Guide to the Ralph H. Baer Papers

NMAH.AC.0854

by Cory Bernat and Alison Oswald

2008

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Collection Overview

Repository: Archives Center, National Museum of American History
Creator: Baer, Ralph H., 1922-2014
Title: Ralph H. Baer Papers
Dates: 1943-2006
Quantity: 3 cubic feet, 11 boxes and 1 oversize folder, includes videocassettes, compact discs, and audio cassettes
Abstract: Ralph H. Baer was a German-born ordnance specialist, inventor, and engineer. He was a pioneer of early videogame technology. The papers include autobiographical materials; firearms notes, manuscripts, and photographs; and videogame and television engineering notes, diagrams, schematics, and video documentation.
Language: Collection text is in English.

Administrative Information

Acquisition Information
The collection was donated by Ralph H. Baer in 2003.

Provenance Information
Working in consultation with Ralph Baer from 2002-2005, David Winter provided important assistance in the discovery, identification, and organization of additional videogame history documentation relating to Ralph H. Baer, held at the Chicago law firm of Leydig, Voit & Mayer.

Separated Materials
The Division of Medicine and Science holds artifacts related to this collection including early video game prototypes and TV Game products.

TV Game Unit #1 (TVG#1); 1966; vacuum tube spot generator with Heathkit IG-62 Generator (See Accession 2006.0102.01)

Heathkit IG-62; used with TVG #1 (See Accession 2006.0102.02)

TV Game Unit #2 (TVG #2), aka the "Pump Unit," 1967; large aluminum chassis with wooden "pump" handle (See Accession 2006.0102.03)

TV Game Unit #7 (TVG#7), aka "Brown Box," 1967/1968; prototype for Magnvox Odyssey (See Accession 2006.0102.04)

Cardboard program cards for use with Brown Box (See Accession 2006.0102.05)
Lightgun, 1967/1968; game accessory for Brown Box (See Accession 2006.0102.06)

TV Game Unit #8, 1968; "de/dt" (velocity responsive) ballgame chassis for use with Brown Box (See Accession 2006.0102.07)

Magnavox Odyssey (Model ITL200) video game unit, 1972; with all accessories in the original carton (See Accession 2006.0102.08)

Milton-Bradley Company SIMON handheld microprocessor-control game, 1978 (See Accession 2006.0102.09)

Ideal Toy Company MANIAC microprocessor-control game, 1979, in original box with game instructions (See Accession 2006.0102.10)

Golf Game accessory, 1968; golf ball mounted on joystick handle for use with Brown Box (See Accession 2006.0102.11)

"Brown Box" programming card, target shooting, 1967 (See Accession 2006.0102.12)

Related Material

Materials at the Archives Center, National Museum of American History

Ralph H. Baer Innovative Lives Presentation, August 15, 2009 (AC1179)

The presentation documents a moderated conversation about Baer's life and work. Baer reenacts, with his partner William Harrison, the first time he played "Odyssey", the first home video game for the consumer market, which he invented, and answers questions from the audience. Materials include original video (born digital), master videos, and reference videos.

Materials at Other Organizations

Brian Sutton-Smith Library and Archives of Play at The Strong

Ralph H. Baer Papers, 1968-2010 inclusive; 1975-1998 bulk

The Ralph H. Baer papers are a compilation of correspondence, game designs, drawings, notes, reference materials, photographs, product descriptions, digital videos, schematics, electronic components, and manuals utilized by Ralph H. Baer throughout his lengthy career in the toy and game industry. The bulk of the materials are from 1975 through 1998.

U.S. Ordnance Museum, Fort Lee, Virginia

Materials consist of data on foreign small arms brought back from Europe in 1946 by Ralph H. Baer.

Available Formats


Processing Information

Series 2 processed by Alison L. Oswald, archivist, 2003; Series 3 processed by Tiffany Draut, 2008; Series 1 and 4 processed by Cory Bernat, March 2006; supervised by John Fleckner, archivist.
Biographical Note

Ralph H. Baer (1922-2014) was born in Germany and immigrated to the United States with his family in 1938. A graduate of the National Radio Institute (1940), Baer worked as a radio technician in the New York City area servicing all types of home and auto radios. During World War II, Baer served in the United States Army, one year stateside, and two years in Europe. He was assigned to Military Intelligence and became an expert on military small arms. Baer returned to the United States with eighteen tons of foreign small arms for use in exhibits at Aberdeen, Maryland, Springfield, Massachusetts Armory and Ft. Riley, Kansas.

After the war, Baer attended the American Television Institute of Technology in Chicago, graduating with a BS in television engineering. In 1949, Baer joined a small electro medical equipment firm, Wappler, Inc., as their chief engineer. He designed and built surgical cutting machines, epilators, and low frequency pulse generating muscle-toning equipment. In 1951, Baer moved to Loral Electronics of Bronx, New York as a senior engineer designing power line carrier signaling equipment for IBM. During 1952-1956, Baer worked at Transitron, Inc., in New York City as a chief engineer and later as vice president. In 1956, Baer joined Sanders Associates in Nashua, New Hampshire building airborne radar components. He became manager of the Electronic Design Department at Sanders and eventually Division Manager and Chief Engineer for Equipment Design. Baer retired in 1987.

At Sanders in 1966, Baer began an independent project experimenting with ways for consumers to interact with standard home television sets. Development of interactive TV Game (TVG) ideas became a company-supported project continued by Baer and assisted by William H. Harrison and William T. Rusch (download the TV game chronology prepared by Ralph Baer in 2006). By mid-1967, ping pong videogames were played inside Sanders, patent disclosures were applied for, and hardware was designed. Baer and his associates called the devices they were developing "boxes" and numbered the various versions one through seven. In 1971, Magnavox became Sanders Associates' first videogame licensee. Between 1972 and 1975, Magnavox produced and sold over 700,000 units of Odyssey, a set of games played on its television receivers. Atari became a licensee in 1976 after the first of many lawsuits won by Sanders in pursuit of patent infringements.
During his tenure at Sanders and thereafter, Baer has been a prolific inventor. His creations include many electronic toys and games and other consumer electronic products. Among the better known product based on Baer's work are Milton Bradley's Simon, Galoob's Smarty Bear Video, and Kenner's Laser Command. In 2004 President George W. Bush awarded Baer the National Medal of Technology.

Baer married Dena Whinston in 1952 and they had three children, James, Mark, and Nancy.

Scope and Content Note

The Ralph Baer Papers include autobiographical materials and an extended oral history interview. The Papers also include materials about military small arms created by Baer during his World War II service. The largest portion of the collection documents Baer's work on video games.

Series 1, Autobiographical Documents, 2000-2006, provides detailed documentation of Baer's life. An unpublished autobiographical manuscript, One Inventor's Odyssey: The Life Story of an Engineer and Inventor (463 pages), is found in hardcopy and, in several versions, as electronic text on a CD. Baer's book, Videogames: In the Beginning, 2005 (Rolenta Press, 2005), draws on the manuscript and reproduces many of the documents in Series 4. David Allison, Chair and Curator of the Museum's Division of Information Technology and Communications, was the principal interviewer in an April, 2003 oral history with Baer. Lasting approximately three hours, the interview focuses on Baer's work with television video games but also touches on his life history, his other inventions, the invention process, and the legal complexity surrounding his inventions. There are original and reference audio tapes and an abstract and summary of the interview.

Series 2, WWII Small Arms Documents, 1943-1953, consists primarily of textual information and photographs gathered on European small arms during Baer's military service. The information was used in preparing training courses for military intelligence schools in England and France. One folder of correspondence documents Baer's efforts to publish some of his writings on machine guns and other arms.

Series 3, Hans Otto Mauksch Materials, 1944-1964, consist primarily of textual documents and photographs describing the Military Intelligence group activities during World War II in Europe. Hans Otto Mauksch (1917-) and Ralph Baer were assigned to the Military Intelligence Training team (12th Reinforcement Depot) during World War II in Europe. Baer met Mauksch on the Mata Roa, a British freighter while traveling from New York to Liverpool in 1944.

Hans O. Mauksch was the leader of the Military Intelligence group in England and was the first to conceive of the idea of a military intelligence team to train troops on enemy subjects. Sent to Europe in February 1944, Mauksch led an effort to amass enemy weapons for the purposes of establishing a museum in Tidworth, England, to train officers and enlisted men to handle enemy weapons and to learn quickly their characteristics and capabilities. Ultimately, a small arms museum was established in France and then arms were shipped to the United States to establish small arms exhibits, particularly at Ft. Riley, Kansas.

Series 4, TV Game Documents, 1966-1972, consists of records created during Baer's work on interactive television games at Sanders Associates. The records include notes, drawings, engineering schematics, laboratory notebooks, and administrative records created by Ralph Baer, William H. Harrison, and William T. Rusch. Baer retrieved these documents, with the assistance of David Winter, from a Chicago law firm years after they had been assembled for the various legal cases involving his television game inventions. Many of the documents are marked and stamped as trial exhibits. Rusch's notebooks include work on an electric guitar pick-up and other non-television game inventions. They also contain ideas about a wide range of games that might be developed. Because these papers were badly disorganized, the archival staff arranged them in the current order.
The records in Series 4, Subseries 4, consist of copies of records in Subseries 1-3, apparently created before the originals were turned over to legal counsel. These documents are arranged as received from Ralph Baer. They may contain copies of some documents for which originals do not exist.

Arrangement

The collection is arranged into four series.

**Series 1: Autobiographical Documents, 1962-2006**

Subseries 1, Manuscript, Book and Other Documents, 1962-2006

Subseries 2, Other Media: CDs, VHS videos, periodical, 1991, 2000-2003

**Series 2: WWII Small Arms Documents, 1943-1953**

Subseries 1, Correspondence, 1950-1953

Subseries 2, Writings and notes, 1943-1948

Subseries 3, Drawings and schematics, undated

Subseries 4, Manuals and encyclopedias, 1943

Subseries 5, Photographs, 1945

**Series 3: Hans Otto Mauksch Materials, 1944-1964**

Subseries 1, Personal background information, 1944, 1945, 1946, 1964

Subseries 2, Instructional materials, 1944-1946, undated

Subseries 3, Ft. Riley, Kansas, 1946, 1953

**Series 4: TV Game Documents, 1966-1972**

Subseries 1, Working notes, diagrams and schematics, 1966-1971

Subseries 2, Administrative documents, 1966-1972

Subseries 3, Notebooks, 1966-1968

Subseries 4, TV game development documentation, 1966-1968

Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

**Subjects:**

- Books
- Firearms
Games
Inventions--20th century
Litigation
Machine guns
Military intelligence
Pistols
Rifles
Television--History
Toys--20th century
Video games
Weapons
World War, 1939-1945

Types of Materials:
Audio cassettes
Audiotapes
CD-ROMs
Correspondence--1950-2000
Diagrams
Drawings--1940-1950
Interviews--2000-2010
Manuals--1940-1950
Notes
Oral history--2000-2010
Photographs--20th century
Photographs--Black-and-white photoprints--Silver gelatin--1940-1950
Sketches
Videotapes
Container Listing

Series 1: Autobiographical Documents, 1962-2006

Subseries 1.1: Manuscript, Book and other documents, 1962-2006

Box 5, Folder 1  One Inventor's Odyssey: The Life Story of an Engineer and Inventor unpublished manuscript (hardcopy), 2006 (folder a: page 1-211)

Box 5, Folder 2  Unpublished manuscript (hardcopy), 2006 (folder b: page 212-463)

Box 5, Folder 3  Videogames: In the Beginning, 2005 (Rolenta Press, 2005)

Box 5, Folder 4  "Summary of Chassis/Boxes/Models," chart, lists of images, "RHB Firsts" undated

Map-folder 1  TV Game timeline, 1962-1974

View Digitized Material

(photocopy)

Subseries 1.2: Other Media: CDs, VHS videos, periodical, 1991, 2000-2003

Box 5, Item OV 854.1  "The Story of Computer Games" undated

1 videocassette (vhs), Duration: 51:00

Box 5, Item RV 854.1  "The Story of Computer Games" undated

1 videocassette (vhs), Duration: 51:00

Box 5, Item OV 854.2  "Playing the Game" 2000 May 24

1 videocassette (vhs), WMUR Channel 9 in New Hampshire. Duration: 02:57.

Box 5, Oversize 9  "Playing the Game" 2000 May 24

1 videocassette (vhs), WMUR Channel 9 in New Hampshire. Duration: 02:57

Box 5, Folder 6  One Inventor's Odyssey and additional photographs, undated

4 electronic discs (cd), 4 versions

Box 5, Folder 7  Electronic Gaming Monthly, article on Ralph Baer, undated page 168

Box 5, Folder 8  Ralph Baer Oral History, 2003 April 22-23

Oral History Abstract Summary (overview):

Baer describes his flash of insight about an interactive video game and the memo he subsequently wrote outlining the idea. Baer demonstrates
and describes several prototypes, the last of which was the “Brown Box” (eventually produced by Magnavox as the Odyssey). Baer discusses the process of selling this to manufacturers. He demonstrates and/or describes other inventions and innovations, both successful and unsuccessful (including Telstar, Simon, Maniac, Smartybear, Monday Night Football, a talking tape measure). He discusses the processes that led to their creation and efforts to secure contracts from manufacturers. Baer discusses inventing in general: the distinction between doing inventive work and actually thinking of himself as an inventor (pursuing patents, etc.), his own passion for the process of inventing, and his interest in creating financially feasible inventions. He mentions inventors and mathematicians whom he admires. Baer describes experiences of persecution in Nazi Germany and the role that these difficulties played in his development. He describes his family’s immigration to America, the anti-Semitism he experienced in this country, and his military service. Various portions of the interview touch on Baer’s habit of documentation, the many legal disputes concerning his inventions, and the complex relationship between Baer’s work at Sanders and his inventive activity.

Box 10, Item OTC 854.1 Ralph Baer Oral History, 2003 April 22-23 1 cassette tape
Box 10, Item OTC 854.2 Ralph Baer Oral History, 2003 April 22-23 1 cassette tape
Box 10, Item OTC 854.3 Ralph Baer Oral History, 2003 April 22-23 1 cassette tape
Box 10, Item OTC 854.4 Ralph Baer Oral History, 2003 April 22-23 1 cassette tape
Box 10, Item RTC 854.1 Ralph Baer Oral History, 2003 April 22-23 1 cassette tape
Box 10, Item RTC 854.2 Ralph Baer Oral History, 2003 April 22-23 1 cassette tape
Box 10, Item RTC 854.3 Ralph Baer Oral History, 2003 April 22-23 1 cassette tape
Box 6, Folder 43 Ralph Baer Interview, 1991 December 4 2 videocassettes (vhs), Raw footage. Duration: 41:09.
Series 2: WWII Small Arms Documents, 1943-1953

Subseries 2.1: Correspondence, 1950-1953
Box 1, Folder 1

Subseries 2.2: Writings and notes, 1943-1948
Box 1, Folder 2  Machine Guns: A Resume of Their History and Characteristics, 1946
Box 1, Folder 3  Basic Weapons, 1886-circa 1920s
Box 1, Folder 4  World War I Heavy Machine Guns, undated
Box 1, Folder 5  Post World War I Light Machine Guns, undated
Box 1, Folder 6  The German Line, 1920-1945
Box 1, Folder 7  Machine Guns, manuscript, undated
Box 1, Folder 8  Multiple Shot Arms, by Mark Dineley, undated
Box 1, Folder 9  Various notes and questions for Mark Dineley, 1945
Box 1, Folder 10 A Brief History on the Development of the Submachine Gun, 1943
Box 1, Folder 11 Aircraft Machine Guns, undated
Box 1, Folder 12 The Machine Gun The Period of Recognition, by Lt. Col. Calvin Goddard, 1943
Box 1, Folder 13 Outline of the Development of the Modern Bolt Operated Service Rifle, 1945
Box 1, Folder 14 Semi-Automatic Rifle notes, undated
Box 1, Folder 15 The Story of the Tommy Gun, 1948
Box 1, Folder 16 German Weapons Information, undated
Box 1, Folder 17 Italian Weapons Information, undated
Box 1, Folder 18 Notes on inventors of various firearms, undated
Box 3, Folder 1  Japanese Weapons Information, undated
Box 3, Folder 2  British War Office technical weapons information, undated
Box 3, Folder 3  German Weapons Information, Specifically Infantry, undated
Box 3, Folder 4  Course Material, undated
  View Digitized Material

Subseries 2.3: Drawings and schematics, undated

Page 9 of 17
Box 2, Folder 1  Rifle Actions, undated
Map-folder 1  Schematic charts of machine guns, undated

Subseries 2.4: Manuals and encyclopedias, 1943

Box 2, Folder 2  Basic Manual on Small Arms, 1943
Box 2, Folder 3  Basic Manual on Small Arms, 1943
Box 2, Folder 4  Ian V. Hogg and John Week, Military Small Arms of the 20th Century. A Comprehensive Illustrated Encyclopedia of the World's Small Caliber Firearms, undated
               (DBI Books, sixth edition)

Subseries 2.5: Photographs, 1945

Box 4, Folder 1  Light machine guns, undated
Box 4, Folder 2  Submachine guns, undated
Box 4, Folder 3  Automatic pistols, undated
Box 4, Folder 4  Rifles, undated

Subseries 3.1: Personal background information, 1944-1964

Box 11, Folder 1  War Department identification card, photographs, certificate of service, citations, correspondence, undated
Box 9, Folder 9  Yank Magazine (British), 1944 November 5
Box 9, Folder 10  The Guidon newspaper, 1946 June 28

Subseries 3.2: Instructional materials, 1944-1946, undated

Box 9, Folder 2  Pistols and revolvers; submachine guns; rifles; machine guns; and semiautomatic rifles, undated
Box 9, Folder 2  A Brief Outline of the Development of the Modern Bolt Operated Service Rifle, undated
Box 9, Folder 2  Equipment and Arms of the German Armed Forces, Part I, Enemy Small Arms, 1945
Box 9, Folder 3  Drawings and Ballistics of Military Ammunition, 1944
Box 9, Folder 3  A Short History of the Development of the Modern Machine Gun, undated
Box 9, Folder 3  Military Intelligence School, German Psychology and background of the Weimar Republic, circa 1945
Box 9, Folder 3  Course in foreign small arms by Hans Otto Mauksch and Ralph H. Baer, undated
Box 9, Folder 4  A Summary of Enemy and Allied Bolt Operated Rifles (partial list), undated
Box 9, Folder 5  A Summary of Enemy and Allied Bolt Operated Rifles (partial list), undated

Subseries 3.3: Fort Riley, Kansas, 1946-1953

Box 9, Folder 6  Inventory of small arms exhibit, 1946 June 24
Box 9, Folder 6  The Guidon, 1946 June 28
Box 9, Folder 6  Issue slip from Instrument and Weapons pool, 1953 June 17
Box 9, Folder 7  Photographs, 1946
### Series 4: Television Game Documents, 1966-1972

#### Subseries 4.1: Working notes, diagrams and schematics, 1966-1971

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<th>Box 6, Folder 1</th>
<th>Original Schematic, TV Game, 1966 September 6</th>
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<th>Notes and Diagrams, including DMV Spec-Schematic #1, MOD IG-62 Block Diagram, MOD IG-62 Outputs, 1966 December, undated</th>
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<th>Some Proposed Basic Circuits and TVTYNDB, 1967 January 2</th>
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<th>Discussion with R. Solomon, Future Planning-TV Gaming, 1967 February 11</th>
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<th>List of Possible Games and Untitled Diagram of Joystick, 1967 February 12</th>
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<th>Layout for Gun Electronics in Pocket Radio Shell, 1967 February 19</th>
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<th>Second Experiment: Creating various hues from background and screen symbols, 1967 February</th>
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<th>Box 6, Folder 8</th>
<th>Notes and Diagrams, including TV Sync Notes, TV Gaming Techniques, To Produce Moveable Dot, and Car Race, 1967 May 2-31</th>
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<th>Box 6, Folder 9</th>
<th>TVG 1st Game, 2nd Game, 3rd Game, 4th Game, 5th Game and Mo-W.H., 1967 May 16-17, undated</th>
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<th>Notes and Diagrams and Switching Functions and untitled documents, 1967 June 1-June 7, undated</th>
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<th>Schematics of TVG Game Unit #3, completed August 2, 1967 (3 versions), 1967 July 7-1967 August 2</th>
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<th>Schematic for early May start of TV Game #2&quot;1967 May 15</th>
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<th>TV Game #2 Updated Schematic, 1967 June 14</th>
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Box 6, Folder 13  "Cludge" Notes and Schematic John Mason's Original Idea, and Random Pulse Gens, Notes, 1967 June, 1967 June 8
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Box 6, Folder 14  Notes and Diagrams, including "Target Shooting," "Test of Resistance Vrs Light"1967 July 7-24
  View Digitized Material

Box 6, Folder 15  Notes and Diagrams, including "Chroma Channel" Block Diagram, "One Transistor," "Rifle Electronics"1967 August 2-September 7
  View Digitized Material

Box 9, Folder 3  To add color to TV Game #3, Schematic, 1967 September 12
  View Digitized Material

Box 6, Folder 16  Undated Schematics, undated
  View Digitized Material

Box 6, Folder 17  Notes and Diagrams, including "TVG Available Functions," "Utilizing Integrated Ckts," "Modulator Economizing," "Target Shooting," "Dot Disappearance"1967 October 10-31, undated
  View Digitized Material

Box 6, Folder 18  Notes and Diagrams, including "Rifle Electronics," "Low Free Circulator Movement of Dot," "Method of Voltage Control of Delay Multivibrators," "Black Dot for Golf Putting"1967 November 1-29 and undated
  View Digitized Material

Box 9, Folder 4  Game Unit #4 Rusch's Slicer Circuits as ball and paddle generators, 1967 November
  2 drawings (visual works)
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Map-folder 1  Untitled Notes, 1967 November
  View Digitized Material View Digitized Material View Digitized Material

Box 9, Folder 5  Block Diagram; Updated Block Diagram; and Untitled Block Diagram, 1967 December 12, 1967 June 14, undated
  View Digitized Material

Box 6, Folder 19  Notes and Diagrams, including "Pool or Billiards Game," "Hockey," "Wall Bounce"1967 December 1-20, undated
  View Digitized Material

Map-folder 1  Rusch describes various games, 1967 December 4
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  4 fold-out sheets

Box 9, Folder 6  Two Untitled Schematics, 1967 December 22
  2 drawings (visual works)
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Box 6, Folder 20  Untitled Notes and Diagrams, 1967 December 26-1968 January 12
  View Digitized Material
Box 6, Folder 21  Notes and Schematics (and copies), including "Low Freq Multivibrator," "Spot Gen," "Gun Electronics" 1968 January 17-26 and undated View Digitized Material

Box 9, Folder 7  TV Game Unit #4 Ball & Paddle Slicer Circuits adapted for cable, 1968 January 26 View Digitized Material

Box 6, Folder 22  Untitled Diagrams, 1968 January-1968 February 20 View Digitized Material

Box 6, Folder 23  Notes and Diagrams, including "Spot size change" and "DMV Voltage Controlled" 1968 August 11-October 8, undated View Digitized Material

Box 6, Folder 24  TVG diagrams, 1968 October 24 View Digitized Material

Box 6, Folder 25  "TVG List of Games" Notes, 1968 October 26 View Digitized Material 6 pages

Box 9, Folder 8  Schematic for TV Game Unit #6, 1968 November 17, undated 6 drawings (visual works) View Digitized Material View Digitized Material View Digitized Material View Digitized Material

Box 6, Folder 26  Notes and Diagrams, including "Game Sequence" 1969 January 2-May 29, undated View Digitized Material


Map-folder 1  Untitled Block Diagram; TVG Schematic, 1969 January 20, undated View Digitized Material View Digitized Material View Digitized Material View Digitized Material View Digitized Material View Digitized Material

Box 6, Folder 28  Notes and Schematics, including "Game Truth Table,” "Chroma Gen for Magnavox” 1971 June 10-1971 August 24, undated View Digitized Material

Map-folder 1  Unidentified block diagram, undated View Digitized Material

Subseries 4.2: Administrative documents, 1966-1972

Box 6, Folder 29  Disclosure Document, 1966 September 1 View Digitized Material
Box 6, Folder 30  Low Cost TV Data Entry Devices—Funding For, Memorandum and Operation of Color TV Set (4 copies), 1966 December 20, 1967 January 4  View Digitized Material

Box 6, Folder 31  Patent Disclosure Sheet and Description of TV Gaming Device Draft, 1968 January

Box 6, Folder 32  Patent Disclosure Sheet and Detailed Description form, 1968 February 2  View Digitized Material

Box 6, Folder 33  Miscellaneous Ideas for T.V.G., Company Memorandum, 1967 May 10  View Digitized Material

Box 6, Folder 34  Summary of Major Games, 1967 June  View Digitized Material

Box 6, Folder 35  Price List, Cost Estimate, and Power Requirements, 1967 October, 1968 January 17, undated  View Digitized Material

Box 6, Folder 36  TVG Cost Summary, TVG-DigBox Estimate, and Price/Parts for Hockey ADD ON for TVG, 1969 March, 1969 May 26, undated  View Digitized Material

Box 6, Folder 37  Proposal for Anticipated IR&D Programs and cost estimate FY 68, 1967 June  View Digitized Material

Box 6, Folder 38  Independent Research and Development Plan and Special Sales Order, 1967 November 7, 1967 October 4, 1967 September 15  View Digitized Material

Box 6, Folder 39  Independent R&D Program Monthly Status Reports, 1967 November, 1968 January  View Digitized Material

Box 6, Folder 40  Sanders Electrical Parts Lists, 1967 July-1971 March

Box 6, Folder 41  Parts order forms, 1967 May-1968 February

Box 6, Folder 41  Purchase Orders, 1968 October 10-1972 December 12

Box 6, Folder 41  "Stroblite" price list, undated

Box 6, Folder 42  TV Game Data in Chronological Order, folder with lawsuit identification stickers, undated

Subseries 4.3: Notebooks, 1966-1968

Box 7, Folder 1  Sanders Associates Engineering Notebook, authored by William Rusch, 1966 October-1967 October  View Digitized Material
Box 7, Folder 2  Sanders Associates Engineering Notebook, authored by William Rusch, 1967 October-November
View Digitized Material

Box 7, Folder 3  Sanders Associates Engineering Notebook, authored by William Rusch, 1967 November-1968 March
View Digitized Material

Box 7, Folder 4  "Engineers' Notebook," authored by William Harrison, 1966 September 11-1967 October 5
View Digitized Material

Subseries 4.4: Television game development documentation, 1966-1968

Box 8, Folder 1  Volume I, Tab 1, TVG Concept Stage, 1966 September 1 to 1967 February 6

Box 8, Folder 2  Volume I, Tab 2, Technology Investigation Stage, 1967 February 11 to May 16

Box 8, Folder 3  Volume I, Box #1 Phase, 1967 May 23 to June 17

Box 8, Folder 4  Volume I, Box #2 Phase, 1967 June 15 to July 21

Box 8, Folder 5  Volume I, Box #3 Phase, 1967 July 28 to 1967 September 29

Box 8, Folder 6  Volume I, Box #4 Phase, 1967 September 29 to 1967 November 20

Box 8, Folder 7  TV Game Development, Volume II, Box #5 (folder a), 1967 November 20 to 1968 September

Box 8, Folder 8  Volume II, Box #5 (folder b), 1967 November 20 to 1968 September

Box 8, Folder 9  Volume II, Box #6, 1968 September 6 to 1968 December 9

Box 8, Folder 10  Volume II, Brown Box #7, 1968 December 10 to 1969 August 21

Box 8, Folder 11  Volume II, TVG Development, Support to Magnavox, 1971

Box 8, Folder 12  TV Game Development, Vol. IV, Licensing Program Files, 1969-1970