Air Mobility Command Museum
Mission Statement

The mission of the Air Mobility Command Museum is twofold:

- To present the history and development of military airlift and tanker operations.
- In a goal closely aligned with the first, to portray the rich history of Dover Air Force Base and its predecessor, Dover Army Airfield.

What is the Air Mobility Command Museum?
Located in Hangar 1301 on Dover Air Force Base, Kent County, Delaware, the AMC Museum is part of the National Museum of the United States Air Force’s field museum system. One of the reasons your AMC Museum continues to provide a great educational experience is that we stick very closely to our reason for being. So exactly what is our “mission”? Broken down by numbers our mission is 70 percent airlift and air-refueling, 20 percent Dover AFB history and 10 percent Air Force general history. Our aircraft and artifact collection sticks very closely to that breakdown. But we work hard to be much more than numbers. We tell the stories of the people who have served in our nation’s Air Force, and we offer the only opportunity for many visitors to see the actual aircraft and meet the people who have served our country.

Hangar 1301 was placed on the National Register of Historic Places in 1994. Although located on Dover AFB proper, entrance to the Museum may be made from Delaware Route 9, south of the base. Admission to and parking at the Museum is free and military identification is not required. The Air Mobility Command Museum is open from 9 a.m. to 4 p.m., Tuesday through Sunday. It is closed on Mondays, Thanksgiving, Christmas and New Year’s Day. For more information, call 302-677-5939.

We like to say we are a window to your Air Force. Let us know how we can continue to improve our outreach and family friendly experience.
It didn’t take long for World War II to come to Delaware. Within weeks of the attack on Pearl Harbor, German U-boats were prowling off the Delaware coast, attacking shipping coming out of Philadelphia and Wilmington. On Feb. 28, 1942 the submarine U-578 fired on the destroyer USS Jacob Jones, sinking it in less than one hour with the loss of all but 11 of its crew of 133 officers and men.

*World War II and the Delaware Coast* tells the story of defenses built and manned along the coast of the First State, from hidden artillery batteries in Sussex County to the buildup of the Civil War-era Fort Delaware.

The coastal town of Lewes, battered by the British in the War of 1812, became a haven for the survivors of such attacks. Delawarans went along with rationing, blackout regulations, air raid drills and scrap drives as they and other Americans worked to win the Second World War. Illustrated with more than 60 black and white photos, *World War II and the Delaware Coast* vividly shows how a little state and its people helped fight a very big war.

Published in 2016; 143 pages, with index and bibliography; $21.99.

Blaugher’s listing of the more than 900 aircraft museums in the United States and Canada now is in its 27th edition. Sparsely illustrated — only the covers and the last page contain any photographs — the book presents an exhaustive listing of 857 aircraft museums within the United States and 69 such museums in Canada.

Organized by state and province, the guide lists each museum by name and address, giving phone numbers, hours, price of admission, and information about gift shops, theaters, cafeterias and restoration facilities at each location. Each museum’s website and email contact information also is provided.

There is a second listing of 672 cities in the United States and 68 Canadian cities with aircraft on display in local parks or elsewhere. Lastly, there is an unusual listing of restaurants featuring one or more aircraft on display inside or outside the building. In addition, 10,525 aircraft are listed with information about which museums house that particular airframe. For readers seeking at particular aircraft, data on serial numbers, tail letters and squadron markings is included.

Published in 2013, 256 pages, $18

In it’s day, the C-133 Cargomaster was a giant: 157 feet 6 inches long with a wingspan of 179 feet 8 inches, it stood more than 48 feet high.

The Air Force’s only turboprop strategic airlifter, the Cargomaster went into service in 1956 and was retired only 15 years later. Author Cal Taylor served as a navigator aboard the C-133 during the last two years of its service, and his book provides an extensive history of the aircraft, from its initial design to its last flight.

The aircraft’s 97-foot-long deck could carry 55 tons of cargo or a fully assembled Jupiter, Atlas or Thor ballistic missile.

There are separate chapters on each of the three squadrons that flew the Cargomaster, including that at Dover AFB.

Only 50 were built, and of those 10 crashed; a separate chapter on these incidents gives complete details and provides an inclusive study of all information available about each.

The book includes an operational history of each Cargomaster, including the only surviving C-133B, now on display at the AMC Museum.

Published in 2007; 420 pages with index, bibliography, more than 330 photos, illustrations and pullouts; also a 16-page color section; $35.95

---

![Is your name on the bench? Be a part of our AIRCRAFT BENCH PROGRAM](https://www.amcmuseum.org)
Dover Army Airfield

German POWs aided in American war effort

By the middle of 1944, Delaware’s agricultural officials knew they were in trouble: with 33,000 men away fighting World War II, there wasn’t enough manpower to ensure the First State’s crops could be successfully harvested.

That was the problem.

German prisoners of war were the solution. Delaware wasn’t the only state where POWs were put to work to support the American war effort, but the need in the First State was acute. Delaware farms were actually overproducing: the government had ramped up food production during the war and the military draft, as well as higher wages offered in war production plants, had sapped the state’s labor pool.

That much was known when George M. Worrell of the University of Delaware said the state would need up to 3,500 extra workers for the 1944 harvest. Plans included bringing in Boy Scouts, laborers from Jamaica and the Bahamas, local residents and German war prisoners.

Elmer Smith, acting director of the state’s Wartime Manpower Commission, said the German soldiers, working voluntarily under the terms of the Geneva Conventions, would “go a long way toward solving the labor shortage in the food processing plants in the state.”

Contracted out to area farmers and manufacturers, the prisoners would be allowed to work no more than 12 hours a day for six days a week. The contractors would pay the government the prevailing wage for the prisoners’ labor.

‘Additional help’ needed

In May 1944, the U.S. Army set up a POW base camp at Fort DuPont near Delaware City, eventually establishing satellite camps near Lewes, Slaughter Beach, Georgetown, Harbeson and at the Kent and Sussex Fairgrounds, now the Delaware State Fairgrounds, in Harrington.

The 400 prisoners at that camp would work at canning plants in Wyoming and Houston, which packed staples such as corn, string beans, tomatoes and peas.

“We can count on the people of Houston, Wyoming and the surrounding communities, many of whom have been loyal employees for over 20 years,” plant superintendent Willard J. Dufendach, said during a production award ceremony in Houston. “But increased production will demand additional help.”

That help would come, in part, from German prisoners, Dufendach said.

Incredible as it may seem, German prisoners also were put to work on American military installations, including Dover Army Airfield. The base was chronically understaffed and commanders could ill afford to take airmen possessing valuable skills and have them working in base mess halls or cutting grass.

Base officials received approval to use German POWs to relieve some of the manpower shortages. Beginning in October 1944, and under strict rules regarding the Geneva Conventions and with an eye toward maintaining security, the prisoners were put to work with housekeeping chores and kitchen duty.

Although lightly guarded, the prisoners were not allowed to fraternize with base personnel, and airmen were warned against socializing with them.

In 1986, retired U.S. Army Maj. George Russell Kates provided the Delaware Public Archives with a typewritten, 13-page memorandum of his service while assigned to prisoner of war camps in the state. Then a second lieutenant, in June 1944 Kates was assigned to the POW camp in Georgetown, which he found “in good condition, with most of the PW’s working in the canning factories in that area.”

Around April 1945, after a promotion to first lieutenant, Kates was reassigned to oversee the construction of a POW camp at the fairgrounds in Harrington. The camp was to house about 550 Austrian prisoners who had been contracted to work in the local Armour Company.

Beginning in October 1944, wartime manpower shortages caused the U.S. Army to bring in German POWs to Dover Army Airfield where they mostly worked in housekeeping and food preparation. The man standing on the right side in the back row has been identified as Joachim Herre; after the war he returned to Germany and then emigrated to Australia.

U.S Army Lt. George Kates turned the former Harrington police building at the county fairgrounds into the headquarters for the prisoners’ compound. He kept a room upstairs while German and American personnel ran administrative offices for the prisoners and military staff.
chicken processing plant. The camp included watch towers as well as fencing to keep the prisoners confined, he said.

Kates took over the fairgrounds’ two-story police headquarters, setting up a cot in a room upstairs for himself and administrative offices downstairs, one for the prisoners and another for the GIs. Sending a truck to the Dover Army Airfield, Kates got his hands on some mahogany paneling he ordered installed in the downstairs offices.

“It would be a nice room for the police after the return to the city of Harrington,” after the war, he noted.

Accompanied by a dog named Brownie who would ride in his jeep’s passenger seat, Kates often drove into town to obtain supplies for the camp.

“I was granted unlimited credit in any store in Harrington for any supplies or equipment needed and no questions asked,” he wrote. Over time, the prisoners also cleared land near the camp, planted flowers throughout the compound and raised a 28-foot-tall flagpole. If a prisoner took ill, a town doctor, under contract to the Army, would be called in. The Armour plant often provided enough chicken for meals for both the prisoners and the GIs at the camp, he said.

In his narrative, Kates also made a point of noting how the military had come under what he considered unfair criticism for allegedly coddling the prisoners. Newspaper columnists, including the famous Walter Winchell, had the wrong idea about why the prisoners were treated humanely, Kates argued.

The Army, Kates wrote, “was following to the letter government directives as to food, furnishing and treatment,” in accordance with the Geneva Convention.

Going unmentioned was the fact the prisoners had helped the American war effort by providing labor that otherwise would have been left undone, for which they were paid about 90 cents an hour. He appended a clipping of a May 4, 1945 Philadelphia Inquirer article, “German Captives Live in Ease and Comfort;” the same issue included photos of prisoners in an unnamed Delaware camp, describing them as “healthy, well-fed Nazis.”

His work in building the camp complete, Kates was transferred back to Georgetown three months after his arrival, where he served as that camp’s executive officer.

6,500 prisoners in Delaware

Generally German prisoners interned in the United States were well behaved and caused few problems for camp administrators. Research has shown this may have been in part because their leaders continued the type of discipline expected in the German military. There is evidence, however, based on reminiscences published after the war, that some of this discipline was based on intimidation and threats by those POWs who where more adherent to Nazi ideology than their fellow prisoners.

Although there was some initial nervousness to their presence in communities surrounding the camps, the POWs generally became more of a curiosity over time. There were scattered escape attempts, including one instance in August 1944 when four men jumped from a truck headed to a Millsboro chicken plant; all were recaptured within three hours.

Even though Germany had been defeated by May 1945, the army remained under pressure not to send the POWs back to Germany any time soon. Although the War Department had previously announced they would be sent home starting in February 1946 and that all would be repatriated by April, President Harry S. Truman, in January 1946, pushed both dates back by two months, “principally in order to meet a temporary labor problem in the production of sugar beets, cotton and pulpwood.”

At the time, an estimated 198,000 German POWs were in the United States; Japanese POWs were scheduled to be sent home by the end of January, with Italian prisoners, which numbered about 10,400, due to be repatriated around the end of March.

In February 1946, George Worrilow, who two years earlier had asked for prisoners to supplement the labor force, essentially seconded Truman’s thoughts when he said the outlook for civilian workers in Delaware remained uncertain; agricultural production still was on a wartime footing, and the estimated 700 German prisoners in the state still were needed.

By the time they were repatriated by June 1946, more than 6,500 German or Austrian POWs had been through the state. Lt. Col. John J. Harris, who had commanded the state’s Prisoner of War Unit, said the prisoners’ labor had brought about $2.4 million to the federal government.

Speaking in Congress after the end of the war, Delaware Sen. James Tunnell said farms in the First State could not have operated without the help of captured enemy soldiers.
A true piece of American history that had sat in the Mojave Desert for decades and was slated to be scrapped now has a new home at the Air Mobility Command Museum.

A C-5M Super Galaxy, operated by the 709th Airlift Squadron, and an AMC Museum team traveled to Edwards Air Force Base, California in December 2016 to transport portions of the Fairchild C-119B Flying Boxcar No. 48-0352 “Am Can Co Special” to the AMC Museum for restoration and display.

The C-119 was a military transport aircraft used primarily to carry cargo, personnel and equipment. It also had airdrop capabilities. The U.S. flew them from 1947 to 1974.

According to AMC Museum Director John Taylor, when restoration work on this C-119 is complete, it arguably will be the most historic aircraft in the Museum’s collection.

“It’s the second-oldest C-119 in existence,” Taylor said, “and the only surviving aircraft from the operation that air-dropped mobile bridge sections to Marines during the Battle of Chosin Reservoir.”

Known for its fierce fighting amid freezing weather, the Battle of Chosin Reservoir, from Nov. 27 to Dec. 13, 1950, took place during the early stages of the Korean War. United Nations forces, comprised mainly of South Korean, American and British troops, had recently pushed the invading North
Korean army out of South Korea back north of the 38th parallel. Not stopping at the border, the UN forces continued pushing north to destroy any and all remnants of the North Korean army. They soon approached North Korea’s border with China. This provoked China, a North Korean ally and fellow Communist state, causing it to intervene in the war by sending hundreds of thousands of troops south to stop the advancing UN forces.

The only way for the 30,000 UN troops was to escape was via a vital bridge between Koto-ri and Hungnam.

“During the battle the Chinese blew the bridge up,” said Jon Andrews, AMC Museum volunteer. “This trapped all the United Nations forces.”

Surrounded by more than 120,000 Chinese soldiers, the trapped UN troops were running out of options. A decision was made to airdrop mobile bridge sections to these forces, with the hope they could be used to rebuild the bridge, effectively giving them an escape route.

Eight C-119s, operated by the 314th Troop Carrier Group out of Ashiya Air Base, Japan, were gathered to complete this mission. Out of the eight bridge sections dropped by parachute, four were used to build a usable bridge. This opened up a way for retreating UN forces.

Les Polley, AMC Museum aircraft restoration chief, was on the team that travelled to Edwards AFB to pick up the C-119. He is happy this plane is coming to the Museum.

“It would have been sold for scrap metal,” he said. “A big piece of history would have been lost.”

Work for the C-5M and 709th AS maybe over, but it has just started for Polley and his restoration crew.

“We are going to go through a complete restoration on the airplane from the ground up,” Polley said. “There’s a lot of corrosion, a lot of holes, a lot of missing parts. We will be scrounging all over the country looking for parts.”

This C-119 served well past the Korean War. It ended its 17-year career with the 911th TCG at the Greater Pittsburgh International Airport in 1966.

“We are going to restore it to what it looked like during the Korean War,” said Polley. “They had done a lot of modifications and upgrades after the war. We want it to look like it did back then, complete with nose art and everything.”

Polley estimates that the whole restoration process will take a minimum of two years before for the C-119 is ready for display.

“For the AMC Museum to have the opportunity to rescue and preserve this historic aircraft and to be able to restore it and tell the story of those that made its history, just does not get any better,” Taylor said.

“The AMC Museum Restoration Team and I are honored to have been given this opportunity.”
From props to jets: the T-33A Shooting Star

While visitors to the Air Mobility Command Museum can see the giant C-5A Galaxy from the nearby highway, the plane that greets them as they drive up to the parking lot is much smaller: the T-33 “Shooting Star.”

The T-Bird may be tiny in size, but its history and impact on modern aviation stretches from the end of World War II to the culmination of the Cold War.

It can be argued that every Cold War pilot who ever sat behind the controls of a jet aircraft trained in the T-33. The plane also was flown by pilots of almost 40 foreign nations and it’s estimated about two dozen still take to the air in the United States, owned and flown by private pilots.

“It’s a rugged, dependable airplane, especially compared to a lot of the other early jets,” said Gregory “Wired” Colyer, a California-based U.S. Army vet who owns two T-Birds. He also is head of the non-profit T-33 Heritage Foundation, founded to help preserve the remaining T-Birds.

Colyer makes little effort to hide his admiration for the aircraft.

“My whole life I’ve been an aviation history buff,” Colyer said. “But I really loved the F-80 and the T-33. They’ve just always held a special place for me.”

Props to jets

According to the National Museum of the U.S. Air Force, the T-33A airframe was developed from the P-80, America’s first operational jet aircraft, which initially took to the air in January 1944. Needing an aircraft to familiarize propeller-qualified pilots on how to fly the new jet aircraft coming into the Air Force inventory, Lockheed stretched the F-80’s fuselage by 41 inches and added a second set of flight controls, instrumentation and seat, turning single-seat fighter into a two-man trainer.

In all, 6,557 T-33As were built between 1948 and 1959.

There actually are two T-33s in the Dover area -- one at the Air Mobility Command Museum and another stationed outside Dover’s American Legion Fox Post Hall No. 2, about three miles to the north. The Legion’s Shooting Star was one of several assigned to Dover Air Force Base from 1951 to 1966.

Two air defense squadrons, the 46th Fighter Interceptor Squadron and the 148 Fighter Interceptor Squadron, used the aircraft as training platforms.

The Museum’s T-Bird, tail number 53-9497, was manufactured in Burbank, California by the Lockheed Aircraft Corporation and delivered to the Air Force in December 1953.

It served as a pilot trainer for more than 11 years at Laughlin Air Force Base, Del Rio, Texas and Vance Air Force Base, Enid, Oklahoma.

The AMCM’s T-33A took on a different training role beginning in February 1965, when it was converted to a ground-based instructional airframe. After being used to train maintenance crews for about 11 months, it was dropped from the Air Force inventory and later put on static display at Lackland Air Force Base, San Antonio, Texas.

Long legs

Although the T-33A served admirably in the Air Force’s Undergraduate Training Program for years, it eventually was replaced as a front-line trainer by the more advanced Cessna T-37 Tweet -- an example of which also is on display at the AMCM gate -- and the Northrop T-38 Talon.

Surplus T-33As were used as aerial targets for missile testing, scrapped or eventually found their way into the hands of private collectors and pilots, including Colyer.
Colyer made his first flight at the age of 7 and has been flying since earning his license in 1982. He served in the U.S. Army for five years and 27 years as an air traffic controller in Oakland, California.

Colyer owns two T-33As, dubbed Ace Maker and Ace Maker II, both of which were built for the Royal Canadian Air Force. The aircraft provides a perfect platform for his air show demonstrations.

He also founded the T-33 Heritage Foundation, a nonprofit whose mission is to help preserve examples of the T-Bird.

“It’s very roll sensitive and very pitch sensitive. If you train in a ‘33 and then go to another airplane, you’ll find the speeds may be completely different. The thing that’s most noticeable about the engine is that it’s very slow to respond to throttle movements. You had to be very careful about anticipating the need for power.”

Driving the T-33A on the ground also could be a challenge.

“Differential braking is needed to turn the nose wheel while taxiing,” he wrote in AOPA magazine. “This is done in most airplanes without nose wheel steering by applying light pedal pressure to one brake or the other.

“But in a T-Bird you need to tap the brake hard enough to make the nose of the airplane dip slightly.”

Being overly aggressive with braking can cause the nose wheel to get stuck at a 45-degree angle and might mean an embarrassing call to the ground crew to straighten it out, he said.

Surprisingly, taking care of a 60-year-old airplane is not all that difficult, Colyer said.

“I do a very thorough yearly inspection and I keep it at throughout the year,” he said. “But like I said, it’s a very dependable airplane and easy to work on.”

Colyer performs some of the maintenance chores himself and can call on some former Air Force mechanics if needed.

His biggest problem may be in finding parts, so he’s always on the lookout for things he might need to keep his T-33 in the air.

“The parts, they’re out there, and I have a lot of spares,” he said. “If I see it, I collect it. My hangar is stacked with parts.”

The T-33A trained many of the Air Force’s first-generation of jet pilots, most of who went on to fly aircraft in the Century Series, those aircraft designated F-100 through the F-109 produced in the late 1950s to early 1960s (these included only production aircraft, as the F-103, and F-107 through F-109 never made it past the design or mockup stage).

The AMC Museum also has two of these aircraft as part of its collection: the F-101B Voodoo and F-106A Delta Dart. Squadrons flying these aircraft were assigned to Dover AFB from 1959 to 1973.

Colyer counts himself as extraordinarily lucky.

“When I open my hangar door, I have to pinch myself,” he said. “I can’t believe I get to fly it, let alone own it. I’m extremely fortunate.”
Shooting Star

U.S. AIR FORCE
Housing at Dover

As Dover AFB grew, so did the need for housing

By Eric Czerwinski

The Cold War expansion of the United States military spawned by the Korean War had a decisive impact on communities that served bases throughout the United States. Each faced unprecedented growth both economically and demographically as a result. Demands for materials and labor required in the building of new facilities on these bases provided a massive economic boon. It was the demand for housing for military members and their families that changed the very fabric of these communities. For the first time, large numbers of families were arriving that were not linked in any way to the generations of family groups that lived there for generations. This spawned both apprehension and not a little resentment on both sides.

The U.S. military was ill equipped to deal with the housing of military families after World War II. During the war, it was a simple proposition: the families of military members were expected stay home while their military spouses were either based stateside or overseas. If a military family wished to live with the member, it was up to them to furnish their own lodging at their own cost. It was not unusual to have spouses of military officers move from base to base with them; their income could afford some measure of adequate billeting. For the vast majority of married service members, however, their families were left behind to fend for themselves. This was wartime footing.

After World War II, the military initially downsized rapidly and it was not difficult for military families to find a few rentals off-base or even reside in pre-war built base housing units. This changed radically during the Korean War mobilization period. In conjunction with the opening of the Cold War, this initiated a massive increase in the size of the military services. Bases that had lain dormant once again were opened up to accept newly activated units. Along with this growth, the military found itself completely unprepared for the incredible demand for military housing. Indeed, the 1950s era ushered in an age of young families and the pursuit of the American Dream: owning a new home and a car in the carport.

For African-American military families, the desegregation initiated by Executive Order 9981 in 1948 did not extend off-base. Throughout the United States, African-American military families continued to face racial segregation and public accommodation denial every bit as much as their civilian counterparts. The search for housing was particularly difficult. Each family was expected to find housing in the local African-American neighborhoods. During the context period, African Americans made up just over 7 percent of the U.S. Air Force manpower.

In reaction to the dramatic increase in the numbers of military families and with the demand for housing, congress introduced the Wherry housing program in 1949. Formally known as the Housing Near Military Establishments, the program was named after its creator, Republican Sen. Kenneth S. Wherry of Nebraska. The idea behind the program was to incentivize private industry to build housing within the communities surrounding military bases. It allowed for FHA insured funding for up to 90 percent of the building cost and when the program ended in 1955, around 85,000 units had been built. When the program started, a mere 2,500 units were available nationwide, most of these of pre-World War II construction.

A twofold problem arose with the Wherry program. There were issues with the quality of the dwellings being built and complaints of excessive rent were being levied at the national level. Many of the not adequately housed, creating a serious morale problem.

But change was in the air. Republican U.S. Senator Homer Capehart of Indiana had long been critical of the Wherry program and the problems associated with it when he introduced the National Housing Act of 1955, aka the Capehart Act. No longer would the private sector build and manage off-base housing.
Instead, the military contracted for the construction of base housing and in addition, owned and managed those properties from within the individual services. Capehart housing became what is commonly known today as traditional military base housing. This program would furnish another 115,000 housing units throughout the nation until its conclusion in the early 1960s.

Dover Air Force Base, three miles southeast of the city of Dover in Kent County, Delaware, began as a federally-funded municipal airport, but was appropriated by the federal government on Dec. 17, 1941, 10 days after the Pearl Harbor attacks.

**Housing at Dover**

The airport was renamed Dover Army Air Field on April 8, 1943, and the Dover Army Airfield on February 2, 1944. During World War II, the base performed a myriad of roles from testing air to ground rockets to training P-47 aircraft pilots. Housing for base personnel was on the base itself. On Sept. 1, 1946, the base was placed into inactive status. Dover Air Force Base (the designation changed in 1948 while inactive) was reactivated in 1950; however, it was not officially removed from caretaker status until 1952 when the base was designated as the Atlantic hub of the Military Air Transport Service Port of Embarkation. Caretaker status for a base means that the base was essentially closed to all flying operations with only a small garrison of airmen left to maintain security and upkeep of the facilities. In 1954, the base was given permanent status without risk of closure.

The expansion of Dover AFB encompassed a massive on-base building program in addition to the large swell of military personnel assigned to the base. Initially, $1.4 million was invested in a new air freight terminal building and $92,000 directed towards the construction of 33 barracks buildings; these being two-story wood frame units built by Ajax Construction. Six bachelor officers quarters buildings as well as a commissary and service club were built. In the process of expansion, the U.S. Air Force acquired more than 1,000 acres from local land owners immediately adjacent to the base through the process of condemnation proceedings. Additional base structures and ultimately Capehart housing would occupy that land. By 1955, more than $38 million was spent on continued construction on Dover Air Force Base, making it the largest industry in Kent County.

It was the growth in the base population that caused the most distress, not just among the local residents of the communities that abutted Dover AFB, but for the base commanding officer as well. Col. Paul Zartman took command of Dover AFB on March 1, 1952 and it did not take long for him to frantically push for new houses to be built.

In a speech to the Dover Rotary Club in August 1952, Zartman aired his concern about the lack of community planning for the rapidly growing base population. A common theme was hit upon that would be repeated over and over again: the lack of housing and facilities in Dover and the surrounding communities. During a tour of the base for local businessmen, Zartman pleaded that at least 1,700 rental units were needed in Dover for U.S. Air Force personnel.

The population of Dover AFB climbed at an alarming rate between 1952 and 1956. In January 1954, the base population was 95 officers, 1,216 airmen and 154 civilians. A year later, this number swelled to 625 officers, 4,084 airmen and 298 civilians. By September 1955, nearly 7,000 airmen worked on base. The numbers of military families in Dover trailed behind the overall population of the base due to the lack of housing. In 1953, 400 military families lived in the local areas, a number that would double a year later. The additional population added 4,000 cars to the streets and roads of Kent County.

The explosion in population and the infusion of money into the economy was massive. The base was an economic boon to Dover and its environs. Between June and December 1955 alone, Dover AFB pumped $2.4 million into the local economy; anything from pencils to paint. New stores opened up to provide furnishings to the new residents. For the first time, stores were opening up on U.S. Route 13 on the corridor on which the Dover AFB sat. This marked a turning point for Dover: downtown no was longer the main draw for business it had been for over a century. Stores opened up along Highway 13 to meet the demand for furnishings, clothing and appliances for military families. New grocery stores came along to provide the food.

Dover AFB and its military families were a major consumer. Retail sales in Kent County grew 40 percent from 1948 to 1955, providing $67 million in revenue and supporting a payroll of more 12,000 employees. The huge housing construction boom added considerably to economic fortunes as well. It was noted at the time that travelers visiting Dover would not have recognized the landscape: what once was farmland had been turned into housing developments and shopping centers.

This unprecedented growth for Kent County and Dover in particular required city officials to scramble to meet the demands of a sprawling town. City engineers were hard pressed to keep up with the demand for plat plans for new housing developments. In 1954, there were 10 different housing developments that submitted building permits to the Suburban Development Division of the State Highway Department. This precipitated a massive effort to upgrade utilities, widen roads, improve intersections and build schools. From 1925 to 1955, electrical power consumption grew from 65,000 kWh to 4 million kWh, a 400 percent increase. A new state of the art 5000 KW turbo generator was installed to rectify the problem the following year. In addition, 18-inch sewer lines had to be installed to link up areas to the south and southeast of Dover. Another headache would arise over the city of Dover’s requirement it annex the large tracts of new housing developments to ensure they could provide services to those areas.

(Continued in the next issue of the Air Mobility Command Museum Hangar Digest)
Museum collections
Conservators keep Museum collections intact

AMCM Collections Manager Debbie Sellars has a time machine of sorts. She can’t take you on a trip to the far past or distant future, but she can slow down Father Time somewhat when it comes to the many pieces held in the Museum’s vast trove of Air Force artifacts.

Each year thousands of people pass through the Air Mobility Command Museum to experience a little bit of what the Air Force was like in the past. A lot of that experience is the chance to see those things actually used by airmen decades ago.

Few, however, realize the care that goes into preserving these rare and oftentimes delicate mementoes. Time takes its toll on everything in the Museum’s collection, and it’s up to Sellars to make sure it does as little harm as possible.

“It’s important to preserve these items because people give them to us in trust,” Sellars said of the Museum’s artifacts. “You’re promising to take care of them, and you want to make sure you keep them in the same state you received them.”

To make sure that happens, Sellars can draw on the expertise of professional conservators, including Francis Lukezic of the Maryland Archaeological Conservation Laboratory. Lukezic holds a Bachelor of Arts degree in Art Conservation from the University of Delaware as well as a Master of Science degree with distinction in Conservation Practice from Cardiff University in Wales.

Connecting with the past is part of her family: her husband Craig Lukezic is president of the Archaeological Society of Delaware and an archaeologist working at Delaware’s State Historic Preservation Office.

“As a museum conservator, I work on preserving a variety of different types of objects,” she said. “When people think of conservators, they usually think about fine arts and paints. But there’s so much more to it.”

Lukezic’s work means she focuses on three-dimensional objects ranging from old cloth to more modern materials.

“What I do is prolong the life of these objects,” she said. “That can involve making supporting mounts to help objects keep their proper shape to treating them to stop or slow down natural deterioration.

Much of Lukezic’s work focuses on preserving archaeological objects, such as those she worked on during a two-month excursion to Athens, Greece, where she helped preserve items excavated at the foot of the Parthenon. These included objects made of bone, stone, copper alloy and ceramics.

“It was a great experience,” she said. “I worked five days a week and on the weekend I had all the time to explore the city and take trips.”

But she also gets to preserve that may be a little less ancient, such as some of the Museum’s collection of flying helmets, which range from leather and fleece-lined head protection of World War II vintage to Cold War-era aircrew helmets.

Many factors in preservation
Lukezic first visited the Museum in 2011.

“I think it was that [former Director Mike Leister] said our World War II leather jackets were a mess and we needed someone to come in and help clean them up,” Sellars said. “At the time the only conservator I knew was Francis.

“I knew her because I also was working part time and we’d run into each other.”

How a historic artifact is preserved depends on many different factors, Lukezic said.

“When it’s found, its condition will vary a lot depending on when and how it was used,” she said. “With each object I always have in mind a set of questions. Then I can formulate how I’ll be able to stop the decay.”

Lukezic visited in December 2016 to examine the Museum’s collection of flight helmets, some dating to World War II. She looked each over carefully, judging their condition with a practiced eye.

“What makes them interesting is that they’re composites,” she said. “They have leather, rubber, fabric and metal. They’re condition can vary greatly even though many are from the same time period. It’s all about where they were, how they were used and where they were stored.”

One factor in preservation is the concept of inherent vice, or the natural tendency of an object to deteriorate because of the components of which they’re made and the processes used to create them. All objects break down over time, which is why paper turns brown, leather cracks and rubber tends to crumble.

Lukezic was pleased with how some of the Museum’s leather helmet collection is...
stored, primarily by placing them on head-shaped mounts that help each maintain its form.

“If it were lying on its side on a shelf, it eventually would take that shape,” she said. “If you fold a newspaper or a tablecloth and tuck it away, when you take it out you’ll have creases in it. You’ll have to get those creases out.

“If it’s rigid, like newspaper, you’ll get a crack line and it falls apart. That’s what we try to head off in conservation.”

Lukezic was particularly interested in one fleece-lined helmet: it had been flattened over time and the leather was split in several areas.

“One issue we have with leather is that different skins, different hides were used,” she said. “It includes how the leather was tanned and how well it was tanned. The quality control used when it was made also can dictate its stability or its tendency to deteriorate.”

An object’s condition also can depend on other materials that make up the piece, such as metals in snaps or communications gear sewn into the helmets, Lukezic said.

Sometimes aircrews would treat the leather with a type of dressing similar to that used on baseball gloves, she said.

“In preservation, we don’t tend to use that because you don’t know how they’ll react over the long term,” she said. “I select methods and materials I know will be stable and not affect the object in a negative way.”

**Tangible pieces of history**

The Museum’s collections are kept in a vault where the temperature is maintained at about 67 degrees with the humidity level at about 47 percent.

Temperature and humidity play a huge role in storage, Lukezic said. It helps to prevent mold and mildew; keeping objects stored in boxes containing a desiccant, such as silica gel, also limits the presence of moisture, she said.

“Maintaining a steady temperature and steady humidity keeps everything back there happy,” she said of the Museum’s vault.

What conservators do isn’t usually noticed by the public but it’s key in the long-term preservation of historic objects, making them available for future research or exhibition.

“Each of these objects may seem mundane or not very exciting, but they have a story to tell,” Lukezic said. “You may have a document or written records, but that often doesn’t come to life unless you have a physical object to display along with it.

“It becomes a tangible piece that draws you out of the record.”

Anyone with an interest in science and history could consider conservation as a career, Lukezic said.

“It’s never boring and there always are different challenges,” she said. “You’re always seeing different objects and different materials.”

For Lukezic, her job incorporates her interests in archaeology, history, art and chemistry.

“There’s a heavy science component in what I do,” she said.

“It’s a way I can still have a very hands-on job that’s never dull or boring. As I work on these objects, I get to learn about them and their stories.”

---

The AMC Museum’s educational summer camp is for children interested in aeronautics and the U.S. Air Force. They will learn the history and science of flight, learn to fly in a simulator, and pre-flight an actual aircraft.

They’ll also see what it’s like in a working air traffic control tower on base, get a weather briefing, talk to a pilot and loadmaster, and go on a digital scavenger hunt.

For more information, email amcmuseum@comcast.net.
Jill Fenstermacher and US Army veteran Glenn Benitez of Quakertown, Pennsylvania, get the lowdown on the Museum’s C-47 on March 5 from volunteer Frank Nartowicz. “We come down for a weekend trip to see all the historic museums in Dover,” Benitez said.

Dad Chris Flood of Lewes brought son Irving, 4, to the Museum on a day where the weather was too cold to go to the beach. As for Irving, “He likes big things, huge construction vehicles, so we thought he’d like this,” Flood said.

Three-year-old Kyle Guerin of Lewes, Delaware, tries on a pair of cap and goggles while visiting the Museum store. Dad Kyle bought Kyle a set of personalized dog tags.

Dylan Noyes brought kids Gavin Noyes, Alexxa Kavalkovich and Kennedy Noyes down from Lebanon, New Jersey to visit the AMC Museum. “We figured we’d stop and visit on the way back home,” he said.
ORDER YOUR CUSTOM DOG TAGS TODAY

$8

GREAT FOR
REUNIONS
BDAY PARTIES
COMMEMORATE
LOVED ONES
CHRISTMAS GIFTS
FAVORITE QUOTES

Each set includes: 1 custom dog tag, 1 AMCM dog tag, 2 rubber silencers, 1 4 1/2" chain, 1 24" chain

For credit card purchase, order online at store.amcuseum.org/dogtag or use the coupon below with your check or money order

YOUR NAME

ADDRESS

CITY STATE ZIP

Print neatly using all CAPITAL letters.
Only 15 characters (letters, special characters, numbers, and spaces) will fit on each line. Spaces and punctuations also count as characters.

Please fill out one letter or space to each square.
Photocopy this coupon to order more than one dog tag.

E-MAIL OR PHONE FOR CONTACT

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Send this coupon plus $8 for each set (check or money order) to:
Store Manager, 1301 Heritage Rd., Dover AFB, DE 19902
Pave a Path to History in Commemoration Park

With Only One Brick . . .

. . . you can accomplish two things — become a permanent part of history in Commemoration Park and join The AMC Museum Foundation in supporting the museum.

And what a great idea — there are so many reasons to order your brick today!

- Offer tribute to or memorialize a loved one.
- Give a holiday or birthday gift.
- Commemorate a special date.
- Recognize a special group.
- Show your personal or business support for the AMC Museum.

To acknowledge the purchase of your brick, you’ll receive a certificate of recognition suitable for framing or presenting to the person you’ve honored. Bricks may be purchased by individuals, businesses, groups, or organizations.

<table>
<thead>
<tr>
<th>INDIVIDUAL</th>
<th>BUSINESS/ORGANIZATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-inches by 8-inches 1 to 3 lines — 15 characters and spaces on each line</td>
<td>8-inches by 8-inches 1 to 6 lines — 15 characters and spaces on each line</td>
</tr>
<tr>
<td>$65</td>
<td>$125</td>
</tr>
<tr>
<td>4-inches by 8-inches 1 to 3 lines — 15 characters and spaces on each line</td>
<td>8-inches by 8-inches 1 to 6 lines — 15 characters and spaces on each line</td>
</tr>
<tr>
<td>$125</td>
<td>$250</td>
</tr>
</tbody>
</table>

All letters are capitalized. Don’t forget to count spaces between letters, too.

BUSINESSES — Have your logo engraved on a brick! Designs must be pre-approved by the engraving company.

Call the AMC Museum Store at 302-677-5992 for more information.

BRICK PROJECT MANAGER
AMC MUSEUM FOUNDATION INC
1301 HERITAGE ROAD
DOVER AFB, DE 19902-5301

Mail form and payment to:

Name (Mr. Mrs. Ms. Rank) ____________________________________________________________
Address ___________________________________________________________ E-mail ____________________________
City __________________ State _______ Zip ______ Phone ______________ Notify me of my brick’s location

Payment Method □ Check □ VISA □ Mastercard □ American Express □ Discover
Name as it appears on card __________________________ Phone (Needed for credit card payment) ____________________________
Credit Card Number __________________________ Expiration Date __________________________ CVV Code ______
Signature (credit card only) __________________________ Amount Enclosed $ __________________

Please order the size brick I’ve checked below:

□ Individual 3-line $65
□ Individual 6-line $125
□ Business 3-line $125
□ Business 6-line $250

Photocopy this form if you’d like to order more than one.

Questions? Email membership@comcast.net.
THANK YOU!
## Become a Member! Support the AMC Museum

<table>
<thead>
<tr>
<th>Membership Category</th>
<th>Annual Dues</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crew Member</td>
<td>$30</td>
<td>Membership certificate, member card good for 10% off purchases in the Museum store, quarterly Hangar Digest newsletter and challenge coin</td>
</tr>
<tr>
<td>Flight Crew Member</td>
<td>$50</td>
<td>Crew member benefits plus challenge coin for each family member (maximum five)</td>
</tr>
<tr>
<td>Squadron Commander</td>
<td>$100</td>
<td>Flight crew member benefits plus recognition in the Hangar Digest newsletter, name engraved on plaque</td>
</tr>
<tr>
<td>Group Commander</td>
<td>$250</td>
<td>Squadron commander benefits plus two museum coffee mugs</td>
</tr>
<tr>
<td>Wing Commander</td>
<td>$500</td>
<td>Group commander benefits plus one crew member membership for friend, signed and numbered aviation print, museum golf shirt personalized with name and donor category</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Donor Category</th>
<th>Donation</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifer (Life Member)</td>
<td>$500</td>
<td>Wing Commander benefits</td>
</tr>
<tr>
<td>Eagle Donor</td>
<td>$1,000</td>
<td>Wing Commander benefits plus special engraved plaque for your home or organization. All Eagle Donors receive further benefits and recognition. Please contact the museum at 302-677-5938 for more information</td>
</tr>
<tr>
<td>Bronze Eagle Donor</td>
<td>$2,500</td>
<td></td>
</tr>
<tr>
<td>Silver Eagle Donor</td>
<td>$5,000</td>
<td></td>
</tr>
<tr>
<td>Gold Eagle Donor</td>
<td>$10,000</td>
<td></td>
</tr>
<tr>
<td>Platinum Eagle Donor</td>
<td>$25,000</td>
<td></td>
</tr>
</tbody>
</table>

Sign me up as a Friend of the AMC Museum at the following level:

- [ ] Crew Member
- [ ] Flight Crew Member
- [ ] Squadron Commander
- [ ] Group Commander
- [ ] Wing Commander
- [ ] Lifer
- [ ] Eagle Donor
- [ ] Bronze Eagle Donor
- [ ] Silver Eagle Donor
- [ ] Gold Eagle Donor
- [ ] Platinum Eagle Donor

Name (Mr. Mrs. Ms. Rank) ________________________________________________________________
Address _____________________________________________ E-mail ____________________________
City __________________ State ____ ZIP __________ Phone ______________ (Required for credit card)
Payment Method   [ ] Check   [ ] VISA   [ ] MasterCard   [ ] American Express   [ ] Discover
Name as it appears on card _____________________________________________________________
Credit Card Number _______________________________________ Exp Date ______________ CVV CODE __________
Signature (credit card only) ___________________________________________________________
[ ] This is a gift membership for:
Name _____________________________________________ E-mail ____________________________
Address _____________________________________________ Phone _____________________________
City __________________ State ____ Zip ___________

**Extra benefit for flight crew members and above:**
Number of coins (maximum of five) ___

**Extra benefit for Wing Commander members and above:**
Shirt size (circle) Small  Medium  Large  XL  XXL
Name to be embroidered on shirt _____________________________

**Mail application and payment to:**
MEMBERSHIP MANAGER
AMC MUSEUM FOUNDATION INC
1301 HERITAGE ROAD
DOVER AFB, DE 19902-5301

Thank you for helping to preserve U.S. Air Force airlift and air refueling history. The AMC Museum Foundation is a non-profit, educational organization that raises money and generates support for the AMC Museum. Dues and donations are tax-deductible in accordance with IRS regulations.