The world’s most popular museum is about to get bigger and better.

New Horizons for Air and Space
The National Air and Space Museum has the world’s most extensive collection of historic aircraft and spacecraft, but visitors see only the most famous artifacts, such as the Wright brothers’ 1903 Kitty Hawk Flyer and Lindbergh’s Spirit of St. Louis.

The museum, located in downtown Washington, D.C., does not have room to show more than 10 percent of its holdings. In any case, the larger items, such as a space shuttle and a B-29 bomber, are too big to display in the main museum.

Eighty percent of the collection is in storage, most of it in no-frills metal...
buildings at the Paul E. Garber Preservation, Restoration, and Storage Facility in Suitland, Md. Another 10 percent of the vintage airplanes are on loan to other museums around the country.

Some of the buildings at Garber are open for tours, but most of the museum’s treasures have seldom been seen by the public.

That is about to change as a huge museum annex—the aviation display hangar will be 10 stories tall and as long as 2.5 football fields—rises out of the Virginia countryside adjacent to Dulles International Airport west of Washington.

Named the Steven F. Udvar–Hazy Center for the contributor who gave $60 million toward its construction, the annex will put 187 aircraft and 100 space artifacts on display.

Among them will be the B-29 Enola Gay, which dropped the first atomic bomb on Japan, the space shuttle Enterprise, an SR-71 Blackbird, fastest airplane ever built, and a Curtiss JN-4D Jenny, the aeronautical equivalent of the Ford Model T.

Along with numerous aircraft from World War II and Korea, the Hazy Center will also exhibit such Vietnam stalwarts as the Republic F-105, North American F-100D, and McDonnell Douglas F-4.

In addition to the air and space exhibition hangars, the center will include a workshop where the public can watch the restoration and preservation of historic aircraft. There will also be restaurants, shops, and large parking lots for cars and tour buses.

Ground was broken for the Hazy Center Oct. 25, and ensuring that it opens on schedule in December 2003, in time to celebrate the 100th anniversary of powered flight by the Wright brothers, is the all-consuming task of the museum’s new director, John R. Dailey.

Marine in Charge

Jack Dailey is a retired four-star Marine, who spent 36 years in uniform and was assistant commandant of the Corps when he left active service in 1992. From then until he came to Air and Space in January 2000, he was the associate deputy administrator at NASA.

He is a pilot with more than 6,000 hours in a variety of aircraft. He served two tours in Vietnam, both at Da Nang. He flew 450 combat missions, most of them reconnaissance missions in RF-4s and the rest of them in EA-6A electronic warfare aircraft.

Dailey succeeded Donald D. Engen, director of the museum from 1996 until his death in a glider accident in 1999. After the disastrous Enola Gay controversy—in which a former director and his curators tried to use the famous bomber in a politically charged exhibit that came close to depicting Japan as the victim rather than the aggressor in World War II—Engen restored stability to the museum and took it back to its basic charter, which is to collect, preserve, and display the nation’s aerospace heritage.

In that respect, Dailey is in the Engen mold.

“Eighty percent of our collection is hidden from the public,” he said. “This is the largest and most complete collection in the world, but we’ve got to get it on display. We are putting that ahead of everything else.”

In a strategic plan developed last year, Dailey temporarily cut back by half on staff research, publications, and other projects not related to the....
Hazy Center and redirected the time and resources to getting the aircraft and spacecraft ready to go to Dulles and preparing other exhibit materials, such as signs and placards, that will be required.

Meanwhile, he and his staff had another special job on their hands. After more than 20 years of operation, the main museum was in urgent need of renovation. By July—the 25th anniversary of the museum’s opening—the skylights and the massive “window walls,” the large exterior panes that give the museum its distinctive look, will have been replaced. The first and second floor ceilings will also be replaced. Until then, visitors must pick their way through construction.

Last November the crown jewels of the collection, the Wright Flyer and Spirit of St. Louis, were moved by special dolly from their customary place just inside the main entrance to the west end of the museum. They move back in July, but for now, visitors standing on the mezzanine are treated to a close look from a different perspective at these classic aircraft.

With more than nine million people touring the museum each year, wear and tear is a constant problem. Every night, the cleaning crew zaps the chewing gum with nitrogen to make removing it easier.

Dailey would like to re-carpet the main museum, but that would cost $700,000, which he doesn’t have to spare just now.

“By the way,” Dailey said, “we are not going to have carpet in Hazy. We are having hardened concrete that will be a very nice surface, but it is not going to be carpet.”

A Ton of Money

Dailey doesn’t get to spend as much time as he would like thinking about airplanes, or even about chewing gum and carpets. His primary focus is on funding.

The Hazy Center will cost about $238 million. “This is the first Smithsonian building to ever be built with 100 percent private funding,” Dailey said.

Congress provided $8 million for planning and design, and the Commonwealth of Virginia is paying for roadways, utilities, and clearing and grading of the site. The project took a great leap forward when Udvar-

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On Display at Udvar–Hazy

More than 180 aircraft and 100 spacecraft will be on display at the Steven F. Udvar–Hazy Center.

Here are some of them. For a complete list, see the museum’s web site, www.nasm.edu/nasm/ext/artifacts.htm.

**Boeing B-17D Swoose**, the oldest intact B-17 in existence. It is the sole survivor of 21 B-17s that made the first mass flight of land-based aircraft from the continental US to reinforce Clark AB, Philippines. It is the only known US military aircraft to have flown a combat mission on the first day of the US entry into World War II and remain in continuous military flying service until the end of the war.

**Boeing B-29 Superfortress Enola Gay**, the aircraft that dropped the first atomic bomb on Hiroshima on Aug. 6, 1945. In 1995, public and Congressional outrage stopped plans by Air and Space Museum curators to exhibit the *Enola Gay* as a prop in a political horror show. The museum director lost his job.

**Boeing P-26A Peashooter**, first monoplane fighter procured by the Army Air Corps and first all-metal production fighter. It was the last open-cockpit fighter accepted by the Air Corps and was still in limited service at the time of Pearl Harbor.

**Caudron G.IV**, one of the world’s first strategic bombers and one of the first World War I Allied aircraft armed with a machine gun. The G.IV was built in three versions: reconnaissance, bomber, and trainer. The museum’s G.IV is one of only two that still exist.

**Curtiss JN-4D Jenny**. The Jenny was the first aircraft many Americans in World War I ever saw, and for most pilots of that era, the first airplane they ever flew. The museum’s Jenny is probably the most complete original World War I aircraft in the world.

**Curtiss P-40E Warhawk**, among the best known US fighters of World War II. Its greatest fame was achieved by the shark-mouth P-40s of the Flying Tigers.

**Lockheed P-38J Lightning**. The twin-boom, twin-engine P-38 was one of the most versatile fighters of World War II and downed more enemy aircraft in the Pacific than any other airplane.

**Lockheed SR-71 Blackbird**. It dates from the early 1960s but is still the fastest, highest-flying aircraft ever built. It can fly at more than 2,200 mph (Mach 3+, or more than three times the speed of sound) and at altitudes above 85,000 feet. On its final flight, the museum’s Blackbird set a transcontinental speed record when it flew from the West Coast to the East Coast in 68 minutes, 17 seconds.

**North American F-86A Sabre**. High above the Yalu River in Korea, it joined the ranks of the great fighters. American pilots flying the Sabre established a victory ratio of more than 10-to-1, even though enemy MiG-15s could not be pursued across the Chinese border.

**Space shuttle Enterprise**. NASA used *Enterprise*, now owned by the museum, for approach, landing, and launchpad tests in the 1980s.
Hazy, the president and CEO of International Lease Finance Corp., which owns and leases a fleet of 400 jet aircraft, contributed $60 million toward the construction.

However, "we still need a ton of money," Dailey said.

Fund-raising professionals have told him that on a project like this, corporate gifts will be limited and that 80 percent of the funding will have to come from individual contributors.

The task has also grown a little. Previously, the size of the main exhibit hangar had been reduced by 25 percent to save money. The space, enough for four additional bays, has been restored. Dailey does not know yet where the money will come from but said that "we are going to build it right when we do it."

That means there will be room for the museum’s most wanted airplane, a B-24. During World War II, 19,256 B-24s were built, more than any other kind of bomber, but they are rare now, and the Smithsonian does not have one.

Only a few of them still exist. The Collings Foundation in Massachusetts has one. So does the Air Force Museum at Wright–Patterson AFB, Ohio. Still another is at what used to be Castle AFB, Calif. The base closed, but the museum (Castle Air Museum) is still in operation, and it has a B-24.

Dailey is confident that the Hazy Center will obtain one eventually.

"We are going to go back to the original size, and that will make room for that B-24 and the Concorde that we already have [from Air France], that has not been delivered yet. They would not fit in the plan before we extended it."

There will be an associate director for the Hazy Center, but the downtown museum and the Dulles annex will operate as two parts of a whole. "We are not going to duplicate the staff," Dailey said.

He will keep his office in the main museum but expects to spend a lot of time at Dulles. (Dailey’s residence is in Fairfax, Va., which is about halfway between the two sites.)

The Garber facility will stay open. "Everybody in the Smithsonian is waiting for us to get out of those buildings ... because that storage space is needed by another museum," Dailey said.

The Air and Space Museum itself will keep three of the 13 buildings it now occupies at Garber, where it will continue such activities as painting airplanes and building exhibits.

Hanging From the Arches

The Udvar–Hazy Center will occupy 176.5 acres on the southeast side of Dulles Airport, near the intersection of Routes 50 and 28.

It will be an instant tourist attraction. Museum officials believe it will draw between three and four million visitors a year. They are providing enough parking for 2,000 cars and special lots for tour buses. Shuttle buses will take people back and forth to the nearest Metro rail station.

The main elements of the Hazy Center will be the aviation hangar and the smaller space hangar, which joins it at a right angle.

The museum staff has been using computer models to fit aircraft within the big hangar. The largest ones will be on the floor, with others suspended from the ceiling at two levels. A walkway approximately four stories high will run parallel to the middle tier of aircraft for close-up viewing.
In all, 73 aircraft will be suspended from the massive arches that reach up 103 feet to support the roof and hold the cables from which aircraft will be hung. Each arch will support 20,000 pounds, spread equally between the two halves of the arch. The arches and cables are strong enough to hold single-seat World War II fighters.

There will also be a large format theater—IMAX or competing technology—where a new film, documenting the first 100 years of powered flight, will premiere in 2003.

In an observation tower named for former museum director Donald Engen, visitors will be able to watch arriving and departing air traffic at Dulles Airport.

The Enola Gay

Positioned in the very center of the aviation hangar will be the Enola Gay, fully assembled for the first time in decades. The big bomber has come a long way in the museum’s regard since 1994 and 1995, when curators tried to use the Enola Gay in a highly politicized exhibition that focused on the suffering of the Japanese at Hiroshima and Nagasaki.

Even the Washington Post denounced the plan as “incredibly propagandistic and intellectually shabby” and the tone as “tendentiously anti-nuclear and anti–American.”

(For background on the controversy, see www.afa.org/enolagay/.)

That exhibit collapsed around the ears of the curators and was canceled, and in June 1995, the museum put the 53-foot forward fuselage of the Enola Gay, up on its nose wheel, on display in a straightforward historical exhibition. The wings would not fit into the gallery—the wingspan stretching 141 feet—and neither would the rest of the fuselage.

Within a year, the Enola Gay had drawn more than a million visitors, making it by far the most popular special exhibition in the history of the Air and Space Museum. When it finally closed in May 1998, it had drawn almost four million visitors.

Since then, the forward fuselage has remained in the main museum, walled off from sight, while restoration of the other sections proceeded at the Garber facility. The work is now complete, although the Garber team has a notice posted on the Internet looking for several interior parts, such as three fire extinguishers of the original type, a torque amplifier, and an azimuth control box.

When the forward fuselage moved from Garber to the downtown museum in late 1994, it was in the small hours of the morning. Reasons included traffic considerations and security, but the Smithsonian also wanted to keep it low key.

When the Enola Gay goes to Dulles, it may be different.

“We are going to announce [it] and we are going to try to get people to come out and wave as we come by,” Dailey said.

Another sign of the times is an announcement that the Enola Gay pilot, Brig. Gen. Paul W. Tibbets Jr., USAF (Ret.), will appear at the museum April 20 to sign copies of his new book, The Return of the Enola Gay.

The next day, he will deliver a special lecture in the museum’s Langley Theater about bombing operations in the Pacific theater during World War II.

It’s a new day at Air and Space.