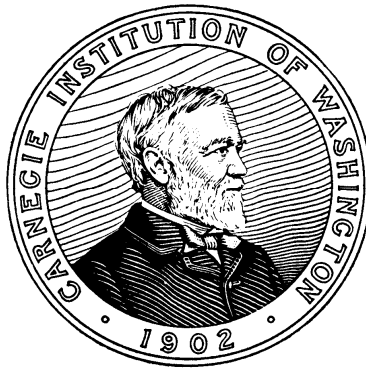


Section T “Proximity Fuze” Records, 1940-[1999] (bulk 1941-1943)



**Carnegie Institution of Washington
Department of Terrestrial Magnetism Archives
Washington, DC**

Finding aid written by:
Jennifer Snyder
January 2005

Section T “Proximity Fuze” Records, 1940-[1999] (bulk 1941-1943)

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Section T “Proximity Fuze” Records, 1940-[1999] (bulk 1941-1943)
DTM-2005-01

Introduction

Abstract: These are the records of Section T of the National Defense Research Committee (NDRC) documenting the development of the proximity fuze during World War II. Office files, project files, laboratory and field notebooks, and artifacts make up the contents of this collection.

Extent: 12.5 linear feet: 11 document boxes, 5 records center cartons, and 1 artifact box.

Acquisition: The records have been in the possession of Department of Terrestrial Magnetism (DTM) since their creation. Four boxes of papers and artifacts relative to the proximity fuze work done at DTM (prior to the program’s transfer to the Applied Physics Laboratory in Silver Spring, Maryland) were found in the attic during the renovation and construction work of 1990-1991. These papers, most of which were classified either “confidential” or “secret,” had probably been kept locked securely until August 1964 when the patent suit of Butement et al. vs. Varian took place. Many of the papers were extracted for evidence and copies were made from other sources.

Access Restrictions: There are no access restrictions. Authorization for removing classification is noted in a memorandum of the Acting Secretary of Defense, 2 August 1960.

Copyright: Copyright is held by the Department of Terrestrial Magnetism, Carnegie Institution of Washington. For permission to reproduce or publish please contact the archivist at the Department.

Preferred Citation: Section T “Proximity Fuze” Records 1940-[1999], Department of Terrestrial Magnetism, Carnegie Institution of Washington, Washington, D.C.

Processing: Processing was completed by Jennifer Snyder in January 2005.

In the early 1990s, Dr. Louis Brown—a DTM staff member—created an inventory to the Section T records. A note in the inventory of the records states, “These files appear to include every scrap of paper created and were in disorder. An effort has been made to extract some of the most relevant looses papers and drawings and locate them in newly marked file jackets.” During processing, files were kept in the same color-coded groups and labeled as subseries.

This collection was processed through the generous support of the National Historical Publications and Records Commission.

Historical Note

The proximity fuze revolutionized warfare for the United States during World War II. The fuze allowed an artillery shell to detonate when it was near its intended target. This allowed for more precise targeting and optimal effectiveness.

How the proximity fuze works:

This fuze operates as a miniature sending and receiving radio station in the nose of a shell. When the shell leaves the gun, this station begins to send out a continuous radio frequency signal, not a short pulse as in radar. As the projectile approaches its target, the radio signal is reflected back and operates to detonate the explosive charge.

The basic components of a radio fuze are (1) miniature “rugged” vacuum tubes, strong enough to stand the tremendous stresses of being shot from a gun, as essential elements of simple electrical circuits; (2) a miniature rugged battery to provide electrical power; and (3) safety devices to prevent operation of the fuze until it had traveled a safe distance from the gun. (Tuve and Roberts, 10)

Fuze research and development in the U.S. was organized under Section T of the National Defense Research Committee (NDRC)--first at the Department of Terrestrial Magnetism (DTM) (1940-1942), then at the Johns Hopkins Applied Physics Laboratory (APL).

DTM staff member Merle A. Tuve was appointed Chairman of Section T on August 24, 1940. In an unpublished history of the proximity fuze, co-written with fellow staff member Richard B. Roberts in 1981, Tuve gave the following summary of DTM’s contribution:

After an inspection of the facilities available at the Department of Terrestrial Magnetism, Carnegie Institution of Washington by officials of Division A, NDRC, the Carnegie Institution was asked to undertake the first of a series of research contracts providing facilities for Section T, Division A, NDRC, in its work on proximity fuzes. Dr. John A. Fleming, Director, DTM, was in charge of administering this contract, and the DTM/CIW made available without charge (1) service of available regular administrative and scientific personnel; (2) use of scientific and machine-tool equipment in its laboratory; (3) use of 11,000 to 15,000 square feet of space in its Cyclotron, Experiment Building, Atomic-Physics and Main laboratories, and some 5,000 square feet in its instrument shops; and (4) use of a DTM site of about 10 acres for experimental field work. (Tuve and Roberts, p. 29)

In 1942, the activities of Section T, under a contract with Johns Hopkins University, were transferred to direct OSRD supervision, where the work remained until December 1944. At that time, the Johns Hopkins University, operating the Applied Physics Laboratory for the Section T program, accepted a direct research contract with the Bureau of Ordnance, Navy Department. (Tuve and Roberts, p. 24)

From 1942 to 1946, Tuve continued his leadership of Section T as the first director of APL. After the war, he returned to DTM and served as director of the department from 1946 to 1966. Roberts, who had worked with Tuve in nuclear physics before the fuze project, conducted experiments with radioactive trace in biology in post-war years.

Scope and Content

This collection documents the development of the proximity fuze in the U.S. during World War II, and a subsequent patent lawsuit. The bulk of the series cover interactions with and materials from various vendors. The remainder of the collection documents in notebooks and objects, the work conducted at the Carnegie Institution's Department of Terrestrial Magnetism and Johns Hopkins Applied Physics Laboratory.

Arrangement

The subseries in Series 1 were created from their original [?] file labels. The files have been kept in original order to preserve any original integrity that may still exist. Several of the subseries have overlapping subject material or contain a mixture of types of files. Within the subseries the files are arranged alphabetically unless otherwise noted. Almost all of the files have a numeric code written on them; the relevance of this code is unknown.

This collection is arranged in three series as follows:

Series 1: Files, 1940-1945, 1964-1966, 1977, n.d.

Subseries 1: File jackets of selected papers (new labels), 1941-1945, 1964-1966, 1977, n.d.

Subseries 2: Original file jackets (yellow labels), 1941-1942

Subseries 3: Original file jackets (dark blue labels), 1941-1942

Subseries 4: Original file jackets (light blue label), 1941-1942

Subseries 5: Original file jackets (pink labels), 1941

Subseries 6: Original file jackets (hand written labels), 1941-1942

Subseries 7: Papers organized chronologically, 1940-1944 (bulk 1941-1942)

Subseries 8: Miscellaneous materials, 1941-1945, 1962, 1981, n.d.

Series 2: Notebooks, 1940-1943

Series 3: Artifacts, ca. 1941-1944, 1990s

Series 1: Files, 1940-1945, 1964-1966, 1977, n.d.

This series consists of the administrative files of the Section T project and is arranged in 8 subseries.

Series 1, Subseries 1: File jackets of selected papers (new labels), 1941-1945, 1964-1966, 1977, n.d.

Included in this subseries are the court papers of Butement et al. vs. Varian regarding possible patent infringement. Of note are R.B. Roberts's memoirs about the project and his tenure at DTM written in 1977 and 1979. Also included here are the drawings of the various proximity fuze components.

Series 1, Subseries 2: Original file jackets (yellow labels), 1941-1942

Memoranda, correspondence, and reports from/with various parts suppliers, including Raytheon and Hygrade Sylvania are included here. In addition, there are office related files (office memos, policy matters, and room arrangements) and project related files (field tests, parts, crew reports, and weekly reports).

Series 1, Subseries 3: Original file jackets (dark blue labels), 1941-1942

Memoranda, correspondence, reports of tests, and drawings from/with National Carbon Company and Hercules Powder Company which were parts suppliers for the fuze.

Series 1, Subseries 4: Original file jackets (light blue label), 1941-1942

Memoranda, correspondence, and reports from/with various parts suppliers, including Bell Telephone Laboratories, General Electric Company, and Hygrade Sylvania. Several folders about the Hytron Corporation are included here, as well.

Series 1, Subseries 5: Original file jackets (pink labels), 1941

This subseries consists of one file on the Hercules Powder Company detonators.

Series 1, Subseries 6: Original file jackets (hand written labels), 1941-1942

This subseries consists of memoranda, correspondence, packing slips, and test results from/with various suppliers and from within the project.

Series 1, Subseries 7: Papers organized chronologically, 1940-1944 (bulk 1941-1942)

The contents of these folders may overlap with what has been pulled out in the other six subseries. This subseries included packing slips, memoranda, correspondence, and various types of reports.

Series 1, Subseries 8: Miscellaneous materials, 1941-1945, 1962, 1981, n.d.

This subseries is made up of materials accessioned from various sources from within DTM, but outside of the original body of records. Most of the materials came from boxes of related WWII material. A few of the items located here duplicate materials found elsewhere in this collection (e.g. the Final Summary Report). Of importance is the unpublished manuscript on the development of the fuze and subsequent lawsuit, written by Tuve and Roberts and compiled in 1981. Also of note is an audio tape of Captains Kitt and Tyler discussing the use of the fuze during the war. This subseries is arranged by date.

Series 2: Notebooks, 1940-1943

The bulk of this series is laboratory and field notebooks. Almost all of these notebooks were numbered and labeled with the owner's name. The content in the notebooks varies greatly (from a few pages of notes or drawings to extensive data). Also of importance are eighteen of Tuve's notebooks relating to the project. Dr. Brown wrote of these notebooks: "Very cryptic, as much of the information was classified. The first records information from Tizard mission, if one knows what to look for." In addition, there are notebooks of the shop job records, test shoots and tube design successes and failures.

This series is arranged in the following way: final reports, followed by tube design and test shoots, shop notebooks, Tuve's notebooks and finally laboratory notebooks arranged numerically.

Series 3: Artifacts, ca. 1941-1944, 1990s

This series consists of 92 objects relating to the creation of the proximity fuze. The bulk of these are the 61 potted tubes from centrifuge testing. Of note is the large prototype fuze. Dr. Brown took photographs of the fuzes probably in the 1990s; these are also included here.

Folder Listing

	<u>Box</u>	<u>Folder</u>
Series 1: Files, 1940-1945, 1964-1966, 1977, n.d.		
Subseries 1: File jackets of selected papers (new labels), 1941-1945, 1964-1966, 1977, n.d.		
37-mm gun and cyclotron photographs, 14 August 1942	1	1
Applied Physics Laboratory Report Draft, 20 September 1945	1	2-4
British proximity fuze reports, January 1941-January 1942	9	1
Budget, Personnel, and Administration, 1941-1942	1	5
Butement et al. vs. Varian: Court Papers, 1964-1966	9	2
Butement et al. vs. Varian: Evidence, 1941-1942	9	3
Drawings: Bakelite battery case, 1942	Map	3
Drawings: Electronic circuits, 1941-1942	Drawer	1
Drawings: Installation in artillery shells, 1941	9	4
Drawings: Miscellaneous, 1941-1942		5
Drawing: Radiosonde, 1941-1942		6
Energizer Story, November 1944	1	6
Patent of the radio fuze, Tuve and Roberts (includes original application), 1941, 1963, 1965	9	4
Patent for an optical fuze, Henderson, Hafstad, and Roberts [MISSING]	--	--
Progress reports, 1941-1942	1	7
R.B. Roberts's recollections, 26 October 1977	1	8
R.B. Roberts's unpublished memoirs, excerpts about fuze work, 5 June 1979	1	9
Star shells, 1941-1942	1	10
Test firings, 1941-1942	1	11
Tizard proximity fuze disclosure [E472], n.d.	9	5
Series 1: Files, 1940-1945, 1964-1966, 1977, n.d.		
Subseries 2: Original file jackets (yellow labels), 1941-1942		
Crosley Corporation [D366-D391], 1941-1942	2	1
Field Tests – Stump Neck [E254-E323], 1941		2
Hygrade Sylvania Corporation: Correspondence and reports [E176-E200], 1941-1942		3
Miscellaneous technical papers [D870-D904], 1941-1942		4
Mott-Smith memos [D265-D269], 1941-1942		5
Naval Ordnance Laboratory [E39-E48], 1941-1942		6
Office memos [D667-D727], 1941-1942		7
Policy Matters: General [D392-D498], 1941-1942		8
Plastic amplifier block [D568-D573], 1942		9
Radio sondes [E80-E91], 1941		10
Raytheon: Correspondence, reports [E49-E79], 1941		11

	<u>Box</u>	<u>Folder</u>
Raytheon: Correspondence, test results [E92-E141], 1941-1942		12
Raytheon: Weekly letter [E142-E151], October 1941-July 1942		13
Room arrangements [D316-D317], ca. 1941		14
Safety delay, set-back switch, self destruction [E152-E168], 1941-1942		15
Semi-caps [D525-D566], 1941-1942		16
Shooting crew reports [D823-D860], 1941-1942		17
Technical information [D510-D524], 1941		18
Thyratron test (special), 1942 [E169-E175]	3	1
Tubes: Reports and data on [tubes] other than tube shoots, 1942 [E201-E253]		2
Tube shoots, 1941-1942 [A708-A712]		3
Tube shoot data and allied information, 1941-1942 [D905-D990]		4
Weekly reports, 1941-1942 [D755-D791]		5
Series 1: Files, 1940-1945, 1964-1966, 1977, n.d.		
Subseries 3: Original file jackets (dark blue labels), 1941-1942		
Hercules Powder Company: Cannon primers, field tests, January-December, 1942 [A320-A345]	3	6
National Carbon Company: Dry battery load tests, 1941 [A503-A514]		7
National Carbon Company: Dry battery [office] memoranda, 1941 [A163-A177]		8
National Carbon Company: Dry battery [office] memoranda, January-June 1942 [C-40]		9
National Carbon Company: Field tests of reserve batteries, Feb.-Aug. 1942 [A179-A184]	4	1-2
National Carbon Company: Reserve battery correspondence Apr.-Dec. 1942 [A188-A196]		3
National Carbon Company: 680 and X-701 [No Load – to meet specs.], 1942 [A404-A426]		4
National Carbon Company: X-701 drawings, 1941-1942 [A469-A484]		5
National Carbon Company: X-701 [and X-703] wiring diagrams, 1941 [A485-A502]		6
Series 1: Files, 1940-1944, n.d.		
Subseries 4: Original file jackets (light blue label), 1941-1942		
Aberdeen [Maryland] [U.S. Army Proving Ground – Ordnance testing], n.d. [D186-D189]	4	7
Bell Telephone Laboratories: D.P.M., 1941 [A911-A936]	9	6
Bell Telephone Laboratories: Packing slips, 1941-1942 [D805-D821]	4	8
C.F. Burgess Laboratories: Burgess field tests, 15 May-24 Sept. 1942 [A289-A293]		9
Burst range data, July 1941 [D499]	5	1
Crosley Contract, 31 January-8 May 1942 [A614-A629]		2
Fragmentation, 1941 [D360-D362]		3
General Electric Company, 1941 [A744-A748]		4

	<u>Box</u>	<u>Folder</u>
Hygrade Sylvania Corporation: DTM tube testing results, 16 September-13 November 1941 [A732-A739]		5
Hytron Corporation: Contract, 1940-1941 [A937-A940]		6
Hytron Corporation: HY123 electrical test data, 1941 [A870-A880]		7
Hytron Corporation: HY145 electrical test data, 1941 [A882-A898]		8
Hytron Corporation: Packing slips, 1 July-31 December 1941 [D798-D804 and A904-A970]		9-10
Paris Island, 1942 [D180-D185]		11
Raytheon: Packing slips, 1 January-31 December 1941 [A770-A782]	9	7
T-3 shoots, 3 September-30 December 1941	5	12
T-4 [Raytheon Tubes (Marshall)], 1941 [A51-A86]		13
Series 1: Files, 1940-1944, n.d.		
Subseries 5: Original file jackets (pink labels), 1941		
Hercules Powder Company: Detonators, 1941 [A309-A319]	6	1
Series 1: Files, 1940-1944, n.d.		
Subseries 6: Original file jackets (hand written labels), 1941-1942		
Base Fuse Program, 1942 [D304-D 306]	6	2
General Program - SD3, 1942 [D307-D312]		3
Molding Company, 1941-1942		4
Radiation pattern measurements, n.d. [D301-D302]		5
Wire: High Resistance for Detonators, 1941-1942 [D274-D291]		6
Series 1: Files, 1940-1944, n.d.		
Subseries 7: Papers organized chronologically, 1940-1944 (bulk 1941-1942)		
May-December 1940	6	7
January-March 1941	9	8
April 1941	6	8
May 1941		9
June 1941		10
July 1941	9	9
August 1941	6	11
September 1941		12
October 1941		13
November 1941		14
December 1941		15
January 1942	7	1
February 1-15, 1942		2
February 16-28, 1942		3
March 1-15, 1942		4
March 16-31, 1942		5
April 1-15, 1942		6
April 16-30, 1942		7

	<u>Box</u>	<u>Folder</u>
May 1-8, 1942	8	1
May 8-30, 1942		2
June 1942		3
July 1942		4
August 1942		5
September 1942		6
October 1942		7
November 1942		8
December 1942		9
1943		10
1944		11
Undated		12

Series 1: Files, 1940-1944, n.d.

Subseries 8: Miscellaneous materials, 1941-1945, 1962, 1981, n.d.

Preference rating certificates, 1941-1942	18	1-3
Reports on Section T activities, October 1941-January 1944	11	1-3
Progress Report: Radio Proximity Fuses for Anti-Aircraft Shell by Merle A. Tuve (National Defense Research Committee: Section T, Division A), 19 February 1942		4
Final Summary Report, 19 April 1942		5
Final Report on the Development of the Radio and other Proximity-Fuzes (Office of Scientific Research and Development: Section T), 31 March 1944 [2 copies]		6
Correspondence re: final report, 1944, 1962		7
The Development and Use of the Proximity or VT Fuze, Navy Department, [October 1945]		8
Memorandum re: declassification of records, 13 February 1962		9
Unpublished manuscript: <i>Proximity Fuze</i> by M.A. Tuve and R.B. Roberts, 1981		10
Article: "Proximity fuzes: a challenge to air power." James Phinney Baxter; <i>The Atlantic</i> (1932-1971); Sep 1946; Vol. 178, Iss 3; pg. 71, 8.	15	20
"The Story of the Applied Physics Laboratory," n.d.		21
<i>Hoover War History 1941-1945: A Record of the Hoover Company of North Canton, O. in World War II</i> , n.d.		22
¼-inch open reel audio tape, 1944, 1945 Title: Capt. Kitt, August 1944 Capt. Tyler, etc., Jan. 1945 Section T, OSRD Johns Hopkins APL Notes: Label on tape: Silver Theater 8/14/44 and 1/4/45		23

Series 2: Notebooks, 1940-1943

Final Summary Report, 19 April 1942 [E447]	10	1
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	<u>Box</u>	<u>Folder</u>
Copy prints from Final Summary Report, n.d.		2
Copy negatives from Final Summary Report, n.d.		3
Centrifuge Testing of Tubes, 1941 [D200]		4
Catalogue of Tubes Studied, 1941 [D201]		5
Details of Tube Failures, 1941 [D202]		6
Details of Tube Design, 1941 [D203]		7
Catalogue of Tubes Studied, 1941 [D204]		8
Current Tube Catalogue, 1-3 September 1942 [For L.M. Mott-Smith] [D500] [Copy 7]	13	1
Hercules Semicap: Reports of tests, 1941-1943 [O.W. Torreson]		2
Notebook: National Carbon Batteries Received and Dispensed (Dry and Reserve), 1942		3
Record of Purchase Orders [Order numbers starting 2360], n.d.		4
Shop Order Book No.3, June 1941		5
Shop Order Book No.5, August 1941		6
First Electrical Assembly Job Book, August 1941		7
Second Electrical Assembly Job Book, October 1941		8
“Bushong” Notebook, March 1942		9
James M. Lafferty Notebook, 24 February 1941-5 January 1942		10
L.S. Skaggs Notebook, 1941-1942 [C71]		11
18 Tuve Notebooks 1-9, 11-13, 17-18, 20-23, 1940-1942		12-20
Laboratory and Field Notebooks		
Design notebook: 5R2B & 3.7-Mk.I	Map Drawer 9	2
Vol. I: Copies of Drawings [C-59], 14 October 1941- December 1941	13	21
Notebook 3: 5-inch Proof [D194], 6 March 1941-9 May 1941		22
Notebook 4: 37mm 6 Pounder [C109, 299], 9 April 1941-12 December 1941		23
Notebook 4: Loose Material		24
Notebook 16 NT: F.C. Sneder, 22 June 1942-5 August 1942		25
Notebook 16: Loose Notes		26
Notebook 105: Perry, 25 August 1941-1 July 1942		27
Notebook 106: G. Jordan, 25 August 1941-1 July 1942		28
Notebook 106: Loose Notes		29
Notebook 108, 25 August 1941-10 March 1942		30
Notebook 112: Illax Bleakney, 25 August 1941-25 November 1941		31
Notebook 114: S.A. Buckingham, 25 August 1941-9 October 1941		32
Notebook 117: O.W. Torreson [#351 C-112], 29 August 1941-13 November 1941		33
Notebook 121: S.H. Dike 12 September 1941-1 December 1942	14	1
Notebook 121: Loose Notes		2
Notebook 122: B. Barghausen, 2 September 1941-1 December 1942		3
Notebook 122: Loose Notes		4

	<u>Box</u>	<u>Folder</u>
Notebook 123: W.J. Fett, 1 September 1941-25 February 1942		5
Notebook 123: Loose Notes		6
Notebook 125: J.A. Van Allen, ca. 23 June 1941-24 May 1942		7
Notebook 125: Loose Notes		8
Notebook 127: L.M. Mott-Smith, ca. 14 April 1941-17 August 1942		9
Notebook 129: R.D. Mindlin [Shooting Program T-4], 18 September 1941-6 June 1942		10
Notebook 129: Loose Notes		11
Notebook 132: George W. Baker, 23 September 1941-20 May 1942		12
Notebook 132: Loose Notes		13
Notebook 133: R.G. Ferris [D272], 15 September 1941-6 April 1942		14
Notebook 134: R.C. Williams, 17 September 1941-16 February 1942		15
Notebook 136: G.E. Waters, 22 September 1941-28 May 1942		16
Notebook 143: E. Ingles [T-55], 27 October 1941-16 January 1942		17
Notebook 145: Lynn G. Howell [D196, 4-A], 30 October 1941-11 December 1941		18
Notebook 153: Luther C. Smith, Jr., 31 December 1941-2 January 1942		19
Notebook 156: K. Caird, ca. 2 January 1942-23 March 1942		20
Notebook 156: Loose Notes		21
Notebook 161: Joseph Teresi, 13 February 1942-4 May 1942		22
Notebook 165: Polich, 6 March 1942-October 1943		23
Notebook 166: Gleason [4-C Experimental Tube Shoots from 3-14-42], 16 March 1942-8 May 1942		24
Notebook 169: Walters, 27 April 1942		25
Notebook 181: Clarence C. Bies, 28 May 1942-28 September 1942		26
Notebook 181: Loose Notes		27
Notebook 183: M.A. Arthur, 1 June 1942-25 May 1943		28
Notebook 183: Loose Notes		29
Notebook 188: Leo Broussard, 19 June 1942-1 July 1942	15	1
Notebook 191: J.C. Jacobs, 21 October 1942-25 March 1943		2
Notebook 196: W.P. Chandler, Jr., 9 February 1943-7 July 1943		3
Notebook 197: G.B. Hunter, 14 October 1942-25 October 1942		4
Notebook 198: J. Taylor, ca. 7 November 1942		5
Notebook 199: Frank Hudson, 30 November 1942-7 July 1943		6
Notebook 199: Loose Notes		7
Notebook 200: T. Lytle, 28 November 1942-14 December 1943		8
Notebook 205: J.B. Sparkman, Jr., n.d.		9
Notebook 211: J.B. Sparkman, Jr., 27 May 1943-28 June 1943		10
Notebook 213: E. Guess, 27 May 1943-28 June 1943		11
Notebook 214: F.T. Holmes, 13 July 1943-24 July 1943		12
Notebook [A], 14-30 April 1942		13
Notebook [B]: Lafferty[?], 18 November-15 December 1941		14
Notebook [C]: [A681-A{?}47], 1942-1943		15
Notebook [D]: Burt E. Moritz, 20 January-25 March 1942		16
Notebook [D]: Loose Notes		17

	<u>Box</u>	<u>Folder</u>
Series 3: Artifacts, ca. 1941-1944, 1990s		
Photographs of Fuzes, ca. 1990s	15	18-19
Prototype fuze, presumably for bomb test; oscillator missing; large dry cell battery	12	--
Fuze marked "Johns Hopkins Applied Physics Laboratory"	16	Tray 1
Oscillator with antenna		Tray 1
Oscillator without antenna		Tray 1
Oscillator in cylinder of Lucite		Tray 1
Bakelite battery case		Tray 1
Nose cone		Tray 1
2 fuzes marked "Tuve personal"		Tray 2
Fuze tagged "5-inch assembly with Carter DSI Mk17"		Tray 2
64 potted tubes from centrifuge testing. Many have identification tags with notes.	17	Tray 1-2
12 unpotted tubes from centrifuge testing. Many have identification tags with notes.		Tray 3
6 assorted remnants of shattered tubes. Some have identification tags with notes.		Tray 3

Subject Terms

Topics: Artillery--History
Military weapons--History
Proximity fuzes
Proximity fuzes--United States--History
Weapons industry--United States--History
World War, 1939-1945

Occupation: Electric engineers
Mechanical engineers
Physicists

Corporate Names: Carnegie Institution of Washington. Department of Terrestrial Magnetism
Johns Hopkins University. Applied Physics Laboratory

Personal Names: Tuve, Merle Antony, 1901-1982
Roberts, Richard B. (Richard Brooke), 1910-1980

Forms: Artifacts
Correspondence
Design patents
Laboratory notebooks
Monthly reports
Progress reports

Weekly reports

Bibliography

Brown, Louis. "The Proximity Fuze." *IEEE Aerospace and Electronic Systems Magazine*; July 1993; Vol.8, No. 7; pp. 3-10.

Tuve, Merle A. and Richard B. Roberts. *Proximity Fuze: A Collection of Papers Relative to the Proximity Fuze*. Unpublished Manuscript. Department of Terrestrial Magnetism, Carnegie Institution of Washington; Washington, D.C., 1981.

Related Collections

Two videotapes containing several reels of film footage were copied from the JHU APL and are kept in DTM's library collection.

- *The VT Radio Proximity Projectile Fuze* A 1945 JHU/APL color silent film production (F124) 46 min.
- Proximity (VT) Fuze WWII Newsreels (F288) B&W Sound 17 min.
 - Proximity Fuze – Pathe
 - Wartime Electronic Miracle – Universal
 - Miracle Fuse Helped Speed War's End – News of the Day
 - Secret Weapons of the War Revealed – Movietone
 - The V-T Fuse - Paramount

It may be useful to look in the following folders in the DTM General Files [unprocessed] for related materials. See the following series in this collection

CHRONOLOGICAL SERIES, 1935-1948

Navy Department

ARCHIVES SERIES

Proximity Fuze

Roberts, R.B.

Tuve, M.A.

In DTM's unprocessed records there are equipment inventory files which relate to Section T.

The Johns Hopkins University Applied Physics Laboratory maintains a collection of Proximity Fuze materials.

The Library of Congress has the Merle Antony Tuve Papers. The register to the collection can be found at:

[http://lcweb2.loc.gov/cgi-bin/faiddfrquerry/r?faidd/faiddfr:@field\(SOURCE+@band\(tuve+merle+antony\)\)](http://lcweb2.loc.gov/cgi-bin/faiddfrquerry/r?faidd/faiddfr:@field(SOURCE+@band(tuve+merle+antony)))