



# Smithsonian

*National Air and Space Museum*

## Charles Stark Draper Collection

Jeremy Linden and Mark Kahn

2001



National Air and Space Museum Archives  
14390 Air & Space Museum Parkway  
Chantilly, VA 20151  
Business Number: Phone: 703-572-4045  
NASMRefDesk@si.edu  
<https://airandspace.si.edu/archives>

## Table of Contents

Collection Overview .....	
Administrative Information .....	1
Biographical / Historical .....	2
Scope and Contents .....	2
Arrangement .....	2
Names and Subjects .....	
Container Listing .....	
Series 1: Legal-sized Material .....	3
Series 2: Oversized Material .....	5

## Collection Overview

<b>Repository:</b>	National Air and Space Museum Archives
<b>Title:</b>	Charles Stark Draper Collection
<b>Date:</b>	1941-1978
<b>Identifier:</b>	NASM.2001.0019
<b>Creator:</b>	Draper, Charles Stark, 1901-1987 (Former owner)
<b>Extent:</b>	1.36 Cubic feet (3 boxes)
<b>Language:</b>	English .
<b>Summary:</b>	Charles Stark Draper was the leading figure behind the use of inertial navigation in aircraft, spacecraft, ballistic missiles, and submarines. This collection of memorabilia largely relates to Draper's career at the MIT Instrumentation Laboratory, his contributions to the military, and to the National Aeronautics and Space Administration (NASA).

---

## Administrative Information

### Acquisition Information

Charles Stark Draper, Gift to Astronautics Department, 1975  
Space History Department, Transfer, 2001

### Processing Information

Arranged and described by Jeremy Linden and Mark Kahn, 2001.  
Encoded by Amanda Buel, 2014.

### Preferred Citation

Charles Stark Draper Collection, Acc. 2001-0019, National Air and Space Museum, Smithsonian Institution.

### Restrictions

No restrictions on access.

### Conditions Governing Use

Material is subject to Smithsonian Terms of Use. Should you wish to use NASM material in any medium, please submit an Application for Permission to Reproduce NASM Material, available at [Permissions Requests](#) .

## Biographical / Historical

Charles Stark Draper was the leading figure behind the use of inertial navigation in aircraft, spacecraft, ballistic missiles, and submarines. He was born in Windsor, Missouri, in 1901. He earned a B.A. in psychology from Stanford University in 1922. He went on to earn a B.S. in electrochemical engineering and a Ph.D. in physics in 1938 from the Massachusetts Institute of Technology (MIT). One year later, Draper joined the faculty at MIT and helped establish the school's Instrumentation Laboratory. During the next thirty years, he performed research and directed the Instrumentation Laboratory, developing systems such as the gyroscopic shoebox gunsight that led to the derivative Mark 14 gunsight used by U.S. Navy shipboard anti-aircraft weaponry in World War II. Draper also developed inertial guidance systems utilized in the Polaris, Poseidon, Trident I and II submarine launched missiles, as well as the Atlas and Titan launch vehicles. During the 1960s, he and the Laboratory created the inertial navigation system employed by the Moon-bound spacecraft of the Apollo program. In 1969, at the height of student protests over military contracts and university research, the politically conservative Draper was asked to step down from his position as director of the Instrumentation Laboratory. Four years after his departure, the Instrumentation Laboratory split away from MIT and formed the non-profit Charles Stark Draper Laboratory.

Draper served in the U.S. Air Corps Reserve from 1926 to 1942, resigning as a first lieutenant. Throughout his career, Draper was the recipient of numerous medals, awards, and distinctions, including the National Medal of Science and induction into the Inventor's Hall of Fame. He was also an avid amateur ballroom dancer. For years, he studied and trained with the Arthur Murray Studio. Draper died in Cambridge, Massachusetts, in 1987.

---

## Scope and Contents

This collection of memorabilia consists of certificates, diplomas, citations, and awards bestowed upon Charles Stark Draper, as well as several photographs, and a photographic copy of a filed patent for a lead angle computer for gunsights. These materials relate to Draper's career at the MIT Instrumentation Laboratory, his contributions to the military, and to the National Aeronautics and Space Administration (NASA). Also included are certificates awarded to him by the Arthur Murray Studio for his performances in dance.

---

## Arrangement

The materials in this collection are arranged by type and chronologically. During processing, the various oversized materials have been placed in appropriately sized boxes. They are organized in each box by organization or institution granting the honor (citation, diploma, certificate) and then chronologically.

---

## Names and Subject Terms

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

Subjects:

Aeronautics  
Astronautics

---

## Container Listing

### Series 1: Legal-sized Material

Box 1, Folder 1	Certificate, Exceptional Service Award, U.S. Air Force, 1952
Box 1, Folder 2	Citation, Colonel Thomas L. Thurlow Navigation Award, 1956
Box 1, Folder 3	Certificate, Admiral William H.P. Blandy Gold Medal, American Ordnance Association, October 16, 1958
Box 1, Folder 4	Certificate of Membership, American Rocket Society, 1958
Box 1, Folder 5	Certificate, The William Proctor Prize, Scientific Research Society of America, December 29, 1959
Box 1, Folder 6	Certificate, Honorary Fellow, American Astronautical Society, Inc., 1960
Box 1, Folder 7	Certificate, Commendation for Contribution to Operation Polaris, AC Spark Plug, Electronic Division of General Motors Corporation, March 21, 1961
Box 1, Folder 8	Certificate, University of Missouri Honor Award for Distinguished Service in Engineering, University of Missouri, March 17, 1962
Box 1, Folder 9	Certificate, Honorary Lifetime Membership, Instrument Society of America, October 15, 1962
Box 1, Folder 10	Certificate of Appreciation, Service on the Aerospace Technology Panel, Institute of the Aerospace Sciences, 1962
Box 1, Folder 11	Certificate, Honorary Fellow, American Institute of Aeronautics and Astronautics, February 1, 1963
Box 1, Folder 12	Certificate, Award for Outstanding Achievement, Western Chapter, Missouri Society of Professional Engineers, February 13, 1963
Box 1, Folder 13	Certificate of Membership, National Hall of Fame, March 5, 1963
Box 1, Folder 14	Citation, Deutsche Gesellschaft Fur Ortung Und Navigation E.V. Award, August 26, 1965
Box 1, Folder 15	Certificate of Membership, Institute of Navigation, April 23, 1969
Box 1, Folder 16	Certificate, Distinguished Public Service Medal, U.S. Department of Defense, March 16, 1970

Box 1, Folder 17	Certificate, Annual Founders Medal, National Academy of Engineering, April 30, 1970
Box 1, Folder 18	Certificate, Distinguished Service, American Ordnance Association, May 6, 1971
Box 1, Folder 19	Certificate of Membership, Order of Washington, August 1, 1972
Box 1, Folder 20	Certificate and Honorary Degree, University of Missouri, December 21, 1975
Box 1, Folder 21	Certificate, Bronze Beaver Award, Massachusetts Institute of Technology, October 14, 1978
Box 1, Folder 22	Photograph, launch of submarine, U.S.S. George Washington, June 9, 1959
Box 1, Folder 23	Photograph, Polaris missile launch, July 20, 1960
Box 1, Folder 24	Photograph and correspondence, Draper and Vice President Hubert Humphrey [autographed by Humphrey], February 8, 1966
Box 1, Folder 25	Photograph, Draper and President Lyndon Johnson [autographed by Johnson], circa 1967
Box 1, Folder 26	Photograph, Russian skin coat, 1971

[Return to Table of Contents](#)

## Series 2: Oversized Material

Arrangement: Oversized certificates, citations, awards, and photographs are grouped by the type of military service, association, organization, or institution that granted them and then chronologically.

Box 2, Folder 1	Certificate, Exceptional Civilian Service Award, November 1947-September 1950, U.S. Air Force [and photograph], circa 1950
Box 2, Folder 1	Certificate, Exceptional Service Award, 1946-60, U.S. Air Force, circa 1960
Box 2, Folder 1	Certificate, decoration for Exceptional Civilian Service, 1962-67, U.S. Air Force, circa 1967
Box 2, Folder 1	Certificate, decoration for Exceptional Civilian Service, 1946 to the present, U.S. Air Force [citation and invitation], circa 1969
Box 2, Folder 1	Certificate, for service on the USAF Scientific Advisory Board, 1946-69, U.S. Air Force, circa 1969
Box 2, Folder 1	Certificate, for service on the USAF Scientific Advisory Board, 1959 to the present, U.S. Air Force, circa 1969
Box 2, Folder 1	Certificate, The Thomas D. White National Defense Award, U.S. Air Force Academy [and citation], May 2, 1970
Box 2, Folder 2	Certificate of Membership, Secretary of the Army's Scientific Advisory Panel, 1958-60, U.S. Army, September 10, 1958
Box 2, Folder 2	Certificate of Membership, Secretary of the Army's Scientific Advisory Panel, 1960-62, U.S. Army, September 10, 1960
Box 2, Folder 2	Certificate, appointment as consultant of the Secretary of the Army's Scientific Advisory Panel, U.S. Army, May 1, 1963
Box 2, Folder 2	Certificate, appointment as consultant of the Secretary of the Army's Scientific Advisory Panel, U.S. Army, 1969
Box 2, Folder 2	Certificate of Appreciation, as scientific advisor to the Secretary of the Army, U.S. Army, August 10, 1956-December 2, 1971
Box 2, Folder 2	Certificate, appointment as consultant of the Secretary of the Army's Scientific Advisory Panel, U.S. Army, 1972
Box 2, Folder 3	Certificate, Naval Ordnance Development Award, U.S. Navy [and letter], December 10, 1945
Box 2, Folder 3	Certificate, Distinguished Public Service Award, U.S. Navy, February 24, 1956

Box 2, Folder 3	Certificate, Distinguished Public Service Award, U.S. Navy, December 1, 1960
Box 2, Folder 3	Certificate of Commendation, Polaris Missile SSB(N) Steering Group, U.S. Navy, December 1, 1960
Box 2, Folder 3	Certificate of Merit to the Instrumentation Laboratory, Massachusetts Institute of Technology (MIT) for designing the guidance systems for the Polaris Missile, U.S. Navy, December 1, 1960
Box 2, Folder 3	Certificate of Merit, Forty-One for Freedom Award, U.S. Navy [and letter], 1967
Box 2, Folder 3	Certificate of Merit, Fleet Ballistic Missile Program, U.S. Navy, November 15, 1975
Box 2, Folder 3	Certificate of Merit, Fleet Ballistic Missile Program, U.S. Navy, June 29, 1976
Box 2, Folder 4	Certificate of Membership, Research Advisory Committee, National Aeronautics and Space Administration (NASA), February 26, 1959
Box 2, Folder 4	Certificate, Public Service Award, NASA, January 10, 1969
Box 2, Folder 4	Certificate, Public Service Award, NASA, September 29, 1969
Box 2, Folder 4	Photographs, images taken by TIROS satellite, NASA, circa 1960
Box 2, Folder 5	Certificate, The Sylvanus Reed Award, Institute of Aeronautical Sciences, 1945
Box 2, Folder 5	Certificate, Presidential Medal for Merit, 1946
Box 2, Folder 5	Certificate, New England Award, Engineering Societies of New England, April 29, 1947
Box 2, Folder 5	Citation, Air Force Association, August 3, 1957
Box 2, Folder 6	Certificate, Admiral of the Fleet Citation, American Airlines, Inc., January 20, 1954
Box 2, Folder 6	Certificate of Membership, TWA Ambassadors Club, August 21, 1958
Box 2, Folder 6	Certificate, Honorary Fellow, Institute of the Aeronautical Sciences, 1958
Box 2, Folder 7	Certificate of Membership, International Astronautical Academy, December 15, 1960
Box 2, Folder 7	Certificate, The Louis W. Hill Space Transportation Award, American Institute of Aerospace Sciences, Inc., 1962
Box 2, Folder 7	Certificate for 1966 Wright Brothers Lecture, American Institute of Aeronautics and Astronautics, January 24, 1966



Box 2, Folder 7	Certificate, The Vincent Bendix Award, The American Society for Engineering Education, 1966
Box 2, Folder 7	Certificate, The Daniel Guggenheim Medal, 1966
Box 2, Folder 7	Certificate of Recognition, the Crew of Apollo 11, August 11, 1969
Box 2, Folder 8	Certificate, Holley Medal, The American Society of Mechanical Engineers, 1957
Box 2, Folder 8	Certificate, Life Fellow, The American Society of Mechanical Engineers, September 30, 1969
Box 2, Folder 8	Certificate, Rufus Oldenburger Award, The American Society of Mechanical Engineers, 1971
Box 2, Folder 8	Certificate, Testimonial of Appreciation, The American Society of Mechanical Engineers, undated
Box 2, Folder 9	Certificate, Honorary Fellow, The Institution of Mechanical Engineers, October 28, 1970
Box 2, Folder 10	Certificate, Die Eidgenossische Technische Hochschule, Zurich, Switzerland, November 12, 1966
Box 2, Folder 10	Certificate, The Presidential Medal of Freedom, Apollo 13 Mission, April 18, 1970
Box 2, Folder 10	Certificate, Honorary Degree, University of Portland, May 10, 1970
Box 2, Folder 10	Certificate of Membership, The Institute of Navigation, October 14, 1970
Box 2, Folder 10	Certificate, The Charles F. Kettering Award, George Washington University, October 29, 1970
Box 2, Folder 10	Certificate, The Elmer Sperry Award, 1970
Box 2, Folder 10	Certificate, National Moon Walk Day Proclamation, July 20, 1971
Box 2, Folder 10	Certificate, Award of Merit, American Institute of Consulting Engineers, October 17, 1972
Box 2, Folder 10	Certificate, The Lamme Medal, The Institute of Electrical and Electronics Engineers [and photograph], 1973
Box 2, Folder 10	Certificate, United States Space Week Proclamation [and letter], July 13, 1974
Box 2, Folder 10	Certificate, Friend of the Burd, MIT, October 1974

Box 2, Folder 10	Certificate, Kelvin Gold Medal, The Institute of Civil Engineers, 1974
Box 2, Folder 10	Certificate, Elder Statesman of Aviation, National Aeronautic Association, October 21, 1977
Box 2, Folder 11	Certificate of Merit, Bronze Medal, Modern Ballroom Dancing, Arthur Murray Studio, March 23, 1974
Box 2, Folder 11	Certificate, Bronze Standard, Swing Dancing, Arthur Murray Studio, November 10, 1974
Box 2, Folder 11	Certificate, Bronze Standard, Polka, Arthur Murray Studio, November 10, 1974
Box 2, Folder 11	Certificate, Bronze Standard, Tango, Arthur Murray Studio, November 10, 1974
Box 2, Folder 11	Certificate, Bronze Standard, Samba, Arthur Murray Studio, November 10, 1974
Box 2, Folder 11	Certificate, Star Award, Boston Ballroom Studio, June 13, 1975
Box 2, Folder 12	Photographic copy, New York Times article, M.I.T.'s Draper Out ("I Got Fired") after 47 Years, October 17, 1969
Box 2, Folder 12	Photograph of Appreciation, Alumni Day Committee, MIT, 1969
Box 2, Folder 12	Photograph [autographed], U.S. Department of Transportation building, April 4, 1972
Box 3, Folder 1	Certificate of Membership, Massachusetts Science and Technology Foundation, July 24, 1973
Box 3, Folder 1	Certificate of Membership, Pan Am Clipper Club, April 7, 1964
Box 3, Folder 2	Photograph, Apollo 15 launch [autographed by the crew], circa 1971
Box 3, Folder 2	Certificate, Howard N. Potts Medal, The Franklin Institute, October 19, 1960
Box 3, Folder 2	Certificate, Honorary Fellow, The Royal Aeronautical Society, December 3, 1970
Box 3, Folder 3	Certificate, Allan D. Emil Memorial Award, International Astronautical Federation, 1977
Box 3, Folder 3	Photographic copy, patent no. 2690014, Lead Angle Computer for Gun Sights, March 29, 1941
Box 3, Folder 3	Photograph [autographed], Draper and chorus line, undated
Box 3, Folder 3	Photograph [autographed], Titan missile launch, February 6, 1959

Box 3, Folder 4	Certificate, The John Scott Medal, the city of Philadelphia, June 11, 1971
-----------------	--

Box 3, Folder 5	Certificate, The National Medal of Science, 1964
-----------------	--

[Return to Table of Contents](#)