Inventory of Records Relating to Ames Aeronautical Laboratory at NARA Archives II, 1939-1958

NASA Ames History Office
NASA Ames Research Center National Archives and Records Administration at College Park, Maryland

Record Group 255

NASA Ames History Office

NASA Ames Research Center
Moffett Field, California

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Descriptive Summary

Title: Records Relating to Ames Aeronautical Laboratory
Date (inclusive): 1939-1958
Collection Number: RG255
Creator: Ames Aeronautical Laboratory
Extent: Number of containers: 28
Repository: National Archives and Records Administration
College Park, Maryland 20740-6001
Abstract: The records of the National Aeronautics and Space Administration (NASA), and its precursor the National Advisory Committee for Aeronautics (NACA), comprise Record Group 255 of the National Archives and Records Administration (NARA). At the College Park, Maryland facility of NARA (known as "Archives II"), there are two groups of textual records and one group of photographic records that contain documents pertinent to Ames. Materials in these groups are presented in this guide, and include research authorizations, material from pubic affairs officers, and photographs.
Language: English

Access

Collection is open for research.

Publication Rights

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Preferred Citation

[Identification of item], Ames Aeronautical Laboratory, [Container number], [Folder number], National Archives and Records Administration, College Park, Maryland.

Administrative History

The Ames Aeronautical Laboratory was the second laboratory of the National Advisory Committee on Aeronautics (NACA). The NACA was created by act of Congress on March 3, 1915 and charged with the development of aeronautical research and testing facilities to improve both civil and military aviation. By 1917 the NACA had built a fully operational aeronautical research facility called the Langley Memorial Aeronautical Laboratory near Norfolk, Virginia. By 1939, American political leaders recognized that the world was heading toward war and that other nations had surpassed the United States in basic aeronautical research. NACA leaders recognized that the Langley laboratory had run out of space for new wind tunnels and was straining the electrical capacity in the area. Thus, the Roosevelt Administration forcefully endorsed a report from the NACA Special Committee on Future Research Facilities, dated December 30, 1938, that argued for the establishment of a second research installation near the West Coast aircraft manufacturers. The tentative site suggested was the U.S. Naval Air Field and Army training base at Moffett Field in Sunnyvale, California. On February 3, 1939 President Roosevelt transmitted the $10 million request to Congress for incorporation into the second deficiency bill. A stiff partisan political struggle followed, however, and it was not until August 9, 1939, that the funds were approved as a part of the third deficiency bill.

Construction of the second laboratory began on December 20, 1939, led by an elite group from Langley, whose building priorities indicated a sense of urgency: flight research building, wind tunnels, the technical services facilities, and lastly the administration building. On April 18, 1940, the center was christened Ames Aeronautical Laboratory to honor Dr. Joseph Ames, the chairman of NACA from 1927 to 1939 and a staunch advocate for basic scientific research and the responsibility of the federal government in training people for it. Responsibility for organizing the center rested with the Engineer-in-Chief, Dr. Smith J. De France, served as Center Director from 1940 to 1965. Smitty DeFrance was ably assisted by John F. Parsons, his deputy in charge of administrative matters, by Harry Goett who directed low-speed wind tunnel research, and Harvey Allen who directed high-speed wind tunnel research. Allen joked in 1943 that he was actually in charge of "Theoretical Aerodynamics and Reinforced Concrete" because, in fact, the bulk of everyone's efforts at Ames was in building facilities as quickly as possible, rather than conducting research.

The first research effort at Ames involved flight test aircraft rather than wind tunnels. The Royal Air Force Bomber Command raids over Germany pointed out the need for a de-icing system to allow aircraft to fly in all types of weather. Within a year an effective hot-air de-icing system had been developed at Ames for American heavy bombers, and Ames led the development of methods to test for icing conditions in actual flight. Lewis Rodert won the 1947 Collier Trophy in recognition of the outstanding research done at Ames. Later, the knowledge of heat transfer gained in wing de-icing experiments was applied to problems of jet aircraft and missile design.

During World War II, Ames kept its wind tunnels in almost constant operation, working to improve such famous production aircraft as the P-51 Mustang and the P-38 Lightning. A complete set of wind-tunnels was available to West coast manufactures and their military customers: the smaller 1-by-3 foot tunnel that operated at supersonic speeds, to the workhorse 7-by-10 wind tunnels, to the 40-by-80 full scale wind tunnel, then the world's largest. In 1943, the Research Division was split into two divisions, one for theoretical and applied research and the other for full-scale flight investigations. In 1944, the technical service group and the technical shops were combined into the Service Division. Otherwise, Ames' organization changed little during the war years.

Ames changed more dramatically in the post-war period. In 1953, as a result of the Hoover Commission on Government Reorganization and its recommendation on establishing a uniform nomenclature for all governament agencies, sections were renamed branches, the primary operational unit below the division. Two new divisions were added at Ames: the High-Speed and Flight Research Division, and the Research Instrumentation and Engineering Services Division.

Another key addition, in 1950, was the Ames Unitary Plan Design Group. More high-speed tunnels and more sensitive instrumentation were required for the United States to compete in the world of jet aircraft and guided missiles. To combine the talents of NACA, university, military, and industry researchers--as well as to forge a unified front in lobbying for the enormous funds required--Ames led the formation of a Unitary Plan wind tunnel design group. This group was to design a series of high-speed wind tunnels located wherever such research was needed, at a total estimated cost of $10 billion. After Congress whittled down the Unitary Plan to $27 million only one such tunnel was constructed--at Ames. Not only was the tunnel itself an engineering masterwork--with three tunnels operating integrated to make the most efficient use of

drive motors and researchers' time--but the tunnel supported much of the key work that led America into the space age.

By 1957, international pressures, the arms race, and the orbit of Sputnik again forced change in the administrative structure of Ames. On July 29, 1958, the National Aeronautics and Space Act was signed. On October 1, 1958, the National Aeronautics and Space Administration was born, it absorbed the NACA, and Ames became a part of America's space program.

Indexing Terms

The following terms may be used to index this collection.

Corporate Name

Ames Aeronautical Laboratory

Geographic Names

Moffett Field (Calif.)

Scope and Content

The records of the National Aeronautics and Space Administration (NASA), and its precursor the National Advisory Committee for Aeronautics (NACA), comprise Record Group 255 of the National Archives and Records Administration (NARA). When NASA assumed the functions of the NACA in 1958, there were three NACA laboratories in the United States, one of which was the Ames Aeronautical Laboratory, located at Moffett Field, California. Per federal guidelines, NACA material meant for permanent retention was sent to the National Archives, which was located in Washington, DC during the 1950s.

This guide provides a detailed list of the materials relating to the Ames Aeronautical Laboratory that have been deposited with the NARA branch at College Park, Maryland (known as "Archives II"). While there are many more records in RG255 than those listed here, this guide is intended to provide access only to the records that relate to the Ames Aeronautical Laboratory. For more complete documents related to the other NACA laboratories and the NASA field centers, please contact the National Archives.

Materials listed in this guide are from three separate sub-groups of RG255, all of which contain some amount of records related to the Ames Aeronautical Laboratory.

RG255.2.2 consists of Records of the Research Coordination Division and includes three boxes of Ames research authorizations, which are primarily made up of correspondence between NACA headquarters and Ames regarding the funding of aeronautical research during World War II.

RG255.4.1 consists of the records of the NASA Ames Research Center, previously known as the Ames Aeronautical Laboratory. While the bulk of materials (over 700 cubic feet) in RG255.4.1 are located at the Pacific Region branch of NARA in San Bruno, California, a few boxes (approximately 3.5 cubic feet) are located at Archives II in College Park, Maryland. Materials in these 10 boxes include press releases, newspaper clippings, and reports from public affairs officers.

The NACA records at Archives II include three sets of photographs that pertain to the Ames Aeronautical Laboratory: RG255-RF, RG255-RFA and RG255-RA. Photographs of NACA research facilities make up RG255-RF, and there are five boxes (numbered 10-14) that contain material related to Ames, such as photos of buildings and facilities, wind tunnels, and aerial photographs of the laboratory campus. Photographs of NACA aeronautical research facilities make up RG255-RFA, and there are 34 folders that contain material related to the aeronautical research conducted at Ames, such as personnel, wind tunnels, facilities, aircraft and spacecraft. Photographs of scientific research conducted at NACA facilities makes up RG255-RA, and there are 11 boxes that are organized by scientific research subject. This guide does not provide detailed information about RG255-RA, and further information must be obtained from the National Archives.

The photograph files were all closed out in 1958, when the NACA was absorbed into NASA. Most of the photos relating to Ames were generated by Ames photographers and thus can also be found using the Ames negative numbers in the Ames photograph collections at NARA San Bruno. Many of the images have also been scanned and indexed by the Ames Research Center and can be found on the Ames Imaging Library System (AILS) on the NASA Ames Web site.

RG255.2.2 **Records of the Research Coordination Division: Ames Research Authorizations 1939-1952**

Physical Description: Boxes 1 - 3

Scope and Content Note

The materials in this set of records are the Records of the Research Coordination Division. The entirety of RG255.2.2 consists of correspondence, 1915-52; technical reports, memorandums, and notes, 1916-58; reprints of reports issued during World War II ("Wartime Reports"), 1942-52; and a reference library of aeronautical literature, 1938-52. Records of the Research Administration Division, consisting of invention and patent case files, 1917-58. Correspondence of the Research and Contribution Board, 1917- 58. Records of the Research Coordination Division, consisting of research memorandums, 1946- 57; Langley Research Authorizations, 1918-48; case files relating to work accomplished at the Langley Laboratory under research authorizations, 1920-41; Ames Research Authorizations, 1941-50; and Lewis Research Authorizations, 1942-50.
The materials listed below are the records in RG255.2.2 that relate to the Ames Aeronautical Laboratory, and primarily consist of correspondence between NACA headquarters and Ames about funding research during World War II.

Box 1, Folder 1	**Ames Aeronautical Laboratory Miscellaneous**
Box 1, Folder 2	**122.1 Ames Aeronautical Laboratory Administration, Policy and Procedures**
Box 1, Folder 3	**122.22 Administration and Service Buildings**
Box 1, Folder 4	**122.32 Schedules of Tests 1949-1952**
Box 1, Folder 5	**122 Ames Aeronautical Laboratory**
Box 1, Folder 6	**Ames Aeronautical Laboratory, Ames Site Selection 1939**
Box 2, Folder 1	**122.33 Closed Research Authorizations**
Box 2, Folder 2	**122.33 (A4) Inv. Full Span Flaps on Consolidated XB-32 Model**
Box 2, Folder 3	**122.33 Ames Research Authorizations (Misc.)**
Box 2, Folder 4	**122.33 (A-15) Balanced Control Services**
Box 2, Folder 5	**122.33 (A-26) Ice Prevention on Boeing B-17F by means of heated surfaces**
Box 2, Folder 6	**122.33 (A-41) Duct Design and Characteristics of Ryan XFR-1**
Box 2, Folder 7	**122.33 (A-99) Wind Tunnel Investigation of Aerodynamic Characteristics of North American XP-82 Airplane**
Box 3, Folder 1	**122.33 (A-143) YP-80 Airplane**
Box 3, Folder 2	**122.33 (A-117) Thermal Ice Prevention Requirements of Lockheed P-38 Airplane at High Speeds**
Box 3, Folder 3	**122.33 (A-69) Device for Reducing Forces on an Airplane Control Stick**
Box 3, Folder 4	**122.33 (A-184) Fundamental Study of Wing Leading Edge Inlets**
Box 3, Folder 5	**122.33 (A-164) Investigation of Compressibility Effects on Overhang-Type Control Balance**
Box 3, Folder 6	**122.33 (A-205)**

RG255.4.1 **Records of the Ames Research Center, Moffett Field, California 1939-1967**

Physical Description: Boxes 1 - 6, 6A

Scope and Content Note

Most of the materials in this set of records are located at the Pacific Region branch of the National Archives, with guides available online: http://www.oac.cdlib.org/findaid/ark:/13030/tf7g5005jm and http://www.oac.cdlib.org/findaid/ark:/13030/tf5779n7mk. Materials at the Pacific Region branch include central correspondence, 1938-58; central coded correspondence; 1951-67; central research correspondence, 1943-65; central files, 1941-65. Report unit files, 1947-77. Research and development reports, 1957, and project authorizations, 1941-59. Life Science Building dedication ceremony, 1968. Records of the Unitary Plan Design Group, 1950-55. Records of the Research Instrumentation Branch, 1941-56. Records of the Photographic Branch, 1945-55. Minutes and reports of the Automatic Stabilization and Control Subcommittee and the Research Advisory Committee on Control, Guidance, and Navigation, 1954-64. Records relating to the NASA Research and Technology Advisory Subcommittee on Aircraft Operating Problems, 1961-69. Historical files, 1941-72. These materials also include sound recordings of the activities at Ames Aeronautical Laboratory, 1942-45.

Some materials, however, are located at Archives II in College Park, Maryland. Listed below are the textual records of the Ames Aeronautical Laboratory that can be found at Archives II. They include correspondence, reports, historical files, and news clippings, and they date between 1938-1958. Also found in these materials is the dedicatory remarks by Dr. W.F. Durand at the official opening of the Ames Aeronautical Laboratory in June 1944. The Don C. Wiley reports were written by Wiley, an Aviation Information Specialist at Ames Aeronautical Laboratory, from the Public Affairs Office. They include weekly reports, correspondence, and brief reports known as Major Information Activities. Daniel S. Wentz II took over duties from Wiley and continued generating reports on a weekly basis.

Box 1, Folder 1	**22-1 Site for Ames 1939**
Box 1, Folder 2	**20-3 Aeronautical Research Facilities, Special Survey Committee on**
Box 1, Folder 3	**22-1 Field Station General 1941**
Box 1, Folder 4	**22-1 Ames Laboratory 1938-1940**
Box 1, Folder 5	**Ames and Edwards**
Box 1, Folder 6	**Ames Aeronautical Laboratory 1940**
Box 2, Folder 1	**Moffett News 1944-1945**
Box 2, Folder 2	**Moffett News 1946-1947**
Box 2, Folder 3	**Editorials/Clippings on Sunnyvale Selection**
Box 3, Folder 1	**Ames Press Releases 1949**
Box 3, Folder 2	**Ames Press Releases 1950**
Box 3, Folder 3	**Ames Newspaper Clippings 1951**
Box 3, Folder 4	**Ames TV Show, Science in Action 1951**
Box 3, Folder 5	**Ames Releases 1952**
Box 3, Folder 6	**Ames Clippings 1952**
Box 3, Folder 7	**Ames Clippings 1953**
Box 3, Folder 8	**Ames Clippings 1954**
Box 3, Folder 9	**Ames Clippings 1955**
Box 3, Folder 10	**Ames Clippings 1956**
Box 3, Folder 11	**Ames Clippings 1957**
Box 3, Folder 12	**Ames Wind Tunnel, Life Magazine Article**
Box 3, Folder 13	**Ames Laboratory**
Box 4, Folder 1	**Wiley, January-June 1949**
Box 4, Folder 2	**Wiley, July-December 1949**
Box 4, Folder 3	**Wiley, January-June 1950**
Box 4, Folder 4	**Wiley Reports**
Box 4, Folder 5	**Wiley, June-December 1950**
Box 5, Folder 1	**Wiley Reports 1951**
Box 5, Folder 2	**Wiley, January-June 1951**
Box 5, Folder 3	**Wiley, July-December 1951**
Box 5, Folder 4	**Wiley, January-June 1952**
Box 5, Folder 5	**Wentz reports 1952**
Box 5, Folder 6	**Wentz, January-June 1952**
Box 5, Folder 7	**Wentz, July-December 1952**

Box 5, Folder 8	**Ames Correspondence, January-June 1953**
Box 5, Folder 9	**Ames Correspondence, July-December 1953**
Box 5, Folder 10	**Ames Correspondence, January-June 1954**
Box 5, Folder 11	**Ames Correspondence, July-December 1954**
Box 6, Folder 1	**Special to AeroDigest on Ames Inspection, 1950**
Box 6, Folder 2	**Ames 1952 Inspection, Press Releases 1952**
Box 6, Folder 3	**Releases, Ames Inspection 1955**
Box 6, Folder 4	**Ames Inspection Brochure**
Box 6, Folder 5	**Photographs of Light Gas Gun**
Box 6, Folder 6	**Ames 1958 Triennial Inspection, Dr. Dryden 1958**
Box 6A, Folder 1	**Ames Aeronautical Laboratory Bluebook 1940-1946**
Box 6A, Folder 2	**Ames Dedication Photographs**
Box 6A, Folder 3	**Ames Light Gas Handouts**

RG255.12 **Still Pictures, General: Photographs of NACA Research Facilities and Activities 1938-1958**

Physical Description: Boxes 10 - 14

Scope and Content Note

RG255.12 contains over 50,000 photographic prints, negatives, transparencies, lantern slides, posters and lithographs. Topics covered relate to aeronautics and astronautics, including activities, facilities, equipment, aircraft, missiles, spacecraft, the lunar surface, astronauts, ceremonies, and conferences.
The photographs in RG255-RF document the NACA Research Facilities and Activities from 1938 to 1958, including photographs of the Ames Aeronautical Laboratory, which can be found in boxes 10 through 14 and are listed below.
The photographs in RG255-RFA document the NACA's and NASA's Aeronautical Research Facilities from 1928 through 1963. Photographs of the Ames Aeronautical Laboratory (known as the Ames Research Center after 1958) are listed below, following Box 15.

Box 10, Folder 109 **Ames Aeronautical Laboratory**
Box 10, Folder 110 **Administration Building**
Box 10, Folder 111 **Plot Plans**
Box 10, Folder 112 **First Flight of O-47A Airplane**
Box 10, Folder 113 **Dedication of Ames Aeronautical Laboratory 1944**
Box 10, Folder 114 **Aerial Views**
Box 10, Folder 114A **Aerial Views**
Box 10, Folder 115 **Plot Plan, Moffett Field**
Box 10, Folder 116 **Flight Research, P-80**
Box 11, Folder 116A **Flight Research, F-86**
Box 11, Folder 116B **Flight Research, C-46**
Box 11, Folder 116C **Flight Research, General**
Box 11, Folder 117 **Flight Research, Lab and Hangar**
Box 11, Folder 118 **Tunnels and Test Setups**
Box 11, Folder 119 **7x10 foot Tunnel**
Box 12, Folder 120 **Tunnel No. 1**
Box 12, Folder 121 **Tunnel No. 2**
Box 12, Folder 122 **Free Flight Tunnel**
Box 12, Folder 123 **40x80 foot Tunnel**
Box 12, Folder 123 **40x80 foot Tunnel**
Box 12, Folder 123B **40x80 foot Tunnel**
Box 12, Folder 123C **40x80 foot Tunnel**
Box 12, Folder 123D **40x80 foot Tunnel**
Box 12, Folder 124 **6x6 inch Heat Transfer Tunnel**
Box 13, Folder 125 **1.5x3 foot Tunnel**
Box 13, Folder 126 **12 foot Tunnel**
Box 13, Folder 127 **16 foot Tunnel**
Box 13, Folder 128 **Hypersonic Gun Tunnel**
Box 13, Folder 129 **Low Density Tunnel**
Box 13, Folder 130 **Low Turbulence 12 foot Pressure Tunnel**
Box 13, Folder 131 **12 foot Pressure Tunnel**
Box 13, Folder 133 **8x8 foot Supersonic Tunnel**
Box 13, Folder 134 **10x14 inch Supersonic Tunnel**
Box 13, Folder 135 **1x3 foot Supersonic Tunnel**
Box 13, Folder 135A **1x3 foot Supersonic Tunnel**
Box 14, Folder 136 **6x6 foot Tunnel**
Box 14, Folder 137 **8 foot Supersonic Tunnel**
Box 14, Folder 138 **Free Flight Tunnel**
Box 14, Folder 140 **2x2 foot Transonic Tunnel**
Box 14, Folder 141 **14 foot Transonic Tunnel**
Box 14, Folder 142 **Labs and Research Facilities**
Box 14, Folder 143 **Instrument Research Lab**
Box 14, Folder 144 **Science Lab**

Box 14, Folder 145 **Electric Analogue for Aerodynamic Studies**
Box 14, Folder 146 **Schlieren Photos**
Box 14, Folder 148 **Atmosphere Energy Simulator**
Box 14, Folder 149 **Auditorium and Cafeteria**
Box 14, Folder 150 **High Speed Wing Research**
Box 14, Folder 151 **Hypervelocity Ballistic Range**
Box 14, Folder 152 **Light Gas Gun**
Box 14, Folder 153 **Porous Leading-Edge Construction**
Box 14, Folder 154 **Shops and Models**
Box 14, Folder 155 **Technical Services Building**
Box 15, Folder 156 **Utilities Building**
Box 15, Folder 1 **Aerial View Ames Facility**
Box 15, Folder 2 **Ground Views/exterior and interior**
Box 15, Folder 3 **NACA Exhibit, San Francisco Junior Jaycees Air Fair**
Box 15, Folder 4 **Flow Chart (graphic)**
Box 15, Folder 5 **Personnel**
Box 15, Folder 6 **6x6 foot/compression**
Box 15, Folder 7 **7x10 foot/aerial**
Box 15, Folder 8 **40x80 foot**
Box 15, Folder 9 **1x3.5 foot high speed**
Box 15, Folder 10 **16 foot high speed**
Box 15, Folder 11 **12 foot low turbulence**
Box 15, Folder 12 **6x6 foot supersonic**
Box 15, Folder 13 **8 inch supersonic**
Box 15, Folder 14 **Free-flight**
Box 15, Folder 15 **Transonic**
Box 15, Folder 16 **Unitary Plan**
Box 15, Folder 17 **Schlieren Effect**
Box 15, Folder 18 **Airspeed Installations/F-86A-5**
Box 15, Folder 19 **Flaps**
Box 15, Folder 20 **Flight Simulators**
Box 15, Folder 21 **Flush Inlet**
Box 15, Folder 22 **Hypersonic Flight**
Box 15, Folder 23 **Icing**
Box 15, Folder 24 **Inspection (graphic)**
Box 15, Folder 25 **Model Shop**
Box 15, Folder 26 **Satellite Launching**
Box 15, Folder 27 **Stability/Ryan 92**
Box 15, Folder 28 **Supersonic Flight (graphic)**
Box 15, Folder 29 **Swinging Probe**
Box 15, Folder 30 **Thrust reversal/graphs**
Box 15, Folder 31 **[No caption]**
Box 15, Folder 32 **XF-2D**
Box 15, Folder 33 **F-80, F-100**
Box 15, Folder 34 **Lockheed Constellation**