul Turner (New York: Oxford University Press, 1998).

2. For example see Franklin W. Dixon, *The Hardy Boys: The Mark on the Door*, illustrated by J. Clemens Gretta (New York: Grosset & Dunlap, 1934).

3. For example see H. Irving Hancock, *The Dave Darrin Series*, (Philadelphia: Henry Altemus Company, 1914-1919).

4. Robert Emmet Finnigan, "Transient Analysis of Nonlinear Servomechanisms Using Describing Functions With Root-Locus Techniques," Ph.D. diss., University of Illinois, 1957.

5. Edward C. Jordan and Keith G. Balmain, *Electromagnetic Waves and Radiating Systems* (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1968).

6. Allan E. Lee, Robert E. Finnigan, and P. Michael Uthe, Jr., "Market for Industrial Process Instruments and Controls, 1960 through 1966," SRI Project No. 1E-3914, Final Report, August 1962.

7. P. M. Uthe, Jr. and R. E. Finnigan, "RF Quadrupole Mass Spectrometer for Process Control," SRI Project No. ES 62-106, Proposal for Research, November 1962.

8. Robert E. Finnigan, P. Michael Uthe, Jr., and Allan E. Lee, "Modern Process Control," *International Science and Technology* (April, 1963).

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10. See Note 6.

11. Maynard B. Neher, *Summary Report on Evaluation of Gas Chromatography/Mass Spectrometer/Computer Systems to Water Quality Office, EPA* (Columbus, Ohio: Battele Columbus Laboratories, 1971).

12. Lawrence H. Keith and William A. Telliard, "Priority Pollutants I – A Perspective View," *Environmental Science and Technology* 13 (1979): 416.

13. Robert E. Finnigan, David W. Hoyt, and David E. Smith, "Priority Pollutants II – Cost Effective Analysis," *Environmental Science and Technology* 13 (1979): 534-541.

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