



# Smithsonian

*National Air and Space Museum*

## George Caldwell Furrow Papers

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2025

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## Collection Overview

<b>Repository:</b>	National Air and Space Museum Archives
<b>Title:</b>	George Caldwell Furrow Papers
<b>Date:</b>	1916-1968 (bulk 1916-1928)
<b>Identifier:</b>	NASM.1992.0005
<b>Creator:</b>	Furrow, George Caldwell, 1888-1958
<b>Extent:</b>	2.22 Cubic feet (6 boxes)
<b>Language:</b>	English .
<b>Summary:</b>	George Caldwell Furrow (1888--1958) was a military aviator and officer in the United States Army. His career began in 1904 with the 3rd Tennessee Infantry and transitioned to military aviation in 1917. Furrow's World War I service included aviation training in San Diego and command of the short-lived 271st Aero Squadron at Aberdeen Proving Ground. Post-war, he commanded the 6th Aero Squadron in Hawaii, later redesignated as the 6th Observation Squadron. The collection primarily covers Furrow's military career from 1916 to 1926 and includes personal papers, photographs, publications, and oversized materials. Notable items include pilot log books and licenses and a scrapbook and two photo albums from his time in Hawaii, one a small photo album kept by his wife, Nancy Caroline Huffard.
<b>Digital Content:</b>	<a href="#">Image(s): NASM-9A20999: Captain George Caldwell Furrow, Junior Military Aviator, US Army Air Service, circa 1919-1920.</a>

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## Administrative Information

### Acquisition Information

LeRoy D. Furrow, gift, 1992, NASM.1992.0005

### Processing Information

Accessioned by Patti Williams, 1992; arranged, described, and encoded by Melissa A. N. Keiser, 2025.

### Preferred Citation

George Caldwell Furrow Papers, NASM.1992.0005, National Air and Space Museum, Smithsonian Institution.

### Restrictions

No restrictions on access. Some oversized materials are awaiting conservation and may not be available for viewing.

## Conditions Governing Use

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## Biographical / Historical

George Caldwell Furrow (1888--1958) was a distinguished military aviator and officer in the United States Army. Born in Tennessee, Furrow enlisted in the U.S. Army in 1904 as a member of the 3rd Tennessee Infantry, Tennessee National Guard. His military career took a significant turn in 1917 when he was detailed to the Aviation Section of the Signal Corps, marking the beginning of his involvement in military aviation. Furrow's service during World War I included training as a junior military aviator at the Signal Corps Aviation School in San Diego, California, and subsequent assignments at various airfields, including Souther Field in Georgia and a course in air navigation and gunnery at the U.S. Naval Air Station in Miami. In November 1918, Furrow was placed in command of the 271st Aero Squadron at Aberdeen Proving Ground, Maryland, where he oversaw aviation ordnance testing, Handley Page O/400 bomber tests, and dive-bombing demonstrations.

In May 1919, Furrow assumed command of the 6th Aero Squadron at Luke Field, located on Ford Island in Pearl Harbor, Oahu, Territory of Hawaii. Once settled, Furrow was joined in Hawaii by his fiancée Nancy Caroline Huffard (1895--1991) of Rural Retreat, Virginia; the couple were married in Honolulu on August 4, 1919, the day after Nancy had arrived by ship. Furrow's time in Hawaii was marked by significant changes to military aviation in the region. The 6th Aero Squadron was redesignated as the 6th Observation Squadron, reflecting its focus on aerial observation and reconnaissance, and attached to the 2nd Observation Group. Major S. H. Wheeler assumed command of the new group on December 4, 1919, promoting Furrow to a position as Group Adjutant. By January 1920, the Furrows were living at Fort Kamehameha with Nancy employed as a teacher at a private school. This honeymoon period of the young couple's life ended in April 1920 when the Furrows were posted back to California; with World War I concluded, the Army was reducing its numbers. In April 1921, the Furrows returned home to Bristol, Tennessee. After retiring from active duty, Furrow continued his service in the Air Corps Reserves, achieving the rank of Major. He remained active in the Officers Reserve Corps and the Tennessee National Guard throughout the 1930s and 1940s, by then having logged over 1,000 hours flying time and served as both a dual and an advanced flying instructor. Furrow officially retired from military service in 1953.

George and Nancy Furrow's life was spent primarily in the Bristol area, on the border between Tennessee and Virginia. They had a daughter, George Ann Furrow, who was born in 1928 but sadly passed away at the age of five months in 1929. George remained active in aviation activities in the region, and ran the Furrow Electric Company, an electrical supply business in Knoxville, Tennessee. Nancy lived to the age of 96, outliving her husband, who passed away in 1958.

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## Scope and Contents

Materials in this collection predominantly cover George Furrow's active military career between 1916 and 1926. Series 1, Personal Papers, includes Furrow's military records and correspondence, pilot log books, pilot licenses, and assorted documents and ephemera such as calling cards and membership cards. Series 2, Photographs, contains formal portrait photographs of Furrow, original small-format negatives and prints, and circa 1990 print enlargements of the negatives. Most of the photographs date from the Furrow's time in Hawaii and reproduce photographs seen in the photo albums. Series 3, Publications, includes hard and soft cover books, booklets, pamphlets, and reports on military administration, early military radio operation, and various aviation related topics. Series 4, Oversized Materials, contains a small photo album kept by George Furrow's wife Nancy Huffard Furrow during her time in Hawaii (August 1919 to April 1920); a larger photo album containing photographs relating to George Furrow's life including a circa 1917 flight with early aviator Ruth Law, flight training at San Diego (CA), a

Handley Page O/400 bomber at Aberdeen Proving Ground (MD), and aerial and ground views of facilities at Luke Field (Territory of Hawaii); and a large scrapbook predominantly covering the Furrow's time in Hawaii and packed with newspaper clippings, but also including a wide range of ephemera, photographs, dried plant material, and a small nurse doll made of yarn and fabric scraps. A large amount of loose material was found tucked inside front and back covers as well as interspersed throughout the scrapbook. This series also includes two World War I era maps of the Territory of Hawaii, and four tightly rolled panoramic photographs (two copies of a group photograph of the 271st Aero Squadron at Aberdeen Proving Ground, one photo of San Diego, and one photo of Honolulu).

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## Arrangement

This collection is arranged into four series grouped by type of material: personal papers, photographs, publications, and oversized materials. Items within each series appear in roughly chronological order.

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## Bibliography

*George Caldwell Furrow Papers, NASM.1992.0005*, National Air and Space Museum, Smithsonian Institution; Box 1, Folders 1 and 2, Military records of George C. Furrow.

Hawaii Aviation. (2025). *An Archives of Historic Photos and Facts*. Retrieved March 2025 from <https://aviation.hawaii.gov/>

Hennessy, J. A. (1958). *The United States Army Air Arm, April 1861 to April 1917*. USAF Historical Research Division, Research Studies Institute, Air University. Retrieved March 2025 from <https://www.dafhistory.af.mil/Portals/16/documents/Studies/51-100/AFD-090602-017.pdf>

Discovery Center Maryland. (2023). *Aberdeen Proving Ground History Book, Second Edition*. Retrieved March 2025 from [https://discoverycentermd.org/wp-content/uploads/2023/2-APG-HistoryBook\\_Second\\_Edition.pdf](https://discoverycentermd.org/wp-content/uploads/2023/2-APG-HistoryBook_Second_Edition.pdf)

Mauer, Mauer. (1960). "The 6th Aero Squadron 1917-1947." *The Air Power Historian*, 7(3), 178-182. <https://www.jstor.org/stable/44513069>

United States Federal Census. (1920). *Fort Kamchamcha [Kamehameha], Honolulu, Hawaii Territory*; Roll: T625\_2037; Page: 8A; Enumeration District: 159; Image: 451.

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## Names and Subject Terms

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

### Subjects:

- Aeronautics
- Aeronautics, Military
- Air pilots

### Types of Materials:

- Aerial Photographs
- Black-and-white photographs -- 1900-1950
- Correspondence
- Maps
- Negatives
- Panoramic photographs

Publications  
Scrapbooks

Names:

Aberdeen Proving Grounds  
Furrow, George Caldwell, 1888-1958  
Luke Field, Pearl Harbor, Hawaii

Places:

Honolulu (Hawaii)  
Oahu (Hawaii)  
San Diego (California)

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## Container Listing

### Series 1: Personal Papers

#### Box 1

Box 1, Folder 1	Military records of George C. Furrow (1 of 2), 1908-1940 Notes: Includes folded certificates.
Box 1, Folder 2	Military records of George C. Furrow (2 of 2), 1913-1959 Notes: Includes folded certificates.
Box 1, Folder 3	Papers, Retirement (1 of 2), 1953-1956
Box 1, Folder 4	Papers, Retirement (2 of 2), 1953-1955
Box 1, Folder 5	Pilot's Log Books and Diary, 1917-1926
Box 1, Item 5	Diary, George C. Furrow (Ward's "A Line A Day" Book), 1917 Notes: After January 19th, only a few sporadic entries in June and December.
Box 1, Folder 5	George C. Furrow Pilot's Log Book No. 1, June 4, 1917 to October 7, 1921
Box 1, Folder 5	George C. Furrow Pilot's Log Book No. 2, May 21, 1919 to September 10, 1926
Box 1, Folder 6	Pilot's Licenses, George C. Furrow
Box 1, Folder 6	FAI Aero Club of America, Aviator's Certificate No. 820, August 29, 1917
Box 1, Folder 6	USA Dept of Commerce, Aeronautics Branch, Private Pilot's Licence No. 22735, October 13, 1931 to October 15, 1932
Box 1, Folder 7	Document, "Course in Aerodynamics"; Signal Corps Aviation School, San Diego, CA, August 1, 1917
Box 1, Folder 8	Documents, US Army Aviation Instructions and Lists, 1917-1919 Notes: Includes "Notes and Rules for Pilots"; "Officers Directory, May 15, 1917, Signal Corps Aviation School, San Diego, CA; and instructions for basic aerobatics issued by Flying Department, Souther Field, Americus, GA, July 23, 1918.
Box 1, Folder 9	Document, Names and Addresses of Air Service Officers, December 31, 1919
Box 1, Folder 10	Document, "Camp Book - Organized Reserves Camp, Rockwell Field, California", August 3-17, 1924

Box 1, Folder 11	Documents, Air Service Orders and Records, 1924-1933
Box 1, Folder 12	Calling Cards and Business Cards, circa 1919-1925 Notes: Cards arranged in alphabetical order by last name. Cards were received from donor inside a brown paper photo wallet (circa early 1920s) from Kuhlman's drug store in Knoxville, Tennessee.
Box 1, Folder 13	Membership Cards, George C. Furrow Notes: Card sets were received from donor housed in heavily worn "US Army Air Corps Rating Certificate" leather folders.
Box 1, Folder 13	[Set 1] United States Army and Navy Air Service Association, no. 747, November 16, 1918
Box 1, Folder 13	[Set 1] Army and Navy Air Service Association, December 1923
Box 1, Folder 13	[Set 2] US Air Corps, Air Corps Reserve, March 11, 1931
Box 1, Folder 13	[Set 2] American National Red Cross, Bristol Va. Tenn. Chapter, September 22, 1931
Box 1, Folder 13	[Set 2] Small envelope of 1.5 x 2 inch head portrait black and white photographs, undated
Box 1, Folder 13	[Set 3] Reserve Officers' Association, No. 2917, 1926
Box 1, Folder 13	[Set 3] Reserve Officers' Association, No. 14290, March 30, 1933
Box 1, Folder 13	[Set 4] Air Reserve Association of the US, No. 435, 1932
Box 1, Folder 13	[Set 4] Calling Cards and Clipping "Be A Booster", undated

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## Series 2: Photographs

### Box 2

Box 2, Folder 1	<a href="#">Photographs, Portraits of George C. Furrow, 1917-1920</a>
Box 2, Folder 2	Photographs, original black and white prints, location unknown (23 total), undated
Box 2, Folder 3	Negatives, Building Camp, Hawaii (11 total, with print enlargements), undated
Box 2, Folder 4	Negatives, Camp, Hawaii (7 total, with print enlargements), undated
Box 2, Folder 5	Negatives, Aviation, Hawaii (8 total, with print enlargements), undated
Box 2, Folder 6	Negatives, Military officers at work and leisure, Hawaii (11 total, with print enlargements), undated
Box 2, Folder 7	Photo album notes, one 4 x 5 inch b/w SI-OPPS copy negative with annotated photocopies, undated

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## Series 3: Publications

### Subseries 3.1: Booklets, Pamphlets, and Reports

#### Box 2

Box 2, Folder 8	US Army Booklets
Box 2, Folder 8	Manual of Interior Guard Duty, United States Army; War Department Document No. 466, Office of the Chief of Staff, 1914
Box 2, Folder 8	Signal Book, United States Army; War Department Document No. 464, Office of the Chief Signal Officer, 1914
Box 2, Folder 8	Lectures on Patrols, Advance Guards, and Outposts by Major John F. Morrison; The Army Service Schools Press (Ft. Leavenworth, Kansas), 1917, 1917
Box 2, Folder 8	The Radio Mechanic and the Airplane, Radio Pamphlet No. 30, Second Edition, Revised to November 26, 1918; Signal Corps, U. S. Army (Government Printing Office, Washington D.C.), 1919
Box 2, Folder 8	U. W. Airplane Radio Telegraph Set Type SCR-80, Radio Pamphlet No. 23; Signal Corps, U. S. Army (Government Printing Office, Washington D.C.), April 14, 1919
Box 2, Folder 9	Pamphlet No. 7, Regulations for Air Service Officers (Provisional), 1919; War Department, Office of the Director of Air Service, Washington, 1919 Notes: Found tucked into document: Mackenzie Aero Deviation Card; telegram to Commanding Officer, Luke Field, Hawaii, dated 18 March 1920 directing Captain William G. Lewis and 1st Lt. George C. Furrow to return to the United States.
Box 2, Folder 10	Pamphlet No. 8, Aerial Navigation Instructions (Provisional), 1919; War Department, Office of the Director of Air Service, Washington, 1919
Box 2, Folder 11	Report, Misc. Report 190, "Report on Structural and Design Characteristics of Present Type Airplanes Considered from a Maintenance Standpoint"; Air Service Engineering Division, McCook Field, Dayton, Ohio, April 2, 1924 Notes: Cyanotype print document.
Box 2, Folder 12	Booklet, Constitution of the Air Service Clubs Association, undated
Box 2, Folder 13	Booklet, "History of the 141st Aero Squadron in World War I" by H. Hallock Brown and Arthur D. Dodds, 1968

## Subseries 3.2: Hardcover Books

## Box 3

Box 3, Item 1	Book, US Army, Field Service Regulations (Government Printing Office, Washington D.C), 1914
Box 3, Item 2	Book, Major James A. Moss, Army Paperwork: A Practical Working Guide in Army Administration; The Collegiate Press, George Banta Publishing Company (Menasha, Wisconsin), July 1917
Box 3, Item 3	Periodical, Army Changes, Volume 5, No. 2, October 1, 1918
Box 3, Item 4	Book, Air Service Medical Manual, War Department, Air Service, Division of Military Aeronautics, Washington, D.C. (Government Printing Office, Washington D.C), 1918 Notes: Heavily illustrated with drawings and photographs.
Box 3, Item 5	Manual, Instructions for the Care and Operation of Model A-1-E Hispano-Suiza Aeronautical Engines, Wright-Martin Aircraft Corporation (New Brunswick, NJ), July 1918
Box 3, Item 6	Book, Regulations for The Army of the United States, corrected to June 10, 1918 (Changes Nos. 1 to 73); War Department Document No. 454, Military Publishing Company (New York, NY), 1918
Box 2, Folder 7	Book, The Big Gun, Ordnance Department, USA, Aberdeen Proving Ground, Maryland, 1918 Notes: Includes two black and white photographs glued to front endpaper of large rail-mounted guns.
Box 3, Item 8	Book, Willis R. Gregg, Aeronautical Meteorology, The Ronald Press Company (New York, NY), 1925
Box 3, Item 9	Book, C. deF. Chandler, ed. Aircraft Power Plants, The Ronald Press Company (New York, NY), 1926
Box 3, Item 10	Manual, Basic Field Manual, Vol. IV: Signal Communication (Government Printing Office, Washington D.C), 1931

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## Series 4: Oversized Materials

Box 4, Folder 1	Photo album, "Kodak pictures memory book, 1919, Nancy H. Furrow, from Honolulu, personal" [Nancy Huffard Furrow] [NASM-9A20992], 1919-1920 Notes: Photo album, 7.25 x 10 x 1.25 inches, black leather cover (badly worn), sewn binding, black paper pages, photos mounted with photo corners. Includes original prints of negatives found in Box 2, Folders 3-7.
Box 5, Folder 1	Scrapbook [NASM-9A20993], 1916-1918, 1940s Notes: Scrapbook, 12.75 x 11 x 3 inches, hard black fabric cover, string binding, manila paper pages. Predominantly newspaper clippings, but also includes a wide range of ephemera, photographs, dried plant material, a small bank book, and a small nurse doll made of yarn and fabric scraps. Large amount of loose material, both tucked inside front and back covers as well as interspersed throughout the scrapbook.
Box 6, Folder 1	Photo album, "Photographs" [NASM-9A20994] Notes: Photo album, 11 x 15 x 2.5 inches, black leather cover (very badly worn, red rot), two post binding, black paper album pages. Many loose photographs inside covers. Includes original print copied as negative stored in Box 2, Folder 7. Pages 70-96 are blank. Subjects depicted include Naval Training Station, San Diego (CA); Souther Field (Americus, GA); Aberdeen Proving Ground (MD); Furrow's trip to Hawaii on the SS Army Transport ship Thomas; Luke Field, Ford Island, Pearl Harbor, Oahu, Territory of Hawaii.
Box 6, Folder 2	Maps of Hawaii
Box 6, Folder 2	"Topographic Map of the Island of Oahu [...] Territory of Hawaii", 1914 Notes: US Geological Survey, "Topographic Map of the Island of Oahu, City and County of Honolulu, Territory of Hawaii"; 1914 (35 x 48 inches). Fragile, folded irregularly; needs conservation to view. Heavily soiled in the section showing Pearl Harbor and environs.
Box 6, Folder 2	US Navy, Map of the Hawaiian Islands, Naval Operations Chart No. 300 Notes: Fragile, folded irregularly; needs conservation to view.
Drawer MISC-ACCS-FOTO-0001	Panoramic Photographs
Drawer MISC-ACCS-FOTO-0001, Folder 1, Item NASM-9A20988	<a href="#">Panoramic photograph by W. L. Mann (no. 235), "271st Aero Squadron Service, Capt. G. C. Farrow Commanding Officer, Aberdeen, Md. Proving Grounds [sic]", 1918</a> Gelatin silver print black and white panoramic photograph, 8 x 46.5 inches. Notes: "271st Aero Squadron Service, Capt. G. C. Farrow Commanding Officer, Aberdeen, Md. Proving Grounds [sic]." Panoramic group photograph of members of the 271st Aero Squadron, US Army Air Service, under the command of Captain George C. Furrow,

posed in front of two hangars and three biplanes at Aberdeen Proving Grounds, Maryland; 1918. Aircraft are (left to right): General Motors (Fisher) DH-4L (Liberty DH-4B), Curtiss R-4L, and Curtiss JN-4H Hisso Jenny. A second Curtiss JN-4 is visible at right background.

Drawer MISC-ACCS-FOTO-0001, Folder 1, Item NASM-9A20989

[Panoramic photograph by W. L. Mann \(no. 236\), "271st Aero Squadron Service, Capt. G. C. Furrow Commanding Officer, Aberdeen, Md. Proving Grounds \[sic\]", 1918](#)

Gelatin silver print black and white panoramic photograph, 8 x 45 inches.

Notes: "271st Aero Squadron Service, Capt. G. C. Furrow Commanding Officer, Aberdeen, Md. Proving Grounds [sic]." Panoramic group photograph of members of the 271st Aero Squadron, US Army Air Service, under the command of Captain George C. Furrow, posed in front of two hangars and three biplanes at Aberdeen Proving Grounds, Maryland; 1918. Aircraft are (left to right): General Motors (Fisher) DH-4L (Liberty DH-4B), Curtiss R-4L, and Curtiss JN-4H Hisso Jenny. A second Curtiss JN-4 is visible at right background. Annotated on reverse by G. C. Furrow:

"The first Plane on left is De Havilland 4 L. (400 Horse power Liberty Motor. The Second Plane is Curtiss R.4L (400 horse power Liberty Motor) The Third Plane is Curtiss H.JN4 (200 horse power Hispano-Suiza Motor)."

Drawer MISC-ACCS-FOTO-0001, Folder 1, Item NASM-9A20990

[Panoramic photograph by O. A. Tunnell, rooftop view of San Diego, California, circa early 1920s](#)

Gelatin silver print black and white panoramic photograph, 8 x 43 inches.

Drawer MISC-ACCS-FOTO-0001, Folder 1, Item NASM-9A20991

[Panoramic photograph by R. L. Dancy, "Honolulu, H.T. from Punchbowl", circa 1919](#)

Gelatin silver print black and white panoramic photograph, 6.5 x 47 inches.

Notes: "R. L. Dancy Photo, Army & Navy News Staff, Honolulu, H.T. from Punchbowl." Panoramic view taken from the rim of the Punchbowl Crater looking roughly west over the city of Honolulu, Territory of Hawaii, circa 1919; Diamond Head visible in far left background.

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