

NASA History Division
Office of External Relations
NASA Headquarters
Washington, DC 20546

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Cover Images:

In 1995, the Hubble Space Telescope captured images of the majestic spiral galaxy NGC 4414. An international team of astronomers, led by Dr. Wendy Freedman of the Observatories of the Carnegie Institution of Washington, observed this galaxy on 13 different occasions over the course of two months. Hubble's Wide Field Planetary Camera 2 (WFPC2) acquired images through three different color filters. (Space Telescope Science Institute image PR99-25)

The NASA-Army-Bell XV-15 tiltrotor research aircraft hovers during a test flight in 1976. The aircraft demonstrated conversion and forward flight in 1978 as the first tilting rotor vehicle to solve the problems of "prop whirl." As a result of tremendously difficult research, the tiltrotor aircraft was able to combine the advantages of vertical liftoff and landing capabilities, which are inherent to the traditional helicopter, with the forward speed and range of a fixed-wing turboprop airplane. (NASA image Ames EC80-75)

This gravity model of Africa and Europe was prepared using data from the Gravity Recovery and Climate Experiment (GRACE), which was launched on 17 March 2002. (Figure prepared by The University of Texas Center for Space Research as part of a collaborative data-analysis effort with the NASA Jet Propulsion Laboratory and the GeoForschungsZentrum Potsdam. Image provided by University of Texas Center for Space Research and NASA.)

The Space Shuttle *Atlantis* takes flight on its STS-27 mission on 2 December 1988, 9:30 a.m. eastern time. (NASA image MSFC 898508)



RESEARCH IN NASA HISTORY

A Guide to the NASA History Program

Steven J. Dick
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Jane H. Odom
Compilers

National Aeronautics and Space Administration
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History is not just a backdrop or a scene-setter. History is cause.

—*Columbia Accident Investigation Board Report*, volume 1 (2003), p. 195

**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)

PART 1:

The NASA History Program

As the National Aeronautics and Space Administration (NASA) celebrated its 50th anniversary in 2008, historians as well as scientists and engineers could look back on a record of accomplishment. Much has been written about the evolution of NASA's multifaceted programs and the people who carried them out. Yet much remains to be done, and we hope this publication will facilitate research in this important field.

As an active internal function, NASA history also marks its 50th year in 2009. Aware of the historic mission on which it was embarking, NASA hired its first Chief Historian, Eugene M. Emme, in 1959. Emme remained on the job until 1978 and was the first of an unbroken line of NASA Chief Historians that included Monte D. Wright (1978–82), Sylvia Fries (1983–90), and Roger D. Launius (1990–2002). These individuals also served as Directors of the History Office at NASA Headquarters. As is evident from this publication, the various NASA Centers also carry out historical and archival functions.

Research in NASA History describes the efforts of NASA to capture and record the events of its past and to make that past accessible to NASA personnel, the historical community, and researchers. It describes the research opportunities and accomplishments of NASA's Agency-wide history program. It also offers a concise guide to the historical documentary resources available at NASA Headquarters in Washington, DC; at NASA facilities located around the country; and through the federal records systems.

This third edition of *Research in NASA History* replaces the first two editions published in 1992 and 1997, respectively. Those editions were preceded by *History at NASA* (1986), prepared by Sylvia Fries, and the *Guide to Research in NASA History*, first issued in 1976 and written by Alex Roland (second through seventh editions).

As an introduction to the field of space history, researchers may wish to consult *Critical Issues in the History of Spaceflight* (NASA SP-2006-4702), edited by Steven J. Dick and Roger D. Launius and published in 2006. Readers will find there some measure of the riches that await researchers in NASA history.

Steven J. Dick

NASA Chief Historian
Director, NASA History Division
February 2009

BACKGROUND AND PURPOSE

First established in 1959, the NASA History Program is one of more than 250 public history functions within the federal government. It is a dedicated, long-term effort to provide a comprehensive understanding of the institutional, cultural, social, political, economic, technological, and scientific aspects of NASA's activities in aeronautics and space. The program resulted from an executive order, first issued by President Franklin D. Roosevelt and periodically reemphasized, that federal agencies objectively record the history of their activities in order to assess policy and departmental effectiveness.

NASA maintains this historical program for three principal reasons:

1. Publication of historical research on U.S. civilian aerospace activities sponsored by NASA is one of the ways NASA responds to that provision of the National Aeronautics and Space Act of 1958, as amended, which requires NASA to “provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof” [42 U.S.C. 2473(a)(3)].
2. Historical research also responds to NASA's mandate to study the societal impact of space exploration, namely “the establishment of long-range studies of the potential benefits to be gained from, the opportunities for, and the problems involved in the utilization of aeronautical and space activities for peaceful and scientific purposes” [42 U.S.C. 2451(d)(4)].
3. The thoughtful study of NASA history can assist Agency managers in accomplishing the missions that are assigned to the Agency. Understanding NASA's past promotes a more complete understanding of its present condition and illuminates possible future courses, including corrective measures to be taken. As the Columbia Accident Investigation

Board concluded in its *Report*, “History is not just a backdrop or a scene-setter. History is cause” (vol. 1, p. 9).

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 the Agency's historical documentation and research activities. The result of these efforts has been a multilevel effort to preserve and disseminate historical knowledge about the Agency.

The NASA History Division 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 Division 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 students preparing a class report to busy NASA managers—from congressional staffers, documentary film producers, and journalists to dissertation writers—all sorts of researchers have come to rely on NASA's Agency-wide History Program for help in their pursuit of knowledge.

The NASA History Division also has long been active in providing context and details of historical developments 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 contributed to the publication of an impressive series of official books, monographs, and journal articles. The program also has fostered historical research through an annual research fellowship competition administered by the American Historical Association (AHA) and, more recently, through its sponsorship of the History of Science Society Fellowship in the History of Space Science, as well as the NASA Fellowship in the History of Space Technology. 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 (1961–68) was an active user and supporter of the division, and other senior-level NASA managers often asked the office to provide information and context for their then-current 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. The aftermath of the *Challenger* and *Columbia* tragedies has brought about major changes in the way NASA sends humans into space, and scientists, scholars, and even the general public look to this recent past in order to gain a better understanding of NASA's direction.

With the exception of a limited number of space science, NASA management, and unpiloted space project histories, NASA's historical publications have focused overwhelmingly 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 Division) has taken great care to ensure that manuscripts for publication receive thorough “peer” and technical review to guarantee accuracy and objectivity. More recently, the NASA History Division, in conjunction with the Science Mission Directorate, has begun supporting a large number of histories of space and Earth science in order to redress the imbalance of previous decades. Similarly, it is addressing large thematic gaps in NASA history, including the societal impact of spaceflight, NASA's international relations, and its life sciences and aeronautics programs. And, as

section 3 of this volume shows, the NASA History Division continues to update its series of reference works, including the documentary histories *Exploring the Unknown* and *The Wind and Beyond*.

To answer research questions from NASA personnel, journalists, scholars, students, and other interested parties from around the world and to provide a foundation for historical research in aeronautics and space history, the NASA History Division maintains an on-site archive. The History Division also sponsors and organizes academic conferences, workshops, and special events several times each year, as well as posting and maintaining a large number of Web sites on NASA history.

For NASA scientists and engineers who are unfamiliar with history, as well as academically oriented historians who are unfamiliar with NASA, the “Thinking About NASA History” guide is a good introduction to what the NASA History Program does and how. It is available at <http://history.nasa.gov/tbinking/index.html> on the Web.

Additional information on the NASA History Program may be found at <http://history.nasa.gov/program.html>.

THE NASA HISTORY DIVISION'S ORGANIZATIONAL SETTING

The NASA History Division at Headquarters is a part of the Office of External Relations, which reports to the NASA Administrator. The history programs of each of the 10 NASA Centers are embedded in distinct hierarchies within their respective Centers. While this means that the Center history programs do not report to the NASA Chief Historian, the NASA History Division at Headquarters coordinates closely with each Center's programs and provides oversight on various Center History projects. The Annual History Review meeting, held at a different Center each year, provides the opportunity for NASA historians and archivists to exchange ideas and coordinate plans.

INDEPENDENT INQUIRY AND NASA HISTORY

The strength and reach of the NASA History Program throughout its existence 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 independent inquiry and of a continuing dialogue among 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 to NASA-sponsored historians to interpret historical evidence in 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 granted access to all relevant documents and data, subject only to national security, Freedom of Information Act (FOIA), Privacy Act, export control, and proprietary considerations.

FELLOWSHIP PROGRAM

As of 2009, the NASA History Division sponsors three fellowships:

- 1. The NASA-AHA Fellowship in Aerospace History.** On behalf of NASA, the American Historical Association annually administers a fellowship competition for predoctoral or postdoctoral research in any area of NASA-related aerospace history. See the AHA Web site at <http://www.historians.org/prizes/NASA.htm> for further information.
- 2. The History of Science Society Fellowship in the History of Space Science.** This fellowship funds a nine-month research project that is related to any aspect of the history of space science, from the earliest human interest in space to the present. The program is broadly conceived and includes the social, cultural, institutional, and personal context of space science history. Proposals of advanced research related to all aspects of the history of space science are eligible. Space sciences and sciences affected by data and concepts developed in connection with space exploration include astronomy, Earth science, optics, meteorology, oceanography, and physiology. The fellowship is open to applicants who hold a doctoral degree in history or a closely related field, as well as students who have completed all requirements
- 3. The NASA Fellowship in the History of Space Technology.** This fellowship, administered by the Society for the History of Technology (SHOT), funds one predoctoral or postdoctoral Fellow for up to one academic year to undertake a research project related to the history of space technology. The fellowship may support advanced research related to all aspects of space history and leading to publications on the history of space technology broadly considered, including cultural and intellectual history, institutional history, economic history, the history of law and public policy, and the history of engineering and management. The fellowship carries a total stipend of \$17,000, paid quarterly. Funds may not be used to support tuition or fees. The NASA Fellow will also receive complimentary SHOT membership for the year of fellowship. The Fellow will be offered opportunities to present research results at SHOT’s annual meeting, in SHOT’s newsletter, in the electronic version of *Technology and Culture*, through the SHOT Web site, or in other outlets as appropriate. Fellows will carry out their research projects using personal office space, equipment, and supplies. Applicants must possess a doctorate in the history of technology or in a closely related field, or be enrolled as a student in a doctoral degree program and have completed all the requirements for the Ph.D., except the dissertation, in the history of technology or a related field. Eligibility is not limited to U.S. citizens or residents. More information is available at the SHOT Web site: <http://www.historyoftechnology.org/awards/nasa.html>.

INTERNSHIPS

NASA is committed to the educational development of future generations. Each NASA Center offers sponsored internships on an ongoing basis for students majoring in a wide variety of academic fields. During the fall and spring school semesters, unpaid internships are available for experience or academic credit. Paid full-time internships are available during the summer as well. Interns work on a wide variety of projects. Some typical tasks include researching and writing biographical sketches; handling a wide variety of information

requests; updating as well as creating Web pages; researching and documenting photos; and arranging, describing, and preserving archival materials. For the most current information on NASA History Division internships at NASA Headquarters, please visit <http://history.nasa.gov/interncall.htm>.

CONTRACT OPPORTUNITIES FOR SPONSORED RESEARCH

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.

Periodically, the NASA History Division 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 Division maintains an electronic mailing list of individuals and organizations who want to receive information on history contracts. To be added to this list, please follow the directions available at <http://history.nasa.gov/listserv.html> online. Those specifically interested in NASA contract opportunities may arrange to

receive tailored e-mail notifications through the NASA Procurement Office's site at <http://prod.nais.nasa.gov/cgi-bin/nens/index.cgi> on the Web.

Authors are also welcome to submit unsolicited NASA history proposals. There is guidance about how to do this at <http://history.nasa.gov/thinking/nasabist-2.html> on the Web.

INTRODUCTION

The NASA History Division’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 Division 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 properly documented.

THE NASA HISTORY SERIES

The list of published works from the NASA History Division includes books written by historians officially employed by NASA as well as books prepared by historians working under contract to the Agency, 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 Division has published significant historical works in various categories, organized generally by SP numbers, as follows:

- **Reference Works (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 (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)**—This category contains the largest number of works, all relating to the various aeronautics and space efforts undertaken by NASA over its history.
- **Center Histories (SP-4300)**—The books in this category cover the specific histories of the various NASA Field Centers.
- **General Histories (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.
- **Monographs in Aerospace History (SP-4500)**—These are studies, shorter than book length, that focus on specific issues in NASA’s history that have immediate relevance for public policy formulation and administration.
- **Electronic Media (SP-4600)**—This category consists of media resources, including DVDs and CDs, available for research purposes.
- **Conference Proceedings Series (SP-4700)**—This category includes the proceedings of NASA conferences and conventions.
- **Societal Impact Studies (SP-4800)**—The works in this collection relate to the impact of space activities, programs, and technologies upon society.
- **New Series in NASA History**—Published by the Johns Hopkins University Press, this category of books was initiated in 1987 to increase public awareness of the history of NASA.

- **Contractor Reports and Technical Memoranda**—The publications in this category are designed for internal NASA use to enhance Agency personnel's knowledge and use of history in their current work.
- **Historical Reports (HHR)**—This category includes a series of studies, both published and unpublished, generated under the auspices of the NASA History Division 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.
- **NASA-Sponsored Historical Works Published by Other Presses**—These are books sponsored by NASA but not published under NASA auspices.
- **Translations**—This category consists of translations, many of them from Russian, of classic studies about space.

PURCHASING NASA HISTORY BOOKS

The following is a list of the various titles published in the NASA History Series. Many of these works, unfortunately, are no longer in print. However, copies are available in many government documents sections at major libraries, both university and public, throughout the United States; additionally, many of them are available online.

Books currently in print are available for sale through three different avenues—through the Center for AeroSpace Information (CASI), the Government Printing Office, and the Information Center at Headquarters. Those publications available for purchase through CASI may be purchased online at <http://www.sti.nasa.gov/>. Likewise, those works published through the Government Printing Office may be purchased online at <http://www.gpoaccess.gov/> or by mail. A list of NASA History publications available through the Headquarters Information Center is available at <http://www.hq.nasa.gov/office/hqlibrary/ic/ic2.htm#pubs>, although customers wishing to purchase publications from the Information Center should either send a check or money order or come in person. In-print monographs are made available to the public for the cost of a self-addressed, stamped envelope.

CONSOLIDATED LIST IS KEPT UPDATED ONLINE

For an updated list indicating which publications are in print and how to purchase them, which are available online, and which are out of print, please see

<http://history.nasa.gov/series95.html> on the Web. This site also has links to online versions of other related works that are not in the formal NASA History Series of publications.

FLAGSHIP PUBLICATIONS

Exploring the Unknown

This is a projected eight-volume series of selected documents in the history of the U.S. civil space program.

- Logsdon, John M., editor, with Linda J. Lear, Jannelle Warren Findley, Ray A. Williamson, and Dwayne A. Day. *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume I: Organizing for Exploration*. NASA SP-4407, 1995.
- Logsdon, John M., editor, with Dwayne A. Day and Roger D. Launius. *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume II: External Relationships*. NASA SP-4407, 1996.
- Logsdon, John M., editor, with Roger D. Launius, David H. Onkst, and Stephen J. Garber. *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume III: Using Space*. NASA SP-4407, 1998.
- Logsdon, John M., editor, with Ray A. Williamson, Roger D. Launius, Russell J. Acker, Stephen J. Garber, and Jonathan L. Friedman. *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume IV: Accessing Space*. NASA SP-4407, 1999.
- Logsdon, John M., editor, with Amy Paige Snyder, Roger D. Launius, Stephen J. Garber, and Regan Anne Newport. *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume V: Exploring the Cosmos*. NASA SP-2001-4407, 2001.
- Logsdon, John M., editor, with Stephen J. Garber, Roger D. Launius, and Ray A. Williamson. *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume VI: Space and Earth Science*. NASA SP-2004-4407, 2004.
- Logsdon, John M., editor, with Roger D. Launius. *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume VII:*

Human Spaceflight: Projects Mercury, Gemini, and Apollo. NASA SP-2008-4407, 2008.

The Wind and Beyond

How ideas about aerodynamics first developed and how the science and technology evolved to forge the airplane into the revolutionary machine that it became is the epic story told in this projected six-volume series.

- Hansen, James R., editor. *The Wind and Beyond: Journey into the History of Aerodynamics in America, Volume 1: The Ascent of the Airplane.* NASA SP-2003-4409, 2003.
- Hansen, James R., editor. *The Wind and Beyond: Journey into the History of Aerodynamics in America, Volume 2: Reinventing the Airplane.* NASA SP-2007-4409, 2007.

Brief Histories of NASA

Overviews of National Advisory Committee for Aeronautics (NACA) and NASA accomplishments in aeronautics and space.

- Anderson, Frank W., Jr. *Orders of Magnitude: A History of NACA and NASA, 1915–1980.* NASA SP-4403, 1981. **Out of print.**
- Bilstein, Roger E. *Orders of Magnitude: A History of the NACA and NASA, 1915–1990.* NASA SP-4406, 1989. **Out of print.**
- Bilstein, Roger E. *Testing Aircraft, Exploring Space: An Illustrated History of NACA and NASA.* Baltimore: Johns Hopkins University Press, 2003. This book is an update of *Orders of Magnitude: A History of the NACA and NASA, 1915–1990.*

Critical Issues in the History of Spaceflight

This is a volume consisting of scholarship on the current state of the discipline of space history presented in a joint NASA and National Air and Space Museum (NASM) conference in 2005. The essays presented in the book explore such issues as the motivations for spaceflight and the relative merits of human and robotic space exploration.

- Dick, Steven J., and Roger D. Launius. *Critical Issues in the History of Spaceflight.* NASA SP-2006-4702, 2006.

Societal Impact of Spaceflight

The purpose of this volume is to examine the effects of spaceflight on society through scholarly research, making use especially of the tools of the historian and the broader social sciences and humanities. Has the Space Age indeed had a significant effect on society? If so, what are those influences? What do we mean by an “impact” on society? And what parts of society? Conversely, has society had any effect on spaceflight? What would be different had there been no Space Age?

- Dick, Steven J., and Roger D. Launius. *Societal Impact of Spaceflight.* NASA SP-2007-4801, 2007.

Memoirs

This autobiography by Boris Chertok, a towering figure in Soviet/Russian space history, was originally published in Russian and has now been specially translated and edited for publication in the NASA History Series. These two books are the first of four volumes of Chertok’s insightful reminiscences on his 60-year career in aviation and space.

- Chertok, Boris. *Rockets and People, Volume I.* NASA SP-2005-4110, 2005. This volume is also available online.
- Chertok, Boris. *Rockets and People, Volume II: Creating a Rocket Industry.* NASA SP-2006-4110, 2006.

This thoroughly researched, insightful biography by a fellow New Zealander who came to the U.S. and worked with William Pickering, who became the Director of the Jet Propulsion Laboratory (JPL), is a timely addition to the aerospace history literature and an engaging portrait of one of the pioneers of early U.S. robotic spaceflight.

- Mudgway, Douglas J. *William H. Pickering: America’s Deep Space Pioneer.* NASA SP-2007-4113, 2007.

Aeronautics and Space Report of the President

The annual Aeronautics and Space Report of the President is a summary of the government’s aerospace activities each year. Mandated by law, it contains information on aerospace activities conducted by 14 federal departments and agencies. It also contains an executive summary organized by agency and narrative sections organized by subject, as well as extensive appendices containing useful historical data on spacecraft launches,

budget figures, key policy documents from the fiscal year, and a glossary.

- Electronic versions of the editions for 1995 through 2006 are available from <http://history.nasa.gov/presrep.htm> online.
- Previous volumes are available in hard copy.

NASA Historical Data Books

The NASA Historical Data Book Series provides a statistical summary of the first 40 years of the National Aeronautics and Space Administration. NASA finances, personnel, and installations are covered, along with the Agency's major programs and projects. Volumes I and II are currently out of print and unavailable in electronic format. Volumes VII and VIII for 1989–98 will be published soon.

- Van Nimmen, Jane, and Leonard C. Bruno, with Robert L. Rosholt. *NASA Historical Data Book, Volume I: NASA Resources, 1958–1968*. NASA SP-4012, 1976, rep. ed. 1988.
- Ezell, Linda Neuman. *NASA Historical Data Book, Volume II: Programs and Projects, 1958–1968*. NASA SP-4012, 1988.
- Ezell, Linda Neuman. *NASA Historical Data Book, Volume III: Programs and Projects, 1969–1978*. NASA SP-4012, 1988.
- Gawdiak, Ihor, with Helen Fedor. *NASA Historical Data Book, Volume IV: NASA Resources, 1969–1978*. NASA SP-4012, 1994.
- Rumerman, Judy A. *NASA Historical Data Book, Volume V: NASA Launch Systems, Space Transportation, Human Spaceflight, and Space Science, 1979–1988*. NASA SP-4012, 1999.
- Rumerman, Judy A. *NASA Historical Data Book, Volume VI: Space Applications, Aeronautics, and Other Topics, 1979–1988*. NASA SP-4012, 1999.
- Rumerman, Judy A. *NASA Historical Data Book, Volume VII: NASA Launch Systems, Space Transportation/Human Spaceflight, and Space Science, 1989–1998*, forthcoming in 2009.
- Rumerman, Judy A. *NASA Historical Data Book, Volume VIII: NASA Space Applications, Aeronautics, Technology, Tracking and Data Acquisition, Facilities, and Resources, 1989–1998*, forthcoming in 2009.

Astronautics and Aeronautics Chronology

A chronology of events in aeronautics, aviation, space science, and space exploration.

- *Astronautics and Aeronautics, 1963: Chronology of Science, Technology, and Policy*. NASA SP-4004, 1964.
Out of print.
- *Astronautics and Aeronautics, 1964: Chronology of Science, Technology, and Policy*. NASA SP-4005, 1965.
Out of print.
- *Astronautics and Aeronautics, 1965: Chronology of Science, Technology, and Policy*. NASA SP-4006, 1966.
Out of print.
- *Astronautics and Aeronautics, 1966: Chronology of Science, Technology, and Policy*. NASA SP-4007, 1967.
Out of print.
- *Astronautics and Aeronautics, 1967: Chronology of Science, Technology, and Policy*. NASA SP-4008, 1968.
Out of print.
- *Astronautics and Aeronautics, 1968: Chronology of Science, Technology, and Policy*. NASA SP-4010, 1969.
Out of print.
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- McCurdy, Howard E. *Inside NASA: High Technology and Organizational Change in the U.S. Space Program*. Baltimore: Johns Hopkins University Press, 1993.
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- Bromberg, Joan Lisa. *NASA and the Space Industry*. Baltimore: Johns Hopkins University Press, 1999.
- Beattie, Donald A. *Taking Science to the Moon: Lunar Experiments and the Apollo Program*. Baltimore: Johns Hopkins University Press, 2001.
- McCurdy, Howard E. *Faster, Better, Cheaper: Low-Cost Innovation in the U.S. Space Program*. Baltimore: Johns Hopkins University Press, 2001.
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- Butrica, Andrew J. *Single Stage to Orbit: Politics, Space Technology, and the Quest for Reusable Rocketry*. Baltimore: Johns Hopkins University Press, 2005.
- Conway, Erik M. *High-Speed Dreams: NASA and the Technopolitics of Supersonic Transportation, 1945–1999*. Baltimore: Johns Hopkins University Press, 2005.

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- Launius, Roger D., and Howard McCurdy, editors. *Spaceflight and the Myth of Presidential Leadership*. Urbana: University of Illinois Press, 1997.

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- Dethloff, Henry C., and Ronald A. Schorn. *Voyager’s Grand Tour: To the Outer Planets and Beyond*. Washington, DC: Smithsonian Institution Press, 2003.
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PART 2:

Sources of NASA
History in the
Washington, DC, Area

The NASA History Division is located at NASA Headquarters in Washington, DC, on the corner of 4th and E Streets Southwest. The closest Metro station is Federal Center Southwest. The L'Enfant Plaza Metro station is also nearby. The office mailing address is NASA History Division, NASA Headquarters, Suite CO72, 300 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, excluding federal holidays.

The History Division staff is as follows:

Steven J. Dick, Chief Historian
Nadine Andreassen, Program Support Specialist
Colin Fries, Contract Archivist
Stephen J. Garber, Historian
John Hargenrader, Contract Archivist
Jane H. Odom, Chief Archivist
Elizabeth Suckow, Contract Archivist

Each staff member can provide guidance and assistance; however, for reference requests, it is usually best to start with the archival staff.

NEWSLETTER AND LISTSERV

The NASA History Division publishes a quarterly newsletter that gives information on its recent and upcoming publications, upcoming conferences, new online resources, archival activities, and other relevant news. The most current issue of the newsletter is posted at <http://history.nasa.gov/ultrc.pdf>. Older issues are available online at <http://history.nasa.gov/histnews.htm>.

We encourage interested parties to sign up to receive the newsletter electronically through our NASA history listserv. Instructions for subscribing, changing one's e-mail address, and unsubscribing are located online at <http://history.nasa.gov/listserv.html>. Listserv recipients also receive periodic timely notices about new publications, Web sites, events, and contract opportunities. This Web page also includes instructions for signing up to receive

NASA press releases, as well as tailored e-mail notification of NASA contract opportunities.

NASA HISTORY ONLINE

The NASA History Division has a wide variety of resources available to researchers electronically via the Internet. Special thanks go to a number of dedicated volunteers who devoted countless hours to preparing various materials for our now-extensive Web site. Our main page is located at <http://history.nasa.gov>.

Most, although not all, books and monographs in the formal NASA History Series are now available on the History Division Web site, thanks in large measure to a small corps of dedicated volunteers. A comprehensive list of all NASA History publications is available online at <http://history.nasa.gov/series95.html>, which also includes links to the online versions, as well as instructions and links for how to purchase hard copies of the various books and monographs.

The *Apollo Lunar Surface Journal (ALSJ)* is a remarkable resource about Apollo put together by a vast team of volunteers led by Eric Jones. It is among the most comprehensive sources on Apollo available online. The *ALSJ* contains the complete transcripts of the lunar-surface-to-Earth transmissions of the 12 Apollo astronauts who walked on the Moon, with extensive explanatory annotations. It also includes technical essays, still images, and video footage. The *ALSJ* site is at <http://history.nasa.gov/alsj/> online.

A companion site, the *Apollo Flight Journal*, similarly provides heavily annotated transcripts of the complete air-to-ground transmissions (beyond just what took place on the lunar surface) for several Apollo missions. The coeditors of the *Apollo Flight Journal*, David Woods and Frank O'Brien, are also volunteers who devoted enormous amounts of time and energy to developing this site. Like the *ALSJ*, the *Apollo Flight Journal* includes technical essays and audiovisual materials about both specific Apollo missions and the program in general. It is accessible from <http://history.nasa.gov/afj/> online.

Another major site that the NASA History Division maintains is the Centennial of Flight (<http://www.centennialofflight.gov>) area. Congress established a national commission to commemorate and coordinate activities and information related to the 100th anniversary of the Wright brothers' first powered, heavier-than-air, controlled flight on 17 December 1903. This commission oversaw the creation of an extensive Web site about aerospace history. Following the 100th anniversary, NASA took over this Web site.

The History Division Web site also provides a great deal of other information. The site includes features such as frequently asked questions, "What's New with NASA History," information about the different NASA Field Centers, background information about doing research at/with NASA and about the Division itself, and even an excellent resource page for kids interested in NASA and the history of space travel.

The sources available through the History Division Web site can be accessed using three distinct search tools: an alphabetical index that lists materials from A to Z by keyword topic; a hierarchical subject index, which enables researchers to look for material relating to a broader subject (for example, human spaceflight); and a keyword search option that allows researchers to search for material within the NASA History Web site proper, the *ALSI*, or the Centennial of Flight Web site. Researchers may search all three of these NASA History areas simultaneously or independently.

GRIN PHOTO DATABASE

The NASA History Division is also responsible for Great Images in NASA (GRIN), a still-image database available at <http://grin.hq.nasa.gov> online. This site is unique among NASA history resources. Although not comprehensive, GRIN contains over one thousand high-resolution images of events, people, and activities that the History Division considers significant from either a historic or a symbolic standpoint. The site is free and easy to search. Detailed captions complement the images, and links to other NASA sites allow researchers to search for images not available in GRIN. Researchers also may request glossy prints or transparencies from still-image libraries at NASA Headquarters and the Centers, usually for a fee.

PUBLIC INQUIRIES

We encourage NASA staff and members of the general public who have detailed questions about specific aspects of NASA history to make an appointment to come in person to our office to do research in the NASA Historical

Reference Collection (see below and <http://history.nasa.gov/contact.html>). You may send e-mail to histinfo@hq.nasa.gov to schedule a research trip.

If you are unable to visit in person to do research or have other questions about NASA history, comments about our Web site, or other history-related concerns, please e-mail us at histinfo@hq.nasa.gov.

NASA HISTORICAL REFERENCE COLLECTION

When considering researching NASA history, it is important to understand that the collection of documents contained within the Headquarters History Division is *not an official archive*, but an artificial reference collection (that is, a collection compiled by someone other than the creator and consisting of copies of official documents as well as published materials gathered from a number of sources to form reference files about one or more topics) containing copies of historically significant NASA materials. This Historical Reference Collection (HRC) is overseen by a civil servant and three contract archivists, who work closely with the historians in the NASA History Division. Details regarding a more specific description of the working relationship between the archivists and NASA historians, as well as an account of the general contents of the Headquarters Historical Reference Collection, can be found online at <http://history.nasa.gov/thinking/nasabist-4.html>.

By law, NASA's official records go to the National Archives and Records Administration (NARA), which is a rich source of NASA history as well. Details regarding the storage of NASA and NACA records at NARA are available at the NASA Web site (<http://history.nasa.gov/nara1.html>). This link is especially important to the researcher because it not only provides details about the record holdings of specific NARA facilities, but it also provides the location of facilities and a description of content.

More general information about NARA is available at <http://www.archives.gov/>. The presidential libraries, which are administered by NARA, are another useful resource. The main Web site for presidential libraries is <http://www.archives.gov/presidential-libraries/contact/libraries.html>, which can be reached through the NASA Web page.

The archival collection housed in the History Division is commonly known as the Historical Reference Collection (HRC). It includes approximately 1,700 cubic feet of primary and secondary source materials and thousands of books. An additional 600 cubic feet (approximately) of records are stored at the Federal Records Center in

Suitland, Maryland. NASA archivists began collecting historical information not long after the creation of the history program at NASA Headquarters in 1959. Twelve major series, or types of material, make up the Historical Reference Collection. Included in nearly every series are the following types of documents: photographs, news releases, correspondence, memoranda, pamphlets, speeches, annual reports, organizational charts, reports, internal and external studies, budget briefings, oral history interviews, *Congressional Record* remarks, and congressional testimony. The Historical Reference Collection also contains a large number of newspaper and magazine articles culled from a variety of secondary sources and filed by subject.

Since 1988, the NASA History Division has been engaged in an ongoing effort to automate its holdings. A database serves a dual purpose: use by staff to answer reference requests and use by on-site visitors who are conducting research. The system is part finding aid and part electronic repository. Approximately 90 percent of the HRC is described in the catalog portion of the database; the other 10 percent is unprocessed. In the electronic repository are 15 series of material, containing thousands of documents that have been scanned.

The HRC also includes hundreds of published and unpublished historical books and studies prepared under the auspices of the NASA History Division. These are classified in the following series: Special Publications (SP), Historical Monographs (HHM), Historical Reports (HHR), Historical Notes (HHN), and Educational Publications (EP). The History Division houses thousands of other books, which the history staff regularly consult to answer queries.

Described below are the archival series that comprise the Historical Reference Collection:

Series 1
Aeronautics Files
52 cubic feet (1945 to present)

Subjects include, but are not limited to, aircraft design, aircraft engines, human-powered flight, solar-powered flight, remotely piloted vehicles, aerodynamics, wind tunnels, aerospace safety, aircraft accidents, aeronautical statistics and records, aeronautical research and development, civil aviation, NASA aircraft, helicopters, commercial aircraft, experimental aircraft, vertical take-off and landing, supersonic transport, experimental vehicles (both aircraft and rockets), and lifting bodies. The Aeronautics Files are arranged by topic and therein chronologically.

Series 2
**Aerospace Industry
and Organization Files**
35 cubic feet (1945 to present)

Included are files on remote sensing and space commercialization. There are files on industries such as Aerospace Corporation, American Airlines, Boeing Company, British Aerospace Company, Comsat Corporation, Douglas Aircraft Company, Lockheed Aircraft Corporation, North American Aviation Incorporated, and Rand Corporation. Additional, there are materials on organizations such as the Aerospace Industries Association, American Institute of Aeronautics and Astronautics, National Space Club, and Society for History in the Federal Government. This series is arranged alphabetically by name of industry or name of organization and therein chronologically.

Series 3
Biographical Files
180 cubic feet (ca. 1915 to present)

This series contains information on thousands of persons, including NASA and NACA officials and employees, aviation pioneers, astronauts, cosmonauts, test pilots, government and military officials, contractors, historians, scientists, and others. See NASA Administration and Organization Files—Administrator/Deputy Administrator Files for biographical information on NASA's top officials. The Biographical Files are arranged alphabetically by last name of individual and therein chronologically.

Series 4
Federal Agency Files
87 cubic feet (ca. 1942 to present)

This series is comprised of government agency files and White House files. Within the government agency files are materials on the Atomic Energy Commission, the Central Intelligence Agency, the Federal Aviation Administration, the National Oceanic and Atmospheric Administration, the Department of Defense, the Air Force and various Air Force bases, the Navy, the National Academy of Sciences, and the National Research Council, among others. Subjects include, but are not limited to, the Dyna-Soar Project, the Manned Orbiting Laboratory, military aircraft and missiles, military histories, interagency cooperation, and the Strategic Defense Initiative. These files are arranged alphabetically by name of federal agency and therein chronologically.

In the White House files are documents recording space policy decisions of presidential administrations from Herbert Hoover's to the present. Also included are

materials relating to the various science and technology councils that advise the President. There are files on the activities of the National Security Council, the National Aeronautics and Space Council, the National Space Council, the President's Science Advisory Committee, and the Office of Science and Technology Policy. These files contain selections from the *Weekly Compilation of Presidential Documents* and copies of space policy materials that were donated to this repository from several of the presidential libraries. The dates of material for each administration's files typically correspond to the dates of each respective presidency, although some earlier material is included in the files of a few administrations. The files of the advisory councils precede the files of presidential administrations, which are in order by name of administration. Within each council or administration grouping, files are arranged topically and therein chronologically.

Series 5
Impact Files, 45 cubic feet
(1950 to present)

These files document the impact of the space program on nearly every facet of life: art, economics, education, humor, literature, medicine, motion pictures, music, numismatics, philately, politics, public opinion, religion, science fiction, society, space history, space souvenirs, technology, television, toys, and dozens of other topics. Also included is material on criticism of the space program. This series is arranged alphabetically by subject and therein chronologically.

Series 6
**International Cooperation
and Foreign Country Files**
70 cubic feet (ca. 1915 to present)

This series contains files on U.S. cooperation and competition with foreign countries in space endeavors. There are files on dozens of countries from Afghanistan to Zimbabwe, including Australia, Canada, France, Germany, India, Indonesia, Israel, Japan, the People's Republic of China, Portugal, Spain, and the United Kingdom. Unique to this series are foreign-language materials and translations of foreign materials. Notably, these files contain materials pertaining to the former Soviet Union and its space activities, including files on Soviet piloted and robotic vehicles, arranged alphabetically. Subjects within the Soviet files include Sputnik, Lunik, Venera, Molniya, Soyuz, Voskhod, Buran, Mir, and launch facilities. The arrangement of this series is alphabetically by name of country and therein chronologically.

Series 7
**National Advisory Committee for
Aeronautics Files**
25 cubic feet (1915–1958)

The NACA Files include subject files, biographical files, patent files, reunion files, interviews with individuals involved in early aeronautical research, and other materials. The official records of the NACA are available for use at the National Archives; the finding aid is online at <http://history.nasa.gov/nara1.html>.

Series 8
**NASA Administration
and Organization Files**
356 total cubic feet (1910 to present)

This series includes, but is not limited to, Administrator/Deputy Administrator files, files documenting Headquarters and Center activities, budget files, and history files. Documented here are the activities of the NASA Advisory Council (NAC), NASA Management Council, Civilian Military Liaison Committee, Aeronautics and Astronautics Coordinating Board, and Aerospace Safety Advisory Panel. Below is a description of each of the larger components of the NASA Administration and Organization Files and the volume of each.

***NASA Administration and Organization Files—
Administrator and Deputy Administrator Files,
63 cubic feet (1958 to present)***

Included are materials documenting the activities of NASA Administrators and Deputy Administrators throughout the history of the Agency. Provided below is a chronological list of the names of past and present officials with the dates of their service. The dates of the material in each official's files nearly always pre- and postdate that person's term(s) of service. Arrangement is by name of individual and therein by topic and/or chronologically.

Administrators

- Glennan, T. Keith, 1958–61
- Webb, James E., 1961–68
- Paine, Thomas O., 1969–70
- Fletcher, James C., 1971–77, 1986–89
- Frosch, Robert A., 1977–81
- Beggs, James M., 1981–85

- Graham, William R., 1985–86 (Acting)
- Truly, Richard H., 1989–92
- Goldin, Daniel S., 1992–2001
- Mulville, Daniel R., 2001 (Acting)
- O’Keefe, Sean, 2001–05
- Gregory, Frederick D., 2005 (Acting)
- Griffin, Michael, 2005–09

Deputy Administrators

- Dryden, Hugh L., 1958–65
- Seamans, Robert C., 1965–68
- Paine, Thomas O., 1968–69
- Low, George M., 1969–76
- Lovelace, Alan M., 1976–81
- Mark, Hans, 1981–84
- Graham, William R., 1985–86
- Myers, Dale D., 1986–89
- Thompson, James R., Jr., 1989–91
- Cohen, Aaron, 1992
- Dailey, John R., 1992–99 (Acting)
- Mulville, Daniel R., 2000–03
- Gregory, Frederick D., 2002–05
- Dale, Shana, 2005–09

NASA Administration and Organization Files— Budget Files, 35 cubic feet (1958 to present)

Included are NASA budget estimates, chronologies of NASA budget submissions, budget planning documents, budget histories, *Congressional Record* remarks, hearing records, background briefings, the *U.S. Budget Brief* prepared by the Office of Management and Budget (OMB), and NASA authorizations. The Budget Files are arranged chronologically by fiscal year. See also the Congressional Documents Collection in the Headquarters Library for related information.

NASA Administration and Organization Files— Headquarters Files, 120 cubic feet (1958 to present)

In this series are files for existing as well as previous program offices; Headquarters reorganizations usually take place every couple of years. There are files on dozens of entities, including the History Program. These files are arranged by name of program office and therein topically and/or chronologically. Documentation is available for offices such as these:

- Office of the Chief Engineer
- Office of the Chief Scientist
- Office of Inspector General
- Office of Advanced Research and Technology
- Office of Equal Employment Opportunity
- Office of Management
- Office of Manned Space Flight
- Office of Personnel
- Office of Procurement
- Office of Public Affairs
- Office of Safety, Reliability, and Quality Assurance
- Office of Space Science and Applications
- Office of Tracking and Data Acquisition
- Office of University Programs

NASA Administration and Organization Files— Field Center Files, 73 cubic feet (1915 to present)

Included are files on present and past NASA installations. These files contain information on site selection, facilities and equipment, military components, annual reports, and other materials. Some installations, over the ensuing years, have been renamed or abolished by NASA. This series is arranged alphabetically by name of Center and therein by subject and/or chronologically. The HRC includes files on the following installations:

- Ames Research Center
- Dryden Flight Research Center

- Electronics Research Center
- Glenn Research Center at Lewis Field
- Goddard Space Flight Center
- Jet Propulsion Laboratory
- Johnson Space Center
- Kennedy Space Center
- Langley Research Center
- Marshall Space Flight Center
- Michoud Assembly Facility
- Stennis Space Center
- Wallops Flight Facility

***NASA Administration and Organization Files—
History Files, 65 cubic feet (1958 to present)***

This series includes, but is not limited to, materials on policy meetings, procurement activities, planning activities and conferences, staffing and organizational studies, key personnel changes, anniversary events, the National Aeronautics and Space Act, Administrators' staff meetings, and the Advisory Committee on the Future of the Space Program. These materials are arranged by topic and therein chronologically.

Series 9
Propulsion Files
16 cubic feet (1956 to present)

Included is information on chemical, electric, liquid, solid, ion, nuclear, and other forms of propulsion. Additionally, there is material on subjects such as avionics, guidance, reentry projects, orbital debris, and safety. This series is arranged topically and therein chronologically.

Series 10
Robert Sherrod Apollo Collection
28 cubic feet (1960–1978)

This series includes Apollo documentation collected by journalist Robert Sherrod for a book that was never completed. The collection contains subject files, biographical files, audio recordings of interviews Sherrod conducted,

interview transcripts, a book outline, and chapter drafts. Arrangement is by type of material.

Series 11
Sciences Files
62 cubic feet (1958 to present)

Included are files describing space sciences, life sciences, and research and development activities in this area. Included in the space sciences files are materials on astronomy, planets, geophysics, volcanoes, meteorology, oceanography, atmospheric research, solar power, nuclear weapons, asteroids, meteoroids, comets, planets, moons, solar exploration, radar astronomy, air pollution, global warming, energy resources, and other topics. In the life sciences area are files on topics such as astrobiology, space medicine, extraterrestrial life, animals in space, lunar quarantine, and radiation. Included in the research and development files is information on spacecraft guidance, science policy, aerodynamics, computers, and lasers. Arrangement is by topic and therein chronologically.

Series 12
Spaceflight Files
477 total cubic feet (1945 to present)

This series includes, but is not limited to, files on human spaceflight, satellites and probes, launch vehicles, and tracking and data acquisition. Below is a description of each of these larger components of the Spaceflight Files.

***Spaceflight—Human Spaceflight, 295 cubic feet
(1953 to present)***

In this series are materials describing the Mercury, Gemini, Apollo, Apollo-Soyuz Test Project (ASTP), Space Shuttle, and Space Station programs. These files contain information on experiments, escape systems, the history of the space station concept, spacesuits, hardware, contractors, anomalies and aborts, costs, directives, mission patches, anniversaries of significant missions, schedules, pre- and postflight activities, and other topics. Additionally, there are materials documenting the activities of a variety of spaceflight committees and working groups. The series also includes files on disasters such as the Apollo 1 fire and the *Challenger* and *Columbia* accidents. These files are arranged by name of program; within each program, by topic; and therein chronologically.

Spaceflight—Satellites and Probes, 130 cubic feet (1945 to present)

Within these files are materials documenting dozens of missions pertaining to lunar and interplanetary flight. There are files on the following missions, just to name a few: Cassini, Galileo, Lunar Orbiter, Magellan, Mars Observer, Mars Pathfinder, Mariner, Pioneer, Ranger, Surveyor, Viking, and Voyager. Additionally, there are files in this series on dozens of Earth-orbiting satellites such as these: the Applications Technology Satellite (ATS), Biosatellite, Comstar, Echo, the Earth Observing System (EOS), the Gamma Ray Observatory, the Hubble Space Telescope, Intelsat, Landsat, the Mission to Planet Earth, Nimbus, the Orbiting Astronomical Observatories (OAO), Pegasus, the Solar Powered Satellite, Tracking and Data Relay Satellite System, the Upper Atmosphere Research Satellite (UARS), Vanguard, and Westar. Satellites and probes have assisted with communications, weather forecasting, mapping, tracking and data relay, atmospheric observation, and planetary exploration. Within the files are materials on pre- and postlaunch activities, press kits, canceled missions, extended missions, and costs, among others. These materials are arranged alphabetically by name of satellite or probe and therein chronologically.

Spaceflight—Launch Vehicles, 36 cubic feet (1945 to present)

This series includes information on launch successes as well as launch problems and failures, sounding rockets, costs, studies, technical reports, and histories and chronologies. Notable reports in this series include *A National Space Vehicle Program Report: A Report to the President*, 1959; the *NASA–Department of Defense Large Launch Vehicle Planning Group Report*, 1962; and various long-range plans in the history of the Agency. Files exist for launch vehicles such as Atlas, Atlas-Centaur, Centaur, Delta, the Heavy Lift Launch Vehicle (HLLV), Iris, Little Joe, Nova, Pegasus, Saturn V, Scout, Single Stage to Orbit, Thor, Titan, and Vega. For information on the X-33 and X-34, see Aeronautics Files. This series is arranged alphabetically by name of launch vehicle and therein chronologically.

Spaceflight—Tracking and Data Acquisition Files, 16 cubic feet (1957 to present)

Included are files on the Deep Space Network, the Space Tracking and Data Acquisition Network (STADAN), tracking and telemetry, the use of Navy ships and Air Force aircraft, domestic and international tracking stations, and histories, among other materials. These files are arranged topically and therein chronologically.

Other Notable Collections, 255 cubic feet (1958 to present)

The collections listed below fall within the series previously described but are deserving of a separate mention due to their content. Most are available in hard-copy form in the Historical Reference Collection; a few are electronic. This is only a partial list.

- Aeronautics and Space Report of the President
- Historical slide collection
- NASA Names Collection
- NASA Policy and Long Range Planning Files
- NASA Management Instructions
- Papers of former Deputy Administrator George Low
- Chronological correspondence files of former Associate Deputy Administrator Noel Hinners
- Space history chronologies and bibliographies
- Files on space-related awards (NASA and other agencies)
- Files on a variety of space history museums
- Early history of NASA, collected by former historian Eugene Emme
- *Satellite Situation Report* prepared by Goddard Space Flight Center
- Chronological reading files of the Office of the Administrator
- Deliverables collected by authors who have contracted with the NASA History Division to write histories

Series 13
Electronic Files
1958 to present

Below are descriptions of some of the most prominent electronic series located in the History Division database. The documents are in PDF format and are fully searchable. They are available to those who come in person to do research at NASA Headquarters and are used

frequently by History Division staff to answer reference requests.

- **Cartoons**—Thousands of space-related cartoons culled primarily from newspapers.
- **Current News**—Daily compilation of newspaper and wire stories about NASA activities.
- **Dan Goldin Files**—Selected items copied from the official records of former Administrator Dan Goldin and retained in the HRC. Items were copied from meeting files, trip files, subject files, and speech files within his collection. Included are nearly a thousand speeches that Goldin gave to a variety of audiences.
- **Headquarters Organization Chronological Correspondence Files**—Copies of outgoing correspondence acquired from a variety of Headquarters program offices.
- **Mission Operation Reports (MORs)**—Nearly 900 MORs from robotic and piloted missions conducted over the life of the Agency. There are mission operation reports on satellites and probes, including those sponsored by other agencies such as the National Oceanic and Atmospheric Administration (NOAA), the North Atlantic Treaty Organization (NATO), and the U.S. Navy. Also included are MORs on launch vehicles, Apollo, Skylab, the Space Shuttle, and the International Space Station.
- **Newsletters**—850 internal newsletters produced by Headquarters and the Centers over the years.
- **Reports**—Approximately 280 reports describing the Mercury, Gemini, Apollo, ASTP, Shuttle-*Mir*, Space Station *Freedom*, and International Space Station programs. Also included are reports of working groups, boards, and other panels on topics such as Earth observation, lunar and planetary missions, program management, safety, mishap investigations, and project failures.
- **Telephone Directories**—Nearly 500 internal telephone directories for Headquarters and the Centers.

HISTORICAL REFERENCE COLLECTION ONLINE DATABASE

Four series from the NASA Headquarters Historical Reference Collection have been digitized and made available for use by researchers at <https://mira.hq.nasa.gov/history/>. Included are PDFs of press kits, press releases, mission

transcripts, and Administrators' speeches. Researchers may use either the Basic Search or the Advanced Search to access these. The Headquarters History Division staff has digitized all press kits, press releases, mission transcripts, and Administrators' speeches that were available to them in the Historical Reference Collection. Links are provided to other sources where similar and/or additional information can be found. Below is a description of each series:

- **Press Kits** are primarily from Shuttle missions, but also included are Mercury, Gemini, Apollo, and Apollo-Soyuz Test Project press kits. Additionally, there are press kits from International Space Station Expeditions and from the deployment of a variety of satellites and probes.
- **Press Releases** include those distributed by Headquarters and the Centers over the years; however, over half of this series is comprised of Headquarters releases. Included also is an index, dated 1960–95, to Headquarters and Center press releases and speeches by officials-in-charge.
- **Mission Transcripts** are from Mercury, Gemini, Apollo, and Skylab missions, as well as Space Shuttle missions STS-1 through STS-5. Also included are Apollo-Soyuz Test Project mission commentaries from U.S. and Soviet Mission Control facilities. There are air-to-ground transcripts, on-board transcripts, mission briefings, and mission commentaries.
- **Administrators' Speeches** include remarks made by former NASA Administrators, Deputy Administrators, and Associate Deputy Administrators since 1958. The speeches were made to a variety of audiences including NASA staff as well as industry, educational, and general audiences. Also included is congressional testimony. There are draft copies of speeches as well as final versions displayed here.

NASA RECORDS HELD AT THE FEDERAL RECORDS CENTER IN SUITLAND, MARYLAND

A number of collections have been retired to the Federal Records Center in Suitland, Maryland. Below is an abbreviated list of some of these materials:

- Files of John R. Dailey, former Acting Deputy Administrator, 27 cubic feet (1993–98)
- History of the X-33 Project files, 32 cubic feet (1977–99)

- International Space Station collection, 76 cubic feet (1987–99)
- Contract deliverables for a history of Space Station *Freedom*, 3 cubic feet (1985–93)
- Various presentations by the Office of Space Exploration Initiatives on Future Human Spaceflight of NASA, 4 cubic feet (1989–91)
- NASA Advisory Council records and NAC Task Force records, 10 cubic feet (1978–90)
- Files of Thomas Moser, former Deputy Associate Administrator (AA) for Space Flight, Deputy AA for Space Station *Freedom*, and Acting AA for Space Station *Freedom*, 6 cubic feet (1986–89)
- Files of Terrence Finn, former member of the Space Station Task Force and Deputy Director of the Policy Division, Office of the Space Station, 5 cubic feet (1983–88)
- Records of the NASA Historical Advisory Committee, 4 cubic feet (1962–83)
- Office of University Affairs records, 12 cubic feet (1962–81)
- Viking collection, 26 cubic feet (1953–78)
- Contract deliverables for Apollo Management History, 31 cubic feet (1959–70)
- Apollo 8 Lunar Orbit Decision Documents and Apollo 10 Decision Documents, 2 cubic feet (1968–69)
- Life sciences files collected by NASA official and author Mae Mills Link, 6 cubic feet (1958–70)
- Electronic Research Center (ERC) collection, including chronological reading files, newspaper clippings, photographs, and reports from the ERC Public Information Office, 19 cubic feet (1961–70)
- Correspondence files of George Low, former Chief of Manned Space Flight within the Applications and Manned Flight Programs Office, and material pertaining to Project Mercury, 8 cubic feet (1958–63)

NASA FILES HELD AT THE NATIONAL ARCHIVES

The History Division has assisted in the past in the transfer of several historically significant Headquarters collections to the National Archives. Below is a partial list of these materials:

- Records of former Administrator Daniel S. Goldin, 220 cubic feet (1992–2001)
- Files of former Associate Deputy Administrator (Technical) Michael Mott, 18 cubic feet (1994–98)
- Files of former Chief Scientist France Cordova, 8 cubic feet (1993–96)
- Records of the Advisory Committee on the Future of the U.S. Space Program, 9 cubic feet (1990–91)
- Papers of former Deputy Administrator James R. Thompson, 26 cubic feet (1988–92)
- Papers of former Deputy Administrator Dale D. Myers, 32 cubic feet (1986–89)
- Papers of former Administrator James C. Fletcher, 14 cubic feet (1986–89)
- Papers of former Associate Administrator for Space Sciences and Applications Homer E. Newell, 43 cubic feet (1962–74)
- Vanguard Division Files, 8 cubic feet (1955–58)
- Records of the National Advisory Committee for Aeronautics, 60 cubic feet (1914–58)

Oral History Collection

The NASA History Division at Headquarters has more than 3,000 oral history interviews in a variety of formats, including reel-to-reel, cassette, CD, and transcript. Many of the reel-to-reel tapes have been transferred to cassette for preservation purposes. The oral histories focus on individuals who have served in major administrative roles for NASA, detailing events that occurred during that person's tenure and concentrating on organizational culture, methodology, program management, and decision-making rationales. They document significant aspects of NASA's spaceflight and other major programs. Many of the oral histories are conducted by contract historians in the course of preparing manuscripts for the NASA History Series. Other oral histories are better categorized as exit

interviews. The collection also includes interviews with women whose contributions range from involvement with the inception of NASA to providing direction for the Agency. See <http://history.nasa.gov/oralhistory/obcatalog.htm> for a consolidated list of oral histories maintained in history offices Agency-wide.

HEADQUARTERS LIBRARY, OFFICE OF PUBLIC AFFAIRS, AND PROGRAM OFFICES

The NASA Headquarters Library carries a wide range of materials. It has a sampling of local and national newspapers and general news 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 focuses on space policy, space history, project and program management, legislative reports, hearings and documents, and general science and technology materials. The Library's collection of budgets, strategic plans, and NASA annual reports, including office and departmental reports, provides a unique resource for researchers. The collection also includes early publications from the National Advisory Committee for Aeronautics (NACA), NASA, and the British Advisory Committee for Aeronautics. Public access computers provide access to the Internet, NASA GALAXIE (the NASA Libraries' online catalog), the NASA Aeronautics and Space Database, and other databases. Visitors are welcome, but many library services are restricted to NASA employees. The Web site can be viewed online at <http://www.hq.nasa.gov/office/hqlibrary/index.html>, and though not all features are available to non-NASA personnel, the site contains several useful links for interested parties. Foreign citizens should plan on scheduling their visits with library management in advance.

NASA's Office of Public Affairs regularly prepares press releases, press kits, and public information brochures. An archive of NASA news releases is available at <http://www.nasa.gov/news/releases/archives/index.html> online. The News and Multimedia Division also maintains files of still photographs, motion pictures, and tape recordings.

Often, research on specific topics can best be pursued from the responsible Headquarters program office. Each office maintains inventories of its retired records; 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 to find relevant material is to check. Finally, the researcher may want to interview the program participants themselves.

NASA CENTER FOR AEROSPACE INFORMATION

Located in Hanover, Maryland, the NASA Center for AeroSpace Information (CASI) is the operational arm of the NASA Scientific and Technical Information (STI) Program (<http://www.sti.nasa.gov>). The NASA STI Program's mission is to collect, archive, and disseminate NASA aerospace information and to locate domestic and international STI pertinent to NASA's missions. The program offers current and historical aerospace-related information on aeronautics, astronautics, chemistry, materials, engineering, physics, geosciences, life sciences, mathematics and computer sciences, social sciences, and space sciences. Examples of NASA STI include research reports, journal articles, conference and meeting papers, technical videos, and mission-related operational documents. In addition, the collection contains reports issued by other government agencies, domestic and foreign institutions, universities, and private firms; translations in report form; and dissertations.

This content is available through two user-friendly search engines. The NASA Technical Reports Server (NTRS) provides the public with open and free access to publicly available NASA STI under the Space Act of 1958. The NTRS also collects scientific and technical information from sites external to NASA through Open Archives Initiative (OAI) protocols to broaden the scope of information available to users. NTRS's "Simple Search" finds NASA information only; its "Advanced Search" can search for NASA and non-NASA information. The NTRS can be found online at <http://ntrs.nasa.gov/>.

The NASA Aeronautics and Space Database (NA&SD) is available to NASA employees, prime contractors, and grantees, as well as to other federal agency employees,

prime contractors, and grantees. The database contains approximately 4 million metadata records of technical reports, conference proceedings, journal articles, and aerospace-related information collected from NASA and from sources around the world. Contents range from NACA publications dating from 1915 to today's latest research. Innovative features include sophisticated search functionality; over 285,000 documents available in searchable PDF format; and over 650,000 electronic full-text materials available through the use of Digital Object Identifiers (DOIs), Handles (HDLs), and Uniform Resource Locators (URLs).

Access to the NA&SD is available to anyone within the *nasa.gov* Internet domain. However, by registering, users can gain added benefits, which include viewing distribution-limited material, performing individualized stored searches, and gaining the ability to request scans of documents not already in electronic form. Users may access and register for the NA&SD at the NASA STI home page at <http://www.sti.nasa.gov>.

Many of the NASA documents can be purchased by contacting NASA CASI. For these documents and additional information about the entire scope of products and services offered by the NASA STI Program or CASI, see the NASA STI home page at <http://www.sti.nasa.gov> or contact the NASA STI Help Desk at 301-621-0390, e-mail help@sti.nasa.gov, or fax 301-621-0134.

NATIONAL AIR AND SPACE MUSEUM ARCHIVES

The National Air and Space Archives supports the mission of the Smithsonian National Air and Space Museum (NASM) by acquiring and preserving for public and curatorial use a wide range of visual and textual materials that document the history of flight, both in air and in space. The collection comprises over 10,000 cubic feet and contains around 1.7 million photographs; 700,000 feet of motion picture film, including nearly 20,000 titles; and some 2 million technical drawings. Archives staff collect, organize, and document these materials and assist the public and other NASM staff in their use.

The NASM Archives holds approximately 1,200 collections of several types. They consist of personal and professional papers, corporate and organizational records, and artificial collections. The latter are collections compiled by someone other than the creator and consisting of official documents as well as published materials gathered from a number of sources to form reference files about one or more topics. In addition to a wide range of photographs, visual materials in these collections include aircraft and spacecraft technical drawings, from three-view drawings to detailed engineering plans, many of which are on microfilm. Also available are many technical manuals that document the design, construction, and performance of aircraft and spacecraft and their engines.

Research on many topics can be accomplished in the main Reading Room at the National Air and Space Museum in downtown Washington, DC. For access to certain collections, researchers may be directed to the Garber Reading Room (Building 12) in Suitland, Maryland, just outside of Washington, DC. To gain access to the materials contained within the NASM Archives, researchers must make appointments for visits. Please call for an appointment as far in advance of your planned visit as possible because space is limited and the reading rooms sometimes close to accommodate Museum functions.

To contact the NASM Archives via e-mail, researchers can use the following address: nasmrefdesk@si.edu. The Web site for the NASM Archives is at <http://www.nasm.si.edu/research/arch/>. The main Archives telephone number is 202-633-2320; its mailing address is as follows:

Archives Division
Smithsonian Institution
P.O. Box 37012
National Air and Space Museum, Room 3100, MRC 322
Washington, DC 20013-7012

SECONDARY SOURCES AND BIBLIOGRAPHIES

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. The following are a few specialized bibliographies available through the NASA History Division at NASA Headquarters:

- 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*. Monograph in Aerospace History No. 1, 1992.
- Launius, Roger D., and J. D. Hunley. *An Annotated Bibliography of the Apollo Program*. Monograph 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 literature is best approached through a computerized retrieval system maintained by NASA's Scientific and Technical Information Branch and by reviewing the following three sources:

- Gull, Cloyd D., 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.
- Hallion, Richard P. *The Literature of Aeronautics, Astronautics, and Air Power*. Office of Air Force History, 1984.
- Pisano, Dominick A., and Cathleen S. Lewis, editors. *Air and Space History: An Annotated Bibliography*. Garland Publishing, 1988.

GENERAL GUIDES

The basic finding aid for all 20th-century U.S. government publications is the *Monthly Catalogue of United States Government Publications*, 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*. This multivolume set is as yet incomplete, but it already covers NASA and the 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, 1959–72) and *Guide to U.S. Government Publications* (annual, 1973–76; irregularly thereafter) are indexed by agency and subject.

LEGISLATIVE DOCUMENTS

Perhaps the most effective source of congressional material is available online through THOMAS. Named for Thomas Jefferson, the third President of the United

States, THOMAS is maintained by the Library of Congress and contains a wealth of information about various bills, treaties, and reports, as well as links to other government resources, including the Library of Congress and committees of both the House of Representatives and the Senate. For more information, visit THOMAS's home page at <http://thomas.loc.gov/>.

The *Congressional Record* (1873 to present) is the basic and most comprehensive paper 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 also 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 that 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 (U.S.C.), 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 U.S.C. 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 in 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 U.S.C. 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 U.S.C. are divided into 50 titles. Many, but not all, of the titles are identical in the two publications. For example, in the U.S.C., 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, which spans multiple chapters; chapter 5 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. Another source of Executive Branch documents is the Public Papers of the Presidents series, published by the Office of the Federal Register, National Archives and Records Administration. This project began in 1957 with the publication of two volumes per year (approximately six months’ worth of material each), containing the President’s papers and speeches issued by the Office of the Press Secretary during the specified time period. Not all Presidents are yet included in this publication series, and some Presidents, such as Franklin D. Roosevelt, were the subject of similar publications before the project began in 1957. Limited volumes (Presidents George H. W. Bush, William “Bill” Clinton, and George W. Bush) are available online through the Government Printing Office at <http://www.gpoaccess.gov/pubpapers/index.html>, but hard copies can be purchased through that office or found at all Federal Depository Libraries. To find the nearest Federal Depository Library, go to <http://www.gpoaccess.gov/libraries.html>. Another source for Public Papers of the Presidents is <http://www.presidency.ucsb.edu/ws/> online.

Other potential sources of useful information in this regard are the Presidential Libraries. There are 12 Presidential Libraries at various locations throughout the United States, each containing a great deal of information, much of which may prove to be invaluable to the researcher. To learn more about these libraries, please visit the National Archives Web site at <http://www.archives.gov/presidential-libraries/>.

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 public business is a formidable challenge even to the most determined researcher. Fortunately, NASA Headquarters and all NASA Centers have on staff records managers willing to help researchers with questions not anticipated by the History Division. 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.¹

Historians will want to examine evidence found in both the official records and in the artificial reference collections maintained in Headquarters and Center history offices. 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 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 “records schedules” approved by the Archivist of the United States (National Archives and Records Administration). The *NASA Records Retention Schedules* (NASA Procedural Requirements [NPR] 1441.1D) list all categories of NASA records and indicate whether they may be destroyed or must be retained; if the latter, for how long; and whether particular categories of records will be transferred to the National Archives. Those transferred to the National Archives 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 a regional Federal Records Center to await their eventual destruction or transfer to National Archives.

1. 36 CFR 1220.14, available online at <http://ecfr.gpoaccess.gov/cgi/t/text?text-idx?c=ecfr&sid=8727740b6a4262aee579af4f35022a67&rgn=div5&view=text&node=36.3.0.10.2.10&idno=36#36.3.0.10.2.10.1.17.1>.

USE OF CURRENT RECORDS

NASA's current files may be examined by bona fide researchers, subject to restrictions imposed by law on the control of security-classified information, proprietary information, Privacy Act data, export-controlled information, and Freedom of Information Act exempted data. The most efficient way for researchers to see such information is to put in a FOIA request once they have determined specifically what they are seeking. The FOIA Guide may be found at <http://www.bq.nasa.gov/pao/FOIA/guide.htm>. 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 upon request.

USE OF RETIRED RECORDS

Retired records fall into two categories: those that have been permanently accessioned by the National Archives and those still in the legal custody of the Agency but stored at a Federal Records Center (FRC). The former have been legally transferred to the National Archives, and, although NASA may assist the researcher in identifying the documents required for each research project, the researcher must make arrangements for access directly with the National Archives. Records still under NASA control but stored in an FRC may be accessed by submitting a FOIA request. A database or finding aid describing NASA collections at regional FRCs is available in the reading room at each FRC. Researchers should be as specific as possible, providing accession and box numbers, along with subjects, when submitting their FOIA requests.

Records of the National Advisory Committee for Aeronautics (NASA's predecessor organization), NASA Headquarters, and Goddard Space Flight Center are stored in Washington facilities. For purposes of administrative control, the records of each government agency are assigned a unique "record group" number; NASA records fall into Record Group 255. These materials now occupy more than 112,000 cubic feet. See <http://www.history.nasa.gov/nara/nara1.html> for a complete description of these records. Each office at NASA Headquarters and at the Centers retires its own records to a regional FRC along with a Standard Form 135, "Records Transmittal and Receipt." Copies of all SF 135s are maintained by NASA records managers. A limited number of SF 135s are maintained in the Headquarters History Division and are open to researchers. One important factor must be kept in mind when examining SF 135s: they are imperfect documents that only provide as much detail as the person retiring the records was willing to supply. For

instance, one SF 135 may provide detailed listings of box contents and another may not.

OFFICIALS' PAPERS

NASA Administrators and Deputy Administrators are presidential appointees. Their records are permanent and mandated by law to go to the National Archives or one of its Presidential Libraries. The official may elect a repository outside the National Archives system with permission from the Archives. Copies of many officials' correspondence, speeches, and other documents have found their way into the Headquarters Historical Reference Collection. Below is a partial list of former officials and other persons of interest, their dates of service, and the name of the repository where their papers are housed.

There are links to the finding aids describing many of these records and personal papers, as well as links to holdings in other libraries, at <http://www.history.nasa.gov/nara/nara1.html>.

- T. Keith Glennan, Administrator, 1958–61—Dwight D. Eisenhower Presidential Library and Case Western Reserve University.
- James E. Webb, Administrator, 1961–68—Harry S. Truman, John F. Kennedy, and Lyndon B. Johnson Presidential Libraries.
- Thomas O. Paine, Administrator, 1968–70—Library of Congress.
- James C. Fletcher, Administrator, 1971–77, 1986–89—University of Utah.
- Robert A. Frosch, Administrator, 1977–81—Jimmy Carter Presidential Library.
- James M. Beggs, Administrator, 1981–85—Ronald Reagan Presidential Library.
- Richard H. Truly, Administrator, 1989–92—NARA, College Park, Maryland.
- Daniel S. Goldin, Administrator, 1992–2001—NARA, College Park, Maryland.
- Hugh L. Dryden, Deputy Administrator, 1958–65—The Johns Hopkins University.
- George M. Low, Deputy Administrator, 1970–76—Rensselaer Polytechnic Institute, Archives and Special Collections.

- Robert C. Seamans, Jr., NASA Associate and Deputy Administrator, 1960–68, and Secretary of the Air Force, 1969–73—Air Force Historical Research Agency.
- Wernher von Braun, leader of the rocket team that developed the Saturn V and former Director of Marshall Space Flight Center, 1960–70—Library of Congress.
- Christopher Kraft, flight director for NASA during the Mercury and Gemini programs and Director of the Manned Spacecraft Center (later Johnson Space Center), 1972–82—Virginia Polytechnic Institute and State University (Virginia Tech), Archives of American Aerospace Exploration.
- John Glenn, astronaut (first American to orbit Earth, 1962) and U.S. Senator, 1975–98—Ohio State University Archives.
- Michael Collins, Apollo 11 astronaut—Virginia Polytechnic Institute and State University, Archives of American Aerospace Exploration.

PART 3:

Sources of NASA History at the Centers

Links to the various NASA history offices at the Field Centers are at <http://history.nasa.gov/centers.html> online.

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 FRCs, it is often better for researchers to visit the FRCs 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:

Glenn E. Bugos, Historian
MS-207-1
Ames Research Center
Moffett Field, CA 94035
650-604-6436

Christian Gelzer, Historian
Dryden Flight Research Center
Building 4839
Edwards, CA 93523
661-276-5290
661-276-3566 (fax)

Anne Power, History POC
Mail Stop 60-3
Glenn Research Center
21000 Brookpark Road
Cleveland, OH 44135
216-433-8715
216-433-5777 (fax)

Barbara J. Thompson, History POC
Code 671
Goddard Space Flight Center
Greenbelt, MD 20771
301-286-3405
301-286-1617 (fax)

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

Erik Conway, Historian
Jet Propulsion Laboratory
Mail Stop 200-108
4800 Oak Grove Drive
Pasadena, CA 91109
818-393-1089
818-393-6024 (fax)

Mark Scroggins, Archivist
Johnson Space Center
Mail Stop GC
2101 NASA Road 1
Houston, TX 77058-3696
281-483-4975

Jennifer Ross-Nazzal, Historian
Johnson Space Center
17047 El Camino Real, #217
Houston, TX 77058
281-486-3942
281-218-6860 (fax)

Elaine Liston, Archivist
Kennedy Space Center
Code Library-E
Kennedy Space Center, FL 32899
321-867-1515
321-867-4534 (fax)

Gail Langevin, History POC
Langley Research Center
Mail Stop 154
Hampton, VA 23681-2199
757-864-8554

Mike Wright, Historian
Marshall Space Flight Center
Mail Stop CN22
Huntsville, AL 35812
256-544-6840
205-544-0007 (fax)

Daphne Alford, History POC
Stennis Space Center
SSC History Office
Building 2105
Stennis Space Center, MS 39529-6000
228-688-2643

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.
- **Glenn Research Center/Lewis Research Center:** Founded in 1941, this Center in Cleveland performs work on both aeronautics and space, with a traditional focus on propulsion research. Materials are located either at the Center itself or at its Plum Brook Station, located on Lake Erie near Sandusky, Ohio.
- **Goddard Space Flight Center:** Researchers interested in space and Earth science should contact the Goddard library for assistance in locating historical materials. Located just outside Washington, DC, Goddard has one of the best Center libraries throughout the federal government. 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 (Caltech). JPL is known for its robotic space programs.
- **Johnson Space Center:** This Center has an extensive and well-organized archive that is, understandably, strongest on the history of human spaceflight. A significant portion of this material is at the University of Houston–Clear Lake.
- **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 in Hampton, Virginia, in 1917, this Center has unparalleled historical materials relating to early aeronautical research and development and more recent space efforts.
- **Marshall Space Flight Center:** This collection has matured over the years into a well-organized set of materials specializing in 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 an installation with an emphasis on practical applications technology. The Center's history office possesses documents related to the Center's history and testing activities.

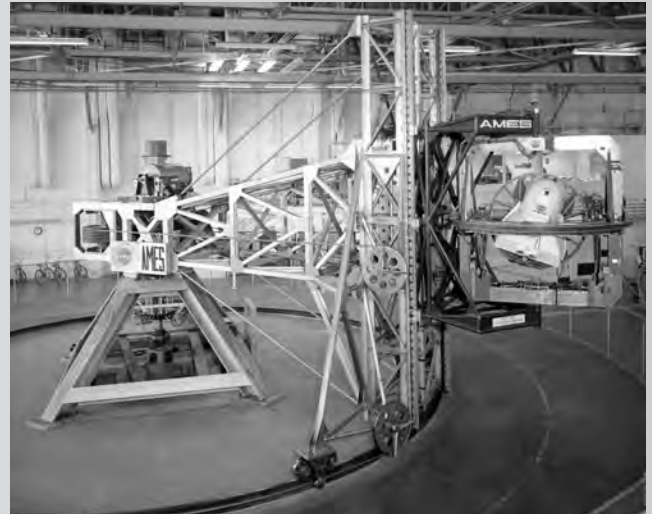
ACCESS POLICIES

Each of the NASA Centers, as well as the NASA Headquarters History Division, has its own access policy. Those interested in visiting should contact the individual Center well in advance to allow time to make any necessary arrangements.

Historical Materials at Ames Research Center

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Mail: NASA Ames History Office, MS 207-1
Moffett Field, CA 94035-1000
Hours of operation: Monday through Friday,
8:30 a.m. to 4:30 p.m. Pacific time
Contact: April Gage, Archivist
Telephone: 650-604-1032
E-mail: history@mail.arc.nasa.gov
Web site: <http://history.arc.nasa.gov/>



The NASA Ames 5-degrees-of-freedom motion simulator in 1962. (NASA image A-29323)

AGENCY RECORDS

Agency records are the collections of official records, as defined in the NASA Procedural Requirements (NPR) 1441.1D, received by the History Office from NASA Ames divisions and codes. The History Office has retained the records in these collections in accordance with the retention schedules outlined in the NPR. Included in this collection are the Public Affairs Office collection of photo files, subject files, and news releases from 1940 through 2001 and the Ames *Astrogram* collection, which contains two copies of every NASA Ames *Astrogram* from 1958 through 2004.

HISTORIES OF AMES RESEARCH FILES

The materials in this collection were gathered to support efforts at gathering narrative histories of NASA Ames Research Center, and its arrangement reflects three written works: the Edwin Hartman book *Adventures in Research: A History of the Ames Research Center, 1940–1965*; materials gathered by Edie Watson in 1977 and 1978 in preparation for an update to Hartman's volume; Elizabeth Muenger's research for *Searching the Horizon: A History of Ames Research Center, 1940–1976*; and draft copies of Glenn Bugos's book *Atmosphere of Freedom*, written for the 60th anniversary of Ames. Other materials in this collection document the research efforts of historians who

wrote articles about various aspects of Ames and its projects, such as the Cosmos/Bion program.

ARCHIVES REFERENCE COLLECTION

This collection is used in answering specific requests for information by NASA officials and the general public and in researching and writing NASA Ames history. The Archives Reference Collection is housed in filing cabinets in the History Office and is organized by subject.

ARTIFACT COLLECTION

This collection contains artifacts related to space exploration and aeronautics. Materials in this collection include items such as instruments, models, and equipment from fields such as aeronautics, information technology, space biology, biotechnology, nanotechnology, thermal protection systems, air traffic management, and human factors research. Other artifacts were used primarily for educational purposes, such as exhibits and displays at NASA Ames Research Center.

PERSONAL PAPERS

The materials in this collection contain the personal papers of several Ames engineers, administrators, and

scientists. The collections include the papers of John W. Boyd (an administrator whose career spans six decades), Robert W. Jackson (administrator of the Pioneer project), Robert Hogan (Pioneer project), James Pollack (senior space research scientist), Carl W. Tusch (Air Force liaison to Ames), Larry A. Manning (mission analysis), and Elliott Levinthal (worked at Stanford University on Viking Lander imaging).

PHOTO COLLECTION

This collection consists primarily of reproductions of photographs taken by the NACA and NASA Ames, from the Center's earliest days to the present. This collection does not generally have original photographs. The original copies of most of the photographs in this collection are maintained by the Ames Documentation Technology Branch (Code J).

MEDIA COLLECTION

This is a growing collection of materials related to Ames that are in a media format other than paper. It includes VHS videocassettes, magnetic reel tapes, DVDs, and CDs.

NASA AMES RECORDS AT NARA-SAN BRUNO

The bulk of Ames's historical archives are not maintained in the History Office, but rather in the NARA Sierra Pacific region. The most complete Ames records at NARA deal with Ames prior to the formation of NASA, and these are a treasure trove of material on aeronautical research and wind tunnel construction in the 1940s and 1950s. Researchers need to contact NARA directly, though they might find it helpful to use finding aids developed by the History Office.

ONLINE ACCESS TO NASA AMES FINDING AIDS

NASA Ames Research Center was among the first of the federal agencies to mark up its finding aids in encoded archival description (EAD), which provides strong search capabilities. Finding aids for processed collections at the NASA Ames History Office are available through the Online Archive of California Web site: <http://www.oac.cdlib.org/institutions/ark:/13030/tf6q2nc0cc>.

Historical Materials at Dryden Flight Research Center

Mail: History Office, Mail Stop 4839
 NASA Dryden Flight Research Center
 P.O. Box 273
 Edwards, CA 93523

Hours of operation: Monday through Friday,
 8:00 a.m. to 4:00 p.m. Pacific time

Contact: Dr. Christian Gelzer, Chief Historian

Telephone/fax: 661-276-5290/661-276-3566

Web site: <http://www.nasa.gov/centers/dryden/history/index.html>

The Space Shuttle Endeavour receives a high-flying salute from its sister Shuttle Columbia, atop NASA's Shuttle Carrier Aircraft, shortly after Endeavour's landing on 12 October 1994 at Edwards Air Force Base, California, at the completion of mission STS-68. (NASA image EC94-42789-5)



NASA Dryden's history dates back to late 1946, when engineers and technicians from the NACA's Langley Memorial Aeronautical Laboratory came to Muroc Army Airfield (now Edwards Air Force Base) in southern California's Mojave Desert to prepare for the first supersonic research flights by the X-1 rocket plane. This work began an era of pioneering research involving numerous experimental jet- and rocket-powered aircraft that were flown to explore the cutting edge of new technologies and flight regimes for the benefit of civil, commercial, and military aerospace efforts.

Since the days of the X-1, Dryden has grown in size and significance and is associated with many important technological milestones in aviation and space access: supersonic and hypersonic flight, digital fly-by-wire control systems, supercritical and forward-swept wings, Apollo Lunar Landing Research Vehicles, wingless lifting bodies, the Space Shuttle, and the X-43A.

Dryden continues to pioneer projects that support NASA's Aeronautics Research Mission Directorate by contributing to revolutionary advances in aeronautics technologies, access to space at reduced cost, and improved safety and security for global civil aviation.

The Dryden History Office has a collection of documents approximating 3,000 linear feet of correspondence, flight reports, technical papers, briefing documents, program logs, and project status reports. The Historical

Reference Collection also includes a considerable number of biographical files on Dryden personnel and oral history interviews. The subjects of these include Center Directors, pilots, engineers, and technicians. There is also a complete collection of the *X-Press*, the Dryden internal newsletter. The Dryden History Office is also responsible for an audiovisual library containing over 2,000 videotapes; much of the collection was transferred from original 16-millimeter film. Additionally, there is a large collection of historic photographs and digital images of various research projects, facilities, and personnel. Many images and some documents and publications are available on the Dryden Web site, and thousands of documents have been cataloged for easy access on a computerized database. Access to the collection is available to qualified researchers by appointment.

The Dryden History Program was established in 1997 to preserve historically relevant materials and to provide people with a means of access to those materials. The Dryden History staff has worked hard to build and maintain a collection of historical documents relevant to Dryden in order to preserve the Center's "corporate memory."

The office serves authors, educators, students, and members of the news media who require historical background information on Dryden projects and achievements. It also provides information to Dryden administrators, project managers, engineers, legal department

staff, security personnel, and others in support of current projects and operations. The staff participates in public outreach by writing and editing articles and books about the Center's historical contributions to aerospace, as well as developing Dryden history exhibits at the Center and for special events.

Mail: History Office
MS 60-3 Glenn Research Center
21000 Brookpark Road
Cleveland, OH 44135

Location: Historical Collection,
Building 60, Room 6

Hours of operation: Monday through Friday,
8:00 a.m. to 4:30 p.m. eastern time

Contact: Anne Power, Center History Officer

Telephone: 216-433-8715

Web site: <http://grchistory.grc.nasa.gov/>

A Mercury astronaut sits in the Multiple Axis Space Test Inertia Facility (MASTIF), developed for Project Mercury to train astronauts in gaining control over a spacecraft that could move in multiple directions at once—pitching, rolling, and yawing all at the same time. (NASA image C1959-52235)



GENERAL INFORMATION

The NASA Glenn Research Center (formerly Lewis Research Center) was founded in 1941 as an NACA research laboratory focused on propulsion. Since that time, the Center has continued to grow and excel in the areas of aeronautics and aerospace propulsion, launch operations, microgravity science, aeronautical safety, environmental improvements, and power systems. As one of the original NACA sites, Glenn has built and continues to build a rich and dynamic history. The History Office at Glenn Research Center is dedicated to the preservation of and access to that history and is the fastest growing history organization in the Agency. In addition to boasting an impressive collection of archival material, the History Office works in conjunction with the Glenn Records Management Office and Imaging Technology Center to provide a complete historical record whenever possible. The historical collection housed at Glenn includes publications; oral histories; facility documentation; photographs; technical drawings and artwork; biographical files; and subject files on programs, projects, organizations, and events. Federal records are stored at Glenn's subsidiary, Plum Brook Station, in Sandusky, Ohio. The Records Management Staff can assist researchers in locating records in storage through the use of their shelf and box lists.

ARCHIVAL COLLECTION

The Glenn Research Center History Office Archives contains material documenting the history of the Center, NASA in general, and aerospace history as it relates to the Center mission. Six hundred cubic feet of material consisting of records of Administrators, buildings and grounds in general and research facilities in particular, organizational development, scientific and technological research programs, events, and staff organizations are augmented by a small professional library and ready reference/biographical file. Record types include office files, publications, scientific and technical research, and audiovisual/multimedia resources, including 150 oral histories.

Subjects of interest in the collection include the following:

- Centaur rocket
- Microgravity
- Nuclear propulsion
- Plum Brook Station
- RL-10 engine
- Rocket Engine Test Facility

- Tribology
- Wind tunnels
- Wind turbines
- Center directories
- Center newsletters

PHOTOGRAPHIC, MOTION PICTURE, AND VIDEO COLLECTION

Glenn Research Center's still photographic collection consists of approximately 315,000 images that document the history of the Center (1941 to present) and Plum Brook Station (1956 to present). These are cataloged chronologically with titles and other basic metadata in a searchable database. Twenty-six thousand of these images are available digitally and can be viewed at <http://grcimagnet.grc.nasa.gov>. The Center also maintains an official portrait collection that includes both a large number of negatives and over 1,100 portraits available digitally.

The NASA Glenn video collection (1986 to present) contains approximately 300 productions [#GRC- . . .] and an equal number of institutional project videos [#WO- . . .]. A few of the topics include microgravity, icing, educational services, and special events. There are also a small, but rapidly expanding, number of multimedia productions and DVDs available. These range from pilot training pieces to documentaries.

The NASA Glenn film collection (1946–89) includes 165 productions [#C- . . .] and 2,200 institutional project films [#MPD- . . .]. It also contains extensive film documentation of the Crash Fire Test Program, as well as Atlas Centaur and Titan Centaur launches.

TECHNICAL LIBRARY COLLECTION

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

Historical Materials at Goddard Space Flight Center (Including Wallops Flight Facility)

Mail: Code 272
 NASA Goddard Space Flight Center
 Greenbelt, MD 20771

Location: Building 21
 Homer E. Newell Memorial Library

Hours of operation: Monday through Friday,
 by appointment
 10:00 a.m. to 3:00 p.m. eastern time

Telephone: 301-286-7218



A GSFC scientist examines the atmospheric satellite Explorer XVII prior to launch. (NASA image G-63-4001)

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 1300
 Wallops Flight Facility
 [part of Goddard Space Flight Center]
 Wallops Island, VA 23337

Location: Building 106

Hours of operation: Monday through Friday,
 by appointment

Contact: Keith Koehler

Telephone: 757-824-1579

The Wallops Flight Facility is organizationally a component of Goddard Space Flight Center but is 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.

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

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Mail: JPL Archives, M/S: 111-113
Jet Propulsion Laboratory
4800 Oak Grove Dr.
Pasadena, CA 91109-8099

Location: Building 111

Hours of operation: Monday through Friday,
7:30 a.m. to 4:45 p.m. Pacific time

Contact: Margo Young, 818-354-3007

Telephone/fax: 818-354-4200/818-393-6752 for
research assistance

E-mail: archives@jpl.nasa.gov

Web site: <http://beacon.jpl.nasa.gov/>

Scientists at JPL work on the 1998 Mars Climate Orbiter, part of NASA's Mars Surveyor Program. (NASA image M98ORBITER)



The Jet Propulsion Laboratory (JPL) is a federally funded research and development facility managed by the California Institute of Technology (Caltech) for NASA.

THE ARCHIVES

The JPL Archives was established in 1989 to document the history of the Laboratory's flight projects, research and development activities, and administrative operations. Archives staff and a portion of the holdings are located at the Lab, while the remaining archival materials are stored off-site. A courier service retrieves and delivers requested material to the Laboratory daily.

HOLDINGS

The primary holdings are the processed collections, the History Collection, oral history interviews and transcripts, and audiovisual materials. They are described on the Beacon Web site at <http://beacon.jpl.nasa.gov>.

The processed collections focus primarily on the Office of the Director and flight projects. The collections are cataloged in the Archives online catalog.

The History Collection is a reference collection first assembled in the 1970s; it contains materials pertaining to the development of the Laboratory from 1936

to the present. Within this collection are materials on Army Ordnance projects such as Corporal and Sergeant; NASA flight projects, including Ranger, Surveyor, and Mariner; other JPL activities; and material generated by organizations other than JPL but relevant to JPL's activities. Indices are available online at <http://beacon.jpl.nasa.gov>. In addition, a hard-copy index is available in the Archives.

The oral history collection contains transcripts of interviews with both JPL retirees and long-time employees about their careers, their involvement with flight projects, their research and development activities, and the evolution of the Laboratory. A new focus of the collection will be to document the evolution of upcoming JPL projects in near-real time. Oral histories will be conducted with top managers of selected projects that are considered to be NASA and JPL's top priorities annually, in order to capture their evolution. Those transcripts that have releases are included in the online catalog and may be viewed on-site.

The audiovisual materials are included in the catalog. They include print negatives, print positives, motion picture film, and videotape. The materials document JPL's projects and research activities, as well as people and events at the Laboratory.

PUBLIC ACCESS

The online catalog is available at <http://beacon.jpl.nasa.gov> and contains extensive descriptions of the collections. Researchers who wish to visit the Archives and use its holdings on-site are required to contact the Archives via e-mail or regular mail at the addresses given above. Researchers will be sent an Application for Access to Archival Material form, which is to be completed and returned for review. It is important to fill out the form fully and provide accurate information, as it will be used to determine access approval. If the visit to the Archives is approved, then the information from the application will be submitted to the JPL Protective Services Office for its approval to visit the Laboratory. Requests for visits from foreign nationals must be submitted at least 20 working days in advance.

Public researchers who wish to carry out their research via e-mail or land mail only must submit a Freedom of Information Act (FOIA) request with the NASA FOIA Officer. See <http://cercla.jpl.nasa.gov/FOIA/>.

FEES FOR REPRODUCTIONS

Photocopy reproductions of paper records and reproductions of JPL images in a variety of photographic formats are available. Contact the Reference Desk at archives@jpl.nasa.gov or call 818-354-4200 for current reproduction fees and method of payment. Prepayment is required for all orders.

- Mail:** NASA Johnson Space Center
Code IRD/Information Resources
Directorate
Houston, TX 77058
- Location:** University of Houston–Clear Lake
Neumann Library
2700 Bay Area Blvd.
Houston, TX 77058
- Hours of operation:** Monday through Friday,
8:30 a.m. to 5:00 p.m. central time
- Contact:** Dr. Jennifer Ross-Nazzal, JSC
Historian; Mark Scroggins, JSC
Archivist; or Shelly Kelly, UHCL
Archivist
- Telephone:** 281-486-3942 (JSC History Office)
281-483-4975 (JSC Archivist)
281-283-3933 (UHCL Archives)
- Web sites:** <http://www.jsc.nasa.gov/history/>
(Johnson Space Center History Portal)
<http://images.jsc.nasa.gov>
(JSC Digital Image Collection)

Overall view of the Mission Operations Control Room in the Mission Control Center, Building 30, Manned Spacecraft Center, showing the flight controllers celebrating the successful conclusion of the Apollo 11 lunar landing mission. (NASA image S-69-40023)



A memorandum of understanding between Johnson Space Center (JSC) and the University of Houston–Clear Lake (UHCL) permits the transfer, on a 10-year renewable loan, of selected historical documents to the UHCL University Archives. UHCL currently administers approximately 2,800 linear feet of JSC historical documents from the early human spaceflight programs.

The UHCL Archives are open to the public and can be contacted from 8:30 a.m. to 5:00 p.m., Monday through Friday, at 281-283-3933. Mail should be addressed to University Archives, Neumann Library, University of Houston–Clear Lake, 2700 Bay Area Blvd., Houston, TX 77058-1098.

The Johnson Space Center Digital Image Collection contains 9,000 NASA press release photos spanning the American human space program from Project Mercury to the STS-79 Shuttle mission. The images are available at <http://images.jsc.nasa.gov>.

The JSC Scientific and Technical Information Center (STIC) also maintains a collection of active historical

documents open only to JSC personnel and contractors. Many of these documents are used on a daily basis and are not ready for retirement to the National Archives. They are not open to the public.

Historical documents from the Mercury and Gemini programs have been retired to the National Archives Southwest Regional Facility in Fort Worth, Texas.

SPECIFIC HOLDINGS

University of Houston–Clear Lake Archives

The JSC History Collection contains materials covering more than 40 years of NASA’s human spaceflight activities. Its holdings include approximately 2,800 linear feet of documents from government, industry, and other sources. The collection is arranged in series by program: 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 were created for quick-reference purposes. The JSC Oral History Collection contains oral histories and interviews preserved on audio media with some transcripts. The collection contains interviews conducted during the early 1960s through the end of the Apollo era (1975), as well as oral history sessions conducted starting in 1997 by the ongoing JSC Oral History Project.

The Mercury and Gemini series formerly housed in the JSC History Collection have been retired to the National Archives Southwest Regional Facility in Fort Worth, Texas. For contact information, please see <http://www.archives.gov/southwest>.

FINDING AIDS

Two electronic databases provide searchable guides to the JSC History Collection at UHCL. The History Search Index allows users to search in the title, author, interviewer, program, date, originator, and comments fields for a document at the item level in the Apollo and Oral History Series. Some access to documents in the early chronological sub-series of the Apollo-Soyuz Test Project, Skylab, and Shuttle series are also available. Management Instructions and the JSC newspaper, the *Roundup*, housed in the General Reference series, are also indexed to the item level.

The Archive Search Index allows users to search in the title field for folder-level descriptions of the main sub-series within the Skylab, ASTP, Shuttle, Station, General Reference, and Center Series.

Both indices are available to the general public via the JSC History Portal Web site, located at <http://www.jsc.nasa.gov/history> under the link JSC History Collection.

Traditional written guides to each of the series described below are also available for browsing in the UHCL Archives.

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

AVAILABLE MATERIALS

Apollo Series (340 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 (1945–78).

- Memoranda of George M. Low, Manned Spacecraft Center (MSC), Apollo spacecraft program manager for the period after the AS-204 fire (1967–69).
- Transcripts of 327 oral history interviews (1965–72).
- Office of Manned Space Flight Management Council meetings, minutes, and related documents.
- Apollo lunar science chronological files (1958–82).
- Science documents for individual Apollo missions.
- Manned Space Flight Experiments Board meeting minutes (1965–68, 1970–72).
- Space Sciences Steering Committee subcommittee meeting minutes (1961–68).
- Lunar Receiving Laboratory chronological files (1964–73).
- Lunar surface operations planning meeting minutes (1967–72).
- MSC Science and Applications Directorate staff meetings (1961–63, 1968–73).
- MSC Apollo Spacecraft Program Office weekly reports (1962–66, 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 on-board 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 (1965–69).

- Lunar Module documents, including operations and systems handbooks, photographs, flight readiness reviews, and configuration control board minutes.
- Apollo Mission Planning Task Force documents (1964–66).
- Contractor studies on Apollo logistic support systems (1964–66).
- Apollo program quarterly status reports, numbers 1 through 25 (1962–68).
- 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 (1960–68).
- Apollo feasibility study proposals and contractor reports (1960–61).
- Grumman reports, including the Lunar Module extension study for the Apollo Extension System Office (1963–66).
- Apollo guidance, navigation, and control documents, including Massachusetts Institute of Technology (MIT), AC Delco, and Grumman materials.
- Lunar Module and Command and Service Module weight and mass properties reports (1962–69).

Skylab Series (201 Feet)

- Applications Program Offices (eventually redesignated Skylab in 1970), as well as some Manned Orbital Laboratory materials and files of the Space Station Study Office (1962–65).
- Mission directives and management documents, including inter-Center 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 (1967–72).
- Handbooks, data books, and checklists outlining operational procedures and experiment and subsystem data (1970–73).
- North American Rockwell, Boeing, Martin Marietta, and Bellcomm documents, including a large group of North American Rockwell progress reports on the Command and Service Module (1962–74).
- Office of Manned Space Flight Management Council meeting minutes and presentation materials (1968–73).
- 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 (1968–73).
- Configuration Control Board meeting minutes (1970–73).
- Program manager's files from the office of Kenneth S. Kleinknecht (1970–72, 1974).
- General subject files covering such diverse topics as the Crew Health Stabilization Program and the Skylab orbital debris problem (1967–74).
- Experiment documents, including correspondence, meeting minutes, reviews, checklists, and acceptance data packages for the Apollo Telescope Mount (ATM), as well as biomedical, Earth resources, and Earth observations investigations (1965–74).
- Skylab news briefings and public affairs publications, including transcripts and press kits (1971–77).
- Correspondence files, including letters, memoranda, meeting minutes, and notes originating at NASA Headquarters, JSC, and other Field Centers, arranged chronologically by mail code (1966–73).
- Contractor correspondence files, primarily from North American Rockwell, Martin Marietta, and McDonnell Douglas, arranged chronologically (1968–73).
- Post-Apollo planning documents, including materials from the Apollo Extension System and Apollo

- Transcripts and tapes from 77 oral history interviews.
- Flight director's handover notes and Flight Management Team meeting minutes (1973–74).
- Air-to-ground and on-board voice communications transcripts (1973–74).
- Mission-related documents, including flight plans, mission reports, and mission rules (1972–74, 1979).
- Skylab Experience Bulletins and “lessons learned” documents describing the performance of flight crews, flight equipment, and hardware (1973–75).

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

- Correspondence files, including letters and memoranda filed chronologically (1973–77).
- Files of clippings and articles from American and Russian newspapers and magazines, including some technical translations (1970–76).
- 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 (1974–76).
- Working group documents, including materials generated by American and Soviet personnel as they negotiated the technical specifications for the ASTP mission (1971–75).
- Transcripts of oral history interviews (1974–76).
- Air-to-ground, on-board voice, and U.S. and USSR Mission Control communications transcripts (1975).
- Photographs, including those taken at joint meetings held in Moscow and Houston (1971–75).
- Experiment documents, including proposals, development materials, and program management files.
- ASTP 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 data books, flight plans, mission requirements documents, and crew activities plans (1974–75).
- North American Rockwell documents consisting largely of materials on the development of the ASTP docking module (1971–74).
- Crew training and joint activities tapes, some in Russian (1973–76).
- Joint meetings documents, including reports, drawings, articles, and audiotapes (1971–75).

Space Shuttle Series (981 Feet)

- Chronological files, including correspondence, memoranda, and early Space Shuttle development documents (1957–84).
- MSC/JSC reports and presentation materials, filed chronologically (1968–89).
- 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 (1970–88).
- Goddard Space Flight Center/Payload Planning Working Group documents (1972–73).
- Rockwell documents, including proposals, study reports, contract reports, and related materials (1965–89).
- Payload documents, including files generated by the Shuttle Payload Integration Office and Payloads Interface Engineering Office (1973–85).
- 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 (1970–86).
- Engineering Systems Integration Group meeting minutes (1977–81).
- Space Transportation System (STS) Operations Office, presentation files of Glynn Lunney (1977–81).

- Spacelab documents, including correspondence, preliminary and critical design reviews, and experiment planning documents (1971–83).
- National STS Program Office and Orbiter and Government Furnished Equipment (GFE) Project Office weekly activity reports (1970–90).
- Approach and landing test documents, including operations plans, final reports, and press releases (1973–78).
- 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 Thompson Ramo Wooldridge (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 (1972–82).
- Phase B and Phase C/D Requests for Proposal (RFP), Source Evaluation Board documents, viewgraphs, and contracts.
- Aerodynamic Design Databooks (1972–81).
- Correspondence and subject files of Rodney Rose generated in the Mission Support Office and during his term as assistant director for the Space Shuttle (1975–84).
- Shuttle/Salyut talks, including agenda and meeting notes (1976–78).
- Shuttle avionics study reports generated by various NASA contractors (1968–75).
- Transcript and tapes of oral history interviews (1983–85).
- 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 (1974–80).
- Abort and Separation Panel meeting minutes (1973–76).
- Radioisotope Thermoelectric Generator (RTG) documents, including safety analysis reports for the Galileo and Ulysses missions (1976–88).
- Shuttle Carrier Aircraft documents, including Boeing materials related to the 747 modification contract (1974–76).
- Space Shuttle Program Office presentation files, arranged chronologically (1969–88).
- Orbiter technical status reviews, including correspondence, meeting minutes, and presentation materials (1981–86).
- Shuttle Mass Properties and Weight Reports (1974–90).

Space Station Series (195 Linear Feet)

- Chronological files, including correspondence, meeting minutes, and reports from early space station concept studies (1952–82).
- Space Station Program Office and Space Station Project Office correspondence and presentation files (1984–91).
- McDonnell Douglas documents, including reports from the Manned Orbiting Laboratory Evaluation Study, the Space Station Phase B Definition Study (1969–72), and the Space Station Systems Analysis Study.
- Rockwell documents, including reports from the Space Station Phase B Definition Study (1969–72), 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 (1985–86).
- European Space Agency (ESA) 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 (1986–91).
- NASA Space Station Program definition and requirements documents (1988–91).
- Description and requirements documents governing Space Station technical and management activities at JSC (1989–91).
- Preliminary Design Review Plans (1989–91).
- 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 (1989–91).
- Space Station *Freedom* External Maintenance Task Team report (1990).
- Files of Thomas K. Mattingly, including materials related to Shuttle flight crew issues (1972–78).
- Materials related to advanced program planning, manned Mars mission studies, and proposed planetary missions (1953, 1959–89).
- Docking and rendezvous documents, including materials related to hardware development and mission techniques (1960–88).
- Spacesuit documents, including materials related to the development of the Mercury, Gemini, Apollo, and Space Shuttle generations of suits (1959–81).
- Earth Resources Program Office documents, including correspondence, meeting minutes, weekly activity reports, and project reports (1965–81).
- Modular Integrated Urban Systems/Minus Integration and Subsystems Test (MIUS/MIST) Project files, including correspondence and reports related to the integrated utility systems study (1971–81).
- Files of Clifford Charlesworth, including reading files and activity reports of the Space Operations Directorate (1982–87).
- Human spaceflight schedules outlining program and hardware milestones for the Gemini and Apollo programs (1962–71).
- Food systems files, including correspondence and reports related to nutrition standards, hardware, experiment management, and menu development for in-flight eating (1967–78).

Center Series (603 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 (1978–91).
- Headquarters correspondence, arranged chronologically by office of origin (1973–81).
- 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 (1965–79).
- Reading files of Dr. Maxime Faget (1958–81) and Dr. Christopher Kraft (1963–70).
- 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 (1971–81).
- Paul Purser logs to Dr. Robert Gilruth outlining daily activities of the Space Task Group and Manned Spacecraft Center in its earliest years (1956–64).
- MSC senior staff meeting minutes (1961–68, 1970–76).

- Organizational files, including organizational charts, studies, and functional statements for MSC/JSC (1958–86).
- 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 (1976–81).
- Files of Dr. Robert Parker, including materials related to his position as backup crewmember 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.
- Files of Michael Reynolds, Chief Contamination Control Officer for the Apollo Lunar Receiving Laboratory (1969–74). Dr. Reynolds also worked on the Crew Health Care System (CHeCS) for the Space Shuttle and the Space Station (1986–96).
- NASA and MSC/JSC Management Instructions and Announcements (1959–92).
- *Space News Roundup* (JSC internal newspaper) (1961–92).
- “Space Flight Justification and the Role of Man in Space,” including articles and publications arguing both the pros and the cons of the space program and the relative merits of human versus robotic exploration (1960–89).
- JSC, NASA Headquarters, and NASA Field Center telephone directories (1959–92).
- General history files, formerly a ready reference subject file, containing files about various programs, Field Centers, contractors, and administrative and astronaut biographies, as well as speeches, articles, and papers.

ORAL HISTORY HOLDINGS

The JSC Oral History Collection consists of more than 1,000 interviews covering all aspects of NASA human spaceflight. The collection is arranged in seven series: Gemini, Apollo, Skylab, Apollo-Soyuz Test Project, Shuttle, Shuttle/*Mir* Phase I, and Center. Reel-to-reel tapes, cassette tapes, and videotapes were used to record the interviews. Compact discs were introduced in the late 1990s for preservation. An inventory to the collection can be accessed by using the History Search Index. All of the audio media and transcripts are located at the University of Houston–Clear Lake archives.

JSC ORAL HISTORY COLLECTION

The Gemini Series consists of 83 interviews available on audio CD. They were originally recorded on audio reel and are considered “tape rescues,” meaning that they have been transferred to audio CD format for accessibility and preservation (1966–70).

The Apollo Series consists of 480 interviews or other audio items available in a variety of media including audio reels, audiocassettes, audio CDs, and paper transcripts. The Apollo series can be further broken down into subseries:

1. **Apollo Miscellaneous:** Forty-four cassettes or audio reels dating from 1963 to 1989. Many of the cassettes are not dated and appear to have been recorded from events or productions such

General Reference Series (200 Linear Feet)

- NASA Special Publications, including the Aeronautics and Astronautics series and books in the History Series, Congressional authorizations and appropriations, testimony, and briefing materials (1950–83, 1986–91); also, NASA semiannual reports to Congress (1959–70).
- President’s Reports to Congress on U.S. Aeronautics and Space Activities (1959–70, 1972–87, 1989–90).
- *Current News* clippings from major national newspapers (1964–91).

as radio interviews, television broadcasts, and awards ceremonies.

2. **Apollo History Interviews:** Interviews conducted with Apollo engineers, contractors, and administrators dating from 1966 to 1976 (bulk 1966–72). These interviews consist of audio reels, paper transcripts, and audio CD “tape rescues.” Because some of the audiotapes were recycled, some interviews exist only in paper format.
3. **Apollo Spacecraft Interviews:** Interviews conducted with Apollo engineers, contractors, and administrators dating from 1964 to 1986 (bulk 1964–73). These audio reels, paper transcripts, and audio CD “tape rescues” sometimes overlap with the Apollo history interviews. Because some of the audiotapes were recycled, some interviews exist only in paper format.
4. **Before This Decade Is Out:** Fifty-five transcripts from interviews recorded between 1969 and 1991 that were used in the publication *“Before This Decade Is Out . . .” Personal Reflections on the Apollo Program*, edited by Glen Swanson, 1999.
5. **Stages to Saturn:** Forty-nine audio CDs containing interviews conducted by Roger Bilstein in support of Marshall Space Flight Center’s Saturn history project under contract. The interviews pertain to the development of the Saturn rockets used in the Apollo lunar landing program. The recording quality reflects the informal nature of the interview series.

The Skylab Series contains 52 interviews with astronauts and scientists about the Skylab program. These interviews are available primarily on audiocassette; however, there are also two audio reels, four audio CDs, and one transcript (1970–79, 1999).

The Apollo-Soyuz Test Project Series consists of 21 interviews about the ASTP, available on audiocassettes and audio reels. Two interviews have been transferred to audio CD (1974–76).

The Shuttle Series holds 42 interviews about early Space Shuttle development. Interviews were recorded on cassettes, and most have been transcribed. Regarding interviews planned but never conducted, there are folders containing only notes about the potential interviewee (1981–86).

The Shuttle/*Mir* Phase I Series contains 71 interviews with Americans and Russians. The interviews were conducted between 1998 and 1999 to develop the publication

Shuttle-Mir: The United States and Russia Share History’s Highest Stage, by Clay Morgan; they are housed in both transcript and audio CD format.

The Center Series consists of over 835 entries in the History database. Interviews and other audio items can be broken down into subseries:

1. **Aviatrix Pioneers:** Six interviews conducted by the JSC Oral History Project team between 1999 and 2000 with women who were pioneers in the field of aviation.
2. **Ballistic Missile Development Pioneers:** Three interviews conducted by the JSC Oral History Project Team in 1999 with key personnel from the Department of Defense who worked on the Ballistic Missile project.
3. **Center Miscellaneous:** Seventy-two items on audiocassettes, audio reels, or audio CD from 1962 to 1997 (bulk 1962–71).
4. **Great Moments in Space:** Thirty-six interviews conducted as research toward a potential publication. The interviews, recorded on microcassettes, are transcribed. The recordings are generally poor in quality and clarity.
5. **Herstory:** Fifteen interviews funded by the NASA Headquarters History Division and conducted with women who contributed to the development and/or influenced the history of NASA and human spaceflight.
6. **Johnson Space Center Oral History Project (1996 to present):** Over 300 interviews conducted by the Oral History Project Office. Interviews are delivered on audio CDs and as transcripts. PDF versions of the transcripts are made available online via the JSC History Portal.
7. **Merrifield:** One hundred nine interviews conducted by former JSC Historian Robert Merrifield from 1967 to 1971 as research toward a potential publication. The interviews were recorded on audio reel, and many were transcribed. Approximately one-third have been transferred to audio CD.
8. **Our Future in Space:** Eleven interviews, not dated, recorded and available on VHS videocassette.
9. **PBS Nova Lone Wolf Productions:** Fifty-five transcripts from a series of interviews conducted by Lone Wolf Productions in 1998 with NASA

astronauts, engineers, and scientists for the PBS Nova series *To the Moon*. These transcripts were donated by Lone Wolf Productions for reference material only. Special citation required for citing from this material.

10. **Southwest Texas State University (SWTSU):** Sixty-one interviews conducted between 1999 and 2001 by students at SWTSU, now known as Texas State University-San Marcos. Transcripts and audio CDs are available for all interviews. Audiocassettes exist for interviews conducted in 1999 and 2001.
11. **Texas Aerospace Scholars Speakers:** Four VHS videocassettes of speakers recorded in 2001.
12. **Video:** Thirty presentations and interviews (various subjects) are available on VHS videocassette dating from 1974 to 2001.

Mail: Kennedy Space Center
Library Archives, Library-E
Kennedy Space Center, FL 32899

Location: Kennedy Space Center Headquarters
Building, Room 1533

Hours of operation: Monday through Friday,
7:30 a.m. to 4:00 p.m. eastern time

Contact: Elaine E. Liston, Archivist
Gregg Buckingham, NASA History
Representative

Telephone/fax: 321-867-1515/321-867-4534

Web site: <http://www.nasa.gov/centers/kennedy/about/history/index.html>

Image of the Space Shuttle Columbia in the hours prior to its 1981 launch on STS-1. (NASA image 81PC-0136)



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 over 3 million pages of documents and more than 55,000 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 robotic and crewed vehicles through the most current Space Shuttle flights. The holdings are accessed through more than 150 guides, lists, and, increasingly, an online database.

The Archives prepares the annual publication *Chronology of KSC and KSC-related Events*. Chronologies have been published for the years 1976 to 2005 and are available from the following Web site: <http://www-lib.ksc.nasa.gov/lib/public/archives/chronology.html>. The Archives exhibits its holdings on a regular basis. A collection of reference books is available for researchers. Although research and reference service is available, written inquiries are preferred.

ACCESS TO THE KSC LIBRARY ARCHIVES

Kennedy Space Center is a restricted government installation; access to all its facilities is granted by prior clearance, per KNPR 1600.1. 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. KSC Archives will not accept responsibility for authorizing visits by foreign nationals.

Available Materials

Apollo Era, 1966–72 (3½ Feet)

The guide to Apollo-era documents comprises 10 series, an arrangement of 245 folders that contain more than 53 pages of description. The bulk of the collection is made up of Daily Status Reports dating from 3 January 1966 through 30 November 1972; these make up 83 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 missions 13 through 16.

Apollo 204 Accident, 1966–67 (2½ Feet)

The Apollo 204 Accident Guide is a description of documents relating to the accident that took place on 27 January 1967 at 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 published transcripts of 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 27 January through 2 February 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, 1958–60 (1 Foot)

These documents were published by the U.S. Army Ordnance Missile Command from 15 May 1958 through 6 July 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 two archives boxes.

Wernher von Braun, 1959–70 (⅔ 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 two archives boxes.

Congressional Series, 1949–75 (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, 1962–67 (1½ 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.

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 40 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.

Department of Defense, 1958–70 (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 Tape Collection, 1958–70 (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 seven series and 63 AVX 90-minute cassettes. 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 Lieutenant Colonel 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 1 on 31 January 1958; the Explorer 1 10th anniversary celebration held on 31 January 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, 1962–65 (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 the title of the document.

KSC Design Engineering Project Status Reports, 1974–76 (1/2 Foot)

These reports (TR-1033) are arranged chronologically.

Launch Umbilical Tower (LUT), 1960–71 (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, 1960–67 (1 Foot)

This material contains historical monographs and chronologies of Marshall Space Flight Center (MSFC). 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, 1958–65 (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, 1959–2005 (3 Feet)

This material contains news releases and fact sheets from MSFC, 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, 1962–75, 2002–05 (electronic)
- Manned Spacecraft Center, 1963–64
- Marshall Space Flight Center, 1961–65
- NASA Headquarters, 1959–76

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 MSFC 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, 1961–64 (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, hazard criteria, transportation requirements, graphs, drawings, blueprints, and memoranda.

Oral History Interviews

The KSC Oral History Program (KOHP) was initiated to capture the history of individuals who served the nation's space program at Kennedy Space Center. Categories include America's human spaceflights and many of its payloads on expendable launch vehicles. Themed interviews include discussions with Center Directors and Launch Directors, as well as conversations about the anniversary of the first launch from Cape Canaveral, Bumper 8. The subjects of a large portion of the completed interviews include former KSC senior management officials. This is an ongoing effort, and new interviews will be added as they are produced. A Web site has been established at the following address: <http://www.ksc.nasa.gov/kscoralhistory/>.

Photograph Collection

The approximately 55,000 pictures that make up the photograph holdings of the KSC Library Archives are described by means of catalog cards, according to subject. The period covered by the collection is approximately 41 years. Photographs received since 1993 have been described and can be accessed through an online database.

Press Kits, 1963–2003 (6 Feet)

This material is divided into human and robotic 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 and cover the period from 1981 to 2003.

Project Gemini, 1962–66 (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, 1961–72 (12 Feet)

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

Service Structure, 1958–69 (1 Foot)

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

Space Shuttle (18½ 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, 1967–68 (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 Present

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 12 December 1962, approximately six months after the formal establishment of the Launch Operations Center on 1 July 1962. Between 13 December 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, 1959–73 (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 (1944–95) was the cofounder 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

clipping 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
- Hyparcos
- 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 and 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 2,460 photographs arranged in 11 series categories. The 116 folders are housed in 9 archive boxes located on Ranges 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, DC. 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 Present (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 1961–62.

Unmanned Launches, 1948–76 (9½ Feet)

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

Vanguard-Martin Collection, 1949–59 (3 Feet)

The documents that comprise the Vanguard-Martin Collection include reports, studies, and analyses of pre-launch 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, 1962–73 (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.

Historical Materials at Langley Research Center

Mail: Langley Research Center
Mail Stop 154
Hampton, VA 23681-2199
Contact: Gail Langevin
Telephone: 757-864-8554
Technical Library, 757-864-2356
Fax, 757-864-2375
E-mail: g.s.langevin@larc.nasa.gov

Section of aircraft tested for drag in Langley wind tunnel. (NASA image 1974-L-02730)



GENERAL INFORMATION

Langley Research Center (LaRC), in Hampton, Virginia, 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 historical aerospace 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, and transcripts of interviews with key personnel, as well as scale models of aircraft and spacecraft and other significant artifacts. Besides Langley Research Center'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 (PARC) until 1959, when Wallops became an independent NASA Field Installation. (It is now organizationally part of NASA's Goddard Space Flight Center.)

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 an 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 an 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 both about his identity as a member of the NACA “corporation” and about his approach, as an engineer, to historical understanding. Furthermore, since 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 non-specialist. 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-644946, 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 the NASA Langley Research Center, 1960–68. 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 of 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 [Department of Defense] 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 Lab
- 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
- 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. During his 93 years, Fred Weick merged his life in the 20th 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, includes his book and journal collection and awards. He organized and indexed the collection himself. Examples of subjects include the following:

- 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 longtime 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 manager at NACA Headquarters, among other accomplishments.

The Zimmerman papers are aeronautics-oriented, emphasizing the areas of low-speed and Vertical Take-Off and Landing (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 take-offs and landings, and was flown by Charles Lindbergh. Derivatives conceived by Zimmerman would have had true VTOL capability. The XF5U-1, a Navy Short Take-Off and Landing (STOL) fighter prototype, was completely developed but never flew. The collection is housed in three lateral file drawers.

FLOYD L. THOMPSON TECHNICAL LIBRARY

What also makes Langley Research Center an outstanding location for research in aeronautical history is the Floyd L. Thompson Technical Library. The library holds 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. Furthermore, the library also preserves the complete NACA publications series of 16,263 reports in 1,057 bound and 1,818 unbound volumes. These include the following: 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 appendix 7 of Alex Roland, *Model Research: The National Advisory Committee for Aeronautics, 1915–1958* [Washington, DC: NASA SP-4103, 1985].)

What gives the library its unparalleled value as a place for historical research is the fact 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, author, 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 members of the public who are able to gain access to the Center, which is closed to the general public.

It is advisable to inquire about the availability of specific materials and services before visiting the library. Many of its databases are available for browsing online.

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 56 transcribed interviews, spanning the timeframe 1960–90, with various key researchers and managers.

Historical Materials at Marshall Space Flight Center

Mail: History Office, GS20
 Marshall Space Flight Center, AL 35812
Location: Building 4200, Room G30
Hours of operation: Monday through Friday,
 8:00 a.m. to 4:00 p.m. central time
Contact: Mike Wright, Historian
Telephone/fax: 256-544-6840/256-544-0007
E-mail: mike.wright@msfc.nasa.gov
Web site: <http://history.msfc.nasa.gov/>



Saturn V rockets being prepared for testing. (NASA image 6870792)

Marshall Space Flight Center (MSFC) contains the following holdings:

FOLDER COLLECTIONS

Correspondence	225 Cubic Feet
Photographs	38 Cubic Feet
University of Alabama in Huntsville Historians' File	23 Cubic Feet

SHELF COLLECTIONS

Technical Documentation/Reports	92 Linear Feet
Photo Notebooks	30 Linear Feet
Library of Congress	17 Linear Feet
Center Directors' Scrapbooks	12 Linear Feet
35-millimeter Slides	8 Linear Feet
CD/DVDs	4 Linear Feet
Phone Books	4 Linear Feet

MICROFICHE COLLECTION

General Reference	4,608
Shuttle Reference	4,000
Space Station Reference	4,000

AUDIO/VIDEO COLLECTION

VHS Tapes	1,000
Audio Recordings	150

ELECTRONIC COLLECTION

PDF Format	5,000
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OVERSIZE COLLECTION

Oversize Drawers	15
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VISITS TO THE MARSHALL CENTER ARCHIVES

MSFC provides an archive primarily to serve the needs of NASA managers and employees who need historical data to fulfill their work requirements. Due to resource limitations, decisions to allow researchers from outside the government to use the archives must be made on a case-by-case basis. Graduate, postgraduate, and professional researchers are requested to notify the archives by postal mail or e-mail 10 business days in advance of a planned visit. Foreign nationals and representatives of foreign governments must strictly follow all federal regulations regarding visits to U.S. government installations. They must also initiate their request to visit at least 20 business days prior to their anticipated visit. All communications should contain the following information about the researcher and proposed research project: a) name of the researcher, b) current address, c) telephone number, d) description of research topic, e) purpose of research, f) date of visit, and g) citizenship or naturalization. All research visits must be concluded in two business days or less. All records in the archives are considered internal documents and must be reviewed and cleared for external release before they can be distributed to the public. Once the records have been cleared for external release, the archives will notify the researcher.

Mail: IA10/History
Stennis Space Center, MS 39529-6000
Location: Building 2105
Hours of operation: Monday through Friday,
8:00 a.m. to 4:30 p.m. central time
Contact: Daphne Alford
Telephone: 228-688-2643
Web site: <http://www.nasa.gov/centers/stennis/about/history/history.html>

The S-II stage of the Saturn V rocket is hoisted onto the A-2 test stand in 1967 at the Mississippi Test Facility, now Stennis Space Center. This was the second stage of the 364-foot-tall Moon rocket. (NASA image 67-701-C)



GENERAL INFORMATION

The goals of the History Office are to present and properly document the rich history of Stennis Space Center. Documents are archived in a computerized, searchable database. 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 accommodates more than 300 shelf feet of historical documentation. The following is an abbreviated description of the materials available in the Stennis history collection.

HISTORICAL ARCHIVES COLLECTION

This collection consists of alphabetized categories that include various types of records, such as the following:

Director’s Office Records

This collection includes all the information originating in the Stennis Space Center Director’s Office, which may include speeches, memoranda, letters, reports, and pre-

sentations, as well as information on each of the Directors, such as biographies and photographs.

Government Records

This collection consists of information pertaining to federal, state, and local government issues as they relate to Stennis Space Center.

Public Affairs Records

This collection consists of any material generated by a public affairs office, whether at Stennis Space Center, NASA Headquarters, another Center, a university, or another organization. Press kits, fact sheets, public affairs plans, management materials, and agendas for visits are included in this section. Visitor’s Services, Teachers’ Resource Center, and Visitor Center activities will also be included in the collection.

PRESS RELEASE ARCHIVES

This collection contains press releases generated by a public affairs office, whether at Stennis Space Center, NASA Headquarters, another Center, a university, or another organization.

LAGNIAPPE/OASIS ARCHIVES COLLECTION

This collection contains issues of Stennis Space Center's in-house newsletter, currently called the *Lagniappe*. From February 2004 until August 2005, the newsletter was called the *Oasis*.

LIBRARY ARCHIVES COLLECTION

This collection consists of NASA publications, general publications, technical publications, references, newspaper articles, and commercial general publications.

MEDIA ARCHIVES COLLECTION

This collection consists of several materials, including the Video History Files, the History Photographic Files, and the Oral History/Audio Files. In terms of Oral Histories, the History Office, in partnership with the University of Southern Mississippi in Hattiesburg, Mississippi, transcribes and binds oral history interviews—the stories of people who tell about their past and present, sharing their wisdom to enlighten the next generation. The interviews are transcribed, bound in a hardback cover, and filed with the audiocassette, CD, and/or videotape if available.

