John Von Neumann Papers

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Manuscript Division, Library of Congress Washington, D.C. 2002 Revised 2010 March

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LC Online Catalog record: http://lccn.loc.gov/mm82044180

Prepared by Margit Kerwin and Patrick Kerwin Revised and expanded by Patrick Kerwin

Collection Summary

Title: John Von Neumann Papers

Span Dates: 1912-1996 **Bulk Dates:** (bulk 1935-1957)

ID No.: MSS44180

Creator: Von Neumann, John, 1903-1957

Extent: 11,660 items; 34 containers; 13.4 linear feet **Language:** Collection material in English and Hungarian

Location: Manuscript Division, Library of Congress, Washington, D.C.

Summary: Mathematician, atomic energy commissioner, and educator. Correspondence, memoranda, journals, speeches, article and book drafts, notes, charts, graphs, patent, biographical material, family papers, and other material pertaining primarily to John Von Neumann's career as professor of mathematics at the Institute for Advanced Study; adviser and commissioner on the U.S. Atomic Energy Commission; scientific consultant to government and private concerns; and author of works on ballistic research, computers, continuous geometries, logic, operator theory, quantum mechanics, and the theory of games.

Selected Search Terms

The following terms have been used to index the description of this collection in the Library's online catalog. They are grouped by name of person or organization, by subject or location, and by occupation and listed alphabetically therein.

People

Aldor, Eva--Correspondence.

Aldor, Eva.

Aldor, Peter, 1904-1976.

Aydelotte, Frank, 1880-1956--Correspondence.

Bethe, Hans A. (Hans Albrecht), 1906-2005--Correspondence.

Birkhoff, Garrett, 1911-1996--Correspondence.

Chandrasekhar, S. (Subrahmanyan), 1910-1995--Correspondence.

Dantzig, George B. (George Bernard), 1914-2001--Correspondence.

Dirac, P. A. M. (Paul Adrien Maurice), 1902-1984--Correspondence.

Eckart, Carl, 1902-1973--Correspondence.

Einstein, Albert, 1879-1955--Correspondence.

Einstein, Albert, 1879-1955.

Fermi, Enrico, 1901-1954--Correspondence.

Flexner, Abraham, 1866-1959--Correspondence.

Gamow, George, 1904-1968--Correspondence.

Goldstine, Herman H. (Herman Heine), 1913-2004--Correspondence.

Goldstine, Herman H. (Herman Heine), 1913-2004.

Gödel, Kurt--Correspondence.

Halmos, Paul R. (Paul Richard), 1916-2006.

Heisenberg, Werner, 1901-1976--Correspondence.

Hove, L. van (Léon)--Correspondence.

Hurd, Cuthbert Corwin, 1911-1996--Correspondence.

Jordan, Pascual, 1902-1980--Correspondence.

Kent, R. H. (Robert Harrington), 1886-1961--Correspondence.

Kistiakowsky, George B. (George Bogdan), 1900-1982--Correspondence.

Morgenstern, Oskar, 1902-1977--Correspondence.

Oppenheimer, J. Robert, 1904-1967--Correspondence.

Ortvay, Rudolf, 1885-1945--Correspondence.

Pauli, Wolfgang, 1900-1958--Correspondence.

Stone, Marshall H. (Marshall Harvey), 1903-1989--Correspondence.

Strauss, Lewis L.--Correspondence.

Taub, Abraham Haskel, 1911-

Taub, Abraham Haskel, 1911- -- Correspondence.

Teller, Edward, 1908-2003--Correspondence.

Ulam, Stanislaw M .-- Correspondence.

Veblen, Oswald, 1880-1960--Correspondence.

Von Neumann, John, 1903-1957.

Von Neumann, Klara Dan--Correspondence.

Weaver, Warren, 1894-1978--Correspondence.

Weyl, Hermann, 1885-1955--Correspondence.

Wiener, Norbert, 1894-1964--Correspondence.

Wigner, Eugene Paul, 1902-1995--Correspondence.

Organizations

Institute for Advanced Study (Princeton, N.J.)--Faculty.

Los Alamos Scientific Laboratory.

U.S. Army Ballistic Research Laboratory.

U.S. Atomic Energy Commission.

Subjects

Ballistics.

Computers.

Continuous geometries.

Game theory.

Logic, Symbolic and mathematical.

Mathematics--Study and teaching.

Nuclear energy--Government policy--United States.

Nuclear energy.

Operator theory.

Physics.

Quantum theory.

Occupations

Atomic energy commissioners.

Educators.

Mathematicians.

Administrative Information

Provenance

The papers of John Von Neumann, educator, mathematician, consultant, and atomic energy commissioner, were given to the Library of Congress in 1974-1975 by his daughter Marina Von Neumann Whitman. Additions were received in 1993 from brother Nicholas A. Vonneuman, 1998 from Israel Halperin, and 2001 from William McClelland.

Processing History

The papers of John Von Neumann were arranged and described in 1992. Additions were made to the collection in 1993 and 2002.

Transfers

A video recording has been transferred to the Motion Picture, Broadcasting and Recorded Sound Division of the Library of Congress, where it is identified as part of these papers.

Copyright Status

The status of copyright in the unpublished writings of John Von Neumann is governed by the Copyright Law of the United States (Title 17, U.S.C.).

Access and Restrictions

The papers of John Von Neumann are open to research. Researchers are advised to contact the Manuscript Reading Room prior to visiting. Many collections are stored off-site and advance notice is needed to retrieve these items for research use.

Preferred Citation

Researchers wishing to cite this collection should include the following information: Container number, John Von Neumann Papers, Manuscript Division, Library of Congress, Washington, D.C.

Biographical Note

Date 1903, Dec. 28	Event Born, Budapest, Hungary
1926	Ph.D., University of Budapest, Budapest, Hungary
1929	Married Mariette Kovesi (divorced 1937)
1930	Immigrated to United States
1930-1933	Visiting professor, Princeton University, Princeton, N.J.
1932	Published Mathematische Grundlagen der Quantenmechanik. Berlin: J. Springer
1933-1957	Research professor of mathematics, Institute for Advanced Study, Princeton, N.J.
1937	Naturalized United States citizen
1939	Married Klara Dan
1940-1957	Member, Scientific Advisory Committee, Ballistic Research Laboratory, Aberdeen, Md.
1943-1955	Consultant, Los Alamos Scientific Laboratory, Los Alamos, N.Mex.
1944	Published <i>Theory of Games and Economic Behavior</i> . Princeton: Princeton University Press
1952-1954	Member, General Advisory Committee, United States Atomic Energy Commission
1955-1957	Commissioner, United States Atomic Energy Commission
1957, Feb. 8	Died, Washington, D.C.

Scope and Content Note

The papers of John Von Neumann (1903-1957) span the years 1926-1996, with the bulk of the items concentrated in the period from 1935 to 1957. The papers pertain primarily to Von Neumann's career in the United States after he emigrated from Hungary to the United States in 1930. They feature his career as professor of mathematics at the Institute for

Advanced Study in Princeton, New Jersey, 1933-1957, adviser and commissioner on the United States Atomic Energy Commission, 1952-1957, scientific consultant with various government and private concerns, and author of works on various scientific topics. The collection consists of correspondence, memoranda, journals, speeches, articles and book drafts, notes, charts, graphs, family papers, clippings, printed matter, photographs, and other materials.

The <u>Family Papers</u> series consists chiefly of correspondence between John Von Neumann and family members. Of particular significance is the extensive correspondence between Von Neumann and his wife Klara Dan Von Neumann concerning professional and family matters.

The General Correspondence series contains Von Neumann's incoming and outgoing correspondence with his colleagues at the Institute for Advanced Study, the Atomic Energy Commission and other government bodies, including the Los Alamos Scientific Laboratory, and various universities. Of special interest are an Albert Einstein letter and report on theoretical physics, 1937. Other correspondents include Frank Aydelotte, Hans Albrecht Bethe, Garrett Birkhoff, S. Chandrasekhar, George Bernard Dantzig, P. A. M. Dirac, Carl Eckart, Enrico Fermi, Abraham Flexner, George Gamow, Kurt Gödel, Herman Heine Goldstine, Werner Heisenberg, L. van Hove, Cuthbert Hurd, Pascual Jordan, R. H. Kent, George B. Kistiakowsky, Oskar Morgenstern, J. Robert Oppenheimer, Rudolf Ortvay, Wolfgang Pauli, Marshall H. Stone, Lewis L. Strauss, Abraham Haskel Taub, Edward Teller, Stanislaw M. Ulam, Oswald Veblen, Warren Weaver, Hermann Weyl, Norbert Wiener, and Eugene Paul Wigner.

The <u>Subject File</u> documents all facets of Von Neumann's career in the United States, reflecting his role in early computer and atomic research. The bulk of the series pertains to his work at the Institute for Advanced Study, including his tenure as director of the Electronic Computer Project. Other papers document Von Neumann's many consultantships. Of particular interest are files relating to his work at the United States Army Ballistic Research Laboratory in Aberdeen, Maryland.

The <u>Speeches and Writings File</u> reflects Von Neumann's interest in numerous scientific and mathematical subjects. The series includes his early writings in quantum mechanics and logic, his writings on continuous geometries, operator theory, ballistic research, and his later works concerning computers. Also of note is his pioneering work on the theory of games. Throughout the Speeches and Writings File are evaluations of Von Neumann's work written after his death by his colleagues. Among the reviewers were Herman Heine Goldstine, Paul R. Halmos, and Abraham Haskel Taub.

An <u>Addition</u> to the papers consists of correspondence between Von Neumann and Eva Aldor, other material relating to Eva and Peter Aldor, correspondence relating to the Poiseuille-type laminar flow, biographical material, a patent, photographs, and printed matter.

Organization of the Papers

The collection is arranged in five series:

- Family Papers, 1929-1956
- General Correspondence, 1930-1959
- Subject File, 1930-1974
- Speeches and Writings File, 1926-1960
- Addition, 1912-1996

Description of Series

Container Series

BOX 34

Family Papers, 1929-1956

Correspondence, telegrams, official documents, and other papers.

Arranged alphabetically.

BOX 2-8 General Correspondence, 1930-1959

Correspondence and attached material with friends and colleagues.

Arranged alphabetically by name of person or institution.

Subject File, 1930-1974

Correspondence, telegrams, memoranda, journals, logs, tests, travel orders, invitations, charts, graphs, forms, biographical data, photographs, clippings and other printed matter, and

miscellaneous material.

Organized by name of person or organization, topic, or type of material.

BOX 19-33 Speeches and Writings File, 1928-1960

Correspondence, speeches, articles, book drafts, notes, contracts, clippings, and printed matter. Speeches have been separated from other writings, which are first arranged alphabetically by type (articles, books, reports, and miscellaneous) and therein alphabetically by type of material, subject, or title.

Addition, 1912-1996

Correspondence, biographical data, patents, photographs, a report, printed matter, and an index.

Arranged by year of addition and therein alphabetically by name of person or type of material.

Container List

Container	Contents
вох 1	Family Papers, 1929-1956
	Correspondence, telegrams, official documents, and other papers. Arranged alphabetically.
BOX 1	Correspondence
	Dan, Kamilla, 1940-1941
	General, 1929-1956
	Kovesi (Von Neumann), Mariette, 1937-1941, undated
	Kovesi, Paulette, 1937, undated
	Neumann, Michel J., 1939-1956
	Von Neumann, Klara Dan, 1938-1952, undated
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	Von Neumann, Margaret, 1937-1939, 1948, undated
	Von Neumann, Nicholas A., 1939-1954
	Subject file
	Divorce and marriage, 1937-1938
	Financial papers, 1933-1954, undated
	Immigration and naturalization, 1934-1953
	Miscellany, 1929-1939, undated
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	Correspondence and attached material with friends and colleagues.
	Arranged alphabetically by name of person or institution.
BOX 2	Aldor, Peter, 1946-1954, undated
	Alexandroff, Paul, 1935
	Aydelotte, Frank, 1940-1945, 1956
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	Bay, Zoltan L., 1945-1954
	Bethe, Hans Albrecht, 1941-1945, 1953-1956
	Bigelow, Julian, 1947-1956
	Birkhoff, Garrett, 1935-1956, undated
	Blake, Gwen, 1934-1942
	Bohr, Niels, 1951
	Bonhoeffer, Karl Fredrich, 1949, undated
	Bush, Vannevar, 1949-1950
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	Calkin, John, 1941-1945, 1955-1956
now?	Chandrasekhar, S. (Subrahmanyan), 1935-1942, 1950-1956
вох 3	Courant, Richard, 1938-1942, 1955-1956

"C" miscellaneous, 1937-1956

(2 folders)

Dantzig, George Bernard, 1947-1948, undated

Dirac, P. A. M. (Paul Adrien Maurice), 1934-1938, undated

"D" miscellaneous, 1944-1956

Eckart, Carl, 1945, 1952-1956, undated

Einstein, Albert, 1937

"E" miscellaneous, 1938-1954

Fellner, William J., 1946-1956, undated

Fermi, Enrico, 1949-1951, undated

Flexner, Abraham, 1933-1944, 1956

Frankel, Stanley, 1946-1955

Fréchet, Maurice, 1934, 1952-1953, 1959

Friedman, William F., 1952-1956

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Gamow, George, 1940-1956, undated

Gödel, Kurt, 1938-1939, 1956

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Goldstine, Herman H., 1944-1956, undated

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Halperin, Israel, 1936-1940, 1946-1952

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Heisenberg, Werner, 1950

Hove, L. van (Léon), 1950

Hurd, Cuthbert C., 1948-1958, undated

"H" miscellaneous, 1933-1948, 1955-1956

"I" miscellaneous, 1935-1951

Jordan, Pascual, 1937, undated

"J" miscellaneous, 1941, 1948-1956

Kakutani, Shizuo, 1942-1955, undated

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Kistiakowsky, George B., 1942-1949

Koopmans, Tjalling Charles, 1945-1946, 1959

Kuhn, Harold, 1949-1953

"K" miscellaneous, 1939-1956

Leutert, Werner, 1950-1951

Loewner, Charles, 1943-1947

Lorch, Edgar, 1946-1947, 1958

"L" miscellaneous, 1933-1956, undated

Mayer, Joseph E., 1950

Monteiro, Antonio, 1941-1942

Montgomery, Deane, 1955-1956

Morgenstern, Oskar, 1940, 1949-1956

"M" miscellaneous, 1935-1956, undated

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	"N" miscellaneous, 1933-1955
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	Oppenheimer, J. Robert, 1955-1956
	Ortvay, Rudolf, 1938-1939
	Overbeck, William P., 1945-1946
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	Panofsky, Hans A., 1946-1947, undated
	Pauli, Wolfgang, 1939-1940
	"P" miscellaneous, 1933, 1939-1957, undated
	Ridenour, Louis N., 1944-1948
	"R" miscellaneous, 1932-1956, undated
	Stone, Marshall H., 1940-1945, 1955
	Strauss, Lewis L., 1945-1956, undated
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	Szent-Györgyi, Albert, 1949-1954, undated
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	Taub, Abraham Haskel, 1939, 1946, 1955-1956
	Teller, Edward, 1944-1956, undated
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	"V" miscellaneous, 1934, 1950-1956
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	Weyl, Hermann, 1935-1940, 1950-1955
	Wiener, Norbert, 1945-1946, 1955
_	Wigner, Eugene Paul, 1938-1947, 1955-1956
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	"Z" miscellaneous, 1934, 1955-1956, undated
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	Correspondence, telegrams, memoranda, journals, logs, tests, travel orders, invitations, charts,
	graphs, forms, biographical data, photographs, clippings and other printed matter, and
	miscellaneous material.
	Organized by name of person or organization, topic, or type of material.
BOX 8	Address cards, undated
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                          American Mathematical Society, 1932-1955
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                          Army Advisory Committee on Mathematics, 1947-1948
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                         Central Intelligence Agency (CIA), 1951-1956
                         Charts and graphs, undated
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                         Columbia University, New York, N.Y., 1953-1954
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                            Electronic Computer Project, Institute for Advanced Study, Princeton, N.J., 1945-1952
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Flow diagram, 1950 General, 1947-1951

Meteorology calculations, 1949-1950

Monte Carlo method, undated

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General, 1949, 1956

Machine time studies, 1954

Moore School of Electrical Engineering, University of Pennsylvania, Philadelphia, Pa., 1945-1946

Consultantships, list of, 1955

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Einstein, Albert, 1938, 1948, 1955

Enrico Fermi Award, 1956

Forbath, Tamas B., 1942

German Academy of Science in Berlin, Berlin, Germany (East), 1950-1954

Institute for Advanced Study, Princeton, N.J.

Administrative, 1933-1945

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General correspondence, 1944-1954

Oppenheimer, J. Robert, 1944-1955

School of Mathematics

General correspondence, 1945-1951

Minutes of meetings, 1939-1956

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International Business Machines Corp. (IBM)

Consultant agreement, 1945-1955

Davies, William H., 1954

General correspondence, 1947-1955

Seminar on scientific computation, 1949

Invitations, 1955-1956

John Von Neumann Memorial Institute of Advanced Studies, University of California, Los Angeles, Calif., 1959

Johns Hopkins University, editorial board of the Applied Physics Laboratory of the Johns Hopkins University on Applied Mathematics and Mechanics, Baltimore, Md., 1951-1955

Journals, 1941, 1956

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Kilgore Manufacturing Co., 1954-1955

Library of Congress, 1960-1963

Los Alamos Scientific Laboratory, Los Alamos, N.Mex.

Consultant agreement, 1946-1951

General correspondence, 1947-1948

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                        Speeches and Writings File, 1928-1960
                          Correspondence, speeches, articles, book drafts, notes, contracts, clippings, and printed matter.
                          Speeches have been separated from other writings, which are first arranged alphabetically by
                             type (articles, books, reports, and miscellaneous) and therein alphabetically by type of
                             material, subject, or title.
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                               By Von Neumann
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                                    "Zur Theorie der Gesellschaftsspiele"
                                 1932
                                    "Zur Operatorenmethode in der Klassischen Mechanik"
                                 1934
                                    "On an Algebraic Generalization of the Quantum Mechanical Formalism"
                                    "On Relativistic Gas-Degeneracy and the Collapsed Configuration of Stars"
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"On Rings of Operators"
"The Uniqueness of Haar's Measure"
1937
"Continuous Rings and Their Arithmetics"
"On Rings of Operators II"
"Quantum Mechanics of Infinite Systems"

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BOX 23

"Some Matrix-Inequalities and Metrisation of Matrix-Space"

"Uber ein Okonomisches Gleichungssystem und eine Verallgemeinerung des Brouwerschen Fixpunktsatzes"

1938

"On Infinite Direct Products"

1940

"Discussion of De Sitter's Space and of Dirac's Equation in It"

"Minimally Almost Periodic Groups"

"On Rings of Operators III"

1941

"Distribution of the Ratio of the Mean Square Successive Difference to the Variance"

"Fourier Integrals and Metric Geometry"

1942

"Approximate Properties of Matrices of High Finite Order"

"Further Remark Concerning the Distribution of the Ratio of the Mean Square Successive to the Variance"

"Statistics of the Gravitational Field Arising From a Random Distribution of Stars"

1943

"On Rings of Operators IV"

(2 folders)

1946

"On the Principles of Large Scale Computing Machines"

"Symmetric Solutions of Some General N-Person Games"

1947

"Discussion of a Maximum Problem"

"The Mathematician"

1948

"Coding Scheme for the Poiseuille-Flow Stability Problem"

(2 folders)

"First Report on the Numerical Calculation of Flow Problems"

(2 folders)

"Second Report on the Numerical Calculation of Flow Problems"

(3 folders)

1949

"On Rings of Operators: Reduction Theory"

1950

"Statistical Treatment of Values of First 2000 Decimal Digits of e and pi Calculated on the ENIAC"

1951

"Description of the Conformal Mapping Method for the Integration of Partial Differential Equation Systems with 1+2 Independent Variables" "Eine Spektraltheorie fur allgemeine Operatoren eines unitaren Raumes" "Remarks Concerning Various Forms of the 'Relaxation Method'" **BOX 24** 1952 "Digital Computations in Hydromechanics" 1953 "Certain Zero-Sum Two-Person Game Equivalent to the Optimal Assignment "Notes on the Photon-Disequilibrium-Amplification Scheme" "Two Variants of Poker" 1954 "Non-Linear Capacitance or Inductance Switching, Amplifying and Memory Organs" (5 folders) "Numerical Method to Determine Optimum Strategy" **BOX** 25 "Blast Wave Calculation" "Can We Survive Technology?" Fermi, Enrico "On the Permutability of Self-Adjoint Operators" 1956 "Probabilistic Logics and the Synthesis of Reliable Organisms from Unreliable Components" Undated "An Inequality Concerning Rational Functions of Non-Hermitean Matrices" "Comparison of Two Cells" "Discussion of the Cylinder Symmetrical Geometry of Points and Trajectories" "Fourier Transformation Method for Two-Dimensional (Baratropic) Meteorological Prediction" "Measure in Functional Spaces" "Non-Isomorphism of Certain Continuous Rings" "Numerical Method for Determination of the Value and the Best Strategies of a Zero-Sum Two-Person Game with Large Numbers of Strategies" "On Generalized Matrix-Algebras with a Unique Trace" "On Relativistic Gas-Degeneracy and the Collapsed Configuration of Stars" "Point-Source Model" "Point-Source-Solution, Assuming a Degeneracy of the Semi-Relativistic Type, p=Kp 4/3, Over the Entire Star" **BOX** 26 "Reliable Organizations of Unreliable Elements" "Representation of Certain Linear Groups by Unitary Operators in Hilbert Space" "Study of a Numerical Solution to a Two-Dimensional Hydrodynamical Problem" By others General, 1952-1955, undated Weyl, Hermann, undated

Book file

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"Continuous Geometries with a Transition Probability," 1937
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BOX 27
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                                 (2 folders)
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                               "Lattice Abeliam Groups," circa 1940
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                            Reports
                               1946
                                 "Preliminary Discussion of the Logical Design of an Electronic Computing Instrument"
                               1948
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Congressional reapportionment

"Planning and Coding of Problems for an Electronic Computing Instrument" (3 folders)

1949

"Recent Theories of Turbulence"

1953

"An Analysis of the Linear Displacement of Oil by Gas-Driven Solvent"

Undated

Shock waves (incomplete)

BOX 34 Addition, 1912-1996

Correspondence, biographical data, patents, photographs, a report, printed matter, and an index.

Arranged by year of addition and therein alphabetically by name of person or type of material.

BOX 34 1993 addition

Index to addition, 1993

Aldor, Peter and Eva, 1949-1989

Biographical material, 1991-1992

Family tree, undated

Patent, 1957

Photographs, 1912-1983, undated

Printed matter, 1946-1955, 1971

2002 addition

Miscellany, 1948, 1957, 1996