Inventory of the Archives Reference Collection, 1939-2005

NASA Ames History Office
NASA Ames Research Center

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Descriptive Summary
Title: Archives Reference Collection, National Aeronautics and Space Administration, Moffett Field, California,
Date (inclusive): 1939-2005
Collection Number: AFS1070.8A
Creator: Ames Research Center.
Extent: Number of containers: 3 filing cabinets
Volume: approximately 30 cubic feet
Moffett Field, California 94035
Abstract: The Archives Reference Collection in the NASA Ames History Office provides a sampling of materials that span
the history of the Center from its origins in December 1939 through 2005. This collection presents the best general
overview of the activities, people, research and development, and organization of the NASA Ames Research Center.
Emphasized are photographs, news clippings, brochures, and administrative reports that provide the level of detail needed
 to answer a query about some subject in Ames history.
Language: English.
Access
Collection is open for research.
Publication Rights
Copyright does not apply to United States government records. For non-government material, researcher must contact the
original creator.
Preferred Citation
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Collection, National Aeronautics and Space Administration, Moffett Field, California, 1939-2005, [Container number] : [Folder number]. [Identification of item]. [Date, if available].

Administrative History
The Ames Aeronautical Laboratory was the second laboratory of the National Advisory Committee on Aeronautics (NACA). It
was located in Mountain View, California, adjacent to the Naval Air Station at Moffett Field. Construction began on
December 20, 1939, starting with the flight research building, various wind tunnels, technical services facilities, and an
administration building. The center was christened Ames Aeronautical Laboratory to honor Dr. Joseph Sweetman 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 Smith J. DeFrance, who
served as Center Director from 1940 to 1965, and Jack Parsons, who served as his assistant director for those years. DeFrance attracted to Ames some the brightest aeronautical engineers, encouraged them to build test facilities to prove their ideas, and then gave them freedom to pursue useful and exciting work.

During World War II, Ames kept its wind tunnels in almost constant operation, working with West coast aircraft manufacturers and their military customers to improve such famous production aircraft as the P-51 Mustang and the P-38 Lightning. Ames built the greatest collection of wind tunnels in the world, including the 1-by-3 foot supersonic tunnel, the workhorse 7-by-10 wind tunnels, the 12-foot pressurized tunnel, and the 40-by-80 foot full-scale wind tunnel, then the world's largest. Harry Goett led the flight and wind tunnel testing by which Ames solved many of the aerodynamic problems faced by jet aircraft as they went from subsonic to supersonic speeds. R.T. Jones developed his idea of the supersonic swept wing and the transonic area rule, which was verified in the Ames wind tunnels.

Ames also built an active flight test program. Pilot George Cooper devised an aircraft handling rating scale that put eventually led Ames into human factors research. One early research effort at Ames involved the use of flight test aircraft to devise a hot-air de-icing system for American aircraft. Lewis Rodert, who led that de-icing research program, won the 1947 Collier Trophy in recognition of the work done at Ames in service of the war effort.

Into the 1950s, Ames did research at ever greater speeds. Ames technicians built more sensitive instrumentation and faster wind tunnels to solve the challenges of jet aircraft and guided missiles. The Unitary Plan Wind Tunnels, opened in 1955, was an engineering masterpiece of three tunnels operating in an integrated system to make the most efficient use of drive motors and researchers' time. H. Julian Allen solved many of the most complex problems of the hypersonic regime, both with his own work and by leading an incredibly vibrant group of aerodynamicists. Allen, working with Alfred J. Eggers, proposed the concept of a blunt body shape for reentry vehicles. Then they created a complex of wind tunnels, ballistic ranges and arc jets which allowed them to develop all the technologies needed for astronauts to return safely to Earth.

On October 1, 1958, the National Aeronautics and Space Administration (NASA) was born, absorbing the NACA and its laboratories. Ames was renamed the NASA Ames Research Center, and embraced America’s space program. Ames continued its fundamental research in hypersonics and component technologies, then leveraged its expertise into new areas of space exploration. Ames became NASA’s lead center in basic life sciences research, which included radiation and gravitational biology, exobiology, human factors, and space physiology and habitability. Ames aerodynamicists also explored the complex airflows around rotorcraft and devised the first tilt-rotor aircraft, while others modeled airflows using new supercomputers and created the field of computational fluid dynamics. To link these computers together, Ames engineers pioneered internetworking, using tools from the Silicon Valley firms growing around it. Ames engineers and planetary scientists managed a series of productive airborne science aircraft, of robotic probes into planetary atmosphere, and robotic explorers like the Pioneers and Lunar Prospector.

Into the 1990s, Ames created the NASA Research Park at Moffett Field as a place to draw university and corporate partners from nearby Silicon Valley into space exploration. Ames leaders continued to explore new ways to develop new technological capabilities—in astrobiology, robotics, communications, instrumentation, and small satellites—and apply them to NASA’s evolving missions.

Indexing Terms

The following terms may be used to index this collection.

Corporate Name
Ames Research Center

Subjects
Aeronautics
Aerospace sciences
Astronautics
Interplanetary voyages
Manned space flight
Spacecraft
Space exploration

Geographic Names
Moffett Field (Calif.)

Scope and Content
The Archives Reference Collection in the NASA Ames History Office provides a sampling of materials from the Center's past. It spans the history of the Center from its origins in December 1939 through 2005. The collection originated in the Main
Library, where all varieties of historical materials donated by Ames employees and retirees were accepted. This Ames History Collection was transferred to the Ames History Office in 1998, and was processed to support the research for *Atmosphere of Freedom: Sixty Years at the NASA Ames Research Center*. The collection was then returned to the Main Library, and more materials added, until the NASA Ames History Office was reopened in 2003. In 2006, the collection was re-organized to allow for greater expansion and more consistent subject headings. This culminated in the establishment of a new collection, the Archives Reference Collection. Materials will continue to be added to this collection, and donations are welcome.

This collection presents the best general overview of the activities, people, research and development, and organization of the NASA Ames Research Center. This collection emphasizes photographs, news clippings, brochures, and administrative reports that provide the level of detail needed to answer a query about some subject in Ames history. The Annual Inspection booklets, for example, are a wonderful source for the early history of Ames. Later Ames history is documented through annual reports, facilities inspections and summaries, master plans, and technical reports. Biographical material can be found about Ames people, such as the administrative staff, scientists and researchers who have worked at Ames over the decades. It contains little original correspondence—which is with the National Archives—and few published materials—which can be found through the Main Library. Furthermore, the research files generated for the three history books on Ames are filed in a separate collection.

Subjects covered in this collection include exploration missions to other planets in which NASA Ames participated, such as the Apollo program that sent humans to the moon; Pioneer program that sent spacecraft to Jupiter, Saturn, and out of the solar system; the Biosatellite program that first studied the effects of weightlessness on the body; the Galileo mission to Jupiter in which a probe was sent through the Jovian atmosphere; the Lunar Prospector mission that sent a probe to the moon, and the Viking mission to Mars. For the first decades of its existence, Ames pioneered research in aeronautics, wing design, wind tunnel research, and body shape, all of which are represented in the Archives Reference Collection.

In no sense is this collection a comprehensive representation of Ames history. The official archive of NASA Ames is deposited with the National Archives and Records Administration--Pacific Region and the Federal Records Center (San Bruno).

This collection is housed in filing cabinets in the Reading Room of the History Office. Please visit the NASA Ames History Office Web site for a complete list of subjects covered by this collection.