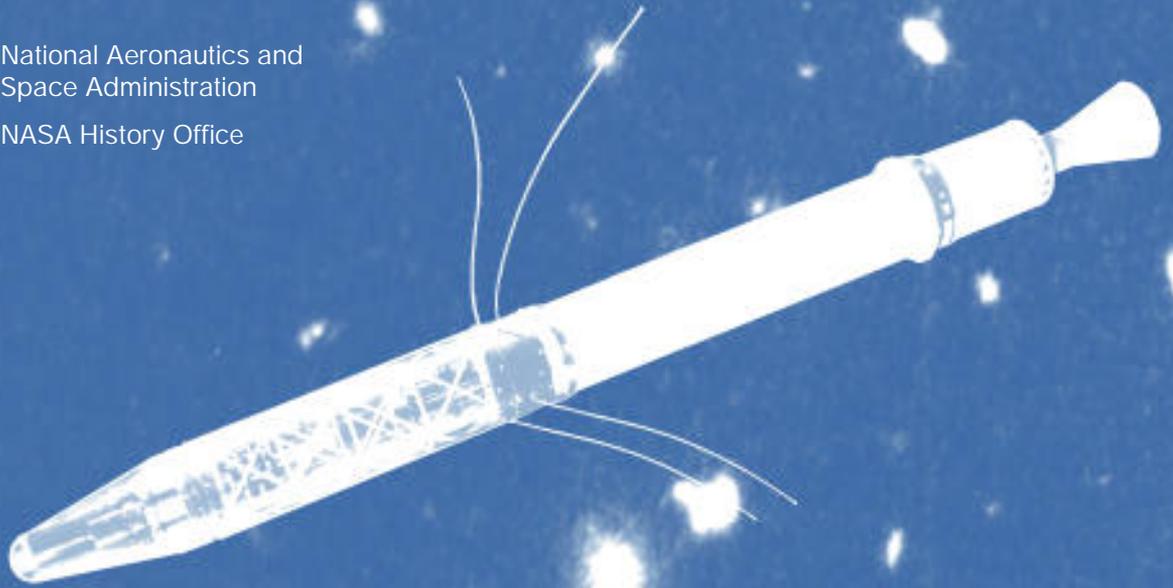




National Aeronautics and
Space Administration
NASA History Office



Research in NASA History

A Guide
to the
NASA
History
Program



Top Image: This photograph is of a model of *Explorer I*, the first spacecraft launched into Earth orbit by the United States. The 18-pound scientific satellite was launched on January 31, 1958, by the Army Ballistic Missile Agency and the Jet Propulsion Laboratory. *Explorer I* discovered the Van Allen radiation belts around the Earth. *NASA Photo # 58 Explorer 1-2.*

Background Image: This dramatic view of the universe is called the Hubble Deep Field and was assembled from several hundred separate images taken by the Hubble Space Telescope. Only about 25 percent of the entire Hubble Deep Field is shown here, covering a slice of the sky only 1/30th the diameter of the Moon. Several hundred newly seen galaxies are visible in this 1996 image. *Space Telescope Science Institute Photo # STSCI-PRC-96-01a.*

Lower Image: A bevy of NACA/NASA experimental aircraft ("X-planes") at the Dryden Flight Research Center (then called the NACA High Speed Flight Station) in Edwards, California, from 1947 to 1958. Counterclockwise from the lower left: the Bell X-1A, the Douglas D-558-1 "Skystreak," the Convair XF-92A, the Bell X-5, the rocket/turbojet Douglas D-558-2, and the Northrop X-4 semi-tailless turbojet. The center aircraft is the turbojet Douglas X-3. *NASA Photo # E-2889.*

Research in NASA History

A Guide to the NASA History Program

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Progress, far from consisting in change, depends on retentiveness. . . . Those who cannot remember the past are condemned to repeat it.

George Santayana
The Life of Reason (1905)

The historian is a prophet looking backwards.

Friedrich Schlegel
Athenaeum

History, by apprising [people] of the past, will enable them to judge the future.

Thomas Jefferson

[L]eaders of large enterprises sometimes find it difficult to relate their way of working to the experiences and needs of others. But . . . many large-scale endeavors of the past and present are open to the responsible scholar. We in NASA would welcome such research. Indeed, we feel a responsibility to give as much assistance to the inquiring scholar as possible.

James E. Webb
Space Age Management (1969)



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Part I

The NASA History Program

1. Introduction

One of the most exciting avenues of historical inquiry for scholars working in the late twentieth century has been unraveling the evolution of one of the vital enterprises of the century: humanity's movement beyond the Earth toward the exploration and use of air and space. Understanding this fundamental shift in humanity's environment after centuries of being Earthbound presents a formidable challenge. This booklet describes the efforts of the National Aeronautics and Space Administration (NASA) to capture and record the events of its past and to make that past accessible to NASA personnel, the historical community, and researchers interested in how and why the U.S. space program came to be, as well as how it carried out its missions in aeronautical research and development and the exploration of space.

Research in NASA History replaces an earlier edition of the same title published in 1992, in addition to *History at NASA* (1986), prepared by Sylvia D. Fries, and the *Guide to Research in NASA History*, first issued in 1976 and written by Alex Roland (second through seventh editions). *Research in NASA History* describes the research opportunities and accomplishments of NASA's agencywide history

program. It also offers a concise guide to the historical documentary resources available at NASA Headquarters in Washington, D.C., at NASA facilities located around the country, and through the federal records systems. In addition to portions of its predecessor publications, *Research in NASA History* contains expanded contributions by Lee D. Saegesser and other members of the NASA Headquarters History Office and by those responsible for historical documents and records at some NASA centers.

The student of modern public history—especially when that history covers large-scale and complex organizations—confronts a labyrinthine passage through documents, organizations, politics and discovers the triumphs and disappointments of innumerable scientists and engineers. If this publication can ease that passage, it will have served its purpose.

Roger D. Launius
NASA Chief Historian
NASA History Office
June 1997

2. The NASA History Program

Background and Purpose

First established in 1959, the NASA History Program is one of more than thirty public history functions in the federal government. It is an ongoing, long-term effort to provide a comprehensive understanding of the space agency's institutional, cultural, social, political, economic, technological, and scientific development of aeronautics and space. The program resulted from an Executive Order, first issued by President Franklin D. Roosevelt and periodically reemphasized, that federal agencies record objectively the history of their activities to assess policy and departmental effectiveness.

NASA created and maintains this historical program for two principal reasons:

1. The sponsorship of research in NASA-related history is one good way in which the agency responds to the provision of the National Aeronautics and Space Act of 1958 to "provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof."
2. The thoughtful study of NASA history can help agency managers accomplish the missions assigned to the agency.

Understanding NASA's past aids in comprehending its present situation and illuminates possible future directions.

These grand strategic ideas have found tangible expression in efforts to ensure that the documentary foundation of the agency's history is captured and preserved for current and future generations, to stimulate historical research in areas of inquiry that may broaden our perceptions of the modern age of aerospace research and development, and to disseminate the results of NASA's historical documentation and research activities. The result has been a multilevel effort to preserve and disseminate historical knowledge about the agency.

The NASA History Office has built a significant

collection of reference materials organized by subject for use by both the public and NASA personnel. These resources are used for answering specific requests for information by NASA officials and for researching and writing agency history. The office also encourages the development of similar collections at NASA centers throughout the nation. The visitors' log at the NASA Headquarters History Office is evidence of the hundreds of persons inside and outside the agency who have used these materials in their daily work. As numerous authors have graciously acknowledged, the NASA History Program has provided the indispensable starting point for research in the history of federally sponsored aerospace research and development. From school youngsters preparing a class report to busy NASA managers, from congressional staffers and foreign journalists to dissertation writers, all sorts of researchers have come to rely on NASA's agencywide history program for help in their work.

The NASA History Office also has long been active in providing context and details of historical development within NASA for use by internal management in assisting with policy decision-making. These staff support activities have taken the form of answering information requests, researching and writing short historical papers on issues of significance inside the agency, and preparing briefings and lectures on contemporary concerns that can be illuminated with historical information.

In addition, the NASA History Program has emphasized as its hallmark the research and writing of a wide range of scholarly works on the history of the American aerospace program. Funded by the agency, a large number of university and independent scholars have been able to complete and publish an impressive series of exceptional official books, monographs, and journal articles. It also fosters historical research through an annual research fellowship competition conducted by the American Historical Association. Each of these activities is

described in subsequent sections of this publication.

During its first decade, the NASA History Office conducted these three aspects of its mission—reference materials collection, staff support, and historical research and writing—as a balanced program. Administrator James E. Webb (1961–1968) was an active user and supporter, and other senior-level NASA managers often asked the office to provide information and context for their present-day concerns. In addition, widespread public interest in the early human spaceflight program led NASA to emphasize the publication of narrative histories of the Mercury, Gemini, and Apollo projects, all of which were published in the 1960s and 1970s.

Until recently, with the exception of a limited number of space science, NASA management, and unmanned space project histories, the lion's share of NASA's historical publications has focused on the human spaceflight program. The professional credibility of these publications has been consistently high because the chief historian (serving as the director of the NASA History Office) has taken great care to ensure that manuscripts for publication received thorough "peer" and technical review to guarantee accuracy and objectivity.

Independent Inquiry and NASA History

The strength and reach of the NASA History Program throughout its more than thirty-year life span have been attributable to the established institutional commitments and practices of the larger organization it serves. Paramount among these is that NASA is primarily a research community; therefore, the agency appreciates the importance, in any attempt to understand human events, of the necessity of independent inquiry and a continuing dialogue among many researchers. NASA does not intend the publications in its professionally recognized History Series to be "definitive" accounts; nor has their original designation as "official" histories ever implied bureaucratic censorship or constraint of

individual authors. NASA's history publications occasionally stimulate controversy both inside and outside the agency. This is as it should be, and it testifies to the freedom given NASA-sponsored historians to interpret historical evidence in the light of their own best professional judgment.

NASA's contractual agreements with scholars for historical research and writing contain an "academic freedom" clause that assures each scholar full academic freedom of research and expression. All authors are asked to observe the highest professional standards for achieving historical accuracy in the representation of facts and events. Interpretations should be based on solid primary-source evidence, and speculations should be noted as such. In turn, NASA-sponsored researchers are assured access to all relevant documents and data, subject only to proprietary and national security restrictions.

Historical Research Through Contracts

A fundamental characteristic of NASA's history is that many of its research and development programs are carried out by the university and industrial communities on the basis of contracts with the agency. As a result, aerospace research opportunities are not confined to the agency, but are available to innumerable researchers in the private sector and in the academic community. Similarly, NASA has typically extended its opportunities for agency-sponsored historical research to university-affiliated and independent scholars throughout the country. The entire scholarly community may thus benefit from NASA's history function, while NASA in turn benefits from the knowledge and research talents of an ever-widening circle of professional historians.

Historical research and writing on the basis of a contract award differ from the research grant more familiar to many academic scholars in that contract historians are obligated to produce a specified "product" as a result of their work. Depending on the contract (and each contract is unique), a "product" might be a publishable manuscript, a research report, a collection of documents, finding aids, or a combination of all four.

To the uninitiated, contracting with any agency of the federal government might seem complicated, time-consuming, and otherwise intimidating. The NASA History Office has tried, however, to simplify the process of contracting with NASA for historical research and writing, while honoring the requirements of the Federal Acquisition Regulations—the established policy on the awarding of all contracts. Most important, the contracts are awarded competitively and according to the regulations—on the basis of an impartial assessment of individuals' qualifications, as well as the intrinsic quality and promise of the proposed work. Opportunities for historical research and writing contracts with NASA are widely advertised, and each proposal receives a careful "peer review," which is the primary basis for awarding a contract.

NASA supports historical research and writing in NASA-related history by both academically affiliated and independent scholars. Support may be in the form of a competitive fellowship for predoctoral or postdoctoral research awarded annually by the American Historical Association or in the form of a contract for a specific research, writing, and/or documentation effort in a subject of particular interest to the agency at a given time.

Fellowship Program

In cooperation with the Society for the History of Technology, the History of Science Society, and the Economic History Association, the American Historical Association administers annually, on

behalf of NASA, a fellowship competition for predoctoral or postdoctoral research in any area of NASA-related aerospace history. The fellowship program is publicized regularly in the newsletters of the cooperating societies and of the American Historical Association. For further information, contact the American Historical Association, 400 A Street, SE, Washington, DC 20003.

Contract Opportunities for Sponsored Research

Periodically, the NASA History Office invites scholars to submit proposals for research, writing, and documentation projects on subjects of current interest to the agency. These solicitations are publicized in the newsletter of the Society for the History of Technology, the History of Science Society, the Organization of American Historians, and the American Historical Association. They are also advertised in the *Commerce Business Daily*, the official vehicle for advertising all contracts awarded by the federal government. The individual solicitation documents contain full details on the nature of the historical research and writing desired and the specifics of proposal preparation and submission.

The History Office maintains a mailing list of individuals and organizations who want to receive information on history contracts. To be added to this list, please write to the NASA History Office, Code ZH, 300 E Street, SW, Washington, DC 20546-0001.

3. NASA Historical Publications

Introduction

The NASA History Office's publication program is an ongoing, long-term effort to publish books, monographs, articles, and other studies on the history of NASA and its multifaceted research and development of space and aeronautical systems, its space exploration efforts, and its space science and applications programs. The publications issued under the auspices of the History Office respond to the provisions of the National Aeronautics and Space Act of 1958, which requires NASA to "provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof." The publications program is reappraised at regular intervals to ensure that subjects of priority to the agency are being properly documented.

The NASA History Series

The list of published works from the NASA History Office includes books written by historians officially employed by NASA, as well as books prepared by historians working under contract to the agency, sometimes by individuals outside official NASA channels, and occasionally by staff members. Books published as part of the NASA History Series have typically appeared in the Special Publications (SP-4000) series and are classified in one of several categories.

Categories of Publications

The NASA History Office has published significant historical works in various categories, organized generally by special publication numbers, as follows:

- *Reference Works (NASA SP-4000)*—The books in this category provide information, usually in dictionary, encyclopedia, or chronological form, for use by NASA personnel, scholars, and the public.
- *Management Histories (NASA SP-4100)*—This category contains historical works analyzing the institutional development of NASA, its institutional culture, and its broad functions in the execution of its aeronautics and space mission.
- *Project Histories (SP-4200)*—By far, the largest number of works have appeared in this category, all relating to the various aeronautics and space efforts undertaken by NASA over its history.
- *Center Histories (NASA SP-4300)*—The books in this category cover the specific history of the various NASA field centers.
- *General Histories (NASA SP-4400)*—This category's publications analyze in detail a variety of topics of interest to NASA, special issues in the development of spaceflight, and the evolution of the aerospace program as it relates to the agency.
- *New Series in NASA History*—Published by The Johns Hopkins University Press, this category of books was originated in 1987 as a means of increasing public awareness of the history of NASA.
- *Contractor Reports and Technical Memoranda*—The publications in this category are designed essentially for internal NASA use as a means of enhancing agency personnel's knowledge and use of history in their current work.
- *Historical Reports (NASA HHR)*—This category includes a series of studies, both published and unpublished, generated under the auspices of the NASA History Office to satisfy requirements within the agency. Many NASA History Series publications originated as HHRs, but only those not otherwise listed will be noted in this booklet.
- *Monographs in Aerospace History*—These are monograph-length studies that focus on specific issues in NASA's history that have immediate relevance for public policy formulation and administration.

- *NASA-Sponsored Historical Works Published by Other Presses*—These are books sponsored by NASA, but not published under NASA auspices.
- *Translations*—This is a series of translations, many of them from Russian, of classic studies about space.

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- Astronautics and Aeronautics, 1976: Chronology of Science, Technology, and Policy* (NASA SP-4021, 1984)
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- Shortal, Joseph A., *A New Dimension, Wallops Island Flight Test Range: The First Fifteen Years* (NASA RP-1028, 1978)
- Tomayko, James E., *Computers in Space Flight: The NASA Experience* (Contractor Report-182505, 1988, multilith)
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- Lewin, Thomas J., and Narayanan, V.K., *Keeping the Dream Alive: Managing the Space Station Program, 1982-1986* (Contractor Report-4272, 1990, multilith)
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- Emme, Eugene M., *Supplement to the Preliminary History of NASA, October 8, 1968–January 20, 1969* (NASA HHR-28, 1969, multilith)
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- Anderson, Frank, Jr., "NACA and NASA," chapter in *Bicentennial History of Public Works in America* (NASA HHR-42, 1976)
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Part II

Sources of NASA History in the Washington, D.C., Area

4. Research at the NASA Headquarters History Office

The NASA History Office is located at NASA Headquarters, Two Independence Square, in Washington, D.C., on the corner of 4th and E streets, Southwest, overlooking the Southwest Freeway. The closest Metro station is Federal Center Southwest, but it is also within a few blocks of the L'Orant Plaza Metro station. The mail address is: NASA History Office, Code ZH, NASA Headquarters, 200 E Street, SW, Washington, DC, 20546-0001. The telephone number is (202) 358-0384. The office is open from 8:00 a.m. to 4:30 p.m., Monday through Friday, except federal holidays. The World Wide Web site is:
<http://www.nasa.gov/history/history.html>

The History Office staff consists of:

- ¥ Roger D. Launius, Director
- ¥ Stephen Garber, Policy Analyst
- ¥ Lee D. Saegesser, Technical Information Specialist
- ¥ Nadine Andreassen, Administrative Support Assistant
- ¥ Louise Alstork, Program Support Specialist
- ¥ Colin Fries, Contract Archivist
- ¥ Mark Kahn, Contract Archivist

Each staff member can provide guidance and assistance. For general historical queries, it is usually best to start with Mr. Saegesser.

The NASA History Office publishes a quarterly newsletter that gives information on its recent and upcoming publications, conferences, new on-line resources, and other relevant news. Interested parties may subscribe via e-mail free of charge.

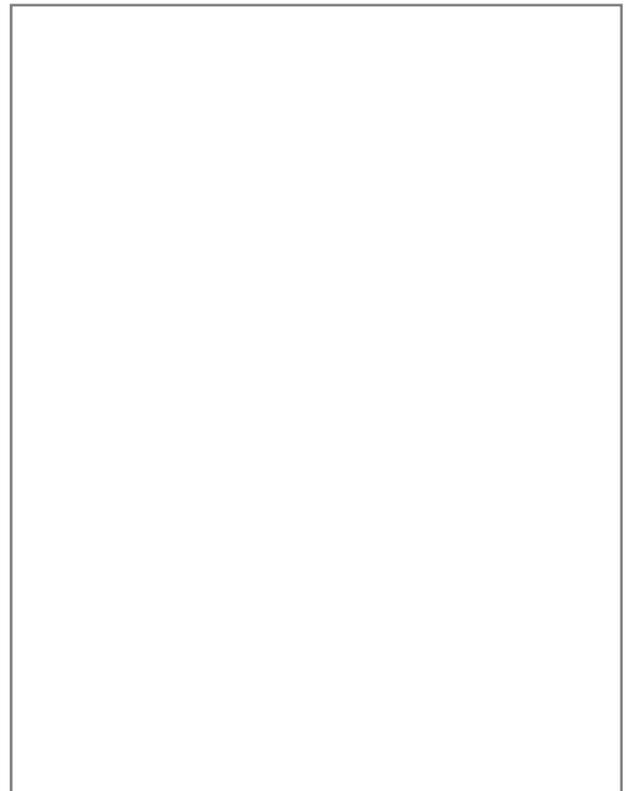
NASA Historical Reference Collection

The principal holdings of the History Office are the historical documents collections, about

2,000 cubic feet of primary and secondary materials, created by Lee Saegesser since 1967. Included are periodical clippings, press releases, reports, correspondence, and oral-history interview transcripts. As with most NASA records, almost all of these materials are undclassified.

Approximately 200 unpublished historical studies prepared under the auspices of the NASA History Office are kept on file and classified in three series: Historical Monographs (HHM), Reports (HHR), and Notes (HHN). Some of these have subsequently appeared as published histories.

Also on file are copies of most post-1958 congressional publications covering aeronautics, astronautics, and related fields. These are filed chronologically according to an assigned code number. The date of publication or the date on which the hearings began is used as the basis of



Former President Harry S. Truman was accompanied by NASA Administrator James E. Webb on his visit to the newly opened NASA Headquarters building on 3 November 1961.

a six-digit code for the year, month, and day, in that order. A suffix denotes a House or Senate document. For example, 68-0312H identifies a House of Representatives document of 12 March 1968. Congressional publications not available in the History Office may be obtained through the NASA Office of Legislative Affairs.

Since 1988, the NASA History Office has been engaged in an ongoing effort to automate the finding aids for its holdings. A database system is now available for researchers for the major collections of the entire collection, including biographical files, NASA administrators, spaceflight, and aeronautics. Approximately 75 percent of the material can now be accessed using this system.

The History Office's documents collection originated shortly after the creation of NASA. The various series described below were originally designed to facilitate research for the major serial publication, *Astronautics and Aeronautics*, but have since evolved into a functional system. The total volume of material amounts to about 2,000 cubic feet (not counting books), plus more than 500 cubic feet stored in the Federal Archives and Records Center in Suitland, Maryland.

White House and Presidential Papers, 27 Feet (1958 to Date)

This series includes documents pertaining to Presidents Hoover through Reagan, the Executive Branch offices, and various commissions and councils that serve the President; selected papers from the *Weekly Compilation of Presidential Documents*; newspaper and *Congressional Record* clippings; magazine articles; photographs; and NASA correspondence. The documents are arranged by organization or President and thereunder chronologically. A general grouping of non-White House material (7 feet) includes such organizations as the President's Science Advisory Committee (PSAC), the National Aeronautics and Space Council (NASC), the National Space Council, and the National Security Council. The following are the amounts of material under each President, with inclusive dates:

- Hoover, negligible amount (1963 to date)
- Roosevelt, negligible amount (1942 to date)

- Truman, 2 inches (1952 to date)
- Eisenhower, 1 foot (1947 to date)
- Kennedy, 2 feet (1957 to date)
- Johnson, 4 feet (1957 to date)
- Nixon, 4 feet (1957 to date)
- Ford, 8 inches (1963 to date)
- Carter, 1 foot (1976 to date)
- Reagan, 3 feet (1981 to date)
- Bush, 2 feet (1987 to date)
- Clinton, 2 feet (1992 to date)

Aeronautics and Space Report of the President, 1 Foot (1958 to Date)

These yearly reports submitted by the President to Congress are arranged chronologically. From 1976 to 1983, the History Office was responsible for preparing this report. Beginning in 1986 to the present, the History Office again has this responsibility. The information contained in these reports cuts across agency boundaries to consider broadly the issues of air and space technology.

Congressional Documents, 35 Feet (1918 to Date)

These documents are arranged by committee and thereunder chronologically. The loose documents are newspaper clippings, magazine articles, *Congressional Record* clippings, brochures, photographs, correspondence, and the *NASA Legislative Activity Reports* (1962 to date). Most of the material is bound committee reports, hearings, special studies, and so forth, covering the period 1957 to date. These hearings and reports are shelved separately in chronological order.

NASA Semiannual Report to Congress, 2 Feet (1958 to 1969)

These reports and related materials are arranged chronologically. The requirement for this report was deleted from the original National Aeronautics and Space Act of 1958 by Public Law 92-68 (85 Stat. 174, 6 August 1971). This is a useful source for determining the major issues being considered during any specific period.

Federal Agencies, 40 Feet (1950 to Date)

This series is arranged alphabetically by name of federal agency and thereunder chronologically. It consists of photographs, newspaper clippings, magazine articles, reports, correspondence, news releases, brochures, *Congressional Record* clippings, and agreements between NASA and other federal agencies.

National Academy of Sciences, Space Science Board, and National Academy of Engineering, 5 Feet (1957 to Date)

This series is arranged chronologically. It consists of news releases, newspaper clippings, magazine articles, reports, brochures, pamphlets, correspondence, and the *NAS Newsreport* (a monthly newsletter).

Organizations, National and International, 8 Feet (1955 to Date)

These materials are arranged alphabetically by name of organization and thereunder chronologically. The series consists of booklets, brochures, news releases, magazine articles, newspaper clippings, photographs, speeches, and monographs. Included under the international organizations are subseries pertaining to international law, agreements, treaties, and conventions.

Foreign Countries, 60 Feet (1800 to Date)

This is divided into two subseries: (1) U.S. cooperation with other countries and (2) the countries themselves. It is arranged alphabetically by name of country and thereunder chronologically. The series consists of newspaper and magazine articles, speeches, news releases, translations, brochures, pamphlets, correspondence, photographs, and *Congressional Record* clippings.

One of the large groupings consists of material pertaining to the former Soviet Union and its space activities, with heavy emphasis on translations. This grouping includes a general subject file of 15 feet on Soviet manned and unmanned satellites, arranged alphabetically. Topics include, among others, Sputnik, Lunik, Venera, Molniya, Soyuz, Voskhod, Buran, space station, Mir, and launching facilities.

Industry, 18 Feet (1945 to Date)

This series is organized alphabetically by name of company and thereunder chronologically. It consists of news releases, magazine articles, newspaper clippings, speeches, photographs, correspondence, brochures, annual reports, and *Congressional Record* clippings. Such classic industry reports as the RAND satellite and High Altitude Test Vehicle (HATV) studies can be found in this series.

Organization and Management, 170 Feet (1910 to Date)

This material includes organizational charts, briefing memoranda, correspondence, internal and external studies, photographs, NASA insignias, newspaper clippings, magazine articles, news releases, speeches, brochures, telephone books, congressional testimony, *Congressional Record* clippings, *Program Reviews*, *General Management Reviews* (1961 to date), *Calendar of Appointments* (1969 to date), and NASA Headquarters Weekly Bulletins (1965 to date). A large subseries in this grouping consists of papers of the NASA Administrators and Deputy Administrators. The following is a chronological listing with the dates of their service, the dates of the papers on file (in parentheses), and the amount of material.

Administrators

- Glennan, Dr. T. Keith, 1958–1961 (1954 to date), 7 feet
- Webb, James E., 1961–1968 (1952 to date), 6 feet
- Paine, Dr. Thomas O., 1968–1970 (1966 to date), 3 feet
- Fletcher, Dr. James C., 1971–1977, 1986–1989 (1969 to date), 6 feet
- Frosch, Dr. Robert A., 1977–1981 (1977 to date), 1 foot
- Beggs, James M., 1981–1986 (1968 to date), 1 foot
- Truly, Richard H., 1989–1992 (1968 to date), 1 foot
- Goldin, Daniel S., 1992 to date (1968 to date), 1 foot

Deputy Administrators

- Dryden, Dr. Hugh L., 1958–1965 (1910 to date), 6 feet
- Seamans, Dr. Robert C., 1965–1968 (1960 to date), 3 feet
- Low, Dr. George M., 1969–1976 (1958 to date), 10 feet
- Lovelace, Dr. Alan M., 1976–1981 (1965 to date), 2 inches
- Mark, Dr. Hans, 1981–1984 (1970 to date), 6 inches
- Graham, Dr. William R., 1985–1986 (1985 to date), 1 inch
- Myers, Dale D., 1986–1989 (1953 to date), 6 inches
- Thompson, James R., Jr., 1989–1991 (1986 to date), 1 inch

Budget Documentation, 25 Feet (1958 to Date)

Arranged chronologically, this material consists of budget briefings, newspaper clippings, magazine articles, correspondence, news releases, speeches, *Congressional Record* clippings, *NASA Budget Estimates*, chronologies of NASA budget submissions, and *The Budget of the United States Government*. A complementary source for budgetary materials can be found under the “Congressional Documents” collection (see above).

NASA Headquarters, 100 Feet (1958 to Date)

This is arranged by major office within NASA Headquarters and thereunder chronologically. It consists of office publications, brochures, news releases, magazine articles, newspaper clippings, speeches, photographs, external and internal studies, correspondence, and organizational charts. The following are the organizations for which there is documentation (some of these offices are no longer in existence):

- Legislative Affairs
- International Affairs
- General Counsel
- Policy
- Applications

- Public Affairs
- Administration
- Technology Utilization
- Space Sciences
- External Affairs
- Center Operations
- Space Transportation Operations
- Space Transportation Systems
- External Relations
- Exploration
- Aeronautics and Space Technology
- Procurement
- Industry Affairs
- Comptroller
- University Affairs
- Special Contracts Negotiations
- DOD and Interagency Affairs
- Program Plans and Analysis
- Space Flight
- Space Operations
- Space Systems Development
- Tracking and Data Acquisition
- Inspector General
- Management
- Chief Engineer
- Chief Scientist

The bulk of the material is to be found under “Public Affairs,” which issues news releases and a newspaper clipping collection called *Current News*.

NASA Centers, 50 Feet (1958 to Date)

This series of material on the NASA installations is arranged alphabetically by name and thereunder by subseries and chronologically. It consists of photographs, organizational charts, newspaper clippings, magazine articles, correspondence, brochures, news releases, center newspapers, and telephone books. Some installations have been renamed, disestablished, reorganized, or separated from NASA. The following are the installations for which there is documentation:

- Ames Research Center
- Dryden Flight Research Center
- Electronics Research Center
- Goddard Space Flight Center
- Jet Propulsion Laboratory
- Johnson Space Center
- Kennedy Space Center
- Langley Research Center
- Lewis Research Center
- Marshall Space Flight Center
- Michoud Assembly Facility
- National Space Technology Laboratories
- Stennis Space Center
- Wallops Flight Facility
- Western Operations Office

Robotic Programs, Projects, and Satellites, 120 Feet (1945 to Date)

This series contains three major subseries, each of which is organized alphabetically and thereunder chronologically. It consists of photographs, correspondence, news releases, newspaper and *Congressional Record* clippings, magazine articles, brochures, mission operation reports, and translations.

The first subseries consists of programs and activities such as communications, meteorology, lunar and interplanetary contamination, balloons, zeppelins, sounding rockets (arranged alphabetically by name), flight schedules, and the Goddard Space Flight Center's *Spacewarn Bulletin*.

The second subseries pertains to lunar and interplanetary flight. The following are the spacecraft to be found in this grouping:

- CRAF (Comet Rendezvous Asteroid Flyby)
- Cassini
- Discovery
- Galileo
- Grand Tour
- Lunar Orbiter
- Lunar Prospector
- Magellan
- Mars Global Surveyor

- Mars Observer
- Mars Pathfinder
- Mars Surveyor
- Mariner
- Out of the Ecliptic
- Pioneer
- Ranger
- Sunblazer
- Surveyor
- Ulysses
- Viking
- Voyager

The third subseries is made up of Earth-orbiting satellites, as follows:

- Able
- ACTS (Advanced Communications Technology Satellite)
- Aeronautical satellite
- Aeros
- Alouette
- Anik (Telesat-Canada)
- ANS (Astronomical Netherlands Satellite)
- Ariel
- ATS (Applications Technology Satellite)
- Azur
- Beacon
- Biosatellite
- CAS-C (Cooperative Applications Satellite, Canada)
- Comstar
- Direct Broadcast
- Earth Resources Satellite
- Echo
- EOS (Earth Observing System)
- Explorer
- Gamma Ray Observatory
- GEOS (Geodynamics Experimental Ocean Satellite)
- GOES (Geostationary Operational Environmental Satellite)
- G Star
- HEAO (High Energy Astronomy Observatory)

- Helios
- HEOS (Highly Eccentric Orbit Satellite)
- Hubble Space Telescope
- Injun
- IntaSat
- Intelsat
- ISIS (International Satellites for Ionospheric Studies)
- Landsat
- Marisat
- Mission to Planet Earth
- NATO
- Nimbus
- NOAA
- OAO (Orbiting Astronomical Observatories)
- OGO (Orbiting Geophysical Observatories)
- OSO (Orbiting Solar Observatory)
- Pageos
- Pegasus
- RCA
- Rebound
- Relay
- San Marco
- Satellite Power System
- Satellite Repair Satellite
- Search and Rescue Satellite
- Seasat
- Skynet
- Small Observatory Satellite
- Snapshot
- Solar Powered Satellite
- Solar Radiation Satellite
- Sphinx
- Sunflower
- Symphonie
- Synchronous Meteorological Satellite
- Syncom
- TD-IA (Thor-Delta Satellite)
- Telstar
- Tethered Satellite
- Tiros

- Tracking and Data Relay Satellite
- UARS (Upper Atmosphere Research Satellite)
- United Kingdom
- Vanguard
- Westar
- Wind

Human Spaceflight, 225 Feet (1953 to Date)

This material is arranged chronologically by project and thereunder topically and chronologically. It includes news releases, speeches, newspaper and *Congressional Record* clippings, magazine articles, photographs, correspondence, reports, brochures, pamphlets, translations, and mission operation reports. (Another 15 cubic feet of documents, pertaining to Skylab, were retired to the Federal Records Center in Suitland, Maryland.) Topics include Mercury, Gemini, Apollo, Apollo-Soyuz Test Project (ASTP), Space Shuttle, Lunar Stations, Space Stations, Planetary Flight, and Space Colonization.

Space Station, 50 Feet (1920s to Date)

Materials documenting the history of the U.S. Space Station program are collected as part of the Space Station History Project. This series is divided by subject and organized chronologically. Because the Space Station program has been ongoing, the number of documents and subject classifications is continuously expanding. The principal files of the collection contain approximately 50 cubic feet of documents on space station history. These documents include photographs, selected correspondence and reports dating from 1958 to the present, and a number of articles and reports concerning the history of the space station concept. Some of this documentation has been retired to the Federal Records Center in Suitland, Maryland.

Launch Vehicles, 26 Feet (1945 to Date)

This series is arranged alphabetically by name of vehicle and thereunder chronologically. It consists of correspondence, reports, brochures, news releases, speeches, magazine articles, newspaper

and *Congressional Record* clippings, studies, and photographs. Such reports as the 1959 National Space Vehicle Program, 1960 Long Range Plan, and 1962 Golovin Report (Large Launch Vehicle Planning Group) are included. Files exist for the following launch vehicles:

- Agena
- Atlas
- Atlas II
- Atlas-Able
- Atlas-Agena
- Atlas-Centaur
- Blue Scout
- Centaur
- Delta
- Hermes
- HLLV (Heavy Lift Launch Vehicle)
- Iris
- IUS (Inertial Upper Stage)
- Juno 11
- Little Joe
- Orbital Maneuvering Vehicle
- Nova
- Pegasus
- Saturn I
- Saturn IB
- Saturn V
- Scout
- Shuttle
- Single-Stage-to-Orbit
- Thor
- Titan
- V-1
- V-2
- Vega

For the X-33 and X-34, see the listing below for "Aeronautics," where the material is filed for continuity with previous X-vehicles.

Space Sciences, 18 Feet (1851 to Date)

Arranged topically and thereunder chronologically, this offers such folders as astronomy, pulsars,

radio astronomy, x-ray, radar, quasar, black holes, comets, meteors, the Sun, the planets, planetary satellites, geodesy, oceanography, physics, aurora borealis, air pollution, and energy. The series consists of monographs, brochures, news releases, newspaper and *Congressional Record* clippings, magazine articles, translations, photographs, correspondence, and studies.

Life Sciences, 7 Feet (1958 to Date)

Material pertaining to exobiology, space medicine, extraterrestrial life, and various NASA studies on life sciences is arranged topically and thereunder chronologically. The series consists of newspaper clippings, magazine articles, correspondence, photographs, studies, brochures, pamphlets, news releases, and NASA special publications.

General Space Research, Propulsion, and Reentry, 15 Feet (1956 to Date)

Arranged topically and thereunder chronologically, this consists of news releases, photographs, correspondence, newspaper and *Congressional Record* clippings, magazine articles, speeches, brochures, pamphlets, and special studies. Included are such topics as avionics; guidance; materials; space processing; chemical, liquid, solid, and nuclear propulsion; the various reentry projects; and orbital debris.

Tracking and Data Acquisition, 6 Feet (1957 to Date)

Arranged topically and thereunder chronologically, this series consists of correspondence, photographs, newspaper and *Congressional Record* clippings, magazine articles, news releases, brochures, and pamphlets.

Biography File, 180 Feet (1800s to Date)

These documents are arranged alphabetically by name of person and thereunder chronologically. The series contains photographs, correspondence, news releases, magazine articles, newspaper clippings, and speeches for about 5,000 individuals. Included are U.S. and foreign space personalities, both living and dead. For related material, see the

subseries NASA Administrators and Deputy Administrators above under "Organization and Management."

Aeronautics, 32 Feet (1945 to Date)

This series is arranged by topic and thereunder chronologically. It contains photographs, newspaper and *Congressional Record* clippings, magazine articles, news releases, reports, studies, correspondence, brochures, and pamphlets. Included are such topics as transportation, statistics, wind tunnels, B-70, helicopters, NASA aircraft, remotely piloted vehicles, fly-by-wire, supercritical wing, Agplane, vertical and short takeoff and landing, supersonic transport, Concorde, X-1 through X-34 (both aircraft and rockets), lifting bodies, hydroplaning, air cushion vehicles, and hydrofoils.

Miscellaneous Material, 350 Feet (1825 to Date)

Arranged topically and thereunder chronologically, this series includes news releases, reports, newspaper clippings, cartoons, magazine articles, NASA issuances, photographs, correspondence, studies, reports, brochures, and pamphlets. The following are some of the topics, with the dates covered and the amount of material available:

- NASA Management Issuances, microfiche (1958 to date)
- Space-related cartoons, more than 7,500, 6 feet (1600s to date)
- NACA correspondence collection, 8 feet (1915 to 1958)
- Transition papers, 6 feet (1958 to date)
- Other histories, arranged alphabetically by name of author, 7 feet (1958 to date)
- USAF (Air Force), Navy, Army, FAA (Federal Aviation Administration) monographs, brochures, 2 feet (1945 to date)
- Chronologies, 3 feet (1945 to date)
- Bibliographies, 3 feet (1958 to date)
- Awards, NASA and others, 3 feet (1909 to date)
- Museums, 3 feet (1958 to date)
- Apollo documentation collected by Robert Sherrod, 36 feet (1960–1978)

- Early history of NASA, collected by Eugene Emme, 7 feet (1950s–1978)
- Newspaper clipping collection, 4 feet (1948–1959)—this series separate from *Current News*
- Impact file, consisting of such topics as criticism of space activities and influence of the space program on economics, humor, military, movies, music, philately, public opinion, religion, technology, television, toys, etc., 20 feet (1950 to date)
- Interviews, many transcribed and filed in "Bibliography File"
- *Satellite Situation Report* prepared by Goddard Space Flight Center, 5 feet (1959 to date)
- Conferences, 1 foot (1961 to date)
- Incomplete collection of NASA Special Publications, 8 feet (1961 to date)
- Naval Research Laboratory reports, 1 foot (1947–1959)
- Papers of Dr. John E. Naugle, NASA associate administrator for space science, 14 feet, microfiched in 1986 (1960–1977)
- Management studies done by NASA, 5 feet (various dates)
- Historical slide collection, 2-inch x 2-inch (35 mm), 10 feet (various dates)
- Various source papers collected by authors who have contracted with the NASA History Office to write histories, 10 feet

Other Headquarters History Office documents have been retired to the Federal Records Center in Suitland, Maryland. This material can be recalled by the Records Management Office for use by researchers. The following are some of the more important series:

- Papers of Dr. Alfred J. Eggers, assistant administrator for policy, 20 feet (1957–1967)
- Papers of Dr. George M. Low, deputy administrator, 5 feet (1958–1961)
- Selected chronological reading files of many NASA Headquarters offices

- Life sciences papers collected by Dr. Mae M. Link, 6 feet (1958–1970)
- Electronics Research Center files, 18 feet (1963–1969)
- Space Task Group (post-Apollo), 1 foot (1969)
- Viking history collection, 26 feet (1960 to date)

Some Headquarters History Office documents have been transferred directly to the National Archives and Records Administration, Archives II, on the campus of the University of Maryland, Record Group 255. The following are some of the more important series:

- Papers of the NASA Administrator Dr. James C. Fletcher (1986–1989), 14 cubic feet
- Papers of the NASA Deputy Administrator Dale D. Myers (1986–1989), 38 cubic feet
- Chronological Reading File of the Office of the Administrator (1962–1966, 1969–1989), 32 cubic feet
- Papers of NASA Associate Administrator and Associate Administrator for Space Sciences, Dr. Homer E. Newell (1939–1974), 43 cubic feet
- Records of the National Advisory Committee for Aeronautics (1914–1958), 60 cubic feet—these documents transferred to Archives I in Washington, D.C.

Oral History Collection

The History Office has more than 300 oral history interviews, approximately half of which have been transcribed. Many of these interviews were done on reel-to-reel tapes and are being transferred to cassette tapes for preservation purposes.

5. NASA History On-Line Resources

The NASA History Office has made a concerted effort to make a wide variety of resources available to researchers electronically via the World Wide Web. The main home page is: <http://www.hq.nasa.gov/office/pao/History/history.html>. The "What's New" page is updated frequently to provide users with the latest information about NASA history publications and Web pages.

The History Program page has links to a comprehensive list of all NASA history publications and their availability, a list of on-line NASA history publications, and other similar information. More than 15 full-length publications are already on-line. The NASA History Office continues its ambitious efforts to put many more titles, especially popular but out-of-print books, on the World Wide Web.

From the main NASA History Home Page, there are also links to the various NASA field center history home pages. The field centers' on-line resources include electronic versions of monographs and books, photo archives, and detailed reference materials.

Information on specific astronautics and aeronautics topics is also available on-line. Most major historical NASA space programs, both human and robotic, have specific home pages. There is also a wealth of aeronautics information and links to some major current programs, such as the Space Shuttle. Many key aeronautics and space policy documents, such as the Space Act of 1958, are available electronically.

In addition, there is a significant amount of general reference material available on the World Wide Web. Researchers and students may find the biographical information on astronauts and key NASA officials especially helpful. Home pages are also devoted to a timeline of aerospace developments, *NASA Pocket Statistics* compiled by the Office of Headquarters Operations, and mission patches. Links are included to other useful home pages belonging to the NASA Headquarters Library, the NASA Center for AeroSpace Information, and other federal government and international agencies involved in aerospace activities.

Moreover, there are Web pages on miscellaneous topics, such as a bibliography of Martian exploration, the annual *Aeronautics and Space Report of the President*, a Government Printing Office brochure of NASA history books, and related policy materials. The NASA History Office also publishes a quarterly newsletter that is posted on the World Wide Web. Interested users may also subscribe electronically via an e-mail list server.

The following is a list of NASA history publications—books and monographs—on-line on the NASA History Home Page at press time:

Books

- Ertel, Ivan D., and Morse, Mary Louise, *The Apollo Spacecraft: A Chronology, Volume I, Through November 7, 1962* (NASA SP-4009, 1969), at: <http://www.hq.nasa.gov/office/pao/History/SP-4009/cover.htm>
- Morse, Mary Louise, and Bays, Jean Kernahan, *The Apollo Spacecraft: A Chronology, Volume II, November 8, 1962–September 30, 1964* (NASA SP-4009, 1973), at: <http://www.hq.nasa.gov/office/pao/History/SP-4009/cover.htm>
- Brooks, Courtney G., and Ertel, Ivan D., *The Apollo Spacecraft: A Chronology, Volume III, October 1, 1964–January 20, 1966* (NASA SP-4009, 1973), at: <http://www.hq.nasa.gov/office/pao/History/SP-4009/cover.htm>
- Ertel, Ivan D., and Newkirk, Roland W., with Brooks, Courtney G., *The Apollo Spacecraft: A Chronology, Volume IV, January 21, 1966–July 13, 1974* (NASA SP-4009, 1978), at: <http://www.hq.nasa.gov/office/pao/History/SP-4009/cover.htm>
- Noordung, Hermann, *The Problem of Space Travel: The Rocket Motor*, Stuhlinger, Ernst, and Hunley, J.D., with Garland, Jennifer, Editors (NASA SP-4026, 1995), at: <http://www.hq.nasa.gov/office/pao/History/SP-4026/cover.html>

Benson, Charles D. and Faherty, William Barnaby, *Moonport: A History of Apollo Launch Facilities and Operations* (NASA SP-4204, 1978), at: <http://www.hq.nasa.gov/office/pao/History/SP-4204/cover.html>

Swenson, Loyd S., Jr., Grimwood, James M., and Alexander, Charles C., *This New Ocean: A History of Project Mercury* (NASA SP-4201, 1966), at: <http://www.hq.nasa.gov/office/pao/History/SP-4201/cover.htm>

Brooks, Courtney G., Grimwood, James M., and Swenson, Loyd S., Jr., *Chariots for Apollo: A History of Manned Lunar Spacecraft* (NASA SP-4205, 1979), at: <http://www.hq.nasa.gov/office/pao/History/SP-4205/cover.html>

Compton, W. David, *Where No Man Has Gone Before: A History of Apollo Lunar Exploration Missions* (NASA SP-4214, 1989), at: <http://www.hq.nasa.gov/office/pao/History/SP-4214/cover.html>

Wallace, Lane E., *Airborne Trailblazer: Two Decades with NASA Langley's Boeing 737 Flying Laboratory* (NASA SP-4216, 1994), at: <http://www.dfrc.nasa.gov/History/Publications/SP-4216/>

Hallion, Richard P., *On the Frontier: Flight Research at Dryden, 1946–1981* (NASA SP-4303, 1984), at: <http://www.dfrc.nasa.gov/History/Publications/SP-4303/>

Bilstein, Roger E., *Orders of Magnitude: A History of the NACA and NASA, 1915–1990* (NASA SP-4406, 1989), at: <http://www.hq.nasa.gov/office/pao/History/SP-4406/cover.html>

Monographs

Launius, Roger D., and Gillette, Aaron K., Compilers, *The Space Shuttle: An Annotated Bibliography* (Monographs in Aerospace History, No. 1, 1992), at: <http://www.hq.nasa.gov/office/pao/History/Shuttlebib/cover.html>

Launius, Roger D., and Hunley, J.D., Compilers, *An Annotated Bibliography of the Apollo Program* (Monographs in Aerospace History, No. 2, 1994), at: <http://www.hq.nasa.gov/office/pao/History/Apollobib/cover.html>

Launius, Roger D., *Apollo: A Retrospective Analysis* (Monographs in Aerospace History, No. 3, 1994), at: <http://www.hq.nasa.gov/office/pao/History/Apollomon/cover.html>

Gorn, Michael H., *Hugh L. Dryden's Career in Aviation and Space* (Monographs in Aerospace History, No. 5, 1996), at: http://www.dfrc.nasa.gov/History/Publications/Monograph_5/

6. Resources at Related NASA Offices

Individual NASA Offices

The NASA Headquarters Library carries a wide range of materials. It has a sampling of local newspapers and general magazines, plus a larger collection of periodicals in the fields of science, technology, and management. Most periodical runs begin in the 1970s or 1980s. The collection is strongest in the fields of business, management, general science, and technology, but it also includes early publications from the National Advisory Committee for Aeronautics (NACA), NASA, and the British Advisory Committee for Aeronautics. Also available is access to the Internet, NASA GALAXIE (the NASA Libraries' online catalog), RECONplus, and several CD-ROM databases. Visitors are welcome, but many library services are restricted to NASA employees.

The Office of Public Affairs regularly prepares press releases, press kits, and public information brochures. These documents must be used cautiously by the historian; their purpose, after all, includes public relations as well as the dissemination of information. But with this caveat in mind, they can be useful sources. The releases, for example, often serve as the official public announcement of a program, decision, or international agreement. The Audio Visual Section also maintains files of still photographs, motion pictures, and tape recordings.

Since the founding of NASA, the Office of the General Counsel has selected important documents for retention and indexing. These are coded by key word and placed on the computer-based Legal Information Retrieval Systems (LIRS). Although primarily intended for legal research, the collection contains much useful historical documentation. The system is available to researchers with the permission of the general counsel.

The Communications Management Division under the Office of Headquarters Operations handles printing and graphics services. One of its functions is to maintain a file of photographs, charts, drawings, and other visual aids used at Headquarters.

Research on specific topics often can best be pursued from the responsible Headquarters office. Each office maintains inventories of its retired records; often the person who initially retired the records is still on the job and can expand on the information listed on the inventory forms. Moreover, many offices keep files on a project until it is completed. This means that active files may go back for years and contain material one would expect to find among the retired records. Policy varies from office to office, and the only sure way is to check. Finally, the researcher may want to interview program participants.

NASA Center for AeroSpace Information

Located in Linthicum Heights, Maryland, near the Baltimore-Washington International Airport, the NASA Center for AeroSpace Information (CASI) provides an aerospace-information acquisitions, indexing, announcing, and retrieval system for the NASA Scientific and Technical Information (STI) program. The program offers aerospace-related information on aeronautics, astronautics, chemistry and materials, engineering, geosciences, life sciences, mathematical and computer sciences, physics, social sciences, and space sciences.

Access to the nearly 3 million bibliographic citations is available through two user-friendly search engines. The CASI-TRS (RECONselect) accesses the NASA STI databases using the WAIS search engine. This widely used search engine accesses NASA STI materials that are publicly available. Through the use of the World Wide Web, users can easily access publicly available NASA STI. The CASI-TRS (RECONselect) is available through the NASA STI Home Page at <http://www.sti.nasa.gov>.

For other users who need a more versatile and powerful retrieval tool or qualify to access controlled materials, RECONplus is available. The character-based interface (CBI) provides three methods of searching: quick, full, and command

line searches. Search functions include truncation, masking, range searching, proximity searching, and Boolean searching on words, terms, phrases, or set numbers. Access is through the Internet using telnet software that properly emulates a VT100 terminal. A system ID and password are required.

The available records represent NASA open literature and reports, and they comprise globally published literature. Included are periodicals, government-sponsored journals, books, and conference proceedings issued from professional and academic organizations. Also included are unclassified documents announced in the published NASA Scientific and Technical Aerospace Reports (STAR). This includes NASA, NASA contractor, and NASA grantee reports; reports issued by other government agen-

cies, domestic and foreign institutions, universities, and private firms; translations in report form; and dissertations. The coverage is from 1958 to the present. Also available are records for documents produced by NACA, the predecessor organization to NASA. These documents cover early aviation research and development. The coverage of these documents is from 1915 to 1960.

Many of the documents cited in the NASA online databases are available for purchase from CASI. For additional information about the products and services offered by the NASA STI program or CASI, see the NASA STI Home Page (<http://www.sti.nasa.gov>) or contact the NASA Access Help Desk at (301) 621-0390 (e-mail: help@sti.nasa.gov; fax: (301) 621-0134).

7. Other Area Libraries

Many area libraries also contain resources of use to NASA historians. The Library of Congress is open to all researchers, and its holdings are unparalleled but, for outsiders, often difficult to use. The delivery of volumes to the reading room is slow (45 minutes or more after the request is submitted); stack passes are hard to come by. In general, the library is best for items such as manuscripts or rare books that cannot be reached through other sources. For some specialized topics, the staff can be helpful. The Science and Technology Reading Room in the Jefferson Annex has its own card catalogue, reference section, and experienced staff.

The library of the National Air and Space Museum, on the Mall at Independence Avenue, is strong on the documentation of artifacts related to aerospace history. The NASA History Office cooperates closely with this museum and can direct researchers to the proper staff member for specific requests.

The Department of Transportation (DOT) has two branches within walking distance of NASA Headquarters. The Nassif branch is located in

Room 2200, 400 7th Street, SW. With open stacks, it is in many respects the most useful general library in the area. It consists of the former libraries of the Coast Guard and the Bureau of Public Roads, but it has wider holdings than that heritage would suggest. It has been a national depository library since 1968.

The DOT branch library at the Federal Aviation Administration (FAA) is located in Room 931, 800 Independence Avenue, SW. The FAA branch library has a much better collection of aviation literature than NASA and also has open shelving.

Two other national depository libraries are contiguous to NASA Headquarters. The library of the Department of Health and Human Services is located at its headquarters on Independence Avenue, also just a few blocks from the NASA History Office. The library of the Department of Housing and Urban Development (HUD) is near L'Enfant Plaza. There are a number of other federal depository libraries within the District of Columbia.

8. General Guide to Related Government History Resources

A substantial historical reference file in the NASA History Office at NASA Headquarters in Washington, D.C., contains copies of many historically valuable official records, newspaper clippings, and other documentary materials. This resource provides a good starting point for any research undertaking in NASA-related history

Secondary Sources and Reference Guides

The most useful secondary sources for NASA-related history are the traditional background literature that any scholar would normally consult in researching a historical topic. These include NASA's own History Series, the New Series in NASA History, and other reference works available from a variety of sources. Other studies can be identified through bibliographic guides and will be found at any major public or university library. A few specialized bibliographies are available in the NASA History Office at NASA Headquarters, such as the following:

Dickson, Katherine M., *History of Aeronautics and Astronautics: A Preliminary Bibliography* (NASA HHR-29, 1968)

Looney, John J., *Bibliography of Space Books and Articles from Non-Aerospace Journals, 1957-1977* (NASA HHR-51, 1979)

Launius, Roger D., *Toward a History of the Space Shuttle: An Annotated Bibliography* (Monographs in Aerospace History No. 1, 1992)

Launius, Roger D., and Hunley, J.D., *An Annotated Bibliography of the Apollo Program* (Monographs in Aerospace History No. 2, 1994)

The U.S. government publishes a number of directories, reference works, and finding aids for research in subjects involving the legislative and executive branches; these are described below. The more specialized aerospace technical litera-

ture is best approached through a computerized retrieval system maintained by NASA's Scientific and Technical Information Branch and by reviewing the following two sources:

Hallion, Richard P., *The Literature of Aeronautics, Astronautics, and Air Power* (Office of Air Force History, 1984)

Pisano, Dominick A., and Lewis, Cathleen S., Editors, *Air and Space History: An Annotated Bibliography* (Garland Publishing, 1988)

Current Published Records of the U.S. Government

The *United States Government Manual*, published annually since 1935 by the National Archives and Records Administration, is the best concise guide to government organizations and the staffing of key positions. Before 1973, it was called the *United States Government Organization Manual*. The *Congressional Directory*, published for each session of Congress, provides more detailed information on the legislative branch and its staffs.

The best introduction to available government publications and how to locate them is Anne M. Boyd and Rae E. Rips, *United States Government Publications* (A.M. Wilson Co., 1949). Lawrence F. Schmeckebier and Roy B. Eastin, *Government Publications and Their Use* (The Brookings Institute, 2d ed., 1969), supplements Boyd and Rips. A short overview can be found in Joe Morehead, *Introduction to United States Public Documents* (Libraries Unlimited, 1975).

General Guides

The basic finding aid for all twentieth-century U.S. government publications is the *United States Government Publications Monthly Catalogue*, collected in an indexed, annual volume since 1895. This may now be supplemented by the *Cumulative Subject Index to the Monthly Catalogue of United*

States Government Publications, 1900–1971 (1972–). This multivolume set is as yet incomplete, but it already covers NASA and NACA. The *Monthly Catalogue* contains numerous citations of congressional reports and documents. To find these in the serial file, use U.S. Superintendent of Documents, *Numerical Lists and Schedule of Volumes*, published annually since 1897 (title varies).

A *Directory of Information Resources in the United States Federal Government* (Library of Congress, 1974 ed.) goes beyond official documents to include government-sponsored information resources, museums, historical societies, and so forth. J.L. Andriot's *Guide to U.S. Government Serials and Periodicals* (annual, 1959–1972) and *Guide to U.S. Government Publications* (annual, 1973–1976; irregularly thereafter) are indexed by agency and subject.

Legislative Documents

The *Congressional Record* (1873–) is the basic source on the activities of the U.S. Congress. Users are cautioned that the *Record* will contain not only an account of actual proceedings, but material inserted by senators and representatives. It is published daily and bound at the end of each legislative session with a comprehensive index in the last volume. In addition to a subject index and a numerical list of bills and resolutions, this volume traces the history of bills; it is an indispensable guide to the legislative process. Both houses of Congress also publish a *Journal*, which is the official record of their respective proceedings. Committee hearings can be located with F.M. Johnston, *Cumulative Index of Congressional Committee Hearings* (to 1959), with supplements (to 1966).

Enacted federal legislation can be found in *United States Code (USC)*, published every six years (with annual supplements), which lists the laws of the United States by subject. One should also consult the *United States Code Annotated*, which is published annually; its annotations provide judicial opinions bearing on sections of the Code. Since 1964, the USC has been indexed as well. The *United States Statutes at Large* lists public laws and concurrent resolutions by date;

the series is published annually in separate, indexed volumes. The *Tables of Laws Affected* are published as supplemental volumes to the *Statutes at Large*. These publications can be found in any university library, as well as law libraries. For recently passed federal legislation, researchers should consult the *Slip Laws*, which reproduce the laws themselves, with notes; these can be found in any law library and can also be obtained from the U.S. Superintendent of Documents, Government Printing Office.

Executive Branch

The National Archives has published the *Code of Federal Regulations (CFR)* annually since 1938. This compilation of executive orders, proclamations, and rules and regulations for departments and agencies does for administrative law what the *USC* does for statute law. The material for the *CFR* is drawn from the calendar year entries in the *Federal Register*, a daily publication of Executive Branch documents and notices of public applicability and legal effect.

Both the *CFR* and the *USC* are divided into 50 titles. Many, but not all, of the titles are identical in the two publications. For example, in the *USC*, the "National Space Program" is chapter 26, Title 42, "The Public Health and Welfare." In the *CFR*, "Aeronautics and Space" covers all of Title 14, of which chapter V is devoted exclusively to NASA.

The *Weekly Compilation of Presidential Documents*, published each Monday, includes all public presidential statements and materials released before 5:00 p.m. on the previous Friday. Since 1945, the National Archives has published in bound volumes the *Public Papers of the Presidents of the United States*, including all public statements and messages and verbatim transcripts of news conferences.

Federal Primary Sources

The archival or primary sources for research in NASA history are known by the rubric "records." Mastering the procedures and terminology by which the U.S. government documents the public business is a formidable challenge to even the

most determined researcher. Fortunately, NASA Headquarters and each NASA center have on their staff records management officers willing to help researchers with questions not anticipated by the History Office or even this publication. By federal law, government “records” are defined as:

all books, papers, maps, photographs, machine-readable materials, or other documentary materials, regardless of physical form or characteristics, made or received by an agency of the United States Government under Federal Law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the Government or because of the informational value of the data in them. Library and museum material made or acquired and preserved solely for reference or exhibition purposes, extra copies of documents preserved only for convenience of reference, and stocks of publications and of processed documents are not included.

The historian will want to examine evidence to be found in both the official record and non-record documents. As with all archival research, depending on each researcher’s interest, there will be either a shortage or an abundance of both categories of documents; pursuing a line of inquiry through the thickets of documentary evidence is, however, at the heart of historical investigation and constitutes its chief challenge and its own reward.

When examining federal records, care must be taken to avoid disrupting file continuity and contributing to the loss of records. Records may be copied with permission and should be returned to their original location within a folder.

By law, each federal agency is required to retain or dispose of certain records according to a “schedule” (list of categories) approved by the Archivist of the United States (National Archives and Records Administration). The *NASA Records Disposition Handbook* (NHB 1441.1A) lists all categories of NASA records and indicates

whether they may be destroyed or must be retained, for how long, and whether particular records will be transferred to the National Archives, where they will be appraised for their historic value and retained or destroyed. Records no longer in frequent use by a given NASA office will normally be transferred to the Federal Records Centers located around the country to await their eventual destruction or transfer to the National Archives.

Use of Current Records

NASA’s current files may be examined by bona fide researchers, subject to restrictions imposed by law, such as control of security-classified information, proprietary information, and personnel data. The most efficient way for a researcher to see such information is to examine the NASA or field installation organizational chart (available in the NASA History Office at NASA Headquarters) for the period being investigated or otherwise determine which organizational unit administered the particular program or activity. Then the researcher should contact that office or its successor, either directly or through the History Office, identify the files or information sought, and make arrangements to examine the materials that are available and accessible.

Under the provisions of the Freedom of Information Act and Executive Order 12065, it is the responsibility of the government to make nonexempt documents available to all citizens expeditiously on request. Nevertheless, experience suggests that the most successful researchers with respect to NASA records and files are those who appreciate the added burden they are imposing on officials and their staffs and who make reasonable arrangements as to time, place, and method of examining documents. After all, the personnel controlling the files are invaluable research aids who harbor a wealth of information that never finds its way onto a printed page. Courteous and cooperative conduct toward a staff member may make of him or her an important ally. Where problems of scheduling or access do arise, the History Office will make every effort to be helpful.

Use of “Retired” Records

Retired records fall into two different categories: those that have been permanently accessioned by the National Archives and Records Administration (NARA) and those still controlled by NASA but stored at the Federal Archives and Record Centers. The former are in the permanent custody of NARA and, although NASA may assist the researcher in identifying the documents required for each research project, arrangements for using them must be made directly by the researcher with NARA. Records still under NASA control but stored in a Federal Archives and Records Center may be recalled to the NASA History Office or other NASA offices as applicable.

The records of NASA and its predecessor agency, NACA, constitute Record Group 255 within NARA. A selection of records of NACA (60 cubic feet) is stored at the Archives Main Building, located five blocks from NASA Headquarters. The remainder (about 4,000 cubic feet) is stored at the Washington National Records Center in Suitland, Maryland, about 20 minutes away. A complimentary shuttle bus to Suitland is available for researchers from the Main Building. Also stored at Suitland are the retired records of NASA Headquarters, the Goddard Space Flight Center, and the Langley Research Center. These records now occupy more than 100,000 cubic feet.

Each office at NASA Headquarters and the agency's centers retires its own records to a regional Federal Archives and Record Center at its own pace, using Standard Form (SF)-135, “Records Transmittal and Receipt.” A file of copies of all Standard Form 135s is maintained by NASA records management officers, making the task of the historian identifying records for use somewhat easier.

Some general caveats should be kept in mind when researching retired federal records. SF-135, although the best inventory of most retired records of NACA and NASA, is an imperfect document; it often masks or confuses as much as it reveals. Seldom can the researcher expect to go directly from the forms to the desired records

box or file. More often, one will find in these forms a number of references to boxes that might contain useful information. It is then often best to go to the appropriate regional Federal Archives and Records Center to examine *in situ* all the boxes that might prove useful. Many leads will turn out to be disappointing.

Approval for access to the records must always be obtained from the NASA employee responsible for maintaining them. NASA Management Instruction (NMI) 1382.2C, “Availability of Agency Records to Members of the Public,” may apply. NMI 1382.2C is published in the *CFR*, Title 14, chapter V. Retired Headquarters records can be viewed at Suitland. To see the records at Suitland, prior arrangements must be made, including a letter to the Records Center from NASA. A security clearance is frequently necessary.

Officials’ Papers

NASA administrators and deputy administrators are presidential appointees; copies of most of their correspondence while in office are available in the NASA History Office or in the retired records. The papers of some former administrators have been donated to repositories, as follows:

- Keith Glennan’s (1958–1961) to the Dwight D. Eisenhower Presidential Library
- James E. Webb’s (1961–1968) to the Harry S. Truman, John F. Kennedy, and Lyndon B. Johnson Presidential Libraries, depending on the period
- Thomas O. Paine’s (1968–1970) to the Library of Congress
- James C. Fletcher’s (1971–1977) to the University of Utah

The papers of Dr. Hugh L. Dryden, NASA’s first deputy administrator (1958–1965), have been donated to The Johns Hopkins University, while those of George M. Low, deputy administrator between 1970 and 1976, are at Rensselaer Polytechnic Institute. Wernher von Braun, leader of the rocket team that developed the Saturn V, has a large collection of papers at the Library of Congress. The Virginia Polytechnic Institute and State University’s Archives of American Aerospace

Exploration also has significant collections of papers of senior NASA officials, including astronaut Michael Collins and Christopher Kraft, the Manned Spacecraft Center director in the 1960s. A useful source in identifying primary source materials is Cloyd D. Gull and Charles L. Smith, Editors, *A Directory of Sources for Air and Space History: Primary Historical Collections in United States Repositories* (National Air and Space Museum, Smithsonian Institution, 1989).

Oral History

Personal interviews can be important sources of historical evidence for recent events. Of course, the testimony of participants must be weighed judiciously against other evidence, but in a time when the telephone is eliminating many written communications, and concern about public disclosure through the Freedom of Information Act is preempting still others, scholars are relying more heavily than ever on participants' recollections. Thorough preparation before the interview and independent verification of the

testimony of the interviewee can go a long way toward reducing the hazards traditionally associated with this research technique.

NASA's enabling legislation, the National Aeronautics and Space Act of 1958, requires the agency to "provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof." This statutory obligation and NASA's civilian character have resulted in an agency commitment to "openness." In keeping with this commitment, the NASA History Program supports the position of the American Historical Association, which opposes any restrictions on open access to federal documents and information, *including* oral interviews, subject only to national security and Privacy Act exemptions to the Freedom of Information Act. Neither NASA employees nor historians working under NASA sponsorship may legally, or as a matter of policy, restrict access to an oral interview tape or transcript as a condition of conducting an interview.

Part III

Sources of NASA History at the Centers

9. Historical Research at the NASA Centers

Records retirement at the NASA centers follows the same procedure as at Headquarters. The major difference is that the Federal Records Centers are seldom as close to the NASA centers as Suitland, Maryland, is to Headquarters. While the NASA centers can recall their records from the records centers, it is often better for researchers to visit the records centers themselves, especially if they need to examine a large amount of material. The records management officers at individual centers can make the arrangements.

History Representatives

All of NASA's field centers have historical monitors who supervise the administration of historical resources and assist researchers. The names and addresses of these history representatives are as follows:

Dan Pappas
Ames Research Center
Mail Stop 202-3
Moffett Field, CA 94035
(415) 604-6325
(415) 604-0680 (fax)

J. D. Hunley
Dryden Flight Research Center
Mail Code TR-42
Edwards, CA 93523
(805) 258-3447
(805) 258-3566 (fax)

Jane Riddle
Code 252
Goddard Space Flight Center
Greenbelt, MD 20771
(301) 286-9161
(301) 286-1755 (fax)

Keith Koehler
Code 130.4
Wallops Flight Facility
Goddard Space Flight Center
Wallops Island, VA 23337
(757) 824-1579
(757) 824-1971 (fax)

Michael Q. Hooks
Mail Stop 512-110
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, CA 91109
(818) 397-7674
(818) 397-7121 (fax)

William A. Larsen
Mail Stop GA-1
Lyndon B. Johnson Space Center
Houston, TX 77058
(281) 483-6715
(281) 483-5200 (fax)

Elaine Liston
John F. Kennedy Space Center
Code NWSI-E
Kennedy Space Center, FL 32899
(407) 867-2407
(407) 867-4534 (fax)

Richard T. Layman
Code 123
Langley Research Center
Hampton, VA 23665
(757) 864-3441
(757) 864-8096 (fax)

Kevin Coleman
Mail Stop 3-2
Lewis Research Center
21000 Brookpark Road
Cleveland, OH 44135
(216) 433-9311
(216) 433-8000 (fax)

Mike Wright
Code CN22
George C. Marshall Space Flight Center
Huntsville, AL 35812
(205) 544-6840
(205) 544-1544 (fax)

Chris Harvey
John C. Stennis Space Center
AAOO/History
Stennis Space Center, MS 39529-6000
(601) 688-2643
(601) 688-2245 (fax)

Center Collections

The organization of historical resources varies from NASA center to NASA center. Some centers have extensive archives set up for research, while others channel their history activities through the center libraries or public affairs offices. It is best to review the synopses below or consult the following relevant chapters to find out what specific resources and procedures are in place at each center.

- *Ames Research Center:* Researchers interested in aeronautics and information systems should contact the Ames library for assistance in locating historical materials.
- *Dryden Flight Research Center:* Researchers interested in aeronautics and especially experimental aircraft should contact the Dryden public affairs office for assistance in locating historical materials.
- *Goddard Space Flight Center:* Located just outside Washington, D.C., Goddard has one of the best center libraries throughout NASA. It is an especially useful source of information for NASA historians.
- *Jet Propulsion Laboratory:* Located in Pasadena, California, this facility is staffed and operated under contract to NASA by the California Institute of Technology. The laboratory has an extensive historical collection, which has been well maintained and organized for use. It has complex access requirements; researchers should contact the archivist well in advance of any visit.
- *Johnson Space Center:* This organization has an extensive and well-organized archives that is, understandably, strongest on the history of human spaceflight. A significant portion of this material is at the Woodson Research Center, Rice University, in Houston.
- *Kennedy Space Center:* A well-defined set of materials, focusing on launch operations, is maintained by the archivist as an adjunct to the center library.
- *Langley Research Center:* First established at Hampton, Virginia, in 1917, this center has unparalleled historical materials in the history of early aeronautical research and devel-

opment and most recent space efforts, such as the Viking lander.

- *Lewis Research Center:* Founded in 1941, this center in Cleveland has recently begun efforts to systematize its historical materials for preservation and use. Materials are located either at the center itself or at its Plum Brook Station, located on Lake Erie near Sandusky, Ohio.
- *Marshall Space Flight Center:* This collection has matured over the years into a well-organized set of materials specializing on Marshall institutional history and the development of rocketry.
- *Stennis Space Center:* Established in southern Mississippi near New Orleans, this center gradually evolved from a rocket engine test facility to its present emphasis on practical applications technology. The center's history office maintains a set of materials that is useful for research.

Access Policy

All of the NASA centers located throughout the United States are restricted government installations. To gain access, nonofficial researchers must obtain visitor badges and, if driving, a vehicle pass at the entrance gate to each center.

U.S. citizens are requested to contact each history office or archives a minimum of four weeks prior to arrival. This will ensure that the materials needed for research will be available and that any access requirements can be met beforehand. In addition to this prior contact being courteous, it will help historians use their research time more productively. Letters informing NASA history personnel of a research visit should include the following information:

1. Full name
2. Current address
3. Current telephone number
4. Description of research objective and materials needed for review, if known
5. Date(s) researcher would like to visit the center

6. Agency/university/company affiliation, if any
7. Social security number (required by the Kennedy Space Center)

Access procedures and the costs of copying materials vary according to center policy. For exam-

ple, the Jet Propulsion Laboratory considers all papers internal documents and requires that they be reviewed and cleared for external release before they can be used by outside researchers. Historical materials may be consulted only during normal working hours at the individual NASA centers.

10. Historical Materials at the Ames Research Center

Mail: Research Information Resources (Library), Mail Stop 202-3, NASA Ames Research Center, CA 94035-1000

Location: Research Information Resources (Library), Building 202B, Room 101

Hours of Operation: 8 a.m. to 4:30 p.m., Pacific Time, Monday through Friday

Contact: Dan Pappas

Telephone/fax: (415) 604-6325/(415) 604-4948

World Wide Web site: <http://mainlib.arc.nasa.gov>

The Ames library has the following periodicals:

- Assorted Memos (an informal record of Ames activities), 1966–1977
- Ames “News Item” Clippings, 1940–1963
- Ames News Releases 1949–1993
- *Astrogram*, 1958–1978 (more current issues located at the Astrogram Office)

The *Ames Research and Technology Annual Report*, a summary of Ames work organized by research directorate, from 1981 to the present, is available. Also on hand are the following Ames telephone directories:

- Two NACA directories
- An incomplete set of NASA directories until 1966
- A complete set of NASA directories from 1966 to the present

Ames has audio cassettes (from Aeronautics Corporate Memory Seminars in October and November 1978). Each of the following runs approximately 2 hours:

- *Recollections from an Earlier Period in American Aeronautics* (R.T. Jones)
- *Low Speed Aeronautical Research* (B. Wick)
- *High Speed Aeronautical Research* (L. Jones)
- *Computational Fluid Dynamics* (H. Lomax)
- *Flight Dynamics Research/Simulation Technology* (M. White)
- *Flight Operations Research* (S. Anderson)
- *Helicopter Technology* (K. Edenborough)
- *Aeronautics Capabilities, Facilities, Objectives* (L. Roberts)



Information technology continues to develop at astounding rates. This photograph shows a sophisticated data acquisition system at the Ames Research Center in February 1990.

11. Historical Materials at the Dryden Flight Research Facility

Mail: Office of External Affairs, Mail Stop TR-42, NASA Dryden Flight Research Facility, Edwards, CA 93523

Location: Building TR-42

Hours of Operation: 8 a.m. to 4:30 p.m., Pacific Time, Monday through Friday

Contact: Dr. J.D. Hunley, Historian

Telephone/fax: (805) 258-3447/(805) 258-3566

World Wide Web site: <http://www.dfrc.nasa.gov/History/>

Founded in 1946, this center is located at Edwards Air Force Base, California, in the Mojave Desert, northwest of Los Angeles. It has recently begun to plan for systematizing its historical mate-

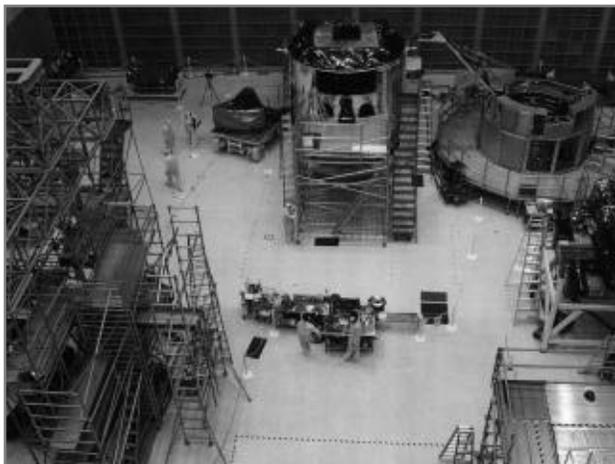
rials for preservation and use. The Dryden facility has approximately 30 linear feet of assorted files. These materials currently are scattered but should be centralized in the near future.

The center has some biographical files, a large photo archive of research aircraft, and files on such flight research projects as the X-15, the F-8 Digital Fly-By-Wire, the Highly Digital Electronic Control project, and some others. The facility also has videotaped oral history interviews of former deputy director De Elroy Beeler, former director Lee Scherer, former director Isaac Gillam, former director Martin Knutson, and eminent engineers Hubert Drake and Gerald Truszynski.



A refurbished mock-up of the famous X-15 aircraft was displayed at the Dryden Flight Research Center in 1995. The original three X-15 aircraft flew a combined total of 199 times from 1959 to 1968. These rocket-powered aircraft reached altitudes of more than 350,000 feet and speeds up to 4,520 miles per hour.

12. Historical Materials at the Goddard Space Flight Center (Including Wallops)



This “cleanroom” at the Goddard Space Flight Center played a major role in preparations for the Hubble Space Telescope’s first servicing mission in December 1993. Able to accommodate two major Space Shuttle payloads simultaneously, this facility removes 99.99 percent of all airborne particles that are 0.3 microns and larger.

Mail: Code 252, NASA Goddard Space Flight Center, Greenbelt, MD 20771

Location: Building 21, Library

Hours of Operation: 8 a.m. to 6 p.m., Eastern Time, Monday through Friday

Contact: Jane Riddle, Reference Librarian

Telephone/fax: (301) 286-9161/(301) 286-1755

The Goddard Space Flight Center has expertise in the areas of space science, Earth science, and space technology. It is NASA’s Center of Excellence for scientific research. The Homer E. Newell Library assists scholars in locating historical materials relevant to the center’s missions. In the area of oral histories, the library also has a copy of *Roads to Space: An Oral History of the Soviet Space Program*.

Wallops Flight Facility

Mail: Code 130.4, Wallops Flight Facility, Goddard Space Flight Center, Wallops Island, VA 23337

Location: Building F6, Room 106

Hours of Operation: by appointment, Monday through Friday

Contact: Keith Koehler

Telephone/fax: (757) 824-1579/(757) 824-1971

The Wallops Flight Facility is organizationally a component of the Goddard Space Flight Center. Located on Virginia’s Eastern Shore, the facility’s historical documents include information on projects and institutional activities since 1945. The materials consist of log books, flight documents, photographs, and correspondence. The collection is not formalized, and requests to view the documents should be made in advance.



The Scout launch vehicle is shown ready for launching in 1962 at NASA’s Wallops Station (now called the Wallops Flight Facility). Scout was a four-stage, solid-fueled vehicle that stood 72 feet high and weighed about 36,100 pounds.

13. Historical Materials at the Jet Propulsion Laboratory, California Institute of Technology

Mail: Archives (Mail Stop 512-110), Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, CA 91109-8099

Location: Archives, Building 512, Room 103

Hours of Operation: 7:30 a.m. to 4:15 p.m., Pacific Time, Monday through Friday

Contact: Dr. Michael Hooks, Chief Archivist

Telephone/fax: (818) 397-7674/(818)397-7121;

World Wide Web site: <http://techinfo.jpl.nasa.gov/archives>

The Jet Propulsion Laboratory (JPL) of the California Institute of Technology (Caltech) is a federally funded research and development center operating under contract to NASA. As NASA's lead center for deep space exploration, JPL is responsible for the unmanned planetary missions of the United States. JPL's contributions to the exploration of the solar system include participation in Earth-orbital projects and experiments, as well as studies of stellar systems and extra-solar-system bodies. Other sponsors for whom JPL performs work includes the Department of Defense, the Federal Aviation Administration, and the Department of Energy.

The Archives

In April 1989, the JPL Archives was established to document the history of the laboratory's flight projects, research and development activities, and administrative operations from its beginnings in the late 1930s to the present. The Archives identifies JPL records of historical value, collects and preserves those records, and makes them available for a variety of research uses by JPL personnel, scholars, students, and the general public.

The documents are arranged by record group according to the project, program, or office. The processed records are available to JPL and NASA personnel, contractors, and the general public. All

JPL records are considered internal documents, but they are accessible to public researchers once they have been reviewed and cleared for external release. Finding aids for processed records are available without restrictions. The processed record groups include the following:

- Earth Observing System
- Galileo Project
- Magellan Project
- Mariner Missions
- Mars Observer Project
- Seasat Project
- Ulysses Project
- Viking Project
- Voyager Project
- Various Research and Development Projects
- Records of former directors William Pickering and Bruce Murray

Holdings

The JPL Archives contains the History Collection, an internally created reference collection pertaining to the development of the laboratory and its projects, such as the Army Ordnance Corporal and Sergeant; NASA programs such as Ranger, Surveyor and Mariner; and other JPL topics. The bulk of the collection covers 1936 to 1976.

In addition to documenting JPL's history through the preservation of written records, the Archives also has an oral history program. Recordings and transcriptions of interviews with current and former JPL employees are available for research use. The combination of documentary materials and oral interviews provide a comprehensive record of JPL's administrative operations, planetary exploration, and numerous scientific and engineering disciplines.



The Jet Propulsion Laboratory is owned by NASA and run by the California Institute of Technology. It has been involved in numerous high-profile planetary exploration missions. This 1962 picture depicts Mariner, the first spacecraft designed for interplanetary discovery; it would eventually fly by Venus.

The materials in the Archives are in the following formats: paper, machine-readable records (audio, microform, and electronic media), and film products (including the JPL photo collection and negatives). New accessions are being added to the holdings of the Archives on a continuous

basis. Researchers are encouraged to contact the Archives to inquire about recently processed records.

Instructions for Public Access

To gain access to the JPL Archives, researchers are asked to comply with the following procedures:

1. Researchers from the general public are allowed to use the archival finding aids to locate records pertinent to their research topic. All records are considered internal documents and must be reviewed and cleared for external release before they can be distributed to the public. The review process takes approximately two weeks. Once the records have been cleared for external release, the Archives will notify the researcher. The Archives charges a photocopying fee of six cents per page. Photocopying orders must be prepaid to Caltech. No cash can be accepted.
2. Researchers are requested to notify the Archives by mail or telephone in advance of a planned visit.
3. Letters should contain the following information about the researcher and proposed research project: (a) name; (b) current address; (c) phone number; (d) description of research topic; (e) purpose of research; (f) date(s) of visit; and (g) citizenship or naturalization.

14. Historical Materials at the Johnson Space Center

Mail: NASA Johnson Space Center, Code GA/Information Systems Directorate, Houston, TX 77058

Location: Technical Library, Building 45, Room 100

Hours of Operation: 8 a.m. to 5 p.m., Central Time, Monday through Friday

Contact: William A. Larsen, History Representative, or Sharon Halprin, Archivist

Telephone/fax: (281) 483-4062 or (281) 483-4049/(281) 483-5200

World Wide Web site: <http://images.jsc.nasa.gov> (on-line photo archives)

The resident historical collection consists primarily of the Space Shuttle and Space Station programs and earlier program information and a variety of institutional and other general reference documents. The historical collection and records administration are under the overall cognizance of the Johnson Space Center (JSC) Scientific and Technical Information Center (STIC), which also manages the library and other information repositories. Because neither JSC nor its information management activities are routinely available to the general public, requests for information access should be directed to the JSC history coordinator or the JSC librarian. There is no dedicated staffing to support history research projects. Therefore, the use of finding aids, guides, and databases is on a self-service basis, with very limited technical assistance from STIC staff.

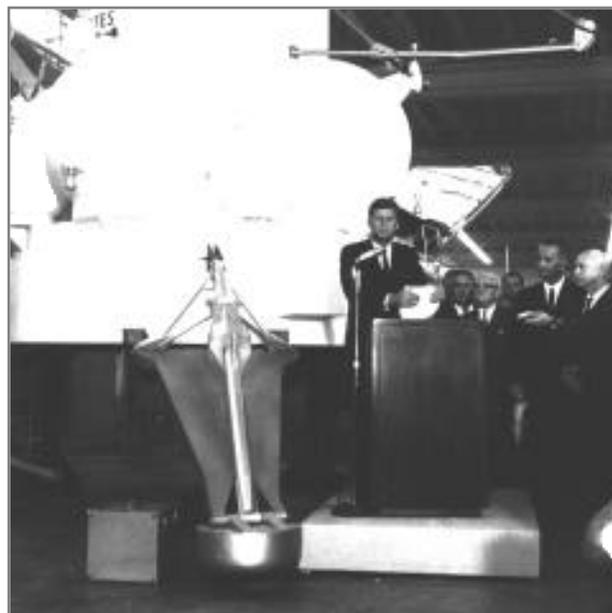
A substantial number of the JSC historical documents are housed at the Woodson Research Center at Rice University. The Woodson Research Center can be contacted from 9:00 a.m. to 4:00 p.m., Monday through Friday, at (713) 527-8101, ext. 2563. Mail should be addressed to Woodson Research Center, Fondren Library, Rice University, P.O. Box 1892, Houston, Texas 77251.

JSC also maintains a comprehensive and catalogued archive of still and motion pictures and videotapes, which could be important research tools. This collection spans the period from the Project Mercury to the present. It is anticipated that

with the passage of time, large portions of this collection will be digitized and be electronically available to the public through various NASA-related elements on the World Wide Web.

Specific Holdings

The JSC History Office's documents collection contains materials covering thirty years of NASA's human spaceflight activities. It contains approximately 2,600 linear feet of documents from government, industry, and other sources. The collection is arranged in several series by program: Mercury, Gemini, Apollo, Skylab, Apollo-Soyuz Test Project, Space Shuttle, and Space Station. In addition, a Center Series contains materials related to the organization, management, and functions of JSC and its line organizations and temporary program/project offices. Smaller groups of General Reference materials and vertical files are available for quick-reference purposes.



Originally called the Manned Spacecraft Center, this NASA facility was renamed the Lyndon B. Johnson Space Center. President John F. Kennedy and then-Vice President Johnson are shown during a 1962 visit. Kennedy is holding a model of the Apollo command module, while a much larger model of the lunar module is behind him.

A memorandum of understanding between JSC and Rice University permits the transfer, on indefinite loan, of selected documents to the Woodson Research Center, Rice University Library. The Woodson Research Center currently administers approximately 1,000 linear feet of JSC historical documents from the early manned spaceflight programs.

Initial inquiries regarding any JSC historical collections should be addressed to the JSC History Office. Public access to the History Office is by appointment only.

Finding Aids

Traditional written guides to each of the series described below are available for browsing in the JSC History Office. These guides may also be searched electronically for specific items or subjects of interest to the user.

Also available is a growing index of correspondence files that can be searched electronically by date, number, author, office or origin, type of document, title, and keywords. The staff of the JSC History Office will conduct database searches upon request.

The following is an abbreviated description of the materials available in the collection.

Available Materials

Mercury Series (52 Feet)

- Chronological files, including correspondence, meeting minutes, and project reports generated by the National Advisory Committee for Aeronautics (NACA), NASA, and the Space Task Group (1951–1967)
- Mission-related documents, including post-launch reports, mission reports, technical information summaries, press kits, flight plans, and recovery documents for the Little Joe, Mercury-Redstone, and Mercury-Atlas missions
- Capsule Coordinating Committee meeting minutes (1959–1960)
- Interim and Quarterly Status Reports (1959–1963)

- Reel-to-reel and cassette tapes covering subjects such as mission simulations, press briefings, air-to-ground communications, and interviews
- McDonnell Aircraft Familiarization Manuals describing capsule systems and major components (1959–1963)
- Contractor reports and documents, including materials from Convair, Douglas, General Dynamics, Grumman, Lockheed, McDonnell, Martin, North American, Northrop, and others (1958–1964)
- Working papers, numbered 100 to 234 (for a complete listing of authors and titles, see *This New Ocean: A History of Project Mercury*, NASA SP-4201, pp. 610–617)
- Photographs and drawings, including those used to illustrate *This New Ocean* and a group of capsule assembly, test, and model photos
- Friendship 7 (John Glenn) Post-flight World Tour, including itineraries, clippings, press releases, and correspondence

Gemini Series (115 Feet)

- Chronological files, including letters, memoranda, and meeting minutes generated by the Gemini Program Office, McDonnell Aircraft, and others (1958–1971)
- McDonnell Aircraft Corporation design notes, including aerodynamics, crew compartment, electrical, electronic, guidance and control, mechanics, instrumentation, propulsion, reliability, spacecraft weight and balance, spacecraft strength design, structural loads, and thermodynamics (1963–1966)
- Mission-related documents, Gemini-Titan I through XII, including mission rules and reports, postlaunch evaluations, flight plans, press kits, air-to-ground transcripts, press briefings, and conferences (1964–1967)
- Manned Spacecraft Center Quarterly Status Reports and Reviews (1962–1966)
- Martin Corporation documents on the Titan launch vehicle, including weight and balance reports, performance specifications, progress reports, reliability reports, flight evaluations, preflight test reports, and hazard analyses (1962–1966)

- Lockheed Corporation documents on the Agena target vehicle, including progress reports, requirements, reviews, and evaluations (1961–1966)
 - McDonnell Aircraft documents on the Gemini spacecraft, including performance specifications, press reference books, acceptance reviews, support and test plans, and weight and balance reports (1962–1968)
 - Financial management and cost documents (1961–1968)
 - Gemini subject files, including Department of Defense support documents, extravehicular activities, docking systems, rendezvous, POGO (privately owned, government-operated) problems, food and waste management, and others (1961–1969)
 - Spaceflight experiment documents, including McDonnell Aircraft correspondence regarding spacecraft modifications, experiment technical development plans, milestone schedules, abstracts, reprints, and reports (1962–1966)
 - Meeting minutes from Gemini Program Office staff meetings, McDonnell Aircraft Corporation technical negotiations, Gemini Program Office/Contractor Coordination Panels, and the Gemini Management Panel (1962–1966)
 - Fuel Cell and Paraglider Landing System development documents (1961–1966)
 - McDonnell Aircraft Familiarization Manuals describing capsule systems and major components (1962–1966)
 - Tape recordings and transcripts of 261 oral history interviews (1966–1970); audio tapes of Gemini postflight press conferences and television interviews (1963–1966)
 - Gemini working papers covering data and mission analyses, system studies, operational methods, requirements, and other subjects (1963–1967)
 - Glass slides, organized by spacecraft number and largely concerning spacecraft assembly; photographs of the Gemini flights, organized by mission
- Apollo Series (318 Feet)***
- Chronological files, including letters, memoranda, and meeting minutes describing the development of the Apollo spacecraft and lunar module, including their design, fabrication, test, and modification through the final Apollo mission (1945–1978)
 - Memoranda of George M. Low, Manned Spacecraft Center (MSC) Apollo spacecraft program manager for the period after the AS-204 fire (1967–1969)
 - Transcripts of 327 oral history interviews (1965–1972)
 - Office of Manned Space Flight Management Council meetings, minutes, and related documents
 - Apollo lunar science chronological files (1958–1982)
 - Science documents for individual Apollo missions
 - Manned Space Flight Experiments Board meeting minutes (1965–1968, 1970–1972)
 - Space Sciences Steering Committee subcommittee meeting minutes (1961–1968)
 - Lunar Receiving Laboratory chronological files (1964–1973)
 - Lunar surface operations planning meeting minutes (1967–1972)
 - MSC Science and Applications Directorate staff meetings (1961–1963, 1968–1973)
 - MSC Apollo Spacecraft Program Office weekly reports (1962–1966, 1970)
 - Apollo mission documents, filed sequentially beginning with AS-001 in December 1964 and ending with Apollo 17 in December 1972, including flight plans, mission requirements documents, public affairs materials, air-to-ground and onboard voice transcriptions, mission reports, anomaly reports, stowage lists, and press kits, among others
 - Apollo crew training schedules, Apollo 7 through Apollo 17
 - Command and Service Module documents, including operations and systems handbooks, manuals, and photographs, as well as a multivolume North American Rockwell study on the module's cost, schedule, and technical characteristics

- Lunar Landing Research Vehicle (LLRV), Lunar Landing Training Vehicle (LLTV), and lunar landing studies documents (1965–1969)
- Lunar Module documents, including operations and systems handbooks, photographs, flight readiness reviews, and configuration control board minutes
- Apollo Mission Planning Task Force documents (1964–1966)
- Contractor studies on Apollo logistic support systems (1964–1966)
- Apollo program quarterly status reports, numbers 1 through 25 (1962–1968)
- Weekly activity reports, Apollo Spacecraft Resident Program Office, Downey, California
- Apollo Experience Reports, authored by program participants on subjects such as docking systems, environmental control, Lunar Module descent and ascent engines, mission planning, testing, stress corrosion, attenuation systems, and others (116 total subjects)
- Apollo Working Papers (1,000 plus series) on aspects of Apollo planning and operations (1960–1968)
- Apollo feasibility study proposals and contractor reports (1960–1961)
- Grumman reports, including the Lunar Module extension study for the Apollo Extension System Office (1963–1966)
- Apollo guidance, navigation, and control documents, including MIT, AC Delco, and Grumman materials
- Lunar Module and Command and Service Module weight and mass properties reports (1962–1969)
- Post-Apollo planning documents, including materials from the Apollo Extension System and Apollo Applications Program Offices (eventually redesignated Skylab in 1970), as well as some Manned Orbital Laboratory materials and files of the Space Station Study Office (1962–1965)
- Mission directives and management documents, including intercenter agreements, program approval documents, program management guides, program plans, contingency plans, and baseline operations plans
- Mission requirements and baseline reference mission documents used to provide a basis for mission planning and to describe mission events in detail (1967–1972)
- Handbooks, databooks, and checklists outlining operational procedures and experiment and subsystem data (1970–1973)
- North American Rockwell, Boeing, Martin Marietta, Bellcomm documents, including a large group of North American Rockwell progress reports on the Command and Service Module (1962–1974)
- Office of Manned Space Flight Management Council meeting minutes and presentation materials (1968–1973)
- Skylab program review materials, including meeting minutes and charts from management reviews, mid-term review and assessment, Command and Service Module major issue reviews, flight readiness reviews, and design certification reviews (1968–1973)
- Configuration Control Board meeting minutes (1970–1973)
- Program manager's files from the office of Kenneth S. Kleinknecht (1970–1972, 1974)
- General subject files covering such diverse topics as the Crew Health Stabilization Program and the Skylab orbital debris problem (1967–1974)
- Experiments documents, including correspondence, meeting minutes, reviews, checklists, and acceptance data packages for the Apollo Telescope Mount (ATM), biomedical, Earth resources, and Earth observations type investigations (1965–1974)
- Skylab news briefings and public affairs publications, including transcripts and press kits (1971–1977)

Skylab Series (192 Feet)

- Correspondence files, including letters, memoranda, meeting minutes, and notes originating at NASA Headquarters, JSC, and other field centers, arranged chronologically by mail code (1966–1973)
- Contractor correspondence files, primarily from North American Rockwell, Martin Marietta, and McDonnell Douglas, arranged chronologically (1968–1973)

- Transcripts and tapes from 77 oral history interviews
- Flight director's handover notes and Flight Management Team meeting minutes (1973–1974)
- Air-to-ground and onboard voice communications transcripts (1973–1974)
- Mission-related documents, including flight plans, mission reports, and mission rules (1972–1974, 1979)
- Skylab Experience Bulletins and “lessons learned” documents describing the performance of flight crews, flight equipment, and hardware (1973–1975)

Apollo-Soyuz Test Project (ASTP) Series (98 Feet)

- Correspondence files, including letters and memoranda filed chronologically (1973–1977)
- Clippings files and articles from American and Russian newspapers and magazines, including some technical translations (1970–1976)
- Public Affairs Office documents, including press kits and releases (in Russian and English), fact sheets, and documents regarding cooperative press and television coverage of the ASTP mission (1974–1976)
- Working Group documents, including materials generated by American and Soviet personnel as they negotiated the technical specifications for the ASTP mission (1971–1975)
- Transcripts of oral history interviews (1974–1976)
- Air-to-ground, onboard voice, and U.S. and U.S.S.R. Mission Control communications transcripts (1975)
- Photographs, including those taken at joint meetings held in Moscow and Houston (1971–1975)
- Experiments documents, including proposals, development materials, and program management files
- ASTP Project documents in the 10,000 through 50,000 series, including safety assessment reports, mission planning documents, interacting equipment documents, and scheduling documents
- Mission-related documents, including handbooks and databooks, flight plans, mission requirements documents, and crew activities plans (1974–1975)
- North American Rockwell documents consisting largely of materials on the development of the ASTP docking module (1971–1974)
- Crew training and joint activities tapes, some in Russian (1973–1976)
- Joint meetings documents, including reports, drawings, articles, and audiotapes (1971–1975)

Space Shuttle Series (918 Feet)

- Chronological files, including correspondence, memoranda, and early Space Shuttle development documents (1957–1984)
- MSC/JSC reports and presentation materials, filed chronologically (1968–1989)
- Marshall Space Flight Center reports and presentation materials focusing primarily on the development of the Solid Rocket Boosters, External Tank, and Space Shuttle Main Engines (1970–1988)
- Goddard Space Flight Center/Payload Planning Working Group documents (1972–1973)
- Rockwell documents, including proposals, study reports, contract reports, and related materials (1965–1989)
- Payload documents, including files generated by the Shuttle Payload Integration Office and Payloads Interface Engineering Office (1973–1985)
- Files of Thomas Hyle generated in the Contingency Abort Section of the Flight Analysis Branch, the Abort Analysis Section of the Engineering Analysis Section, and the Space Shuttle Systems Engineering Office (1970–1986)
- Engineering Systems Integration Group meeting minutes (1977–1981)
- Space Transportation System (STS) Operations Office, presentation files of Glynn Lunney (1977–1981)
- Spacelab documents, including correspondence, preliminary and critical design reviews, and experiment planning documents (1971–1983)

- National STS Program Office and Orbiter and GFE Project Office weekly activity reports (1970–1990)
- Approach and landing test documents, including operations plans, final reports, and press releases (1973–1978)
- Mission-related documents, including flight plans, mission reports, press kits, and flight profiles
- Contractor documents, including Grumman, General Dynamics, Boeing, Lockheed, Martin Marietta, McDonnell Douglas, and TRW concept studies and Space Shuttle proposals
- Remote Manipulator System documents, including design reviews, interface control documents, final reports, meeting minutes, and presentation materials generated by NASA and SPAR Aerospace (1972–1982)
- Phase B and Phase C/D Requests for Proposal (RFP), Source Evaluation Board documents, viewgraphs, and contracts
- Aerodynamic Design Databooks (1972–1981)
- Correspondence and subject files of Rodney Rose generated in the Mission Support Office and during his term as assistant director for the Space Shuttle (1975–1984)
- Shuttle/Salyut talks, including agenda and meeting notes (1976–1978)
- Shuttle avionics study reports generated by various NASA contractors (1968–1975)
- Transcript and tapes of oral history interviews (1983–1985)
- Special Program Requirements Review Board for Systems Design, including agendas, meeting minutes, and directives (1986)
- STS user charge documents, including background studies, correspondence, notes, and presentation materials (1974–1980)
- Abort and Separation Panel meeting minutes (1973–1976)
- RTG (Radioisotope Thermoelectric Generator) documents, including safety analysis reports for the Galileo and Ulysses missions (1976–1988)
- Shuttle Carrier Aircraft documents, including Boeing materials related to the 747 modification contract (1974–1976)
- Space Shuttle Program Office presentation files, arranged chronologically (1969–1988)
- Orbiter technical status reviews, including correspondence, meeting minutes, and presentation materials (1981–1986)
- Shuttle Mass Properties and Weight Reports (1974–1990)

Space Station Series (195 Linear Feet)

- Chronological files, including correspondence, meeting minutes, and reports from early space station concept studies (1952–1982)
- Space Station Program Office and Space Station Project Office correspondence and presentation files (1984–1991)
- McDonnell Douglas documents, including reports from the Manned Orbiting Laboratory Evaluation Study, the Space Station Phase B Definition Study (1969–1972), and the Space Station Systems Analysis Study
- Rockwell documents, including reports from the Space Station Phase B Definition Study (1969–1972), the Space Construction Analysis Study, and the Space Operations Center Study
- Boeing documents, including reports from the Saturn V Single Launch Space Station Study, the Space Operations Center Systems Analysis Study, and the Space Station Attributes and Architectural Options Study
- Miscellaneous contractor documents, including reports generated by General Dynamics, Grumman, Lockheed, Martin Marietta, and TRW
- Critical Evaluation Task Force meeting minutes, presentation materials, and final findings (1986)
- Rockwell and McDonnell Douglas Space Station Work Package 2 definition and preliminary design phase proposal documents for Phase B (1985–1986)
- European Space Agency Columbus Phase B1 definition and design reports (1985)
- Space Station Phase C/D RFP and McDonnell Douglas technical proposal (1987)

- Architectural control documents for various Space Station Freedom subsystems (1986–1991)
- NASA Space Station Program definition and requirements documents (1988–1991)
- Description and requirements documents governing Space Station technical and management activities at JSC (1989–1991)
- Preliminary Design Review Plans (1989–1991)
- Miscellaneous requirements documents for a wide range of items, including the in-flight health care system, robotics accommodation, microgravity laboratories, radio frequency data, and so on
- Software specifications, development, and test-related documents (1989–1991)
- Space Station Freedom External Maintenance Task Team report (1990)
- Gemini, Apollo, and Space Shuttle generation of suits (1959–1981)
- Earth Resources Program Office documents, including correspondence, meeting minutes, weekly activity reports, and project reports (1965–1981)
- MIUS/MIST Project files, including correspondence and reports related to the integrated utility systems study (1971–1981)
- Files of Clifford Charlesworth, including reading files and activity reports of the Space Operations Directorate (1982–1987)
- Manned spaceflight schedules outlining program and hardware milestones for the Gemini and Apollo programs (1962–1971)
- Food systems files, including correspondence and reports related to nutrition standards, hardware, experiment management, and menu development for in-flight feeding (1967–1978)

Center Series (468 Linear Feet)

- Director's reading files, including correspondence circulated among executives in the center director's suite of offices (not containing any confidential or sensitive materials), filed chronologically by the circulation date (1978–1991)
- Headquarters correspondence, arranged chronologically by office of origin (1973–1981)
- Files of Joseph P. Loftus, including materials related to NASA budget and manpower issues, advanced program planning, research and technology operating plans, and Space Shuttle extended duration mission studies
- Program Operating Plans (1965–1979)
- Files of Thomas K. Mattingly, including materials related to shuttle flight crew issues (1972–1978)
- Materials related to advanced program planning, manned Mars mission studies, and proposed planetary missions (1953, 1959–1989)
- Docking and rendezvous documents, including materials related to hardware development and mission techniques (1960–1988)
- Spacesuit documents, including materials related to the development of the Mercury, Gemini, Apollo, and Space Shuttle generation of suits (1959–1981)
- Earth Resources Program Office documents, including correspondence, meeting minutes, weekly activity reports, and project reports (1965–1981)
- MIUS/MIST Project files, including correspondence and reports related to the integrated utility systems study (1971–1981)
- Files of Clifford Charlesworth, including reading files and activity reports of the Space Operations Directorate (1982–1987)
- Manned spaceflight schedules outlining program and hardware milestones for the Gemini and Apollo programs (1962–1971)
- Food systems files, including correspondence and reports related to nutrition standards, hardware, experiment management, and menu development for in-flight feeding (1967–1978)
- Reading files of Dr. Maxime Faget (1958–1981) and Dr. Christopher Kraft (1963–1970)
- Correspondence files and miscellaneous reports of the Administration, Center Operations, Space and Life Sciences, Mission Operations, Flight Crew Operations, and Engineering and Development Directorates
- Large space structures documents, including correspondence and reports related to the Power Extension Package (PEP) study (1971–1981)
- Paul Purser logs to Dr. Robert Gilruth outlining daily activities of the Space Task Group and Manned Spacecraft Center in its earliest years (1956–1964)
- MSC senior staff meeting minutes (1961–1968, 1970–1976)
- Organization files, including organizational charts, studies, and functional statements for MSC/JSC (1958–1986)
- NASA, JSC, and STS management documents, including management study reports conducted internally and by various JSC contractors

- Files of Paul H. Vavra, including materials related to the development of the Mercury Control Network, Mission Control Center, and Apollo Unified S-Band and Acceptance Checkout Systems
- Mission Control Center and Real Time Computer Complex documents, including correspondence and reports from MIT and Philco Corporation
- Solar Power Satellite documents, including Boeing and Rockwell study reports examining questions of energy conversion in space, microwave transmission of power to Earth, and space construction of power satellites (1976–1981)
- Files of Dr. Robert Parker, including materials related to his position as backup crew member for Apollo 15 and Apollo 17, program scientist for Skylab, and flight crew for Spacelab and Astro-1 Space Shuttle missions
- Orbital Maneuvering Vehicle project documents, including Requests for Proposal, study reports, and meeting minutes

General Reference Series (200 Linear Feet)

- NASA Special Publications, including Aeronautics and Astronautics and books in the History Series, Congressional Authorizations and Appropriations, testimony, and briefing materials (1950–1983, 1986–1991), NASA semi-annual reports to Congress (1959–1970)
- President’s Reports to Congress on U.S. Aeronautics and Space Activities (1959–1970, 1972–1987, 1989–1990)
- *Current News* clippings from major national newspapers (1964–1991)

- NASA and MSC/JSC Management Instructions and Announcements (1959–1992)
- *Space News Roundup* (JSC internal newspaper) (1961–1992)
- “Space Flight Justification and the Role of Man in Space,” including articles and publications arguing both the pros and cons of the space program and the relative merits of manned versus unmanned exploration (1960–1989)
- JSC, NASA Headquarters, and NASA field center telephone directories (1959–1992)

Oral History Holdings

The JSC Oral History Collection consists of more than 800 interviews on all aspects of NASA human spaceflight. The collection is arranged in seven series: Gemini, Apollo, Skylab, Apollo-Soyuz Test Project, Shuttle, Center, and General.

The series on human spaceflight programs includes interviews that cover a variety of areas, from weather conditions at the Kennedy Space Center to overall mission planning and mission operations. The Center Series includes interviews on such subjects as site acquisition, security, public affairs, astronaut selection, legal affairs, and general management issues. The General Series includes interviews with NASA executives on macro issues, such as agency external relationships.

Reel-to-reel tapes, cassette tapes, and video-tapes were used to record the interviews. The Center Series and parts of the General Series have edited transcripts accompanying the tapes. Because some of the audiotapes were recycled, some interviews exist only in paper format. An inventory to the collection exists both electronically and in hard copy. All of the tapes are located in the Scientific and Technical Information Center at JSC.

15. Historical Materials at the Kennedy Space Center

Mail: Kennedy Space Center Library Archives,
Kennedy Space Center, Florida 32899

Location: Kennedy Space Center
Headquarters Building, Room 1533

Hours of Operation: 7:30 a.m. to 4:00 p.m.,
Eastern Time, Monday through Friday

Contact: Elaine E. Liston, Archivist, or Audrey
Silipo, NASA Technical Representative

Telephone/fax: (407) 867-2407/(407) 867-
4534

World Wide Web site: <http://www-lib.ksc.nasa.gov/lib/archives.htm>

General Information

The historical documents collection of the Kennedy Space Center (KSC) Library Archives was created in 1976 during the celebration of the American Bicentennial. Archival materials are received as donations through various KSC organizations. The Archives houses nearly 650,000 pages of documents and more than 35,000 photographs; these are historical evidence of KSC's growth and development from 1958 to the present.

The documents and photographs cover a wide array of subjects, from the construction of facilities, such as the Vehicle Assembly Building and Launch Complex 39, to launches of both unmanned and manned vehicles through the most current Space Shuttle flights. The holdings are accessed through more than 150 guides, lists, and, increasingly, an on-line database.

The Archives prepares the annual publication *Chronology of KSC and KSC-related Events*. Chronologies have been published for the years 1976 to 1995. The Archives also prepares the cumulative five-year index to *Spaceport News*, KSC's newspaper.

The Archives exhibits its holdings on a regular basis. A collection of reference books is available for researchers. While research and reference service is available, written inquiries are preferred.



STS-1, the maiden flight of the Space Shuttle, blasted off from the John F. Kennedy Space Center on 12 April 1981.

News and information concerning the KSC Library Archives can be found at the following World Wide Web address: <http://www-lib.ksc.nasa.gov/lib/archives.htm>

Access to the KSC Library Archives

KSC is a restricted government installation; access to all its facilities is granted by prior clearance, per KHB 1610.2 and NMI 1371.4B. Access to the KSC Archives by U.S. citizens is best achieved by contacting the KSC Library Archives by letter a minimum of two weeks prior to visiting the center. Telephone requests will be accepted. Foreign nationals must contact the KSC

Library Archives a minimum of six weeks in advance of visit to the space center and should provide a passport or visa number. It is recommended that foreign nationals provide the name, address, and telephone number of at least one American reference.

Available Materials

Kurt H. Debus (40 Feet)

The guide to this material has been compiled for use as a general reference tool for researchers. The information found here is the result of a survey of forty boxes of official records from the office of Dr. Kurt H. Debus, the center's director from 1962 until 1974. The collection contains photographs, letters, notes (both handwritten and typewritten), memoranda, articles, and speeches. The records are dated from 1956 through 1974, but the bulk of the records date from approximately 1959 through 1969. The KSC Library Archives also has an audiotape of an interview done with Dr. Debus by Dick Young (KSC Public Affairs Office) in 1974.

Photograph Collection

The approximately 35,000 pictures that make up the photograph holdings of the KSC Library Archives are described by means of catalogue cards, according to subject. The period covered by the collection is approximately forty-one years. Photographs received since 1993 have been described and can be accessed through an on-line database.

Apollo Era, 1966–1972 (3 1/2 Feet)

The guide to Apollo era documents comprises ten series, an arrangement of 245 folders that contain more than fifty-three pages of description. The bulk of the collection is made up of Daily Status Reports dating from January 3, 1966, through November 30, 1972; these make up eighty-three folders. The remainder of the documents are test reports, summaries, letters, memoranda, operations plans, portions of the Review Board findings concerning the AS-204 accident,

and launch documents from the beginning of the Apollo program through Apollo 12 and for Apollo 17. The collection does not include documentary materials for Apollo 13 through 16.

Apollo 204 Accident, 1966–1967 (2 1/2 Feet)

The Apollo 204 Accident Guide is a description of documents relating to the accident that took place on January 27, 1967, at the Kennedy Space Center. The various evidentiary materials described in the 29 pages are arranged in 8 series and contained in 58 folders. The documents include congressional hearings, statements concerning the accident by then-NASA Administrator James E. Webb, the "Phillips Report," regular press releases, a special series of "AS-204 Releases" running from January 27 through February 2, 1967, NASA's official accident report, newspaper articles, wire service reports, chronologies, biographies of Gus Grissom, Roger B. Chaffee, and Edward H. White II, memoranda and letters, and the four volumes of the AS-204 Technical Information Handbook.

Army Ordnance Missile Command Reports, 1958–1960 (1 Foot)

These documents were published by the U.S. Army Ordnance Missile Command from May 15, 1958, through July 6, 1960, and reflect work performed for the Advanced Research Projects Agency of the Department of Defense and for NASA. Most of the documents are monthly progress reports. The collection is housed in 33 folders in 2 archives boxes.

Wernher von Braun, 1959–1970 (2/3 Foot)

This collection of documents covers the career of Dr. Wernher von Braun from 1945 through August 1970. Among other documents, the collection includes von Braun's rocketry predictions made in 1945, a selection of his speeches, and several documents concerning his tenure as director of the Development Operations Division. The collection consists of 21 folders in 2 archives boxes.

Congressional Series, 1949–1975 (6 Feet)

The congressional material is arranged alphabetically by record type/agency and thereunder chronologically. The speeches are arranged alphabetically by speaker and thereunder chronologically. Miscellany is arranged similarly. In addition, the collection contains a number of congressional publications from 1962 to the present; most concern NASA appropriations.

Crawler-Transporter, 1962–1967 (1 1/2 Feet)

This material consists of blueprints, drawings, technical reports, proposals, feasibility studies, modification reports, and design and production criteria. It is arranged chronologically in 30 folders. Two files, "Crawler Analysis from Design Analysis" and "Transporter Mode Comparison Evaluation Study," are arranged chronologically within each file. Undated material can be found at the end of the guide.

Department of Defense, 1958–1970 (2 Feet)

The Air Force subseries consists of chronologies, handbooks, histories, and technical reports. These are arranged chronologically under the following headings: Air Force Eastern Test Range, Air Force Missile Test Center, Office of Aerospace Research, and Western Test Range. The Army subseries consists of a circular, documents, histories, pamphlets, plans, proposals, regulations, reports, specifications, technical memoranda, technical reports, and a file of miscellany; it is arranged chronologically thereunder. The Navy subseries consists of histories and reports, arranged chronologically.

Historical Events Cassette Tapes Collection, 1958–1970 (2 Feet)

This collection of audio recordings has been available in the Archives since 1976, but only recently has it been converted to cassette format to facilitate its use by researchers. The collection, to which other tapes may be added, currently consists of 7 series and 63 AVX 90-minute cas-

ettes. The tapes have been renumbered, beginning with the first Apollo History Workshop at A-1. Among the recordings are speeches by Dr. Kurt H. Debus (the first KSC director), former President Lyndon B. Johnson, former Vice President Hubert H. Humphrey, and Lt. Col. James P. Hamill. Hamill spoke of the recruitment by the U.S. Army of German scientists from Peenemünde at the close of World War II. Also included are recordings of the launch of Explorer I on January 31, 1958; the Explorer I tenth anniversary celebration held on January 31, 1968; and interviews with Dr. Rocco Petrone, Dr. Hans F. Gruene, Albert Zeiler, and Theodor A. Poppel.

Hovair, 1965 (1/3 Foot)

This collection contains three documents concerned with the Hovair transporter as a load-carrying device as described in Martin Company reports of May 1965.

Jetstar/Executive Transporter, 1962–1965 (1 Foot)

This material contains trip diaries, itineraries, manifests, operational data, and other information on the KSC Jetstar, a Lockheed executive aircraft used by the center to transport visiting dignitaries and other personnel. The series is arranged chronologically, with undated documents at the end of the file. The undated file is arranged alphabetically by title of the document.

KSC Design Engineering Project Status Reports, 1974–1976 (1/2 Foot)

These reports (TR-1033) are arranged chronologically.

Launch Umbilical Tower (LUT), 1960–1971 (1 Foot)

This material consists of design proposals and configurations, drawings, review data, an engineering study, a technical report, and test and analysis documents. It is arranged chronologically, with undated material at the end, arranged alphabetically by title or topic.

Marshall Space Flight Center Historical Monographs, 1960–1967 (1 Foot)

This material contains historical monographs and chronologies of the Marshall Space Flight Center. It includes 20 volumes, 11 of which—Marshall Historical Monographs (MHM) 1 through 11—contain supporting documents. Two chronologies appear as Marshall Historical Reports (MHR 6 and 7). The guide is arranged chronologically.

Mercury Program, 1958–1965 (3 Feet)

The material is divided into suborbital and orbital missions and arranged chronologically thereunder. In addition to technical material, there are records from the Public Affairs Office. The records consist of the following:

- Quarterly project status reports
- A contractor siting team report
- A report on range support
- Monthly reports on Department of Defense support
- Transcripts of press conferences
- Documents relating to flight results
- News releases
- Illustrated commemorative brochures
- Fact sheets
- Illustrated brochures describing mission personnel and postlaunch ceremonies
- Conference proceedings
- Transcripts of communications from spacecraft
- Transcript of a public address announcement from Mission Control Center
- A document providing test philosophy and proceedings as applied to Mercury spacecraft and planned application to future projects

News Releases, 1959–1976 (3 Feet)

This material contains news releases and fact sheets from the Marshall Space Flight Center, MSC/JSC, KSC, and NASA Headquarters. No series is complete; each has a table of contents. The series covers the following years indicated:

- Kennedy Space Center 1962–1975
- Manned Spacecraft Center 1963–1964
- Marshall Space Flight Center 1961–1965
- NASA Headquarters 1959–1976

The subject matter varies from biographical announcements and photographs of those appointed or promoted to summaries of speeches, congressional hearings, announcements of contracts, mission activities, and visits by world leaders to the various centers. The releases and fact sheets are arranged chronologically. All but those from the Marshall Space Flight Center are numbered sequentially. Fact sheets from KSC are not included here; they are filed with the guides to which they pertain (that is, by topic or in the speeches guide).

NOVA, 1961–1964 (1 1/2 Feet)

NOVA was a large launch vehicle, later canceled in favor of the smaller Saturn vehicle. The documents are arranged chronologically in 188 folders. This collection includes the Hawaii NOVA launch site study, the NOVA vehicle systems study, the NOVA launch facilities study, the lunar mission study, proposals, facilities estimates, land development plans, hazards criteria, transportation requirements, graphs, drawings, blueprints, and memoranda.

Press Kits, 1963–1991 (3 Feet)

This material is divided into manned and unmanned launches. It is arranged alphabetically by the name of the mission and thereunder chronologically within these subdivisions: press kits created by NASA, those created by other government agencies, and those generated by industry. Space Shuttle materials are housed separately.

Project Gemini, 1962–1966 (3 Feet)

This material is arranged sequentially by the number of the mission. In addition to technical material, there are records from the Public Affairs Office. The records for each mission include the following:

- A launch facilities plan

- Contractor reports
- Fact sheets
- Test summaries
- Mission summaries
- Program review documents
- A press handbook
- Project histories
- Extravehicular activities
- Mission reports
- A mission commentary transcript
- Data summaries
- Illustrated mission summaries
- Operations orders
- Mission recovery requirements
- Files pertaining to protocol for the invitees and attendees, their schedules, and accommodations involved with the launches

Public Affairs (9 Feet)

This collection of documents is especially strong on visits by prominent public figures and on the worldwide interest in the American space program. The collection is complemented by the Gordon Harris Public Affairs collection and accompanying papers donated to the Archives after his retirement.

Saturn/Apollo Launches, 1961–1972 (12 Feet)

Documents in this material include mission histories, launch operations schedules, daily status reports, mission reports and evaluations, public affairs records, and miscellaneous correspondence. The material is divided into unmanned flights grouped according to launch vehicles—for example, Saturn I tests. Manned missions are listed chronologically.

Service Structure, 1958–1969 (1 Foot)

The chronologically arranged guide consists of technical memoranda, architectural and engineering studies, charts, contractors' reports, a design data manual, design criteria, siting and design recommendations, drawings and blue-

prints, and construction cost estimates. The Saturn Service Structure II Design Committee papers form a single file.

Space Shuttle (18 1/2 Feet)

The development of the Space Shuttle as a reusable orbital vehicle is reflected in documentation continually being created, and the Space Shuttle holdings of the KSC Library Archives are increasing correspondingly. For this reason, Space Shuttle documents of historical value are being handled as though they constituted a single large records group. A number of documents relating to each flight are also available for research; these were primarily gathered at the time of the launch from materials available at the Press Site and the Joint Industry Press Center.

Spacecraft Operations, 1967–1968 (1 Foot)

This series consists of "Spacecraft Operations," a biweekly status report at KSC, prepared by the Support Branch and Boeing. It is arranged chronologically.

Spaceport News, 1962 to Date

Spaceport News is the official newspaper for the civil service and contractor employees at KSC and is published by the Public Affairs Office, Public Information Branch. The first issue appeared on December 12, 1962, approximately six months after the formal establishment of the Launch Operations Center, July 1, 1962. Between December 13, 1962, and July 1966, *Spaceport News* was issued weekly. Since then, it has been published on alternate Fridays. The *Spaceport News Index* is currently prepared by the KSC Library Archives and is included in this series. The index is prepared in cumulative five-year portions.

Speeches, 1959–1973 (3 Feet)

This material comprises 274 folders of speeches delivered by persons ranging from Ira Abbott and Aldo H. Bagnulo to James E. Webb and Eugene M. Zuckert. The guide is arranged alphabetically by speaker and chronologically thereunder.

Sweetsir Collection

The Richard A. Sweetsir Collection is a major recent addition to the holdings of the KSC Library Archives. Sweetsir (1944–1995) was the co-founder and past president of the Northeast Florida Astronomical Society (NEFAS); he was a high school science teacher and an adjunct professor at the Florida Community College in Jacksonville, Florida. Sweetsir's collection contains artifacts as well as documents and photographs. The collection also includes scrapbooks on the Viking program, some mission patches, an ASTP first-day cover, and a large number of newspaper and newspaper clippings subcollections. The collection is organized with subject titles, including the following:

- ASTP
- JPL V-1 Lander and JPL V-2 Lander
- Magellan
- Galileo
- Ulysses (from 1991)
- History of the first Missile Division, Vandenberg Air Force Base
- Hiparcos
- An extensive collection of Space Shuttle mission folders beginning with STS-1 in April 1981
- SETI-1 (Search for Extraterrestrial Intelligence)
- CRAF (Comet Rendezvous Asteroid Flyby)
- NASA Writer's Conference 1977
- NASDA (National Space Development Agency of Japan)
- ESA (European Space Agency)
- USSR
- Mars Sample Return
- NASA Future Programs
- Voyager 1/2
- EOS (Earth Orbiting System)
- SOFIA (Stratospheric Observatory for Infrared Astronomy)
- SAMPEX (Solar, Anomalous, and Magnetospheric Particle Explorer)
- NOAA-D (National Oceanic and Atmospheric Administration satellite)
- EUVE (Extreme Ultraviolet Explorer)

- Materials Processing
- Skylab
- NASA Facts

Taylor Photograph Collection (8 Feet)

This collection of facility construction photographs is described in a guide; the collection originated in four large boxes from the office of Annie E. Taylor, Administrative Operations Branch of Project Management. A second photographic collection of roughly equivalent size has not yet been described but does have a usable index.

The Taylor Photograph Collection consists of approximately 2,461 photographs arranged in 11 series categories. The 116 folders are housed in 9 archives boxes located on Range 8D through 8F. Descriptions of the photographs were derived from the wording found on the back of each photograph. The original order was maintained throughout. Duplicate photographs were sent to the Smithsonian Institution's National Air and Space Museum in Washington, D.C. In the relatively few instances where third copies of the photographs existed, these were sent to the Deutsches Museum in Munich, Germany.

Telephone Directories, 1961 to Date (4 Feet)

This material is arranged alphabetically by NASA center and chronologically thereunder. The largest and most complete series of this collection are the KSC directories, which run from 1964 to the current year. The series for the Launch Operations Directorate includes 1961–1962.

Unmanned Launches, 1948–1976 (9 1/2 Feet)

This material consists of launch reports, field flight reports, operations summaries, flash flight analysis reports, postlaunch reports, illustrated fact sheets, technical reports, and blueprints. It is arranged alphabetically by mission and thereunder chronologically.

***Vanguard-Martin Collection, 1949–1959
(3 Feet)***

The documents that comprise the Vanguard-Martin Collection (78-10) include reports, studies, and analyses of prelaunch and launch activities of the Vanguard Satellite Launch Vehicle Program. The documents are arranged chronologically and cover the period from September 1949 through December 1959. The researcher may find particularly useful an organization manual for Project Vanguard dated September 1958, which is found in folder 88 of box 5, and a NASA review

dated January 1959, which is found in folder 97 of box 6. The collection is in 105 folders contained in six boxes.

***Vehicle Assembly Building, 1962–1973
(2 Feet)***

This material consists of engineering reports, technical studies, data manuals, design reviews, blueprints, and fact sheets pertaining to the Vehicle Assembly Building. It is arranged chronologically; miscellany consists of undated material, arranged alphabetically.

16. Historical Materials at the Langley Research Center

Mail: Historical Program Manager, Mail Stop 446, Langley Research Center, Hampton, VA 23681-0001

Location: Building 1194, Room 200, for historical collections; Building 1194, third floor, for Technical Library's collections

Hours of Operation: 8:00 a.m. to 4:30 p.m., Eastern Time, Monday through Friday

Contact: Richard T. Layman, Historical Program Manager, or Garland Gouger, Library Technical Information Specialist

Telephone/fax: (757) 864-3441/(757) 864-8096

Technical Library telephone/fax: (757) 864-2356/(757) 864-2375

General Information

The Langley Research Center in Hampton, Virginia, the oldest laboratory of the National Advisory Committee for Aeronautics (NACA) and its successor agency (NASA), possesses a historical documents collection that, with its technical library, constitutes a premier collection (with some documents dating from 1917) for aerospace historical research. Included are rare books and photographs, technical reports, office memoranda, flight and wind tunnel logs, programs and minutes of major technical conferences, personal papers, transcripts of interviews with key personnel, as well as scale models of aircraft and spacecraft and other significant artifacts. Besides



President Franklin D. Roosevelt visited Langley Field on 29 July 1940.

Langley's own historical documents, the collection includes important files from the Wallops Island, Virginia, rocket test range, created in 1945 as an auxiliary base of Langley Laboratory and managed by Langley as part of the Pilotless Aircraft Research Division until 1959, when Wallops became an independent NASA field installation.

Also included are Special Files on topics such as the XP-51 Mustang; "house organs" (1942 to the present; limited photo collections; special events, including annual inspections dating back to 1926; and the Apollo 11 25th anniversary celebration in July 1994. Please contact the Langley historical program manager in advance for access to these files.

The most important collections at Langley are: NACA correspondence files; NACA research authorization files; the Milton Ames Collection; the personal papers of Floyd L. Thompson, John Stack, Fred Weick, and Charles F. Zimmerman; and the books of Max Munk. These collections are described briefly below.

Research Authorization Files

The most important source for research in aeronautical history at Langley consists of the NACA research authorization files. These files permit the historian to recreate the entire NACA research procedure for a given project, from the raw research idea through the final polished report.

What, exactly, was a NACA research authorization? Whenever a project for research at Langley was approved by NACA Headquarters, a research authorization (or RA) was signed by the chairman of the executive committee and forwarded to the laboratory for execution. Technically, Langley was supposed to have an RA for each one of its investigations, and each RA was expected to lead to the publication of a NACA report. Each RA had a title and number, and each included specific information on the how and why of the investigation.

Milton Ames Collection

In the early 1970s, Milton Ames, a former Langley engineer who had served as chief of aerodynamics at NACA Headquarters from 1949 to 1958, began research for what he hoped would be a complete and publishable history of the laboratory. Although he did not achieve his

goal, Ames did pull together hundreds of significant documents. Organized into folders that he titled and deposited into seven oversized boxes, the Ames collection is now in lateral files in the Langley archive; the original filing order and folder titles have been preserved.

The Ames collection is especially enlightening because it was created by an "old NACA hand," a product of the institutional culture under investigation. The documents he found significant enough to include for research tell us something about both his identity as a member of the NACA "corporation" and about his approach as an engineer to historical understanding. Furthermore, because Ames was one of the NACA's most talented and forward-looking aerodynamicists, his choice of key technical papers for historical examination is helpful to the nonspecialist. The collection organization is outlined below.

Contents of Box No. 1

- Wright Brothers
- Establishment of British Advisory Committee for Aeronautics
- Need for an Aeronautical Laboratory in America
- Smithsonian Advisory Committee on the Langley Aerodynamical Laboratory
- Surveys of Aeronautical Laboratories in Europe, 1913–1920
- Aeronautical Research in Canada
- Early History of Aeronautical Research in Germany
- Miscellaneous Papers on Aviation up to Establishment of NACA
- Legislation Pertaining to NACA and April 1958 Summary
- Establishment of NACA
- NACA Membership, Chairmen, etc.
- First Meeting of NACA
- Langley Site Selection and Transfer of Land to NACA
- NACA Statement of Policy, October, 1917; Executive Order Dated May 20, 1918
- Memorandum of Understanding with the Army Re Use of Langley Field by NACA, 1919

- Summary of Important Events in Early History of NACA, 1915–1917
- NACA Paris Office (Established May 1919)
- Miscellaneous Papers on Aeronautical Research in USA, 1921–1925
- Early Reviews and Summaries: NACA and Langley
- Miscellaneous Langley Background Information
- Langley Field, Va.: History and Construction (Air Corps Views)
- Langley Land Records and Deeds
- Early Construction, Langley Research Station
- Dedication of Langley (June 11, 1920)
- Variable Density Wind Tunnel: Construction

Contents of Box No. 2

- Langley Organization Charts
- Langley Personnel and Personnel Activities
- Estimates of Langley Plant Costs
- Economic Value of NACA Research (Summary, 1937)
- Preliminary (Langley) Data on NACA Budget (1915–1952)
- Efforts to Transfer NACA from Independent Agency to Other Agencies
- Langley Inspections (Originally called Manufacturers’ Conferences)

Contents of Box No. 3

- Photographic Files
- Log Books of Early Exhibits
- Visitors’ Register, Langley, 1926–1934

Contents of Box No. 4

- Wilbur Wright Memorial Lectures
- Folders on Key Individuals Associated with Langley
- History Clippings (1925–1930)
- 1933 Hurricane
- Special Publications: Anniversaries, Histories
- Conferences, Ceremonies, Inspections, Visitors

- Economic Study of 1933 and “Notes on Aviation Progress Through Research”
- Langley History (Collection of Papers and Talks on Langley History)
- Miscellaneous Press Releases on Langley Research Activities
- Miscellaneous Correspondence Regarding Early Headquarters/Langley Relationship
- Langley Telephone Directories, January 1963–Current

Contents of Box No. 5

- Early Engine Competition (1920)
- Fatal Aircraft Accident Report, JN-6 44946, August 20, 1924; Ford Reliability Tour, 1926
- Crash of the “American Legion” at Langley, April 26, 1927
- Research Activities During 1920s
- NACA Preparation Prior to World War II
- Langley Contributions to Ames and Lewis Laboratories
- Langley Activities During World War II Era
- Mead Committee Investigation: Correspondence
- National Aeronautical Research Policy, March 21, 1946
- Post–World War II Research Activities
- Government Accounting Office Survey of NACA, 1953
- 25th Anniversary of Langley Towing Tank and Full-Scale Wind Tunnel, 1956
- National Awards to Langley
- Extra Copies of Air Scoop
- Miscellaneous Airship Photographs from Melvin N. Gough

Contents of Box No. 6

- Area Rule and Richard Whitcomb
- Langley Contributions to B-58
- V/STOL Research
- High-Speed Submarine (Albacore) Research for U.S. Navy
- Research on Flexible Wings
- Langley Special Group on Research for Guided Missiles

- Langley Research Facilities
- "NACA Research into Space," 1957
- Echo 1 and William J. O'Sullivan
- Early Manned Space Flight
- Project Apollo

Contents of Box No. 7

- Papers and Talks relating to History of Langley

Note: The "box" scheme is retained through inserts, but the Ames collection is housed according to his scheme, in five lateral file drawers.

Personal Papers

Floyd L. Thompson Collection

This collection holds more for the space historian than it does for the historian of aeronautics. Most of its contents postdate the NACA; they derive from Thompson's term as director of Langley from 1960 to 1968. Box C of this collection, though, contains some important documents on NACA research dating back to the 1930s. (Thompson began working for the NACA at Langley in July 1926.) The following reproduces Floyd Thompson's own inventory of the subjects of the collection, which is now housed in two lateral file drawers.

Box A

- MORL (Manned Orbital Research Laboratory)
- Lunar Orbiter (Historical Notes)
- Apollo
- Mercury
- Scout
- X-15
- SST (Supersonic Transport)
- Passive Communications Satellite
- Large Boosters
- Miscellaneous Technical Proposals and Memos

Box B

- Early Space Program Planning: Memos and Organizations: Visits and Events
- Newport News Cyclotron and VARC (Virginia Associated Research Center)
- Special Assignments

Box C

- Old Langley Flight Research Programs
- Historical Notes on Flying Qualities Work
- Old Conference Memos and Historical Notes on Dynamic Loads and Structures Research
- Transonic Research
- Notes, Comments, Statements on Management Philosophy Aeronautics Policy, 1970
- Langley's 50th Anniversary
- Rotary Club Talks
- Local Affairs
- University of Michigan Honorary Doctorate
- William and Mary Honorary Doctorate
- Retirement Party, October 17, 1968
- Personal Matters, Including Correspondence Regarding Appointment as Center Director
- Notes on Other Persons
- Miscellaneous Technical Reports and Papers

Box D

- Copies of Public Talks, Publicity Statements, Photos
- Letter to National Academy of Engineering
- Numerous Technical Articles and Papers, Mostly Published

John Stack Collection

This collection of the papers of a famous Langley aerodynamicist from the 1920s through the 1950s is more valuable to the historian of aeronautics than the Thompson collection because it includes a greater number and wider chronological range of older business correspondence and research program files, many of which concern Stack's pioneering work in transonic and supersonic technology. The papers, which

are in folders labeled by Stack, are housed in three lateral file drawers according to categories.

Section No. 1: Wind Tunnel Design, Operation, and Test Techniques

- Crocco Curve
- Kochel Ultra-Supersonic Wind Tunnel Development
- New Types of Tunnels
- Uses of Gas other than Air in Wind Tunnels
- Hodograph Report
- 8-Foot High-Speed Tunnel Operations
- Supersonic Wind Tunnel at Wright Field
- 4-Foot Supersonic Tunnel
- Miscellaneous Wind Tunnel Data
- Special Type Tunnels: Slotted Test Sections
- Repowering 16-Foot High-Speed Tunnel
- Unitary Plan Wind Tunnel
- Revised Unitary Program
- Gas Dynamics Laboratory
- Supersonic Compressor
- Aberdeen Supersonic Wind Tunnel
- Madelung High-Pressure Water Tunnel
- Proposed Air Engineering Development Center
- National Supersonic Research Center
- Electric Power Supply
- Refrigeration
- Schlieren Photographs: British National Physical Laboratory
- Afterglow Photographs
- Sphere Photos over a Range of Mach Numbers

Section No. 2: Research Problems

- Jet Analysis, Inducted
- Interaction of Shock and Boundary Layer
- Shrouded Propellers
- Data on Various NACA Airfoil Sections
- Drafts of Stack's Wright Brothers Lecture, "Compressible Flows in Aeronautics," December 17, 1944
- Miscellaneous Technical Reports

Section No. 3: Reports of Meetings, Conferences, and Study Groups

- Gas Turbine Conference at General Electric, 1945
- High-Speed Aerodynamics Conference, NACA-Navy-Army, July 13, 1945
- Stack's Report on Aberdeen Conference, January 17, 1946
- American Physical Society Meeting, April 25, 1946
- NACA Conference on Supersonic Aerodynamics, Ames Laboratory, June 4, 1946
- Langley Conference on High-Speed Aerodynamic Theory, February 3, 1947
- Langley Conference on Supersonic Aerodynamics, June 19–20, 1947
- Ames Conference on Supersonic Aerodynamics, August 31, 1948
- American Physical Society Meeting, University of Virginia, December 1949
- Miscellaneous Conference Reports
- Conferences
- Minutes of Meetings
- Subcommittee on High-Speed Aerodynamics
- Committee on Advanced Study
- Ad Hoc Panel on Long-Range Air-to-Air Guided Missiles
- Draper Committee
- DOD Technical Advisory Panel on Aerodynamics, Ad Hoc Group on Water-Based Aircraft

Section No. 4: Memos and Correspondence

- Henry J.E. Reid's Trip to Europe, 1944
- Developments in High-Speed Aeronautics During World War II
- Riparbelli Report
- Letters from Coleman Dupont Donaldson on German Scientists at Wright Field, 1946
- Bell Telephone Labs
- Personal Correspondence
- Memos for Associate Director

- Letters Between Professor Carlo Ferrari, University of Turin, and Antonio Ferri, NACA, 1947–1948
- Memos on Airfoils
- Memo from Hartley Soule, 1948
- Memos for Files
- Miscellaneous Correspondence

Section No. 5: Aircraft Development Projects

- North American P-51
- High-Speed Bomber Program, 1945
- Supersonic Airplane
- Project 506
- Water-Based Aircraft
- Republic P-47B
- B-35 Elevon
- Propeller for Spitfire 21
- XP-69 Horizontal Tail
- Eagle
- Republic Aviation Corporation 5-Year Plan
- Supersonic Transport (SST)
- Ground Effects Machines
- V/STOL (vertical/short takeoff and landing)
- Mutual Weapons Defense Program (MWDP)
- TFX Development

Section No. 6: Miscellaneous

- Miscellaneous Photographs
- Blueprint Drawings
- “Stack’s Stuff”: Miscellaneous

Fred Weick Papers

The Fred Weick Papers, received by the Langley Archive in November 1993, represent a lifetime of work by a distinguished aeronautical engineer. Fred Weick, during his 93 years, merged his life through this century with the development of aviation in America. He began his career with the NACA in the early 1920s and helped design and construct the propeller research wind tunnel. He also led the team of engineers who developed the NACA cowling for radial air-cooled engines, a Collier Trophy-winning effort for

1929. He was widely recognized as an expert in propeller design. Later, Weick led design teams that developed a number of general aviation aircraft. He was vitally interested in pilot safety for the design, operation, and handling qualities of general aviation aircraft.

The Fred Weick Papers, a large collection occupying 153 linear feet, include his book and journal collection and awards. He organized and indexed the collection himself. Examples of subjects include:

- Old flight log books and navigation computers (including some homemade ones)
- Piper airplanes—photos and detailed design data
- Aero engineering—early propeller design, first NACA cowling tests, NACA low drag cowling
- Ercoupe variations—photos and technical drawings

Charles F. Zimmerman Collection

This eclectic collection of the papers of an aeronautical engineer with a long and varied career includes materials ranging from an early (1930s) “flying saucer” pancake aircraft and its fighter derivative, to the theory of relativity, to stand-on flying platforms. Zimmerman was a long-time employee of the NACA, a member of the Space Task Group (the Project Mercury management team), an aircraft industry designer, an Army aviation chief engineer, and a NACA Headquarters manager, among other accomplishments.

The Zimmerman papers are aeronautics oriented, emphasizing the areas of low-speed and VTOL performance; they heavily document the development of his V-173 and XF5U-1 aircraft. The V-173, flown many times, was capable of very short takeoffs and landings, and it was flown by Charles Lindbergh. Derivatives conceived by Zimmerman would have had true VTOL capability. The XF5U-1, a Navy STOL fighter prototype was completely developed, but it never flew. The collection is housed in three lateral file drawers.

Floyd L. Thompson Technical Library

What also makes Langley an outstanding location for research in aeronautical history is the Floyd L. Thompson Technical Library. Besides holding major collections (more than 3.8 million volumes) in the physical sciences and engineering—with emphasis on aerospace science and technology, aeronautics, structures, materials, acoustics, energy, electronics, and the environment, supported by additional collections in physics, chemistry, mathematics, and management—the library also preserves the complete NACA publications series of 16,263 reports in 1,057 bound and 1,818 unbound volumes. These include Technical Reports (TR), Technical Notes (TN), Technical Memorandums (TM), Wartime Reports (WR), Aircraft Circulars (AC), Research Memorandums (RM), Advance Confidential Reports (ACR), Advance Restricted Reports (ARR), Confidential Bulletins (CB), Restricted Bulletins (RB), and Memorandum Reports (MR). (For an analysis of the NACA publications series, see Alex Roland, *Model Research: The National Advisory Committee for Aeronautics, 1915–1958* (Washington, DC: NASA SP-4103, 1985), appendix 7.)

What gives the library its unparalleled value as a place for historical research is that its staff maintains the same index to aeronautical literature

that was begun by the NACA in the 1920s. Cards reference tens of thousands of aeronautical papers from all over the world by subject, by author, by title, and, in the case of NACA reports and research authorizations, by number. Many of these papers are unpublished or classified. This makes the NACA card file one of this country's most treasured guides to aeronautical literature. The library is open to the public, if access to the Langley Research Center, which is closed to the public, can be obtained.

It is advisable to inquire about the availability of specific materials and services before visiting the library. Many of its databases are on-line through the Internet.

Photographic Collection

Langley's NACA collection of photographs (housed separately from the library) comprises roughly 100,000 negatives, all logged by date and by brief subject. The current NASA collection exceeds 500,000. Special photographic collections, compiled for a variety of events and books, are in the historical archives.

Oral History Collection

Langley's collection includes fifty-six transcribed interviews with various key researchers and managers that span from 1960 to 1990.

17. Historical Materials at the Lewis Research Center

Mail: History Office, Mail Stop 3-2, Lewis Research Center, 21000 Brookpark Road, Cleveland, OH 44135

Location: Historical Collection, Building 60, Room 216

Hours of Operation: 8:00 a.m. to 4:30 p.m., Eastern Time, Monday through Friday

Contact: Kevin P. Coleman, History Coordinator

Telephone/fax: (216) 433-9311 or (216) 433-5762 (library)/(216) 433-8000

General Information

The History Office at the Lewis Research Center is undergoing a major reorganization and inventory effort. The collection includes general



An icing research tunnel became operational at the Lewis Research Center in 1944 and has proved very useful to NASA and industry researchers ever since. This photo dates from 1946.

files on the history of Lewis, historical photographs filed by subject, a collection of NASA history publications, some administrative records and correspondence filed by subject, and other miscellaneous files. Lewis's records are currently kept at the center's subsidiary, Plum Brook Station, located in Sandusky, Ohio. The only guide to this material at this time is a set of shelf lists maintained by the Records Management Office at Lewis. Some of the records from the 1940s through the 1960s, including speeches, lectures, correspondence, and reports, have been transferred to the National Archives and Records Administration.

Lewis Library Vertical File

The Lewis Library has a small general file arranged alphabetically by subjects, such as "Apollo," "Astronauts," and "NASA Centers." These files contain miscellaneous items, including reports, brochures, and newspaper clippings.

Lewis Telephone Directories, 1942–Present

This material is bound and arranged chronologically. Many of the directories contain organizational charts and maps, as well as listings of personnel.

Inspection Notebooks

The Lewis Library holds a bound collection of notebooks containing information about the NACA inspections held at Lewis, Langley, and Ames from 1947 to 1966. The notebooks include photographs, correspondence, speeches, scheduling information, lists of invitees, and newspaper clippings. The following inspections are documented:

- Lewis, October 8–10, 1947
- Lewis, September 28–30, 1948
- Langley, May 18–24, 1949

- Lewis, September 20–22, 1949
- Ames, July 10–12, 1950
- Langley, May 18–25, 1951
- Lewis, October 9–11, 1951
- Ames, July 14–15, 1952
- Langley, May 5–13, 1953
- Lewis, June 2–4, 1954
- Ames, June 27–28, 1955
- Lewis 10 x 10 Supersonic Wind Tunnel Inspection, May 22, 1956
- Lewis, October 7–10, 1957
- Langley, May 18–19, 1964
- Lewis, October 4–7, 1966
- Langley, October 10–16, 1956
- Ames, September 1958
- Langley, October 12–16, 1959
- Lewis, September 19–21, 1973

Photographic, Motion Picture, and Video Collection

The Lewis Research Center's still photographic collection consists of approximately 300,000 images dating from January 1941 through the present. This collection is logged and filed chronologically. All subjects are intermixed. However, there are several small collections that are filed separately, such as the Crash Fire Tests, the Atlas and Titan Centaur launches, and the original photographs of Lewis's construction. Plans are currently under way to transfer all photographic materials to optical disk. The motion picture and video collection at Lewis consists of approximately 2,000 reels of data footage. These are logged and filed chronologically. There are also 300 motion picture and video productions. These are accessible through the Lewis Research Center's *Motion Picture and Video Film Catalog*, which is available by request. Lewis Research Center also houses the original motion picture footage (available in 16 mm, 35 mm, and 70 mm) of the Atlas Centaur and Titan Centaur launches.

18. Historical Materials at the Marshall Space Flight Center

Mail: History Office, CN31S, Marshall Space Flight Center, AL 35812

Location: Building 4200, Room G11C

Hours of Operation: 8:00 a.m. to 4:30 p.m., Central Time, Monday through Friday

Contact: Michael Wright, Historian

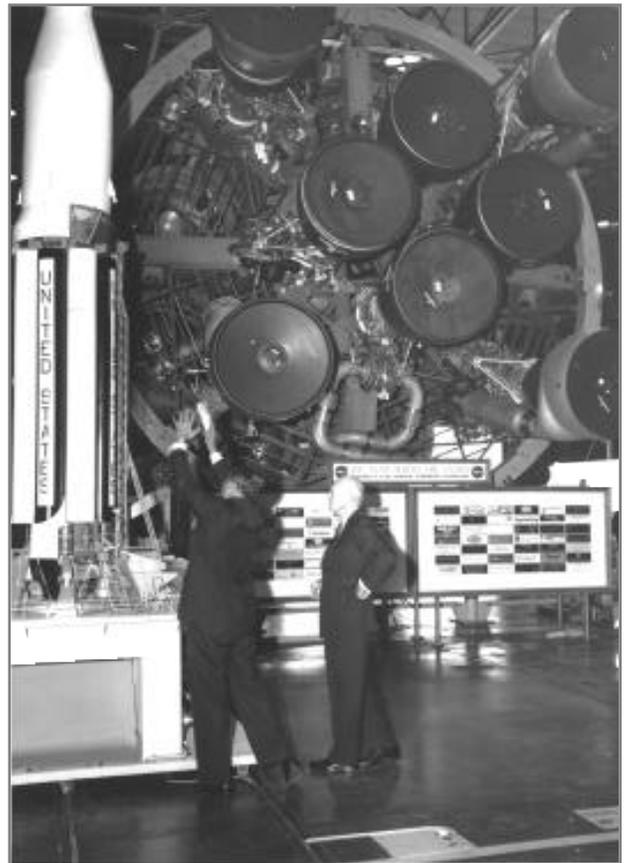
Telephone/fax: (205) 544-6840/(205) 544-1544

General Information

The holdings include approximately 7,000 historically important documents tracing the origin, development, and management of the center as well as its role in such programs as Saturn, Skylab, Lunar Roving Vehicle, Apollo-Soyuz Test Project, High Energy Astronomy Observatories, and Spacelab. A special collection of documents and chronologies also traces the center's role in the Space Shuttle and Space Station programs. A major portion of the historical documentation at Marshall has been reproduced on microfiche and coded on a computer in the Historian's Office.

Oral History Interviews

Marshall also has three major collections of oral history interviews. These include more than 30 interviews related to the Space Station, more than 50 interviews related to the Space Shuttle, and more than 30 interviews that Mitchell R. Sharpe conducted with members of the Wernher von Braun rocket team. The set of rocket team interviews is part of the archives at the U.S. Space and Rocket Center. The Space and Rocket Center



President Dwight D. Eisenhower toured the George C. Marshall Space Flight Center during its dedication in September 1960. Center director Wernher von Braun explained how the powerful Saturn rocket functioned.

also has a list of approximately 200 interviews conducted by Fred Ordway as part of his research into the history of rocketry. The Marshall Space Flight Center has compiled a list of interviews conducted by the historians at the University of Alabama in Huntsville for their history of Marshall.

19. Historical Materials at the Stennis Space Center

Mail: PAOO/History, Stennis Space Center, MS 39529-6000

Location: Building 1100, Room 1002

Hours of Operation: 8 a.m. to 4:30 p.m., Central Time, Monday through Friday

Contact: Chris Harvey

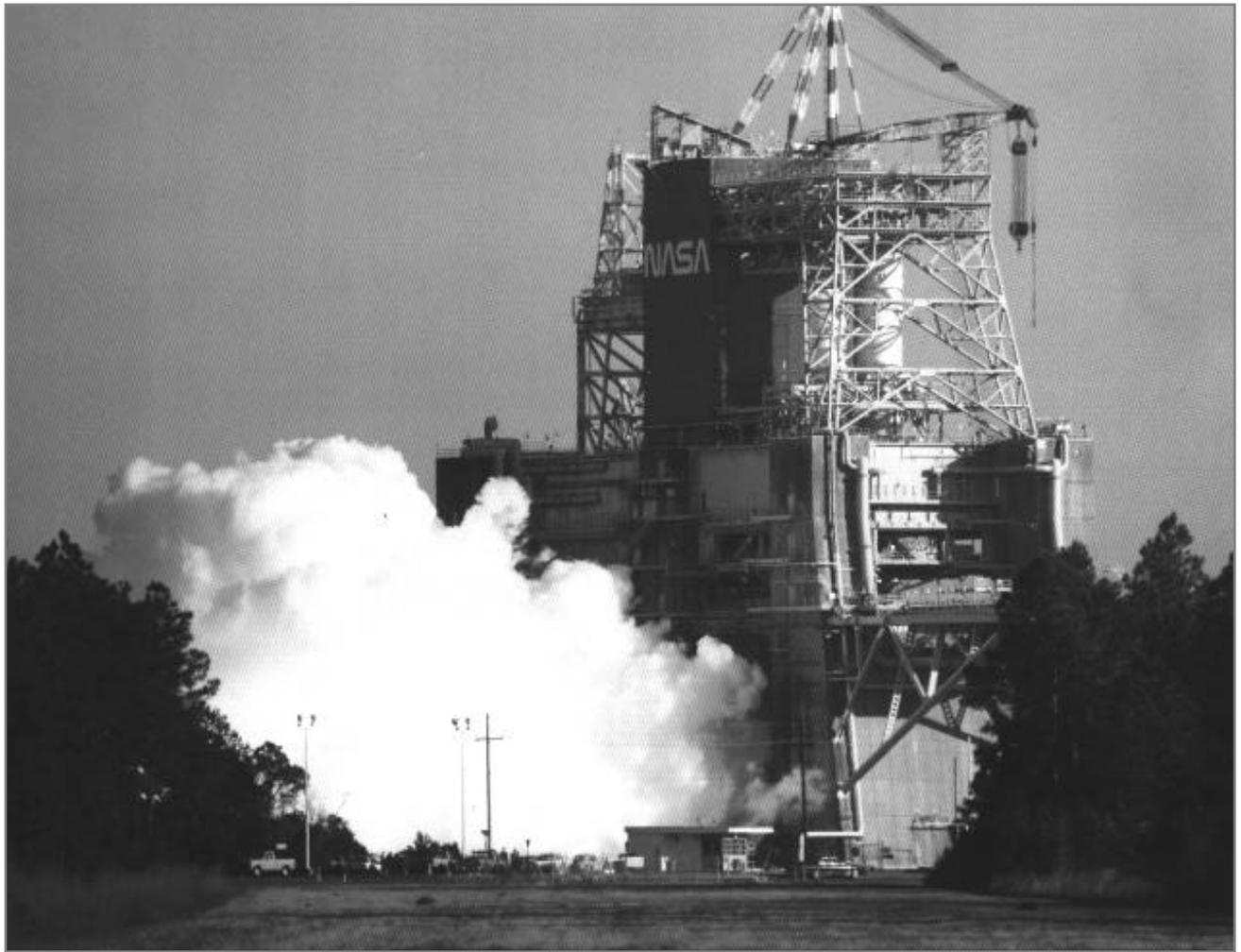
Telephone/fax: (601) 688-3795/(601) 688-7637

General Information

The staff of the Stennis Space Center History Office concentrate their efforts on collecting and

organizing information that documents the rich history of the installation. The staff are currently entering files into a new database system. Materials are arranged and described according to standard archival practice.

As the “corporate memory” of Stennis Space Center, the History Office maintains working historical files for managers, engineers, scientists, and other researchers of history. Currently, the office is expanding to accommodate more than 300 shelf feet of historical documentation. The following is an abbreviated description of the materials available in the Stennis history collection.



The John C. Stennis Space Center is responsible for testing the main engines of the Space Shuttle before each launch. This photo shows a typical test of the main engine on one of Stennis's three test stands.

Executive Collection

This collection holds the Stennis Space Center Director's Office Series, the NASA Headquarters Series, and the Government Series.

Director's Office Series

This collection includes all the information originating in the Stennis Space Center Director's Office, which may include speeches, memoranda, letters, reports, and presentations, as well as information on each of the directors, such as biographies and photographs.

NASA Headquarters Series

This collection consists of any information, except publications and public affairs information, generated by NASA Headquarters in Washington, D.C.

Government Series

This collection consists of four components, one each for information pertaining to federal government, congressional, state government, and local government issues as they relate to the Stennis Space Center.

Center Activities Collection

This collection encompasses information related to the activities and the everyday functions of the center. While it includes documents from other sources, it primarily consists of information generated at Stennis Space Center offices. The most developed series at this time are the Public Affairs Series, the Internal Services Series, and the Science and Technology Series. New features of the Public Affairs Series are sub-categories for events, special events, and visits.

Public Affairs Series

This series contains any material generated by a public affairs office either at Stennis Space

Center, NASA Headquarters, another center, a university, or another organization. Press kits, press releases, fact sheets, public affairs plans, management materials, and agendas for visits are included in this section. Visitors' Services, Teachers' Resource Center, and Visitor Center Activities will also be included in this series.

Internal Services Series

This section includes labor statistics and any material on personnel or management generated from the Human Resources and Legal Offices at the Stennis Space Center.

Technical Activities Collection

This collection includes technical information regarding NASA, the Army, the Navy, and other federal and state agencies.

Publications Collection

This collection consists of NASA publications, general publications, technical publications, references, newspaper articles, oral history publications, *Lagniappes* (Stennis Space Center's in-house newsletter), and commercial and general publications.

Audio/Visual Collection

This collection consists of several series, including the Oral History/Audio Series, the Video History Series, and the Historical Photographs Series. In terms of oral histories, the Stennis Space Center History Office and the University of Southern Mississippi Oral History Department, located in Hattiesburg, have combined to conduct, transcribe, and bind twenty-seven interviews. Three more interviews are almost completed. The average interview lasts approximately two hours.