

# NASA History and the Challenge of Keeping the Contemporary Past

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## *Introduction*

T. KEITH GLENNAN, the first administrator of the National Aeronautics and Space Administration (NASA), perhaps did not fully appreciate what he was doing when he established the NASA history program in 1959.<sup>1</sup> Glennan,

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1. The career of Glennan has been discussed in Roger D. Launius, "Introduction" to *The Birth of NASA: The Diary of T. Keith Glennan*, ed. J. D. Hunley (Washington, D.C.: NASA Special Publication-4105, 1993), ix-xxxii.

who had been president of the Case Institute of Technology in Cleveland, Ohio, had a respected historian of technology on faculty, Melvin R. Kranzberg, and Kranzberg suggested to him that NASA would be making a lot of history and that efforts should be made to document its activities properly.<sup>2</sup> Kranzberg traced for Glennan how the federal government had long taken steps to preserve the record of its activities—for example, the documentary history projects of the nineteenth century such as the *American State Papers* series and the massive War Department series, *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies*.

Kranzberg also pointed out the Executive Order of President Franklin D. Roosevelt, which had been periodically reemphasized, that federal agencies should record objectively the history of their activities in order to assess policy and departmental effectiveness. Supporting this, a directive by General Dwight D. Eisenhower, then Chief of Staff of the Army, helped to support the history programs of the armed services during and after World War II—programs that grew rapidly, employed many academically trained historians, and published notable works of history such as the multivolume U.S. Army in World War II series, better known as the Green Book series.<sup>3</sup>

Kranzberg also noted that the National Aeronautics and Space Act of 1958 that created NASA contained a specific mandate for the agency to “provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof.”<sup>4</sup> He added, perhaps serendipitously, that thoughtful study of NASA history could help agency executives accomplish the missions assigned to the agency. Understanding NASA’s origins and development, he added, would aid in comprehending its present situation and help illuminate possible future directions. Equally important, advancing the historical knowledge of the development of flight was an important part of NASA’s mission, and a properly managed history program would be invaluable in such a task.<sup>5</sup>

Glennan accepted Kranzberg’s recommendations and in 1959 established the NASA History Office, attached to the Office of the Administrator

2. Kranzberg had been one of the founders of the Society for the History of Technology and is the author of numerous seminal studies in the field.

3. There are now more than seventy volumes in this series, arranged in subseries as follows: *The War Department*, *The Army Air Forces*, *The Army Ground Forces*, *The Army Service Forces*, *The Western Hemisphere*, *The War in the Pacific*, *The Mediterranean Theater of Operations*, *The European Theater of Operations*, *The Middle Eastern Theater*, *The China-Burma-India Theater*, *The Technical Services*, *Special Studies*, and *Pictorial Record*. On the origins of the Army History Program, see Kent Roberts, *The Historian and the Army* (New Brunswick, N.J.: Rutgers University Press, 1954), esp. 7–9.

4. “National Aeronautics and Space Act of 1958,” Public Law 85-568, as reprinted in *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Vol. I, Organizing for Exploration*, John M. Logsdon, gen. ed. (Washington, D.C.: NASA SP-4407, 1995), 334–45, quote from p. 337.

5. This was the argument, incidentally, of Richard E. Neustadt and Ernest R. May, *Thinking in Time: The Uses of History for Decision Makers* (New York: Free Press, 1986).

at NASA Headquarters in Washington, D.C., and hired Eugene M. Emme to serve as the chief historian. It was appropriate that Glennan turned to Emme, for he was an alumnus of the U.S. Air Force history program and had a breadth of experience in historical work outside of the academy. He had been a pilot during World War II and had served in a variety of posts in the air force history program, including on the faculty of the Air University, the service's principal officer training school at Maxwell Air Force Base, in Montgomery, Alabama.<sup>6</sup> Emme directed the NASA history function until his retirement in the mid-1970s, in the process placing an indelible imprint upon the agency's program.

### *The Early Years of NASA History*

Emme implemented at NASA a history program modeled on the one with which he was familiar from the armed services. Most important, he took action to ensure that the grand strategic ideas of Glennan and Kranzberg found tangible expression in efforts to ensure that the documentary foundation of the agency's history was captured and preserved for current and future generations, to stimulate historical research in areas of inquiry that might broaden perceptions of the modern age of aerospace research and development, and to disseminate the results of NASA's historical documentation and research activities. The result was a multi-level effort to collect, preserve, and communicate historical knowledge about the agency.

To accomplish this goal, Emme started to build a significant collection of reference materials organized by subject for use by both NASA personnel and the public. He envisioned that this material would be used to answer specific requests for information by NASA officials and for researching and writing agency history. Emme's vision took a great step forward in 1967 when he hired Lee D. Saegesser as the first full-time archivist in the agency. From a starting point of four filing cabinets of historical materials, by the time of his retirement in 1997 Saegesser had made the NASA Historical Reference Collection into a significant resource of more than 2,000 linear feet of topically organized materials that no historian interested in aerospace history could ignore.

The visitors' log at the NASA History Office in Washington, D.C., is ample evidence of the thousands of people inside and outside the agency who have used these materials in their daily work and in their historical and policy studies. As numerous authors have graciously acknowledged, NASA's history program has provided the indispensable starting point for research

6. Eugene M. Emme, *A History of Space Flight* (New York: Holt, Rinehart, and Winston, 1965), 2.

in the history of federally sponsored aerospace research and development. From school youngsters preparing class reports to busy NASA managers, from congressional staffers and foreign journalists to dissertation writers and seasoned historians, all kinds of researchers have come to rely on NASA's agencywide history program for help in their work. This was an important aspect of Emme's early efforts on behalf of NASA history.

Since Emme's time, the NASA Historical Reference Collection has evolved into an important source of information, requiring better physical control than previously. In the 1980s, the office began the development of an electronic finding aid. More recently, the NASA History Office embarked on a long-term effort to scan and create in an electronic format a database of historically significant one-of-a-kind documents currently maintained on paper only in the NASA Historical Reference Collection. This project accomplishes several tasks:

- (1) it preserves unique records of the agency that are critical to understanding the agency and its historical development;
- (2) it allows the disposition of paper originals to the National Archives where they belong in keeping with the archive's mission of maintaining a record of the activities of the federal government;
- (3) it frees space within the NASA History Office for its continued collection of the historically significant documents of the agency; and
- (4) it makes these historical materials available to a much wider body of researchers from NASA, other government agencies, the academic community, and the public.

The original materials, then, are to be transferred to the National Archives and Records Administration for permanent accessioning into its collections. This effort is now underway, but will not be completed for several more years.

Emme also established the precedent of offering historical perspective to NASA executive leaders to help inform their decisionmaking, but not so much to participate in it. These staff support activities took the form of answering information requests on a timely basis, researching and writing short historical papers on issues of significance in the agency, and delivering briefings and lectures to agency personnel on contemporary concerns that could be illuminated with historical information. All successors to Emme—Monte D. Wright, Sylvia D. Fries, and I—have enthusiastically supported this endeavor as well. A notable example of this type of staff support occurred in January 1986 when the *Challenger* exploded. Sylvia Fries prepared within a matter of hours a detailed historical paper for the NASA administrator on how the agency had handled previous disasters. The information helped shocked administrators regain their composure and rise

to the occasion, and at the same time considerably boosted the standing of the agency's historians.

But the task of providing "real-time" historical perspective to senior officials has a price. All those who have served as historical staff seek to hold these tasks in creative balance, equalizing the demands for information with the limited resources available to accomplish them. This has not always been possible, and the unfortunate outcome is that success in providing timely historical information of value to NASA officials most assuredly begets more requests until the deluge of requests could not be fulfilled on either the time schedule or in the detail required because of limited history resources. While this has been a decidedly difficult issue to manage, it is nevertheless a problem that the agency's historical staff would rather tackle than to be classed as an irrelevant NASA organization.

In addition, Emme began a book publication program modeled on the well-respected histories produced by the armed services about their experiences in World War II. Those works were marked by well-defined and quite restricted parameters. For instance, in the army Green Book series there were volumes on individual campaigns and in some cases battles, as well as on specific organizations—the Signal Corps, Ordnance, etc.—and on theater operations and war planning and theater defense. All of these were marked by the highest levels of research in both classified and open primary source documents. Even if one must also look hard to find a thesis in some of them and they are too often written in a deadpan tone, they are almost documentary in comprehensiveness and absolutely reliable as to names, events, and the like. They were also big books, sometimes as long as 1,000 pages. Their documentary nature ensured that they were not often attractive to academic historians in and of themselves, but always they provided grist for other historians in the fashioning of interpretive structures. Emme began sponsoring the research and writing of a wide range of scholarly works on NASA history similar to those produced by the military services, especially programmatic histories of NASA efforts. For instance, just three years after the program ended, in 1966 Emme published *This New Ocean: A History of Project Mercury*, written by three skilled historians, Loyd S. Swenson, Jr., James M. Grimwood, and Charles C. Alexander.<sup>7</sup> This official history of the first American human space flight program has stood the test of time very well, but it and most of the others sponsored by Emme were overwhelmingly exhaustive project histories with essentially the same strengths and weaknesses of the World War II service histories. Not to criticize these pathmarking efforts, since the era of Emme's leadership successor NASA chief historians have tried to broaden the subject matter and to free the interpretive parameters of the office's earlier projects.

7. Loyd S. Swenson, Jr., James M. Grimwood, and Charles C. Alexander, *This New Ocean: A History of Project Mercury* (Washington, D.C.: NASA SP-4201, 1966), reprint edition, 1998.

One area where Emme did depart from the military history programs was in the use of contract historians instead of in-house talent to work on individual book projects. In so doing he enlisted the support of scholars both from academia and from among the first generation of public historians. This was a common approach for NASA as a whole, so it was an easy decision for Emme, for during the 1960s somewhere between 80 and 90 percent of NASA's overall budget went for contracts to purchase goods and services from the private sector.<sup>8</sup> What he did not know when he started the effort was that it would prove to be a very effective means of harnessing diverse historical talent and institutional resources not already within NASA. Emme and his successors have been able to contract with historians in individual specialties on a project-by-project basis.<sup>9</sup> It has also been an excellent jumping-off point for young historians just out of graduate school to undertake a NASA historical project before moving on to another position. The list of superb scholars who have written NASA histories at one point in their careers, therefore, is large.<sup>10</sup>

The NASA History Office has attempted to conduct these three aspects of its mission (reference materials collection, staff support, and historical research and writing) as a balanced program since 1959. Administrator James E. Webb (1961–1968) was an active user and supporter, and other senior-level NASA managers often asked the office to provide information and context for their present-day concerns.<sup>11</sup> In addition, widespread public interest in the early human space flight 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, 1970s, and 1980s.

Throughout the program's history, with the exception of a limited number of space science histories, the lion's share of NASA's historical publications have focused on the human space flight program. The professional

8. Sylvia K. Kraemer, "Organizing for Exploration," in *Exploring the Unknown*, gen. ed. Logsdon, 613–15.

9. As examples of scholars from other fields who worked for a time in NASA history: Syracuse University political scientist W. Henry Lambricht wrote a biography of NASA administrator James E. Webb; Rand Corp. management analyst Alan J. Levine wrote a history of NASA management during its first decade; University of California–Irvine historian of science Karl Hufbauer published a prize-winning study of solar science since Galileo; University of Houston historian Loyd S. Swenson wrote histories of Mercury and Apollo; and American University political scientist Howard E. McCurdy has written histories of the Space Station decision, the evolution of NASA organizational culture, and space and the American imagination.

10. For example, Charles C. Alexander moved on to Ohio University, where he has enjoyed an exceptionally productive career; James E. Hansen, who wrote two volumes on the history of the Langley Research Center, is professor and former department chair at Auburn University; Richard P. Hallion, who wrote a history of Dryden Flight Research Center, is the current Chief of Air Force History; and Linda Neuman Ezell, who collaborated on two project histories and completed several other NASA History Series publications on her own, is a preservation specialist at the National Air and Space Museum.

11. The standard work on Webb is W. Henry Lambricht, *Powering Apollo: James E. Webb of NASA*, "New Series in NASA History" (Baltimore, Md.: Johns Hopkins University Press, 1995).

credibility of these publications has been consistently high because NASA has made good use of its History Advisory Committee, and because the chief historian has taken great care to see that manuscripts for publication received thorough peer and technical review to assure accuracy and objectivity. At the same time, there has long been a recognition that a broader approach to studying NASA history must be undertaken. This has led the office since the 1980s to support a much wider range of scholarly activities than at any time in the past.

### *Evolution of the NASA History Publications Program*

The hallmark of the NASA history program has long been the preparation of solid, well-researched works on the history of the U.S. civil space program. This aspect of the program represents 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. NASA does not intend these publications to be definitive accounts; nor has their original designation as official histories ever implied bureaucratic censorship or constraint of individual authors. Rather, NASA history publications occasionally stimulate controversy both inside and outside the agency.

The list of published works put out by the NASA History Office includes books written by historians officially employed by NASA, as well as books prepared by historians working under contract to the agency, sometimes by individuals outside official NASA channels, and occasionally by other NASA personnel. Books published as part of the NASA History Series have typically appeared in the Special Publications (SP-4000) series issued by the agency through the Government Printing Office. These have been classified in one of several major categories. They are distributed through an aggressive outreach program sponsored by the agency, made available in libraries and research centers, and reviewed in major historical journals.

The NASA History Series has published significant historical works in five broad categories, organized by special publication numbers:

- *Reference Works, SP-4000*: 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*: By far the largest number of works has appeared in this category, relating to the various

aeronautical and space efforts undertaken by NASA throughout its history.

- *Center Histories, SP-4300*: Books in this category describe 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 aeronautics and space flight, and the evolution of aerospace capability as it relates to the agency.

Since the publication of the first book in the NASA History Series in 1963, more than seventy volumes have been issued. The History Office continues to publish in this series at a rate of three or four volumes per year.

In selecting subjects for historical research and book-length documentation, the NASA History Office has attempted to fulfill the needs of the agency, to anticipate questions most likely to be of historical interest, and to provide balanced coverage of NASA's programs in aerospace science and technology. Many projects are initiated with the encouragement of, and jointly sponsored by, individual NASA program offices or centers.<sup>12</sup> Occasionally a project will be suggested to NASA by an outside researcher; such projects receive the same careful consideration and peer evaluation as those proposed from inside the agency. Of course, all of NASA's history projects depend on the availability both of qualified historians to carry them out and of funding.

During more than thirty years of historical scholarship, NASA's history program has produced well-documented, professionally recognized histories of NASA's Mercury, Gemini, Apollo, Apollo-Soyuz, and Skylab programs.<sup>13</sup> Space science has been treated in NASA-sponsored histories of the

12. This creates for the chief historian the challenge of ensuring that significant NASA efforts that do not have the funding support of a project manager are not ignored simply because there is no patron to support a history. This is a difficulty not to be dismissed lightly; a case in point is the fact that there has been no interest from the Space Shuttle Project Office, despite repeated attempts to support a history of this effort, the largest single agency mission since Apollo.

13. See, for example, James M. Grimwood, *Project Mercury: A Chronology* (Washington, D.C.: NASA SP-4001, 1963); James M. Grimwood and Barton C. Hacker with Peter J. Vorzimmer, *Project Gemini Technology and Operations: A Chronology* (Washington, D.C.: NASA SP-4002, 1969); Mae Mills Link, *Space Medicine in Project Mercury* (Washington, D.C.: NASA SP-4003, 1965); Ivan D. Ertel and Mary Louise Morse, *The Apollo Spacecraft: A Chronology, Volume I, Through November 7, 1962* (Washington, D.C.: NASA SP-4009, 1969); Mary Louise Morse and Jean Kernahan Bays, *The Apollo Spacecraft: A Chronology, Volume II, November 8, 1962–September 30, 1964* (Washington, D.C.: NASA SP-4009, 1973); Courtney G. Brooks and Ivan D. Ertel, *The Apollo Spacecraft: A Chronology, Volume III, October 1, 1964–January 20, 1966* (Washington, D.C.: NASA SP-4009, 1973); Ivan D. Ertel and Roland W. Newkirk with Courtney G. Brooks, *The Apollo Spacecraft: A Chronology, Volume IV, January 21, 1966–July 13, 1974* (Washington, D.C.: NASA SP-4009, 1978); Roland W. Newkirk and Ivan D. Ertel with Courtney G. Brooks, *Skylab: A Chronology* (Washington, D.C.: NASA SP-4011, 1977); Arnold S. Levine, *Managing NASA in the Apollo Era* (Washing-



Vanguard, Ranger, and Viking projects; a personal history by a former NASA chief scientist; a study of the development of policies associated with the selection of space science experiments; a book on biomedicine in the space program; a prize-winning study of planetary radar astronomy; a history of satellite communication; and a history of early rocket propulsion.<sup>14</sup> Meanwhile, aeronautical research has been emphasized in a history of NASA's predecessor organization, the National Advisory Committee for Aeronautics, and a historical account of high-speed flight research at NASA's Dryden Flight Research Center and institutional histories of the Langley, Ames, and Lewis Research Centers.<sup>15</sup>

Much of the recent historical research and writing of the program has been oriented toward more thematic or interpretive historical works. This is especially true of the New Series in NASA History at Johns Hopkins University Press originated in 1987 by then NASA Chief Historian Sylvia D.

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ton, D.C.: NASA SP-4102, 1982); Swenson, Grimwood, and Alexander, *This New Ocean*; Barton C. Hacker and James M. Grimwood, *On Shoulders of Titans: A History of Project Gemini* (Washington, D.C.: NASA SP-4203, 1977); Charles D. Benson and William Barnaby Faherty, *Moonport: A History of Apollo Launch Facilities and Operations* (Washington, D.C.: NASA SP-4204, 1978); Courtney G. Brooks, James M. Grimwood, and Loyd S. Swenson, Jr., *Chariots for Apollo: A History of Manned Lunar Spacecraft* (Washington, D.C.: NASA SP-4205, 1979); Roger E. Bilstein, *Stages to Saturn: A Technological History of the Apollo/Saturn Launch Vehicles* (Washington, D.C.: NASA SP-4206, 1980); W. David Compton and Charles D. Benson, *Living and Working in Space: A History of Skylab* (Washington, D.C.: NASA SP-4208, 1983); Edward Clinton Ezell and Linda Neuman Ezell, *The Partnership: A History of the Apollo-Soyuz Test Project* (Washington, D.C.: NASA SP-4209, 1978); W. David Compton, *Where No Man Has Gone Before: A History of Apollo Lunar Exploration Missions* (Washington, D.C.: NASA SP-4214, 1989).

14. See Constance McL. Green and Milton Lomask, *Vanguard: A History* (Washington, D.C.: NASA SP-4202, 1970); R. Cargill Hall, *Lunar Impact: A History of Project Ranger* (Washington, D.C.: NASA SP-4210, 1977); Homer E. Newell, *Beyond the Atmosphere: Early Years of Space Science* (Washington, D.C.: NASA SP-4211, 1980); Edward Clinton Ezell and Linda Neuman Ezell, *On Mars: Exploration of the Red Planet, 1958-1978* (Washington, D.C.: NASA SP-4212, 1984); John A. Pitts, *The Human Factor: Biomedicine in the Manned Space Program to 1980* (Washington, D.C.: NASA SP-4213, 1985); John E. Naugle, *First Among Equals: The Selection of NASA Space Science Experiments* (Washington, D.C.: NASA SP-4215, 1991); Andrew J. Butrica, ed., *Beyond the Ionosphere: Fifty Years of Satellite Communication* (Washington, D.C.: NASA SP-4217, 1997); Andrew J. Butrica, *To See the Unseen: A History of Planetary Radar Astronomy* (Washington, D.C.: NASA SP-4218, 1996).

15. Alex Roland, *Model Research: The National Advisory Committee for Aeronautics, 1915-1958* (Washington, D.C.: NASA SP-4103, 1985); Lane E. Wallace, *Airborne Trailblazer: Two Decades with NASA Langley's Boeing 737 Flying Laboratory* (Washington, D.C.: NASA SP-4216, 1994); R. Dale Reed, with Darlene Lister, *Wingless Flight: The Lifting Body Story* (Washington, D.C.: NASA SP-4220, 1997); Edwin P. Hartman, *Adventures in Research: A History of Ames Research Center, 1940-1965* (Washington, D.C.: NASA SP-4302, 1970); Richard P. Hallion, *On the Frontier: Flight Research at Dryden, 1946-1981* (Washington, D.C.: NASA SP-4303, 1984); Elizabeth A. Muenger, *Searching the Horizon: A History of Ames Research Center, 1940-1976* (Washington, D.C.: NASA SP-4304, 1985); James R. Hansen, *Engineer in Charge: A History of the Langley Aeronautical Laboratory, 1917-1958* (Washington, D.C.: NASA SP-4305, 1987); Virginia P. Dawson, *Engines and Innovation: Lewis Laboratory and American Propulsion Technology* (Washington, D.C.: NASA SP-4306, 1991); Lane E. Wallace, *Flights of Discovery: 50 Years at the NASA Dryden Flight Research Center* (Washington, D.C.: NASA SP-4309, 1996).

Fries. It was created as a means of increasing public awareness of the history of NASA. Five titles have appeared to date, with several others in production.<sup>16</sup> Emblematic of this effort is *Inside NASA: High Technology and Organizational Change in the U.S. Space Program*, by Howard E. McCurdy. Published in the series in early 1993, it sought to identify and trace the evolution of the organizational culture of NASA from its founding and expansion during the Apollo era through the changes in the 1970s and 1980s. Far from being court history, this book analyzes the reasons for what the author calls the "decline of NASA's technical culture" in the post-Apollo era, shedding light on the agency's overall difficulties in recent years. Because of the book's provocative thesis and use by NASA management as a means of better understanding the agency, it received the 1993 Henry Adams Prize awarded by the Society for History in the Federal Government for the best interpretive history sponsored by a federal agency. In addition, McCurdy has been asked to testify before the House Committee on Government Operations about NASA's organizational culture, and his expertise has been tapped by the agency to help reform its bureaucracy.

Understanding the culture, processes, and critical environment of successful research and development institutions is a predominant theme in several current NASA history projects. These include an exploratory study on the evolution of NASA/industry relations, a documentary history of the U.S. civil space program that through essays and documents highlights many of the important themes of NASA's history, an analysis of the relationship between popular culture and public policy about space flight, a comparison of the development of space flight technology in the United States and Germany to 1945, presidential leadership in the setting of space policy, and an examination of the political decision to build the Space Shuttle.<sup>17</sup>

The NASA History Office is also beginning to emphasize more thoroughly the scientific aspects of the agency's mission. A project currently being sponsored is aimed at recording the history of planetary geosciences, accentuating the period since the creation of NASA but also analyzing earlier research efforts. The office also sponsored a history of planetary astronomy that is both broadly based and interpretive in orientation.<sup>18</sup> It is also involved in completing histories of the NASA research into particles

16. These include Henry S. F. Cooper, Jr., *Before Lift-Off: The Making of a Space Shuttle Crew* (1987); Howard E. McCurdy, *The Space Station Decision: Incremental Politics and Technological Choice* (1990); Karl Hufbauer, *Exploring the Sun: Solar Science Since Galileo* (1991); Howard E. McCurdy, *Inside NASA: High Technology and Organizational Change in the U.S. Space Program* (1993); Lambright, *Powering Apollo* (1995).

17. Those that have appeared are, Logsdon, gen. ed., *Exploring the Unknown*, 3 vols. (Washington, D.C.: NASA SP-4407, 1995-1998) Vol. I, *Organizing for Exploration*, Vol. II, *External Relationships*, and Vol. III, *Using Space*; Howard E. McCurdy, *Space and the American Imagination* (Washington, D.C.: Smithsonian Institution Press, 1997); Roger D. Launius and Howard E. McCurdy, eds., *Spaceflight and the Myth of Presidential Leadership* (Urbana: University of Illinois Press, 1997).

18. Ronald A. Schorn, *Planetary Astronomy: From Ancient Times to the Third Millennium* (College Station: Texas A&M University Press, 1998).

and fields in space; the Galileo spacecraft mission to Jupiter; the Deep Space Network; and Project Voyager.

One of the quite apparent researching and writing areas deserving greater concentration has been the development of aeronautical research and development. As the NASA personnel working in aeronautics are wont to assert, the first “A” in NASA stands for “aeronautics.” Even so, there has been a dearth of historical work in this arena. Since coming to NASA in 1990, I have made a concerted effort to enhance this aspect of NASA’s sponsored historical research. We have made a few strides in this direction. For instance, we have sponsored a collection of essays on the various research and development projects that received the Collier Trophy from the National Aeronautic Association, many of which were explicitly aeronautical as opposed to space projects.<sup>19</sup> We have also started work on histories of the X-15 program, the D-558 research aircraft program, a study of flight research, a study of the NACA’s role in supporting the development of commercial aeronautical technology, a project history of the X-33 which has a serious aeronautics component, and a documentary history of the evolution of aerodynamics research and development. All of these are useful works, and we anticipate that with the 2003 centennial of flight, efforts to document a century of flight will become an even higher priority early in the next century. Accordingly, we have taken action to create a series of syntheses on various aspects of the development of flight to be published by Texas A&M University Press.<sup>20</sup>

Over the years, the office has also begun or continued the publication of several other works that are not a part of either the formal NASA History Series or the New Series in NASA History. For example, in 1992 the office began publication of a Monographs in Aerospace History series, designed to provide a wide variety of short studies relative to the history of aeronautics and space. This series’ publications are intended to be tightly focused in terms of subject, relatively short in length, and reproduced in an inexpensive format to allow timely and broad dissemination to researchers in aerospace history. Twelve titles have appeared thus far, and additional ones are in preparation.<sup>21</sup> In addition, the office is responsible for the annual publica-

19. Pamela E. Mack, ed., *From Engineering Science to Big Science: The NACA and NASA Collier Trophy Research Project Winners* (Washington, D.C.: NASA SP-4219, 1998).

20. For the Centennial of Flight series, Texas A&M University Press is inviting proposals for relatively small, general-interest paperbacks on the history of flight to be published between 2001 and 2003 for the centennial of the first powered flight by the Wright brothers on December 17, 1903. The series editor, Roger D. Launius, welcomes proposals for syntheses of major aspects of the development of flight.

21. The monographs, all published in Washington, D.C., include Roger D. Launius and Aaron K. Gillette, comps., *The Space Shuttle: An Annotated Bibliography* (Monographs in Aerospace History, No. 1, 1992); Roger D. Launius and J. D. Hunley, comps., *An Annotated Bibliography of the Apollo Program* (Monographs in Aerospace History, No. 2, 1994); Roger D. Launius, *Apollo: A Retrospective Analysis* (Monographs in Aerospace History, No. 3, 1994); James R. Hansen, *Enchanted Rendezvous: John C. Houbolt and the Genesis of the*

tion, the *Aeronautics and Space Report of the President*, which is required by law to be submitted to Congress. It contains a wealth of data, for it includes not only NASA information but also capsule summaries of aerospace activities taking place in other federal agencies.

There have also been some NASA-sponsored historical books published by other presses as appropriate to ensure the widest possible readership among those who might have an interest in the subject.<sup>22</sup> NASA has also published as opportunity availed itself a series of translations, many of them from Russian, of classic studies about space.<sup>23</sup> Also appearing occasionally have been technical memoranda, historical notes, and contractor reports. All of these publications have been designed essentially for internal NASA use as a means of enhancing agency personnel's knowledge and use of history in their current work. They have emphasized monographic treatments of important subjects.

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*Lunar-Orbit Rendezvous Concept* (Monographs in Aerospace History, No. 4, 1995); Michael H. Gorn, *Hugh L. Dryden's Career in Aviation and Space* (Monographs in Aerospace History, No. 5, 1996); Sheryll Goecke Powers, *Women in Aeronautical Engineering at the Dryden Flight Research Center, 1946-1996* (Monographs in Aerospace History, No. 6, 1997); David S. F. Portree and Robert C. Treviño, comps., *Walking to Olympus: A Chronology of Extravehicular Activity (EVA)* (Monographs in Aerospace History, No. 7, 1997); John M. Logsdon, moderator, *Legislative Origins of the National Aeronautics and Space Act of 1958: Proceedings of an Oral History Workshop* (Monographs in Aerospace History, No. 8, 1998); Judy A. Rumerman, comp., *NASA Human Space Flight: A Record of Achievement, 1961-1998* (Monographs in Aerospace History, No. 9, 1998); David S. F. Portree, *NASA's Origins and the Dawn of the Space Age* (Monographs in Aerospace History, No. 10, 1998); John M. Logsdon, *Together in Orbit: The Origins of International Cooperation in the Space Station Program* (Monographs in Aerospace History, No. 11, 1998); and W. Hewitt Phillips, *A Journey in Aeronautical Research: A Career at NASA Langley Research Center* (Monographs in Aerospace History, No. 12, 1998).

22. Some of these recent works have included Robert W. Smith, *The Space Telescope: A Study of NASA, Science, Technology, and Politics* (Cambridge, England: Cambridge University Press, 1989); Martin J. Collins and Sylvia D. Fries, eds., *A Spacefaring Nation: Perspectives on American Space History and Policy* (Washington, D.C.: Smithsonian Institution Press, 1991); Martin J. Collins and Sylvia K. Kraemer, eds., *Space: Discovery and Exploration* (Washington, D.C.: Hugh Lauter Levin Associates, Inc., for the Smithsonian Institution, 1993); Roger D. Launius, *NASA: A History of the U.S. Civil Space Program* (Malabar, Fla.: Robert E. Krieger, Inc., 1994); Roger D. Launius, ed., *Organizing for the Use of Space: Historical Perspectives on a Persistent Issue* (San Diego, Calif.: Univelt, Inc., American Astronautical Society History Series, Vol. 18, 1995); J. D. Hunley, ed., *History of Rocketry and Astronautics: Proceedings of the Twenty-fourth History Symposia of the International Academy of Astronautics* (San Diego, Calif.: Univelt, Inc., American Astronautical Society History Series, Vol. 19, 1997); J. D. Hunley, ed., *History of Rocketry and Astronautics: Proceedings of the Twenty-fifth History Symposia of the International Academy of Astronautics* (San Diego: Univelt, Inc., American Astronautical Society History Series, Vol. 20, 1997); Launius and McCurdy, eds., *Spaceflight and the Myth of Presidential Leadership*; McCurdy, *Space and the American Imagination*; Roger D. Launius, *Frontiers of Space Exploration*, "Critical Events in the Twentieth Century Series" (Westport, Conn.: Greenwood Press, 1998).

23. The most recent of these is Hermann Noordung, *The Problem of Space Travel: The Rocket Motor*, ed. Ernst Stuhlinger and J. D. Hunley, with Jennifer Garland (Washington, D.C.: NASA SP-4026, 1995).

### *NASA History on the Internet*

In the last five years, the NASA History Office has become increasingly involved in World Wide Web activities. Its home page on the Web is <http://www.nasa.gov/hqpao/History/history.html>. The History Office now has one of the most extensive presences on the Internet of any NASA organization, and one of the largest of any historical entity anywhere. It is also one of the most popular NASA sites, with an average of more than 800 hits on the page each day, or some 292,000 a year. This has created a three-fold challenge that we did not anticipate when we started developing the first Web presence in 1994.

First, there is the overarching task of conceptualizing what to present in this manner. Our approach has been two-pronged here, placing on-line several of the classic works originally published in the NASA History Series and creating special on-line exhibits on certain topics of importance in aerospace history. An example of the first approach has been such books as *This New Ocean*, long out of print but still much in demand, and examples of the second include special exhibits on the fiftieth anniversary of the first supersonic flight of the X-1 by Chuck Yeager, the fortieth anniversary of Sputnik, and the Apollo Lunar Surface Journal, which presents the transmissions of all communications from the Moon during Project Apollo as well as a wealth of additional information and commentary.

The second challenge is the enormous investment of resources required to get appropriate materials into digital form and then to create hypertext mark-up language (HTML) pages. NASA history has benefited from the volunteer work of an excellent group of space enthusiasts who are willing to help with this formatting, and without this assistance there would not be nearly as much NASA history on the World Wide Web as presently.

Finally, since I believe that one of the critical issues with the Internet is that too much of the information available on it has no provenance and its veracity may therefore be challenged, we wanted to ensure that the NASA History Office was identified as the responsible organization for all of our pages. This has ensured that we have received all manner of e-mail requests for additional information. As a public agency, we take seriously responding to all inquiries, so this has heightened the workload of the office in ways that we did not expect. New procedures have had to be developed to respond to these inquiries, including a system for tracking requests, a timeline for making responses, the use of generic responses to general questions whenever possible, and a tracking system for the time spent working on public inquiries.

### *Other Activities*

As another means of disseminating knowledge about NASA's aerospace activities, the History Office has periodically sponsored symposia and sessions at other professional conferences. Unlike many of the symposia sponsored by other federal history programs, these have not taken an

internalist perspective on the subject, but have sought to engage the wider historical discipline and to speak to audiences not usually concerned with aerospace history. For example, in March 1993, the office co-sponsored a two-day symposium at American University, Washington, D.C., on Presidential Leadership, Congress, and the U.S. Space Program that involved several senior presidential, rather than aerospace, scholars—among them, Michael Beschloss, Robert Dallek, Fred I. Greenstein, Robert H. Ferrell, and Joan Hoff—and led to the publication of an anthology in 1997.<sup>24</sup> The intent was to study the nature and effectiveness of presidential leadership in shaping public policy and to trace its evolution over time, in this instance using space policy as the test case.

More recently, in the fall of 1997, in cooperation with the National Air and Space Museum of the Smithsonian Institution, the Space Policy Institute of George Washington University, the Kennan Institute for Advanced Russian Studies of the Woodrow Wilson Center for International Scholars, and the D.C. Space Grant Consortium, the NASA History Office co-sponsored a well-received conference that attracted much media attention, *Reconsidering Sputnik: 40 Years Since the Soviet Satellite*. Involving more than 150 participants, featured speakers included Walter A. McDougall, professor of history at the University of Pennsylvania and author of the Pulitzer Prize winning book, *...the Heavens and the Earth: A Political History of the Space Age* (New York: Basic Books, 1986); Sergei Khrushchev, son of the former Soviet premier, aerospace engineer in his own right, and now professor at Brown University; Roald Sagdeev, former Soviet space scientist and present director of the East-West Center at the University of Maryland; John A. Simpson, University of Chicago space scientist who was involved in the early space program; Eilene Galloway, one of the authors of the National Aeronautics and Space Act of 1958; and twenty-six academic presenters. Based on the success of the symposium, we are proceeding with publication of some of the papers originally delivered at the symposium.

The office also has organized on a routine basis sessions taking place at the AHA, the Organization of American Historians (OAH), the History of Science Society, the Society for History in the Federal Government, the Society for the History of Technology, the American Institute for Aeronautics and Astronautics, and the American Astronautical Society annual meetings. As an example of the type of work being presented at those organizations, "Eisenhower and Sputnik: Reconsiderations of a Cold War Crisis" was a session held at the 1995 annual meeting of the OAH. The story of Dwight D. Eisenhower and the Sputnik crisis of 1957 is that of a reluctant participant in a highly public program of research and development which had all of the earmarks of a race, but which the participant himself resolutely defined as a non-race. It is in part a story of technological competition, but

24. Launius and McCurdy, *Spaceflight and the Myth of Presidential Leadership*.

in larger part it is a story of political competition—partisan national competition between a popular president and a congressionally based coalition of members of the opposite party and Cold War international competition between the United States and the Soviet Union. While the major contours of that story had been retold many times, the revisionist perspectives expressed about Eisenhower in recent years, and especially the availability of new documentary materials—many of which had been highly classified as part of Cold War security concerns—offered an opportunity to reconsider and in many instances to reinterpret the major themes of the crisis.

In 1984 then chief historian Sylvia D. Fries created with the AHA an annual Fellowship in Aerospace History, funded by the NASA History Division, as a means of enhancing scholarly study in the field. Modeled on similar fellowship programs administered by the National Academy of Sciences and other organizations, the AHA aerospace history fellowship program is now more than fifteen years old, and it has succeeded admirably in its principal objectives of broadening research and writing in the field. It has been conducted since its inception by the AHA and NASA in association with the Society for the History of Technology, the History of Science Society, and the Economic History Association, and allows competition for both pre- and postdoctoral research in any area of aerospace history. The fellowship provides funding of \$30,000 for one year, enabling fellows to pursue projects unfettered by other demands on their time.

Collectively, the work sponsored through this AHA fellowship represents what amounts to a major move toward a “New Aerospace History.” Like the “New Western History” or the “New Social History,” it aims at a significant transformation in the larger field. Specifically, the “New Aerospace History” is committed to relating the subject to the larger issues of society, politics, and culture, taking a much more contextually sophisticated view than previously held. In the past, most aerospace historians held a fascination with the machinery, which had been largely anthropomorphized and often seen as magical. This “New Aerospace History” moves beyond a fetish for the artifact to emphasize the broader role of the technological system including not just the vehicle but also the other components that make up the aerospace climate, as an integral part of the human experience.

Indicative of the diversity of the work being undertaken under the aegis of the fellowship, the 1997–1998 fellow was Margaret A. Weitekamp, a Ph.D. candidate in American history at Cornell University, who focused on thirteen women astronaut trainees in 1960 to examine gender in aerospace history. The 1998–1999 fellow, Hugh G. Slotten, takes on an entirely different but equally important aspect of aerospace history, the development of public policy relative to satellite communications in the Kennedy administration. From the *Challenger* accident to the development of operations research in the military aerospace community, from the role of human-machine systems in space (cyborgs) to gender roles in aerospace history, the AHA

fellowship program has been an important vehicle for stimulating serious research into the specialty.

### *Challenges*

The tone of this essay has been relatively upbeat, and in large measure that is appropriate because of the overall success of the NASA history program since its inception. Yet there are numerous challenges and concerns that federal historians in general, and certainly those involved in NASA history, should recognize. Unfortunately, what might be done to overcome them cannot be reduced to a simple set of “do’s and don’ts.” Nonetheless, there are three major areas that I believe deserve discussion.

First, there is always a tension that exists in any organization about whether or not to expend resources for the expansion of historical knowledge when the primary function of that organization is neither educational nor historical. This ensures that a history staff in such an organization must overcome periodic financial and bureaucratic threats to its welfare. This has certainly been true at NASA over the years, where some individuals—perhaps even some in senior leadership positions—have questioned the validity of expenditures for the history program as not contributing to the core missions of the agency. There is never any one satisfactory manner of dealing with these challenges, and the experience at NASA has been that the funding available for historical work has expanded and contracted depending on the fortunes of the agency in the budgetary process, the priorities of senior officials, and the like. There does not seem to be any way of eliminating these cycles, only of minimizing them, through excellent productivity, strong results, and timely support.

In the case of NASA, however, at no time has the agency’s leadership made a decision that NASA should have no history program whatsoever. They have uniformly affirmed that NASA makes dramatic history—certainly more so than agencies like the General Services Administration, which does necessary work ensuring the proper functioning of the federal government, to be sure, but does not contribute in the same way as NASA to the American experience. Senior leadership has also always held that NASA’s history must be preserved and disseminated. Because of this institutionalization of perspective within the NASA culture, serious threats to the history program of the agency have been few over the years.

Second, for many years some academic historians have held a bias against sponsored projects such as those NASA engages in on a regular basis. Those who criticize such work invariably invoke the characterization “court historian” to damn the effort. There are, of course, many tales of censorship and castigation, spin control, and scandalous domination that have been told about historians employed by some company or organization. It is easy,



therefore, to understand how such a stigma might originate. At the same time, all who have served as NASA chief historians since 1959 have worked very hard to ensure that the “court history” epithet cannot be appropriately applied to products developed by the agency’s history program. That effort, ultimately, is the only means of overcoming the stigma.

There have, of course, been periodic tribulations within NASA over some historical manuscripts. These difficulties have been motivated by everything from legitimate concern about the quality of the historical manuscript to self-serving and short-sighted positions by some NASA personnel. The best means of resolving such concerns was pioneered at NASA by Eugene Emme, and followed by his successors—to send all historical manuscripts through rigorous peer review. Using informed and diligent readers from both the historical and the technical disciplines—not necessarily from the NASA technical community—the office follows a procedure at least as rigorous as that of scholarly presses. This helps to ensure that any book manuscript published as a part of the NASA History Series has been judged worthy of publication according to the accepted scholarly standards of the historical craft.

This is a rigorous, time-consuming, but necessary process that ensures that only the best works appear. It is also critical to maintaining the high credibility to which NASA historical works aspire. Although some historical studies from NASA are judged to be better than others, I do not believe that any have ever been knowingly dishonest. Some of the resulting contract works have been award-winners, and a few have even become seminal studies in the field. Many of them have also been highly critical of certain aspects of NASA’s performance, organization, and personnel.

Efforts to guard against NASA court history notwithstanding, I also point out to my academic colleagues what I consider a great naiveté among many professors that they are somehow impartial and can “tell the truth” (whatever that is, and if it really does exist) in their historical discourses without having to satisfy some client. After all, academic historians writing without a contract on virtually any topic imaginable are still serving a clientele—their peers, an identity group of some type, a publisher and its review board—that has certain perspectives on the past. Generally speaking, those historians tell the groups for which they write pretty much what they want to believe about the history. That clientele might be other academic specialists in whatever field is under investigation; it might be groups bound together by religion, ethnicity, or labor; or it might be any number of identifiable groups that have an interest in the subject.

These need not be monolithic groups, either. My point is that consciously or unconsciously, historians—even if they have not been formally hired to prepare histories for the group—shape their discourses to provide understanding about the past in relationship to ideas already present among those with an interest in the subject. If they stray too far afield from the major

streams of understanding about the subject, historians may be unable to find an outlet for publication, may be censured in reviews, may have their livelihood destroyed by not receiving tenure, or may lose whatever reputation they had. All of that is possible, without serving some formal client who may have a vested interest in ensuring that a historian tells a story in a certain way.<sup>25</sup> While we must be endlessly diligent to ensure that NASA not produce court history, those occupying the chief historian position have long labored to ensure that historians working for NASA have latitude in presenting their findings as great as those in academia.

Third, the NASA history staff also must work hard to keep from being overtaken by the forces of heritage, as David Lowenthal calls it. Memory of the past reigns supreme in the commemorations of past successes—and not surprisingly no one seems to champion commemorations of failures—and they come at regular intervals in the history of space exploration. Lowenthal's definition of heritage, and its relationship to history, is instructive: "History is the past that actually happened, heritage a partisan perversion, the past manipulated for some present aim."<sup>26</sup> Such commemorations may represent the single greatest threat to the serious study of history at NASA. Although I am not by definition opposed to heritage events, and even enjoy working on many of them, my personal wish would be to ignore most anniversaries as counterproductive to the larger goals of the agency history program. For good or ill, however, for those of us in public history, there seems to be no way to escape at least some of those commemorations. The communities we serve seemed thrilled with anniversaries in general, and many are tailor-made for hoopla, historicism, and perhaps even hysteria.

The simple fact is that I do not see how public historians, certainly not those a part of the NASA history program, can escape these activities. Perhaps academic historians, too often characterized by ivory tower mentalities, may be able to use those ivy-covered walls as a defense against those who demand commemoration, but public historians will be left putting together all manner of events and celebrations and exhibits and publications and television documentaries because their clients require such remembrances. At NASA, given that anniversaries of the first landing on the Moon, the first or last flight of this airplane or that spacecraft, certain institutional anniversaries, and similar other events gone by are natural subjects for commemoration, public historians must leap aboard commemoration trains that are already rolling and help to guide them down the tracks. Those who don't are run over by them. Therefore, I ask myself, "How might I, as the NASA chief historian, use an important commemoration to accomplish

25. I have discussed this issue in the context of Mormon history, another field in which I engage in historical research and writing, in my presidential address to the Mormon History Association. See Roger D. Launius, "Mormon Memory, Mormon Myth, and Mormon History," *Journal of Mormon History* 21 (Spring 1995): 1–24.

26. David Lowenthal, *Possessed by the Past: The Heritage Crusade and the Spoils of History* (New York: Free Press, 1996), 102.

worthwhile objectives not otherwise attainable because of the lack of resources, interest, or resolve?”

To a very real extent commemorations represent a double-edged sword for the NASA history program. There are certain expectations that must be met for public events, but there are also opportunities to accomplish several related, and I believe, worthy ends. All of these are connected to the three broad goals of collecting, preserving, and disseminating the history of the agency that we make the mission of this history program. To use the example of Apollo, every five years there seems to be another commemoration of the 1969 Moon landing. It was, indeed, a significant event and deserves recognition. But for every public event in which the three Apollo 11 astronauts are featured, I would also like to enlist the support of the NASA leadership for a serious historical undertaking: a book or CD-ROM project, an oral history project of Apollo scientists and engineers, or some other effort that will build the base of knowledge about the program. Generally, I find enthusiasm—and therefore resources—for such projects when coupled with public events. But it represents a constant balancing act to maintain a focus on substantive projects in an environment that tends to rally around such public commemorations.

### *Conclusion*

Even with these challenges, during nearly forty years, NASA's history program has undertaken the three-fold task of collecting, preserving, and disseminating the agency's role in modern America and the larger development of aerospace policy and technology in the United States. In large measure this has been a successful effort, working with both academically affiliated and independent scholars under contract or at symposia or on the AHA fellowship. Not every research project has yielded acceptable results, but a shelf of publications of the NASA History Series, those of the “New Series in NASA History” published by Johns Hopkins University Press and those issued through other publishers, represent a substantive body of work. The other activities of the History Office have also been generally well received, and will be continued and expanded in the future. In 1992 the NASA History Advisory Committee developed a set of goals that have guided the efforts of the office ever since: (1) continuous promotion of a fine contract history research and publications program on development of the entire aerospace enterprise; (2) stimulation of new work on issues of interest to NASA, with an emphasis on applied history through, for example, symposia whose results could be published or be the basis for future studies; (3) continuous attention to the NASA Historical Reference Collection as a resource not only for NASA but for a broad audience of scholars; and (4) involvement of other NASA offices to assure that products of the history program are useful to NASA personnel.