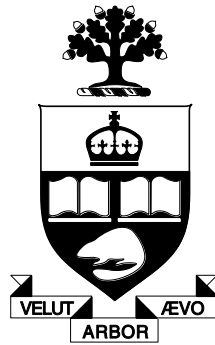


University of Toronto Archives and Record Management Services



## **Finding Aid**

# **Robert William McKay fonds**

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Robert William McKay fonds

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## Robert William McKay fonds

### Biographical sketch

The youngest of three children, Robert William McKay (1907-1978) was born in Macao to missionary parents of Irish and Scottish descent. Growing up in China, he was home-schooled by his mother and learned to speak Cantonese as well as English, although he eventually came to forget much of the former. As a boy, he relocated to Vancouver with his mother and two siblings so that his brother could attend high school. Later, he and his sister, Marjorie, were sent to board at Llewellyn Hall in Oshawa, a residence for the children of missionaries. Probably during this period, the two developed a close bond that would persist well into their adult lives. (Marjorie even contributed the illustrations to the physics textbook her brother co-authored.) While in Oshawa, McKay attended King Street School (1917-1919) and Oshawa High School (1920-1922, 1923-1925). He also attended Riverdale Collegiate in Toronto (1922-1923).

McKay went on to study physics and chemistry as an undergrad at University College. There, he distinguished himself by winning two scholarships in his first year: the first Alexander T. Fulton Scholarship in Natural and Physical Sciences and the Jean Balmer Scholarship in Science. He likewise earned the Gordon Southam Scholarship for the years 1927 and 1928. In addition to his studies, McKay found time to play interfaculty rugby and basketball. In 1929, he completed his Bachelor of Arts, graduating with Honours.

As a graduate student, McKay continued his studies at the University of Toronto, completing his Master of Arts in 1930. In 1930-1931, he received the National Research Council Post-Graduate Research Scholarship. He spent this time working for the Northern Electric Company in research and development. Thereafter, he resumed his studies and in May 1934 published his PhD thesis, *The Measurement of the Dielectric Constant of Electrolytes*.

McKay spent the next five years, between 1934 and 1939, employed by the Ontario Research Foundation as a textile chemist. During the war years he went to work for the National Research Council where he was involved in the development of the radio proximity fuse. It was during this period that he came into possession of a Japanese paper balloon, a weapon designed and employed by Japan during the latter part of the Second World War. Following the war, McKay took a position at the U of T as a professor of physics. Apart from a one year exchange to the University of Illinois, he held this position until 1973.

McKay and his wife, Mary Wickett, had two daughters. Their first daughter, Mary Christine, was born January 24, 1938 while their second, Marjorie Estelle, was born October 22, 1939.

**Robert William McKay fonds**

**Scope and content**

Textual and graphic records, artifacts, and publications, 1922-1965, 1.72 m.

Fonds consists primarily of the academic and professional records of Robert William McKay and is divided into five series:

1. National Research Council,
2. Manuscripts and publications,
3. Reports,
4. Education, and
5. Employment.

Apart from materials from McKay's time as a student at the University of Toronto, the fonds is mostly devoid of personal records.

**Access:** Open

**Accessions:** B2013-0035

**Note on arrangement and description:**

Files in boxes have been arranged first by series, then by date, and finally by title.

Robert William McKay fonds

**Series 1 : National Research Council**

Textual and graphic records, three artifacts, 1942-1946, predominant 1944-1945, 0.07 m.

Series contains is composed of records dating from McKay’s time at the National Research Council. During the Second World War, the organization was mobilized to support the Allied war effort. As a result, most of the series’ records relate to military research and development. Canadian Army Operational Research Group (C.A.O.R.G.) reports compose approximately half the files that make up the series. These reports cover subjects ranging from blast measurements for anti-tank mine clearance to the number and distribution of Japanese paper balloons in North America. There are also two summary reports on Japanese balloon incidents. The remainder of the textual and graphic records are made up of committee minutes, general Department of Defence documents, and a short paper on Canada’s part in the development of the radio proximity fuse, which McKay contributed to as assistant to project leader Professor Arnold Pitt.

Also included in this series are the remains of a Japanese paper balloon. Paper balloons, also known as balloon bombs, were a by-product of an atmospheric experiment by Axis scientists, which discovered a powerful air current traveling across the Pacific at about 30,000 feet.<sup>1</sup> Taking advantage of this knowledge, the Japanese military developed what may well have been the first intercontinental weapon in the form of explosive devices attached to paper balloons. These balloons were released in Japan and carried along the Pacific by a jet stream, ultimately finding their way to North America’s West Coast. Although the Japanese are thought to have released as many as 9,000 paper balloons, only 1,000 or so are thought to have reached North America, resulting in a total of six casualties.<sup>2</sup>

<b>/Box</b>	<b>(folder)</b>	<b>Description</b>	<b>Date(s)</b>
<b>B2013-0035</b>			
/001ART		Paper balloon [flattened], found 1945-01-19	1945
/002ART		Paper balloon board	n.d.
/003ART		Paper balloon parts	n.d.
/001	(01)	Photo of newel post of central staircase in East Wing of University College [removed from DoD – General]	n.d.
	(02)	Photo of remains of paper balloon [removed from DoD – General]	n.d.
	(03)	Map of Ottawa [oversized]	1941
	(04)	Department of Defence – General	[1942-1946]

<sup>1</sup> Johnna Rizzo, “Japan’s secret WWII weapon: Balloon bombs,” *National Geographic*, 27 May 2013.

<sup>2</sup> Ibid.

**Robert William McKay fonds**

<b>/Box</b>	<b>(folder)</b>	<b>Description</b>	<b>Date(s)</b>
/001	(05)	C.A.O.R.G. report no. 2	1944
	(06)	C.A.O.R.G. report no. 5	1944
	(07)	C.A.O.R.G. report no. 11	1944
	(08)	C.A.O.R.G. report no. 15	1944
	(09)	Min. of the Working Committee on Survey of Anti-Tank Mine Counter Measures	1944
	(10)	Photos of pupil diameters O.11" and Q29" rear sight focussed on foresight [removed from Min. of Working Committee]	[1944]
	(11)	Canada's part in the development of the V.T. (radio proximity) fuze	1945
	(12)	C.A.O.R.G. memorandum no. 19	1945
	(13)	C.A.O.R.G. report no. 22	1945
	(14)	C.A.O.R.G. report no. 27	1945
	(15)	Japanese balloon incidents – summary no. 10	1945
	(16)	Japanese balloon incidents – summary no. 12	1945
	(17)	Min. of the 1 <sup>st</sup> regular meeting of the Special Selection Committee on Appointments in National Defence Research	1946

**Series 2: Manuscripts and publications**

Publications, textual records, 1922-1955, 0.07 m.

Series contains manuscripts and publications that McKay either wrote or kept in his files. Although the majority of pieces address scientific matters, the series also includes a Junior Prize Essay ("Fathers Versus Sons") that McKay wrote while still in high school. A number of pieces, including the aforementioned "Fathers Versus Sons," are to be found in journals or magazines, which have been included in the fonds both so as to preserve context and because many of them are no longer in print. It is worth noting that four of the articles in the series were co-authored, rather than sole-authored, by McKay. These are: "The Decay of Nitrogen Afterglow," "The Decay of the Populations of Metastable Atoms and Ions from the Same D-C. Discharge in Neon," "Effect of Previous History on Switching Rate in Ferrites," and "The Hall Effect and Resistivity in Tellurium." The series also includes McKay's PhD dissertation, *The Measurement of the Dielectric Constant of Electrolytes*, and the high school physics textbook he co-authored with D.G. Ivey and which his sister, Marjorie, illustrated.

Robert William McKay fonds

/Box	(folder)	Description	Date(s)
<b>B2013-0035</b>			
/002	(01)	Fathers versus sons [in Acta Ludi vol. 2, no. 1]	1922
	(02)	The measurement of the dielectric constant of electrolytes	1934
	(03)	O.R.F. Bulletin vol. 2, no. 7	1935
	(04)	O.R.F. Bulletin vol. 7, no. 4	1940
	(05)	Atomic bombs [in CATM no. 55]	1945
	(06)	Japanese paper balloons [in The Engineering Journal vol. 28, no. 9]	1945
	(07)	The place of physics in medical training [in U of T Medical Journal vol. 26, no. 4]	1949
	(08)	The decay of nitrogen afterglow	1957
	(09)	The decay of the populations of metastable atoms and ions from the same D-C. discharge in neon	1957
	(10)	Reversible component of magnetization	1959
	(11)	Effect of previous history on switching rate in ferrites	1960
	(12)	The Hall effect and resistivity of tellurium	1961
	(13)	Centrifugal force [in The Crucible]	1962
/003	(01)	Physics – A text for senior high schools	1955

**Series 3 : Reports**

Textual records, [19--]-1959, 0.07 m.

Series includes several reports either written or co-authored by McKay. It also includes several unsigned reports along with a report by Kenneth C. Smith, now Professor Emeritus at the University of Toronto. Neither Appendix M nor file three (“Figures and Notations”) were attached to any document or set of documents at the time of their arrival at the Archives.

Robert William McKay fonds

/Box	(folder)	Description	Date(s)
B2013-0035			
/003	(02)	Appendix M – The economical design of statistical experiments	n.d.
	(03)	[Figures and notations]	n.d.
	(04)	Storage systems	n.d.
	(05)	Report no. 79 – A one-word model of a word-arrangement memory	1957
	(06)	[Measurements of the reversible component of magnetization for two types of cores]	1958
	(07)	Some flipflops	1958
	(08)	Magnetization of ferrites	1959

**Series 4 : Education**

Textual records, one publication, one artifact [192-]-1929, 0.035 m.

Series documents McKay's time as a university student. The physics and chemistry workbook belongs to his undergraduate years as do the correspondence and clippings regarding his scholarships. Max Planck's *Treatise on Thermodynamics* was gifted to McKay when the British Association for the Advancement of Science awarded him a bronze medal. Although the academic hood does not have a date, McKay most likely received it upon earning his Doctorate in 1934.

/Box	(folder)	Description	Date(s)
<b>B2013-0035</b>			
/004	(01)	2T9 physics and chemistry workbook	[192-]
	(02)	Scholarships [correspondence and clippings]	[192-]
	(03)	Treatise on thermodynamics [removed to library]	1927
/004ART		Bronze medal, gift of the British Association for the Advancement of Science, awarded to a student of the fourth year, on the nomination of the Department of Mathematics	1929



**Robert William McKay fonds**

**Series 5 : Employment**

Textual records, [19--]-1965, 0.035 m.

Series consists of a work log (year unknown) and a cumulative bibliography request from Claude Bissell, President of the University of Toronto. Attached to the request is a draft of McKay's curriculum vitae, which chronicles his career up until 1965.

<b>/Box</b>	<b>(folder)</b>	<b>Description</b>	<b>Date(s)</b>
<b>B2013-0035</b>			
/004	(04)	[Work log, July – March 18]	n.d.
	(05)	Cumulative bibliography request	1965