



## Guide to the Hewitt D. Crane papers

**Creator:** Hewitt D. Crane

**Dates:** 1959-2005

**Extent:** 5 linear feet, 4 record cartons

**Collection number:** X4338.2008

**Catalog number:** 102733959

**Collection processed by:** Bo Doub and Kim Hayden, 2015

**Finding aid prepared by:** Bo Doub and Kim Hayden, 2015

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### **Abstract**

The Hewitt D. Crane papers document Crane's time as an engineer and inventor at Stanford Research Institute (later renamed SRI International), from 1956 to 2005. Included in the collection are materials related to some of the systems and products he developed, including all-magnetic computing and logic systems, the Purkinje Image Eye-Tracker, handwriting verification systems, and auditory neuroscience systems. Also included are manuscripts for his book "A Cubic Mile of Oil: Realities and Options for Averting the Looming Global Energy Crisis" and a history of the winery he co-founded, Ridge Vineyards.

## Administrative Information

### Access Restrictions

The collection is open for research.

### Publication Rights

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### Languages

Collection materials entirely in English.

### Preferred Citation

[Identification of Item], [Date], Hewitt D. Crane papers, Lot X4338.2008, Box [#], Folder [#], Catalog [#], Computer History Museum.

### Immediate Source of Acquisition

Gift of Hewitt D. Crane family, 2007.

### Repository

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## Biographical/Historical Note

Hewitt D. Crane was born in Jersey City, New Jersey, in 1927. After serving in the United States Navy as a radar technician during World War II, Crane studied electrical engineering at Columbia University, earning his BS in 1947, and Stanford University, earning his doctorate in 1960. Crane's first jobs in the computer industry were debugging an early facsimile system at Western Union Research Laboratory (1948 to 1949), maintaining one of IBM's earliest computers (the SSEC) (1949 to 1952), working on the IAS computer project led by John von Neumann at the Institute for Advanced Study (1952 to 1955), and working on magnetic-core memories at Sarnoff Research Laboratory (1955 to 1956).

In 1956, Crane moved to SRI International in Menlo Park, California, where he spent the rest of his career. His first project at SRI was helping with the creation of ERMA (Electronic Recording Machine, Accounting), a pioneering automated check processing system for Bank of America. Later projects included the study and development of all-magnetic computing and logic systems (a prototype of a very early all-magnetic computer is in the collection of CHM), automatic focus optical systems, the Purkinje Image Eye-Tracker, handwriting verification systems, optical character recognition, and auditory neuroscience. Crane was one of SRI's most prolific

inventors with more than 70 patents and 70 published papers to his name. "A Cubic Mile of Oil: Realities and Options for Averting the Looming Global Energy Crisis," a book he authored with fellow SRI scientists Edwin Kinderman and Ripudaman Malhotra, was published posthumously in 2010. In addition to his computer engineering career, Crane co-founded Ridge Vineyards in Cupertino, California, in 1959. He died June 17, 2008, in Portola Valley, California.

### **Scope and Content of the Collection**

The Hewitt D. Crane papers contain materials collected and primarily authored by Crane during his time as an engineer at Stanford Research Institute (later renamed SRI International). Included in the collection are technical papers written by Crane, correspondence, grant applications, personal narratives, and SRI International records relating to client contracts and project proposals. The records span 1959 through 2007 with the bulk of the collection being from the early 1960s to the late 1980s. Highlights in the collection include notes, articles, and contract agreements regarding Crane's handwriting recognition system and eye tracking technology. Also of interest are research and articles on all-magnetic computing systems, including one co-written by Crane and Douglas Engelbart, and a wide variety of explorations of human-computer interaction and sensory augmentation via computing systems. The collection contains very little documentation regarding Crane's work on ERMA (Electronic Recording Machine, Accounting) – SRI's project for Bank of America to automate its check-processing operations. Mentions of ERMA are limited to Crane's biographical narratives.

### **Arrangement**

The collection is arranged into 2 series:

- Series 1, Writings, 1959-2005, bulk 1960-1990
- Series 2, SRI proposals and contracts, 1972-1982

### **Indexing Terms**

Crane, Hewitt D.  
Electrical engineering  
Eye tracking  
Magnetic logic  
Optical character recognition  
Stanford Research Institute  
SRI International

### **Related Collections at CHM**

The Computer at the Institute for Advanced Study, photograph, Lot X2556.2003, Catalog number 102707323.

Magnetic logic computer, Lot X2915.2005, Catalog number X2915.2005.

SRI ARC/NIC records, Lot X3578.2006, Catalog number 102706170.

### **Collection Contents**

#### **Series 1, Writings, 1959-2005, bulk 1960-1990**

This series contains technical papers, correspondence, and personal narratives written by Crane. Most of the papers in this series, authored by Crane during his long career at SRI International, cover engineering topics including all-magnetic computing systems, eye tracking technologies, optical character recognition, auditory neuroscience, and alternative energy. Also included in this series are correspondence and clippings from articles sent between Crane and

various individuals, which Crane arranged alphabetically. Correspondents with last names starting with letters J through Z are included, but letters A through I were not part of the donation. Lastly, this series contains autobiographical narratives and the history of a vineyard in Cupertino called Ridge Vineyard, which was co-owned by Crane. Of particular interest in this series is a technical paper co-written by Crane, David R. Bennion, and Douglas Engelbart titled, "A Bibliographical Sketch of All-Magnetic Logic Schemes." This series is arranged alphabetically by title.

**Series 2, SRI proposals and contracts, 1972-1982**

This series contains materials that document SRI International's contracted projects, product development proposals, proposals to prospective clients, grant applications and grant proposals, and legal agreements from 1972 through 1982. A large part of the series deals with handwriting recognition systems developed by Crane, including documentation on a licensing agreement with Tymshare and contracted projects with the U.S. Navy, Sandia Laboratories, and the National Bureau of Standards. Also included are papers on construction of the eye tracker that Crane developed, an application for a National Science Foundation grant, and product proposals for the gait plate -- a personal identification system based on a person's gait -- and a probe created to measure three-dimensional force. This series is arranged alphabetically by folder title.

## Folder List

Hewitt D. Crane papers

X4338.2008

	<u>Catalog Number</u>	<u>Title</u>	<u>Date</u>
	<b>Writings</b>		
<b>Box 1</b>	102734090	A Cubic Mile of Oil manuscript and notes	1989-2006
<b>Box 1</b>	102734097	Beyond the Seventh Synapse: The Neural Marketplace of the Mind	1978-1988
<b>Box 1</b>	102734093	Biographical information	1962; 1981; 2007
<b>Box 1</b>	102734101	Bubbles, balloons, capillaries, and alveoli	1959-2004
<b>Box 1; 2</b>	102734089	Correspondence and clippings	ca. 1966-2002
<b>Box 3</b>	102734088	Hearing research, acoustics, and auditory neuroscience	1960-1996
<b>Box 3</b>	102734092	Magnetic logic	1959-2004
<b>Box 3</b>	102734099	Neural theory	1964-1992
<b>Box 3</b>	102734102	Neuristor logic	1960-1986
<b>Box 3</b>	102734098	Pattern and optical character recognition	1973-1991
<b>Box 2</b>	102734096	Purkinje eyetracker	1959-2005; bulk 1978-1983
<b>Box 4</b>	102734095	Ridge Vineyard	1993
<b>Box 4</b>	102734100	Sociology, alternative energy, eye tracking, auditory neuroscience, and Fibonacci numbers	1976-2001
<b>Box 4</b>	102734087	Speech recognition	ca. 1985-1996

	<u>Catalog Number</u>	<u>Title</u>	<u>Date</u>
	<b>SRI proposals and contracts</b>		
<b>Box 4</b>	102734107	Eyetracker construction	1980
<b>Box 4</b>	102734108	Grant correspondence	1980
<b>Box 4</b>	102734103	National Bureau of Standards contracts	1975-1977
<b>Box 4</b>	102734109	National Science Foundation grant records	1972-1978
<b>Box 4</b>	102734105	Office of Naval Research contracts	1979-1980
<b>Box 4</b>	102734110	Product and client proposals	1980-1982
<b>Box 4</b>	102734104	Sandia contracts	1975-1978
<b>Box 4</b>	102734111	Tymshare handwriting verification system licensing agreement	1976
<b>Box 4</b>	102734106	U.S. Navy contracts	1975-1977
<b>Box 4</b>	102734112	Visual Science Foundation limited partnership agreement	1980-1981