



## FROM THE CHIEF HISTORIAN



The recent compilation of the 2006 National Aeronautics and Space Administration (NASA) History Division Year in Review (online at <http://history.nasa.gov/2006.pdf>) has prompted me to highlight some of the activities that will be of special interest to readers of this newsletter. Throughout the past year, we continued to focus on the Division's core goals of conducting a high-quality, academically sound program of research pertinent to NASA leadership's concerns; effectively acquiring, preserving, and making available documentary information in the NASA Historical Reference Collection; and disseminating historical information to the widest practicable audience.

In pursuit of these objectives, the History Division continued to follow its detailed strategic plan. Among the Division's highlights were the conference on "Societal Impact of Spaceflight," held at the Hirshhorn Museum in September 2006; a wide variety of publications in aerospace history, including the landmark *Critical Issues in the History of Spaceflight* (NASA SP-2006-4702); the implementation of the NASA Chief Historian's Survey of NASA Culture; and the continuing series of essays on "Why We Explore" at [http://www.nasa.gov/mission\\_pages/exploration/whyweexplore/index.html](http://www.nasa.gov/mission_pages/exploration/whyweexplore/index.html).

During calendar year 2006, NASA History Division personnel answered a total of 1,055 research requests from governmental, educational, and private organizations on a wide variety of topics. History Division personnel also provided research services to approximately 324 on-site researchers who used the Historical Reference Collection.

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## FROM RUSSIA WITH HISTORY

by Asif Siddiqi

As NASA Chief Historian Steven J. Dick has noted, the year 2007 has a special meaning for those involved in space history. Later this October marks 50 years since the launch of *Sputnik* by the former Soviet Union, the event that set off the Space Age. The Russians are fond of celebrating anniversaries, and this year is particularly special, not only because of *Sputnik*, but also because of a host of other major landmarks, including the 150th anniversary of the "patriarch" of Russian cosmonautics, Konstantin Tsiolkovsky, and the 100th birthday of the founder of the Russian space program, Sergei Korolev. I was fortunate to be invited to present a paper commemorating the latter in late January in Moscow. It was a rare and valuable opportunity to see firsthand the nature and practice of Russian space history.

The Russian space history community holds a number of major annual conferences on a variety of topics. One of the most prominent is the "Academic Readings on Cosmonautics," typically held in January of every year. Because 12 January was also Korolev's 100th birthday, this year's Academic Readings, the 31st in the series, was held with much fanfare and celebration. The actual conference was hosted by the Bauman Moscow State Technical University, the alma mater of many of Russia's cosmonauts and space engineers. The opening day, January 30, was dedicated to a plenary session in Bauman's main conference hall in its imposingly huge science laboratory building. The proceedings were led by academician Boris Chertok, one of the last surviving senior designers from Korolev's generation, who at (almost) 95 years old seemed sprightly and fully in control of the room. Chertok began the proceedings to a packed audi-

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ence of several hundred people with a short introduction in which he mentioned the anniversaries this year (besides Korolev and Tsiolkovsky): the launch of *Sputnik* (50 years), the launch of the first R-7 missile (50 years), the birth of pioneer Fridrikh Tsander (120 years), and the birth of Korolev's successor, Vasily Mishin (90 years).



The Bauman Moscow State Technical University's Bauman Center (note statue of Korolev).

Chertok's introduction was followed by a talk by Nataliya Sergeyevna Koroleva, Korolev's daughter, now 71 years old. She gave a very compelling presentation using a superb PowerPoint slide show of her father's life. Koroleva has spent the last 15 years of her life doing an enormous amount of research on the late Soviet chief designer, poring over rare documents, traveling to Siberia where Korolev was interned in a Gulag camp, and tracking down previously unknown photographs. The fruits of her labors are represented in a new, three-volume set of books entitled *Otets (Father)*. In her presentation, she included many interesting mementos of Korolev's life, and surprisingly did not minimize or avoid in-depth exploration of Korolev's arrest in 1938 by the Soviet security services and the subsequent six years he spent in various Gulag camps.

Koroleva's presentation was less substantive on the later years of Korolev's life, since by that time he had divorced Koroleva's mother and remarried. The relationship between father and daughter was somewhat strained by the 1950s and early 1960s.

After Koroleva's speech, Chertok gave a lengthy formal talk about Korolev, focusing particularly on an issue that few space historians devote much attention to: the organizational evolution of the Soviet space program, beginning with the foundation of the postwar missile effort in 1946.

Chertok was followed by Nikolai Sevastyanov, the head of Rocket & Space Corporation Energia (RSC Energia), who gave a sharply focused talk summarizing Energia's plans up to the year 2050. As is well known to many in the Russian space industry, the relationship between Sevastyanov and Roskosmos, the Russian governmental space agency, has become strained recently over precisely the kind of ambitious and somewhat unrealistic plans that he mapped out at this conference. With striking illustrations, Sevastyanov laid out Energia's goals for exploring the Moon in three stages, beginning with a piloted *Soyuz* circumlunar flight by 2015 and a permanent base by 2030. The eventual goal is to extract helium-3 from the lunar surface to fuel future fusion reactors. Given the financial priorities of the Russian space industry, it is questionable that any of this will actually happen.

After the formal papers, several famous veterans of the space program who knew Korolev talked informally from the podium. Among them were veteran cosmonauts Pavel Popovich and Boris Volynov, now in their 70s, who spoke about their experiences as part of the first group of cosmonauts selected in 1960. Audience members—who included former Russian Space Agency head Yuri Koptev and veteran cosmonauts Sergei Krikalev and Aleksandr Aleksandrov—punctuated these reminiscences with much applause.



Asif Siddiqi and Nataliya Koroleva standing around a statue of Korolev.

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*From the Chief Historian (continued)*

Overseeing the NASA Historical Reference Collection is a major activity and is performed by Chief Archivist Jane Odom. The NASA History Division received over 42 cubic feet of material from various offices at Headquarters in 2006 and staff members processed (i.e., appraised, arranged, described, and preserved) a total of 70 cubic feet. They also continued their efforts to scan and electronically store historically significant documents from paper collections maintained in the NASA Historical Reference Collection.

Recording, transcribing, and permanently accessioning in the NASA Historical Reference Collection the recollections of National Advisory Committee for Aeronautics (NACA)/ NASA personnel have been among the most important activities undertaken by the NASA History Division since its inception in 1959. Many NASA oral histories originated when historians interviewed participants to obtain firsthand information for writing their volumes in the NASA History Series. Other oral histories can be more properly categorized as exit interviews. The NASA Historical Reference Collection holds over 2,000 oral histories on a widely divergent set of individuals. They include oral histories focusing on all the major projects of the Agency, organizational culture, engineering practice, program management, aerospace medicine, and other specialized topics. Other NASA Centers also have large collections of oral histories. The Johnson Space Center, for example, has a collection of over 2,000 oral histories. While the majority of the oral histories available from NASA have been conducted during the course of writing specific historical works, the Agency has increasingly undertaken oral history for its own sake as a means of preserving knowledge. This year, we have implemented a new inventory of NASA oral histories, and a new portal for accessing them at <http://history.nasa.gov/oralhistory/ohcatalog.htm>. Some of the interviews are online in full.

For the last several years, the NASA History Division has been working to place as much information as possible on the Internet. During 2006, the Division substantially increased its electronic resources, especially on the World Wide Web. Our main page continues to be <http://history.nasa.gov>. In addition to being one of the largest NASA Web sites, the NASA History site continues to be one of the most popular Agency sites. Throughout the year, there were 62,183,862 hits on the NASA History Web site.

The NASA History Division continues to build its online resource for historical photos. GRIN (GRIN) is online at <http://grin.hq.nasa.gov> and features over 1,000 historically significant black-and-white and color images in four resolutions, ranging from thumbnail to a high resolution, that are suitable for publishing. Public users may download any of these images without charge. While other somewhat similar photo databases are online, the specific format of this one is unique and attracts a steady flow of users. GRIN received 9,189,913 hits in 2006.

In parallel with the conference on the “Societal Impact of Spaceflight,” the NASA History Division also sponsored a variety of studies on that theme. Among the studies are NASA’s role in microelectronic mechanical systems (MEMS), integrated circuits (ICs), management techniques, medical applications, space law, applications satellites, and the environmental movement. The approach is rigorous historical study, not public affairs. These studies will be part of the new subseries of NASA History publications on the societal impact of spaceflight.

This year, 2007, promises to be just as busy as 2006 was, as the 50th anniversary of the Space Age inexorably approaches. The NASA/National Air and Space Museum (NASA/NASM) program “Remembering the Space Age” is now set, and you will find it

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*From the Chief Historian (continued)*

elsewhere in this newsletter. The dates are 22–23 October at the American Association for the Advancement of Science (AAAS) auditorium in Washington, DC, immediately following the Society for the History of Technology (SHOT) meeting. We hope you will be able to attend. Then it will be time to move on to 2008 and NASA's 50th anniversary. Already, we have initiated a "NASA at 50" program. The goal of this program is to document on audiotape the state of NASA at 50 years old as perceived by its top managers, as well as their hopes for NASA's future. The project is being coordinated from Headquarters and implemented by the oral history team at Johnson Space Center.

The 50th anniversaries of the Space Age and of NASA provide a good opportunity to reflect on how the myriad activities in space have affected science, society, and national and global identities.

Steve Dick

*From Russia with History (continued)*

The remainder of the conference was dedicated to about 300 separate formal papers spread out over more than 20 different thematic sections. About 1,500 people attended these sessions, most from the Russian space industry, including both retired veterans and current employees. These sessions provided an interesting window into the practice of space history in Russia. Following are some of my general impressions.

First, it is clear that there is a publishing boom on space topics in Russia. The tables set out in the main hall were packed with new books on every possible aspect of Russian space history. The space-history publishing field is dominated by two types of works: the memoir genre—usually recollections by both former designers and cosmonauts—and the official organizational history, issued to coincide with unending anniversaries. There is a great deal of general popular interest in space, at least as compared to that in the United States, and there appears to be a genuine market for these works, although some of my Russian colleagues confided that the glut of history books also dilutes the quality. Few, if any, of the works are written by professional historians, and many are basically recycling older information, benefiting from the genuinely ground-breaking work from the 1990s of talented historians such as Yaroslav Golovanov, Georgy Vetrov, Igor Afanasyev, Mikhail Rebrov, and others. My impression was that these days, most of the truly innovative work on Russian space history is left to journalists, particularly the influential monthly journal *Novosti Kosmonavtiki (News of Cosmonautics)*, which regularly publishes important pieces on Russian space history.

Second, the Russian space history field has a very strong strand of hagiography. Hero worship is most evident in the cases of Korolev and Gagarin, but also is shown toward many other personalities of the era. This is not to say that these individuals do not deserve acclaim or genuine respect, but it appears to me that much of the recent Russian historical material has an uncritical stance. If there is criticism leveled at the pioneers of Russian space exploration, it is usually propagated by veterans representing the legacies of competing designers. In fact, one of the most striking aspects of Russian space history is how it still remains remarkably fractured along the same lines that the actual program was in the 1960s. The acrimony among feuding designers such as Sergei Korolev, Valentin Glushko, and Vladimir Chelomei is now continued by curators of their respective legacies.

For example, at one session dedicated to Korolev, a veteran of the Chelomei organization took great umbrage at some demeaning comments about Chelomei. Responding to another paper on Chelomei, supporters of another designer, Viktor Bugaisky, were upset about the way in which the latter was portrayed in the history. To a large degree, these kinds of battles are still being fought because there is a strong curatorial dimension to Russian space history; i.e., groups of historians have become custodians of specific designers rather than any broad interpretive ideas.

Third, the perception of American space history is generally fairly sophisticated. *Novosti Kosmonavtiki* for example frequently publishes excellent pieces on American space history that, although based on secondary sources, provide succinct and accurate views of American space exploration. They are particularly strong in covering American military and intelligence space efforts. There also are a few areas where Russian space historians (and space veterans) fall back on clichés. Nowhere is this more apparent than the status of Wernher von Braun. Most people I spoke to are of the opinion that von Braun was Korolev's equivalent in the United States. Most Russians had little interest or knowledge of other American pioneers of rocketry and space exploration. Because of von Braun's critical role in the development of both the German V-2 and the American Saturn V, many Russians believe him to have essentially created the American space program, much as Korolev did. In Russia, the American space program has become synonymous with von Braun when, in truth, von Braun had little to do with the development of any American human or robotic spacecraft.

Finally, the Russians are hungry for materials on the American space program. My sense is that there is a huge audience for Russian translations of major American works on space history (books by Walter McDougall, Michael Neufeld, Charles Murray and Catherine Cox, Howard McCurdy, and James Hansen come to mind). My own paper on Korolev's legacy in the United States was met with great interest, partly because few Russians have any sense of how Americans perceive Russian space achievements such as *Sputnik* and Gagarin's historic first flight.

Overall, the trip underscored one thing above all: Russians are extremely proud of their space achievements. There is a strong undercurrent of nationalism in the creation and maintenance of the memory of their space programs, but this is not so different from most other countries that have space programs. But what gives Russian space historiography its unique flavor is the active engagement of veterans in the history field. Once their careers are over, they do not fade into obscurity but instead become proponents for the present-day space program. There are both advantages and disadvantages in having veterans actively engaged in writing history, but the practice does underscore the degree to which memorialization has become an essential function of the *current* Russian space program. For them, truly, their future (e.g., bases on the Moon) exists in simultaneity with their past (e.g., *Sputnik*, Gagarin). It has become almost impossible to separate them.



## NEWS FROM HEADQUARTERS AND THE CENTERS

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### Headquarters

Nadine Andreassen continued planning for the 2007 NASA History Program Review at Dryden Flight Research Center. She also worked on logistics for the upcoming conference on the 50th anniversary of the Space Age, to be held in Washington, DC, 22–23 October 2007, in conjunction with the 50th anniversary meeting of the Society for the History of Technology (SHOT).

Glen Asner gave a presentation at the Hagley Museum and Library's March 2007 conference on "Technological Innovation and the Cold War." His talk, titled "Military Breakthrough, Commercial Bust," focused on the difficulties Government contractors faced in their attempts to commercialize thermoelectric technologies in the late 1950s. NASA Headquarters Office of External Relations senior management has eliminated Glen's position. Glen will continue to work at NASA in another capacity, but he will no longer be able to discuss matters that relate to the functions or activities of the NASA History Division. He bids a fond farewell to all NASA History points of contact at the Field Centers and other friends who made his time in the NASA History Division a joy.

Colin Fries continued the ongoing task of scanning and adding our *Current News* collection to the database. Colin recently completed work on news articles from 1997 through 2000. Along with John Hargenrader, Colin continued to process a large, 40-cubic-foot collection of NACA material. Colin has been processing the subject files. John and Colin also shared reference duties, such as answering inquiries sent to the public e-mail account on the History Division Web site and assisting walk-in researchers. In March, they fact-checked photo captions for a forthcoming NASA 50th anniversary publication.

Steve Garber is looking forward to the upcoming publication of several books and monographs. He is continuing his work with Glen on the history of the Decadal Planning Team and the development of the Vision for Space Exploration. He extends a special thanks to Jennifer Ross-Nazzal in Houston for giving a talk on the NASA History Program at Foundations of Aerospace classes run by NASA's Academy for Program, Project, and Engineering Leadership (APPEL).

John Hargenrader continued the ongoing task of scanning and adding our *Current News* collection to the database. John scanned NASA *Current News* for 1991 and completed digitizing news stories from 1996. Along with Colin Fries, John continued to process a large, 40-cubic-foot collection of NACA material. John has been integrating biographical files from the NACA collection into the main biographical files to avoid redundancies and has been updating database records accordingly. John and Colin also shared reference duties, such as answering inquiries sent to the public e-mail account on the History Division Web site and assisting walk-in researchers. In March, they fact-checked photo captions for a forthcoming NASA 50th anniversary publication. John is nearing completion of the

preservation photocopying of all the old newspaper clippings in the Mercury, Gemini, and Apollo files and is giving the human spaceflight files one final check to find items in need of preservation.

Jane Odom and Norm Weinberg reviewed for declassification over 150 cubic feet of Office of External Relations materials in response to Presidential Executive Order 12958. Their review concluded in December. Jane and Norm will continue to serve as declassification authorities (DCAs) for the Office of External Relations. Jane continues to review new materials for acquisition and answer reference requests. She appraises collections for historical value. Two collections she worked on recently include chronological correspondence files and reports from former Deputy Administrator Fred Gregory and the Shuttle *Mir* files. Additionally, she approved the transfer, per the records schedules, of 122 cubic feet of older, permanent records from the Family Records Centre (FRC) to the National Archives and Records Administration (NARA).

## Dryden Flight Research Center (DFRC)

Curtis Peebles completed work on his X-43 monograph, which includes a set of DVDs with video footage of the three launches and control room activity, as well as a CD of documents associated with the program. The manuscript is currently under review for export control requirements. He has finished editing the second edition of *The Spoken Word*, which focuses on oral histories from Dryden (the Flight Research Center) in the 1960s.

Besides being the chief resource for information inquiries, Peter Merlin has been hard at work on his SR-71 manuscript, a book that will include new material from the plane's manufacturer as well as more detailed accounts of its work under NASA's umbrella. Both his and Curtis's books are intended as college-level aerospace engineering textbooks, and we are hoping the American Institute of Aeronautics and Astronautics (AIAA) serves as the hosting publisher. Pete led off a new monthly series hosted by NASA's Exploration Gallery in Palmdale, California, where he spoke on the X-15. The event was well attended, including representation by a television station news crew and one of the surviving pilots of the experimental aircraft.

Christian Gelzer has found time for some work on the truck fairing monograph he has had on the table for a while. He also wrote and submitted an article for publication in the *International Test Engineers Association* journal on the truck fairing research done at Dryden in the 1970s. He has been preparing for the upcoming NASA history conference, as the Center is hosting the event this year. He also made a presentation at the Exploration Gallery as part of the monthly series, in which he talked about the Lunar Landing Research Vehicle (LLRV). He has also finished editing Bill Dana's monograph on the X-38, a manuscript that will be published as the second in a series of Dryden Historical Studies.

The Center has released a second edition of *Flights of Discovery: 60 Years of Flight Research* at the Dryden Flight Research Center, which various members of the history office helped edit or expand.

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*News from Headquarters and the Centers (continued)*

## Glenn Research Center (GRC)

The archive at Glenn Research Center has had a steady stream of interesting researchers through its doors in recent months. We feel very fortunate to have been a part of their research, as much of it will result in larger projects that will be beneficial to the Agency as a whole and serve as a valuable resource to future researchers.

Dr. Larry Lee of the National Park Service visited 26 February through 2 March to do research for the new edition of *The Wind Tunnels of NASA*. Dr. Lee toured a number of wind tunnels and historic research facilities, interviewed current and retired wind tunnel employees, and viewed textual and photographic records from both our archival collection and the holdings of our records management program.

Brett Anderson of the University of Toledo and GRC researcher Larry Viterna have been doing extensive historical research on the wind turbine program of the 1970s. This research is aiding current work on renewable energy research in northern Ohio.

Also making extensive use of our archival and records management holding are retirees Joe Nieberding and Larry Ross. Nieberding and Ross worked in the Launch Vehicles Division on the Centaur Program and are currently giving classes on lessons learned from successful and failed Centaur launches managed by GRC from the early 1960s through the mid-1990s to current Glenn Crew Exploration Vehicle (CEV) and Crew Launch Vehicle (CLV) program managers. As a result of this project, several films of failed Centaur launches have been digitized.

Archivist Bob Arrighi is working on the final Historic American Buildings Survey and the Historic American Engineering Record (HABS/HAER) document for the historic Altitude Wind Tunnel (AWT) and Space Power Chamber (SPC). This has involved a good deal of time working with the original facility blueprints in Building 28 and old photographs. The report consists of several sections, including historical information on the AWT, architectural information on the AWT, historical information on the SPC, architectural information on the SPC, and a description of the support buildings. Each includes an accompanying image section with recent and historical photographs. Approximately 200 photographs have been gathered, formatted, and captioned for the report. The final report will also include detailed drawings of the facilities.

Archivist Nora Blackman will be working with the Glenn Education Office to develop another in our series of portable exhibits. This exhibit will highlight Glenn's involvement in early aviation history in Cleveland, Ohio, especially the National Air Races.

## Jet Propulsion Laboratory (JPL)

This September marks the 30th anniversary of the launch of the still-operating Voyager missions to Jupiter and Saturn (and, as it turned out, Uranus, Neptune, and points further out as well). JPL will be celebrating with a public lecture and media events.

Last October was JPL's 70th anniversary. We held a week-long series of lunchtime events at the Lab, including historical lectures by Blaine Baggett and Erik Conway, the premiere of a documentary on George Ellery Hale, and showings of some historic film footage. We



filled the Von Karman auditorium for each event, and they seemed to have been well received. We currently have planned a similar set of events for the 50th anniversary of the Explorer 1 launch in January 2008.

Also in October, JPL rolled out a new history Web site. It traces the Lab's evolution and its missions from its Army days to the 1990s. It is located at <http://www.jpl.nasa.gov/jplhistory/>.

In late February, Peter Westwick gave a lunchtime lecture here, based on his new history of JPL, *Into the Black*. His book is the result of a Caltech-funded contract begun several years before Erik Conway's arrival. It is an excellent survey of the last 40 years here at JPL. He has graciously donated all of his oral histories to us, and the JPL Archives has begun the process of audit checking and obtaining releases from the individual interviewees.

On the Mars robotics history front, Erik Conway's major effort now is on the Mars Climate Orbiter and Mars Polar Lander, both lost in 1999. Unlike Mars Pathfinder, which was built "in house" at JPL, the Climate Orbiter and Polar Lander were built under systems contracts for us. The documentary record for these missions is relatively poor and significant portions of it are proprietary, and the JPL project team was tiny, consisting of only about six individuals. These two projects will be a bit more challenging to research, as they were the epitome of a "faster, better, cheaper" mentality in terms of reduced documentation.

Erik Conway's article "Drowning in Data: Satellite Oceanography and Information Overload in the Earth Sciences" was published in *Historical Studies in the Physical and Biological Sciences*, vol. 37, no. 1, 2006. Erik Conway's co-written article (with Mirella Flores), "Deep Space 1: A Revolution in Space Exploration," has been accepted by *Quest*.

The JPL Archives has begun an effort to clarify the status of its oral history collection. Many of the oral histories were done before the advent of a legal requirement for signed releases, and we are attempting to contact families and survivors to gain release authority.

A new part-time library science student, Charlene Gould, has joined the staff to assist in processing. Processing is almost completed on the Mars Pathfinder collection. Work continues on some recently rediscovered Mars Observer materials.

There is some concern at the senior management level that project records are not being maintained and stored in ways that provide acceptable postproject access to the engineering organizations at the Lab. JPL has formed a new Lab-wide group to develop and implement policies to improve project records management, and this effort provides an opportunity to improve historical access as well.

Finally, Johns Hopkins University Press has accepted Erik Conway's *History of Atmospheric Science at NASA* for publication. The final manuscript should go back to the press in April.

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*News from Headquarters and the Centers (continued)*

## Johnson Space Center (JSC)

The Johnson Space Center History Office presented a panel discussion at the 2007 annual meeting of the National Council on Public History held 12–15 April 2007, in Santa Fe, New Mexico. The session titled “The Challenges Facing a Twenty-First Century Oral History Project” was presented in three segments. Rebecca Wright shared information on “Using Oral History as a Knowledge Management Tool”; Sandra Johnson talked about “Media and Digital Challenges: 2,200 Recordings and Counting”; and Dr. Jennifer Ross-Nazzal, who chaired the panel, spoke on “Visions Explored: Sustainability and Increased Interest in NASA History.” This outreach effort allowed the team from JSC to provide additional information about the Center and the Agency to the more than 400 public historians who attended the conference.

The history team is currently conducting interviews for the “NASA at 50” oral history project, sponsored by the NASA Headquarters History Division. This project involves the Agency’s top managers and captures (on audiotape) their reflections on the state of NASA as it approaches its 50th anniversary. The team has gathered information from more than half of the identified participants and will continue the project for the remainder of this fiscal year.

## Langley Research Center (LaRC)

Langley Research Center is celebrating its 90th anniversary this year. Traditionally, the date is marked as 28 June 1917, when Langley Field, Virginia, was authorized as a NACA experimental station and J. G. White Engineering Corporation of New York was contracted to build the first NACA laboratory. A fictionalized account of the first stages of construction of Langley Field appears in *Look Homeward Angel*, by Thomas Wolfe. The airfield, then shared with the Army Air Corp, has been recognized as the oldest continuously used airport in Virginia. Two Virginia Historical Roadside Markers at the Virginia Air and Space Center commemorate the airfield. One marker notes the Army Air Corp and Air Force history highlights at Langley Field and the other notes NACA and NASA highlights. Plans are under way for a public celebration of the Center’s anniversary later this year.

Freelance author Mark Chambers’s book *Flight Research at NASA Langley Research Center* is going to press in April. Published by Arcadia Press, the book of over 200 historic images of Langley flight research is part of the press’s *Images of Aviation* series.

A virtual tour of the Langley 7-by-10-Foot High Speed Tunnel is being constructed and will be posted to the Langley Web site. Oral histories of researchers who worked in the tunnel have been recorded, and clips from these histories will appear on the Web site. The hour-long version of each oral history will be stored in the Langley archives. Used for early transonic speed research, the 7-by-10-Foot Tunnel was closed in 1994. The virtual tour will offer the public an opportunity to learn about wind tunnel research, the history of the 7-by-10, and interior and exterior photographs of the tunnel.

## Marshall Space Flight Center (MSFC)

New sources and new opportunities to learn about the history of the Marshall Space Flight Center continue to expand in 2007.

One recent project that the history office at Marshall helped complete was a brief history of NASA's Michoud Assembly Facility in New Orleans, Louisiana. The Marshall history office has also recently posted a copy of the now famous 1961 letter Wernher von Braun sent in response to a request from Vice President Lyndon Johnson. The letter is on the Marshall history Web site. In addition, author and aerospace historian Anthony Young has recently published a new history of the Lunar Roving Vehicle.

The history and other information about Michoud is located at <http://www.nasa.gov/centers/marshall/michoud/index.html>. NASA's prime contractor for the External Tank, Lockheed Martin Corp., has manufactured and assembled the Shuttle tank at Michoud for nearly three decades. The capability that enables it to host the tank work also positions Michoud to provide other vital support to the Vision for Space Exploration to extend a human presence throughout the solar system. Michoud's space heritage dates back to the Apollo program when it was used to build the first stages of the Saturn I and V launch vehicles. The facility, on 832 acres of land, includes a port with deep-water access—a capability providing for transportation of large space systems and hardware. The original tract of land was part of a 34,500-acre French royal land grant to local merchant Gilbert Antoine de St. Maxent in 1763. Later, the land was acquired by French transplant Antoine Michoud, who operated a sugar cane plantation and refinery on the site until his death in 1863. In 1940, the U.S. Government purchased the land as a site for war-related construction. Three years later, the world's largest production building at the time, covering 43 acres under one roof, was completed. The plant was used during World War II to build cargo planes and other aircraft, and again during the Korean War to produce tank engines. The Michoud facility was acquired by NASA in 1961, after its availability was brought to the Agency's attention by Wernher von Braun, the Marshall Center's first director in 1960. Currently, Michoud is in a period of transition from producing Space Shuttle External Tanks to supporting Constellation program work such as the Crew Exploration Vehicle and the Ares I and Ares V launch vehicles.

The 29 April 1961 letter from von Braun to Johnson is often cited by Apollo-era historians. Von Braun calls the letter an attempt to answer some of the questions about our national space program raised by the President “in his memorandum to you dated April 20, 1961.” Von Braun responds by telling the Vice President that the United States does not have a good chance of beating the Soviets to a manned laboratory in space. However, he says the United States has “a sporting chance” of beating the Soviets to a soft-landing of a radio transmitter station on the moon” and “a sporting chance” of sending a three-man crew around the Moon ahead of the Soviets. Finally, he tells Johnson the United States has an “excellent chance” of beating the Soviets to the first landing of a crew on the Moon. The letter and memos associated with it are located at [http://history.msfc.nasa.gov/vonbraun/vp\\_ljohnson.pdf](http://history.msfc.nasa.gov/vonbraun/vp_ljohnson.pdf) online.

Finally, Anthony Young's new book is entitled *Lunar and Planetary Rovers, the Wheels of Apollo and the Quest for Mars*. Young began the book with the goal of writing about the design, development, testing, and building of the Lunar Roving Vehicle and the astronauts' experience with the vehicle on the Moon. “During peer reviews of the book proposal, it was suggested that I tie in the tremendous successes of the Martian rovers Sojourner, Spirit and Opportunity,” Young says in his preface. A large portion of the manuscript related to the Lunar Roving Vehicle is based on interviews, photographs, and other documentation that Young collected while doing research at Marshall and in Huntsville, Alabama.

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*News from Headquarters and the Centers (continued)*

## Stennis Space Center (SSC)

NASA Stennis Space Center has been selected as a 2007 Historic Aerospace Site by the American Institute of Aeronautics and Astronautics (AIAA) Historic Sites Committee. A dedication ceremony is planned for later this year.

The Center was initially established in the 1960s as a national testing center to flight-certify all first and second stages of the Saturn V rocket for the Apollo manned lunar landing program.

Construction of the test site in Mississippi began in 1963. The land was chosen because of its water access, which was essential for transporting large rocket stages between the manufacturing plant at Michoud Assembly Facility in New Orleans and Stennis Space Center, Marshall Space Flight Center, and Kennedy Space Center. It also provided the 13,500-acre test facility with a sound buffer of close to 125,000 acres, which remains a national asset.

Three test stands, A-1, A-2, and the dual B-1/B-2, were built in the early 1960s to test the first and second stages of the Apollo Saturn V rocket that successfully transported Americans to the Moon.

The Center conducted its first static test-firing 23 April 1966 on the A-2 Test Stand. The S-II-T tested was a cluster of five J-2 engines, the second stage of the Saturn V Moon rocket.

A total of 45 Saturn V stage tests were conducted at Stennis Space Center. Ten Apollo missions were successfully launched by the engines tested at Stennis Space Center.

Stennis Space Center's primary mission of testing the first and second stages of the Saturn V Moon rocket for the Apollo program continued until the last Saturn V test at Stennis Space Center on 30 October 1970. Following the Apollo program, the Center's test stands were converted from the Apollo/Saturn V configuration to accommodate the testing of the Space Shuttle Main Engines (SSMEs). On 19 May 1975, the first test firing of an SSME took place. Since then, all of the Space Shuttle's Main Engines have been tested and proven flight-worthy at Stennis Space Center. On 21 January 2004, a milestone in human spaceflight was achieved when the one-millionth second of successful test and flight operations of an SSME took place on the A-2 Test Stand at SSC.

In April 2006, NASA celebrated the 40th anniversary of the first rocket engine test at Stennis Space Center and the 25th anniversary of STS-1, the first Shuttle flight.

On 9 November 2006, Stennis Space Center held a ceremony marking the turnover of the A-1 Test Stand from the Space Shuttle program to the Constellation program, which is developing the next generation of spacecraft. Under the direction of NASA's Constellation program, the A-1 test stand begins a new chapter in its operational history. It is being temporarily decommissioned for conversion to test the J-2X engine. That engine will power the upper stage of NASA's new crew launch vehicle, Ares I, and the Earth departure stage of the new cargo launch vehicle, Ares V.

The site is also listed on the National Register of Historic Landmarks, so designated on 3 October 1985. In the National Register, the site is referred to as the “Rocket Propulsion Test Complex,” Bay St. Louis, Mississippi; National Register Number 85002805.



## PROFILES OF NASA’S HISTORIC RESOURCES

*While NASA’s historic accomplishments in aeronautical research, science, and space exploration are well documented, less is known about the buildings and structures that house and enable these accomplishments. This series will provide a brief review of the real property assets that NASA owns and operates across the country, beginning with the resources considered historically significant. Of the many assets that are listed or eligible for listing on the National Register of Historic Places, 20 are National Historic Landmarks (NHLs).*

### Test Complex A and B, Stennis Space Center, Mississippi: An Evolution of Space Exploration Support

The Rocket Propulsion Test Complex consists of three static test stands operated at NASA’s Stennis Space Center (SSC), in the southwest corner of Mississippi, approximately 50 miles northeast of New Orleans, Louisiana. The stands were built in 1965 by Sverdrup & Parcel & Associates, Inc., to test and human-rate all Saturn V rockets used in the Apollo program. Originally part of the National Space Technology Laboratories, in 1988, the facility was renamed Stennis Space Center in honor of the late Mississippi Senator John C. Stennis. The complex contains two single-position test stands designated as Test Stand A-1 (Building Number 4120) and Test Stand A-2 (Building Number 4122), as well as B-1/B-2 Test Complex.



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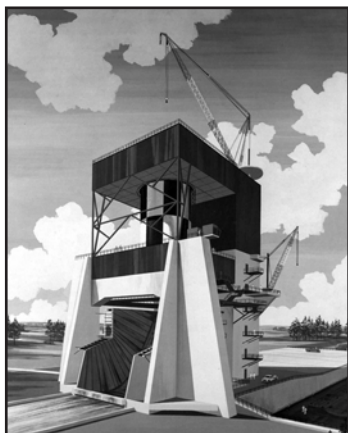
*Profiles of NASA's Historic Resources (continued)*

The A-1 and A-2 stands are single-position, vertical firing stands capable of static firing a test article up to 33 feet in diameter with a maximum dynamic load of 1.1 million pounds vertical (up), 1.7 million pounds vertical (rebound), and 0.7 million pounds horizontal. The A-2 Test Stand is equipped with an altitude diffuser, which is utilized to simulate altitude conditions during engine testing. Though the B-1/B-2 Test Complex is a single structure, it consists of two test stands with separate building numbers (4210 and 4220). Standing at over 400 feet tall, this enormous structure rests on 1,600 steel pilings, each 98 feet long. During test firings, the S-IC stage of the Saturn V was secured by four hold-down arms anchored to a slab of concrete 39 feet thick.



In 1984, the Rocket Propulsion Test Complex, consisting of the three structures (and four test stands), was designated as a National Historic Landmark. The complex was determined to be a resource that was “essential to accomplish the goal of landing a man on the moon” under the Man-In-Space Theme Study conducted by the National Park Service (NPS). The complex consists of over 40 additional supporting assets, including test control centers, observation bunkers, pump houses, storage tanks for liquid fuels, as well as associated ground service equipment necessary to control and fire the engines or rocket stages being tested. Though critical to the operation of the stands, only the physical boundaries of the three test structures constitute the actual NHL. The

NHL resides in a location that has over 118,000 acres of restrictive easement to provide an acoustic buffer zone during testing. Construction is prohibited within this easement, which is subject to intense sound pressure levels and noise created by engine firings. Though public access to this NHL is restricted due to safety and security, the buffer zone helps to preserve SSC as an irreplaceable national rocket test facility.



The stands were modified to support the development testing and flight certification of rocket propulsion systems for the Space Shuttle. SSC tested all Space Shuttle Main Engines (SSMEs) that were required to pass a series of tests before they were shipped to Kennedy Space Center, Florida, for installation onto an orbiter. The A-1 Test Stand at NASA's Stennis Space Center marked an historic moment on 17 August 2006, as the 1,000th test of an SSME was conducted. These high-performance engines provide most of the total impulse needed

during the Shuttle's 8.5-minute-flight into orbit. Though SSME's will continue to serve Space Shuttle missions until 2010, this NHL was used to conduct the final SSME test firing on 29 September 2006.

On 9 November 2006, a new chapter opened in the propulsion testing program of the SSC when the A-1 Test Stand was officially handed over to NASA's new Constellation program. NASA is planning to refurbish the test stand to test the J-2X engine that will power the upper-stage of the proposed new crew launch vehicle, Ares I, and the Earth departure stage of the new cargo launch vehicle, Ares V. The B-1/B-2 complex may also support the Constellation program.

According to Marco Giardino, Ph.D., SSC Historic Preservation Officer, "The A1 propulsion test stand is a prime example of how NASA manages its historic facilities without impeding the progress of new operational activities." Before the transfer to the facility to the new program, Dr. Giardino consulted with the Mississippi State Historic Preservation Officer (SHPO) about modifications that would be needed in order for the stand to meet the requirements of the Constellation program without sacrificing the A-1's unique attributes that resulted in its original designation as a National Historic Landmark. Reuse of historic resources is a tenant of the 2005 Executive Order, Preserve America.

Harry Butowsky, Ph.D., is the NPS historian who conducted the Man-in-Space thematic study that led to the NHL designation of the SSC test complex. According to Dr. Butowsky, ". . . preservation of any NHL is the priority and reusing an NHL helps to preserve an NHL. In the case of the A-1 Test Stand at Stennis, I understand modifications were made to the test stand to enable it to support the Space Shuttle Program. I understand that NASA plans to use the test stand to support the replacement space program, Constellation. Although it will have to be modified again, I am pleased to see this landmark continue to play a key role in the development and implementation of future space exploration programs."

*The Rocket Propulsion Test Complex was selected as one of the 2007 Historic Aerospace Sites by the American Institute of Aeronautics and Astronautics (AIAA) Historic Sites Committee.*

By Tina Borghild Norwood, NASA Federal Preservation Officer ([tnorwood@hq.nasa.gov](mailto:tnorwood@hq.nasa.gov)) and Dr. Marco Giardino, SSC Historic Preservation Officer ([marco.j.giardino@nasa.gov](mailto:marco.j.giardino@nasa.gov))



## REMEMBERING THE SPACE AGE

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### Conference on the 50th Anniversary of the Space Age Sponsored by the NASA and NASM Divisions of Space History

22–23 October 2007

American Association for the Advancement of Science (AAAS) Auditorium  
Washington, DC

### Program

#### DAY 1 NATIONAL AND GLOBAL DIMENSIONS OF THE SPACE AGE

Has the Space Age fostered a new global identity, or has it reinforced distinct national identities? How does space history connect with national histories and with the histories of transnational or global phenomena such as the Cold War or the rise of global markets or global satellite communications?

**8:30 a.m.** Opening Remarks: Steven J. Dick (NASA) and Roger D. Launius (NASM)

**9:00 a.m.** **Keynote:** *John Robert McNeill* (Georgetown University)

#### **9:30–11:30 a.m. Session 1: Invited Papers and Commentary**

*Steven J. Dick*, Chair

30 min. *Asif Siddiqi* (Fordham University)—Globalization and Nationalism

30 min. *John Krige* (Georgia Institute of Technology)—Building National Capability Through Regional and International Collaboration: The European Experience

30 min. **Commentator:** *John Logsdon* (George Washington University)

30 min. **Panel/Q&A:** *Steven J. Dick*, Moderator

#### **1:00–3:00 p.m. Session 2: Contributed Papers**

*Michael Neufeld* (NASM)—Creating a Memory of the German Rocket Program for the Cold War

*Monique Laney* (University of Kansas)—Operation Paperclip in Huntsville, Alabama

*Dwayne Day* (Space Studies Board/National Research Council)—The Central Intelligence Agency and Freedom of Space

*Andrew Butrica*—The “Right” Stuff: The Impact of the Reagan Revolution and the Conservative Space Agenda on the U.S. Space Program

*James Hansen* (Auburn University)—China’s Human Spaceflight Program and Chinese National Identity

*Jonathan Coopersmith* (Texas A&M University)—The Railroad and the Space Program: A View from the 21st Century

#### **3:30–5:00 p.m. Roundtable**

**DAY 2 REMEMBRANCE AND CULTURAL REPRESENTATION OF THE SPACE AGE**

How is the historical record of the Space Age collected, preserved, displayed, and interpreted around the world, especially in the United States, Russia, the European Union, Canada, and China? What purpose do space museums serve and what message do they convey? How accessible are space archives? How do the “official” versions of events square with the document trail and with eyewitness accounts? How is the Space Age represented in the arts, in the media, in the movies, in propaganda discourse, etc.?

**9:00 a.m. Keynote: *Emily S. Rosenberg***—Far Out: The Space Age in American Culture

**9:30–11:30 a.m. Session 1: Invited Papers and Commentary**  
*Roger D. Launius*, Chair

30 min. ***Constance Penley*** (University of California at Santa Barbara)—Film, Arts, and the Media

30 min. ***Martin Collins*** (NASM)—A Second Nature Rising: Spaceflight in a Time of Representation

30 min. **Commentator: *Slava Gerovitch*** (Massachusetts Institute of Technology)

30 min. **Panel/Q&A: *Roger D. Launius***, Moderator

**1:00–3:00 p.m. Session 2: Contributed Papers**

***Amy Nelson*** (Virginia Tech)—Lost in Space: Global Echoes of Sputnik 2

***Cathy Lewis*** (NASM)—Cosmonaut Nostalgia in Film

***James Oberg***—Cosmonauts and Cosmo-NOTS: Image Falsification in the Soviet Manned Space Program

***Michael Soluri***—Discovering the Iconic in Space Exploration Photography

***Bettyann Holtzmann Kevles*** (Yale University)—Space Art and Art in Space

***Robert Kennedy***—Robert Heinlein’s Influence on Spaceflight

**3:30–4:30 p.m. Roundtable: *Linda Billings***, Moderator

**4:30–5:00 p.m. Closing Keynote: *Roger D. Launius***

For more information, see <http://history.nasa.gov>.

## OTHER HISTORY NEWS

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### National Air and Space Museum (NASM), Division of Space History (DSH)

In mid-January 2007, Roger Launius rotated out of the Chair of DSH after four years of energetic service and Michael Neufeld took over. Neufeld’s book, *Von Braun: Dreamer of Space, Engineer of War* (New York: Alfred A. Knopf), will be published in September, just in time for the 50th anniversary of *Sputnik*. It will be about 640 pages long and represents the culmination of 20 years of research.

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*Other History News (continued)*

Robert Smith, University of Alberta, has arrived as the new Charles A. Lindbergh Chair. He is exploring the history of the Hubble Space Telescope since its launch in 1990, as well as the development of its planned successor, the James Webb Space Telescope. He will remain in Washington, DC, until August.

Frank Winter has published “The Birth and Early Rise of ‘Astronautics’: The REP-Hirsch Astronautical Prize, 1928–1940” in *Quest* 14, no. 1 (January 2007): 35–43. This is the first comprehensive and scholarly article on the REP-Hirsch Prize of 1928–1940, the world’s first award in astronautics that also gave birth to the term “astronautics.”

Roger Launius was the banquet speaker for the Science and Technology Applications International Forum (STAIF) 2007 on 13 February 2007, in Albuquerque, New Mexico. His topic was “Exploration through the Centuries.” Additionally, he presented a paper entitled “Robots and Humans in Spaceflight: Technology, Evolution, and Interplanetary Travel,” based on his forthcoming book coauthored with Howard McCurdy. Roger also presented in a session at the American Association for the Advancement of Science (AAAS) annual meeting in San Francisco, California, on 15 February 2007. His paper was entitled “Key Turning Points in the History of the Space Age.” Valerie Neal, also of DSH, was the commentator for the session. In addition, Roger has published “Indispensable Books on the History of the Space Shuttle,” *Aerospace America* (February 2007): B11. Roger also gave a special lecture for educators on Saturday, 3 March 2007, concerning the history of spaceflight at the Indiana State Museum, Indianapolis, Indiana, at the launch of a traveling exhibit, “Space: A Journey to Our Future.” He is the author of the companion book to the exhibit. Finally, Roger Launius and Dennis R. Jenkins, NASM Verville Fellow in 2005–2006, have published an article, “Is It Finally Time for Space Tourism?” in *Astropolitics: The International Journal of Space Politics and Policy* 4 (winter 2006): 253–280.

Both Roger Launius and Margaret Weitekamp participated in a session at the American Historical Association (AHA) in Atlanta, Georgia, on 4–7 January 2007. The session, “From Alien Nations to Global Community: Political, Cultural, and Environmental Approaches to Nationalism in Space History,” explored the transition from nationalism to internationalism during the Apollo era from three different subdisciplines: political history, cultural history, and environmental history. Roger gave the paper, “‘You Really Want To Impress Us! Bring Back Our Flag!’ Nationalism, Jingoism, and Project Apollo as a Surrogate for War,” and Margaret presented “The American Space Craze: Looking at Nationalism through Space Memorabilia.” In addition, Neil M. Maher, Rutgers University and former NASM Verville Fellow, offered “‘Think Globally, Act Locally’: How NASA Technology Internationalized the Space Race and the Environmental Movement.” Roger also organized and chaired a session at the annual meeting of the Society for History in the Federal Government (SHFG) on 8 March at Archives II, College Park, Maryland. The session was entitled “Presenting Federal History to a Broad Public” and included participants from the Smithsonian: Dik Daso (NASM Aeronautics), Jennifer Levasseur (DSH), and Harry Rubenstein (National Museum of American History), as well as Ann Hitchcock from the National Park Service.

Martin Collins provided an invited comment on a session of papers at “Technological Innovation and the Cold War,” a conference at the Hagley Museum and Library on 9 March. The conference was organized by Phil Scranton and John Krige, two former hold-



ers of NASM's Lindbergh Chair, and aimed to provide an assessment of past and current research on this crucial topic in U.S. and international history.

Every year, DSH selects a portion of the objects in the NASM collections database to update for public access. The 2006 project included the 1,174 artifacts on public display already marked "curator approved" by January 2006. Of this allotment, 1,018 of them were fully updated and approved for inclusion in e-Museum with the "public access" check. They are now available for viewing by the public through the NASM Web site <http://www.nasm.si.edu/>. By completing 87 percent of these (the goal for 2006 was 75 percent), DSH now has nearly 1,900 artifacts available for public viewing through the NASM Web site, and that number represents almost 15 percent of the entire space history collection. The department will continue this project in 2007 by updating all other DSH objects on display both at NASM and Udvar-Hazy Center (UHC), which consists of another approximately 1,200 artifacts.

A new video display at NASM shows image data from the Landsat 5 and Landsat 7 satellites. The Landsat satellites collect images of Earth's land surface. Data from these satellites are received at a ground station in South Dakota and then transferred over the Internet to the museum display. Images are displayed in real time during satellite passes over North America. Recently recorded data are displayed between passes. This project grew out of collaboration with the U.S. Geological Survey.

## CONTRACTS

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### Contract Awarded

Congratulations to the Georgia Institute of Technology, which was recently awarded a contract to research and write a book-length manuscript on the history of NASA's international relations efforts. Dr. John Krige will lead a small team that will conduct this research and writing. The book manuscript will focus on the time period since NASA's inception in 1958, but will also provide background to place NASA's work in the international arena in the context of previous scientific endeavors such as the International Geophysical Year (IGY).

### Upcoming Contracts

The NASA History Division is pleased to announce the release of a solicitation for a book-length historical manuscript about NASA's international Cassini-Huygens mission. The solicitation is online at <http://procurement.nasa.gov/cgi-in/eps/synopsis.cgi?acqid=123752>. The deadline for submissions is 22 May 2007.

The goal of this research project is to produce a roughly 400-page manuscript history on the origins, development, and operations of the Cassini-Huygens mission. The book shall focus on the time period from mission advanced studies (c. 1986) to the present day and shall consider the mission in the context of space science and in relation to past missions to the outer planets. The author shall document the views of scientists, engineers, policy-makers, enthusiasts, and the general public regarding the mission and

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*Contracts (continued)*

various ancillary issues, including the use of plutonium in the spacecraft's radioisotope thermoelectric generators and relations with international partners.

Interested parties should note that the procedures for submitting proposals have changed slightly from previous NASA History solicitations so proposers should be sure to read the instructions carefully. Any questions about this solicitation should be addressed to Alpana Jenne, as specified in the online announcement.

## PUBLICATIONS

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### New NASA History Publication

*Mission to Jupiter: A History of the Galileo Project* (NASA SP-2007-4231), by Michael Meltzer. This informative manuscript discusses the Galileo spacecraft project from its inception to its conclusion. Hard copies are available for purchase from NASA's Center for Aerospace Information (\$25 domestically and \$50 internationally) from <http://www.sti.nasa.gov>. It is also available electronically at <http://history.nasa.gov/sp4231.pdf>.

### Forthcoming Publications

*The Wind and Beyond: A Documentary Journey into the History of Aerodynamics in America, Volume II: Reinventing the Airplane*, edited by James R. Hansen, with Jeremy Kinney, D. Bryan Taylor, and J. Lawrence Lee. The second volume in *The Wind and Beyond* series discusses the airplane design revolution of the 1920s and 1930s and the quest for improved airfoils.

*Mars Wars: A Policy History of the Space Exploration Initiative*, by Thor N. Hogan. This provocative book argues that the failure of President George H. W. Bush's Space Exploration Initiative (SEI) was the result of a flawed policy process.

*Facing the Heat Barrier: A History of Hypersonics*, by T. A. Heppenheimer. This book documents the history of hypersonics research in great detail. It should be published in early 2007.

*Dictionary of the Space Age*, by Paul Dickson. This new book will augment and update *The Origins of NASA Names* (NASA SP-4402, 1975) by including terms not in common usage approximately 30 years ago, as well as extensive etymological information.

*Flights of Discovery: The History of the Dryden Flight Research Center*, by Lane E. Wallace. This history of the first 50 years at the NASA Dryden Flight Research Center captures the spirit of the role flight research has played in aeronautical research and development and provides insightful accounts of most of the major flight research projects from 1946 to 1996.

*Nose Up: High-Angle-of-Attack and Thrust Vectoring Research at NASA Dryden, 1979–2001* (NASA SP-2006-4534), by Lane Wallace. This monograph examines three different programs that explored high-angle-of-attack flight: the F-18 High Alpha Research Vehicle (HARV), the X-31, and the F-15 Advanced Controls Technology for Integrated Vehicles (ACTIVE). This monograph is scheduled for publication in 2007.

## NEW ONLINE RESOURCES

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### NASA History Web Sites

*We Freeze to Please: A History of NASA's Icing Research Tunnel and the Quest for Safety* (NASA SP-2002-4226), by William M. Leary, is now available online at <http://history.nasa.gov/sp4226.pdf>.

The lengthy appendices to the Apollo 204 Review Board Report are now available online at <http://history.nasa.gov/Apollo204/content.html>.

Information regarding the 45th anniversary of the Mercury *Friendship 7* mission (in which John Glenn became the first American to orbit Earth) is available online at <http://history.nasa.gov/friendship7/>.

### Other New Electronic Resources

The Aviation Safety and Security Archives (ASASA) of Embry-Riddle Aeronautical University (ERAU) has launched its new “digital library” of both born-digital and scanned reports, photographs, correspondence, investigative files, and other materials in its physical facility on the Prescott, Arizona, campus. The “library” of digital materials may be reached by accessing the library link at ERAU, <http://library.pr.erau.edu/>, scrolling over the “Archives” link under the eagle, and choosing the “Archives Home.” This leads to a brand-new set of pages for ASASA just created by the ERAU Prescott Library’s electronic services librarian, Joanne Evanoff, and the “digital library” link in the frame on the left. The database for the digital library is ArchivalWare, a PTFS product (<http://www.ptfs.com>) populated by ASASA staff, including student employees, and with quality checks and uploading done by full-time staff members Denise Vickers (research specialist) and Arel Lucas (archivist). Full text of most documents is available, but descriptions of documents not scanned are also being provided. It is hoped that a scan-on-demand service being given a trial will help guide the staff’s selection of documents to be digitized. For further information, contact Denise Vickers at [prasasa@erau.edu](mailto:prasasa@erau.edu) or call 928-777-3949.

## UPCOMING MEETINGS AND EVENTS

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15–16 May 2007, the Chemical Heritage Foundation will host the E. N. Brandt Oral History Conference in Philadelphia, Pennsylvania. For more information, see <http://www.chemheritage.org/>.

27–31 May 2007, the American Astronomical Society (AAS) will be holding its 210th meeting in Honolulu, Hawaii. See the AAS Web site, <http://www.aas.org>, for meeting updates.

1–2 June 2007, the Business History Conference will hold its annual conference at Case Western Reserve University in Cleveland, Ohio. The theme of the conference is “Entrepreneurial Communities.” For more information, see <http://www.thebhc.org/annmeet/general07.html>.

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*Upcoming Meetings and Events (continued)*

20–24 June 2007, the Society for Historians of American Foreign Relations (SHAFR) will hold its annual meeting at the Marriott Westfields Conference Center in Reston, Virginia. For additional information, see <http://www.shafrr.org/>.

21–27 June 2007, the American Library Association annual conference will be held in Washington, DC, at the Washington Convention Center and at several hotels within the city. See <http://www.ala.org/ala/eventsandconferencesb/annual/2007a/geninfo.htm> for details on the conference and related activities.

14–19 August 2007, the International Committee for the History of Technology’s (ICOHTEC) 34th Symposium will meet in Copenhagen, Denmark. “Fashioning Technology: Design from Imagination to Practice” is the symposium’s general theme. For details, see <http://www.icohtec2007.dk>.

29 August–2 September 2007, the Society of American Archivists will be holding its 71st annual meeting at the Fairmont Hotel in Chicago, Illinois. For additional conference information, visit <http://www.archivists.org/conference/index.asp>.

16–17 October 2007, the Air Force Historical Foundation will host a symposium entitled “The Evolution of Air and Space Power: Know the Past, Shape the Future,” in Arlington, Virginia. See <http://www.afhistoricalfoundation.org> for more information on the symposium.

17–21 October 2007, the Society for the History of Technology will hold its annual meeting at the Capital Hilton in Washington, DC. The theme of the conference will be “SHOT@50: Looking Back, Looking Beyond.” For additional information on the meeting, see <http://www.historyoftechnology.org/annualmtg.html>.

1–3 November 2007, the Mid-Atlantic Regional Archives Conference will hold its fall meeting in Williamsburg, Virginia, at the Williamsburg Marriott. For more information, see <http://www.lib.umd.edu/MARAC/conferences/conferences.html>.

3–6 January 2008, the American Historical Association will host its annual meeting at the Marriott Wardman Park and Omni Shoreham hotels in Washington, DC. For more information on the conference, see <http://www.historians.org/>.

The NASA History Division, under the Office of External Relations, NASA Headquarters, Washington, DC 20546, publishes *News and Notes* quarterly.

To receive *News and Notes* via e-mail, send a message to [domo@hq.nasa.gov](mailto:domo@hq.nasa.gov). Leave the subject line blank. In the text portion, simply type “subscribe history” without the quotation marks. You will receive confirmation that your account has been added to the list for the newsletter and for receiving other announcements. We also post the latest issue of this newsletter at <http://history.nasa.gov/nltrc.html> on the Web.

Do you have more questions about NASA history in general? Please check out our NASA History Division Home Page at <http://history.nasa.gov> on the Web. For information about doing research in the NASA History Division, please e-mail us at [hinfo@hq.nasa.gov](mailto:hinfo@hq.nasa.gov) or call 202-358-0384.

We also welcome comments about the content and format of this newsletter. Please send comments to Steve Garber, newsletter editor, at [stephen.j.garber@nasa.gov](mailto:stephen.j.garber@nasa.gov).

#### **NASA Headquarters History Division Staff Contact Information:**

Steven J. Dick, Chief Historian	<a href="mailto:steven.j.dick@nasa.gov">steven.j.dick@nasa.gov</a> 202-358-0383
Nadine Andreassen, Program Support Specialist	<a href="mailto:nadine.j.andreassen@nasa.gov">nadine.j.andreassen@nasa.gov</a> 202-358-0087
Colin Fries, Archivist	<a href="mailto:cfries@mail.hq.nasa.gov">cfries@mail.hq.nasa.gov</a> 202-358-0388
Stephen Garber, Historian	<a href="mailto:stephen.j.garber@nasa.gov">stephen.j.garber@nasa.gov</a> 202-358-0385
John Hargenrader, Archivist	<a href="mailto:jhargenr@mail.hq.nasa.gov">jhargenr@mail.hq.nasa.gov</a> 202-358-0387
Jane Odom, Chief Archivist	<a href="mailto:jane.h.odom@nasa.gov">jane.h.odom@nasa.gov</a> 202-358-0386

Created and produced by the following:

Steve Garber, NASA Headquarters History Division  
 Dyana Weis and Lisa Jirousek, Editors, NASA Headquarters Printing and Design Office  
 Steve Bradley, Designer, NASA Headquarters Printing and Design Office  
 Jeffrey McLean, Printing Specialist, NASA Headquarters Printing and Design Office  
 Trenita Williams, Mail Coordinator, NASA Headquarters Mail Room  
 Carl Paul, Distribution, NASA Headquarters Printing and Design Office





National Aeronautics and  
Space Administration

**NASA HISTORY DIVISION**

Office of External Relations  
Washington, DC 20546

*<http://www.nasa.gov>*

*<http://history.nasa.gov>*