

COMMON Ground



PRESERVING OUR NATION'S HERITAGE WINTER 2007

50

SPUTNIK AT

THE LEGACY OF THE SPACE RACE



Shock to the System

| BY PAUL DICKSON |

FIFTY YEARS AGO I WAS A FRESHMAN at Wesleyan University in Middletown, Connecticut. I was walking across the campus on a beautiful autumn evening and a friend of mine ran up to me and said, “The Russians just put a rocket in orbit.” He was nervous and we looked up and could see nothing of course, but we went back to the fraternity house and turned on the radio. NBC had just picked up this signal from a receiving station on Long Island, and the announcer said, “Listen now for the sound that will forevermore separate the old from the new.” And the beeping started. It was one of the most exhilarating moments of my life because I realized I was actually witnessing history. It was like being at the Battle of Hastings or the end of the Hundred Years’ War. **SPUTNIK’S VISIBILITY WAS** calculated. Its surface was polished, and it had mirrors. The Russians wanted people to see and hear it. The orbit was low enough to reflect the sun; you could pick up the beep on short wave. High school science clubs tuned in, becoming part of the mystique. A few nights later, the radio said, “The astronomer at Yale has just announced that Sputnik will be coming up the Connecticut River. It’s going to pass over New Haven, then Middletown, then Hartford.” That night, I stood on the football field and this glowing thing comes across the horizon. It was amazing. It was electric. **IT WAS ALSO A TREMENDOUS SHOCK.** People began to wonder, if they can throw this Sputnik over the Monongahela and the Mississippi and the Ohio Rivers, if they can keep sending this over America day after day, if they’ve got rockets that are that powerful, then they can send a missile right into the middle of Omaha. Armageddon from space was suddenly a reality. America and the Soviet Union were compared to two scorpions in a bottle. **THE THREE BRANCHES OF THE MILITARY** were fighting for control of the space program, but President Eisenhower, who had seen battle up close, believed that nuclear weapons should be in the hands of civilians, an idea that was carried on by President Kennedy. Eisenhower defined national security in terms of prosperity and goodwill in the world. One of the results of Sputnik was that instead of having a war, we had a race. The prize was the moon and the repercussions were far-reaching. The space race introduced massive public works programs. There was an unprecedented infusion of technology to both cultures.

AMERICA IMMEDIATELY STARTED pumping billions of dollars into education. The National Defense Education Act created huge numbers of new Ph.D.s, and summer institutes where teachers enriched their curricula, places that still exist today. The middle class was being squeezed out of education and suddenly there was a multitude of scholarships and a boost in graduate school enrollment. The renaissance wasn’t just in engineering and physics, but in education and other fields as well. It is a benefit we still enjoy today. **IN 1958, THE UNITED STATES** established the Defense Advanced Research Project Agency to prevent another surprise like Sputnik. The United States began spending money on very far-out technology, things that we couldn’t even imagine at the time. In this research lay the origins of micro-miniaturization, the beginnings of solar power, the seeds of the Internet. Sputnik is in the laptop. It’s in the cell phone. It’s in almost everything we see in

“Sputnik is in the laptop. It’s in the cell phone. It’s in almost everything we see in modern life. The space race forced us to create new technology. I think we picked up a decade or two because of Sputnik. I think it compelled us to better ourselves.”

modern life. The space race forced us to create new technology. I think we picked up a decade or two because of Sputnik. I think it compelled us to better ourselves. **THE RUSSIANS CHALLENGED US.** They criticized our materialism, our big cars, our color televisions, our princess phones. They seemed to be saying, all that matters is what you can do for humanity. Every year, the Soviet Union was graduating tens of thousands of women from their universities—engineers and doctors. How many women were at MIT in the late ’50s? How many were going into engineering? This was another area where Sputnik forced us to better ourselves. **THE REACTION TO CRISIS IS FASCINATING.** People talk about whether there’s a Sputnik moment out there, if there’s something lurking on the horizon that will galvanize us, if maybe there have been some missed chances, like Katrina, or the bridge collapse in Minneapolis. It is a hopeful thought, in a way, that there may be something, like that light in the sky, that can elevate us to a higher level of humanity.

Paul Dickson is the author of *Sputnik: The Shock of the Century*. Adapted from a speech at Northern Virginia Community College, October 2007.

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Cover: Detail of Soviet greeting card celebrating supremacy in space and the 42nd anniversary of the Russian Revolution, circa 1959.

RYKOFF COLLECTION/CORBIS

REMAINS OF REVOLUTION

REPORT SEES UNCERTAIN FUTURE FOR REVOLUTIONARY, WAR OF 1812 SITES

In response to a congressional directive, the National Park Service has produced a first-of-its-kind report on some of the earliest historic military sites in the American story. Battlefields and other properties associated with the Revolutionary War and the War of 1812 were the subject of a four-year study, prompted by concern over rapidly encroaching development and a dearth of information. Among the findings are that more than two dozen highly intact major sites have little to no protection, and that within the next decade about a quarter of the sites studied are expected to be completely destroyed or dramatically altered.

obscure in the national consciousness. Burnt Corn, Fort Mims, and Tallussahatchee do not carry the same patriotic resonance as Yorktown, Saratoga, or Bunker Hill. Nonetheless, the war represents an important time in history, when a young nation



Led by the National Park Service American Battlefield Protection Program and Cultural Resources Geographic Information Systems Program, the project was the first to focus on these two early conflicts in such a comprehensive fashion. Many sites associated with the wars are now occupied by subdivisions, highways, and shopping centers. The study's goal was to develop a clear picture of how many sites remain, describe their significance, and determine whether they are threatened. Congress also asked that researchers consider which places, if any, could be added to the National Park System. The report will be delivered to Congress in early 2008.

More than 2,700 properties made up the initial pool. A panel of scholars rated the significance of each, with 677 deemed worthy of further study. What followed is what the report calls "perhaps the broadest federal effort ever undertaken" to determine the status of such sites. Aside from battlefields, the project included encampments, hospitals, supply centers, and headquarters.

WHILE PLACES SUCH AS BRANDYWINE AND FORT MCHENRY ARE WELL KNOWN, THERE IS A MULTITUDE OF RELATED SITES FLUNG far over the 31-state research area. British troops moved down Pennsylvania Avenue in their 1814 assault on Washington, DC, for example, but the modern thoroughfare offers no hint of the event. Other properties like little known rural mills, forgotten farmhouses, and isolated stone buildings also hide their connection to the wars. Documentation is sparse. These properties posed a challenge to researchers, who often had little more to go on than anecdotal evidence or an assertion that a given structure was standing at the time of war. Some are shipwrecks, others are archeological sites.

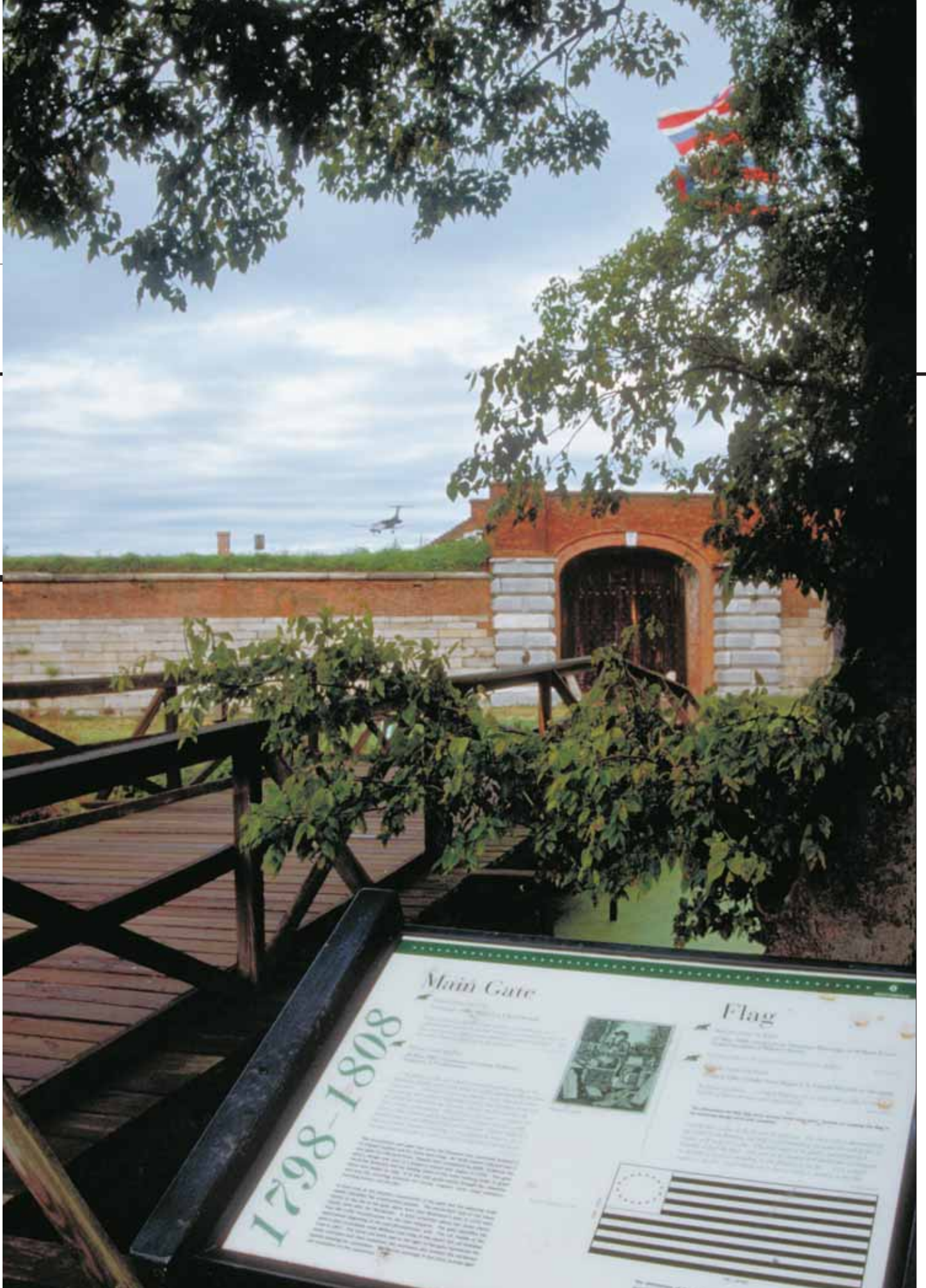
The report's authors cite how important "authenticity of place" is in interpreting the past. Referring to the Revolution, they write, "At Concord Bridge, one comes to terms with a simmering frustration that finally exploded in a volley of musketry." The War of 1812, "America's forgotten war," remains relatively

sensing the possibility of empire flexed its muscles against its former master.

The study was an outgrowth of a similar effort in the early 1990s. At that time, the Civil War Sites Advisory Commission, a congressionally appointed body, worked with the National Park Service to produce an extensive survey of Civil War battlefields. The same approach was used for this study, except this time it was led solely by National Park Service researchers and the scope was far more ambitious, focusing on more than the battlefields themselves.

The Park Service enlisted the help of state historic preservation officers—who had the best in-depth knowledge of their own locales—and hired consultants to fill out the ranks of the surveyors. The state and local researchers

Above: Fort Ticonderoga, overlooking Lake Champlain in New York State. Right: Fort Mifflin, on the Delaware River, site of a siege in 1777.



LEFT PAUL HAWKINS, RIGHT CHRIS HEISEY

1798-1808

Main Gate

Historical Marker

The Main Gate to the fort was built in 1808. It was the only entrance to the fort from the land. The gate was built of brick and stone. It was destroyed in 1862 during the Battle of Fort Mifflin. The gate was rebuilt in 1877. It is now a National Historic Landmark.



Flag

The flag shown in the illustration is the 15-star flag, which was used from 1794 to 1800. It is the first flag to have a star for each state. The flag is now in the collection of the National Archives and Records Administration.





LEFT STEPHEN D. SMITH, RIGHT CHRIS HESSEY

conducted the initial work, poring over battle records, documents, and personal accounts. Then, before heading into the field to conduct surveys, participants were trained by National Park Service specialists in how to use GIS and GPS technology. One of the specialists, Deidre McCarthy, says the work represents “a completely new approach to landscape and battlefield survey.”

America’s oldest wars were indeed the focus of something new: surveyors walking about with handheld GPS receivers. Centuries-old information was compared to the scene today, a quest that sometimes ended in the presence of a big-box store or a parking lot. In less disturbed areas, the detective work began in earnest. The information was ultimately compiled into a comprehensive and versatile database. A user can search for specific features or view landscape attributes in relation to one another. The boundaries of a skirmish can be drawn in GIS, then laid over a modern aerial photograph. Software can determine a battlefield’s exact acreage, assess

Left: The ruins of Sheldon Church in Beaufort County, South Carolina, burned by the British in 1779, rebuilt, and burned again by General Sherman during the Civil War. Below: The William Brinton House, a national historic landmark, survived the Battle of Brandywine.



urban encroachment, and show the extent of properties whose owners are sympathetic to preservation.

Of the battlefields and other properties that survive, many enjoy at least partial protection from public or non-profit agencies. However, the extent of this protection varies. Significant portions of most of these sites are privately held, making them vulnerable to sale, subdivision, and destruction. About 85 are owned entirely by private individuals, and tend to be high priorities for preservation.

The report categorizes the threats as short or long term, offering suggestions for preserving and interpreting what remains, like having public agencies and nonprofits collaborate to purchase land or have it donated. New partnerships are urged, as well as innovative arrangements that work toward recognizing this fast disappearing legacy. Some possibilities include local friends groups, a national

advocacy organization, and partnerships with private landowners. Working to designate sites as national historic landmarks and listed in the National Register of Historic Places are also recommended. Of the sites already commemorated, there is little in the way of interpretive displays. Engaging visitors will be a critical component of any preservation strategy.

As an example of the possibilities, Tanya Gossett of the American Battlefield Protection Program points to South Carolina’s Camden Battlefield. The site of a Revolutionary War battle where the British consolidated their hold on the Carolinas, Camden became a national historic landmark in 1962. Local concern elevated it to the point where it is now the subject of a special resource study to determine if it could become a national park. “There’s been a lot of movement to get it designated,” says Gossett. Camden enjoys the benefits of a good public-private partnership. Bowater, Inc., a paper company, was recognized by the National Park Service for its part in preserving the battlefield. It donated a 310-acre conservation easement and has provided over half a million dollars. Camden has also received grants from the NPS-administered Save America’s Treasures Program and American Battlefield Protection Program.



Left: Cannon and shot at Baltimore’s Fort McHenry, target of a British naval bombardment and inspiration for the “Star Spangled Banner.” The site, unlike many from the War of 1812, enjoys protection as a national park.

From an educational standpoint, the wars hold a great deal of potential. Both conflicts had a profound effect on Native Americans and persons of African descent, whose participation is not always recognized. Thoughtful interpretation could expose visitors to what the report calls “provocative stories” and their parallels in today’s world. The researchers list sites related to the Native and African American perspectives, addressing not only their roles in the wars but the consequences that followed.

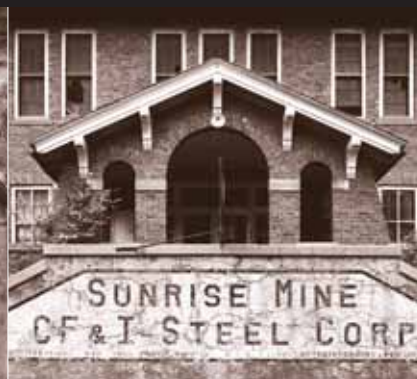
To explain the importance of saving sites associated with long-ago turmoil and uncertainty, the authors of the report point to the world of today. “In times when our nation faces troubling challenges in the world, Americans instinctively seek the authentic fabric of history.”

For more information, email Tanya Gossett at tanya_gossett@nps.gov.

SUNSET ON SUNRISE

BOOM AND BUST IN THE IRON-RICH HILLS OF A HIGH DESERT MINING TOWN

“The now abandoned town . . . lies on the floor of Eureka Canyon, surrounded by [walls]. Red dust covers everything . . . including the trees and the buildings. The property is overgrown with native shrubs and grasses [amidst] the remains of domestic fruit trees, roses, lilacs, and perennial flowers.” This description of Sunrise, a defunct mining town in eastern Wyoming, leads off the narrative part of its documentation in the National Register of Historic Places. Like many towns that grew up around extracting valuable metals out of the earth, Sunrise appears stripped and empty. The impression is misleading, though, because the lonely site actually contains a very full story of technology, labor, and immigration in what’s left of its small town setting.



Far left: Shower house for mine workers. **Near left:** Wyoming’s first YMCA, built for the company town in 1917. **Right:** Boiler house that supplied heat to the train depot, the general store, and the YMCA.

THE SUNRISE MINE HISTORIC DISTRICT, LISTED IN THE NATIONAL REGISTER IN 2005, is a 225-acre property in the foothills of Wyoming’s high desert, about halfway between Casper and Cheyenne, owned today by a private citizen. It is the site of one of the West’s earliest and longest-lived iron mining operations, where several technical developments were pioneered, and significant in the history of community planning.

The Colorado Fuel and Iron Company, which ran both mine and town, wielded enormous influence over how its employees lived. Immigrants flocked to the remote area in search of work, which saw a unique ethnic intermingling, and in later years was a lab for evolving relations between labor and management.

The iron-rich hills went undiscovered until relatively late. In 1880, after gold had fizzled, copper replaced it as the moneymaker. But within seven years the cost of hauling ore via mule to a smelter—coupled with a 40 percent drop in the price of copper over a four-year period—spelled the end.

A sharp-eyed local rancher, who had visited Minnesota’s iron mines, started buying up Sunrise claims. Samples of the local ore

were displayed at Chicago’s 1893 World’s Fair and—at 60 percent pure—were billed as “superior to all other domestic and foreign samples.” Iron mining began in earnest. In the next few years, the rest of the West caught on and it wasn’t long before deep-pocketed corporations showed up. The Colorado Fuel & Iron Company, which was putting heavy capital into the ore as part of an expansion, bought the mine for \$500,000.

THE TOWN FUNCTIONED FROM 1898 TO 1980 AND WHILE THE UNCHANGING nature of the low scrubby hills might suggest timelessness, global developments—both technological and social—took firm root here.

Today’s historic district comprises about 20 buildings along with an assortment of ruins and foundations. With around 500 residents at its peak, Sunrise was laid out in a grid pattern with tree-lined streets. World War I-era photos taken from a hill depict a settlement of hip-roofed cottages and a church steeple amidst a series of smokestacks.

The mine was crucial in the development of both Wyoming and Colorado, since it fed smelters elsewhere. At first, miners simply blasted the ground apart with dynamite, then picked out the ore





SUNRISE WAS A COMPANY TOWN IN A TIME BEFORE

Above: Lonely remnants of Colorado Fuel & Iron’s once pervasive presence. The building on the left was one of many that housed boilers to power mining equipment and provide heat. In the shower house, on the right, miners washed the red dust off their bodies after a day spent working hills rich with hematite, an iron oxide Indians used as a paint pigment.

with a steam shovel. A company railroad carried it 375 miles to a smelter in Pueblo, Colorado, which was rapidly expanding to meet demand.

After a few years, the pits became so deep they were impossible to get at from the surface. This brought about an innovation called the “glory hole,” which included excavating chutes in areas that rail cars and other equipment could no longer reach. The chutes were linked to tunnels lined with a system of tracks and cars. As before, the pits were blasted except now the broken rock fell down the chutes to be collected and hauled out of the mine via a hoisting shaft.

In 1927, another innovation replaced the glory hole. “Block caving” undercut large sections so they would collapse and break on their own. These city-block-size portions would fall into a newly excavated void where the ore could be hauled out.

World War II demand fostered major changes. Sunrise was one of just a few underground iron mines in the United States and the only one west of the Missouri. Structures known as head frames were built at the tops of shafts, which housed hoisting and loading systems. In 1945, one head frame nearly topped 200 feet, the nation’s tallest. Today the site gives a picture of technology whose impacts

are still felt. According to the National Register description, the setting is intact, with no modern intrusions. What remains as well are the ghostly traces of personal lives. Sunrise was a company town in a time before organized labor. The paternal presence permeated the place—including the company houses, which workers were required to rent, and the company newspaper, *Camp and Plant*, published in Italian, German, Spanish, and English for everyone whose labor supported the far-flung CF&I empire.

THE IMMIGRANTS FIRST ARRIVED IN THE EARLY STAGES OF MINING, COMING in numbers as it thrived. Greeks were among the most numerous, forming Greek work gangs, living in Greek houses, and founding a Socrates society to help sick and struggling countrymen. The Italians had a social group called the Dante Alighieri Society. The nationalities were many, extending beyond Europe and into Asia and the Middle East. Many of the immigrants who came to Sunrise quickly sent word back home that there was work in the American West, with the resulting diversity still visible today in the face of the population.

In 1902 the company built the Sociological Hall, a recreational building. In 1917 a YMCA went up. The Italian Renaissance revival structure, which still stands, was the community centerpiece. The



ORGANIZED LABOR. THE PATERNAL PRESENCE PERMEATED THE PLACE—

Above: The hoist house, the largest building still standing in the historic district. Built in 1944, it once housed the machinery to move ore and equipment through mine shafts hundreds of feet deep.

INCLUDING THE COMPANY HOUSES, WHICH WORKERS WERE REQUIRED TO RENT, AND THE COMPANY NEWSPAPER, CAMP AND PLANT, PUBLISHED IN ITALIAN, GERMAN, SPANISH, AND ENGLISH FOR EVERYONE WHOSE LABOR SUPPORTED THE FAR-FLUNG CF&I EMPIRE.

'20s brought duplexes for the increasing number of workers. At its peak, the town had about 50 houses, a train depot, and a filling station. Today, the site still bears evidence of a carefully planned community. Bridges, sidewalks, sewers, and rock-walled terraces extend up the hillsides, with clothesline poles still marking now-overgrown yards.

CF&I HAD ITS SHARE OF LABOR TROUBLES IN ITS MINES, PLANTS, AND TOWNS.

In April 1914, National Guardsmen fired on striking miners and their families in a now infamous showdown at Ludlow, Colorado. The dead included 11 women and 2 children.

John D. Rockefeller, a major CF&I investor determined not to repeat the experience, set up one of the first company-run unions. Although miners could elect representatives to discuss concerns with management, it was a far cry from a real union. The arrangement was influential in the later years of labor relations.

With the advent of the automobile, workers no longer had to live in town. Sunrise began a slow decline. While World War II brought a burst of prosperity—plus unprecedented feats to reach deeper veins of ore—the domestic steel market eventually faced tough competition from foreign suppliers. The mine continued profitably

until 1959, when a strike shut down the steel industry for nearly four months. Manufacturers turned to less expensive Japanese and Korean imports. This was the beginning of American steel's gradual demise. The Sunrise mine eked along until 1980, when it closed. Many of the buildings were either burned or torn down. Six remaining houses, the Y, the old boiler structures, and other remnants today comprise what the National Register nomination calls a "quiet testament to a major mining operation of the last century."

A research project at the University of Wyoming's American Studies Program yielded the National Register nomination, with students and faculty visiting the site and interviewing retired mine workers and their families. The Bessemer Historical Society, based in Pueblo, Colorado, has published *Sunrise, a Chronology of a Wyoming Mine*, an exhaustive history of the operation from its beginnings to its end. Today, the owner of the historic district would like to see the interpretive potential, inherent in both the nomination and the book, realized.

For more information, contact the Bessemer Historical Society at info@cfisteel.com or Kara Hahn at the Wyoming State Historic Preservation Office, khahn@state.wy.us.

Witness to Infamy

Sand Creek Massacre Site Memorialized by the National Park Service

THE NATIONAL PARK SYSTEM BECAME ONE PARK RICHER THIS PAST APRIL WITH the designation of the Sand Creek Massacre battlefield as a national historic site. “The massacre was a defining event in both tribal and western history,” says former superintendent Alexa Roberts, now in charge of nearby Bent’s Old Fort and the Southeast Colorado Group. “Its untold story is long overdue.” Roberts, who recently won a National Park Service Appleman-Judd-Lewis Cultural Resource Stewardship award for her work at the massacre site, says

After mutilating the corpses and burning the village, Chivington and his men were paraded as heroes until the ugly truth led to three federal investigations. No one ever spent a day in jail, however, and the only justice was a U.S. Army condemnation calling the attack “a cowardly and cold-blooded slaughter, sufficient to cover its perpetrators with indelible infamy, and the face of every American with shame and indignation.”

BEFORE THE FIELD COULD BE MEMORIALIZED ITS LOCATION HAD TO BE IDENTIFIED. For decades people thought the massacre was in a bend in Sand



Left: Cheyenne artist Howling Wolf depicts himself fighting the militiamen in an example of “ledger art,” pictures that Indians drew on sheaves of accounting paper they got through trade or capture. Right: “Witness trees” at the site.

that turning the land into the 391st unit of the National Park System was not an easy task. “Sand Creek took the effort of a lot of people.”

The tumultuous journey began in 1999 when former Colorado Senator Ben Nighthorse Campbell sponsored legislation to get the site recognized. A Cheyenne himself, it was something he had wanted for decades. “The massacre is a real black eye in Colorado history,” he says.

Located on the rural southeastern plains of Colorado, the infamous field, bordered by a dried up streambed and a number of “witness trees,” is where Colonel John Chivington and his 700 volunteer soldiers, acting on tensions between settlers and Native Americans, ignored a waving white flag and brutally attacked a Cheyenne and Arapaho village on November 29, 1864. Taken by surprise, the Indians were defenseless against weapons such as 12-pounder mountain howitzers, and over 160 people, most of them women, children, and the elderly, lost their lives. The soldiers lost 16.

MOST OF THE INDIANS NEVER REALIZED THE IMPENDING DANGER, PARTLY because they had received word from the government to await instructions for peace negotiations. “They were placid, peaceful, and unsuspecting,” Campbell says. One Cheyenne chief, White Antelope, stoically repeated a death chant, “Nothing lives long except the earth and the mountains,” as bullets tore into him.

Creek. But its boundaries had never been definitively recorded, and a metal detector search turned up little. “It wasn’t a place you could point to, like a tree or a rock—it was a running massacre that stretched miles,” Campbell says. The area was finally pinpointed three quarters of a mile away, through oral histories and old maps, confirmed by the metal detector discovery of Indian village artifacts and the remnants of the ammunition used against them. Most telling were fragments of the howitzer cannonballs.

BUT THEN CAME THE CHALLENGE OF WORKING WITH THE 17 OWNERS OF THE 12,488-acre patch, as well as the Cheyenne and Arapaho tribes, the Conservation Fund, Kiowa County, and the Colorado Historical Society—all key to acquiring the site.

Given the unfulfilled treaty to repay the Indians, it’s probably too late for justice, but not for awareness. Roberts is using her award as seed money for an archives and research center in the park’s gateway community. “I hope it’s a place where people can reflect on the relevance of the massacre to the timeless issues of fear, territorialism, and genocide that afflict people all over the world throughout history,” she says. With the site’s new designation, that’s just as the Cheyenne would want it, Campbell says. “It’s now a sanctuary and a place to pray.”

Sand Creek Massacre National Historic Site is on the web at www.nps.gov/sand.





ALL PHOTOS CAROL M. HIGHSWORTH FOR THE NPS MUSEUM MANAGEMENT PROGRAM EXCEPT AS NOTED. LEFT EISE 667

at home with

IKE *and* MAMIE

A LIFE ON VIEW AT THE PRESIDENT'S PENNSYLVANIA FARM BY MEGHAN HOGAN

Former First Lady Mamie Eisenhower once joked that she had “lived in everything but an igloo,” for in her 53 years of marriage to Dwight D. Eisenhower, they lived in 37 different places. But she only called one of them, a rural Pennsylvania farmhouse, home.

Left: A ceramic jug, which sits on the porch of the ex-president's farmhouse, is just one of many representational figures that testify to his iconic status, including plastic statuettes of him and Mamie offered as prizes in cereal boxes.

DUBBED THE “TEMPORARY WHITE HOUSE” DURING IKE’S STAY WHILE RECOVERING from his first heart attack in 1955, the farm—now called the Eisenhower National Historic Site—served as a retreat during his presidency. It did not become the Eisenhower’s permanent address until 1961 when the couple left Washington. Retirement didn’t slow Ike down—he kept up his military work ethic even in the pursuit of relaxation. He once joked to Walter Cronkite that his wife thought retirement was “just a word in the dictionary,” because for the ex-president it was the truth. Nowhere better can Ike admirers see this than when visiting the two-story structure, and with a new virtual exhibit now on the National Park Service Museum Management website, the contents of the house, on the outskirts of Gettysburg Battlefield, can be examined close up.

The web exhibit is not only a snapshot of the couple’s golden years, but also boasts many artifacts of Eisenhower’s army days, and later, his time as the nation’s 34th president.

Born into a poor family in 1890, Ike was the third of seven boys raised in Abilene, Kansas, on what one biography calls “the wrong side of the tracks.” While bright, paying for college was a struggle and he did not seem to have a particularly promising future until he got an appointment to West Point from Kansas senator Joseph Little Bristow. Ike was more interested in football than studying, but a knee injury ended his sports career, so he turned his attentions to the classroom, graduating as a second lieutenant in 1915. A year later he married 19-year-old Mamie Geneva Doud, their engagement sealed with a miniature of his West Point ring. Ike’s impressive climb up the military ranks had begun, culminating in 1944 with his promotion to five-star general, the same year he brilliantly led the invasion of Normandy.

Eisenhower’s stature as a war hero practically jumps off the computer screen, with item after item recalling his achievements. They include his silver and brass General of the Army insignia, his well-used Ronson lighter (he smoked four packs a day while planning the

RETIREMENT DIDN’T SLOW IKE DOWN—HE KEPT UP HIS

military work ethic even in pursuit of relaxation. He once joked to Walter Cronkite that his wife thought retirement was “just a word in the dictionary,” because for the ex-president it was the truth. Nowhere better can Ike admirers see this than when visiting the two-story structure.



invasion), a plethora of troop patches and badges, and a swastika pennant confiscated by GIs as the Allies made their way into Germany.

THE VIRTUAL TOUR ALSO FEATURES HIS CAMPAIGN MEMORABILIA, MUCH OF IT adorned with a catch phrase that captures the era. The “I Like Ike” slogan—which took many forms, from buttons to bumper stickers—testified to Eisenhower’s extraordinary popularity. He was the second Republican to serve two terms, getting more votes in his second election than his first. Hallmark did Christmas cards of the couple, printed exclusively for friends and family. After the two moved into their Pennsylvania retreat, Americans showered them with housewarming gifts for the new home. “Ike had a checklist for what to do with the gifts,” says Carol Hegeman, the site’s supervisory historian. “There was even a box on it labeled ‘Ask Mamie.’”

This was often the sensible choice, because she was in charge of decorating, although interior designer Elizabeth Draper oversaw the work. As an army wife, Mamie had lived everywhere, even in the jungles of Panama, placing possessions in storage as she went. “I feel like a football—kicked from place to place,” she once said, so a house of her own meant a lot. Remembering how much the two of them

Above: Likenesses of Ike in his U.S. Army uniforms. Right: A determined face stares back from a poster encouraging Americans to buy war bonds.

BACK 'EM UP





THE “I LIKE IKE” SLOGAN—WHICH TOOK MANY

LEFT TO RIGHT EISE 2584, EISE 15832, EISE 11213/HALLMARK COMPANY, EISE 8162

enjoyed Gettysburg, where they lived when Ike commanded nearby Camp Colt during World War I—they bought an eventual retirement home there while residing in New York City, where the ex-general was president of Columbia University before his election. Mamie fell in love with the 189-acre farm, declaring that she “must have this place.” The two-story brick house, dating to the 1750s, was purchased for \$44,000. No expense was spared in the renovation. New wings were added as the first lady asked for more and more changes, such as lowering the already installed bedroom windows so she could gaze out at the fields from her bed. An exasperated Ike, who refused to have the barn moved or the kitchen expanded, eventually gave in to her other requests.

Republic of Korea, and a painting of Prague from its citizens in gratitude for his actions in World War II. But the Eisenhowers were very down-to-earth and the house never felt like a museum. “A lot of people are surprised at how modest it is,” Hegeman says. Ike and Mamie loved hanging out in the enclosed back porch, where they watched “I Love Lucy” and “Gunsmoke.” Mamie so enjoyed soap operas that she had Secret Service agents watch when she couldn’t, then recount the story.

The setting saw many esteemed visitors from Churchill to De Gaulle. “Eisenhower liked to get them away from the White House formality so that he could get to know them one on one,” Hegeman says.

The porch doubled as Ike’s painting studio, where an easel holds a reproduction of his last, unfinished work. “I’ve burned more portraits than anything else,” he once said of his paintings, but several were made into prints for Christmas gifts while he was president. He got out the easel twice a week, “come hell or high water,” says Karal Ann Marling, author of *As Seen on TV: The Visual Culture of Everyday Life in the 1950s*, once painting seven pictures in ten days. “They’re no fun when they’re finished,” he said.

FAMOUS FOR HIS AFTERNOONS GOLFING WHILE PRESIDENT, IKE HAD A PUTTING green installed by the Professional Golfers Association, where he wielded a Grip-rite putter engraved with his own name. He also dis-



FORMS, FROM BUTTONS TO BUMPER STICKERS—TESTIFIED TO

“For God’s sake, get her what she wants and send me the bill,” he told the construction engineer. The \$215,000 renovation transformed the house into a fifteen-room, nine-bath “modified Georgian,” as its architect Milton Osborne called it. Only 80 miles from Washington, yet surrounded by scenic serenity, “Mamie’s Dream House” was perfect for both of them. Gifted to the National Park Service in 1967, it was restored to its 1960s appearance after Mamie’s death in 1979. “Ninety-nine percent of the furnishings are original,” Hegeman says. The same crops still grow in the fields.

A GUESTBOOK IN THE ENTRANCE HALL IS FILLED WITH THE SIGNATURE AND date of visitors received—with the exception of Nikita Khrushchev—even the four grandchildren who lived on a corner of the property. The living room boasts Mamie’s piano, a silk rug from the Shah of Iran, a black lacquer coffee table inlaid with mother-of-pearl from the

Eisenhower’s extraordinary popularity. He was the second Republican to serve two terms, getting more votes in his second election than his first. Hallmark did Christmas cards of the couple, printed exclusively for friends and family.

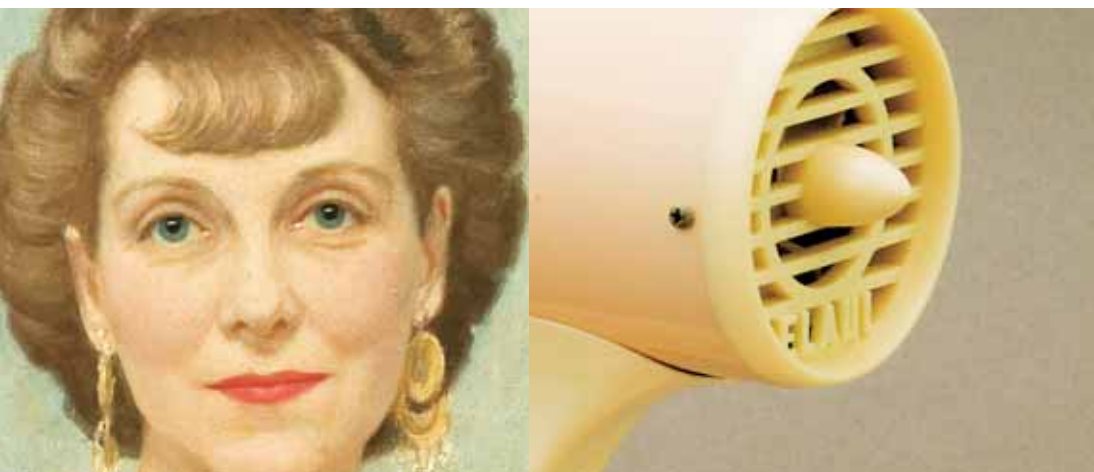
Far left: Ike’s well-worn lighter, which fired up four packs of cigarettes a day during the planning for the Normandy invasion. Near left: “I Like Ike” in Spanish. Above left: Ike and Mamie, icons of their time; Hallmark got into the act with a 1955 Christmas card of the couple in their Crosley Runabout, tree and presents in tow, sent out exclusively to family and friends. Above right: Golf ball. Ike, known for afternoons on the links during his presidency, installed a putting green on the farm.

played skill as a chef, with stews and Pennsylvania Dutch breakfasts. The cream-colored kitchen is a 1950s slice of life, with its Crosley refrigerator, metal cabinets, linoleum countertops, Veg-O-Matic food processor, and rocket-shaped Sunbeam mixer. He wasn't the main cook—that job went to Delores Moaney, who lived in the house with husband Sergeant John Moaney, his former valet in the army, who did the same job here. “The Eisenhowers were very busy people,” Hegeman points out when asked if Mamie ever did the laundry. The couple wholeheartedly embraced the new technology. Almost every room sports a telephone, in a multitude of hues including custom gold.

Mamie's love of pink lends the house much of its charm. When traveling, she carried a stick daubed with her preferred shade to match up to potential purchases. It started a nationwide craze and soon the

White House was dubbed the “Pink Palace.” Here, moss green bedroom walls set off a pink bedspread, curtains, and chairs. In the bathroom, tiles, toilet, sink, and towels all carry the hue. Not everything was pink, however. Mamie's enchanting hat collection, much of it Sally Victor-designed, was in a mix of colors, styles, and fabrics—everything from black velvet to pheasant feathers. But she would often have one of them perched on a pink hat stand that bears the letter E.

A FASHION SHOW WAS A SUREFIRE WAY TO GET HER INTERESTED IN A fundraiser. Though the spoiled daughter of a millionaire, she wasn't one to spend a lot, given Ike's meager salary in the early days of his career. They often had to “squeeze a dollar until the eagle screamed,” she joked. She favored the clearance racks at “J.C. Penné,” as she called it with a faux French accent, and was not embarrassed to admit it. “We had a hard time convincing her that she couldn't wear two-year-old dresses,” her favorite designer, Mollie Parnis, once said of Mamie's attempts to dress more like a first lady. Still, she made the list of “Twelve Best Dressed Women” every year Ike was in office. Yet she held on to her signature bangs even when they



NO EXPENSE WAS SPARED IN THE RENOVATION. NEW WINGS

were added as the first lady asked for more and more changes, such as lowering the already installed bedroom windows so she could gaze out at the fields from her bed. An exasperated Ike, who refused to have the barn moved or the kitchen expanded, eventually gave in to her other requests. “For God's sake, get her what she wants and send me the bill,” he told the construction engineer.

Above left: Signature bangs visible in a 1948 portrait by Thomas Stevens. Above right: Mamie sparked the nationwide craze for pink, shown here in her hair dryer. Right: Pocket mirror in another favored hue, gold, engraved with Mamie Dowd Eisenhower's initials.

went out of style. *Life* magazine retouched photos of her to prove that without them, she could be “the best looking First Lady.”

Like Mamie, Ike had his separate areas of the house, devoid of pink. His own bath is tiled in mint green; next door is a private room where he retired for afternoon naps after his heart troubles began. But a nap was never his preferred choice of activity. Always one to keep busy, he often had various projects underway, including the writing of his memoirs. He had an office at both Gettysburg College and at home, the latter featuring a reproduction of George Washington's desk made of old pine boards from the White House, discarded during a renovation in the late 1940s. But his true pride and joy was probably the farm itself. Growing up in Kansas, Eisenhower saw firsthand the challenges of trying to grow crops in depleted soil and was always keen on learning how to improve it. The

FAR LEFT EISE 415, NEAR LEFT EISE 5701, RIGHT EISE 11331





LEFT EISE 14329, NEAR RIGHT EISE 9197, FAR RIGHT EISE 11208/HALLMARK COMPANY

area's poor soil provided the perfect lab for conservation experiments. "I shall leave the place better than I found it," Eisenhower said of his land. He soon had area agricultural agents and members of the U.S. Soil Conservation Service poring over his fields with instruments such as core samplers, sending off scooped-out dirt in paper bags for analysis. Fertilization and location plans were developed for each crop, with one of the plans in the web exhibit.

EISENHOWER ALSO TRIED HIS HAND AT CATTLE BREEDING, IN 1954 LAUNCHING a full-blown cattle enterprise with friends who purchased the neighboring 306 acres. The operation had around 60-70 Aberdeen Angus purebreds, which competed in the top show circuits like the International Livestock Show. Eisenhower never wanted his cattle to get special treatment—he entered them under his partners' names, "Byars and Allen"—though his stock often earned awards.

"Fitting" the cattle for a show was a challenge. Farmhands spent hours washing, combing, and trimming the pampered animals. The task was time-consuming, so to make things easier on show days, Bob Hartley, the farm's herdsman, acquired the latest in labor-saving technology—an electric Dairy-Vac grooming machine. Hair gloss, brushes, combs, and leather halters were all a necessity to show off the cattle to their best. These items, and more, are all part of the web exhibit.

Inspecting the crops and livestock was one of the first things that Eisenhower did when arriving from Washington. Because of his immense pride in the farm, it was often the first thing that visiting dignitaries did too. "Eisenhower would stuff them in the golf cart and subject them to a two hour tour," says John Joyce, an interpreter at the site. "He felt the relaxing atmosphere was more conducive than Camp David," the official pres-



idential retreat only 18 miles away. Ike eventually received an "Honorary Master Farmer" award from the Pennsylvania State Farmer's Association, but after a second heart attack in 1966, he decided to downsize the business. He closed it completely in 1969, the year he died after a lengthy stay at Walter Reed General Hospital. Looking out at the green fields surrounding the farm, it's not hard to imagine that he wished he could have spent those last months here. With Ike gone, Mamie often piled his side of the bed with books and candy so that she felt less lonely.

NOW, ALMOST 40 YEARS LATER, THE APPEARANCE OF A NEW BIOGRAPHY ON THE bestseller lists attests to the rekindled interest in the Eisenhowers. Ike devotees can research much of his life at the presidential library in his hometown of Abilene, Kansas, and of course, dozens of Eisenhower-related websites are already scattered across the Internet. But exploring online the house where he ate, slept, worked, and played brings both him and Mamie back to life in a way that no book ever will.

Access the online exhibit through the National Park Service Museum Management Program website at www.nps.gov/history/museum/exhibits/eise/index.html or the park's home page at www.nps.gov/eise. In addition to the artifact photos, viewers can see a timeline of Eisenhower's achievements, check out the farmhouse floor plan, look at slide shows of family photos, and even hear Mamie herself in a 1973 interview.

Left: Hat and stand in Mamie's favored hues. Below left: One of the many multicolored telephones. Below right: A Hallmark Christmas illustration of Mamie with hair of holly and her name spelled out in signature bangs.

MAMIE'S LOVE OF PINK LENDS THE HOUSE MUCH OF ITS CHARM.

When traveling, she carried a stick daubed with her preferred shade to match up to potential purchases. It started a nationwide craze. Soon the White House was dubbed the "Pink Palace."



sputnik

THE LEGACY OF THE SPACE RACE
BY JOE FLANAGAN

at 50

IT WAS AN INDIAN SUMMER EVENING IN THE EISENHOWER YEARS, STARS emerging over a nation sated by prosperity and lulled into contentment by the wholesome and familiar. Yet the decade's can-do confidence had been tempered by an indefinable fear—bound up with science and space, communism and the atom. It found an expression in the monster movies and science fiction of the time, a sense that, despite unprecedented power and security, the country was surrounded by alien forces and secret phenomena. And the air was indeed different that night. Something was out there.

Several hundred miles up, a basketball-sized sphere floated just outside the atmosphere. Blasted into orbit from a secret launch pad in Kazakhstan, it was now a point of light moving slowly among the stars. Below, the printing presses rolled. A new word suddenly seemed to be everywhere: Sputnik. Unschooled in the space lexicon that would soon flood the language, newspapers called it a “moon.”

It was the starting gun for the space race. “Sputnik represents the first time humans broke the gravitational bonds of Earth and escaped into what President Kennedy called the ‘new ocean,’” says NASA chief historian Steven J. Dick. News of the very first satellite put a completely different face on the Cold War. The conflict was no longer simply about armies and spies and propaganda. Now it would be defined in the esoteric terms of nuclear physics and aerospace engineering: thrust, megatons, fission, and payload. “Sputnik changed everything,” says National Park Service historian Harry Butowsky. “It cast space exploration in a Cold War context.”

The story of space flight—and its parallel narrative, the arms race—is preserved today in a collection of sites around the country, sur-

vivors of a struggle that constantly remade itself, discarding old parts for new just as fast as technology allowed. In the 1950s and '60s, the cutting edge was a perpetually receding destination. Unaltered remnants from the early years are few, and until relatively recently haven't been seen as historic or at least very “old.” That Congress raised concern back in the '70s, when these places were beginning to decay, was provident. We can see that now, especially, when we look at the light years we have traveled since an awkward-looking Russian device launched the space age.

Under a 1980 congressional directive, the National Park Service, in consultation with NASA, the Department of Defense, and other agencies, conducted a study of the spacecraft, hardware, and facilities that remained. The “Man in Space National Historic Landmark Theme Study” was done to determine the significance and physical integrity of places linked to space. The report and several follow-up studies were authored by Butowsky, who also lectures on the subject at Virginia's George Mason University.

The result was a list of site candidates that, according to the report, “represent the best and most important remaining examples of the technology needed to land a man on the moon and to explore the earth, planets, and solar system.” Today nearly two dozen are national historic landmarks, the highest honor the federal government can bestow on a property for its importance to America's story. The Smithsonian has also preserved a great deal of the legacy at the National Air and Space Museum, which opened in 1976. In addition, the Historic American Engineering Record of the National Park Service, which documents important engineering and industrial relics

from the past, has recorded many sites—a few pictured here—some of which no longer survive. HAER's large-format photographs, measured drawings, and detailed histories have become part of a Library of Congress collection—with many images online—an irreplaceable record of the early space age.

The launch of Sputnik had such a profound effect on the United States that school curricula were upgraded to cultivate more advanced math and science skills. Eisenhower quickly signed the National Defense Education Act,



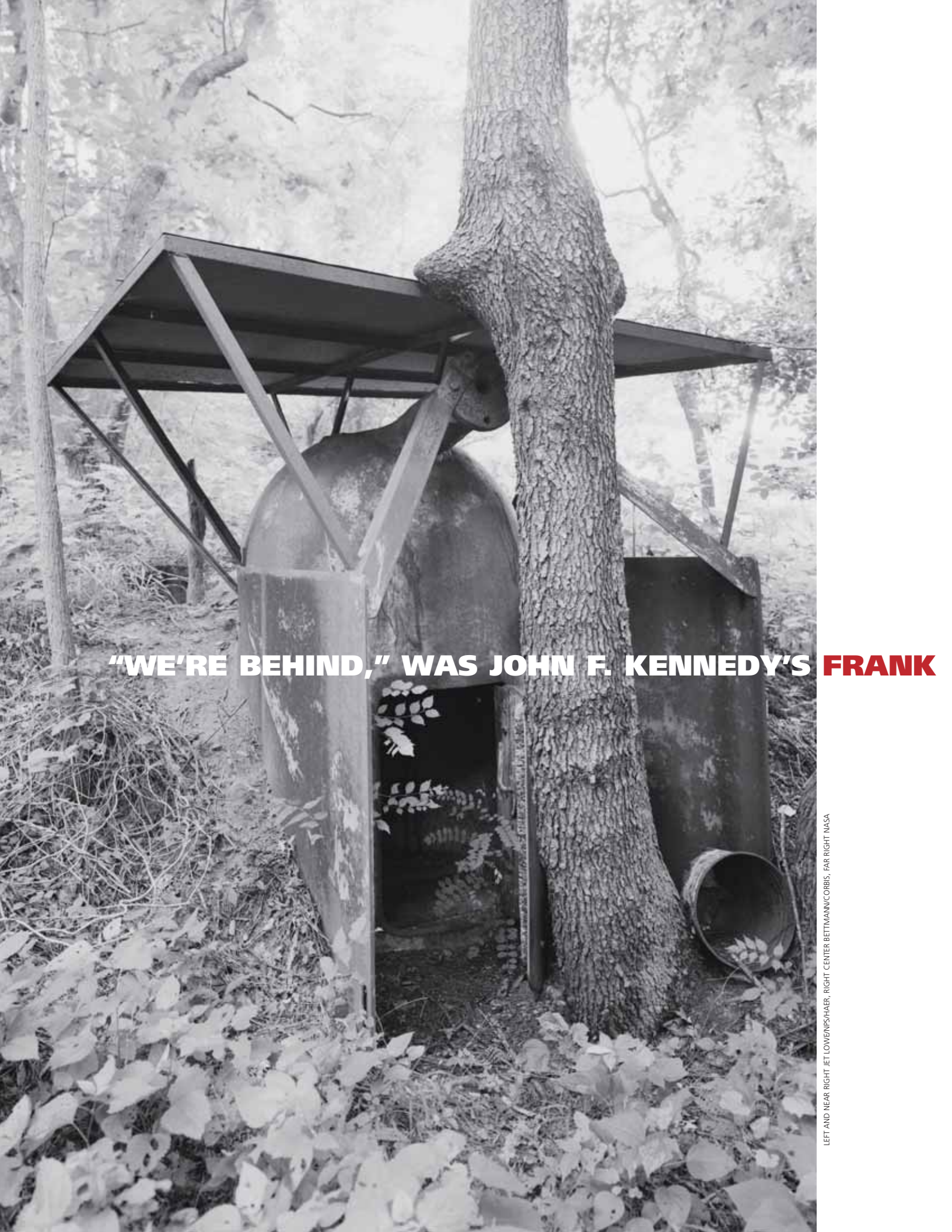
THE CONFLICT WAS NO LONGER SIMPLY ABOUT ARMIES AND AND PROPAGANDA. NOW IT WOULD BE DEFINED IN THE ESOTERIC TERMS OF NUCLEAR PHYSICS AND AEROSPACE ENGINEERING: THRUST, MEGATONS, FISSION, AND PAYLOAD. “SPUTNIK CHANGED EVERYTHING,” SAYS NATIONAL PARK SERVICE HISTORIAN HARRY BUTOWSKY. “IT CAST SPACE EXPLORATION IN A COLD WAR CONTEXT.”

ABOVE LEFT: COSMONAUT ALEXEI LEONOV'S HISTORIC FIRST SPACE WALK IN MARCH 1965. **ABOVE RIGHT:** COSMONAUTS ON RUSSIAN TELEVISION, JUNE 1963. **RIGHT:** ENGINES ON THE RUSSIAN PROTON ROCKET—A HEAVY BOOSTER INTRODUCED IN 1965 AND STILL IN USE TODAY—FROM PHOTOGRAPHER ADAM BARTOS' BOOK, *KOSMOS: A PORTRAIT OF THE RUSSIAN SPACE AGE*.

SPIES



LEFT RIA NOVOSTI, ABOVE ADAM BARTOS



"WE'RE BEHIND," WAS JOHN F. KENNEDY'S FRANK

LEFT AND NEAR RIGHT JET LOWENSPHAER, RIGHT CENTER BETTMANN/CORBIS, FAR RIGHT NASA

the biggest federal education initiative in history. A billion dollars would be spent building new schools, establishing student loans, and encouraging vocational training to supply workers for the defense industry. “We’re behind,” was John F. Kennedy’s frank assessment of the situation, feeding national anxiety over why, to paraphrase the headlines of the time, Ivan could do what Johnny could not. When the Navy’s Vanguard rocket, carrying what would have been America’s answer to Sputnik, lifted four feet off its launch pad and erupted in flames, the crisis deepened.

THE SPACE RACE HAD ITS ROOTS IN NAZI GERMANY’S V-2 ROCKET PROGRAM.

When the war ended, the United States and the Soviet Union smuggled out as much technology and expertise as they could. Wernher von Braun, the brains behind the German rocket effort, wound up in

tinental missile. There were problems with stability and fuel. Both sides had their share of failures. For the Americans, much of this process took place on a test stand at the Redstone Arsenal. Made of concrete and salvaged metal, it was used repeatedly from 1952 to 1960, with no change in its design. Most of its cost was in the massive concrete foundation that was required to withstand the thrust of powerful rockets. Now a national historic landmark, the Redstone test stand is a witness to the first major breakthroughs in the arms race and the quest to reach the moon.

A MONTH AFTER RUSSIA’S “OCTOBER SURPRISE,” SPUTNIK 2 WENT UP, THIS

time with a passenger. It was unknown whether a living being could survive a launch into space or the effects of weightlessness. While the passenger, a small dog named Laika, died due to a failure in the



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White Sands, New Mexico, experimenting with captured V-2s. His former assistant, Helmut Gröttrup, was doing similar work for the Russians. The era’s boldest innovations—the atom bomb and rocket flight—were irresistible and terrifying, which explains the secrecy and grim intensity that surrounded the competition for technology.

In the years preceding Sputnik, both sides tried to adapt World War II missile technology to a new generation of rockets. By 1951, the United States was running out of captured V-2s and moved Wernher von Braun along with 130 other German scientists and engineers to the Army’s Redstone Arsenal in Huntsville, Alabama. There, they began work on what would become the Redstone rocket.

On the other side of the world, the Russians were feverishly conducting their own secret research. The coveted prize was a rocket that could fly from one side of the world to the other—an intercon-

craft’s thermal control system, the experiment opened the way for human space flight and provided some of the first information on how living organisms responded to the experience.

In the wake of the Vanguard disaster, von Braun and his team got permission to prepare their Redstone rocket for a satellite launch. Renamed Jupiter C, it fired the first American satellite into space in January 1958. Explorer I carried more sophisticated instruments than Sputnik’s, and detected the Van Allen radiation belts surrounding the earth, a major discovery at the time.

Pasadena, California’s Jet Propulsion Laboratory designed critical components for Explorer I. An important research center during the war years, it was soon enlisted in the drive for space supremacy. The lab was a fertile testing ground for emerging technologies such as robotics and communications. The far-flung aeronautics and space industry consisted of a number of similar facilities that would be united under the umbrella of NASA, created by President Eisenhower in 1958.

Leading the Soviet effort was rocket engineer Sergei Korolev, who had spent years in prison after Stalin’s Great Purge of 1938. Released and recruited for the space program, Korolev was a formidable opponent to the minds at NASA. He oversaw the Sputnik launches,

LEFT: REMAINS OF OBSERVATION BUNKER NEAR A ROCKET TEST STAND AT ALABAMA’S MARSHALL SPACE FLIGHT CENTER. ABOVE LEFT: THE HISTORIC REDSTONE ROCKET TEST STAND, WITH INSTRUMENTATION AND CONTROL FACILITY IN THE FOREGROUND. CENTER: PRESIDENT KENNEDY AT CAPE CANAVERAL IN 1962. RIGHT: TESTING A MODEL ROCKET ENGINE.



LEFT NASA, BELOW ADAM BARTOS

THE RUSSIANS SET THE PACE. AS THE DECADE

was instrumental in developing the first Russian ICBMs, and led the Vostok projects—a series of spacecraft that brought the USSR some of its greatest early successes.

Hoping to capitalize on the success of Explorer I, the United States launched its successor in March 1958. The satellite, which carried equipment to detect cosmic rays and micrometeorites, never reached orbit. Less than two weeks later, Vanguard I went up. A satellite whose small size was derided by the Soviets, it nonetheless produced volumes of information. Its data showed that the earth is more oval than spherical and geographers got some of the first hard evidence of continental drift. Vanguard was the litmus test for solar energy cells, which were a stunning success, lasting for seven years. Like many of the era's spacecraft, it unlocked secrets not only of space, but of the ever-evolving technology needed to get there, thus informing subsequent flights.

In May of 1958, the Russians announced that the third Sputnik was now in orbit. Its instruments were testing the upper atmosphere, as the first Sputnik had done. The Americans responded in October with Pioneer I, which was intended to reach the moon but failed, nonetheless yielding information about the near-Earth atmosphere before coming down over the South Pacific.

FOR BOTH SIDES, PROGRESS IN SPACE CONTINUED A STEP AT A TIME. THE Russians set the pace. As the decade turned, they reeled off a series of firsts: the first rocket to clear earth's orbit; the first satellite to circle the sun; the first craft on the moon. While the Americans played catch-up, the Soviets managed to photograph the far side of the lunar surface—and then, in April 1961, put a man in space. The following day, the House Committee on Space grilled an uncomfortable NASA administrator, asking if they could expect to see cosmonauts celebrating the 50th anniversary of the Russian Revolution from the surface of the moon in 1967.

With their dependable new Vostok rocket, which would serve them well into the 1980s, the Soviets achieved the first two-spacecraft flight and the first long duration mission. They also sent the first woman—Valentina Tereshkova—into space.

The Americans realized that Russian guidance systems could put a nuclear warhead on a faraway target. The undercurrent of anxiety that ran through the 1950s had now, by the early '60s, become open

ABOVE: COSMONAUT YURI GAGARIN, THE FIRST MAN IN SPACE, PRIOR TO THE HISTORIC LAUNCH, APRIL 1961. RIGHT: SOYUZ ROCKET POISED FOR TAKEOFF AT A ONCE-SECRET COSMODROME, IN KOSMOS: A PORTRAIT OF THE RUSSIAN SPACE AGE.



TURNED, THEY REELED OFF A SERIES OF FIRSTS:

THE FIRST ROCKET TO CLEAR EARTH'S ORBIT; THE FIRST SATELLITE TO CIRCLE THE SUN; THE FIRST CRAFT ON THE MOON. WHILE THE AMERICANS PLAYED CATCH-UP, THE SOVIETS MANAGED TO PHOTOGRAPH THE FAR SIDE OF THE LUNAR SURFACE— AND THEN, IN APRIL 1961, PUT A MAN IN SPACE.



THE STORY OF SPACE FLIGHT—AND ITS PARALLEL NARRATIVE,



fear, fed by the Cuban Missile Crisis and the failed Bay of Pigs invasion. President Kennedy vowed to put a man on the moon by the end of the decade.

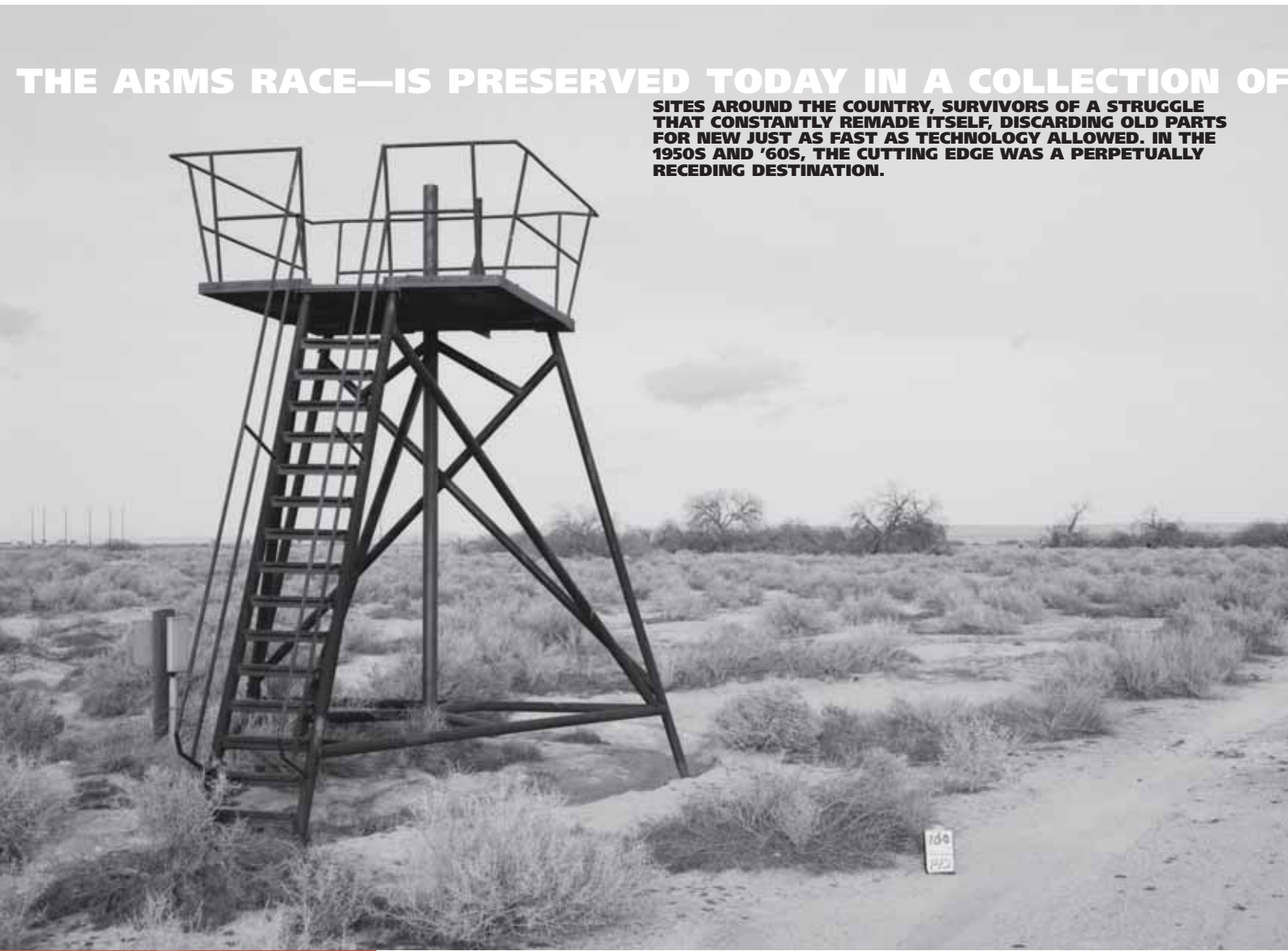
THE IDEOLOGICAL AND POLITICAL WAR FOUND DRAMATIC EXPRESSION IN the flaming launch footage of iconic spacecraft, the most visible aspects of the race to the moon. Always a step behind, the United States forged on. The nation thrilled to the daredevil exploits of the Mercury astronauts. In 1961, Alan B. Shepard, Jr., became the first American in space. The following year, John Glenn orbited the earth three times, part of NASA's Mercury program, which was, in broad terms, a run-up to an eventual moon launch. It was the golden age of the American space program. Astronauts were household names,

their splashdowns watched on television like sporting events. The facilities that supported the missions were places like Cape Canaveral, where launch pads and the original mission control room are part of a national historic landmark. There is also Houston's Space Environment Simulation Laboratory, still in use, and the Rendezvous Docking Simulator, a relic that hangs from the ceiling of a giant hangar at NASA's Langley Research Center in Virginia. Both are landmarks as well.

While manned space flight was getting all the press, Sputnik's legacy grew. Both sides continued to fire satellites into the heavens, and their capabilities multiplied. The impact on meteorology, communications, and earth science would be far-reaching, not to mention

THE ARMS RACE—IS PRESERVED TODAY IN A COLLECTION OF

SITES AROUND THE COUNTRY, SURVIVORS OF A STRUGGLE THAT CONSTANTLY REMADE ITSELF, DISCARDING OLD PARTS FOR NEW JUST AS FAST AS TECHNOLOGY ALLOWED. IN THE 1950S AND '60S, THE CUTTING EDGE WAS A PERPETUALLY RECEDING DESTINATION.



ABOVE DAVID DE VRIES/NPS/HAER, LEFT NASA



LEFT ABOVE: WHAT'S LEFT OF AN OBSERVATION BUNKER AT CALIFORNIA'S EDWARDS AIR FORCE BASE, WHERE ROCKET PROPULSION WAS TESTED ON RAILS IN THE DESERT. ABOVE: ABANDONED CAMERA TOWER USED FOR RECORDING EARLY ROCKET PERFORMANCE. LEFT: NASA SCIENTIST.

WHILE MANNED SPACE FLIGHT WAS GETTING ALL THE PRESS, BOTH SIDES CONTINUED TO FIRE SATELLITES INTO THE HEAVENS, AND THEIR CAPABILITIES MULTIPLIED. THE IMPACT ON METEOROLOGY, COMMUNICATIONS, AND EARTH SCIENCE WOULD BE FAR-REACHING, NOT TO MENTION WHAT THE FAR-AWAY DEVICES MEANT FOR THE FUTURE OF SURVEILLANCE, A FIELD BOTH EAST AND WEST PURSUED FERVENTLY.

BELOW: LIKENESSES OF SPACE PIONEERS SERGEI KOROLEV AND KONSTANTIN TSIOLKOVSKY ADORN THE WALLS OF A RUSSIAN SCIENTIFIC RESEARCH INSTITUTE, IN *KOSMOS: A PORTRAIT OF THE RUSSIAN SPACE AGE*. **RIGHT:** TOYS ON A MOSCOW DEPARTMENT STORE SHELF IN 1967.

BELOW ADAM BARTOS, RIGHT BETTMANN/CORBIS



SPUTNIK'S LEGACY GREW.



what the far-away devices meant for the future of surveillance, a field both East and West pursued fervently. There were revolutionary developments in miniaturization, microprocessing, robotics, and solar power. Says NASA's Steven Dick, "We take for granted global weather forecasts, GPS navigation, and instantaneous communication, none of which were possible before. Instruments such as the Hubble Space Telescope allow us to see our place in the scheme of 13.7 billion years of cosmic evolution."

The Pioneer Deep Space Station, a collection of low buildings and giant satellite dishes in the California desert, earned landmark status for its early role in tracking unmanned vehicles in the far reaches of space. The Spacecraft Magnetic Test Facility, a national historic landmark at Maryland's Goddard Space Flight Center, was critical to measuring the effect of magnetism on a craft's movement in space. It is the only site of its kind in the United States.

Introducing space age relics to the nation's inventory of historic sites was a frontier in itself. All are under the jurisdiction of NASA, the Air Force, or the Army, whose primary missions are not preservation. While some are open to tours, others are not for reasons of security, safety, and, in some cases, because they are still in use. The National Park Service has tapped some of the potential with its Teaching With Historic Places lesson plans for teachers.

WHILE THE AMERICANS WERE ASCENDING, THE RUSSIAN ECLIPSE HAD BEGUN.

The Soviet run of "firsts" was done largely at the behest of Nikita Khrushchev, who, says Butowsky, "wanted to show the superiority not only of Soviet science but of the Soviet system." When the Americans were mounting the Gemini missions in the first half of the '60s, the Russians could have been aiming at the moon. Instead, Khrushchev was bent on one-upping the other side. Russia used up money and resources that could have been spent on more far-sighted work.

DRIVEN BY FEAR

BY SERGEI KHRUSHCHEV

In February 1956, my father, Nikita Khrushchev, visited the head Soviet rocket engineer, Sergei Korolev, because he wanted to see the miracles he had been hearing about. I was a student in technical school and was there when Korolev showed us the R-7, the new missile that could reach American territory. Then he showed my father the satellite. Korolev told him that he believed he could send it into an orbit around the earth.

Much of the driving force behind Sputnik was fear. In the Soviet Union, we were surrounded by American bases. We lived under pressure. At that time there was an ongoing discussion in the U.S. Congress over how many Soviet cities they would have to bomb in order to preserve democracy. Fear was part of our times.

The International Geophysical Committee was due to meet in October 1957, and Korolev was determined by that time to announce the launch of a satellite. He pushed his people both day and night. They switched to a smaller model than the one they showed my father: a sphere with four antennae and two transmitters. They published in radio magazines the frequencies on which its signals could be heard, but nobody paid attention.

When they launched Sputnik, I was with my father when they came to tell him. He smiled and was very happy. He told them all how famous they were going to be. But we really didn't understand the magnitude of the event. We had launched the first nuclear electric power station in 1954, so it just seemed like one more achievement. It was 50 lines in the newspaper on October 5. In the United States it made headlines. It wasn't until October 6 that it was front-page news in the Soviet Union.

My father once tried to frighten the Americans by saying, "We are producing missiles like sausages." I asked him, "Why are you saying this? It's not true." And he responded that if the Americans knew how weak we were, they would attack us. In the early '60s, Kennedy vowed that the Americans would land on the moon. At one point, he proposed to my father, "Let's go together," and he rejected this, but he did so out of fear. Later, Kennedy brought it up again, and my father liked the idea because he believed it would improve our chances for peace. But fate was different. President Kennedy was assassinated and my father was forced out of power. But I think that if they had both remained, we might have gone to the moon together in 1969 and it might have been the end of the Cold War.

Adapted from a speech at Northern Virginia Community College, October 2007.



THE LAUNCH PADS, HARDWARE, SIMULATORS,

ABOVE: THE RIGHT STUFF. TEST PILOTS POSE WITH EXPERIMENTAL X-15 ROCKET PLANE IN 1962. ABOVE RIGHT: JOHN GLENN, THE FIRST AMERICAN TO ORBIT THE EARTH.

Khrushchev fell from power in 1964, and the next year, Sergei Korolev, head of the Soviet space program, died. In 1966, Russia's Luna 9 became the first craft to "soft land" on the moon. Luna 10 became the first to enter lunar orbit. The Russians continued to achieve the remarkable, but the tide had turned.

Wernher von Braun, now director of NASA's Marshall Space Flight Center in Huntsville, Alabama, was well into designing a rocket that would carry astronauts to the moon. Saturn V became a legend unto itself. The 36-story behemoth produced nine million pounds of thrust, enough to push a 150-ton payload to the moon. From William Walter's *Space Age*: "Its bottom stage was so enormous it had to be shipped to Cape Canaveral by barge—no other form of transportation could handle it. To prevent rain clouds from forming above the roof of the building in which it was assembled, engineers had to design a special air-conditioning system." There has never been anything quite like the Saturn V. No other launch vehicle has surpassed it in size or power. Its five engines caused tremors 50 miles away.

There are three surviving Saturn Vs on display. One is at the U.S. Space and Rocket Center, a museum at the Redstone Arsenal not far from the Marshall Space Flight Center. The museum is the brainchild of von Braun himself. A project to preserve the rocket won a \$700,000 Save America's Treasures grant from the National Park Service. An exhibit space was literally built around it, with glass walls on one side so it's visible from nearby Interstate 565. Plans are for an opening in January.

The Saturn V carried Michael Collins, Neil Armstrong, and Buzz Aldrin to the moon in the summer of 1969, an event that announced an end to the space race. The Soviets, while far along, could not build a rocket to do the job. The Americans launched the Saturn V 13 times between 1967 and 1973 in increasingly ambitious missions to the moon. Russian engineers, meanwhile, watched repeated failures of their putative moon rocket—the N1—before scrapping it altogether.

WHILE AMERICA WENT ON TO BECOME THE UNDISPUTED LEADER IN SPACE, RUSSIA SOLDIERED ON, concentrating on its space station, Salyut, and probes to Venus and Mars. NASA sent six missions to the moon. The final flight, Apollo 17, docked with a Soviet Soyuz spacecraft in 1975, a largely symbolic event intended to ease relations. But space exploration was no longer a priority. The United States was preoccupied with Vietnam and social unrest. Each lunar landing generated less interest.

Yet unmanned exploration flourished. Robotic spacecraft landed on Mars and orbited Venus, Jupiter, and Saturn. "The most spectacular part of space," says Butowsky, "is the unmanned program. You have these spacecraft that are 10 billion miles away from Earth and they're still returning useful information. They're at the edge of the solar system."

The legacy of the space race would be difficult to measure, so profound was its impact. The drama of those years, ringing with the language of Armageddon and charged with a nationalism approaching religious zeal, was fitting for an epic time. The launch pads, hardware, simulators, and testing sites remain largely out of sight now, abstract forms whose purpose seems inscrutable. They lack the expressive impact of a cliff dwelling or a Victorian hotel, but speak the language of another kind of history, of a time when faraway space came right into our living rooms. A history of the future, introduced by an unprepossessing object that floated among the stars 50 years ago.

The Man in Space NHL theme study is at www.nps.gov/history/history/online_books/butowsky4; the Teaching with Historic Places lesson plan, "America's Space Program: Exploring a New Frontier," is at www.nps.gov/history/nr/twhp/wwwlps/lessons/101space/101space.htm.



BELOW: ABANDONED OBSERVATION BUNKER AT TEST AREA 1-120, EDWARDS AIR FORCE BASE, WHERE TECHNICIANS TESTED SOME OF THE MOST DRAMATIC DEVELOPMENTS IN THE RACE TO THE MOON.

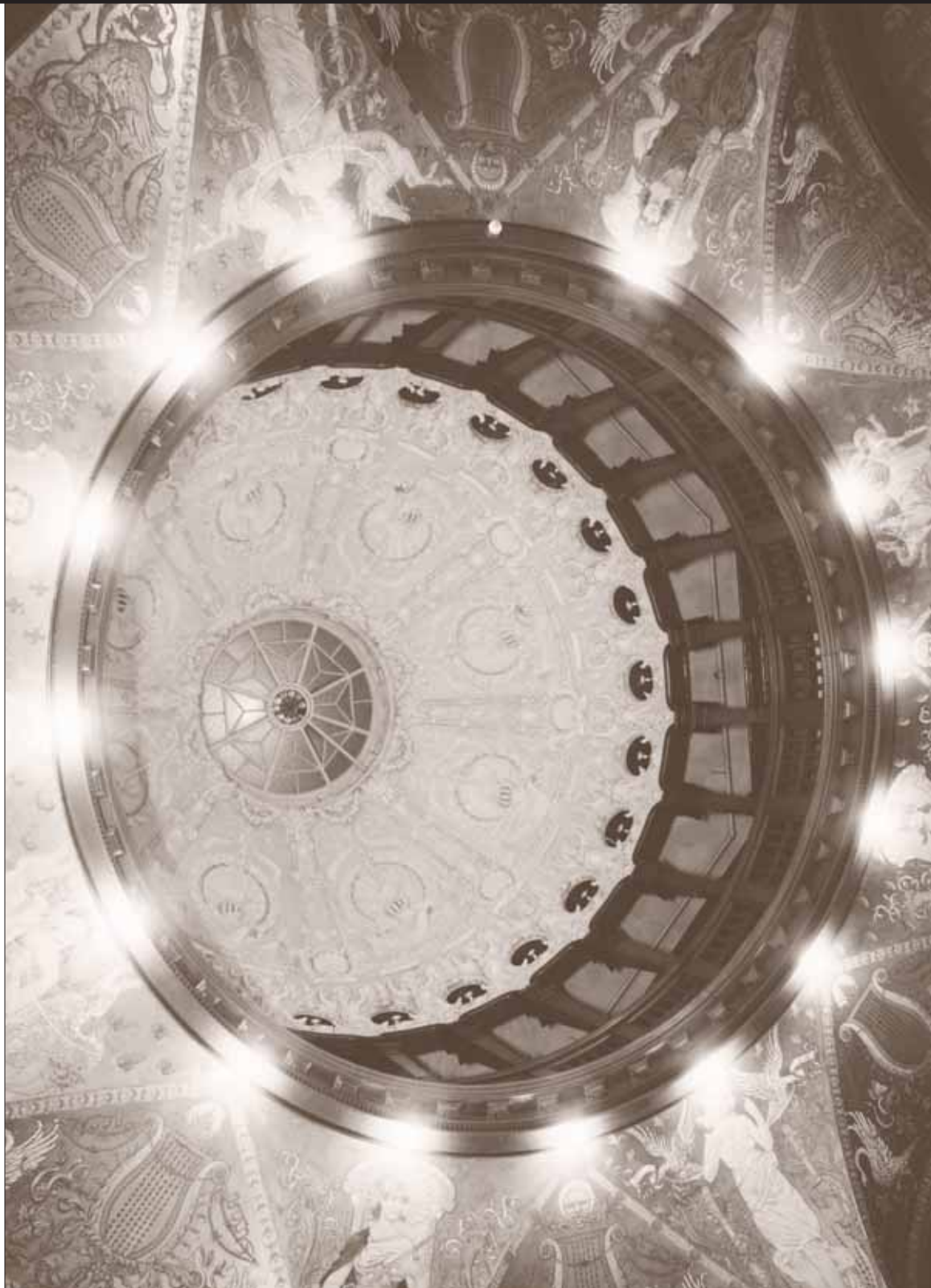
AND TESTING SITES REMAIN LARGELY OUT OF SIGHT NOW,
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ARTI FACT

SEASIDE OPULENCE

IN THE NATION'S OLDEST CITY—St. Augustine, Florida—there are a lot of historic structures, but perhaps none characterizes the place more than the former Hotel Ponce de Leon, a newly minted national historic landmark. **OPENED IN 1888**, the five-story hotel was a latecomer to America's first continuously occupied European settlement, but it transformed the city's image from a sleepy seaside village into an opulent vacation resort. Henry Flagler, who with John D. Rockefeller co-founded Standard Oil, dreamt it up to anchor a winter playground for wealthy northerners. **THE PONCE WAS THE ESSENCE** of luxury. There were electric lights, steam heat—even private bathrooms—plus stained glass windows and mosaics by Louis Comfort Tiffany. Two architects from the prominent firm McKim, Mead and White—John Carrere and Thomas Hastings—designed the Ponce to honor the city's Spanish past. The opening announcement for the hotel and Flagler's other resort, the Alcazar across the street, said "it would take volumes to describe the architectural beauties of these Spanish-Moresque palaces, set amidst the luxuriance of the orange, the palm and the olive." News of the opulence spread, and with New York City only 36 hours away by train, the place was soon booming. **BY THE 1960S, HOWEVER**, people were vacationing in the summer, by car. The hotel was a relic of bygone days. Flagler College purchased the property in 1968, a year after it closed. "It's remarkably unchanged," says Thomas Graham, a Flagler history professor who prepared the NHL nomination for the Ponce, now a dorm and office building for the school, which has invested over \$23 million in restoration. The photograph shown here, taken by the Historic American Buildings Survey, captures the jewel and its sparkle.



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PRESIDENT JOHN F. KENNEDY, WERNER VON BRAUN, AND NASA OFFICIALS TOUR THE MARSHALL SPACE FLIGHT CENTER IN 1962. NASA

“We’re behind,’ was John F. Kennedy’s frank assessment of the situation, feeding national anxiety over why, to paraphrase the headlines of the time, Ivan could do what Johnny could not. When the Navy’s Vanguard rocket, carrying what would have been America’s answer to Sputnik, lifted four feet off its launch pad and erupted in flames, the crisis deepened.” —from “Sputnik at 50: The Legacy of the Space Race,” page 24

