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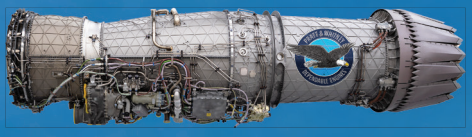

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American bald eagles land on a tree stump at Cook Inlet, Alaska.

DEPARTMENTS

ON THE COVER

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Two American bald eagles in flight in the Kenai region of Alaska.

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EDITORIAL

By Tobias Naegele

A Lesson Learned

In the half-century since the end of the war in Vietnam, we Americans seem to have forgotten most of the useful lessons that unkind war once taught us.

The most important of these is encapsulated in the Powell Doctrine: "Once a decision for military action has been made, half-measures and confused objectives extract a severe price in the form of a protracted conflict, which can cost needless loss of human lives and material resources, a divided nation at home, and defeat," reads the 1992 National Military Strategy, published during Gen. Colin Powell's tenure as Chairman of the Joint Chiefs of Staff.

"One of the essential elements of our national military strategy is the ability to rapidly assemble the forces needed to win," the strategy continues, before advocating "the concept of applying decisive force to overwhelm our adversaries and thereby terminate conflicts swiftly with minimum loss of life."

The document never mentioned Vietnam. It didn't have to.

Powell served two combat tours in Vietnam. His boss, then-Defense Secretary Dick Cheney, escaped military service, but not the national reckoning that period invoked.

They published their military strategy in the immediate wake of Operation Desert Storm. There, they applied that strategy so artfully that the U.S. military successfully deployed 500,000 troops halfway around the globe, obliterated the world's fourth-largest army, and got almost everyone home in time for a national Welcome Home celebration in under 11 months.

Of all those who served, America lost just 147 troops to hostile action in that war; there were days in Vietnam, we lost many more in a single day.

Success was born of the conviction that we would not fight with "half measures and confused objectives" again. President George H. W. Bush said we would expel Iraq from Kuwait, and he did. Once that was done, in the midst of a rout, he ended the killing. One can argue the consequences of not removing Saddam Hussein right then, but Bush achieved his objective and got most of his troops home. Later that same year, the Soviet Union ceased to exist.

So, when Powell and Cheney produced their strategy and articulated the doctrine within it, it seemed a clear attempt to ensure the United States would never again be bogged down in "another Vietnam." Ironically, of course, Powell and Cheney would re-emerge a decade later as crucial figures in the aftermath of 9/11. So shaken were they by al-Qaeda's attack that they seemingly ignored their own sound advice and helped launch the U.S. into a pair of forever wars in Iraq and Afghanistan.

Doing so cost hundreds of billions of dollars, thousands of lives, and vastly diminished American political, military, and deterrent power worldwide.

The principles of the Powell Doctrine and the effective deterrence that it should yield remain relevant today as we contemplate a new Cold War with China and two regional conflicts in which American policy is deeply intertwined.

In Ukraine, the U.S. and our NATO allies have provided more than $175 billion in military aid along with priceless intelligence and cyber support. Yet our persistent incrementalism with regard to how much and what kind of aid we've provided, and how those weapons may be used, has consistently restrained Ukraine from being able to fully defend itsef against brutal Russian invaders. These severe restrictions offer added advantage to the enemy.

Retired Lt. Gen. David Deptula, Dean of AFA's Mitchell Institute for Aerospace Studies, returning from military consultations in Ukraine in May, likened the situation to a football game in which each side plays by different rules. "The Russians get to use the whole field, Ukraine can't cross the 50-yard line into the opposition's territory," he said. "They can only play defense on their own side (with U.S.-supplied weapons), but they can't score. So, how are they going to win?"

Helping Ukraine just enough to keep hope alive borders on cruelty. It also signals to allies that the U.S. is not to be fully trusted. We fight over offering aid and make poor choices that must soon be reversed. We opposed long-range artillery, then changed our minds. We said no to tanks, then changed our mind. We said no to F-16s, then changed our mind.

Now it's time to change our mind about how Ukraine fights its enemy. We should drop restrictions on missiles, long-range artillery, and other U.S.-made weapons. In a war of attrition, which is where Ukraine is today, Russia can't lose and Ukraine can't win. Vladimir Putin has deeper pockets and controls all the levers of power at home. He has a marriage of convenience with China, which benefits from anything that seems to weaken the United States.

Thus, it seems they are deterring us, rather than the other way around.

In Israel and Gaza, the Powell Doctrine offers other lessons. After Hamas attacked and killed 1,500 civilians without provocation last Oct. 7, Israel invaded Gaza with a just cause and overwhelming force. But while it got those things right, its stated objective—the destruction of Hamas—was aspirational, perhaps even unachievable.

Here again are reflections of Vietnam. Like the Viet Cong in South Vietnam, Hamas is at once both a political movement and a military organization. It is deeply integrated in the community and can appear and disappear at will. Headquartered in Qatar and funded by foreign sponsors, it exists beyond the confines of the Gaza Strip. Hamas cannot be crushed there militarily, but rather must be made irrelevant politically.

Overwhelming force is only possible if the nation has the capacity and capability to employ that force at will.

The Palestinian people chose Hamas and rather than be held responsible for its atrocities, now point to the humanitarian crisis unleashed by Israel's invasion as a moral equivalent, or worse undertaking, than the wanton rapes and murders Hamas forces unleashed in October.

In this, Israel played directly into Hamas' hands. The world now wrings its hands over heart-rending images of Palestinian refugees, —many complicit in Hamas' crimes—having all but forgotten the similarly wrenching images of Israelis, Americans, and other foreign nationals, young and old, held hostage by Hamas terrorists.

Thus, college campuses gave way to protest groups this spring and Ireland, Norway, and Spain now recognize Palestine as an independent state. These are political victories for Hamas, the fruits of their unprovoked attack last October. Israelis, like Americans, are divided at home—precisely the outcome Hamas hoped for.

"Half measures and confused objectives" also threaten our ability to deter China in the Pacific and in Space. Our Air Force is shrinking to unprecedented levels, as theirs grows larger by the day. We are jettisoning more aircraft than we buy, and underfunding modernization, sustainment, and training. Our Space Force is likewise underfunded and takes a cut under the President's 2025 budget request.

The overwhelming force intrinsic in the Powell Doctrine is only possible if the nation has the capacity and capability to assemble and employ that force at will. Underfunding our military risks ceding that advantage to others—a risk Americans should not accept.


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LETTERS

Surprise, Not Surprised

I was somewhat despondent after reading the article "Retooling for China" [January/February, p. 19].

Ten years to get to 100 B-21s? When the P-51 of WWII was conceived in 1938, flew in 1940 and was upgraded to a Rolls-Royce engine in under a year. Of course, we were close to war, and then got into the war.

And China has satellites of unknown purpose in orbit now?

They can put up an observation satellite with a computer program that compares photos of areas over oceans and can detect and report aircraft. Goodbye stealth. Or use infrared detection at night. Goodbye surprise.

We seem to have forgotten the strategy of gaining the high ground. We should be having a monthly launch of repair satellites that can either refuel satellites that are out of fuel or be able to hook onto them and get them to de-orbit.

Where? In the ocean or on a target. When? As the military situation determines a target needs to be attacked. Use old satellites as bombs from space.

The author Alvin Toffler wrote a book called "Future Shock." Things are changing rapidly. Those who anticipate changes will survive. Those who want to use the old tried and true will be obsolete.

Maj. William J. Maki, USAF (Ret.)
Cuyahoga Falls, Ohio

Perfect Match

The editorial by Tobias Naegele, "Re-Optimize Now," [January/February 2024, p. 3] identifies "organizational impediments to change." He includes "institutional stovepipes, insufficient centralization and oversight over critical skill sets and areas of technology development, and also inadequate depth of talent and equipment."

In my humble opinion, I believe the most critical impediment to change is related to personnel, mainly inadequate professional experience and poor leadership.

In my 20 years of Active duty and 24.5 years as a DAF civilian in the intelligence business, too often personnel with little or no experience as an intelligence analyst, staff officer and/or manager were placed in a position of supervisor, chief, or director of an intelligence office or unit.

The resulting lack of confidence led to indecisive actions and a breakdown of operations. No change of the organizational structure could fix poor personnel issues.

It all depends on promoting the right people and assigning the right personnel to the job. I would rather have a major with 13 years of intelligence in a colonel's position than a full colonel with little or no experience in intelligence.

Lt. Col. Russell A. Noguchi, USAF (Ret.)
Pearl City, Hawaii

Page Turner

Although I read the December 2023 issue of the magazine when I received it, I recently reread the article "Three Airmen Who Sought—But Never Won—the Presidency" [p. 42] by Daniel

WRITE TO US

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Haulman. The article was very informative and interesting, and I enjoyed it immensely.

Thanks, Daniel, for contributing such a superb article to an always excellent magazine. My tardiness in sending this compliment should not detract from the significance of my enjoyment.

Lt. Col. Gary L. Gilchrist,
USAF (Ret.)
Palm Harbor, Fla.

Team Win

With regard to "The Man Who Shot Down Yamamoto" article [March/April, p. 48], the extraordinary decadeslong struggle to assign credit for the downing of one airplane makes one question the entire concept of being an ace. I have long wondered how many bombers were lost over Germany because of an escort fighter's continued pursuit of a damaged enemy fighter to ensure recording credit for the kill.

As the character and frequency of aerial combat has changed dramatically since WWI, perhaps the title Ace should be retired to the history books. I am reminded of a quote from Harry S. Truman, "It is amazing what you can accomplish if you do not care who gets the credit."

Col. Michael R. Gallagher,
USAF (Ret.)
Eugene, Ore.

Honored To Serve

I really appreciated your article on medical disqualifications in the March/April issue [p. 37]. In the spring of 1966 I was DQ'd during my physical for entrance to the Advanced Corps of Air Force ROTC at my college. I then proceeded to go through the waiver process and still have the final rejection letter from the Air Force Surgeon General.

Having had a rather obscure illness between the ages of 11 and 15, I knew there might be a problem so I secured a letter from my doctor "clearing" me to serve and adding that there were no harmful residual effects nor was there a likelihood of its recurrence. Nonetheless the Air Force thought that there was still a slim possibility it could return and as the Surgeon General stated, "This, (the rejection), is not predicated on the fact that you may become incapacitated but rather early separation could deny the Air Force an officer who represented an extensive in-service training investment". The rejection still stings for me as it does for thousands who also wanted to serve in various branches of the armed forces.

I have always felt that I'd rather serve with someone who wants to be there than someone who has to be there. Needless to say, at 77 I am still here, no recurrence. I did serve as an enlisted man in the Army (Officer Candidate School out of the question) and went on to a demanding civil service career followed by 20-plus years as a construction manager.

My dad, a WWII mechanic on P-38's and P-51's also believed in finding a slot for everyone. I remember to this day, his comment when Joe Namath, the New York Jets football star, received his 4-F classification for torn up knees, "The Army always needs typists!" Indeed, we should be trying and trying hard to find a slot for everyone who wants to serve his or her country regardless of disability.

My wife and I recently counseled a young man who had asthma as a child. An outstanding student, peer leader and star athlete, he applied to West Point, his life's dream. The mere history of the asthma, which never recurred, not only DQ'd him from the Point but for enlistment in any of the services. Needless to say he is heartbroken, as heartbroken as I was some 58 years ago. This being a hot button topic for me I have met scores of young people in my life who have had this experience, all physically able yet rejected for some old malady.

I am happy to see that Sen. Elizabeth Warren is examining this issue. Hopefully she will be able to bring about some changes. I can well remember the "old" military before 1975 when pregnancy ended your military career, I also remember numerous stories over the past two decades of badly wounded Soldiers and Airmen being allowed to continue their careers, something that never would have happened in the Vietnam years. The time for a change in policy is now.

Dennis Trynosky,
USA (Ret.)
Fair Lawn, N.J.

Dollars and Sense

I read with keen interest both Tobias Naegele's "Editorial" [March/April 2024, p. 2] and "Verbatim" [p. 7] comments from USAF Chief of Staff Gen. David Allvin and from Secretary of the Air Force Frank Kendall, which beg the question: "Why are both USAF and USSF forced to continually operate under a "compromised" budget which sees the National Reconnaissance Office (NRO but annotated as "non-Blue") taking almost 20 percent off the top resulting in a "net" gain year over year of a paltry 1 percent? It's especially insulting when none of the other service branches are forced to operate under such budgetary restrictions.

Naegele had it right in his editorial. How is USAF and USSF expected to modernize and achieve current mission objectives when this President and Congress, year after year, do not support them when it comes to funding (where the rubber meets the road)?

As long as USAF/USSF budgets are continually "penalized" and "compromised" … year after year—as this administration continues spending taxpayer $$ like a drunken Sailor on everything but national defense—you can expect with certainty that our near-peer adversaries will continue to take every opportunity to challenge the U.S.

MSgt. Randolph E. Whitmire,
USAF (Ret.)
Immediate Past President
Air & Space Forces Assn., Michigan
East China, Mich.

Strength In Numbers

Regarding ["Extending Endurance for Pacific Conflict," January/February, p. 40], I hope Maj. James C. Miller's letter in the March/April issue on the need to use predictive modeling of fatigue's effects on aircrew is being acted on.

While on the Air Staff in the early 1980s. I proposed increasing the crew ratios for squadrons (more pilots than normal) when they were deployed into combat in order to allow the squadron to fly high sortie rates while minimizing the need for each pilot to fly frequently and experience the degradation of performance caused by aircrew fatigue.

This approach also had the advantage of allowing the squadron's aircraft that were not deployed initially to be used to replace aircraft that were damaged and lost in combat. I wrote several point papers on the subject and even corresponded with the Air Force's Surgeon General, but failed to find any

interest at all within the Air Staff regarding the importance of addressing the impact of human factors in war on either our personnel or the enemy's.

Besides this proposal, I also recommended preparing all personnel to defend their air base. I had been stationed at Tan Son Nhut Air Base in Vietnam during the 1968 Tet Offensive and felt helpless because we turned in our weapons after each flight. My suggestion was for all air and ground personnel to be trained and given access to weapons as well as assigned positions to defend during an attack.

When our general worried about the high cost of doing this, my colonel recognized the general's lack of interest and told me to forget it. I am hopeful that this lack of interest in air base defense is now ancient history.

Lt. Col. Price T. Bingham,
USAF (Ret.)
Melbourne, Fla.

Outer Space

Your "Verbatim" quote "Space has been overclassified for years" ["De-Sapping Space," March/April 2024, p. 7] reminded me of my experiences as an Air Force observer/coach for U.S. Army Warfighter Exercises. Invariably, at some point during the Warfighter, the various Warfighting Function representatives would huddle with the battle captain in the Division TOC (Tactical Operations Center) to discuss and develop a plan for some newly tasked operation.

Observing patiently, I would wait until the appropriate time, then toss out my little nugget, "Has anyone talked to the space guy?" Always the same response. Blank looks for a few seconds, followed by (from the battle captain): "Uh, lieutenant, go get the space guy."

Actually, like everyone else, I was not cleared to know anything about what the space guy could do. I just knew that he might be important, but seldom did anyone remember that he even existed!

Lt. Col. Dale Hanner,
USAF (Ret.)
Loveland, Colo.

Damaging

I am just taken aback that the USAF will not repair the damaged B-2 that crashed at Whiteman AFB, Mo., [in 2022] due to cost and is not sure what to do with the aircraft as of yet. But it's okay to spend over $4 billion to rebuild Tyndall Air Force Base, Fla., and repair Offutt Air Force Base, Neb., as well?

How does this make any sense? We need to address the recruiting issues as if we had to go to war; [if not] we are going to be in trouble. We cut the force after the Gulf War and continued that we are at WWI strength. ... We really need to tell Congress who they work for—the taxpayer.

The Air Force leadership needs to take care of the Air Force instead of worrying about changing Air Force Instructions for so many things that are just ridiculous. What is happening to the Air Force I joined and retired from?

SSgt. Dean R. Martinez,
USAF (Ret.)
Medical Lake, Wash.

Unit Reunion:

The B-52 Stratofortress Assn., Reunion/Rendezvous is being held **Sept. 12-15, 2024,** at Embassy Suites, Downtown Medical Center, Oklahoma City, Okla.
Register at: https://stratofortress.org/b52-stratofortress-reunion
Contacts: Russell Stephenson (410-740-8024) or Peter Derenski (314-822-2071).

The Air Force wants the MH-139A Grey Wolf to replace the UH-1 Huey for security and transport across its ICBM fields and for executive airlift in the National Capital Region. But in March, USAF announced plans to cut its buy from 80 to 42 aircraft, triggering "critical" cost overruns disclosed in April. The MH-139s, now going through testing at Eglin Air Force Base, Fla., can fly farther, go faster, and carry more than the Hueys they will replace. Buying fewer helicopters will save $1.1 billion, but the savings come at a cost: The cut pushed up the unit price of each aircraft by more than 15 percent.

Samuel King Jr./USAF

The Air Force's 509th Bomb Wing demonstrated a rare B-2 elephant walk and fly-off April 15 at Whiteman Air Force Base, Mo., launching two-thirds of its entire B-2 fleet. In May, the Air Force disclosed it will not repair a B-2 Spirit damaged in a mishap in 2022, shrinking the fleet to 19 aircraft. Over the next decade, those jets will be replaced by the B-21 Raider, a smaller, but next-generation stealth aircraft now undergoing flight tests at Edwards Air Force Base, Calif. Air Force plans call for acquiring 100 B-21s.

Airman 1st Class Hailey Farrell

The Air Force owns two-thirds of the nation's nuclear triad—strategic bombers and ICBMs. But the third leg is the U.S. Navy's Ohio-class ballistic missile submarines. At more than 560 feet long and 42 feet wide, the USS Nebraska (SSBN 739) can carry up to 20 Trident II D-5 ballistic missiles to waiting points far below the surface and hidden deeply beneath the sea. When transiting on the surface, though, a Boomer is vulnerabl. Here, Air Force A-10 Thunderbolt IIs fly air cover and unseen Coast Guard vessels keep surface craft a safe distance away as the Nebraska transits the Strait of Juan de Fuca.

Mass Communication Specialist 2nd Class Gwendelyn Ohrazda/USN

Staff Sgt. Ryan Gomez

The Air Force wants to divest 250 aircraft in 2025, including 32 older F-22 Raptors.

Our Incredible, Shrinking Air Force

By Chris Gordon and John Tirpak

The Air Force fleet will drop below 5,000 aircraft for the first time in its history and continue to shrink, even as leaders work to modernize the force. In 2025, service plans call for divesting 250 aircraft and buying just 91, and Lt. Gen. Richard G. Moore Jr., deputy chief of staff for plans and programs, says more cuts are to come.

"I see that continuing," Moore said, because the Fiscal Responsibility Act caps spending increases at no more 1 percent, regardless of inflation. "This is the result of a reduced top line and also reduced buying power, and so we have to buy fewer [aircraft]. We had to balance. Balance is something that's a requirement."

Ahead lies a force with a fleet size closer to 4,000 aircraft, he admitted. "What's happening is, in order to maintain legacy force structure and try and modernize, we're hollowing out the force," Moore said.

Moore argued that the Air Force needs to jettison aircraft that aren't combat capable, noting that divesting 32 older F-22s contributes to that plan. But Congress has balked at that plan in prior years, and Moore admitted the service would prefer not having to propose such a tradeoff in the first place.

"In the choice of what we absolutely need to maintain and what hard choice could we make that might not be as hard as others, this is the one," Moore said of retiring the older F-22s. That's because those jets are not combat-rated and can't be affordably upgraded. "We remind ourselves regularly that when times get tough, we have to make hard choices. This was one that was hard," he said.

F-35 ISSUES

Meanwhile, Congress is also growing exasperated with Lockheed Martin's inability to complete the F-35's Tech Refresh 3 (TR-3) update. The Air Force has declined to take delivery of dozens of completed fighters since last fall pending the successful completion of testing and delivery of required functionality. But in May, the House Armed Services Committee weighed in, proposing to slash the 2025 budget for F-35 purchases by 10 to 20 aircraft.

The House Armed Services Committee "chairman's mark" of the 2025 National Defense Authorization bill, essentially the first draft of the legislation, proposes a $1 billion cut to the procurement program while investing some $850 million to increase testing capacity by buying a second Cooperative Avionics Test Bed aircraft, developing an F-35 "digital twin," and setting up a second Mission Software Integration Laboratory.

"We are trying to get the attention" of the Pentagon and Lockheed Martin, a HASC staff member told Air & Space Forces Magazine. "We are tired of talking about [F-35 delays] and hearing excuses. … Once and for all, let's get this thing straightened out."

The Pentagon's 2025 budget requests asked for 42 Air Force F-35As, 13 Marine Corps F-35Bs, and 13 Navy F-35Cs. The draft signed by HASC Chairman Rep. Mike Rogers (R-Ala.), would cut 10 jets, six for the Air Force and two each for the Navy and Marines. But it would cut another 10 aircraft if the Secretary of Defense and the Joint Program Office fail to deliver on a series of corrective actions the committee is demanding.

Either way, they signal little sign that Congress might add to

the 42 F-35s the Air Force wanted, as lawmakers have in past years, meaning the pace of deliveries will continue to lag Air Force requirements. The service has stated in the past a need to acquire at least 72 fighters annually to rejuvenate the force, but its budget requests have rarely matched that requirement. The 2025 request includes just 60 new fighters, with 18 F-15EXs in addition to 42 F-35s.

F-35 Program Executive Officer Lt. Gen. Michael J. Schmidt testified this spring that TR-3 testing has been slowed by insufficient test assets, a problem that has contributed to a backup on F-35 deliveries as completed planes are parked after coming off the production line. About 75 jets are parked now and awaiting delivery.

Anticipated Block 4 upgrades—primarily software enhancements dependent on TR-3—are being "reimagined," Schmidt said, deferring many of those capabilities into the 2030s.

TR-3 testing, already a year behind, is ongoing, with the best-case scenario being a truncated TR-3 approval coming in the third quarter of this year. The F-35's international partners have agreed to the truncated version, but the U.S. has not bought in so far. Schmidt has said the fully completed TR-3 won't arrive before 2025.

Lockheed Martin Chairman Jim Taiclet told financial reporters in April that the truncated version would allow pilots to practice using systems that won't be fully operational until the all-up TR-3 comes long. He called it a "combat-capable training" version of the software. He also said Lockheed will deliver only 75 to 110 F-35s this year, well short of the 156 planned.

Moore said that in the near-term, the bulk of aircraft retirements are A-10 close air support aircraft that the Air Force does not consider survivable against modern anti-air threats. Also due to exit the fleet in the coming years are aging F-15C/D Eagles, some of which are barely airworthy.

"I don't know if we're as troubled by the retirement of A-10s as we would be by other retirements that would have to happen later in the [future years defense plan]," Moore said. "But I do see ... divestitures outpacing procurements for the rest of this budget horizon."

Weapons School: Still Evolving After 75 Years

By David Roza

The Air Force opened its Aircraft Gunnery School at what was then Las Vegas Air Force Base, Nev., in 1949, with the intention of leveraging the expertise of World War II fighter pilots to pass on their hard-won combat lessons to new crews.

Over the next three-quarters of a century it became the Air Force Weapons School, among the service's premier institutions, a place where Airmen and Guardians alike become experts in their weapons systems and how best to employ them. Weapons School graduates spread across the Air and Space Forces today include the Chairman of the Joint Chiefs of Staff, the Chief of Space Operations, and the commanders of Pacific Air Forces and U.S. Air Forces Europe/Africa.

The Weapons School's heritage and evolution were on display May 17 as the school celebrated its legacy. The base renamed the 57th Wing and 99th Air Base Wing headquarters complex for Gen. John P. Jumper, 17th Air Force Chief of Staff and the Weapons School flight commander from 1974 to 1977. Jumper, Air Combat Command head Gen. Kenneth Wilsbach, and Chairman of the Joint Chiefs of Staff Gen. Charles Q. Brown—a former Weapons School commandant—converged on the base for the ceremonies.

The timing couldn't be better, Weapons School Commandant Col. Charles Fallon said, noting that the Air Force today faces potential adversaries in China and Russia with technological sophistication and vast international ambitions. Just as past generations of weapons instructors had to adapt to emerging threats with limited resources, so too must today's cadre rise to the occasion. "We can do that too," Fallon said. "We can be those people.

William Lewis/USAF

An F-16C with the 64th Aggressor Squadron takes off for a training mission at Nellis Air Force Base, Nev., in 2023. The squadron's aircraft are painted in camouflage schemes identical to Russian-manufactured aircraft, providing realistic air-to-air training.

TODAY'S SCHOOL

Today, the Weapons School educates some 150 Airmen and Guardians every six months from its complex at Nellis Air Force Base, Nev., having expanded well beyond fighters, to include bombers, helicopter search and rescue, cyber warfare, space operations, and more, with geographically separated squadrons hosting platform-specific classes across the country.

Through it all, one constant remained, said Fallon told Air & Space Forces Magazine: a commitment to keep being better.

"When you look at where we began, with very few platforms post-WWII, to where we are now, it looks like wild change," he said. "But the one thing that hasn't changed, from its inception until now and into the future, is that we are always going to adapt and improve. That is at the heart of what we do."

Now, as the Air Force and Space Force prepare to fight a near-peer adversary such as China or Russia, the Weapons School is adapting to include a greater emphasis on synthetic training, multidomain integration, and human performance, ensuring that weapons officers keep pace with rapidly developing capabilities, technologies, and evolving military threats.

"Not only are we looking to make really fantastic weapons officers, we think part of that is just making better humans," Fallon said. "If you can make a better human, then that better human will be a better weapons officer, a better tactician. They'll be able to answer their nation's call to lead Airmen."

SYNTHESIZED SUCCESS

For most of its history, the Weapons School emphasized live flight training as the way to prepare students for real-world operations. Indeed, weapons officers helped stand up the first Aggressor Squadrons: dedicated pilots who imitate hostile "Red Air" tactics to better prepare U.S. and coalition crews for combat. But in recent years, synthetic training has allowed Weapons School courses to simulate large-scale, high-tech battles that may not be possible on a real-world training range.

"When I first went through the school, it was 'pound on your chest, we're going to fly, we've got to do it live,'" said Fallon, who began his career flying F-16s and is now an F-35 pilot. "Now there has been such great advances in the synthetic environment that you can create an ultrarealistic and, in some cases, more realistic threat representation in-scenario than you could in the actual real-world environment."

Traditional simulators taught crew members how to safely operate an aircraft, but manufacturer's threat simulations were not so realistic, Fallon explained. Today's synthetic environments, however, can network live and virtual simulations together, enabling realistic threat scenarios and making possible some situations that simply can't be practiced in the real world.

Fallon likened it to video games, which often fall into one of two categories: arcade or simulator. In an arcade racing game, for example, players hold a button to make the race car go forward, while in a simulator racing game, players must shift gears and adjust for weather conditions, tire traction, and a range of other realistic factors.

"All of our simulators up until now have kind of been that arcade mode," Fallon said. "Now we're getting into the real simulation mode where the synthetic environment is almost imperceptible from the real world."

While not a replacement for live training, synthetic environments help emulate threats or stand-off weapons that may be too long-range for the restricted airspace above a training range, or assets that may be too expensive to bring in more than once a year. But it also helps with the day-to-day skills Airmen and Guardians need to stay proficient.

"I can go in the sim for eight hours and those individuals can receive hundreds of reps and sets that would have taken an entire year of training live," Fallon said.

MULTIDOMAIN MASTERS

The push for synthetic environments occurs as warfare becomes more multidomain: the first Bamboo Eagle exercise held earlier this year featured air, sea, cyber, and space operators working together in an eight-day simulation of an Indo-Pacific conflict. That melding between domains is also happening at the Weapons School, where Fallon sees students from different platforms working together earlier in the six-month curriculum.

"That integration continues to push left in the timeline, and you honestly can't start that early enough," he said.

That was not always the case at the Weapons School, which for its first 43 years focused exclusively on fighters. That changed in 1992, with the activation of B-52 and B-1 bomber divisions; followed by HH-60 rescue helicopters, EC-130 electronic warfare planes, and RC-135 intelligence, surveillance, and reconnaissance jets in 1995; and a space division in 1996.

Today, the Weapons School features 21 Weapons Squadrons, focused on platforms ranging from intercontinental ballistic missiles to CV-22 tilt-rotor transports. The F-35 embodies that fusion: a multirole fighter jet with cutting-edge sensors and electromagnetic warfare systems. Almost 70 percent of the F-35 Weapons School syllabus involves some sort of integration with another platform, Fallon said.

"That's a wild change from other platforms in the past, and we would assume every platform that onboards from here on out is going to be very typical of that," the colonel said.

The mind-melding culminates in the three-week Weapons School Integration (WSINT), the capstone element where students work together to plan and execute "every aspect of air, space, and cyber combat operations," according to the Air Force.

The growing emphasis on integration also reflects that the Weapons School, never known for being easy, may become even more demanding of students, who are already expected to be Ph.D.-level experts in their own platforms upon graduating.

"It was a real shock for someone who'd aced everything to date to consider failing a formal course," wrote retired Lt. Col. Dan Hampton about his experience at Weapons School in his 2012 memoir "Viper Pilot." Besides a heavy flying schedule, he and his fellow students also had to juggle hundreds of hours of academics covering aircraft weapons, systems, and tactics, write a graduate-level paper, and then present it to their instructors.

"I used to fall asleep standing up in the shower at the end of the day," Hampton wrote. "It sucked. I loved it."

Still, part of the expectation at the Weapons School is to raise the standards, "so that every single class is more difficult than the class prior to it," Fallon said.

"As our understanding of the pacing challenge continues to evolve, we continue to add on," he said. "All the things that we have asked our graduates to do for the past 75 years, that's just the norm. And then anything new is a growth on top of that. The old stuff doesn't go away, there's nothing that comes off the plate."

The Weapons School plate has more on it now than ever before, but new advances in human performance could help students consume more and digest it faster to keep pace.

HUMAN PERFORMANCE

The Weapons School is often "the nexus of the latest and greatest technology and what things you can do with that technology," Fallon said. "But for right now, it's people that operate all of our technology, and so that's where we really need to lean in and invest."

Recent efforts include taking lessons from science and academia on how people cognitively behave and receive information. For the past year and a half or so, the school hired a contractor to perform cognitive brain mapping on students and instructors, examining their brain waves, stress levels, and abilities to learn and adapt. The data so far hints that future syllabuses could benefit from having time off or "very targeted recovery, rather than just, 'Hey, you're gonna fly every single day for five days,'" Fallon said. "And then at the end of the week, we wonder why someone's not getting better."

Several hundred students and instructors are also tracking their sleep and daily routines through wearable technology, which helps them better understand how to perform at their best.

"We can't continue to burn people out into the red and then wonder why they're not getting it," Fallon said. "We need to allow them to get into what we call a flow state, so that they can actually perform at their peak. Then we need to proactively work that into the syllabus, which is something that's never been attempted here before."

Beyond making sure students perform at their best in Weapons School, Fallon also wants graduates to keep improving long after they put on the school's iconic patch.

"The real problem is once you put that patch on your shoulder, training in the Air Force literally stops," Fallon said. "There are no more upgrades that I can put you in, there is no formal course

I can send you to to get you more training in your platform."

The default assumption, he explained, is that the patch-wearer is at the top of their game and the best of the best.

"My question is just, can you make them better?" the colonel asked.

Synthetic training could play a role by remembering an individual's weak areas from past experiences, then targeting those whenever they hop in a simulator. The technology is not there yet, the colonel said, but once it is, it could ensure weapons officers retain their edge.

INFLECTION POINT

The Air Force Weapons School has a 75-year tradition of excellence, one that Fallon is reminded of every time he walks through the front door and is greeted by a statue of Brig. Gen. James "Robbie" Risner, the Korean War ace who was shot down during the Vietnam War and helped keep up the spirits of his fellow prisoners of war at the infamous "Hanoi Hilton."

"That is definitely a visceral thing that physically hits you in the face every single morning when you walk in, and it really means something," Fallon said.

Though Risner was not a weapons officer, every year a graduate receives the Risner Award for embodying the Weapons School's values: humble, approachable and credible, and for doing something "of great credit for the community and represents the patch the best," Fallon explained.

MODERNIZATION

Allvin: 100 B-21s Is Still the Goal

By John A. Tirpak

Edwards Air Force Base/Facebook

The B-21 Raider continues to conduct flight tests at Edwards Air Force Base, Calif., with the B-21 Combined Test Force, including ground testing, taxiing, and flying operations. The Raider continues to make progress toward becoming the backbone of the U.S. Air Force bomber fleet.

The Air Force is holding to its requirement for 100 B-21 bombers because other options could emerge before that bridge must be crossed, Air Force Chief of Staff Gen. David W. Allvin told the Senate Armed Services Committee on April 16.

"I think we're not going to reach [100 B-21s] until probably the mid-2030s and beyond," Allvin said, indicating a production rate numbering fewer than 10 aircraft per year.

Pentagon acquisition and sustainment chief William LaPlante recently said that the B-21's production rate was deliberately set at a low level to protect it from budget cuts.

USAF first quoted a requirement for 80 to 100 B-21s in 2015, increasing to "at least 100" in recent years, even as independent experts have called for as many as 250 B-21s. That fleet will replace the Air Force's 19 B-2s and 45 B-1s, while its 75 reengined B-52s will continue to fly for at least two more decades.

Air Force Secretary Frank Kendall, also testifying before the SASC, expressed optimism that the program is "moving forward" appropriately. "We're pretty happy with the progress," Kendall said. "I'm always very careful about saying positive things about programs and development … they all have risk. … [But the] B-21 has been performing close to the original schedule and costs and delivering capability," he said. "It's in testing. We just had the milestone C approval to enter low-rate production."

In May, the Air Force revealed it will not repair a B-2 damaged in a December 2022 mishap. Operational and maintenance savings worth some $176 million over the next five years will be redistributed to other needs. "Potential savings in some areas"—such as B-2 O&M—"must be managed at the enterprise level to account for increased costs in others to support National Defense Strategy priorities," a spokesman said.

The lost aircraft accelerates a planned divestiture by several years, but with the B-21 making progress, its replacement is already in the pipeline. "The Air Force will incrementally retire existing B-1 and B-2 aircraft as B-21s come online," the spokesman said. "For operational security reasons, we are not going to get into specifics."

Counting aircraft in depot, maintenance and test, the divestment of another B-2—the second lost out of an original fleet of 21—means the Air Force has about 13 B-2 bombers available for combat at any time.

The B-21's first operating station will be at Ellsworth Air Force Base, S.D., where military construction to prepare for the new bomber has been underway for some time. The Air Force has previously said that manpower billets will shift from the B-1 and B-2 to B-21 as the latter program matures.

The service has also said that the first B-21 test aircraft will be "usable assets" for combat "in the mid-2020s."

The Air Force recently awarded an indefinite delivery/indefinite quantity contract worth up to $7 billion to B-2 prime contractor Northrop Grumman for depot and line maintenance to carry the B-2 fleet through to its retirement. Although the Air Force has been unclear about when exactly the B-2 fleet will be completely retired, the contract—as well as future years defense plan estimates for B-2 research and development and procurement—ends in fiscal 2028.

Kendall Expects 100 CCAs by 2030

By John A. Tirpak

Anduril

The Anduril "Fury" autonomous aircraft. Anduril and General Atomics were picked to develop the first Collaborative Combat Aircraft designs on April 24.

Though the Air Force plans to buy as many as 2,000 Collaborative Combat Aircraft (CCA) through the late 2030s, only about 100 will be built by 2029, Secretary Frank Kendall told lawmakers April 30. After an initial award, more CCA contracts will follow on a roughly two-year tempo, he said.

During a House Appropriations defense subcommittee hearing, Kendall was asked how many CCAs will be in service and how soon.

"We'll have over 100 on order or delivered by the end of the [Future Years Defense Program]; that's for Increment 1," Kendall said. The FYDP covers the next five years, ending in fiscal 2029.

Kendall noted that he has provided a "planning figure" of 1,000 CCAs. "That's just really to reflect the fact that we're serious about this, it's going to be a significant part of our force structure," he said.

The Air Force announced Anduril and General Atomics as the finalists for the first increment of CCAs on April 24. The two companies beat out aircraft primes Boeing, Lockheed Martin, and Northrop Grumman for the award, but the service said those companies can compete for the second increment on their own dime. The Air Force has declined to disclose details of the Increment 1 contracts, including their dollar value.

Kendall has said up to 2,000 CCAs might be in the Air Force's long-term plans. But he told lawmakers that the "ultimate number is going to depend upon all the costs, portability [of technology to and from other platforms] and a number of other factors."

Regardless, Kendall called CCAs a "fairly transformative change to going away from the individual fighter pilots all out there at risk together, to giving our fighter pilots a wingman.

"It can be attrited to a degree—it's intended to be survivable—but attritable," he added, meaning the drones can be lost in acceptable numbers. "That will give us a wide range of tactics and techniques that we currently can't utilize."

Asked how many CCAs will be acquired for every crewed fighter, Kendall said two to five is a likely range, but that "we won't do it for every single fighter, probably—at least not initially."

Kendall's desired cost of a CCA will top out at about $25 million to $30 million, he said, a "fraction" of the price of a crewed fighter. That would be about a third of the cost of an F-35, which came in at about $80 million each under the most recently negotiated lot.

Air Force officials have said a contract for Increment 2 is expected to be awarded in 2025 or 2026, but that platform has not yet been defined. Service officials said it started out as being an "exquisite," high-end, stealthy platform, but the service went back to the drawing board after wargames showed that large numbers of low-end CCAs were more valuable in a Pacific conflict than small numbers of high-end versions.

"The way the program is structured, it has multiple increments; they're about two years apart," Kendall explained in the hearing. Increment 1 is meant to go "quickly to production," he said.

"We expect to have those aircraft in production within a few years and have deliveries before the end of the five-year plan," he said.

Those first aircraft will "allow us to learn a lot; they'll give us an operational capability," Kendall said. "There'll be a second increment coming along a couple of years behind that one. And we are particularly looking for international cooperation with that second increment."

Boeing developed its MQ-28 Ghost Bat—also called the Airpower Teaming System—with Australia, and the Air Force has shown interest in that modular, uncrewed aircraft. The U.K. and other international partners are also working on their own autonomous aircraft. Kendall said he and Chief of Staff Gen. David W. Allvin have discussed cooperation with several allies.

Pentagon acquisition and sustainment chief William LaPlante has noted that producing the same platforms or munitions in multiple countries would enhance coalition surge capability and interoperability, and provide a powerful deterrent if such items were produced at scale.

The "secret sauce" that will "enable us to be more rapidly integrating with our allies and partners" is the fact that the CCA will generate a "government-owned reference architecture that we control," said Allvin at the hearing.

"And so, as we are seeing advancements in the technology, we can maybe set the pace for how we can integrate and work with our allies and partners."

Anduril and General Atomics Win CCA Contracts

By John A. Tirpak, Unshin Lee Harpley, and Chris Gordon

The Air Force has picked Anduril and General Atomics to continue developing their autonomous Collaborative Combat Aircraft concepts over designs offered by Boeing, Lockheed Martin, and Northrop Grumman, the service announced on April 24. Those firms, however, are still eligible to compete to build the resulting aircraft, USAF said.

"The Department of the Air Force made the decision to continue funding Anduril and General Atomics for detailed designs, manufacture, and testing of production-representative test articles under the Collaborative Combat Aircraft program," the service noted in a press release. The release stated, "More than 20 companies [may still] compete for future efforts, including future production contracts."

Since its inception, Air Force officials have suggested that design and production could be separated in order to attract as many companies as possible to contribute to the effort. But vendors interested in competing later will do so, a spokesman said, "at their own expense."

General Atomics (GA) Aeronautical Systems is an industry veteran, having built the MQ-1 Predator and then the MQ-9 Reaper remotely piloted hunter-killer drones for the Air Force since the 1990s. But Anduril, founded in 2017, is a recent entry in the uncrewed aircraft field. The Silicon Valley startup purchased Blue Force Technologies and its "Fury" stealthy aggressor drone program in the fall of 2023.

GA has promoted its "Gambit" concept for CCAs, which features five platforms optimized for various missions and built around a common core comprised of an engine, keel, and landing gear.

The two were selected for Increment 1 of the CCA program, with a winner to be chosen in 2026. The Air Force also plans a still-to-be-defined Increment 2, which will get underway next year.

Secretary of the Air Force Frank Kendall has said the service plans to build at least 1,000 and as many as 2,000 CCAs through the mid-2030s, at a cost of about $30 million per copy. The concept is for CCAs to give the Air Force "affordable mass" to deal with a growing and highly capable threat posed by China, given that the Air Force can't build enough aircraft or train enough pilots to overwhelm a peer adversary with manned platforms alone.

Commenting on the selection, Kendall praised the speed of the program and the quality of the entries.

"The progress we've made is a testament to the invaluable collaboration with industry, whose investment alongside the Air Force has propelled this initiative forward. It's truly encouraging to witness the rapid execution of this program," Kendall said.

Andrew Hunter, Air Force acquisition executive, said continued collaboration "with both current and potential industry partners remains pivotal. Their expertise, innovation, and resources are instrumental in driving this initiative forward, ensuring its success and impact on future operations."

Lockheed Martin Chief Executive Officer Jim Taiclet said on the company's first-quarter earnings call on April 23 that the government must be prepared to pay a "risk premium" on contracts where new technology is being invented—such as CCAs—as many companies have taken heavy losses bidding aggressively on fixed-price development projects.

The CCA is budgeted as part of the Next-Generation Air Dominance program, making up one element of NGAD's "family of systems" concept. The Air Force asked for $577.1 million for the CCA in its fiscal 2025 budget request and plans to spend $8.9 billion on it through fiscal 2029.

SPACE

Biggest Space Flag Exercise Ever

By Greg Hadley

The Space Force's premier exercise was restructured and expanded for its latest iteration, as planners emphasized Guardians' ability to integrate into a larger operational plan.

The three-week Space Flag 24-1 brought together 400 participants at Schriever Space Force Base, Colo., in April—up from 250 or so in the biggest prior Space Flag event.

"It is important that Space Flag expands," Lt. Col. Scott Nakatani, commander of the 392nd Combat Training Squadron, told Air & Space Forces Magazine. "It needs to expand to cover down all of the mission areas and those critical units that are preparing to be presented. So we expanded greatly. We definitely maxed out our spaces."

More than size, Space Flag also expanded beyond tactical training for the first time, including operational support for warfighters.

"Space Flag in the past has been tactical mission plan, tactical execution—plan, execute, plan, execute," said Capt. Lane Murphy, exercise director. "So now it's kind of transitioned to, instead of advanced training, it's more operational readiness to execute effective support of an [operations] plan."

In prior years, mission planning and execution were conducted on the tactical level, but this year, the entire first week was devoted to developing overarching operational plans, which were then passed on to mission commanders. The next two weeks focused on collaborative planning efforts from approximately 20 units across Space Operations Command to execute the plan, which were then tested in "fly-out" simulations against a thinking adversary, according to a Space Training and Readiness Command release.

"We did that to be more realistic," Murphy said. By bringing planners and different operators together, he added, teams can see how their actions affect other units and adjust accordingly.

Nakatani declined to say exactly what scenarios Guardians faced in this Space Flag, but he did say they were meant to emphasize integration into broader operations.

"It was informed by two real world O-plans, and we based them off of the most likely and most dangerous intelligence

assessments of how those O-plans would execute," Nakatani said. "And this is the first time that we have gone down a hard O-plan-informed scenario. We may have previously seen tasks that would be called out in an O-plan make their way into Space Flag. But this is the first time that we ran down as though the forces were expected to support an ongoing operation."

Space Flag's evolution seeks to align the exercise with the Department of the Air Force's broader effort to "re-optimize for great power competition," Nakatani added. Back in February, the department announced among its 24 specified decisions that it wanted to "conduct a series of nested exercises in Space Force that increase in scope and complexity, fit within a broader DAF-level framework, and are assessed through a service-level, data-driven process to measure readiness."

Space Flag was the first major example of that effort.

"Space Flag still teaches integrated mission planning, but it's more focused on how those space forces come together into an integrated sortie to meet combatant commanders' intent," Nakatani said. "And all of that's directly in line with our direct marching orders, our new direction from the Secretary, from the CSO."

Judi Tomich/USSF

Nearly 400 Guardians and civilians took part in Space Flag 24-1. The April exercise focused on mission integration and planning.

China's 'Unprecedented' Growth in Space

By Greg Hadley

A little less than three years after then-U.S. Strategic Command boss Adm. Charles Richard warned of China's nuclear forces experiencing a "strategic breakout," the Space Force's top intelligence officer says the People's Liberation Army has done the same in space.

"The PLA has rapidly advanced in space in a way that few people can really appreciate," Maj. Gen. Gregory J. Gagnon said May 2 at the Mitchell Institute for Aerospace Studies. "I tried to think about historical analogies, about rapid buildups. I haven't seen a rapid build-up like this. I was thinking about World War II, but even as I was looking more broadly, an adversary arming this fast is profoundly concerning."

Richard's assessment of Chinese nuclear capabilities in August 2021 came around the same time that reports first emerged of the PLA building massive nuclear silo fields and has become an oft-repeated term used by lawmakers and Pentagon officials ever since.

Jud McCrehin/staff

China's pace of advancement in space is "profoundly concerning," says Maj. Gen. Gregory Gagnon, deputy chief of space operations for intelligence.

In recent months, top military space leaders started using similar language.

"Admiral Richard … labeled the moniker 'breakout pace' for nuclear forces. He talked about the fact that, we thought they'd have 500 warheads, but they're rapidly getting to 1,000," Gagnon said. "The breakout pace in space is profound."

Gagnon's comments came a week after U.S. Space Command boss Gen. Stephen N. Whiting said during a visit to Japan and South Korea that China is moving "breathtakingly fast" in space and only weeks after Chief of Space Operations Gen. B. Chance Saltzman spoke of an emerging "sensor-shooter kill web" in China that he said "creates unacceptable risk to our forward-deployed force."

China is now prepared to use space against the U.S. as the U.S. has leveraged its space capabilities against others.

"For the last two years, they've placed over 200 satellites in space, both years," Gagnon said. "Of that, over half of them are remote sensing satellites—remote sensing satellites that are purpose built to surveil and do reconnaissance in the western Pacific and globally. … And the purpose of reconnaissance and surveillance from the ultimate high ground is, of course, to inform decisions about fire control for militaries. It's to provide indications and warning of [U.S.] Sailors, Marines, Airmen trying to move west, if directed, to defend freedom."

Using space for ISR is something only the U.S. has been doing for years. Now, though, "that monopoly is over," Gagnon said.

And like the U.S., the Chinese are not content with only a few, technologically exquisite satellites, Gagnon warned. Rather, they are putting up so many satellites to proliferate just like the Space Force is trying to do—making it harder for an adversary to block the ISR and targeting capability.

It is, Gagnon warned, "an architecture that's designed to go

to war and sustain at war."

The U.S. Space Force is countering China by adding sensors and a new squadron—the 75th Intelligence, Surveillance, and Reconnaissance Squadron—to enhance U.S. targeting of adversaries' space assets, networks, and ground stations.

China and others account for some 1,000 "priority" satellites in orbit, and the Space Force has some 600 sensors to track them. That marks rapid growth from a few dozen just a few years ago, but necessary given the rising level of China's space activity. Five years ago, space leaders pushed out "six to seven maneuver alerts a month," Gagnon said. "Today, we're putting out 11,000 a month."

USSF Eyes LEO for Moving Targeting Indication

By Greg Hadley

The Space Force and NRO want to build and deploy a constellation of targeting satellites in low-Earth orbit, the USSF's top intelligence officer said May 2.

The two organizations have been working for months to develop satellites that will provide moving target indication (MTI) for troops on the ground and in the air to keep track of targets and replacing old Air Force platforms that officials say would not survive in a contested environment. But many details of the plan remain under wraps.

Speaking with the Mitchell Institute for Aerospace Studies, Maj. Gen. Gregory J. Gagnon, vice chief of space operations for intelligence, did not offer specifics on how many satellites will be needed or when they will launch, but he did lay out the basic framework for how they will work and how Guardians will use them to assist combatant commanders around the globe.

Airman Collin Wesson

A United Launch Alliance Atlas V rocket rolls out to Space Launch Complex-41 at Cape Canaveral Space Force Station, Fla., in 2023. The mission, SILENTBARKER/NROL-107, was the 99th National Security space launch.

"This will be an asset that's in LEO," Gagnon said. "You think about the numbers of these that you will buy, and you think about proliferating this architecture so that it can be difficult to destroy multiple of them … and so the fact that you proliferate your architecture and don't just have like six satellites that can do this—I won't give you the real number—but you can have lots of satellites that do this. It makes it difficult for them to disrupt."

The Space Force is already building proliferated constellations for transporting data and missile warning/missile tracking in low-Earth orbit. The hope is that a potential adversary such as China won't be able to shoot down enough satellites to disrupt the network, thus discouraging it from trying in the first place.

In order for such a targeting solution to work, the Space Force will likely have to buy dozens of small satellites. Spacecraft in LEO don't stay in one place, and it takes several to provide steady, persistent coverage over an area. On the plus side, small, fast-moving satellites are tough to disable, Gagnon said.

"If you're lying in the backyard and you're looking up and something's going over at LEO, it's going over really fast," he explained. "So you have to be able to know what it is, track it, send that firing solution to a firing element, and get that engagement as it's zipping over you, because you only have a field of view that's kind of short."

For decades, the Air Force relied on aircraft such as the E-8C JSTARS and E-3 AWACS for moving target indication, but officials worry those could be easily destroyed in a near-peer conflict. Proliferated satellites are thought to be more survivable, but they require a change in mindset about the very nature of military space, Gagnon said.

"It's a tactical platform in space, and our use of space as a community has always considered it special and strategic," he said. "Space is no longer only strategic. Space is tactical. And our adversaries have made it so."

The shift to tactical raises questions about who will direct and operate the satellites. For years, agencies such as the NRO and the National Geospatial Intelligence Agency conducted intelligence operations from space, but did not focus on real-time targeting. With the shift to tactical, Space Force officials say the combatant commands should have tasking authority over the satellites, with the help of the Space Force components stood up within those combatant commands in recent years.

"The Space Force proposal, since we're part of the joint force, and we've stood up components in each of the combatant commands, is to make sure that our component can service their component partners, whether it's the Army component, the maritime component, or the Air Force component, with timely, relevant MTI capability based off the direction of their joint combatant commander," Gagnon said.

Recent media reports indicate there is tension between the Space Force and other agencies about how to fulfill the MTI mission, but Gagnon said he is working with both the NGA and NRO on the problem.

"I have spent the last three days actually out at NGA with [NGA Director Vice Adm. Frank Whitworth] and [NRO Director Christopher Scolese]. We're in meetings where we're talking about the best way to optimize taxpayer money that supports the joint warfighting need," Gagnon said. "Because we must be able to do moving target indicator with sensor control from the warfighters so that they can close the kill chain. That's our remit."

Government satellites may not be the only ones providing MTI. Gagnon noted a Space Force pilot program that started last year called "Tactical Surveillance, Reconnaissance, and Tracking," or TacSRT, that created a commercial marketplace for such data. Combatant commanders can go to the marketplace, type in the kind of data they need, and then contractors have 72 hours to respond to the proposal, Gagnon explained.

Vision for Part-Time Guardians Still Fuzzy

By David Roza

The Space Force expects not to have conventional Guard and Reserve forces, but instead to have a single personnel system that enables Guardians to serve on either a full-time or part-time basis. But just how that will work is still unclear.

Part-time jobs could involve test, evaluation, training or planning, and might involve a variety of duty tempos, including temporary full-time status for deployments and multiweek temporary assignments as are common in the Guard and Reserve today.

Speaking at an AFA Warfighters in Action fireside chat on May 10, Chief Master Sergeant of the Space Force John F. Bentivegna said the service is still working through the details of what a part-time force would look like under the Space Force Personnel Management Act, a bill signed in December. But Bentivegna said the new system will give Guardians the ability to adjust to changing life circumstances more easily, and help them avoid the bureaucratic hoops of switching between components.

"It adds optionality to the Guardians, so we can still leverage that deep expertise that Guardians bring to the table," he said. It also clears up any chain-of-command conflicts that might arise from having two components in such a small service, which "isn't necessarily beneficial for unity of command or readiness."

The Space Force aims to open up full-time positions this summer for currently serving Air Force Reservists. That's the easy part, Bentivegna said, since the branch already has the pay, benefits, and other systems for full-time Guardians. The tricky part is doing the same thing for part-time Guardians.

"Where we have to work on is: define part-time … and not only defining it, but also how do I pay you, how do the systems track you? We don't have that build yet," he said.

The Space Force Personnel Management Act gives the service five years to figure it out, but the top enlisted Guardian said the goal is to move much faster than that, perhaps in a year or so. In the meantime, they are figuring out what jobs would work best under the part-time construct. Chief of Space Operations Gen. B. Chance Saltzman first hinted at those jobs in a March memo.

"I don't anticipate part-time Guardians maintaining mission-ready status in 24/7 employed-in-place operations," he wrote. "Instead, we will leverage their expertise in institutional and service-retained functions like education, training, and test units or key staff positions."

But Guardians are eager for more details. When asked what concerns he hears most from Guardians about the part-time/full-time construct, Bentivegna said that many of the questions "are based on us explaining our vision on full-time and part time."

"The employed-in-place mission sets when you have to be combat mission-ready, and the commit phase that we talked about, we don't know whether or not that really is conducive to a part-time Guardian," he said. "They may not be, 'Well, I'm a crew dog and I work shift.' Maybe that's not part time."

Instead, the part-time model "really fits in on deployable capabilities," Bentivegna explained. "That's a traditional model where you come on full-time orders from part-time, you spin up, you pack up your gear, you maybe go downrange some place, you do your six or seven months, you come back and reconstitute and then you go back to part time."

That work might include testing and evaluating a new weapons system or acting as an adversary at a Red Flag or other major exercise for a few weeks, missions which put to good use the expertise part-timers bring from their civilian jobs, Bentivegna said. Now the service has to communicate to Guardians and potential part-timers what that looks like and "paint the vision where they can see themselves."

"I want to be able to tell those stories and get the part-timers, if you will, excited about where we really need them in the future under this Personnel Management Act vision," he said.

Mike Tsukamoto/staff

Chief Master Sergeant of the Space Force John Bentivegna talks about issues facing the enlisted force during a Warfighters In Action event at AFA.

Fighters Knock Down Drones Headed for Israel

By Chris Gordon

U.S. Air Force F-15E Strike Eagles and F-16 Fighting Falcons shot down dozens of Iranian drones as they headed toward targets in Israel on April 13, a unique international defensive operation that effectively shut down an Iranian offensive.

F-15E Strike Eagles from the 494th Fighter Squadron and the 335th Fighter Squadron along with F-16s from unidentified units were involved in downing more than 70 Iranian drones, Air & Space Forces Magazine confirmed.

A U.S. Army Patriot battery in Erbil, Iraq, took down a ballistic missile, and the USS Arleigh Burke and USS Carney in the Eastern Mediterranean took down four to six ballistic missiles, officials added. U.S. Navy aircraft also supported the mission.

President Joe Biden personally commended members of the F-15 squadrons "for their exceptional airmanship and skill in defending Israel from an unprecedented aerial attack by Iran," the White House said.

The Iranian attack totaled more than 100 ballistic missiles, 30 land-attack cruise missiles, and 150 drones, launched from Iran, Iraq, Syria, and Yemen. As many as 100 were airborne at any given moment during the skirmish, an official said.

U.S. and Israeli officials said "99 percent" of the drones and missiles were intercepted, the majority by Israeli defenses. British and French fighters also took down some drones.

"The close cooperation between the U.S. military and the IDF (Israel Defense Forces) has led to the formation of a strong coalition that proved itself last night in the face of Iran's aerial attack," the IDF said in an April 14 statement.

With Israel mounting its defense with Arrow 2 and Arrow 3 surface-to-air interceptors and fighter jets, the U.S. coordinated coalition forces from the Combined Air Operations Center at Al Udeid Air Base, Qatar, where Air Forces Central (AFCENT) boss Lt. Gen. Alexus G. Grynkewich was the regional air defense commander. (He has since become the Operations Chief, or J3, on the Joint Staff at the Pentagon).

Biden ordered additional F-15s and destroyers to the region ahead of the attack, saying later that the move helped ensure "nearly all" of the incoming drones and missiles were intercepted.

In an interview with Air & Space Forces Magazine on April 14, Grynkewich declined to discuss Iran's attack, but did describe how the CAOC typically coordinates air defense.

"We take whatever assets we have that are in theater … under our tactical control or in a direct support role across the joint force and the coalition, and we stitch them together so that we can synchronize the fires and effects when we get into that air defense fight," Grynkewich said.

"We're trying to stitch together partners in the region who share a perspective of a threat, share concern of the threats to stability in the region—which primarily emanate from Iran with a large number of ballistic missiles—and be in a position where we're able to share information, share threat warning," Grynkewich said. "And the ultimate goal is to get to a much deeper and fuller integration. We've made tremendous progress."

USAF

An F-16 Fighting Falcon from Aviano Air Base, Italy, lands at an undisclosed location in the U.S. Central Command's area of responsibility in April 2024.

British Prime Minister Rishi Sunak said Royal Air Force jets shot down "a number" of Iranian drones during the barrage. The U.K. Defense Ministry said in a statement that RAF aircraft in the region were prepared to "intercept any airborne attacks within range of our existing missions." Additional RAF fighter jets and refueling tankers have been deployed for the counter-Islamic State mission in Iraq and Syria, which has also freed up U.S. air assets to focus on intercepting Iranian threats.

"It's a win for the concept of integrated air and missile defense across the theater," retired Marine Corps Gen. Kenneth F. McKenzie, the CENTCOM commander from 2019 to 2022, told Air & Space Forces Magazine. "People should draw strong conclusions from what just happened about the efficacy of that approach."

Other former top Middle East generals agreed.

"One of the big concerns we had was how we were going to share the air picture with the Israelis and then coordinate who was doing what when the shooting started," added retired Air Force Gen. Jeffrey L. Harrigian, the commander of AFCENT from 2016 to 2018. "Based on the results, it sounds like it was pretty good coordination."

CENTCOM's commander from 2016 to 2019, retired Army Gen. Joseph L. Votel, said Iran's attack proved integrated air and missile defense "ought to now be an overriding priority" for the entire region.

"I hope the Gulf states are taking note of this," Votel said. "The level of cooperation between Western militaries plus Jordan is a real example that they should be eager to emulate against the Iranian threat."

The operation also proved a blow to Iran, experts said. "This is a big deterrent failure for the Iranians," said Michael Knights of the Washington Institute for Near East Policy. "That's the key takeaway from this."

Bud Anderson, WWII Triple Ace, Dies at 102

By John A. Tirpak

Brig. Gen. Clarence E. "Bud" Anderson, the last surviving triple ace from World War II, a noted Air Force test pilot, and a 30-year veteran of the service who also flew combat missions during the Vietnam War, died May 17 at the age of 102.

Anderson shot down 16 German aircraft in WWII (and shared one-quarter credit on a 17th aircraft) in a variety of P-51 Mustangs he called "Old Crow," after a preferred brand of whiskey. He logged more than 480 hours of combat time during the war, across 116 missions, all from March to December 1944, and all with the 363rd Fighter Squadron. The bulk of his kills were Focke-Wolfe 190s. He credited his especially keen eyesight as the key to his success, allowing him to spot enemy aircraft before they spotted him.

After the war, Anderson flew as a test pilot, logging time in more than 130 different types of aircraft, especially the "Century Series" of supersonic fighters, and he amassed more than 7,500 hours of flight time. After his retirement as a colonel, he worked for McDonnell Aircraft Corp. as its chief of flight test.

Anderson grew up near Sacramento, Calif., and earned his pilot's license while still a teenager. He joined the Army as an aviation cadet shortly after the Japanese attack on Pearl Harbor and earned his wings before the end of 1942. He trained in the P-39 Airacobra, which he flew at several stateside bases, but switched to the P-51 soon after arriving in Europe in late 1943.

By early 1944, as part of the 357th Flying Group—self-nicknamed "The Yoxford Boys"—Anderson was flying escort for bombers over Europe. Only a month after starting escort missions, he downed his first German aircraft, a Messerschmitt BF-109. By the end of May, he had become an ace, meaning he had shot down five enemy aircraft. In June, he shot down three FW-190s in a single day, and by the end of that month had become a double ace.

After taking stateside leave, he returned to flying duty and in November and December 1944 shot down three FW-190s and forced down one more, his final aerial victories, making him the 357th's third-leading ace, with 16.25 kills. None of the planes Anderson flew were hit by enemy fire and he never aborted a mission.

Back in the states, the Air Force deployed the high-scoring ace as a goodwill ambassador and recruiter, but by 1948 he returned to regular flying as a test pilot at Wright Field, Ohio, where he served until 1953, working on a variety of experimental projects. Among the concepts he tested was the F-84 as a parasite fighter operating off a B-36 bomber.

After Air Command and Staff College, he was assigned as director of operations at the 58th Fighter-Bomber Wing at Osan Air Base, Korea, from August 1955 to February 1956, when he took command of the 69th Fighter-Bomber Squadron at Osan until August 1956.

In 1990, Anderson cowrote "To Fly and Fight: Memoirs of a Triple Ace," which was updated and republished in 2019. In the book, Anderson's lifelong friend and fellow ace and test pilot Chuck Yeager described him as "the best fighter pilot I've ever seen."

Also in 2019, the Smithsonian National Air and Space Museum unveiled a special display of Anderson's flight jacket and flying gear as a highlight of the World War II exhibit at its Udvar-Hazy Center. The same day, he recorded recollections of some of his service history with Air & Space Forces Magazine.

Air & Space Forces Magazine

Bud Anderson in 2019, offering recollections of his Air Force career with Air & Space Forces Magazine. In the background is a photo of Anderson sitting on the wing of his P-51 Mustang.

He was given an honorary promotion to brigadier general in December 2022 in a ceremony at the Aerospace Museum of California, near his boyhood home, presided over by then-Chief of Staff (now Joint Chiefs of Staff Chairman) Gen. Charles Q. Brown Jr.

Anderson was inducted into the National Aviation Hall of Fame in 2008 and the International Air & Space Hall of Fame in 2013. In 2015, along with other American Fighter Aces, he received the Congressional Gold Medal, and in 2017, received the Air Force Association's Lifetime Achievement Award.

A life-size bronze statue of Anderson stands at the Auburn Municipal Airport in California, near his hometown of New Castle. He was a life member of the American Fighter Aces Association and was a Fellow of the Society of Experimental Test Pilots.

From there he went to Edwards Air Force Base, Calif., where he became Chief of Test Flight Operations until 1962, flying or supervising tests on a wide variety of jet aircraft, including the first double-sonic jets.

He completed the Army War College and several operational assignments after that, until he was assigned to command the 18th Tactical Fighter Wing at Kadena Air Base, Japan, until late 1967.

After a Pentagon tour, Anderson commanded the 355th Tactical Fighter Wing from June to December 1970, flying 25 combat missions along the Ho Chi Minh Trail from Takhli Royal Thai Air Force Base. He was in charge of closing the base when it deactivated

Anderson retired in 1972, having been decorated with two awards of the Legion of Merit, five awards of the Distinguished Flying Cross, the Bronze Star, and 16 Air Medals, as well as the French Legion of Honor and Croix de Guerre. After retirement, he managed McDonnell's flight test operations at Edwards until 1998, where he supervised test projects such as the F-15 Eagle, F/A-18 Hornet, and C-17 Globemaster III.

VERBATIM

Tomorrow's Another Day

"All our dreams come true after the FYDP."

—Rep. Rob Wittman (R-Va.), tongue firmly in cheek, on how the Air Force's plans to grow capacity, capability, and readiness are always to be resolved sometime beyond the term of the current administration.

Tech. Sgt. Jack Sanders

Quality of Life

"Ensuring our military spouses can maintain meaningful careers is not just the right thing to do, it is a national security imperative. ... Allowing more spouses the ability to keep their federal jobs and telework strengthens economic security and quality of life for our service members and their families and enhances readiness and retention for our all-volunteer force."

—Deputy Defense Secretary Kathleen Hicks on the Defense and State Department's long-awaited agreement that would allow the spouses of military service members to telework while overseas [Defense One, April 22].

Abracadabra

"I've got 52 years of experience with new product development, and I've seen us get in trouble the same way over and over ... unrealistic requirements, unrealistic schedules, lack of appreciation of technical risk. ...There's been an effort to chase what I call 'acquisition magic' a few times. ... It usually involves taking extraordinary risks, and then we pay the price for that. Putting amateurs in charge doesn't work very well. ... We're asking them to build weapons systems that are a generation ahead of anything ever built before. There is inherent risk in that. And you have to plan and manage that risk. ... You have to understand deeply what those technical risks really are. ... There's this idea that we can go much faster if we just, you know, somehow wave our arms and create a different set of structures. That tends to just get you in trouble. ... When we take wild chances, we get the results you should expect. ... Structure programs to be somewhat aggressive, but not so much so that you're guaranteeing failure. ... You've got to really understand what you're doing. There's no magic."

—Air Force Secretary Frank Kendall on perpetual efforts at acquisition reform, House Appropriations Committee, April 30.

Mike Tsukamoto/staff; Pixabay

PROBLEM DEFINED

"The United States, from a defense and military standpoint, is in a state of disruption. ... We have a limited number of things that are really expensive, really exquisite, they're hard to build, they're hard to replace, not many companies can build them. And they [assume] things we'll always have access to: command and control, space, the electromagnetic spectrum basic logistics. And all of those things are now increasingly being held at risk. ... We have to get our heads around this failure of imagination: We are off by an order of magnitude in terms of what it is actually going to take to qualitatively and quantitatively marshal, not just the industrial base, but a different kind of industrial base ... to field the kinds of systems at the kinds of scales, at the kinds of pricing, required to be competitive—and then to sustain that over what are likely going to be protracted competitions and protracted conflicts."

—Christian Brose, Chief Strategy Officer, Anduril Industries, CSIS Global Strategies Forum [April 24].

NO MATTER THE PRICE

"The modernization of our triad is the top priority of the Defense Department. [The 2022 Nuclear Posture Review] reaffirmed the need for a triad, so Nunn-McCurdy or not, we have a policy of our country having and sustaining a triad."

—Undersecretary of Defense for Acquisition and Sustainment **William A. LaPlante** to the Senate Appropriations defense subcommittee May 15 on why, no matter how high the cost, the Sentinel ICBM program must proceed.

Risky Business

Benjamin Applebaum/DOD

"Everything is 'high risk.' ... I've found, if you don't say it's higher, significant risk, don't bother showing up" to the meeting.

—Chairman of the Joint Chiefs of Staff Gen. Charles Q. Brown Jr. on balancing competing demands for forces from the nation's regional combatant commanders, at the Center for Strategic and International Studies, April 24.

Sergei Bobylev, TASS via Kremlin

In Plain Sight

"China did not need to host Putin at Harbin in order to transfer technologies from there to Russia. That this visit took place so openly is a visible and symbolic sign of Beijing being willing to provide directly military-applicable technology to support Russia's war against Ukraine."

—Markus Garlauskas, a security expert at the Atlantic Council, to the New York Times, May 17.

FACES OF THE FORCE

Tech. Sgt. Victoria Nelson

New Hampshire ANG **Airman 1st Class Sokthearrith Dong** of the 157th Operations Group, who's also a patrol supervisor with a local police department, saved a man's life at his gym. Upon arriving at the gym, Dong found the man had collapsed from a heart attack. Utilizing his training, he administered CPR and used an automated external defibrillator (AED) until emergency responders arrived. The man survived. Dong credited his training in both the military and police force. Dong said, "You hear all the time it's not just doing the right thing but stepping up when no one is watching."

Staff Sgt. Matthew Matlock

Tech. Sgt. Chase Molden of the 94th Security Forces Squadron has embarked on a unique self-funding project: creating comic books to help hospitalized children understand their medical conditions. Beyond his duties in the Air Force Reserve and his civilian job as an insurance adjuster, he has been creating comic books for five years featuring superheroes to simplify medical concepts. This initiative garnered interest from several health care entities. Molden envisions expanding his comic series to address broader health issues, potentially reaching a collegiate audience in the future.

Airman 1st Class Patrick Boyle

On April 30, 2023, **Senior Airman Travis Spong** of the 35th Force Support Squadron at Al Udeid Air Base, Qatar, witnessed a severe car accident while driving. Spong rushed out to help the critically injured Qatari man with a severed leg. Drawing from his Tactical Combat Casualty Care course, Spong fashioned his belt as a tourniquet, effectively stemming the flow of blood from the severed leg. He then stabilized the victim's neck to prevent further injury and kept the man conscious until emergency services arrived. Spong was awarded the 2024 USO Service Member of the Year and the Air and Space Commendation Medal.

Michael Dougherty

On April 25, 2024, **Capt. Bryon Adams Jr.** of the Intelligence division (A2) at 1st Air Force, was commuting to work when he witnessed a catastrophic car accident on the DuPont Bridge near St. Andrew's Bay in Florida. Without hesitation, Adams rushed to the overturned SUV, crawling through shattered glass, and extracted a mother and her three children, including an infant, one by one. He directed another motorist to call 911 while ensuring the family's safety. According to Adams, no one was seriously injured. "It's just something that any of us would have done in that situation," said Adams.

Senior Airman Nicholas Battani/ANG

Senior Master Sgt. Ashley Young of the Ohio National Guard's 180th Fighter Wing Medical Group, inspired by her experience during COVID-19 as an operating room nurse, pursued a master's in public health to further serve her community. She works with the Ryan White Program at the University of Toledo Medical Center, offering comprehensive HIV/AIDS care. Young also provides medical aid to underprivileged communities through the 180th FW Medical Group's Innovative Readiness Training (IRT) missions. In her recent IRT mission, Young and her fellow Airmen helped tornado-affected communities.

Senior Master Sgt. Emily Beightol-Deyerle/ANG

Master Sgt. Garey Diefenderfer from the 167th Airlift Wing earned the highest level of recognition in military marksmanship—twice. He was honored with the distinguished badges in both rifle and pistol shooting, the ultimate achievement for a service shooter. To attain these, one must accumulate points through qualifying matches. Diefenderfer began shooting at age 6 and continued to excel throughout his military career, earning various accolades including the USAF Excellence in Competition Distinguished Rifle Badge. Despite facing open-heart surgery, Diefenderfer now aims to inspire others to pursue marksmanship.

Senior Airman Mark Sulaica

In 2021, **Lt. Col. Reinier Villanueva**, 15th Wing chief of safety discovered a lump in his throat, later diagnosed as thyroid cancer in 2023. Villanueva underwent surgery to remove his thyroid gland, but doctors discovered that the cancer had progressed to Stage 2. With unwavering support from his family, he underwent radiation. Despite the challenges of balancing family life and military duty during treatment, he made a swift recovery and returned to work. He highlighted the team support within the Air Force. "I want Airmen to be vulnerable and feel comfortable sharing their struggles," he said.

Master Sgt. Jeffrey Grossi

When an EF2 tornado struck her hometown in West Virginia, **Senior Master Sgt. Maranda Jordan** of the 911th Maintenance Group, sprang into action, organizing relief efforts and volunteers through social media. She rallied support for families affected by the disaster. After two days of effort, Jordan and her fellow local volunteers helped remove more than six dump trucks' worth of debris and provided aid to affected families. Jordan credited her grandfather's charitable activities for prioritizing helping those in need. "I just want to get the word out there. There is still more to do," she said.

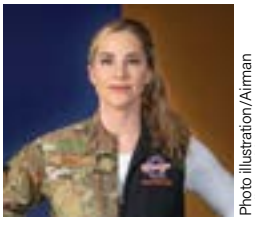

Photo Illustration/Airman Kylie Davidson

Master Sgt. Vanessa Oswalt of the 179th Cyberspace Wing has made significant contributions to the development of girls' wrestling in Ohio. Noticing a lack of growth in female wrestling in her home town, in 2019 she helped initiate efforts to sanction girls' wrestling at Olentangy Orange High School. Despite starting from scratch, the team won the State Championship in 2023/24. Her dedication to creating opportunities for female athletes led her to advocate for sanctioning girls' wrestling in Ohio. She continues to inspire others through her involvement in an upcoming documentary series named "WrestleHER."

Airman 1st Class Dave Calcote

Tatsuya Hara, chief of civilian defense at Yokota Air Base's 374th Security Forces Squadron, has been named the Air Force Outstanding Security Forces Flight-level Civilian Supervisor of the Year. During his 30-year tenure, Hara played a crucial role as a security expert for events such as the Friendship Festival, which invites over a hundred thousand members of the general public to the base. Hara volunteers extensively, organizing various events for local schools and contributing to the community. His leadership and volunteer work have earned him respect from colleagues and recognition from the service.

Tell us who you think we should highlight here. Write to afmag@afa.org.

Air Force & Space Forces ALMANAC 2024

This Almanac was compiled by Amanda Miller, Aaron M.U. Church, and the staff of Air & Space Forces Magazine. We gratefully acknowledge Air Force Public Affairs offices at headquarters, agencies, major commands, and the reserve components for their invaluable help—The Editors.

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DEPARTMENT OF THE AIR FORCE

The Department of the Air Force and the Air Force & Space Force themselves are "re-optimizing" their organizational structure, including changes to the services' commands and organization and a change in terminology. Here's how the department presents itself today.

AIR&SPACE FORCES
airandspaceforces.com

Frank Kendall — SECRETARY OF THE AIR FORCE

SECRETARIAT

- ★★★ Director of Staff
- ★★★ Inspector General
- ★★ Legislative Liaison
- ★ Public Affairs
- SES Principal Cyber Advisor
- SES Chief Data & AI
- SES Small Business Programs
- SES Administrative Assistant

UNDERSECRETARY OF THE AIR FORCE — Melissa Dalton

(Confirmed May 23, 2024)

- POL International Affairs
- POL Chief Information Officer
- POL Auditor General
- POL Management
- POL General Counsel
- POL Acquisition, Technology & Logistics
- POL Space Acquisition & Integration
- POL Manpower & Reserve Affairs
- POL Energy, Installations, & Environment

Chief of Staff of the Air Force
Gen. David W. Allvin

Vice Chief of Staff of the Air Force
Gen. James C. Slife

Chief Master Sgt. of the Air Force
CMSgt. David A. Flosi

AIR STAFF

- ★★★ Manpower, Personnel & Services (A1)
- ★★★ Intelligence, Surveillance, Reconnaissance and Cyber Effects (A2/6)
- ★★★ Operations (A3)
- ★★★ Logistics, Engineering, & Force Protection (A4)
- ★★★ Air Force Futures (A5/7)
- ★★★ Plans & Requirements (A8)
- ★★★ Strategic Deterrence & Nuclear Integration (A10)
- ★★★ Strategy, Integration, & Requirements
- ★★ Chief of Chaplains
- ★★★ Surgeon General
- ★★★ Judge Advocate General
- ★★ Chief of Safety
- SES Studies & Analysis
- SES Chief Scientist
- SES Test & Evaluation
- SES History & Museums

AIR FORCE SERVICE COMPONENT COMMANDS

61

Service Component Commands will prepare Airmen for warfighting in a combatant command's area of responsibility.

- ★★★★ Pacific Air Forces (PACAF) Component to USINDOPACOM 69
- ★★★ Air Forces Central (AFCENT) Component to USCENTCOM 62
- ★★★ Air Forces Cyber (AFCYBER) Component to USCYBERCOM 62
- ★★★★ Air Force Global Strike Command (AFGSC) Component to USSTRATCOM 71
- ★★★ Air Force Special Operations Command (AFSOC) Component to USSOCOM 67
- ★★★★ U.S. Air Forces Europe/Air Forces Africa (USAFE/AFAFRICA) Component to USEUCOM & USAFRICOM 70
- ★★★★ Air Mobility Command (AMC) Component to USTRANSCOM 68
- ★★ Air Forces Southern (AFSOUTH) Component to USSOUTHCOM 62
- ★★★ Air Forces Northern (AFNORTH) Component to USNORTHCOM 62
- ★★★ Air Forces Space (AFSPACE) Component to USSPACECOM 62

AIR FORCE INSTITUTIONAL COMMANDS

61

Institutional commands will organize, train and equip Airmen.

- ★★★★ Air Combat Command (ACC) 62
- ★★★★ Air Force Materiel Command (AFMC) 64
- ★★★ Air Force Reserve Command (AFRC) 65
- ★★★ Air Education and Training Command (Future-Airman Development Command) 63
- ★★★ Air National Guard (ANG) 66
- Integrated Development Command (ICC)

SECRETARY OF THE AIR FORCE

USAF ECHELONS

- HQ
- Institutional Commands & Component Commands (11) See page 61
- Numbered Air Forces and Centers (26)[1] See page 64
- Wings (144) See page 74
- Groups (~700)
- 312 operational and ~ 3,000 support Squadrons

USSF ECHELONS

- HQ
- Field & Component Field Commands (6) See page 87
- Deltas (19) See page 88
- Squadrons (111)

[1]For a list of NAF-equivalent centers, see AFMC listing on p. 64
[2]AFCENT is officially a "Named Air Force"
[3]Also supports Unified Combatant Commands

Chief of Space Operations
Gen. B. Chance Saltzman

Vice Chief of Space Operations
Gen. Michael A. Guetlein

SPACE FORCE FIELD COMMANDS

- ★★★ Space Operations Command (SpOC) 88
- ★★★ Space Systems Command (SSC) 88
- ★★ Space Training & Readiness Command (STARCOM) 89
- Space Futures Command (S4S)

SPACE FORCE COMPONENT FIELD COMMANDS

- ★ Space Forces Indo-Pacific Command (SPACEFORINDOPAC)
- Space Forces Central Command (SPAFORCENT)
- Space Forces Europe-Africa Command (SPAFOREUR-AF)
- ★★★ Space Forces Space Command

Chief Master Sergeant of the Space Force
CMSgt. John F. Bentivegna

SPACE STAFF

- SES Chief Human Capital Officer (S1)
- ★★★ Chief Operations Officer (S3/4/6/7/10)
- ★★ Deputy Chief of Space Operations for Intelligence (S2)
- ★★★ Chief Strategy & Resourcing Officer (S5/8)
- SES Chief Technology & Innovation Officer
- ★★★ Director of Staff (S9)

KEY INDICATES POSITION AND RANK

- POL Political Appointee
- SES Senior Executive Service (career)
- Colonel
- ★ Brigadier General
- ★★ Major General
- ★★★ Lieutenant General
- ★★★★ General

Future Commands anounced February 2024

PERSONNEL

DAF TOTAL FORCE END STRENGTH

(As of Sept. 30, 2023)

FISCAL YEAR	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
USAF ACTIVE DUTY									Estimate	Estimate
Officers	60,961	61,597	62,640	63,902	64,245	64,873	64,941	60,744	61,396	61,510
Enlisted	252,762	256,983	258,978	263,976	265,369	265,658	263,480	253,904	254,110	254,490
Cadets	4,160	4,207	4,262	4,223	4,176	4,103	4,003	4,050	4,000	4,000
Total USAF Active Duty	317,883	322,787	325,880	332,101	333,790	334,634	332,424	318,698	319,506	320,000
USSF ACTIVE DUTY										
Officers					84	3,656	4,220	4,424	4,576	4,680
Enlisted					1	2,907	3,841	4,455	4,924	5,120
Total USSF Active Duty					85	6,563	8,061	8,879	9,500	9,800
CIVILIAN PERSONNEL										
Direct hire (excluding technicians)	131,965	140,116	135,879	139,536	140,848	147,434	142,293	161,448	169,325	165,705
ANG technicians	23,044	22,542	21,705	17,502	14,970	10,994	14,143	10,179	10,864	10,744
AFRC technicians	8,384	7,872	7,648	7,714	9,027	7,224	5,793	5,342	6,882	6,697
Total direct hire	163,393	170,530	165,232	164,752	164,845	165,652	162,229	176,969	187,071	183,146
Indirect hire	3,704	4,570	4,202	4,190	3,694	3,728	3,973	3,549	3,909	3,132
Total Civilian Personnel	167,097	175,100	169,434	168,942	168,539	169,380	166,202	180,518	190,980	186,278
AIR NATIONAL GUARD										
Selected Reserve Officers	14,593	15,257	15,401	15,495	15,990	16,377	16,253	16,238	15,705	15,608
Selected Reserve Enlisted	90,907	90,413	92,068	91,702	91,424	92,106	88,731	88,736	90,595	92,092
Total ANG	105,500	105,670	107,469	107,197	107,414	108,483	104,984	104,974	106,300	107,700
AIR FORCE RESERVE COMMAND										
Selected Reserve Officers	14,896	13,672	13,716	14,042	14,458	14,947	14,988	14,838	14,579	14,625
Selected Reserve Enlisted	54,304	55,126	54,987	55,347	54,598	55,623	53,060	51,378	52,121	52,375
Total AFRC Selected Reserve	69,200	68,798	68,703	69,389	69,056	70,570	68,048	66,216	66,700	67,000
Individual Ready Reserve Officers	7,492	7,492	6,593	7,631	7,631	7,631	7,340	7,379	7,419	7,458
IRR Enlisted	29,359	29,359	21,801	20,683	20,683	20,683	21,196	23,099	23,056	22,696
Total IRR	36,851	36,851	28,394	28,314	28,314	28,314	28,536	30,478	30,475	30,154
Total AFRC	**106,051**	**105,649**	**97,097**	**97,370**	**97,370**	**98,884**	**96,584**	**96,694**	**97,175**	**97,154**

Sources: Fiscal 2024 and 2025 President's Budget Requests; Defense Manpower Data Center.

DAF ACTIVE DUTY MALE/FEMALE, 1970-2023

(As of Sept. 30, 2023)

	1970	1980	1990	2000	2010	2019	2020	2021	2022	2023*
CADETS										
Female	0	504	553	658	966	1,176	1,194	1,182	1,196	1,203
%	0	11.4	12.7	15.4	21.2	27.9	28.6	28.8	29.9	29.7
Male	4,144	3,907	3,817	3,617	3,592	3,047	2,982	2,921	2,807	2,847
%	100	88.6	87.3	84.6	78.8	72.2	71.4	71.2	70.1	70.3
Total	**4,144**	**4,411**	**4,370**	**4,275**	**4,558**	**4,223**	**4,176**	**4,103**	**4,003**	**4,050**
ENLISTED										
Female	8,987	60,803	60,803	55,011	50,946	54,205	55,239	55,644	55,297	53,973
%	1.4	13.2	14	19.2	19.3	20.5	20.8	20.9	21.0	20.9
Male	652,559	399,517	374,385	231,620	212,491	209,771	210,130	210,014	208,183	204,386
%	98.6	86.8	86	80.8	80.7	79.4	79.2	79.1	79.0	79.1
Total	**661,546**	**460,320**	**435,188**	**286,631**	**263,437**	**263,976**	**265,552**	**265,369**	**263,480**	**258,359**
OFFICER										
Female	4,667	8,493	13,331	11,819	12,363	13,932	14,325	14,671	15,040	15,468
%	3.6	8.7	13.3	17.1	18.7	21.8	22.3	22.6	23.2	23.7
Male	125,136	89,156	86,714	57,204	53,838	49,970	49,920	50,202	49,901	49,700
%	94.6	91.3	86.7	82.9	81.3	78.2	77.7	77.4	76.8	76.3
Total	129,803	97,649	100,045	69,023	66,201	63,902	64,245	64,873	64,941	65,168
Grand Total	**795,493**	**562,380**	**539,603**	**359,929**	**334,196**	**332,101**	**333,790**	**334,634**	**332,424**	**327,577**

Sources: Defense Manpower Data Center: Table of Active Duty Females by Rank/Grade and Service, September 2023, and Active Duty Military Personnel by Rank/Grade, September 2023
*includes Space Force

ACTIVE DUTY AIR & SPACE PERSONNEL END STRENGTH: 1907-TODAY

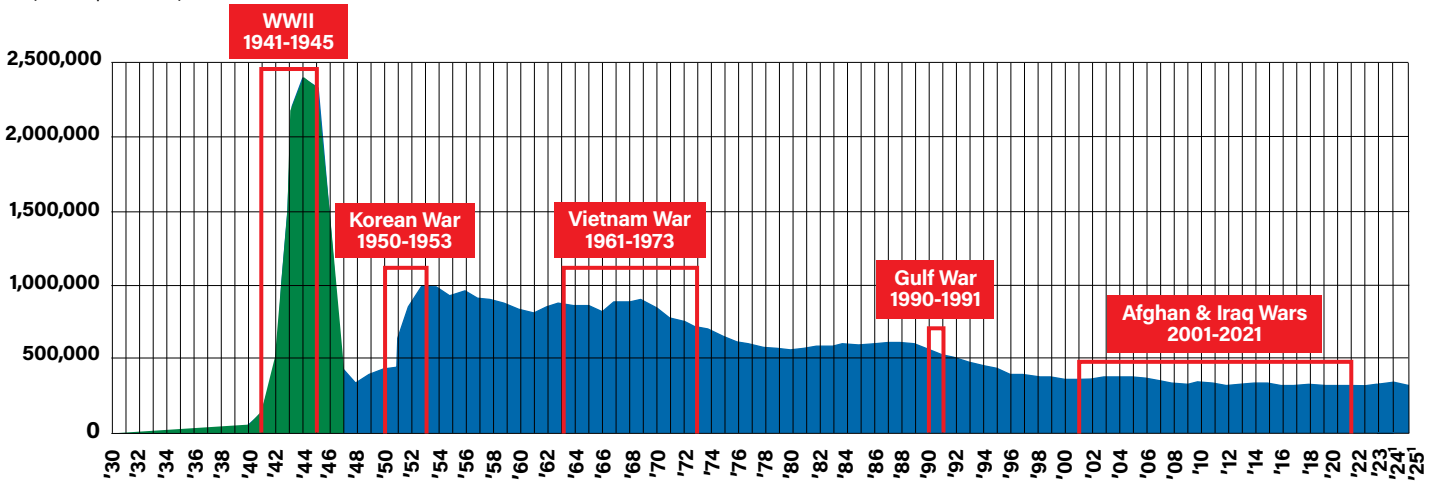
(As of Sept. 30, 2023)

YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER	YEAR	NUMBER
1907	3	1937	19,147	1967	897,494	1997	377,385
1908	13	1938	21,089	1968	904,850	1998	367,470
1909	27	1939	23,455	1969	862,353	1999	360,590
1910	11	1940	51,165	1970	791,349	2000	355,654
1911	23	1941	152,125	1971	755,300	2001	353,571
1912	51	1942	764,415	1972	725,838	2002	368,251
1913	114	1943	2,197,114	1973	691,182	2003	375,062
1914	122	1944	2,372,292	1974	643,970	2004	376,616
1915	208	1945	2,282,259	1975	612,751	2005	353,696
1916	311	1946	455,515	1976	585,416	2006	348,953
1917	1,218	1947	305,827	1977	570,695	2007	333,495
1918	195,023	1948	387,730	1978	569,712	2008	327,379
1919	25,603	1949	419,347	1979	559,455	2009	333,408
1920	9,050	1950	411,277	1980	557,969	2010	334,196
1921	11,649	1951	788,381	1981	570,302	2011	333,370
1922	9,642	1952	983,261	1982	582,845	2012	332,918
1923	9,441	1953	977,593	1983	592,044	2013	330,694
1924	10,547	1954	947,918	1984	597,125	2014	316,332
1925	9,670	1955	959,946	1985	601,515	2015	311,357
1926	9,674	1956	909,958	1986	608,199	2016	317,883
1927	10,078	1957	919,835	1987	607,035	2017	322,787
1928	10,549	1958	871,156	1988	576,446	2018	329,880
1929	12,131	1959	840,435	1989	570,880	2019	332,101
1930	13,531	1960	814,752	1990	535,233	2020	329,797
1931	14,780	1961	821,151	1991	510,432	2021	334,634
1932	15,028	1962	884,025	1992	470,315	2022	332,424
1933	15,099	1963	869,431	1993	444,351	2023	333,944
1934	15,861	1964	856,798	1994	426,327	2024*	334,100
1935	16,247	1965	824,662	1995	400,409	2025*	329,800
1936	17,233	1966	887,353	1996	389,001		

From 1907-1946, these Airmen were part of the U.S. Army. See p. 80 on organizational history.
*Requested

DAF ACTIVE DUTY END STRENGTH: 1930-TODAY

(As of Sept. 30, 2022)



1—Requested

ACTIVE DUTY BY REGION, 1970-2023

(As of Sept. 30, 2023)

REGIONS	1970	1980	1990	2000	2010	2019	2020	2021	2022	2023**
U.S. and Territories	565,098	445,886	418,027	291,260	277,123	276,090	277,818	303,007	277,184	279,004
Europe	72,937	76,788	69,296	32,901	30,963	27,649	27,762	29,896	28,548	28,954
East Asia, Pacific	139,666	32,263	33,558	22,030	12,649	20,698	20,644	22,053	21,105	20,966
Africa, Mideast, S. Asia	608	674	376	8,972	891	2,076	2,032	2,162	2,093	2,087
Western Hemisphere	5,348	2,211	2,356	345	339	440	436	454	389	459
Other	7,692	147	11,620	146	12,231	1,096	1,105	1,183	1,097	1,109
TOTAL*	**791,349**	**557,969**	**535,233**	**355,654**	**334,196**	**328,049**	**329,797**	**358,755**	**330,416**	**332,579**

*Not including cadets.
**Includes Space Force beginning in 2023.
Source: Department of the Air Force

DAF ACTIVE DUTY DEMOGRAPHICS: SEX, ETHNICITY, RACE, MARITAL STATUS, EDUCATION

(As of Sept. 30, 2023)

ENLISTED RANKS	E-1	%	E-2	%	E-3	%	E-4	%	E-5	%	E-6	%	E-7	%	E-8	%	E-9	%Enlisted Total*	%	DAF Total*	%
TOTAL	**8,227**		**7,714**		**44,497**		**64,879**		**56,118**		**41,216**		**24,024**		**4,741**		**2,538**	**253,954**		**314,693**	
SEX																					
Female	1,599	19	1,618	21.0	10,021	22.5	14,684	22.6	11,611	20.7	7,081	17.2	4,897	20.4	1,132	23.9	513	20.2	53,156	20.9	67,764	21.5
Male	6,628	80.6	6,096	79.0	34,476	77.5	50,195	77.4	44,507	79.3	34,135	82.8	19,127	79.6	3,609	76.1	2,025	79.8	200,798	79.1	246,929	78.5
ETHNICITY*																					
Declined to Respond	8	0.1	11	0.1	102	0.2	270	0.4	716	1.3	941	2.3	720	3.0	180	3.8	92	3.6	3,040	1.2	13,582	4.3
Hispanic or Latino	2,055	25.0	2,062	26.7	10,654	23.9	13,871	21	10,384	18.5	6,397	15.5	3,366	14.0	602	12.7	273	10.8	49,664	19.6	54,888	17.4
Not Hispanic or Latino	6,164	74.9	5,641	73.1	33,741	75.8	50,738	78.2	45,018	80.2	33,878	82.2	19,938	83.0	3,959	83.5	2,173	85.6	201,250	79.2	246,223	78.2
RACE																					
American Indian or Alaska Native	128	1.6	111	1.4	524	1.2	634	1.0	443	0.8	293	0.7	174	0.7	38	0.8	14	0.6	2,359	0.9	2,668	0.8
Asian	353	4.3	461	6.0	2,903	6.5	3,299	5.1	2,535	4.5	1,543	3.7	842	3.5	133	2.8	54	2.1	12,123	4.8	15,631	5.0
Black or African American	1,739	21.1	1,642	21.3	8,724	19.6	12,239	18.9	9,381	16.7	5,985	14.5	3,530	14.7	807	17.0	511	20.1	44,558	17.5	48,476	15.4
Declined to Respond	20	0.2	16	0.2	198	0.4	767	1.2	1,378	2.5	1,762	4.3	1,424	5.9	386	8.1	251	9.9	6,202	2.4	10,076	3.2
Identified More Than One Race	518	6.3	488	6.3	2,994	6.7	3,682	5.7	3,077	5.5	2,060	5.0	1,034	4.3	170	3.6	80	3.2	14,103	5.6	16,437	5.2
Native Hawaiian or Other Pacific Islander	106	1.3	102	1.3	749	1.7	883	1.4	740	1.3	598	1.5	431	1.8	84	1.8	27	1.1	3,720	1.5	4,076	1.3
White	5,363	65.2	4,894	63.4	28,405	63.8	43,375	66.9	38,564	68.7	28,975	70.3	16,589	69.1	3,123	65.9	1,601	63.1	170,889	67.3	217,329	69.1
MARITAL STATUS**																					
Divorced	52	0.6	35	0.4	577	1.3	3,188	4.8	4,940	9.1	4,335	10.9	2,575	10.9	480	10.0	237	10	16,419	6.5	18,778	6.0
Married	830	10.2	1,106	13.8	10,565	23.8	25,980	38.8	31,298	57.8	29,153	73.4	19,211	81.6	4,099	85.7	2,164	87.9	124,406	49.4	165,094	53.0
Single	7,274	89.2	6,885	85.8	33,183	75	37,740	56.4	17,845	33.0	6,131	15.5	1,716	7.3	196	4.1	57	2.3	111,027	44.0	127,538	40.9
Other***	1	0.0	3	0.00	16	0.0	50	0.1	49	0.1	46	0.10	35	0.10	7	0.10	5	0.20	212	0.1	268	0.1
HIGHEST EDUCATIONAL ACHIEVEMENT																					
No High School Diploma or GED	12	0.1	11	0.1	29	0.1	23	0.0	5	0.0	0	0.0	0	0.0	0	0.0	0	0.0	80	0.0	80	0.0
High School Diploma/GED	6,821	82.9	5,752	74.6	12,295	27.6	904	1.4	127	0.2	10	0.0	1	0	0	0.0	0	0.0	25,910	10.2	25,910	8.2
Some College	342	4.2	1,390	18	27,261	61.3	58,655	90.4	37,792	67.3	13,058	31.7	1,973	8.2	0	0.0	0	0.0	140,471	55.3	140,471	44.6
Associate Degree	20	0.2	3	0.0	437	1.0	2,444	3.8	12,740	22.7	18,286	44.4	11,184	46.6	1,378	29.1	406	16.0	46,898	18.5	46,898	14.9
Bachelor's Degree	8	0.1	7	0.1	942	2.1	2,490	3.8	4,868	8.7	8,423	20.4	8,315	34.6	2,098	44.3	1,114	43.9	28,265	11.1	54,271	17.2
Master's Degree	2	0.0	0	0.0	86	0.2	161	0.2	550	1.0	1,376	3.3	2,527	10.5	1,244	26.2	1,000	39.4	6,946	2.7	30,416	9.7
Ph.D. or Professional Degree	0	0.0	1	0.0	7	0.0	7	0.0	13	0.0	14	0.0	22	0.1	21	0.4	18	0.7	103	0.0	7,741	2.5
Unknown	1,022	12.4	550	7.1	3,440	7.7	195	0.3	23	0.0	49	0.1	2	0.0	0	0.0	0	0.0	5,281	2.1	8,906	2.8

OFFICER RANKS	O-1	%	O-2	%	O-3	%	O-4	%	O-5	%	O-6	%	O-7	%	O-8	%	O-9	%	O-10	%	Officer Total	%
TOTAL	**6,796**		**6,909**		**21,097**		**13,421**		**9,098**		**3,177**		**123**		**68**		**39**		**11**		**60,739****	
SEX																						
Female	1,869	27.5	1,886	27.3	5,289	25.1	3,256	24.3	1,719	18.9	562	17.7	13	10.6	8	11.8	5	12.8	1	9.1	14,608	24.1
Male	4,927	72.5	5,023	72.7	15,808	74.9	10,165	75.7	7,379	81.1	2,615	82.3	110	89.4	60	88.2	34	87.2	10	90.9	46,131	75.9
ETHNICITY																						
Declined to Respond	1,608	23.7	1,536	22.2	3,619	17.2	1,670	12.4	1,921	21.1	186	5.9	1	0.8	1	1.5	0	0.0	0	0.0	10,542	17.4
Hispanic or Latino	730	10.70	734	10.6	1,987	9	1,038	7.7	563	6.2	170	5.4	1	0.8	1	1.5	0	0.0	0	0.0	5,224	8.6
Not Hispanic or Latino	4,458	65.6	4,639	67.1	15,491	73.4	10,713	79.8	6,614	72.7	2,821	88.8	121	98.4	66	97.1	39	100.0	11	100.0	44,973	74.0
RACE*																						
American Indian or Alaska Native	26	0.4	35	0.5	111	0.5	81	0.6	41	0.5	14	0.4	1	0.8	0	0.0	0	0.0	0	0.0	309	0.5
Asian	451	6.6	456	6.6	1,320	6.3	753	5.6	430	4.7	98	3.1	0	0.0	0	0.0	0	0.0	0	0.0	3,508	5.8
Black or African American	432	6.4	480	6.9	1,433	6.8	889	6.6	468	5.1	199	6.3	9	7.3	2	2.9	4	10.3	2	18.2	3,918	6.5
Declined to Respond	367	5.4	446	6.5	1,253	5.9	970	7.2	636	7.0	196	6.2	3	2.4	3	4.4	0	0.0	0	0.0	3,874	6.4
Identified More Than One Race	429	6.3	344	5.0	915	4.3	374	2.8	209	2.3	60	1.9	3	2.4	0	0.0	0	0.0	0	0.0	2,334	3.8
Native Hawaiian or Other Pacific Islander	46	0.7	51	0.7	135	0.6	72	0.5	43	0.5	8	0.3	1	0.8	0	0.0	0	0.0	0	0.0	356	0.6
White	5,045	74.2	5,097	73.8	15,930	75.5	10,282	76.6	7,271	79.9	2,602	81.9	106	86.2	63	92.6	35	89.7	9	81.8	46,440	76.5
MARITAL STATUS**																						
Divorced	99	1.5	185	2.7	913	4.5	727	5.5	458	5.0	151	4.8	1	1.0	4	5.2	1	2.4	0	0.0	2,359	4.0
Married	2,020	30.4	2,888	42.2	13,597	66.6	10,845	81.5	8,244	89.4	2,873	91.8	95	96.0	72	93.5	41	97.6	13	100.0	40,688	68.3
Single	4,513	68	3,767	55.0	5,900	28.9	1,718	12.9	508	5.5	101	3.2	3	3.0	1	1.3	0	0.0	0.0	0.0	16,511	27.7
Other***	3	0.0	7	0.1	15	0.1	12	0.1	13	0.1	6	0.2	0	0.0	0	0.0	0	0.0	0	0.0	56	0.1
HIGHEST EDUCATIONAL ACHIEVEMENT																						
Bachelor's Degree	4,852	71.4	5,264	76.2	12,054	57.1	3,555	26.5	280	3.1	0	0.0	0	0.0	1	1.5	0	0.0	0	0.0	26,006	42.8
Master's Degree	231	3.4	822	11.9	5,591	26.5	7,225	53.8	6,984	76.8	2,400	75.5	110	89.4	59	86.8	37	94.9	11	100.0	23,470	38.6
Ph.D. or Professional Degree	8	0.1	31	0.4	2,463	11.7	2,521	18.8	1,817	20.0	775	24.4	13	10.6	8	11.8	2	5.1	0	0.0	7,638	12.6
Unknown	1,705	25.1	792	11.5	989	4.7	120	0.9	17	0.2	2	0.1	0	0.0	0	0.0	0	0.0	0	0.0	3,625	6.0

*Includes three enlisted members whose data queries returned an error.

**Current as of March 28, 2024. Includes one Air Force officer whose data query returned an error.

***Includes annulled, legally separated, and widowed. The data queries of 10 members returned an error.

AIR FORCE RESERVE DEMOGRAPHICS: SEX, ETHNICITY, RACE, MARITAL STATUS

(As of Sept. 30, 2023)

Records were reported as "blank," or left blank, resulting in small differences in some totals. *Includes annulled, legally separated, widowed, and interlocutory decree. **Record blank.

ENLISTED RANKS	E-1	%	E-2	%	E-3	%	E-4	%	E-5	%	E-6	%	E-7	%	E-8	%	E-9	%Enlisted Total	% AFRC Total	%
TOTAL	**667**		**403**		**2,798**		**10,517**		**10,707**		**12,061**		**9,464**		**2,908**		**1,019**	**50,544**	**64,800**	
SEX																				
Female	246	36.9	153	38.0	958	34.2	3,448	32.8	3,075	28.7	2,905	24.1	2,516	26.6	796	27.4	246	24.1	14,343	28.4	18,214	28.1
Male	421	63.1	250	62.0	1,840	65.8	7,069	67.2	7,632	71.3	9,156	75.9	6,948	73.4	2,112	72.6	773	75.9	36,201	71.6	46,586	71.9
ETHNICITY																				
Declined to Respond or Blank Response	638	95.7	367	91.1	2,544	90.9	6,506	61.9	4,594	42.9	3,323	27.6	1790	18.9	298	10.2	54	5.3	20,114	39.8	23,148	35.7
Hispanic or Latino	15	2.2	19	4.7	92	3.3	1,238	12	1,688	15.8	1,969	16.3	1,354	14.3	400	13.8	100	9.8	6,875	13.6	7,915	12.2
Not Hispanic or Latino	14	2.1	17	4.2	162	5.8	2,773	26.4	4,424	41.3	6,769	56.1	6,320	66.8	2,210	76.0	865	84.9	23,554	46.6	33,734	52.1
RACE																				
American Indian or Alaska Native	9	1.3	3	0.7	31	1.1	100	1.0	82	0.8	67	0.6	72	0.8	18	0.6	4	0.4	386	0.8	448	0.7
Asian	165	24.7	24	6.0	269	9.6	1,975	18.8	968	9.0	545	4.5	302	3.2	63	2.2	28	2.7	4,339	8.6	5,040	7.8
Black or African American	104	15.6	139	34.5	960	34.3	1,725	16.4	2,016	18.8	2,122	17.6	1,382	14.6	353	12.1	108	10.6	8,909	17.6	9,847	15.2
Declined to Respond, Identification Pending, or Blank	2	0.3	2	0.5	4	0.1	102	1.0	285	2.7	487	4.0	460	4.9	193	6.6	59	5.8	1,594	3.2	2,380	3.7
Identified More Than One Race	21	3.1	19	4.7	110	3.9	479	4.6	520	4.9	578	4.8	296	3.1	67	2.3	26	2.6	2,116	4.2	2,506	3.9
Native Hawaiian or Other Pacific Islander	16	2.4	7	1.7	36	1.3	164	1.6	177	1.7	147	1.2	152	1.6	33	1.1	10	1.0	742	1.5	831	1.3
White	350	52.5	209	51.9	1,388	49.6	5,972	56.8	6,657	62.2	8,115	67.3	6,800	71.9	2,181	75.0	784	77.0	32,456	64.2	43,742	67.5
MARITAL STATUS*																				66,462	
Divorced	7	1.0	7	1.7	77	2.8	448	4.3	848	7.9	1,404	11.6	1,269	13.4	413	14.2	124	12	4,597	9.1	5,699	8.8
Married	56	8.4	55	13.6	588	21.0	3,220	30.6	5,021	46.9	7,445	61.7	6,744	71.3	2,234	76.8	815	80.0	26,178	51.8	37,331	57.6
Single	603	90.4	339	84.1	2,131	76.2	6,843	65.1	4,831	45.1	3,196	26.5	1,424	15.0	255	8.8	77	7.6	19,699	39.0	21,670	33.4
Other**	1	0.1	2	0.50	2	0.1	6	0.1	7	0.1	16	0.10	27	0.30	6	0.20	3	0.3	70	0.1	100	0.2

OFFICER RANKS	O-1	%	O-2	%	O-3	%	O-4	%	O-5	%	O-6	%	O-7	%	O-8	%	O-9	% Officer Total	%
TOTAL	**497**		**747**		**2,723**		**4,643**		**4,519**		**1,044**		**54**		**28**		**1**	**14,256**	
SEX																			
Female	135	27.2	230	30.8	857	31.5	1,155	24.9	1,165	25.8	307	29.4	14	25.9	8	28.6	0	0.0	3,871	27.2
Male	362	72.8	517	69.2	1,866	68.5	3,488	75.1	3,354	74.2	737	70.6	40	74.1	20	71.4	1	100.0	10,385	72.8
ETHNICITY																			
Declined to Respond	199	40.0	289	38.7	847	31.1	963	20.7	672	14.9	56	5.4	0	0.0	8	28.6	*	*	3,034	21.3
Hispanic or Latino	44	8.90	85	11.4	235	8.6	342	7.4	267	5.9	64	6.1	3	5.6	0	0.0	*	*	1,040	7.3
Not Hispanic or Latino	254	51.1	373	49.9	1,641	60.3	3,337	71.9	3,580	79.2	924	88.5	51	94.4	20	71.4	*	*	10,180	71.4
RACE																			
American Indian or Alaska Native	3	0.6	5	0.7	10	0.4	22	0.5	17	0.4	5	0.5	0	0.0	0	0.0	*	*	62	0.4
Asian	37	7.4	37	5.0	159	5.8	226	4.9	204	4.5	37	3.5	1	1.9	0	0.0	*	*	701	4.9
Black or African American	50	10.1	77	10.3	254	9.3	263	5.7	243	5.4	46	4.4	3	5.6	2	7.1	*	*	938	6.6
Declined to Respond, Identification Pending or Blank	13	2.6	25	3.3	112	4.1	291	6.3	285	6.3	58	5.6	1	1.9	1	3.6	*	*	786	5.5
Identified More Than One Race*	20	4.0	22	2.9	107	3.9	129	2.8	92	2.0	20	1.9	0	0.0	0	0.0	*	*	390	2.7
Native Hawaiian or Other Pacific Islander	5	1.0	8	1.1	19	0.7	31	0.7	23	0.5	3	0.3	0	0.0	0	0.0	*	*	89	0.6
White	369	74.2	573	76.7	2,061	757	3,679	79.2	3,655	80.9	875	83.8	49	90.7	25	893	*	*	11,286	79.2
MARITAL STATUS*																			
Divorced	25	5.0	68	9.1	222	8.2	320	6.9	366	8.1	99	9.5	1	1.9	1	3.6	0	0.0	1,102	7.7
Married	287	57.7	436	58.3	1,862	68.4	3,787	81.6	3,815	84.4	888	85.1	51	94.4	26	92.9	1	100.0	11,153	78.2
Single	185	37.2	243	32.5	636	23.4	529	11.4	326	7.2	50	4.8	2	3.7	0	0.0	0	0.0	1,971	13.8
Other**	0	0.0	0	0.0	3	0.1	7	0.2	12	0.3	7	0.7	0	0.0	1	3.6	0	0.0	30	0.2

Tech Sgt. Tyler Bolken

More than 75 Reserve Citizen Airmen of the 944th Fighter Wing, along with 10 Airmen from the 56th Fighter Wing, conducted Ready Airmen Training during Field Training Exercise Desert Anvil, at Florence Military Reservation in Florence, Ariz., in April.

Staff Sgt. Christina Russo

Tech. Sgt. Ian Ludy, a maintainer with the 910th Maintenance Group, marshals in a C-17 Globemaster III at Youngstown Air Reserve Station, Ohio, in May.

ANG DEMOGRAPHICS: SEX, ETHNICITY, RACE, EDUCATION

(As of Sept. 30, 2023)

*Current as of March 28, 2024. **Includes annulled, legally separated, and widowed.
***Several records resulted in errors, creating small differences between totals.

ENLISTED RANKS	E-1	%	E-2	%	E-3	%	E-4	%	E-5	%	E-6	%	E-7	%	E-8	%	E-9	%Enlisted Total	%ANG Total	%
TOTAL	**1,972**		**1,051**		**9,457**		**12,735**		**20,456**		**19,995**		**16,504**		**4,512**		**2,054**	**88,736**	**104,974**	
SEX																				
Female	638	32.4	355	33.8	2,486	26.3	3,266	25.6	4,400	21.5	3,820	19.1	3,434	20.8	936	20.7	341	16.6	19,676	22.2	23,050	22.0
Male	1,334	67.6	696	66.2	6,971	73.7	9,469	74.4	16,056	78.5	16,175	80.9	13,070	79.2	3,576	79.3	1,713	83.4	69,060	77.8	81,924	78.0
ETHNICITY																				
Declined to Respond	0	0.0	2	0.2	34	0.4	208	1.6	566	2.8	836	4.2	711	4.3	147	3.3	41	2	2,545	2.8	3698	3.5
Hispanic or Latino	331	16.8	189	18.0	1,756	18.6	2,158	16.9	3,002	14.7	2,559	12.8	1,643	10.0	388	8.6	148	7.2	12,174	13.7	13,245	12.6
Not Hispanic or Latino	1,641	83.2	860	81.8	7,667	81.1	10,369	81.4	16,886	82.5	16,599	83	14,150	85.7	3,977	88.1	1,865	90.8	74,014	83.4	88,027	83.9
RACE																				
American Indian or Alaska Native	14	0.7	8	0.8	78	0.8	98	0.8	133	0.7	131	0.7	102	0.6	41	0.9	13	0.6	618	0.7	697	0.7
Asian	91	4.6	51	4.9	573	6.1	632	5.0	836	4.1	690	3.5	396	2.4	106	2.3	37	1.8	3,412	3.8	3,962	3.8
Black or African American	287	14.6	194	18.5	1,269	13.4	1,564	12.3	2,186	10.7	1,804	9.0	1,327	8.0	296	6.6	133	6.5	9,060	10.2	9,866	9.4
Undeclared	2	0.1	5	0.5	12	0.1	81	0.6	279	1.4	514	2.6	563	3.4	177	3.9	69	3.4	1,702	1.9	2,266	2.2
Identified More Than One Race	89	4.5	49	4.7	444	4.7	540	4.2	766	3.7	609	3.0	376	2.3	81	1.8	28	1.4	2,982	3.4	3,334	3.2
Native Hawaiian or Other Pacific Islander	31	1.6	18	1.7	143	1.5	154	1.2	247	1.2	232	1.2	175	1.1	32	0.7	13	0.6	1,045	1.2	1,149	1.1
White	1,458	73.9	726	69.1	6,938	73.4	9,666	75.9	16,009	78.3	16,015	80.1	13,565	82.2	3,779	83.8	1,761	85.7	69,917	78.8	83,700	79.7
HIGHEST EDUCATIONAL ACHIEVEMENT																				
High School Diploma/GED or Technical Degree	1,748	88.6	603	57.4	4,051	42.8	1,154	9.1	1,050	5.1	254	1.3	44	0.3	1	0.0	0	0.0	8,905	10.0	8,981	8.6
Some College	112	5.7	444	42.2	4,247	44.9	10,469	82.2	14,797	72.3	11,327	56.6	6,522	39.5	143	3.2	56	2.7	48,117	54.2	48,403	46.1
Associate Degree	1	0.1	1	0.1	205	2.2	372	2.9	2,586	12.6	5,404	27.0	6,028	36.5	2,491	55.2	1,063	51.8	18,151	20.5	18,431	17.6
Bachelor's Degree	1	0.1	2	0.2	686	7.3	627	4.9	1,716	8.4	2,525	12.6	3,077	18.6	1,345	29.8	657	32.0	10,636	12	18,115	17.3
Master's Degree	0	0.0	1	0.1	100	1.1	87	0.7	267	1.3	453	2.3	805	4.9	513	11.4	262	12.8	2,488	2.8	8,003	7.6
Ph.D. or Professional Degree	0	0.0	0	0.0	11	0.1	4	0.0	15	0.1	26	0.1	28	0.2	18	0.4	16	0.8	118	0.1	1,623	1.5
Unknown or None Listed	110	5.6	0	0.0	157	1.7	22	0.2	25	0.1	6	0.0	0	0.0	1	0.0	0	0.0	321	0.4	1,412	1.3

OFFICER RANKS	O-1	%	O-2	%	O-3	%	O-4	%	O-5	%	O-6	%	O-7	%	O-8	%	O-9	%Officer Total	%
TOTAL	**993**		**1,432**		**3,806**		**4,308**		**4,396**		**1,092**		**152**		**55**		**4**	**16,238**	
SEX																			
Female	278	28.0	350	24.4	874	23.0	851	19.8	794	18.1	190	17.4	24	15.8	9	16.4	4	100.0	3,374	20.8	
Male	715	72.0	1,082	75.6	2,932	77.0	3,457	80.2	3,602	81.9	902	82.6	128	84.2	46	83.6	0	0.0	12,864	79.2	
ETHNICITY																			
Declined to Respond	35	3.5	45	3.1	182	4.8	432	10.0	414	9.4	43	3.9	1	0.7	1	1.8	0	0.0	1,153	7.1	
Hispanic or Latino	88	8.9	124	8.7	296	7.8	250	5.8	239	5.4	60	5.5	10	6.6	3	5.5	1	25.0	1,071	6.6	
Not Hispanic or Latino	870	87.6	1,263	88.2	3,328	87.4	3,625	84.1	3,743	85.1	989	90.6	141	92.8	51	92.7	3	75.0	14,013	86.3	
RACE																			
American Indian or Alaska Native	3	0.3	9	0.6	21	0.6	18	0.4	19	0.4	7	0.6	2	1.3	0	0.0	0	0.0	79	0.5	
Asian	28	2.8	57	4.0	153	4	148	3.4	138	3.1	21	1.9	4	2.6	1	1.8	0	0.0	550	3.4	
Black or African American	78	7.9	103	7.2	241	6.3	189	4.4	152	3.5	30	2.7	10	6.6	3	5.5	0	0.0	806	5.0	
Undeclared	16	1.6	27	1.8	95	2.5	191	4.4	183	4.2	49	4.5	2	1.3	1	1.8	0	0.0	564	3.5	
Identified More Than One Race	41	4.1	50	3.5	106	2.8	78	1.8	65	1.5	11	1.0	0	0.0	1	1.8	0	0.0	352	2.2	
Native Hawaiian or Other Pacific Islander	9	0.9	14	1.0	22	0.6	29	0.7	24	0.5	4	0.4	2	1.3	0	0.0	0	0.0	104	0.6	
White	818	82.4	1,172	81.8	3,168	83.2	3,655	84.8	3,815	86.8	970	88.8	132	86.8	49	89.1	4	100.0	13,783	84.9	
HIGHEST EDUCATIONAL ACHIEVEMENT* **																			
High School Diploma/GED or Technical Degree	43	4.3	24	1.7	5	0.1	4	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	76	0.5	
Some College	136	13.7	101	7.1	38	1.0	7	0.2	3	0.1	1	0.1	0	0.0	0	0.0	0	0.0	286	1.7	
Associate Degree	137	13.8	100	7.0	33	0.9	9	0.2	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	280	1.7	
Bachelor's Degree	493	49.6	890	62.2	2,513	66	2,017	46.8	1,324	30.1	205	18.8	31	20.4	6	10.9	0	0.0	7,479	46.1	
Master's Degree	130	13.1	217	15.2	813	21.4	1,593	37.0	2124	48.3	531	48.6	82	53.9	25	45.5	0	0.0	5,515	34.0	
Ph.D. or Professional Degree	5	0.5	24	1.7	167	4.4	392	9.1	680	15.5	214	19.6	18	11.8	5	9.1	0	0.0	1505	9.3	
Unknown or None Listed	49	4.9	76	5.3	237	6.2	286	6.6	260	5.9	140	12.8	21	13.8	18	32.7	4	100.0	1091	6.7	

Tech. Sgt. Codie Trimble

A U.S. Air Force E-4B assigned to the 595th Command & Control Group, Offutt Air Force Base, Neb., prepares to receive fuel from a KC-135R Stratotanker from the 126th Air Refueling Squadron, Wisconsin Air National Guard, May, 15, 2024.

Sgt. 1st Class Zane Craig/ANG

Airmen and Soldiers with the Pennsylvania National Guard load a UH-60M Blackhawk helicopter onto a C-17 cargo aircraft at the Army Aviation Support Facility in Johnstown, Pa., on Oct. 13, 2023. This training prepares the Guardsmen to

DAF ENLISTED TOTAL FORCE BY AIR FORCE SPECIALTY CODE (AFSC)

(As of Sept. 30, 2023)

AFSC		TOTAL
1A3	In-Flight Refueling Spc	1,517
1A1	Flight Eng	2,566
1A2	Aircraft Ldm	3,341
1A3	Airborne Mission Sys Spc	1,787
1A6	Flight Attendant	300
1A8	Airborne ISR	2,102
1A9	Spc Mission Aviator	1,055
1B0	Cyber Warfare Operations Supt	31
1B4	CW Ops	1,659
1C0	Aviation Rsc Mgmt	3,047
1C1	Air Traffic Control	2,994
1C3	C2 Ops	2,799
1C5	C2 Battle Mgmt Ops	2,431
1C6	Space Sys Ops	711
1C7	Airfield Mgmt	1,251
1C8	Radar, Airfield, and Weather Sys	1,757
1D7	Defensive Cyber Ops	31,392
1H0	Aerospace Physiology	234
1N0	Intelligence	6,915
1N1	Imagery Analysis	3,469
1N2	Sigint	2,231
1N3	Cryptologic Language Analyst	3,212
1N4	Network Intel Analysis	4,313
1N7	Humint Spc	165
1N8	Targeting Analyst	858
1P0	Aircrew Flight Equip	4,042
1S0	Safety	722
1T0	SERE Specialist	796
1U0	RPA Sensor Operator Manager	2,229
1U1	RPA Pilot Manager	200
1W0	Weather	3,087
1Z1	Pararescue	938
1Z2	Combat Control	622
1Z3	TACP	1,952
1Z4	Special Recon	126
2A0	Avionics	1,516
2A2	SOF/PR Integrated Comm/ Nav/Mission Sys	394
2A3	Fighter/RPA Maint	19,578
2A5	Airlift/Special Mission Aircraft Maint	20,629
2A6	Aircraft Sys	26,637
2A7	Aircraft Metals Technology	8,923
2A8	Mobility AF Integrated Comms/ Nav/Mission Sys	518
2A9	Bomber/Spc Integrated Comms/ Nav/Mission Sys	7,606
2F0	Fuels	4,508
2G0	Logistics Plans	1,540
2M0	Missile and Space Sys Maint	1,617
2P0	Precision Measurement Equipment Lab	792
2R0	Maintenance	1,015
2R1	Maint Prod Mgmt	1,123
2R2	Maint Mgmt	404
2S0	Materiel Mgmt	9,492
2T0	Traffic Mgmt	2,676
2T1	Ground Trans	3,077
2T2	Air Trans	10,791
2T3	Vehicle Mgmt	5,179
2W0	Munitions Maint	9,309
2W1	Aircraft Armament Sys	9,511
2W2	Nuclear Weapons	687
3D0	Cyberspace Ops	1
3E0	Civil Engineer	4,915
3E1	Heating	2,388
3E2	Pavements and Construction Equip	3,180
3E3	Structural	2,664
3E4	Water and Fuel Systems	2,617
3E5	Engineering	1,580
3E6	Ops Mgmt	1,177
3E7	Fire Protection	5,447
3E8	Explosive Ordnance Disposal	1,944
3E9	Emergency Mgmt	1,659
3F0	Personnel	9,250
3F1	Services	7,228
3F2	Education and Training	2,663
3F3	Manpower	439
3F4	Equal Opportunity	374
3F5	Administration Manager	6,072
3H0	Historian	8
3N0	Public Affairs	1,867
3N1	Regional Band	472
3N2	Premier Band - The USAF Band	173
3N3	USAF Academy Band	50
3P0	Security Forces	36,341
4A0	Health Services Mgmt	3,944
4A1	Medical Materiel	1,465
4A2	Biomedical Equip	686
4B0	Bioenvironmental Eng	1,238
4C0	Mental Health Svc	983
4D0	Diet Therapy	220
4E0	Public Health	1,352
4H0	Cardiopulmonary Lab	492
4J0	Physical Medicine	295
4M0	**AEROSPACE AND OPS PHYSIOLOGY**	
4N0	Aerospace Medical Svc	11,308
4N1	Surgical Technologist	636
4P0	Pharmacy	699
4R0	Diagnostic Imaging	782
4T0	Medical Lab	1,083
4V0	Optometry	332
4Y0	Dental	2,797
5C0	Cyber Ops (USSF)	1
5J0	Paralegal	1,277
5R0	Religious Affairs	985
5S0	Space Sys Ops (USSF)	2
6C0	Contracting	1,753
6F0	Financial Mgmt and Comptroller	3,526
7S0	Special Investigations	1,219
8A1	**CAREER ASSISTANCE ADVISOR**	
8A2	Enlisted Aide	67
8A3	Protocol	59
8A4	Talent Mgmt Consultant	175
8B0	Military Training Instructor	675
8B1	Military Training Leader	483
8B2	Academy Military Training NCO	118
8B3	AFROTC Training Instructor	88
8C0	Amn and Family Readiness Center NCO	193
8D1	**LANGUAGE AND CULTURE ADVISOR**	
8F0	First Sergeant	2,556
8G0	Premier Honor Guard	269
8G1	USAF Installation Honor Guard Prgm Mgr	73
8H0	Amn Dorm Leader	302
8I0	Superintendent	260
8I1	Inspections Coordinator	322
8I2	Complaints Resolution Coordinator	11
8K0	Software Development Specialist	1
8L5	Air Advisor Advanced	1
8L7	Combat Aviation Advisor	25
8P0	Courier	78
8P1	Defense Attache	121
8R0	Enlisted Accessions Recruiter	1,806
8R2	Second-Tier Recruiter	967
8R3	Third-Tier Recruiter	500
8S0	Missile Facility Mgr	196
8S2	**COMBAT CREW COMMUNICATIONS**	
8T0	PME Instructor	610
8T1	Enl PME Instructional Sys Designer	32
8T2	Airman Development Advisor	87
8U0	Unit Deployment Mgr	232
8U1	WMD Civil Support Team	10
9A0	Enl Amn, Disqualified for Reasons Beyond Ctrl	112
9A1	Enl Amn, Disqualified for Reasons Within Ctrl	66
9A2	Enl Airman Awaiting Discharge, Separation, or Ret for Reasons Within Ctrl	62
9A3	Enl Awaiting Dis, Sep, or Ret for Reasons Beyond Ctrl	58
9A5	Enl Amn Temp Ineligible for Retraining, Disqualified for Reasons Beyond Ctrl	82
9B0	Sr Enl Adv to Chair of Joint Chiefs of Staff	1
9C0	Chief Master Sergeant of the Air Force	1
9C1	Executive Asst to the CMSO	1
9D1	AF Developmental Senior Enlisted Positions	17
9D2	Key Developmental Senior Enlisted Positions	22
9E0	Command Chief Master Sergeant	384
9E1	Command Chief Executive Assistant	18
9E2	Individual Mobilization Augmentee to CCMS	11
9G1	Group Senior Enl Leader	783
9H0	Academic Faculty Inst	11
9I0	Futures Airman	9
9J0	Prisoner	10
9L0	Interpreter/Translator	77
9L1	Enl Engagement Mgr/Int'l Affairs	5
9M0	**MILITARY ENTRANCE PROCESSING**	
9M0	MEPCOM Sr Enl Advisor	1
9M2	Intl Health Spc	3
9M4	Chief, Medical Enl Force	14
9Q0	Reserve Force Generation and Oversight NCO	16
9S0	**CHIEF MASTER SERGEANT OF THE SPACE FORCE**	
9R0	Civil Air Patrol Assistance NCO	1
9S1	Scientific Applications Spc	504
9T0	Basic Enl Amn	4,750
9T1	Officer Trainee	503
9T2	Pre-Cadet Assigned	310
9T4	AF Institute of Tech or Ed WithIndustry Enl Students	4
9T5	Basic Special Warfare Enlisted Airman	190
9V0	Key Developmental Joint Enlisted Position	8
9V1	Exec Asst to the Sr Enl Advisor to the Chairman of the Joint Chiefs of Staff	2
9W3	Non-Combat Wounded Warrior	1
9Z0	Special Warfare Mission Support on HAF Staff	2
9Z2	Special Warfare Mission Support Supt	5

DAF OFFICER TOTAL FORCE BY AIR FORCE SPECIALTY CODE (AFSC)

(As of Sept. 30, 2023)

AFSC		TOTAL
10C	Ops Cmdr	588
11B	Bomber Pilot	611
11E	Experimental Test Pilot	164
11F	Fighter Pilot	3,719
11G	Generalist Pilot	411
11H	Helicopter Pilot	957
11K	Trainer Pilot	1,565
11M	Mobility Pilot	7,932
11R	Recon/Surveillance/EW Pilot	804
11S	Spc Ops Pilot	1,507
11U	RPA Pilot	230
12B	Bomber Combat Systems Officer (CSO)	632
12E	Experimental Test CSO	29
12F	Fighter CSO	419
12G	Generalist CSO	125
12H	Rescue CSO	104
12K	Trainer CSO	167
12M	Mobility CSO	413
12R	Recon/Surveillance/EW CSO	874
12S	Spc Ops CSO	675
12U	RPA	127
13A	Astronaut	3
13B	Air Battle Mgr	1,829
13H	Aerospace Physiologist	85
13M	Airfield Ops	297
13N	Nuclear and Missile Ops	1,235
13O	Multi-Domain Warfare Officer	17
13S	Space Ops	465
14F	Info Ops	163
14N	Intelligence	5,178
15A	Operations Research Analyst	470
15W	Weather and Environmental Svcs	523
16F	Regional Affairs Strategist	431
16G	AF Ops Staff Officer	840
16K	Software Development Officer	9
16P	Political-Military Affairs Strategist	274
16R	Planning and Programming	758
17C	Cyberspace Warfare Ops Cmdr	20
17D	Warfighter Comms Ops	2,905
17S	Cyberspace Effects Ops	1,244
18A	Attack RPA Pilot	2,006
18E	Experimental Test RPA Pilot	13
18G	Generalist RPA Pilot	75
18R	Recon RPA Pilot	560
18S	Special Ops RPA Pilot	421
19Z	Special Warfare	753
20C	Logistics Cmdr	369
21A	Aircraft Maint	2,019
21M	Munitions and Missile Maint	317
21R	Logistics Readiness	2,173
30C	Support Cmdr	474
31P	Security Forces	939
32E	Civil Eng	1,903
35B	Band	22
35P	Public Affairs	625
38F	Force Support Officer	2,151
40C	Medical Cmdr	226
41A	Health Services Admin	1,725
42B	Physical Therapist	220
42E	Optometrist	256
42F	Podiatric Surgeon	16
42G	Physician Asst	804
42N	Audiology/Speech Pathologist	31
42P	Clinical Psychologist	303
42S	Clinical Social Worker	280
42T	Occupational Therapist	22
43B	Biomedical Scientist	115
43D	Dietitian	41
43E	Bioenvironmental Eng	382
43H	Public Health Officer	267
43P	Pharmacist	293
43T	Biomedical Lab	146
44A	Chief, Hospital/Clinic Svcs	76
44B	Preventive Medicine	28
44D	Pathologist	73
44E	ER Services Physician	382
44F	Family Physician	544
44G	General Practice Physician	111
44J	Clinical Geneticist	2
44K	Pediatrician	307
44M	Internist	494
44N	Neurologist	50
44O	Physician	69
44P	Psychiatrist	177
44R	Diagnostic Radiologist	168
44S	Dermatologist	38
44T	Radiotherapist	5
44U	Occupational Medicine	15
44Y	Critical Care Medicine	72
44Z	Allergist	22
45A	Anesthesiologist	207
45B	Orthopedic Surgeon	112
45E	Ophthalmologist	46
45G	Obstetrician and Gynecologist	167
45N	Otorhinolaryngologist	50
45S	Surgeon	318
45U	Urologist	30
46A	Nursing Admin	228
46F	Flight Nurse	974
46N	Clinical Nurse	3,041
46P	Mental Health Nurse	70
46S	Operating Room Nurse	187
46Y	Adv Practice RN	672
47B	Orthodontist	28
47D	Oral and Maxillofacial Pathologist	3
47E	Endodontist	32
47G	Dentist	951
47H	Periodontist	45
47K	Pediatric Dentist	17
47P	Prosthodontist	51
47S	Oral and Maxillofacial Surgeon	55
48A	Aerospace Medicine Physician Spc	144
48G	General Med Officer, Flight Surgeon	131
48O	Aeromedical Physician	1
48R	Residency Trained Flight Surgeon	809
48V	Pilot-Physician	1
51J	Judge Advocate	2,253
52R	Chaplain	1,174
60C	Sr Materiel Leader-Upper Echelon	15
61C	Chemist/Nuclear Chemist	63
61D	Physicist/Nuclear Eng	170
62E	Development Eng	1,821
62S	Materiel Leader	6
63A	Acquisition Mgr	2,061
63G	Sr Materiel Leader-Lower Echelon	56
63S	Materiel Leader	135
64P	Contracting	897
65F	Financial Mgmt	810
65W	Cost Analysis	59
71S	Spc Investigations	463
80C	Cmdr, Cadet Squadron, USAF Academy	45
81C	Instructor, Officer Training School	56
81D	ROTC Detachent Commander and Professor of Aerospace Studies	150
81L	Education and Training Leader	22
81T	Instructor	888
82A	Academic Program Mgr	61
83R	Recruiting Svc	191
84H	Historian	15
85G	USAF Honor Guard	5
86M	Ops Mgmt	250
86P	C2	72
87G	Wing IG	259
87I	Director, Wing Inspections	145
87Q	Director, Complaints Resolution	114
88A	Aide-de-camp	43
88B	Protocol Officer	21
88C	Sexual Assault Response Coordinator	27
88I	Innovation Officer	1
89G	Cobat Aviation Advisor	14
89W	WMD Civil Support Team	1
90G	General Officer	573
91C	Cmdr	156
91W	Wing Cmdr	461
92F	Foreign Area Officer Trainee	38
92J	Non-Designated Lawyer	5
92M	Health Prof Scholarship Prgm Med Student	248
92P	Physician Assistant Student	9
92R	Chaplain Candidate	100
92S	Student Officer Authorization	1,895
92T	Pilot Trainee	2,631
93P	Patient	9
95A	Non-Extended Active Duty USAFR Academy Liaison Officer or CAP Reserve Asst Prgm Officer	14
96A	Disq. Officer, Reasons Beyond Control	3
96B	Disq Officer, Reasons Within Control	5
96D	Officer N/A for Use in Awarded AFSC for Cause	15
97E	Executive Officer	795
99A	Unspecified AFSC	2
99G	Gold Bar Diversity Recruiter	3

DAF ACTIVE DUTY BY COMMAND

(As of Sept. 30, 2023)

USAF MAJOR COMMANDS	USAF	USSF	Total
Air Combat Command	77,077	116	77,193
Air Education and Training Command	54,973	434	55,047
Air Force Global Strike Command	27,036	14	27,050
Air Force Materiel Command	17,333	64	17,397
Air Force Special Operations Command	15,485	10	15,495
Air Mobility Command	40,480	13	40,493
Pacific Air Forces	30,363	10	30,373
U.S. Air Forces Europe-Air Forces Africa	23,898	12	23,910
TOTAL	**286,645**	**673**	**286,958**
FIELD OPERATING AGENCIES	**USAF**	**USSF**	**Total**
Air Force Agency for Modeling and Simulation	7	0	7
Air Force Audit Agency	0	0	0
Air Force Cost Analysis Agency	12	0	12
Air Force Flight Standards Agency	109	0	109
Air Force Historical Research Agency	0	0	0
Air Force Inspection Agency	80	0	80
Air Force Legal Operations Agency	532	2	534
Air Force Manpower Analysis Agency	154	0	154
Air Force Medical Readiness Agency	216	0	216
Air Force Mortuary Affairs Operations	24	0	24
Air Force Office of Special Investigations	159	0	159
Air Force Operations Group	43	0	43
Air Force Personnel Center	642	0	642
Air Force Public Affairs Agency	46	0	46
Air Force Review Boards Agency	26	0	26
Air Force Safety Center	46	0	46
Air National Guard Readiness Center	39	0	39
DOD Cyber Crime Center	4	0	4
National Air and Space Intelligence Center*	697	0	697
TOTAL	**2,836**	**2**	**2,838**
DIRECT REPORTING UNITS	**USAF**	**USSF**	**Total**
Air Force District of Washington	105	1	106
Air Force Operational Test and Evaluation Center	297	2	299
Air Force Reserve Command	50	0	50
U.S. Air Force Academy	225	14	239
TOTAL	**677**	**17**	**694**
OTHER	**25,123**	**8,249**	**33,372**
TOTAL ACTIVE DUTY	**315,281**	**8,941**	**323,862**

Source: Office of the Secretary of the Air Force

*Total personnel numbers for the National Air and Space Intelligence Center were updated in August 2024.

ACTIVE DUTY BY BASE, 2023 vs. 2013

(As of Sept. 30, 2023)

BASE	2013 Total	2023 Total	USAF 2023	USSF 2023	% CHANGE
JB San Antonio-Lackland, Texas	11,588	14,099	13,929	170	21.7
Ramstein AB, Germany	9,580	9,520	9,480	40	-0.6
Hurlburt Field, Fla.	8,990	8,440	8,428	12	-6.1
JB Langley-Eustis, Va.	8,161	7,911	7,909	2	-3.1
Nellis AFB, Nev.	10,181	7,525	7,495	30	-26.1
Shaw AFB, S.C.	6,134	7,049	7,045	4	14.9
Travis AFB, Calif.	6,736	6,661	6,660	1	-1.1
Kadena AB, Japan	6,563	6,301	6,300	1	-4.0
Davis-Monthan AFB, Ariz.	6,561	5,968	5,960	8	-9.0
Offutt AFB, Neb.	5,401	5,935	5,925	10	9.9
Eglin AFB, Fla.	5,416	5,884	5,814	70	8.6
Wright-Patterson AFB, Ohio	5,953	5,741	5,492	249	-3.6
JB Andrews, Md.	6,333	5,723	5,722	1	-9.6
Scott AFB, Ill.	5,040	5,679	5,674	5	12.7
JB Pearl Harbor-Hickam, Hawaii	5,324	5,576	5,514	62	4.7
Osan AB, South Korea	5,485	5,479	5,409	70	-0.1
JB Elmendorf-Richardson, Alaska	5,612	5,427	5,427	0	-3.3
Minot AFB, N.D.	5,528	5,390	5,390	0	-2.5
Cannon AFB, N.M.	4,871	5,259	5,257	2	8.0
Sheppard AFB, Texas	4,941	5,140	5,140	0	4.0
JB McGuire-Dix-Lakehurst, N.J.	4,957	5,095	5,095	0	2.8
RAF Lakenheath, U.K.	4,524	5,059	5,059	0	11.8
Barksdale AFB, La.	5,662	4,998	4,997	1	-11.7
Holloman AFB, N.M.	4,003	4,880	4,878	2	21.9
Aviano AB, Italy	3,810	4,616	4,615	1	21.2
Dyess AFB, Texas	4,739	4,518	4,516	2	-4.7
Tinker AFB, Okla.	4,938	4,508	4,503	5	-8.7
Moody AFB, Ga.	4,741	4,426	4,425	1	-6.6
Keesler AFB, Miss.	4,685	4,313	4,188	125	-7.9
Seymour Johnson AFB, N.C.	4,647	4,300	4,299	1	-7.5
RAF Mildenhall, U.K.	4,255	4,275	4,275	0	0.5
Luke AFB, Ariz.	3,756	4,256	4,255	1	13.3
Hill AFB, Utah	3,742	4,182	4,179	3	11.8
Spangdahlem AB, Germany	4,350	3,997	3,997	0	-8.1
Peterson SFB, Colo. [1]	3,852	3,879	2,444	1,435	0.7
Whiteman AFB, Mo.	4,024	3,829	3,828	1	-4.8
MacDill AFB, Fla.	3,698	3,619	3,587	32	-2.1
Goodfellow AFB, Texas	3,890	3,507	3,374	133	-9.8
JB Charleston, S.C.	3,853	3,453	3,452	1	-10.4
Little Rock AFB, Ark.	5,375	3,439	3,438	1	-36.0
Fairchild AFB, Wash.	2,912	3,433	3,433	0	17.9

BASE	2013 Total	2023 Total	USAF 2023	USSF 2023	% CHANGE
Yokota AB, Japan	2,938	3,431	3,422	9	16.8
Fort Meade, Md.	2,616	3,407	3,247	160	30.2
Mountain Home AFB, Idaho	3,522	3,321	3,321	0	-5.7
Dover AFB, Del.	3,554	3,317	3,316	1	-6.7
Beale AFB, Calif.	4,862	3,252	3,206	46	-33.1
Ellsworth AFB, S.D.	3,333	3,200	3,196	4	-4.0
Malmstrom AFB, Mont.	3,340	3,200	3,185	15	-4.2
Kirtland AFB, N.M.	3,300	3,189	3,014	175	-3.4
Creech AFB, Nev. [2]	n/a	3,162	3,162	0	n/a
Eielson AFB, Alaska	1,897	3,124	3,123	1	64.7
JB Lewis-McChord, Wash.	3,673	3,093	3,093	0	-15.8
Pentagon, Va.	4,163	3,067	2,628	439	-26.3
F.E. Warren AFB, Wyo.	3,197	3,012	3,012	0	-5.8
JB San Antonio-Randolph, Texas	2,546	2,859	2,832	27	12.3
McConnell AFB, Kan.	3,121	2,834	2,833	1	-9.2
Misawa AB, Japan	2,827	2,832	2,816	16	0.2
Bolling AFB, D.C.	2,370	2,777	2,705	72	17.2
Robins AFB, Ga.	3,781	2,757	2,756	1	-27.1
Edwards AFB, Calif.	2,648	2,656	2,638	18	0.3
Vandenberg SFB, Calif.	2,821	2,465	1,630	835	-12.6
Tyndall AFB, Fla.	3,023	2,453	2,452	1	-18.9
Maxwell AFB, Ala.	2,927	2,417	2,347	70	-17.4
Kunsan AB, South Korea	2,380	2,395	2,395	0	0.6
Pope Field, N.C.	2,712	2,350	2,350	0	-13.3
U.S. Air Force Academy, Colo.	2,129	2,214	2,146	68	4.0
Schriever SFB, Colo.	1,603	2,194	487	1,707	36.9
Andersen AFB, Guam	2,023	2,190	2,190	0	8.3
Buckley SFB, Colo.	1,563	1,835	1,085	750	17.4
*Patrick SFB, Fla. [1]	1,736	1,804	1,641	163	3.9
MCB Quantico, Va.	1,569	1,682	1,678	4	7.2
Grand Forks AFB, N.D.	1,704	1,631	1,631	0	-4.3
Incirlik AB, Turkey	1,339	1,580	1,580	0	18.0
JB San Antonio-Fort Sam Houston, Texas	1,231	1,553	1,553	0	26.2
Hanscom AFB, Mass.	1,519	1,451	1,442	9	-4.5
Columbus AFB, Miss.	1,521	1,422	1,422	0	-6.5
Laughlin AFB, Texas	1,431	1,288	1,288	0	-10.0
Altus AFB, Okla.	1,367	1,265	1,265	0	-7.5
Vance AFB, Okla.	1,284	1,219	1,218	1	-5.1
Los Angeles AFB, Calif.	1,359	1,205	552	653	-11.3
USAG Stuttgart, Germany	1,188	826	820	6	-30.5

[1] USSF personnel assigned to Cape Canaveral SFS are included with Patrick SFB; and those assigned to Cheyenne Mountain SFS are included with Peterson SFB.
[2] Not separately recorded.

DOD PERSONNEL

DOD TOTAL FORCE END STRENGTH

(In thousands, as of Sept. 30, 2023)

FISCAL YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Active-Duty Military										Requested	Requested
USAF	311	317	323	326	328	330	328	324	315	324	320
Army	491	475	476	476	484	481	487	465	449	452	442
Marine Corps	184	184	185	186	186	181	180	174	173	172	172
Navy	328	325	324	330	337	342	348	344	328	347	332
USSF							7	8	9	9	10
Full-time Guard and Reserve	76	76	75	79	83	87	90	90	90*	92	92*
Total	**1,390**	**1,378**	**1,382**	**1,397**	**1,422**	**1,421**	**1,439**	**1,405**	**1364***	**1,396**	**1368***
Selected Reserve											
Air National Guard	106	106	106	107	107	107	109	108	105	108	107
AFRC	68	69	69	69	69	69	71	68	66	70	67
Army National Guard	350	342	344	335	336	336	338	329	325	325	325
Army Reserve	199	198	194	189	191	189	184	176	177	175	176
Marine Corps Reserve	39	38	39	38	38	36	35	33	33	34	33
Navy Reserve	57	58	58	59	60	59	58	55	55	57	58
Total	**819**	**812**	**810**	**797**	**801**	**796**	**794**	**769**	**768**	**769**	**766**
Appropriated-Fund Civilian Full-time Equivalents											
DAF	166	167	167	170	172	170	173	177	177	178	175
Army	206	195	191	189	190	251	250	218	228	185	184
Navy/Marine Corps	199	204	206	209	218	220	205	217	217	215	218
Defense Agencies	187	189	191	193	216	114	114	156	156	217	218
Total	**758**	**755**	**756**	**761**	**796**	**755**	**762**	**779**	**779**	**795**	**795**

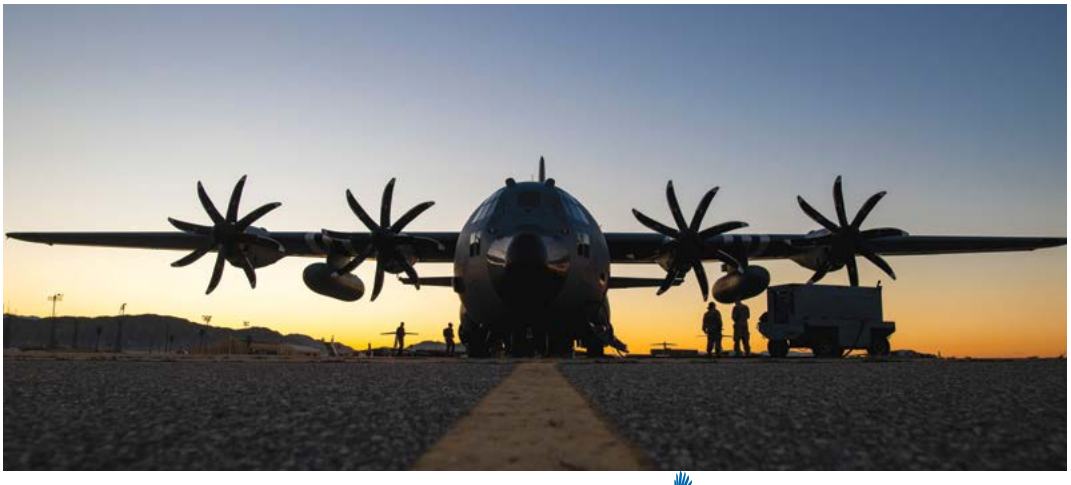
*Estimate based on prior year.
Source: National Defense Budget Estimates for Fiscal Year 2024; Number of Military and DoD Appropriated Fund (APF) Civilian Personnel

DOD ACTIVE DUTY BY ENLISTED/OFFICER AND SEX

(As of Sept. 30, 2023)

	DOD		DAF		ARMY		MARINE CORPS		NAVY		SPACE FORCE	
		%		%		%		%		%		%
CADET/MIDSHIPMAN												
Female	3,506	27.1	1,203	29.7	997	22.1	n/a	n/a	1,306	29.8	n/a	n/a
Male	9,442	72.9	2,847	70.3	3,513	77.9	n/a	n/a	3,082	70.2	n/a	n/a
ENLISTED												
Female	177,989	17.1	53,145	20.9	52,819	14.8	14,592	9.6	56,605	20.8	828	18.6
Male	860,838	82.9	200,759	79.1	303,652	85.2	136,740	90.4	216,060	79.2	3,627	81.4
OFFICER												
Female	47,088	20.1	14,609	24.1	17,678	19.1	2,171	10.2	11,771	21.3	859	19.4
Male	187,164	79.9	46,135	75.9	74,892	80.9	19,074	89.8	43,498	78.7	3,565	80.6
TOTAL ACTIVE DUTY	**1,286,027**		**318,698**		**453,551**		**172,577**		**332,322**		**8,879**	

Sources: Defense Manpower Data Center, Active Duty Military Personnel by Rank/Grade and Service; and Table of Active Duty Females by Rank/Grade and Service



Airman 1st Class Ivy Thomas/ANG

A C-130H Hercules, assigned to the 120th Airlift Wing, sits on the flight line during Agile Flag 24-1, an Agile Combat Employment exercise, at March Air Reserve Base, Calif., in January.

DOD MILITARY DEMOGRAPHICS BY SERVICE

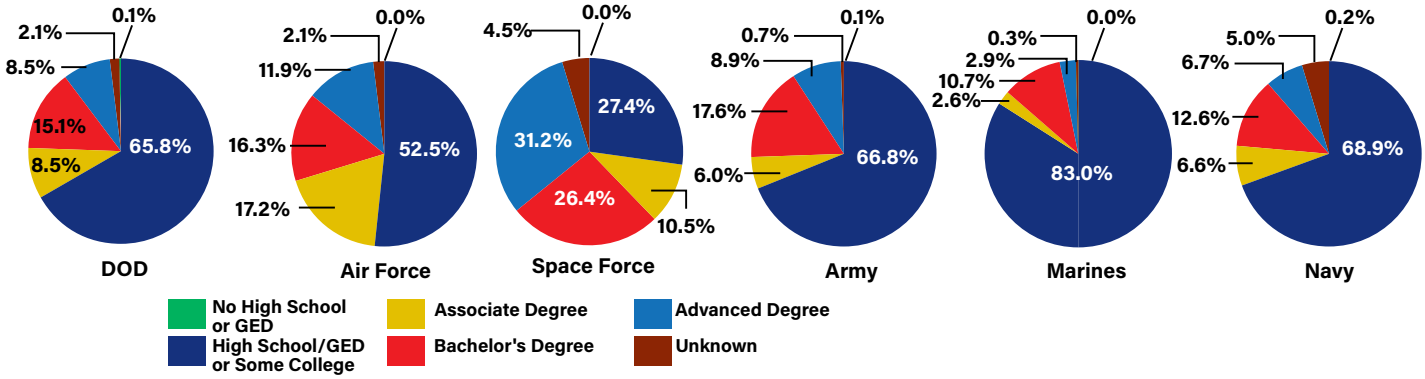
(As of Sept. 2023)

	DOD		AIR FORCE		SPACE FORCE		ARMY		MARINE CORPS		NAVY	
TOTAL	**1,304,720**	**100**	**320,421**	**24.6**	**8,000**	**0.6**	**461,657**	**35.4**	**340,065**	**26.1**	**174,577**	**13.4**
HIGHEST EDUCATIONAL ACHIEVEMENT		%		%		%		%		%		%
No High School Diploma or GED	1,070	0.1	74	0.0	0	0.0	371	0.1	557	0.2	68	0.0
High School Diploma/GED or Some College	858,697	65.8	168,252	52.5	2,194	27.4	308,220	66.8	234,229	68.9	145,802	83.5
Associate Degree	110,652	8.5	55,210	17.2	838	10.5	27,533	6.0	22,608	6.6	4,463	2.6
Bachelor's Degree	196,850	15.1	52,122	16.3	2,112	26.4	81,041	17.6	42,886	12.6	18,689	10.7
Advanced Degree	109,464	8.4	38,047	11.9	2,496	31.2	41,181	8.9	22,726	6.7	5,014	2.9
Unknown	27,987	2.1	6,716	2.1	360	4.5	3,311	0.7	17,059	5.0	541	0.3
ETHNICITY												
Hispanic or Latino	240,594	18.4	53,587	16.7	1,115	13.9	80,976	17.5	59,702	17.6	45,214	25.9
Not Hispanic or Latino	1,064,126	81.6	266,834	83.3	6,885	86.1	380,681	82.5	280,363	82.4	129,363	74.1
MARITAL STATUS												
Divorced	63,767	45	19,518	6.1	2,837	35.5	193,537	41.9	161,367	47.5	100,342	57.5
Married	651,603	49.9	171,253	53.4	4,802	60.0	242,927	52.6	163,700	48.1	68,921	39.5
Never Married	587,522	4.9	129,439	40.4	352	4.4	24,601	5.3	14,061	4.1	5,235	3.0
Other*	1,828	0.1	211	0.1	9	0.1	592	0.1	937	0.3	79	0.0
RACE												
American Indian or Alaska Native	14,059	1.1	2,545	0.8	60	0.8	3,409	0.7	5,897	1.7	2,148	1.2
Asian	67,454	5.2	15,091	4.7	533	6.7	24,697	5.3	20,896	6.1	6,237	3.6
Black or African American	226,293	17.3	48,580	15.2	671	8.4	97,472	21.1	60,431	17.8	19,139	11.0
Native Hawaiian or Other Pacific Islander	15,737	1.2	4,061	1.3	74	0.9	5,584	1.2	4,106	1.2	1,912	1.1
Multi-racial**	40,961	3.1	15,986	5.0	478	6.0	n/a	n/a	21,818	6.4	2,679	1.5
White	897,340	68.8	223,473	69.7	5,823	72.8	313,738	68.0	214,194	63.0	140,112	80.3
Other/Unknown	42,876	3.3	10,685	3.3	361	4.5	16,757	3.6	12,723	3.7	2,350	1.3
SEX												
Female	228,966	17.5	68,803	21.5	6,466	19.2	71,836	15.6	70,353	20.7	16,440	9.4
Male	1,075,753	82.5	251,618	78.5	1,534	80.8	389,820	84.4	269,712	79.3	158,137	90.6

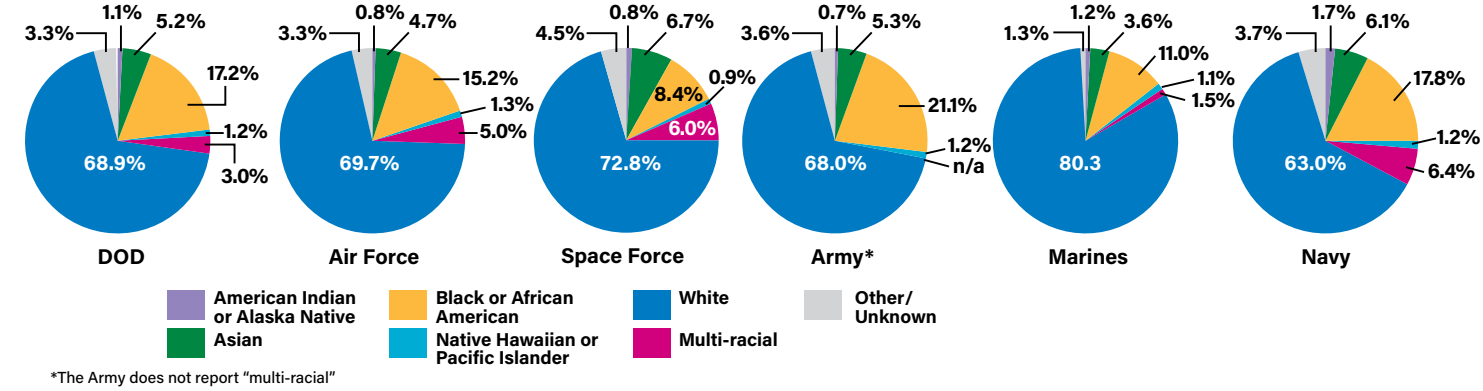
*Includes annulled, widowed, and unknown.
**The Army does not report "Multi-racial."
***One Army member categorized as "unknown."
Source: 2022 Demographics Profile of the Military Community

DOD MILITARY DEMOGRAPHICS BY SERVICE

Education



Race



*The Army does not report "multi-racial"
Source: 2022 Demographics Profile of the Military Community

PAY & ALLOWANCES

ANNUAL MILITARY BASIC PAY

(Effective Jan. 1, 2024)

GRADE	2	3	4	6	8	10	12	14	16	18	20	22	24	26	28	30
COMMISSIONED OFFICERS																
O-10	—	—	—	—	—	—	—	—	—	—	221,904	221,904	221,904	221,904	221,904	221,904
O-9	—	—	—	—	—	—	—	—	—	—	217,152	220,284	221,904	221,904	221,904	221,904
O-8	158,688	162,024	162,948	167,124	174,084	175,704	182,316	184,212	189,912	198,156	205,572	201,828	201,828	201,828	201,828	216,096
O-7	133,596	136,344	138,528	142,476	146,376	150,888	155,388	159,900	174,084	186,048	186,048	186,048	186,048	187,008	187,008	190,752
O-6	106,356	113,340	113,340	113,772	118,644	119,292	119,292	126,072	138,060	145,092	152,124	156,132	160,188	168,036	168,036	171,384
O-5	90,924	97,212	98,400	102,324	104,676	109,836	113,640	1,118,536	126,024	129,588	133,116	137,124	137,124	137,124	137,124	137,124
O-4	80,604	85,992	87,180	92,184	97,536	104,208	109,392	113,004	115,080	116,268	116,268	116,268	116,268	116,268	116,268	116,268
O-3	69,408	74,904	81,672	85,596	89,892	92,664	97,224	99,612	99,612	99,612	99,612	99,612	99,612	99,612	99,612	99,612
O-2	60,252	69,396	71,736	73,212	73,212	73,212	73,212	73,212	73,212	73,212	73,212	73,212	73,212	73,212	73,212	73,212
O-1	47,796	57,780	57,780	57,780	57,780	57,780	57,780	57,780	57,780	57,780	57,780	57,780	57,780	57,780	57,780	57,780
COMMISSIONED OFFICERS WITH OVER 4 YEARS ACTIVE DUTY SERVICE OR MORE THAN 1,460 RESERVE POINTS AS AN ENLISTED MEMBER OR WARRANT OFFICER																
O-3E	—	—	81,672	85,596	89,892	92,664	97,224	101,076	103,296	106,308	106,308	106,308	106,308	106,308	106,308	106,308
O-2E	—	—	71,736	73,212	75,540	79,476	82,524	84,780	84,780	84,780	84,780	84,780	84,780	84,780	84,780	84,780
O-1E	—	—	57,780	61,692	63,972	66,312	68,604	71,736	71,736	71,736	71,736	71,736	71,736	71,736	71,736	71,736
WARRANT OFFICERS																
W-5	—	—	—	—	—	—	—	—	—	—	112,512	118,212	122,472	127,164	127,164	133,536
W-4	68,064	70,008	71,940	75,252	78,528	81,480	86,820	91,200	95,364	98,772	102,096	106,980	110,988	115,560	115,560	117,864
W-3	60,192	62,664	63,468	66,048	71,148	76,452	78,948	81,840	84,804	90,168	93,780	95,940	98,232	101,364	101,364	101,364
W-2	55,968	57,456	58,476	61,788	66,948	69,504	72,012	75,084	77,496	79,668	82,272	83,988	84,344	84,344	84,344	84,344
W-1	49,716	51,012	53,760	57,000	61,776	64,008	67,140	70,212	72,624	74,856	77,556	77,556	77,556	77,556	77,556	77,556
ENLISTED MEMBERS																
E-9	—	—	—	—	—	76,452	78,180	80,364	82,932	85,524	89,664	93,180	96,876	102,528	102,528	107,640
E-8	—	—	—	—	62,580	65,352	67,056	69,108	71,340	75,348	77,388	80,844	82,764	87,492	87,492	89,244
E-7	47,472	49,296	51,696	53,592	56,820	58,632	61,860	64,548	66,384	68,340	69,096	71,640	72,996	78,192	78,192	78,192
E-6	41,412	43,236	45,012	46,860	51,036	52,656	55,800	56,760	57,456	58,272	58,272	58,272	58,272	58,272	58,272	58,272
E-5	36,792	38,568	40,392	43,224	46,188	48,624	48,912	48,912	48,912	48,912	48,912	48,912	48,912	48,912	48,912	48,912
E-4	33,216	35,016	36,792	38,364	38,364	38,364	38,364	38,364	38,364	38,364	38,364	38,364	38,364	38,364	38,364	38,364
E-3	30,324	32,160	32,160	32,160	32,160	32,160	32,160	32,160	32,160	32,160	32,160	32,160	32,160	32,160	32,160	32,160
E-2	27,132	27,132	27,132	27,132	27,132	27,132	27,132	27,132	27,132	27,132	27,132	27,132	27,132	27,132	27,132	27,132
E-1 >4 mos	24,204	24,204	24,204	24,204	24,204	24,204	24,204	24,204	24,204	24,204	24,204	24,204	24,204	24,204	24,204	24,204

NOTE: Basic pay for an O-7 to O-10 is limited by Level II of the Executive Schedule in effect during Calendar Year 2024, which is $18,492.
NOTE: Basic pay for O-6 and below is limited by Level V of the Executive Schedule in effect during Calendar Year 2024, which is $15,000.
Source: Modified from the Defense Finance and Accounting Service's Monthly Military Basic Pay.

ANNUAL PAY FOR FEDERAL CIVILIANS

(Effective Jan. 1, 2024)

GRADE	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	STEP 7	STEP 8	STEP 9	STEP 10	WITHIN GRADE AMOUNTS
GS-1	$21,986	$22,724	$23,454	$24,183	$24,912	$25,339	$26,063	$26,792	$26,821	$27,502	varies
GS-2	24,722	25,310	26,129	26,821	27,124	27,922	28,720	29,518	30,316	31,114	varies
GS-3	26,975	27,874	28,773	29,672	30,571	31,470	32,369	33,268	34,167	35,066	899
GS-4	30,280	31,289	32,298	33,307	34,316	35,325	36,334	37,343	38,352	39,361	1,009
GS-5	33,878	35,007	36,136	37,265	38,394	39,523	40,652	41,781	42,910	44,039	1,129
GS-6	37,765	39,024	40,283	41,542	42,801	44,060	45,319	46,578	47,837	49,096	1,259
GS-7	41,966	43,365	44,764	46,163	47,562	48,961	50,360	51,759	53,158	54,557	1,399
GS-8	46,475	48,024	49,573	51,122	52,671	54,220	55,769	57,318	58,867	60,416	1,549
GS-9	51,332	53,043	54,754	56,465	58,176	59,887	61,598	63,309	65,020	66,731	1,711
GS-10	56,528	58,412	60,296	62,180	64,064	65,948	67,832	69,716	71,600	73,484	1,884
GS-11	62,107	64,177	66,247	68,317	70,387	72,457	74,527	76,597	78,667	80,737	2,070
GS-12	74,441	76,922	79,403	81,884	84,365	86,846	89,327	91,808	94,289	96,770	2,481
GS-13	88,520	91,471	94,422	97,373	100,324	103,275	106,226	109,177	112,128	115,079	2,951
GS-14	104,604	108,091	111,578	115,065	118,552	122,039	125,526	129,013	132,500	135,987	3,487
GS-15	123,041	127,142	131,243	135,344	139,445	143,546	147,647	151,748	155,849	159,950	4,101

Does not include locality pay assigned by geographic area, such as 21.21% for Dayton, Ohio, and 33.26% for Washington, D.C.
Source: Office of Personnel Management

SENIOR EXECUTIVE SERVICE PAY

(Effective Jan. 1, 2023)

SES Pay System Structure	Minimum	Maximum
Certified SES performance appraisal system	$147,649	$221,900
Noncertified SES performance appraisal system	$147,649	$204,000

The Further Consolidated Appropriations Act, 2024 (Public Law 118-47, March 23, 2024), continues the freeze on the payable pay rates for the Vice President and certain senior political appointees during Calendar Year 2024. Unless extended by new legislation, the pay freeze will end on the last day of the last pay period that begins in Calendar Year 2024 (i.e., Jan. 11, 2025, for those on the standard biweekly payroll cycle).

What Goes Into Military Pay

Many factors go into military compensation, from paygrade (responsibility) and time in service (experience) to job skills and incentives. How two notional service members' compensation breaks down:

O-4 (Major)	PAY GRADE	E-4 (Specialist)
11FX (Fighter Pilot)	Military occupational specialty (MOS)	5I1A (Imagery Analyst)
15	Years in service	Over 4
Joint Base Andrews, Md.	Duty Station	Peterson Space Force Base, Colo.
Yes	Dependents	No
$9,416	Basic Pay	$3,066
$1,000	Aviation Incentive Pay (maximum assuming sufficient flight hours)	N/A
$4,056	Basic Allowance for Housing	$1,638
$316.98	Basic Allowance for Subsistence	$460.25
$14,788.98	Monthly total	$5,146.25
$177,468	Annualized total	$61,755

(ILLUSTRATION) A composite image to create a generic U.S. Air Force pilot.

Mike Tsukamoto/staff; William Lewis/USAF; Pixabay

A composite image to create a generic U.S. Space Force Guardian E-4 rank.

Mike Tsukamoto/staff; Airman 1st Class Joshua Hollis/USSF; Pixabay

Graphic by Dash Parham/staff

AVIATION INCENTIVE PAY

(Effective since Oct. 1, 2017)

Years of Service as Aviation Officer	Monthly Rate
Two or fewer	$150
More than two	$250
More than six	$700
More than 10	$1,000
More than 22	$700
More than 24	$450

Years of Service as Aviation Enlisted	Monthly Rate
Four of fewer	$225
More than four	$350
More than eight	$500
More than 14	$600

Source: Defense Finance and Accounting Service

HAZARDOUS DUTY INCENTIVE PAY

(Effective since Jan. 1, 2017)

Duty	Rate per month
Aircrew Members	$250
Parachute Duty, Static Line	$150
Parachute Duty, Military Free Fall	$225
Flight Deck Duty	$150
Demolition Duty	$150
Experimental Stress Duty	$150
Toxic Fuels (or Propellants) Duty	$150
Toxic Pesticides Duty	$150
Dangerous Viruses (or Bacteria) Lab Duty	$150
Chemical Munitions Duty	$150
Maritime Visit, Board, Search, Seizure (VBSS) Duty	$150
Polar Region Flight Operations Duty	$150
Weapons of Mass Destruction Civil Support (WMDCS) Team	$150

Source: Defense Finance and Accounting Service

2nd Lt. Ben Williams

A U.S. Air Force 820th Base Defense Group Airman jumps out of an HC-130J Combat King II during static-line parachute currency training above Tifton, Georgia, in August 2023.

Air Dominance

Next Generation Air Crew Headsets

David Clark Company has been a leading supplier of aviation headsets for the US Armed Forces and military aviators worldwide for decades. These purpose-built air crew headsets are designed to match the impedance and connectivity requirements for a variety of military aircraft. Offering lightweight comfort, excellent active noise reduction performance and “David Clark durability”. For more information call **1-800-298-6235** or visit **www.davidclark.com**.

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RANK INSIGNIA OF THE ARMED FORCES

Air Force Officer		Air Force Enlisted		Space Force Officer		Space Force Enlisted		Army						Navy & Coast Guard						Marine Corps					
O-1	Second Lieutenant	E-1	Airman Basic No insignia	O-1	Second Lieutenant	E-1	Specialist 1	O-1	2nd Lieutenant	W-1	Warrant Officer 1	E-1	Private	O-1	Ensign	W-1	USN Warrant Officer 1	E-1	Seaman Recruit	O-1	2nd Lieutenant	W-1	Warrant Officer 1	E-1	Private
O-2	First Lieutenant	E-2	Airman	O-2	First Lieutenant	E-2	Specialist 2	O-2	1st Lieutenant	W-2	Warrant Officer 2	E-2	Private E-2	O-2	Lieutenant Junior Grade	W-2	USN Chief Warrant Officer 2	E-2	Seaman Apprentice	O-2	1st Lieutenant	W-2	Chief Warrant Officer 2	E-2	Private First Class
O-3	Captain	E-3	Airman First Class	O-3	Captain	E-3	Specialist 3	O-3	Captain	W-3	Warrant Officer 3	E-3	Private First Class	O-3	Lieutenant	W-3	USN Chief Warrant Officer 3	E-3	Seaman	O-3	Captain	W-3	Chief Warrant Officer 3	E-3	Lance Corporal
O-4	Major	E-4	Senior Airman	O-4	Major	E-4	Specialist 4	O-4	Major	W-4	Warrant Officer 4	E-4	Corporal / Specialist	O-4	Lieutenant Commander	W-4	USN Chief Warrant Officer 4	E-4	Petty Officer Third Class	O-4	Major	W-4	Chief Warrant Officer 4	E-4	Corporal
O-5	Lieutenant Colonel	E-5	Staff Sergeant	O-5	Lieutenant Colonel	E-5	Sergeant	O-5	Lieutenant Colonel	W-5	Warrant Officer 5	E-5	Sergeant	O-5	Commander	W-5	USN Chief Warrant Officer 5	E-5	Petty Officer Second Class	O-5	Lieutenant Colonel	W-5	Chief Warrant Officer 5	E-5	Sergeant
O-6	Colonel	E-6	Technical Sergeant	O-6	Colonel	E-6	Technical Sergeant	O-6	Colonel			E-6	Staff Sergeant	O-6	Captain			E-6	Petty Officer First Class	O-6	Colonel			E-6	Staff Sergeant
O-7	Brigadier General	E-7	Master Sergeant / First Sergeant	O-7	Brigadier General	E-7	Master Sergeant	O-7	Brigadier General			E-7	Sergeant First Class	O-7	Rear Admiral Lower Half			E-7	Chief Petty Officer	O-7	Brigadier General			E-7	Gunnery sergeant
O-8	Major General	E-8	Senior Master Sergeant / First Sergeant	O-8	Major General	E-8	Senior Master Sergeant	O-8	Major General			E-8	Master Sergeant / First Sergeant	O-8	Rear Admiral Upper Half			E-8	Senior Chief Petty Officer	O-8	Major General			E-8	Master Sergeant / First Sergeant
O-9	Lieutenant General	E-9	Chief Master Sergeant / First Sergeant / Command Chief Master Sergeant	O-9	Lieutenant General	E-9	Chief Master Sergeant	O-9	Lieutenant General			E-9	Sergeant Major / Command Sergeant Major	O-9	Vice Admiral			E-9	Master Chief Petty Officer / Fleet/ Command Master Chief Petty Officer	O-9	Lieutenant General			E-9	Master Gunnery Sergeant / Sergeant Major
O-10	General	CMSAF	Chief Master Sergeant of the Air Force	O-10	General	CMSSF	Chief Master Sergeant of the Space Force	O-10	General / General of the Army (Reserved for wartime only)	SMA	Sergeant Major of the Army			O-10	Admiral / Fleet Admiral (Reserved for wartime only)	MCPON	Master Chief Petty Officer of the Navy and Coast Guard			O-10	General	SMMC	Sergeant Major of the Marine Corps		

AWARDS AND DECORATIONS

Shown in order of precedence.


Medal of Honor (AF)


Air Force Cross


Defense Distinguished Service Medal


Distinguished Service Medal (AF)


Silver Star


Defense Superior Service Medal


Legion of Merit


Distinguished Flying Cross


Airman's Medal


Bronze Star Medal


Purple Heart


Defense Meritorious Service Medal


Meritorious Service Medal (AF)


Air Medal


Aerial Achievement Medal


Joint Service Commendation Medal


Air Force Commendation Medal


Joint Service Achievement Medal


Air Force Achievement Medal


Air Force Combat Action Medal


Presidential Unit Citation (AF)

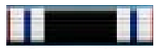

Joint Meritorious Unit Award


Gallant Unit Citation


Meritorious Unit Award


Air and Space Outstanding Unit Award


Air and Space Organizational Excellence Award


Prisoner of War Medal


Combat Readiness Medal


Air Force Good Conduct Medal


Army Good Conduct Medal


Space Force Good Conduct Medal

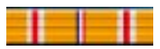

Air Reserve Forces Meritorious Service Medal


Outstanding Airman of the Year Ribbon


Air and Space Recognition Ribbon


American Defense Service Medal


American Campaign Medal


Asiatic-Pacific Campaign Medal


European-African-Middle Eastern Campaign Medal


World War II Victory Medal


Army of Occupation Medal

Medal for Humane Action

National Defense Service Medal

Korean Service Medal

Antarctica Service Medal

Armed Forces Expeditionary Medal

Vietnam Service Medal

Southwest Asia Service Medal

Kosovo Campaign Medal

Afghanistan Campaign Medal

Iraq Campaign Medal

Inherent Resolve Campaign Medal

Global War on Terrorism Expeditionary Medal

Global War on Terrorism Service Medal

Korean Defense Service Medal

Armed Forces Service Medal

Humanitarian Service Medal

Military Outstanding Volunteer Service Medal

Remote Combat Effects Ribbon

Air and Space Campaign Medal

Nuclear Deterrence Operations Service Medal

Air and Space Overseas Ribbon-Long

Air and Space Overseas Ribbon-Short

Air and Space Expeditionary Service Ribbon

Air and Space Longevity Service Award Ribbon

Developmental Special Duty Ribbon

Air Force Basic Military Training Instructor Ribbon

Air Force Recruiter Ribbon

Armed Forces Reserve Medal

USAF NCO PME Graduate Ribbon

Basic Military Training Honor Graduate Ribbon

Continued from previous page

Small Arms Expert Marksmanship Ribbon

Philippine Defense Ribbon

Air and Space Training Ribbon

Philippine Independence Ribbon

Philippine Liberation Ribbon

ROK Presidential Unit Citation

Philippine Presidential Unit Citation

United Nations Service Medal

RVN Gallantry Cross with Palm

NATO Meritorious Service Medal

United Nations Medal

NATO Medal for Kosovo

NATO Medal for Yugoslavia

Article 5 NATO Medal-Active Endeavor

Article 5 NATO Medal-Eagle Assist

Non-Article 5 NATO Medal-ISAF*

Non-Article 5 NATO Medal-Balkans

Kuwait Liberation Medal, Kingdom of Saudi Arabia

Republic of Vietnam Campaign Medal

Republic of Korea Korean War Service Medal

Kuwait Liberation Medal, Government of Kuwait

*International Security Assistance Force

Devices

Bronze Star

For number of campaigns or operations, multiple qualifications, or an additional award of an authorized ribbon.

Silver Star

One silver star is worn in lieu of five bronze service stars.

Silver and Bronze Stars

When worn together on a single ribbon, silver stars are worn to wearer's right of a bronze star.

Bronze Oak Leaf Cluster

For second and subsequent awards.

Silver Oak Leaf Cluster

For sixth, 11th, etc., entitlements or in lieu of five bronze OLCs.

Silver and Bronze OLCs

Silver OLCs are worn to the wearer's right of the bronze OLCs on the same ribbon.

Valor Device

Denotes heroism above what is normally expected while engaged in direct combat with an enemy of the U.S., or an opposing foreign or armed force, with exposure to enemy hostilities and personal risk; not an additional award; only one per ribbon; worn to the wearer's right of OLCs on the same ribbon.

Arrowhead Device

Shows participation in assigned tactical combat parachute, glider, or amphibious assault landing; worn on campaign medals, Korean Service Medal, and Armed Forces and GWOT Expeditionary medals.

Combat Device

Denotes meritorious service or achievement performed under combat conditions.

Remote Device

Denotes hands-on employment of a weapons system, performed remotely without personal physical combat risk that had a direct and immediate effects on the outcome of an engagement or specific effects on a target.

Hourglass Device

Issued for the Armed Forces Reserve Medal in bronze for 10 years of service, silver for 20, and gold for 30.

Arctic Device

Worn on Air Force Overseas Ribbon-Short for service north of Arctic Circle; one per ribbon; worn to the wearer's right of OLCs.

Mobility Device

Worn with the Armed Forces Reserve Medal to denote Active Duty status for at least one day during a contingency; here with number of mobilizations.

Nuclear Device

Worn on the Nuclear Deterrence Operations Service Medal to indicate direct support.

Wintered Over Device

Worn on Antarctica Service Medal to denote staying on the Antarctic continent over the winter—bronze for one; gold, two; silver, three.

Plane Device

Worn on Army of Occupation Medal for 90 consecutive days in direct support of the Berlin Airlift, June 26, 1948, to Sept. 30, 1949.

USAF Specialty Berets

Airmen in seven USAF specialties are authorized to wear a colored beret along with the insignia of that particular field.

Combat Controller/ Special Tactics Officer

Pararescue/Combat Rescue Officer

Security Forces

Survival, Evasion, Resistance, and Escape

Tactical Air Command and Control

(Tactical Air Control Party crest)

Air Liaison Officer

(TACP flash and rank)

Weather Parachutist

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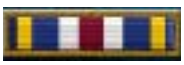
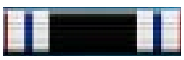

Joint Meritorious Unit Award


Gallant Unit Citation


Meritorious Unit Award


Air and Space Outstanding Unit Award


Air and Space Organizational Excellence Award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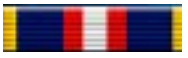
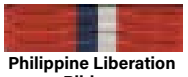


Philippine Independence Ribbon



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United Nations Service Medal

RVN Gallantry Cross with Palm

NATO Meritorious Service Medal

United Nations Medal

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For sixth, 11th, etc., entitlements or in lieu of five bronze OLCs.

Silver and Bronze OLCs

Silver OLCs are worn to the wearer's right of the bronze OLCs on the same ribbon.

Valor Device

Denotes heroism above what is normally expected while engaged in direct combat with an enemy of the U.S., or an opposing foreign or armed force, with exposure to enemy hostilities and personal risk; not an additional award; only one per ribbon; worn to the wearer's right of OLCs on the same ribbon.

Arrowhead Device

Shows participation in assigned tactical combat parachute, glider, or amphibious assault landing; worn on campaign medals, Korean Service Medal, and Armed Forces and GWOT Expeditionary medals.

Combat Device

Denotes meritorious service or achievement performed under combat conditions.

Remote Device

Denotes hands-on employment of a weapons system, performed remotely without personal physical combat risk that had a direct and immediate effects on the outcome of an engagement or specific effects on a target.

Hourglass Device

Issued for the Armed Forces Reserve Medal in bronze for 10 years of service, silver for 20, and gold for 30.

Arctic Device

Worn on Air Force Overseas Ribbon-Short for service north of Arctic Circle; one per ribbon; worn to the wearer's right of OLCs.

Mobility Device

Worn with the Armed Forces Reserve Medal to denote Active Duty status for at least one day during a contingency; here with number of mobilizations.

Nuclear Device

Worn on the Nuclear Deterrence Operations Service Medal to indicate direct support.

Wintered Over Device

Worn on Antarctica Service Medal to denote staying on the Antarctic continent over the winter—bronze for one; gold, two; silver, three.

Plane Device

Worn on Army of Occupation Medal for 90 consecutive days in direct support of the Berlin Airlift, June 26, 1948, to Sept. 30, 1949.

USAF Specialty Berets

Airmen in seven USAF specialties are authorized to wear a colored beret along with the insignia of that particular field.

Combat Controller/ Special Tactics Officer

Pararescue/Combat Rescue Officer

Security Forces

Survival, Evasion, Resistance, and Escape

Tactical Air Command and Control
(Tactical Air Control Party crest)

Air Liaison Officer
(TACP flash and rank)

Weather Parachutist

SPENDING

Joshua McClanahan/USAF

The first T-7A Red Hawk, piloted by USAF test pilot Maj. Jonathan "Gremlin" Aronoff and Boeing test pilot Steve "Bull" Schmidt, soars over Edwards Air Force Base, Calif., Nov. 8, 2023. The T-7A will replace the 1960s-era T-38, providing advanced pilot training capabilities.

Each year, the President submits a budget request to Congress. Congress can add to or subtract from that request, and does, on an item-by-item basis. After debate, which takes months, Congress must pass both an Authorization bill that directs the President's spending and an Appropriation bill to fund those programs. The Defense Department Budget rolls up the total spending by each military department—the Departments of the Air Force (which also includes the Space Force), the Navy (which also includes the Marine Corps), and the Army. Budget figures sometimes disagree, either because of rounding or because of different approaches to financial reporting. Variations appearing among the tables on the following pages are due to one or the other factor.

DOD BUDGET AUTHORITY

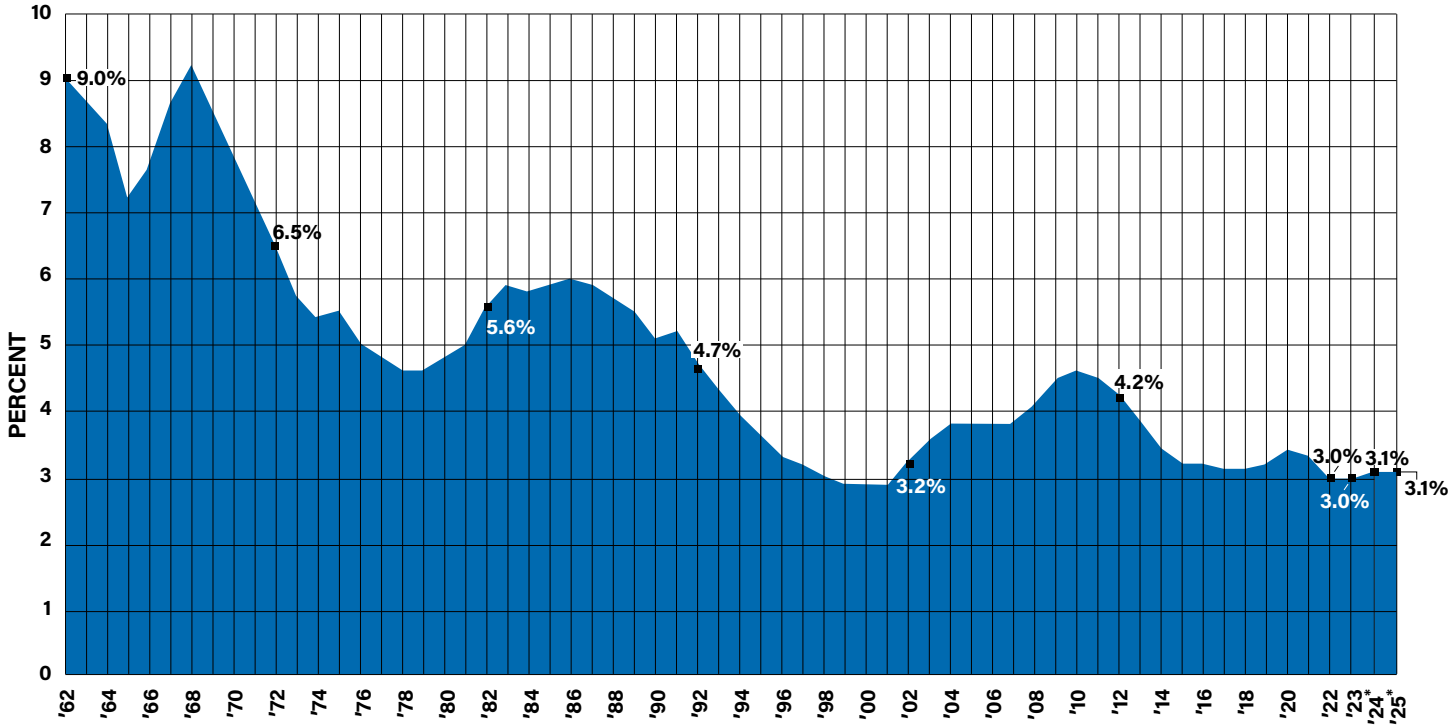
($ billions)

	2018	2019	2020	2021	2022	2023	2024	2025*
Base Budget	$600.0	$616.0	$633.0	$703.7	$742.2	$815.9	$817.3	$849.80
With Supplementals	671.0	688.0	723.0	704.7	776.6	851.7	875.6	n/a

*The government was funded by a continuing resolution for fiscal 2024 at the time the White House released the 2025 budget with the most recent figures.
*Requested
Source: Budget of the U.S. Government, Fiscal Year 2025

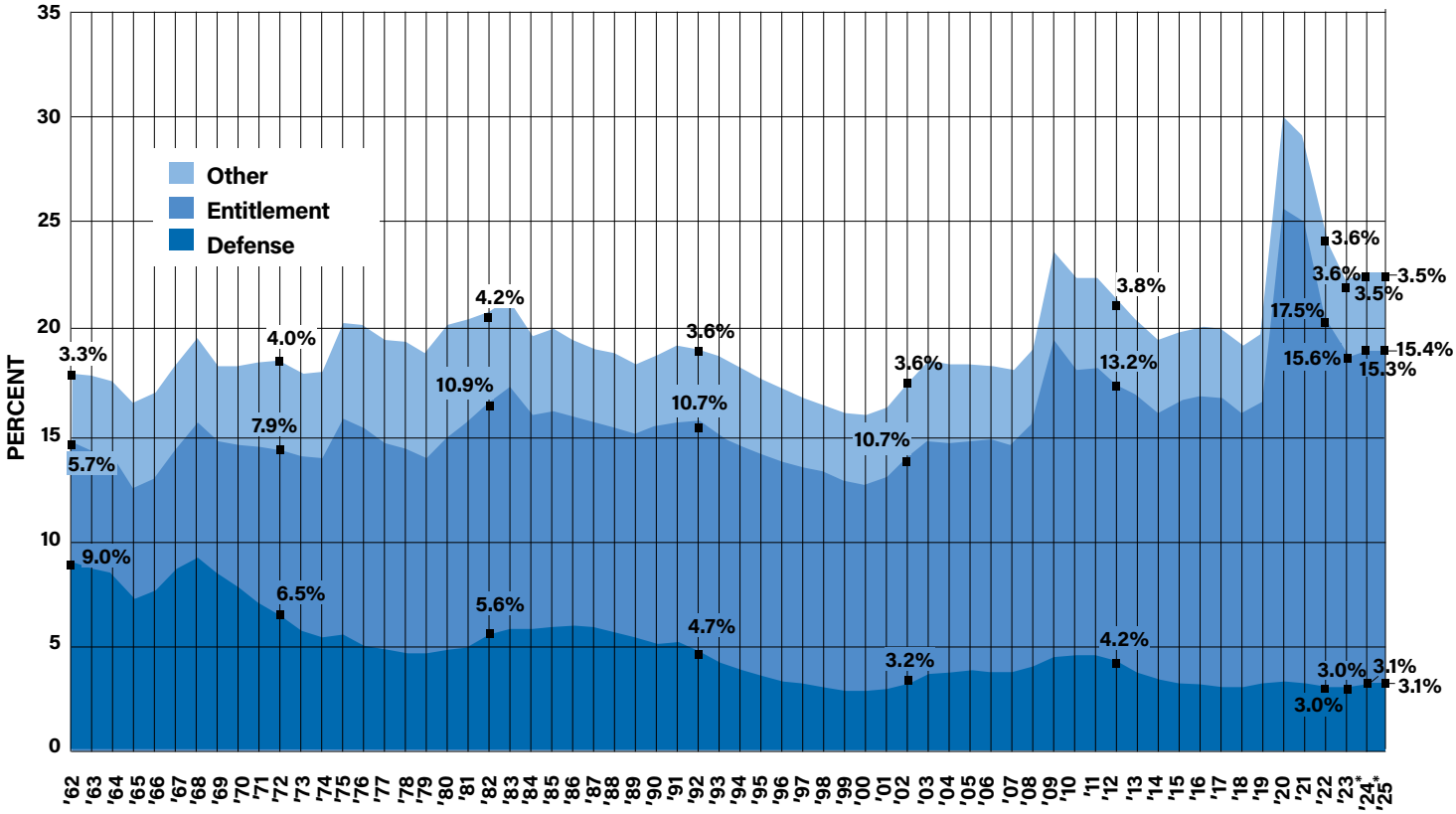
DOD SPENDING AS PERCENTAGE OF GDP

Percent by Fiscal Year



*Based on estimate. Source: Budget of the U.S. Government, Fiscal Year 2025, Historical Tables

FEDERAL SPENDING AS A PERCENTAGE OF GDP



*Based on estimates. Source: Budget of the U.S. Government, Fiscal Year 2025, Historical Tables

FEDERAL SPENDING AS PERCENTAGE OF GROSS DOMESTIC PRODUCT (GDP)

Year	Defense	Entitlements	Other
1962	9.0	5.7	3.3
1963	8.7	5.5	3.5
1964	8.3	5.6	3.6
1965	7.2	5.3	3.8
1966	7.6	5.3	4
1967	8.6	5.7	4.1
1968	9.2	6.4	4
1969	8.4	6.3	3.5
1970	7.8	6.7	3.7
1971	7.1	7.4	3.9
1972	6.5	7.9	4
1973	5.7	8.2	3.9
1974	5.4	8.5	3.9
1975	5.5	10.3	4.4
1976	5.0	10.3	4.8
1977	4.8	9.7	4.9
1978	4.6	9.7	5
1979	4.6	9.3	4.8
1980	4.8	10.1	5.1
1981	5	10.5	4.8
1982	5.6	10.9	4.2
1983	5.9	11.3	4.1
1984	5.8	10	3.8
1985	5.9	10.2	3.8
1986	6.0	9.9	3.6
1987	5.9	9.7	3.4
1988	5.7	9.6	3.4
1989	5.5	9.5	3.3
1990	5.1	10.3	3.4
1991	5.2	10.4	3.5
1992	4.7	10.7	3.6
1993	4.3	10.5	3.7

Year	Defense	Entitlements	Other
1994	3.9	10.5	3.6
1995	3.6	10.4	3.6
1996	3.3	10.4	3.4
1997	3.2	10.2	3.3
1998	3.0	10.2	3.2
1999	2.9	9.9	3.1
2000	2.9	9.8	3.2
2001	2.9	10.0	3.3
2002	3.2	10.7	3.6
2003	3.6	11.0	3.7
2004	3.8	10.8	3.7
2005	3.8	10.8	3.7
2006	3.8	10.9	3.6
2007	3.8	10.7	3.5
2008	4.1	11.4	3.5
2009	4.5	15.1	4.0
2010	4.6	13.4	4.4
2011	4.5	13.7	4.2
2012	4.2	13.2	3.8
2013	3.8	12.7	3.5
2014	3.4	12.5	3.4
2015	3.2	13.3	3.3
2016	3.2	13.5	3.2
2017	3.1	13.5	3.1
2018	3.1	12.8	3.1
2019	3.2	13.3	3.1
2020	3.4	22.0	4.3
2021	3.3	21.6	3.9
2022	3.0	17.3	3.6
2023	3.0	14.4	3.4
2024 estimate	3.1	15.3	3.5
2025 estimate	3.1	15.4	3.5

Source: Budget of the U.S. Government, Fiscal Year 2025, Historical Tables

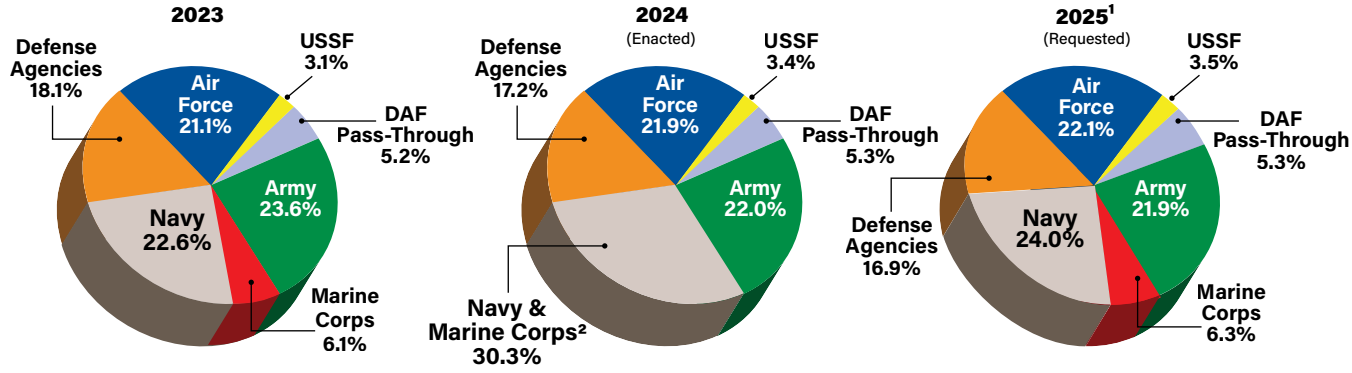
DOD BUDGET BY SERVICE, INCLUDING PASS-THROUGH

($ in millions)

	Enacted		Enacted		Requested	
	2023	%	2024	%	2025	%
Department of the Air Force	$249,897	29.3%	$256,953	30.6%	$262,642	30.9%
USAF	179.7*	21.1	184,371	21.9	188.1*	22.1
USSF	26.1*	3.1	28,696	3.4	29.4*	3.5
Pass-Through	43.9*	5.2	44,579	5.3	45.1*	5.3
Army	201,366	23.6	185,643	22.0	185,807	21.9
Department of the Navy	246,584	29.0	254,905	30.3	257,586	30.3
Navy	192,845	22.6	202,553**	***	203,869	24.0
Marine Corps	51,860	6.1	53,219**	***	53,717	6.3
Defense Agencies	153,858	18.1	144,824	17.2	143,735	16.9
Total	$851,706		842,326		$849,770	

May not add due to rounding.
*$ in billions
**Requested. The Department of the Navy had not separately published the enacted amounts for the Marine Corps and Navy by press time.
***The Department of the Navy had not separately published the enacted amounts for the Marine Corps and Navy by press time.
Sources: Defense Budget Overview, United States Department of Defense Fiscal Year 2025 Budget Request; Department of the Air Force and Department of the Navy FY 2025 budget documents; Department of the Air Force; and Department of Defense

DOD BUDGET SHARES: 2023 vs. 2024 vs. 2025



1—Requested. The Department of the Navy had not separately published the enacted amounts for the Marine Corps and Navy by press time.
2—The Department of the Navy had not separately published the enacted amounts for the Marine Corps and Navy by press time.

DOD BUDGET SHARES BY MILITARY DEPARTMENT

($ millions)

									Enacted	Requested
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
DAF*	$164,009	$171,457	$190,359	$196,066	$206,691	$204,574	$223,553	$249,897	$256,953	$262,642
%	27.9	28.1	28.3	28.3	29.0	29.0	28.8	29.3	30.5	30.9
Army	$151,296	$159,018	$178,260	$181,166	$184,195	$174,040	$183,512	$201,366	$185,643	$185,807
%	25.7	26.1	26.5	26.1	26.2	24.7	23.6	23.6	22.0	21.9
Navy/Marine Corps	$170,325	$174,058	$190,489	$197,778	$209,383	$206,936	$223,231	$246,584	$254,905	$257,586
%	28.97	28.57	28.31	28.54	29.8	29.4	28.7	29.0	30.3	30.3
Defense Agencies	$102,348	$104,754	$113,853	$117,991	$122,955	$119,184	$146,336	$153,858	$144,824	$143,735
%	17.4	17.2	16.9	17.00	17.5	16.9	18.8	18.1	17.2	16.9
Total	$587,978	$609,287	$672,960	$693,001	$723,224	$704,734	$776,632	$851,706	$842,326	$849,770

*Includes Pass-Through
Sources: Defense Budget Overview; United States Department of Defense Fiscal Year 2025 Budget Request; and Department of Defense.

DOD BUDGET BY SPENDING CATEGORY

Base budget; 2021 and later includes war funding; does not include Ukraine or disaster assistance; current $ in billions

									Enacted	Requested
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Military Personnel	$138.3	$139.0	$136.0	$144.7	$149.9	$162.8	$166.8	$174.0	$175.9	$181.9
O&M	247.8	258.1	199.7	231.4	237.2	283.6	294.5	318.5	326.8	337.9
Procurement	119.9	126.0	107.1	133.8	129.1	140.7	145.1	162.8	171.4	167.5
RDT&E	70.6	74.8	71.8	94.1	103.6	105.9	118.5	139.4	147.7	143.2
Military Construction	7.6	7.6	6.4	8.8	9.9	7.1	13.4	16.7	16.7	15.6
Family Housing	1.5	1.4	1.2	1.6	1.5	1.4	1.5	2.3	2.0	2.0
Revolving Funds & Other	2.3	2.3	1.5	1.9	2.3	2.1	2.3	2.2	1.8	1.7
Total	$588.0	$609.20	$523.70	$687.8	$633.3	$703.7	$742.2	$815.9	$842.3	$849.8

Source: National Defense Budget Estimates for FY 2025; and Department of Defense

DAF BUDGET BY SPENDING CATEGORY

Base budget in $ billions; includes war funding in 2021 and later; does not include Ukraine or emergency funding)

								Enacted	Requested
	2017	2018	2019	2020	2021	2022	2023	2024	2025
Military Personnel	$34.6	$34.7	$37.4	$39.4	$42.8	$44.4	$46.5	$47.7	$49.3
O&M	45.9	50.2	51.2	53.4	65.5	69.9	76.0	77.8	81.8
Procurement	38.1	41.7	43.2	43.3	47.8	49.5	58.1	61.0	59.5
RDT&E	27.3	28.9	40.6	45.3	46.2	52.8	61.4	65.8	67.8
Military Construction	2	2	2	2.4	1.3	3.5	4.6	4.0	3.6
Family Housing	0.3	0.3	0.4	0.4	0.4	0.4	0.6	0.6	0.5
Revolving and Management	0.1	0.1	0.1	0.2	0.4	0.5	0.1	0.1	0.1
Total	**$148**	**$158.2**	**$174.8**	**$184.5**	**$204.5**	**$221.0**	**$247.3**	**$257.0**	**$262.6**

						Enacted	Requested		
% Change	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Military Personnel	1.6	0.4	7.8%	5.3%	8.6%	3.7%	4.7%	2.6%	3.4%
O&M	3.3	9.3	2.1	4.3	22.7	6.7	8.7	2.4	5.1
Procurement	-6.9	9.5	3.5	0.2	10.4	3.6	17.4	5.0	-2.5
RDT&E	11.8	5.9	40.1	11.6	2	14.3	16.3	7.2	3.0
Military Construction	20.3	9.7	-10.6	20	45.8	169.2	31.4	-13.0	-10.0
Family Housing	-31.7	0	17.9	0.0	0.0	0.0	50.0	0.0	-16.7
Revolving and Management	1.6	4.7	16.4	100.0	100.0	25.0	-80.0	0.0	0.0
Total	**1.5**	**15.8**	**1.8%**	**5.5%**	**10.8%**	**8.1%**	**11.9%**	**3.9%**	

Sources: National Defense Budget Estimates for FY 2025 and earlier; and Department of Defense

DAF SPENDING VS. PASS-THROUGH

(Total Obligation Authority; $ in billions)

								Enacted	Requested
	2017	2018	2019	2020	2021	2022	2023	2024	2025
DAF	$136.6	$151.5	$156.8	$168.1	$168.2	$180.8	$205.8	$213.1	$217.5
Pass-Through	34.3	37.2	37.8	39.0	37.3	41.4	43.9	44.6	45.1
Total	**170.9**	**188.7**	**194.6**	**207.1**	**205.5**	**222.3**	**249.7**	**257.7**	**262.6**
Pass-Through %	**20.1%**	**19.7%**	**19.4%**	**18.8%**	**18.2%**	**18.6%**	**17.6%**	**17.30%**	**17.2%**

Sources: Department of the Air Force budget requests

EQUIPMENT

AIRCRAFT TOTAL ACTIVE INVENTORY (TAI)

(As of Sept. 30, 2023)

	ACTIVE	ANG	AFRC	TOTAL	AVG. AGE
BOMBERS (p. 111)					
B-1B Lancer	45	0	0	45	36.40
B-2A Spirit	20	0	0	20	27.75
B-52H Stratofortress	58	0	18	76	61.80
Total	**123**	**0**	**18**	**141**	**48.86**
FIGHTER/ATTACK (p. 113)					
A-10C Thunderbolt II	141	66	54	261	42.37
F-15C Eagle	29	116	0	145	29.09
F-15D Eagle	1	11	0	12	36.51
F-15E Strike Eagle	218	0	0	218	31.42
F-15EX	2	0	0	2	2.50
F-16C Fighting Falcon	418	258	50	726	32.85
F-16D Fighting Falcon	98	37	1	136	32.53
F-22A Raptor	165	20	0	185	18.01
F-35A Lightning II	380	28	0	408	4.92
Total	**1,452**	**536**	**105**	**2,093**	**26.84**
SPECIAL OPERATIONS FORCES (p. 117)					
AC-130J Ghostrider	30	0	0	30	5.23
CV-22B Osprey	52	0	0	52	10.84
MC-130H Combat Talon II	2	0	0	2	35.05
MC-130J Commando II	55	2	0	57	6.91
Total	**139**	**2**	**0**	**141**	**8.40**
C3/BM/ISR (p. 120)					
E-3B Sentry (AWACS)	1	0	0	1	52.00
E-3G Sentry (AWACS)	14	0	0	14	43.91
E-4B NAOC	4	0	0	4	49.38
E-9A	2	0	0	2	31
E-11A BACN	5	0	0	5	11.73
EC-130H Compass Call	6	0	0	6	49.02
EC-130J Commando Solo	0	5	0	5	23.46
MQ-1B Predator	1	0	0	1	19.80
MQ-9A Reaper	220	24	0	244	6.20
P-9A	4	0	0	4	7
RC-135S Cobra Ball	3	0	0	3	61.47
RC-135U Combat Sent	2	0	0	2	58.65
RC-135V Rivet Joint	8	0	0	8	58.94
RC-135W Rivet Joint	12	0	0	12	60.17
RQ-4B Global Hawk	9	0	0	9	12.40
TC-135W	3	0	0	3	61.3
TU-2S Dragon Lady	4	0	0	4	38.92
U-2S Dragon Lady	27	0	0	27	40.58
WC-130J Hercules	10	0	0	10	22.45
WC-135R	3	0	0	3	60.55
Total	**338**	**29**	**0**	**367**	**17.45**
TANKERS (p. 126)					
HC-130J Combat King II	21	12	6	39	7.00
KC-10A Extender	21	0	0	21	38.61
KC-46A	48	12	12	72	3.27
KC-135R Stratotanker	123	140	62	325	61.71
KC-135T Stratotanker	28	23	0	51	63.73
Total	**241**	**187**	**80**	**508**	**48.47**

	ACTIVE	ANG	AFRC	TOTAL	AVG. AGE
AIRLIFT (p. 128)					
C-5M Super Galaxy	36	0	16	52	36.40
C-12C Huron	16	0	0	16	47.17
C-12D Huron	6	0	0	6	39.43
C-12F Huron	3	0	0	3	38.25
C-12J Huron	4	0	0	4	35.72
C-17A Globemaster III	146	50	26	222	21.16
C-21A Learjet	19	0	0	19	38.50
C-32A Air Force Two	4	0	0	4	25
C-32B Air Force Two	0	2	0	2	20.24
C-37A Gulfstream V	9	0	0	9	22.47
C-37B Gulfstream V	7	0	0	7	7.57
C-40B	4	0	0	4	19.65
C-40C Clipper	0	3	4	7	17.76
C-130H Hercules	0	86	40	126	30.23
C-130J Super Hercules	101	40	10	151	13.20
LC-130H Hercules	0	10	0	10	38.05
VC-25A Air Force One	2	0	0	2	32.95
Total	**357**	**191**	**96**	**644**	**23.94**
HELICOPTERS (p. 133)					
HH-60G Pave Hawk	27	18	16	61	28.93
HH-60U Pave Hawk	3	0	0	3	11.37
HH-60W	32	0	0	32	1.82
MH-139	5	0	0	5	0.87
TH-1H Iroquois	28	0	0	28	42.53
UH-1N Iroquois	63	0	0	63	51.59
Total	**158**	**18**	**16**	**192**	**32.82**
TRAINERS (p. 134)					
T-1A Jayhawk	127	0	0	127	29.38
A-29C	3	0	0	3	1.70
T-6A Texan II	442	0	0	442	17.98
T-7A	1	0	0	1	0.10
T-38A Talon	52	0	0	52	56.84
(A)T-38B Talon	6	0	0	6	60.12
T-38C Talon	437	0	0	437	57.29
T-41D Mescalero	4	0	0	4	54.1
T-51A Cessna	3	0	0	3	18.2
T-53A Kadet II	24	0	0	24	11.66
UV-18B Twin Otter	3	0	0	3	46.96
Total	**1,102**	**0**	**0**	**1,102**	**36.96**
AERIAL TARGETS (p. 138)					
QF-16A	11	0	0	11	39.72
QF-16C	62	0	0	62	36.82
Total	**73**	**0**	**0**	**73**	**38.27**
GLIDERS					
TG-15A	2	0	0	2	18.80
TG-15B	3	0	0	3	18.80
TG-16A	19	0	0	19	10.64
TG-17A	1	0	0	1	3.00
Total	**25**	**0**	**0**	**25**	**11.97**
GRAND TOTAL	**4,008**	**963**	**315**	**5,286**	**29.20**

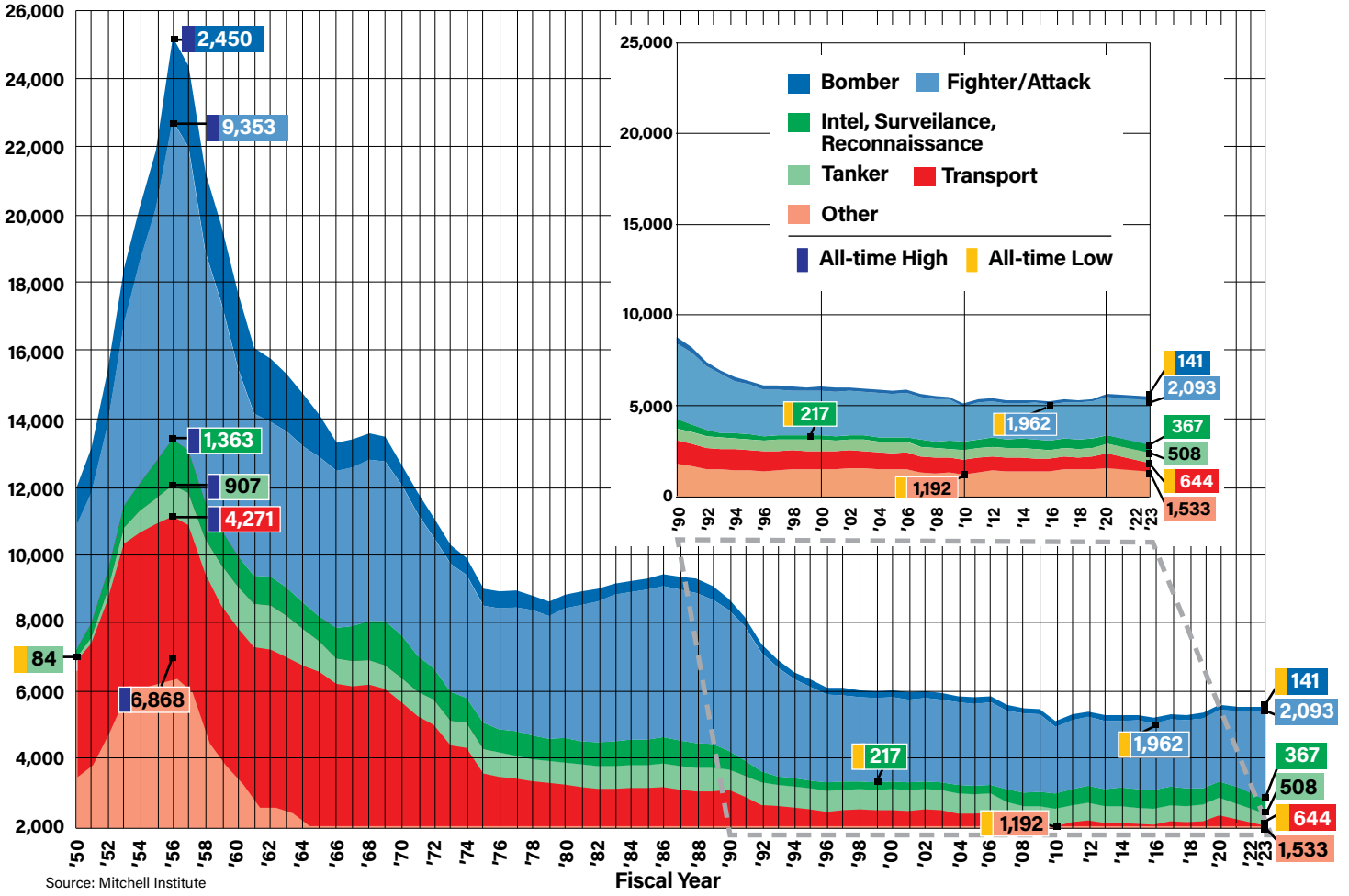
Total active inventory (TAI): aircraft assigned to operating forces for mission, training, test, or maintenance. Includes primary, backup, and attrition reserve aircraft. For other aircraft acronyms, see Gallery of Weapons.

ICBMs IN SERVICE OVER TIME

(As of Sept. 30, 2023)

TYPE OF SYSTEM	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Minuteman III	450	450	450	450	450	450	406	400	400	400	400	400	400
Total ICBMs	**450**	**450**	**450**	**450**	**450**	**450**	**406**	**400**	**400**	**400**	**400**	**400**	**400**

USAF AIRCRAFT INVENTORY, FY50-23 TOTAL ACTIVE AIRCRAFT



Source: Mitchell Institute

TOTAL NUMBER OF ACTIVE DUTY AIRCRAFT IN SERVICE OVER TIME

(As of Sept. 30, 2023)

ACTIVE	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Bomber	144	144	141	141	140	140	139	139	140	140	123	123	123
Fighter/Attack	1,287	1,289	1,287	1,273	1,252	1,257	1,280	1,309	1,338	1,352	1,476	1,456	1,452
Aerial Targets*	**	**	**	**	60	25	17	23	32	39	43	66	73
Special Ops Forces	105	117	122	124	144	132	138	135	144	154	139	143	139
ISR/BM/C3	381	413	394	444	437	434	441	432	428	422	471	439	338
Tanker	247	246	243	244	239	236	234	215	238	289	264	235	241
Transport	429	425	413	410	381	384	363	356	361	366	366	358	357
Helicopter	151	170	138	137	157	160	131	154	159	159	155	158	158
Trainer	1,159	1,182	1,118	1,171	1,157	1,170	1,177	1,157	1,156	1,155	1,153	1,180	1,077
Gliders	31	31	47	24	30	24	34	24	24	24	23	0	25
Total Active Duty	**3,934**	**4,017**	**3,927**	**3,968**	**3,997**	**3,962**	**3,954**	**3,944**	**4,015**	**4,100**	**4,213**	**4,158**	**4,008**
ANG													
Bomber	0	0	0	0	0	0	0	0	0	0	0	0	0
Fighter/Attack	639	635	630	585	611	577	575	575	577	594	593	583	536
Special Ops Forces	4	4	4	4	4	4	4	1	0	0	0	0	2
ISR/BM/C3	80	87	86	88	91	89	93	78	59	59	35	55	29
Tanker	189	189	187	185	184	181	181	185	181	164	188	188	187
Transport	242	232	223	207	207	212	210	208	208	319	191	191	191
Helicopter	17	17	17	17	17	17	17	17	23	23	18	18	18
Total ANG	**1,171**	**1,164**	**1,147**	**1,086**	**1,114**	**1,080**	**1.080**	**1,064**	**1,048**	**1,159**	**1,025**	**1,035**	**963**
AFRC													
Bomber	18	18	18	18	18	18	18	18	18	18	18	18	18
Fighter/Attack	100	101	95	104	111	111	109	109	109	109	109	109	105
Special Ops Forces	10	5	4	0	0	0	0	0	00	0	0	0	0
ISR/BM/C3	12	11	11	10	10	10	10	10	10	10	10	10	0
Tanker	72	72	71	68	68	72	72	72	74	73	75	75	80
Transport	152	148	147	145	139	101	91	96	98	140	98	98	96
Helicopter	15	15	15	15	15	15	15	15	15	16	16	16	16
Total AFRC	**379**	**370**	**361**	**360**	**361**	**327**	**315**	**320**	**324**	**366**	**326**	**326**	**315**
TOTAL FORCE	**5,484**	**5,551**	**5,435**	**5,414**	**5,472**	**5,369**	**5,349**	**5,328**	**5,387**	**5,625**	**5,564**	**5,519**	**5,286**

* QF-16 Aerial Targets replaced QF-4 Phantoms from FY15. **Previous years' QF-4 data not available.

MAJOR USAF PROGRAMS (RDT&E)

PROGRAM	2023	2024 C.R.	2025 Requested	2026 FYDP	2027 FYDP	2028 FYDP	2029 FYDP
BOMBERS							
B-1B	19.456	12.619	17.939	1.976	-	-	-
B-2A	100.590	87.623	41.212	0.004	0.004	0.004	0.004
B-2B	-	-	-	-	-	-	-
B-21	3037.499	2984.143	2654.073	2051.427	1648.845	1478.595	1486.123
B-52	701.934	950.815	1,045.570	895.365	506.982	473.368	426.807
FIGHTER/ATTACK							
A-10	52.797	-	-	-	-	-	-
F-15C/D/E	193.307	50.965	178.603	202.168	298.351	138.559	172.172
EPAWSS	65.587	13.982	-	-	-	-	-
F-15EX	91.178	100.006	56.228	-	-	-	-
F-16	241.482	98.633	106.952	199.054	185.414	112.794	115.020
F-22	542.659	725.889	768.561	647.983	474.352	582.879	594.387
F-35	60.501	97.231	47.132	49.156	47.709	49.561	50.539
NGAD	1,608.787	2,326.128	3,306.355	3,684.211	5,396.538	7,247.656	8,829.396
F-35 BLK 4 C2D2	994.924	1,275.268	1,124.207	1,192.420	1,160.610	975.101	989.293
F-35 Mods	-	-	-	-	-	-	-
HELO							
HH-60W	27.722	48.268	-	-	-	-	-
UH1 Replacement (MH-139)	15.805	25.737	-	-	-	-	-
ICBM							
Minuteman III Squadrons	71.339	33.237	62.550	24.436	20.830	16.194	9.343
LGM-35A Sentinel	3,434.623	3,746.935	3,721.024	3,791.551	3,568.798	2,890.117	2,011.934
MMIII Fuze Modernization	97.499	71.732	10.408	-	-	-	-
Minuteman III Modifications	-	-	-	-	-	-	-
C3/BM/ISR							
Air and Space Operations Center	76.216	72.059	71.442	96.738	99.707	104.657	106.723
DCGS	28.774	31.589	30.932	31.396	32.008	33.127	33.782
CRC	-	2.005	2.012	-	-	-	-
E-3	11.191	-	-	-	-	-	-
E-3 Block 40/45	-	-	-	-	-	-	-
E-7	411.704	681.039	418.513	297.334	161.838	167.697	171.006
E-8	-	-	-	-	-	-	-
ABMS	229.842	500.575	743.842	958.948	727.834	562.905	577.983
E-4B	29.245	39.868	40.441	43.496	24.649	3.005	3.065
Compass Call	54.758	66.932	132.475	107.766	101.785	108.169	109.544
MQ-9	144.827	81.123	7.074	0.297	0.303	0.315	0.322
RQ-4	36.791	1.242	9.516	-	-	-	-
RC-135	14.590	14.330	16.323	16.729	17.073	17.692	18.041
U-2 Mods	35.170	16.842	-	-	-	-	-
MOBILITY							
C-5	3.095	29.502	33.003	51.939	19.737	50.032	68.031
C-17	25.387	2.753	17.395	27.998	82.177	127.463	129.980
C-32	-	-	-	-	-	-	-
C-130J	9.782	19.100	34.423	32.469	17.216	15.691	16.000
KC-10 (ATCA)	-	-	-	-	-	-	-
KC-135	18.409	51.105	31.977	49.847	93.235	12.826	12.825
KC-46	140.395	124.662	93.620	58.744	53.345	36.584	-
PAR (VC-25B)	79.623	490.701	433.943	400.905	441.009	59.604	34.803
VC-25A	-	-	-	-	-	-	-
MUNITION							
AIM-9	33.365	41.958	34.932	16.146	16.478	17.074	17.412
AIM-120	36.055	53.679	53.593	51.994	53.062	54.982	56.069
JASSM	123.852	132.937	183.532	41.017	17.941	21.858	22.289
SDB1	-	-	-	-	-	-	-
SDB2	37.988	37.518	29.91	24.918	25.419	25.817	26.326
JDAM	-	-	-	-	-	-	-
SiAW	243.076	298.585	375.528	405.136	381.648	299.313	301.956
LRASM	-	-	-	-	-	-	-
AGM-114 Hellfire	-	-	-	-	-	-	-
ARRW	112.015	150.34	-	-	-	-	-
LRSO	921.891	911.406	623.491	601.584	288.272	76.487	77.997
SPECIAL OPERATIONS FORCES							
CV-22B	9.678	18.127	26.249	30.865	26.018	21.878	21.099
HC-130/MC-130	1.055	0.926	0.748	0.894	0.765	0.792	0.808
Communication Modernization (HC-130J/MC-130J)	46.119	35.610	24.186	45.223	44.910	36.252	36.770
TRAINERS							
T-6	-	-	-	-	-	-	-
T-7A	32.513	77.252	83.985	30.826	5.255	5.366	5.471
T-38	-	-	-	-	-	-	-
T-1	-	-	-	-	-	-	-

MAJOR USAF PROGRAMS (Procurement)

PROGRAM	2023	2024 C.R.	2025 Requested	2026 FYDP	2027 FYDP	2028 FYDP	2029 FYDP
BOMBERS							
B-1B	36.313	12.757	13.406	13.154	1.003	1.370	1.397
B-2A	72.919	107.980	63.932	58.891	52.463	15.807	16.124
B-2B	36.325	15.207	15.709	16.026	16.854	17.204	17.547
B-21	413.165	708.000	721.600	845.000	964.000	1,005.665	1,026.784
B-52 Mods	70.303	65.815	194.832	267.169	1,092.683	1,047.284	988.289
FIGHTER/ATTACK							
A-10 Mods	83.972	-	-	-	-	-	-
F-15C/D/E Mods	192.394	34.830	45.829	118.303	47.944	20.753	21.827
EPAWSS	259.837	280.658	271.970	207.723	118.624	102.513	123.474
F-15EX	2,735.768	2,898.039	1,808.472	60.714	-	-	-
F-16 Mods	724.944	297.342	217.235	528.492	530.110	364.998	326.756
F-22 Mods	719.933	794.676	861.125	1,019.413	1,101.842	886.729	842.638
F-35	4,482.170	5,279.121	4,956.740	5,314.029	5,690.148	5,600.821	5,738.909
NGAD	-	-	-	-	-	-	-
F-35 BLK 4 C2D2	220.584	287.607	398.416	384.098	381.713	388.583	469.085
F-35 Mods	333.096	451.798	549.657	557.906	555.554	567.105	578.374
HELO							
HH-60W	1,205.995	282.533	162.685	54.671	-	-	-
UH1 Replacement (MH-139)	186.192	228.807	294.095	159.817	177.854	146.696	79.876
ICBM							
Minuteman III Squadrons	-	-	-	-	-	-	-
LGM-35A Sentinel	-	-	-	1,634.097	4,131.827	5,073.777	5,697.755
MMIII Fuze Modernization	137.364	158.789	144.375	123.564	110.274	100.583	0.728
Minuteman III Modifications	54.171	48.639	24.212	16.339	10.359	10.581	10.793
C3/ BM/ ISR							
Air and Space Operations	21.709	5.032	21.175	22.937	23.742	24.253	24.732
DCGS	219.343	129.655	59.504	79.617	115.616	115.803	118.083
CRC	13.986	-	73.412	60.894	38.333	39.146	39.92
E-3	29.187	1.35	68.192	17.355	0.839	1.399	1.426
E-3 Block 40/45	-	-	-	-	-	-	-
E-7	-	-	-	-	-	-	-
E-8	-	-	-	-	-	-	-
ABMS	100.991	73.593	49.991	65.252	56.314	63.280	64.530
E-4B	5.973	13.055	28.728	36.835	44.487	45.414	46.316
Compass Call	330.2	144.686	94.654	126.803	214.492	216.548	221.612
MQ-9	16.039	-	-	-	-	-	-
RQ-4	0.193	-	-	-	-	-	-
RC-135	234.224	220.138	222.966	226.333	231.415	236.228	240.921
U-2 Mods	81.65	54.727	69.806	13.072	13.367	13.644	13.915
MOBILITY							
C-5	15.486	24.377	45.445	29.401	63.33	36.643	34.577
C-17	133.779	140.56	103.306	139.078	140.81	181.645	209.181
C-32	4.068	19.06	6.422	0.010	0.010	0.010	0.010
C-130J	1,775.293	34.921	2.405	-	-	-	-
KC-10 (ATCA)	1.722	-	-	-	-	-	-
KC-135	144.557	153.595	146.564	176.454	139.928	206.590	171.045
KC-46	2,458.717	2,882.590	2,854.748	2,833.054	2,429.705	-	-
PAR (VC-25B)	-	-	-	-	-	-	-
VC-25A	1.619	29.707	11.388	9.395	-	-	-
MUNITION							
AIM-9	220.855	95.643	107.101	127.838	130.045	132.837	135.479
AIM-120	371.104	489.049	518.176	738.09	186.616	39.966	-
JASSM	834.971	1,685.67	825.05	821.193	829.091	850.81	867.157
SDB1	52.715	48.734	42.257	41.744	44.571	84.551	86.232
SDB2	480.406	291.553	328.382	181.872	166.239	136.181	134.739
JDAM	251.956	132.364	125.268	127.838	130.318	132.969	135.625
SiAW	77.975	41.947	173.421	149.489	347.978	400.068	408.025
LRASM	211.589	187.667	354.1	296.205	336.935	339.325	345.996
AGM-114 Hellfire	1.040	1.049	-	-	-	-	-
ARRW	-	-	-	-	-	-	-
LRSO	31.454	66.816	210.335	295.523	1,074.934	1,685.006	2,210.506
SPECIAL OPERATIONS FORCES							
CV-22B	153.026	153.006	42.795	100.356	96.582	79.524	65.408
HC-130/MC-130	111.285	101.055	213.284	367.274	261.148	169.774	169.902
MC-130J	17.481	-	-	-	-	-	-
TRAINERS							
T-6	6.215	2.942	130.281	413.188	185.123	370.785	324.55
T-7A	10.507	-	235.207	548.486	524.987	835.7	852.307
T-38	89.385	125.340	115.486	82.398	96.737	99.014	156.432
T-1	6.262	10.950	2.205	0.137	0.140	3.577	3.648

2023 AIRCRAFT MISSION CAPABLE RATES

MDS	2023 12-HOUR FIX %	2023 BREAKS %	2023 MC %
A-10C	59	10	67
AC-130J	48	8	76
AT-38B	78	7	70
B-1B	24	27	47
B-2A	58	27	56
B-52H	26	45	54
C-5M	41	5	46
C-12C	N/A	N/A	99
C-12D	N/A	N/A	100
C-12F	N/A	0	99
C-12J	N/A	0	100
C-17A	54	1	76
C-21A	N/A	0	100
C-32A	0	0	88
C-37A	33	0	93
C-37B	N/A	0	91
C-40B	50	0	88
C-40C	0	0	91
C-130H	31	2	44
C-130J	56	2	72
CV-22B	40	31	46
E-3B	35	34	47
E-3G	41	42	60
E-4B	21	3	61
E-8C	44	30	63
EC-130H	56	30	33
EC-130J	32	7	63
F-15C	58	14	33
F-15D	65	12	55
F-15E	55	15	55
F-15X	67	8	85
F-16C	55	9	69
F-16D	57	9	65
F-22A	54	10	52
F-35A	N/A	N/A	52

MDS	2023 12-HOUR FIX %	2023 BREAKS %	2023 MC %
HC-130J	56	20	72
HH-60G	54	11	67
HH-60W	62	9	67
KC-10A	60	5	79
KC-46A	57	1	65
KC-135R	47	4	69
KC-135T	50	6	67
LC-130H	37	8	48
MC-12W	N/A	N/A	100
MC-130H	0	13	0
MC-130J	50	12	76
MH-139A	N/A	N/A	77
MQ-9A	57	3	86
RC-135S	62	27	73
RC-135U	50	19	85
RC-135V	34	29	71
RC-135W	34	19	77
RQ-4B	23	19	50
T-1A	63	8	78
T-6A	67	5	62
T-38A	69	7	63
T-38C	56	7	58
TC-135W	52	11	82
TE-8A	70	9	79
TH-1H	54	12	60
TU-2S	74	11	81
U-2S	65	11	76
UH-1N	58	6	78
UV-18B	N/A	0	100
WC-130J	23	5	68
WC-135R	67	5	87

PILOT TRAINING HOURS/MONTH BY AIRCRAFT TYPE 2018-2022*

	COMPONENT	2018	2019	2020	2021	2022
ALL MDS	Active Duty	10.7	6.8	10.9	10.1	14.4
	ANG	9.3	5.3	9	8.6	10.1
	AFRC	8	4.2	7.2	8.3	9.4
AIRCRAFT TYPE	**COMPONENT**	**2018**	**2019**	**2020**	**2021**	**2022**
AIRLIFT	Active Duty	12.7	8	12.2	12	18
	ANG	9.8	5.8	10.3	9.3	10.1
	AFRC	10.7	5.2	8.3	9.3	9.3
BACN	Active Duty	26	21.6	23.4	9.2	57.5
	ANG				2.3	N/A
	AFRC					N/A
BOMBER	Active Duty	6.1	4	7.2	7.1	12.9
	ANG	4.2	1.6	2.2	1.4	8.6
	AFRC	3.5	2.9	4.7	4.6	8.2
FIGHTER	Active Duty	8.2	5.7	8.1	6.8	10.7
	ANG	7.1	4.2	6.4	7.3	9.0
	AFRC	5.2	3.9	5.5	6.7	7.1
FIX WING	Active Duty	9	5.7	8.7	6.1	15.4
	ANG	6.8	5.8	10.8	7.9	10.9
	AFRC			4.8	10.9	12.9

AIRCRAFT TYPE	COMPONENT	2018	2019	2020	2021	2022
RECON	Active Duty	7.8	4.7	7	8.4	11.6
	ANG	8	5.7	9	8.1	11.8
	AFRC	5.7	2.7	5.3	5.4	11.0
ROTARY	Active Duty	6.8	4.5	6.9	6.5	11.1
	ANG	5.8	3.9	7.9	6.4	9.1
	AFRC	8.5	3.4	4.9	6.9	11.7
SPEC OPS	Active Duty	11.1	6.6	13	11.6	14.4
	ANG	6.9	3.7	5.8	10.1	7.6
	AFRC	5	3	5.2	5.9	8.0
TANKER	Active Duty	13.6	8	12.1	12	16.0
	ANG	12.4	7.5	10.4	9.4	10.1
	AFRC	10	5.7	8.3	9.1	10.0
TRAINER	Active Duty	10.2	6.8	9.6	8	17.0
	ANG	7.9	1.7	0.9	1	0
	AFRC	1.2	2.2	2.9	0.4	9.5

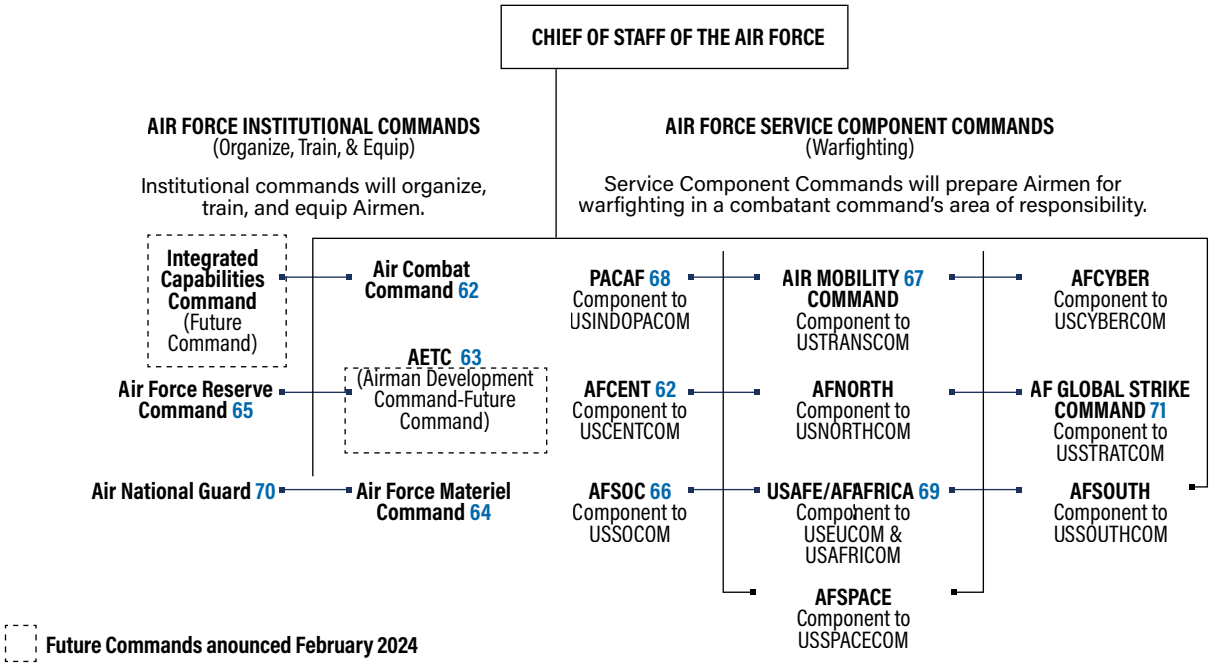
* The Air Force declined to provide 2023 Pilot Training Hours.

USAF INSTITUTIONAL AND COMPONENT COMMANDS

The Air Force has six Institutional Commands focused on the recruit, train, and equip function of the department, and 10 Service Component Commands focused on meeting the needs of the nation's joint Combatant Commands.

Staff Sgt. Holly Cook

A B-1B Lancer assigned to Dyess Air Force Base, Texas, sits on the flight line during Bomber Task Force 24-2 at Morón Air Base, Spain, in April.



The Air Force has traditionally referred to its largest organizations as "Major Commands." But in February 2024, Chief of Staff Gen. David W. Allvin suggested that term did little to define what those commands really do or lend to the Air Force, and that other terminology is more accurate: Institutional Commands that are responsible to the Department of the Air Force for developing personnel, or systems, or combat readiness, and Component Commands that are responsible to the nation's combatant commands for generating combat capability.

ACC

AIR COMBAT COMMAND

JB Langley-Eustis, Va.
EST. June 1, 1992

MISSION Institutional command responsible for combat airpower and readiness—fighters, reconnaissance, battle management, and electronic combat aircraft—to combatant commands. Provide command, control, communications, and intelligence (C3I) systems. Conduct global information operations.

ACC COMMAND STRUCTURE


USAF

Commander
Gen. Kenneth S. Wilsbach
(as of Feb. 29, 2024)

- ★★★ **1st Air Force** (Air Forces Northern) Tyndall AFB, Fla.
- ★★★ **9th Air Force** (Air Forces Central) Shaw AFB, S.C.
- ★★ **12th Air Force** (Air Forces Southern) Davis-Monthan AFB, Ariz.
- ★★ **15th Air Force** Shaw AFB, S.C.
- ★★★ **16th Air Force** (Air Forces Cyber) JBSA-Lackland, Texas
- ★★★ **U.S. Air Forces Central Command** Southwest Asia
- ★★ **USAF Warfare Center** Nellis AFB, Nev.
- **Air Force Spectrum Managment Office** Fort Meade, Md.
- **Cyberspace Capabilities Center** Scott AFB, Ill.

PERSONNEL	
Active-duty USAF	79,555
Active-duty USSF	116

EQUIPMENT (TAI)	
Fighter/Attack	684
Helicopter	30
C3/BM/ISR	317
Trainer	51
TOTAL	**1,082**

MAJOR UNITS	LOCATION	AIRCRAFT/MISSION/WEAPON
1st Fighter Wing (FW)	JB Langley-Eustis, Va.	F-22, T-38A
4th FW	Seymour Johnson AFB, N.C.	F-15E
9th Reconnaissance Wing	Beale AFB, Calif.	RQ-4, T-38A, U-2
20th FW	Shaw AFB, S.C.	F-16C/DM
23rd Wing	Moody AFB, Ga.	A-10C, HC-130J, HH-60G
53rd Wing	Eglin AFB, Fla.	A-10C, BQM-167A, E-9A, F-15C/E, F-16C/D, F-22A, F-35A, HC-130J, HH-60G, MQ-9, QF-4, QF-16, RQ-4, U-2
55th Wing	Offutt AFB, Neb.	EC-130H, OC-135B, RC-135S/U/V/W, TC-135S/W
57th Wing	Nellis AFB, Nev.	A-10C, EC-130, F-15, F-15E, F-16, F-22A, F-35A, HH-60G (23rd Wing), MQ-9
67th Cyberspace Wing	JBSA-Lackland, Texas	Cyberspace operations
70th ISR Wing (ISRW)	Fort Meade, Md.	Cryptologic operations
93rd Air Ground Operations Wing	Moody AFB, Ga.	Battlefield Airmen operations, support
99th Air Base Wing (ABW)	Nellis AFB, Nev.	Base support
319th Reconnaissance Wing	Grand Forks AFB, N.D.	High-altitude ISR, communications, mission support
325th FW	Tyndall AFB, Fla.	F-22A, F-35A
355th Wing	Davis-Monthan AFB, Ariz.	A-10, EC-130H, (55th Wing), F-16CG, HC-130J, HH-60G (23rd Wing)
363rd ISRW	JB Langley-Eustis, Va.	Multi-intelligence analysis, targeting
366th FW	Mountain Home AFB, Idaho	F-15E
388th FW	Hill AFB, Utah	F-35A
432nd Wing	Creech AFB, Nev.	MQ-9, RQ-170
480th ISRW	JB Langley-Eustis, Va.	DCGS, cyber ISR, CFACC support, signals intelligence integration
461st Air Control Wing (ACW)	Robins AFB, Ga.	Ground-based tactical command and control
505th Command and Control Wing	Hurlburt Field, Fla.	Command and control operational-level tactics, testing, training
552nd ACW	Tinker AFB, Okla.	E-3B/C/G
557th Weather Wing	Offutt AFB, Neb.	Weather information
601st Air Operations Center	Tyndall AFB, Fla.	Plan and direct air operations
616th Operations Center	JBSA-Lackland, Texas	Plan and direct cyber, electronic warfare, and ISR operations
633rd ABW	JB Langley-Eustis, Va.	Joint base facilities support
688th Cyberspace Wing	JBSA-Lackland, Texas	Information operations, engineering installations
AF Rescue Coordination Center	Tyndall AFB, Fla.	National search and rescue coordination
AF Technical Applications Center	Patrick SFB, Fla.	Nuclear treaty monitoring, nuclear event detection

ACC AIRCRAFT BY TYPE

A-10	115
AT-38	6
AT-6	0
E-3B	1
E-3G	14
E-9A	2
E-11	5
EC-130	6
F-15C	8
F-15E	158
F-15X	2

F-16C	144
F-16D	19
F-22A	107
F-35A	131
HC-130J	18
HH-60G	6
HH-60W	24
MQ-1	1
MQ-9	133
P-9A	4
QF-16A	11

QF-16C	62
RC-135S	3
RC-135U	2
RC-135V	8
RC-135W	9
RQ-4B	8
T-38A	38
TC-135W	3
TU-2S	4
U-2S	27
WC-135R	3
TOTAL	**1,082**

Source: U.S. Air Force Total Aircraft Inventory (TAI) as of Sept. 30, 2023

AETC*

AIR EDUCATION AND TRAINING COMMAND

★★★

JBSA-Randolph, Texas
EST. July 1, 1993

MISSION Institutional Command responsible for recruiting, training, and educating Airmen through basic military training, initial and advanced technical training, and professional military education.

(*The Air Force announced plans in February 2024 to change the name of this command to Airmen Development Command (ADC).

AETC COMMAND STRUCTURE

USAF

Commander
Lt. Gen. Brian S. Robinson
(as of May 20, 2022)

- ★★ **2nd Air Force** Keesler AFB, Miss.
- ★★ **19th Air Force** JBSA-Randolph, Texas
- ★★ **Air Force Recruiting Service** JBSA-Randolph, Texas
- ★★★ **Air University** Maxwell AFB, Ala.

PERSONNEL	
Active-duty USAF	56,285
Active-duty USSF	434

EQUIPMENT (TAI)	
Fighter/Attack	260
Helicopter	26
C3/BM/ISR	27
Tanker	25
Trainer	1,075
Airlift	47
TOTAL	**1,460**

MAJOR UNITS	LOCATION	AIRCRAFT/MISSION/WEAPON
12th Flying Training Wing (FTW)	JBSA-Randolph, Texas	T-1A, T-6A, T-38C (CSO at NAS Pensacola, Fla.)
14th FTW	Columbus AFB, Miss.	T-1A, T-6A, T-38C (A-29 at Moody AFB, Ga.)
17th Training Wing (TRW)	Goodfellow AFB, Texas	Technical training
33rd Fighter Wing (FW)	Eglin AFB, Fla.	F-35
37th TRW	JBSA-Lackland, Texas	Basic military and technical training
42nd Air Base Wing (ABW)	Maxwell AFB, Ala.	Base support
47th FTW	Laughlin AFB, Texas	T-1A, T-6A, T-38C
49th Wing	Holloman AFB, N.M.	MQ-1, MQ-9, QF-16
56th FW	Luke AFB, Ariz.	F-16, F-35
56th Air Refueling Squadron	Altus AFB, Okla.	KC-46
58th Special Operations Wing	Kirtland AFB, N.M.	CV-22, HC-130J/P/N, HH-60G, HH-60W, MC-130H/J/P, UH-1N, TH-1H
59th Medical Wing	JBSA-Lackland, Texas	Wilford Hall Ambulatory Surgical Center
71st FTW	Vance AFB, Okla.	T-1A, T-6A, T-38C
80th FTW	Sheppard AFB, Texas	T-6A, T-38C
81st TRW	Keesler AFB, Miss.	Technical training
82nd TRW	Sheppard AFB, Texas	Technical training
97th Air Mobility Wing	Altus AFB, Okla.	C-17, KC-135R, KC-46
314th Airlift Wing	Little Rock AFB, Ark.	C-130J
502nd ABW	JBSA-Fort Sam Houston, Texas	JBSA facilities support
AF Profession of Arms Center of Excellence	JBSA-Randolph, Texas	Professional training
AF Institute of Technology	Wright-Patterson AFB, Ohio	Postgraduate education
Carl A. Spaatz Center for Officer Education	Maxwell AFB, Ala.	Officer professional military education (PME)
Curtis E. LeMay Center for Doctrine Dev. & Education	Maxwell AFB, Ala.	Air Force doctrine development
Ira C. Eaker Center for Leadership Dev.	Maxwell AFB, Ala.	Professional and technical continuing education
Jeanne M. Holm Center for Officer Accessions and Citizen Development	Maxwell AFB, Ala.	Officer training, ROTC and JROTC oversight
Muir S. Fairchild Research Information Center	Maxwell AFB, Ala.	Information resources
Thomas N. Barnes Center for Enlisted Education	Maxwell AFB, Ala.	Enlisted PME

AETC AIRCRAFT BY TYPE

C-130J	14	KC-135R	17	T-51A	3
C-17A	17	KC-135T	1	T-53A	24
CV-22B	7	KC-46A	8	TG-15A	2
F-16C	65	MC-130J	6	TG-15B	3
F-16D	43	MQ-9	24	TG-16A	19
F-35A	152	T-1A	127	TG-17A	0
HC-130J	3	T-6A	442	TH-1H	28
HH-60G	8	T-38C	422	UH-1N	10
HC-60W	8	T-41D	4	UV-18B	3
				TOTAL	**1,460**

Source: U.S. Air Force Total Aircraft Inventory (TAI) as of Sept. 30, 2023

AFMC

AIR FORCE MATERIEL COMMAND

Wright-Patterson AFB, Ohio
EST. July 1, 1992

MISSION Institutional Command responsible for research, development, procurement, testing, and sustainment of U.S. Air Force weapon systems.

AFMC COMMAND STRUCTURE

USAF

Commander
Gen. Duke Z. Richardson
(as of June 13, 2022)

- ★★★ **Air Force Life Cycle Management Center (AFLCMC)** Wright-Patterson AFB, Ohio
- ★★ **Air Force Installation & Mission Support Center (AFIMSC)** JBSA-Lackland, Texas
- ★★ **Air Force Research Laboratory (AFRL)** Wright-Patterson AFB, Ohio
- ★★ **Air Force Nuclear Weapons Center (AFNWC)** Kirtland AFB, N.M.
- ★★ **Air Force Test Center (AFTC)** Edwards AFB, Calif.
- SES **Air Force Sustainment Center (AFSC)** Tinker AFB, Okla.
- SES **National Museum of the U.S. Air Force** Wright-Patterson AFB, Ohio

PERSONNEL	
Active-duty USAF	17,693
Active-duty USSF	64

EQUIPMENT (TAI)	
Bomber	5
Fighter/Attack	47
Helicopter	5
C3/BM/ISR	15
Tanker	1
Trainer	15
Airlift	24
TOTAL	**112**

	MAJOR UNITS	LOCATION	AIRCRAFT/MISSION/WEAPON
AFIMSC	AF Civil Engineer Center	JBSA-Lackland, Texas	Installation support (civil engineering)
	AF Financial Management Center of Expertise	Buckley SFB, Colo.	Installation support (financial analysis)
	AF Installation Contracting Center	Wright-Patterson AFB, Ohio	Enterprise contracting support
	AF Security Forces Center	JBSA-Lackland, Texas	Installation support (security forces programs)
	AF Services Center	JBSA-Lackland, Texas	Installation support (lodging, recreation)
AFLCMC	AF Prg. Exec. Officer–Agile Combat Support	Wright-Patterson AFB, Ohio	Systems acquisition
	AFPEO–Armament	Eglin AFB, Fla.	Sys. acquisition
	AFPEO-Command, Control, Communications, and Battle Management (C3BM)	Hanscom AFB, Mass.	Sys. acquisition
	AFPEO–Business and Enterprise Systems	Maxwell AFB-Gunter Annex, Ala.	Sys. acquisition
	AFPEO–C3I and Networks	Hanscom AFB, Mass.	Sys. acquisition
	AFPEO–Fighters and Advanced Aircraft	Wright-Patterson AFB, Ohio	Sys. acquisition
	AFPEO–ISR and Special Operations Forces	Wright-Patterson AFB, Ohio	Sys. acquisition
	AFPEO–Mobility and Training Aircraft	Wright-Patterson AFB, Ohio	Sys. acquisition
	AFPEO-Presidential and Executive Airlift	Wright-Patterson AFB, Ohio	Sys. acquisition
	AFPEO–Tanker	Wright-Patterson AFB, Ohio	Sys. acquisition
	88th Air Base Wing (ABW)	Wright-Patterson AFB, Ohio	Base support
AFNWC	AFPEO–Nuclear Command, Control, and Communications	Hanscom AFB, Mass.	Sys. acquisition
	AFPEO–Strategic Systems	Kirtland AFB, N.M.	Sys. acquisition
AFRL	Aerospace Systems	Wright-Patterson AFB, Ohio	Research and development (R&D)
	AF Office of Scientific Research	Arlington, Va.	Research
	AF Strategic Development Planning and Experimentation Office	Wright-Patterson AFB, Ohio	R&D
	Directed Energy	Kirtland AFB, N.M.	R&D
	Information	Rome, N.Y.	R&D
	Materials and Manufacturing	Wright-Patterson AFB, Ohio	R&D
	Munitions	Eglin AFB, Fla.	R&D
	Sensors	Wright-Patterson AFB, Ohio	R&D
	Space Vehicles	Kirtland AFB, N.M.	R&D
	711th Human Performance Wing	Wright-Patterson AFB, Ohio	Airman performance R&E
AFSC	Ogden Air Logistics Complex (ALC)	Hill AFB, Utah	Weapons sustainment
	Oklahoma City ALC	Tinker AFB, Okla.	Weapons sustainment
	Warner Robins ALC	Robins AFB, Ga.	Weapons sustainment
	72nd ABW	Tinker AFB, Okla.	Base support
	75th ABW	Hill AFB, Utah	Base and Utah Test and Training Range support
	78th ABW	Robins AFB, Ga.	Base support
	448th Supply Chain Management Wing	Tinker AFB, Okla.	Depot line repairables and consumables
	635th Supply Chain Operations Wing	Scott AFB, Ill.	Global sustainment support
AFTC	Arnold Engineering Development Complex	Arnold AFB, Tenn.	Flight, space, and missile ground testing
	96th Test Wing (TW)	Eglin AFB, Fla.	Aircraft/system testing, base & range support
	412th TW	Edwards AFB, Calif.	Aircraft/system testing, base & range support
	U.S. Air Force Test Pilot School	Edwards AFB, Calif.	Pilot, navigator & engineer training for flight tests

AFMC AIRCRAFT BY TYPE	
A-10C	2
B-1B	2
B-2A	1
B-52H	2
C-12C	16
C-12D	6
C-12F	1
C-12J	1
F-15C	0
F-15E	5
F-16C	14
F-16D	20
F-22A	4
F-35A	2
HH-60U	3
KC-135R	1
MQ-9A	14
NC-135W	0
RQ-4B	1
T-38C	15
UH-1N	2
TOTAL	**112**

Source: U.S. Air Force Total Aircraft Inventory (TAI) as of Sept. 30, 2023

AFRC

AIR FORCE RESERVE COMMAND

Robins AFB, Ga.
EST. February 17, 1997

MISSION Institutional Command responsible for providing strike, air mobility, special operations forces, rescue, aeromedical evacuation, aerial firefighting and spraying, weather reconnaissance, cyberspace operations, ISR, flying training, and other capabilities to support the Active-duty force and assist with domestic and foreign disaster relief.

AFRC COMMAND STRUCTURE


USAF

Commander
Lt. Gen. John P. Healy
(as of Aug. 3, 2022)

- ★★ **4th Air Force** March ARB, Calif.
- ★★ **10th Air Force** NAS JRB Fort Worth, Texas
- ★★ **22nd Air Force** Dobbins ARB, Ga.
- ★ **Air Reserve Personnel Cntr.** Buckley SFB, Colo.
- ★ **Force Generation Center** Robins AFB, Ga.
- **AFRC Recruiting Service** Robins AFB, Ga.
- **Individual Reservist Readiness & Integration Organization** Buckley SFB, Colo.

PERSONNEL	
Selected Reserve	66,216

EQUIPMENT (TAI)	
Bomber	18
Fighter/Attack	105
Helicopter	16
C3/BM/ISR	10
Tanker	80
Airlift	96
TOTAL	**325**

MAJOR UNITS	LOCATION	AIRCRAFT/MISSION/WEAPON
94th Airlift Wing (AW)	Dobbins ARB, Ga.	C-130H
301st Fighter Wing (FW)	NAS JRB Fort Worth, Texas	F-16
302nd AW	Peterson SFB, Colo.	C-130H (including Modular Airborne Firefighting System)
307th Bomb Wing	Barksdale AFB, La.	B-52H
310th Space Wing	Schriever SFB, Colo.	Space control/operations/warning, information operations
315th AW (classic associate)	JB Charleston, S.C.	C-17
349th Air Mobility Wing (classic associate)	Travis AFB, Calif.	C-5, C-17, KC-10
403rd Wing	Keesler AFB, Miss.	C-130J, WC-130J
419th FW (classic associate)	Hill AFB, Utah	F-35A
433rd AW	JBSA-Lackland, Texas	C-5M, formal training unit
434th Air Refueling Wing (ARW)	Grissom ARB, Ind.	KC-135R
439th AW	Westover ARB, Mass.	C-5M
442nd FW	Whiteman AFB, Mo.	A-10C
445th AW	Wright-Patterson AFB, Ohio	C-17
446th AW (classic associate)	JB Lewis-McChord, Wash.	C-17
452nd AMW	March ARB, Calif.	C-17, KC-135R
459th ARW	JB Andrews, Md.	KC-135R
482nd FW	Homestead ARB, Fla.	F-16C
507th ARW	Tinker AFB, Okla.	KC-135R
512th AW (classic associate)	Dover AFB, Del.	C-5M, C-17
514th AMW (classic associate)	JB McGuire-Dix-Lakehurst, N.J.	C-17, KC-46
655th ISR Wing	Wright-Patterson AFB, Ohio	Intelligence
908th AW	Maxwell AFB, Ala.	MH-139A
910th AW	Youngstown ARS, Ohio	C-130H
911th AW	Pittsburgh ARS, Pa.	C-17
914th ARW	Niagara Falls ARS, N.Y.	KC-135R
916th ARW	Seymour Johnson AFB, N.C.	KC-135R, KC-46A
919th Special Operations Wing (classic associate)	Duke Field, Fla.	C-145A, C-146, MQ-9
920th Rescue Wing	Patrick SFB, Fla.	HC-130K/J, HH-60G
926th Wing (classic associate)	Nellis AFB, Nev.	F-16, F-22A, F-35A, MQ-9 (Creech AFB, Nev.)
927th ARW (classic associate)	MacDill AFB, Fla.	KC-135R
931st ARW (classic associate)	McConnell AFB, Kan.	KC-135R, KC-46A
932nd AW	Scott AFB, Ill.	C-40C
934th AW	Minneapolis-St. Paul ARS, Minn.	C-130H
940th ARW	Beale AFB, Calif.	KC-135R
944th FW (classic and active associate)	Luke AFB, Ariz.	F-35A (Luke AFB and Eglin AFB, Fla.)
960th Cyberspace Wing	JBSA-Lackland, Texas	Cyberspace operations

AFRC AIRCRAFT BY TYPE

A-10	54	C-40	4	HH-60G	16
B-52H	18	C-5M	16	KC-135R	62
C-130H	40	F-16C	50	KC-46A	12
C-130J	10	F-16D	1	WC-130J	10
C-17A	26	HC-130J	6	**TOTAL**	**325**

Classic associate: Active-duty unit owns aircraft.
Source: U.S. Air Force Total Aircraft Inventory TAI as of Sept. 30, 2023

ANG

AIR NATIONAL GUARD

Washington, D.C.
EST. Sept. 18, 1947

MISSION Institutional Command that provides combat capability to the Active-duty force and security for the homeland. Support for U.S. domestic and foreign humanitarian and disaster relief.

ANG COMMAND STRUCTURE

USAF

Director
Lt. Gen. Michael A. Loh
(as of July 28, 2020)

PERSONNEL	
Selected Reserve	104,974

EQUIPMENT (TAI)	
Fighter/Attack	536
Helicopter	18
C3/BM/ISR	29
Tanker	163
Airlift	205
TOTAL	**951**

WING (STATE)	SYSTEM/MISSION
101st Air Refueling Wing (Maine)	KC-135R, CC
102nd Intelligence Wing (Mass.)	DCGS, cyber, ISR, EISG, WXF
103rd Airlift Wing (Conn.)	C-130H
104th Fighter Wing (Mass.)	F-15C/D
105th AW (N.Y.)	C-17, EIS, WXF
106th Rescue Wing (N.Y.)	HC-130, HH-60G, GA
107th ATKW (N.Y.)	MQ-9
108th Wing (N.J.)	KC-135R, C-32B, intel, SOS
109th AW (N.Y.)	LC-130
110th Wing (Mich.)	MQ-9, AOG, C2, cyber
111th Attack Wing (Pa.)	MQ-9, cyber, EIS
113th Wing (D.C.)	C-40C, F-16C/D, WXF
114th FW (S.D.)	F-16C/D
115th FW (Wis.)	F-16C/D, RC-26B, WXF
116th Air Control Wing (Ga.)	E-8C, WXF
117th ARW (Ala.)	KC-135R, DCGS
118th Wing (Tenn.)	MQ-9, cyber
119th Wing (N.D.)	MQ-9, ISR, WXF
120th AW (Mont.)	C-130H, WXF
121st ARW (Ohio)	KC-135R, WXF
122nd FW (Ind.)	A-10C
123rd AW (Ky.)	C-130J, CRG, special tactics, WXF, intel
124th FW (Idaho)	A-10C, TACP, cyber
125th FW (Fla.)	F-15C/D, WXF
126th ARW (Ill.)	KC-135R, SCMS
127th Wing (Mich.)	A-10C, KC-135T, WXF
128th ARW (Wis.)	KC-135R
129th RQW (Calif.)	HC-130J, HH-60G, GA
130th AW (W.Va.)	C-130H, RC-26B
131st Bomb Wing (Mo.)	B-2 (CA*)
132nd Wing (Iowa)	MQ-9, cyber, ISR
133rd AW (Minn.)	C-130J, ALCF, WXF
134th ARW (Tenn.)	KC-135R
136th AW (Texas)	C-130H, ALCF, WXF
137th SOW (Okla.)	MC-12, EIS, SOS, TACP
138th FW (Okla.)	F-16C/D, EIS, WXF
139th AW (Mo.)	C-130H, AATTC (ANG/AFRC), ATCS
140th Wing (Colo.)	F-16C/D, CEF, WXF
141st ARW (Wash.)	KC-135R, CC, RC-26B, intel
142nd FW (Ore.)	F-15C/D, special tactics, WXF
143rd AW (R.I.)	C-130J, cyber
144th FW (Calif.)	F-15C/D, WXF
145th AW (N.C.)	C-17, CEF, MAFFS
146th AW (Calif.)	C-130J, ALCF, MAFFS, WXF
147th Attack Wing (Texas)	MQ-9, RC-26, TACP, EIS, WXF

WING (STATE)	SYSTEM/MISSION
148th FW (Minn.)	F-16C/D
149th FW (Texas)	F-16C/D
150th SOW (N.M.)	Special ops training (CA*), RC-26B
151st ARW (Utah)	KC-135R
152nd AW (Nev.)	C-130H, DCGS
153rd AW (Wyo.)	C-130H, MAFFS
154th Wing (Hawaii)	C-17 (CA*), F-22, KC-135R, intel, WXF
155th ARW (Neb.)	KC-135R
156th Wing (Puerto Rico)	WC-130H
157th ARW (N.H.)	KC-135R, KC-46A
158th FW (Vt.)	F-16C, F-35A, WXF
159th FW (La.)	F-15C/D, CC
161st ARW (Ariz.)	KC-135R
162nd Wing (Ariz.)	F-16, RC-26B, WXF
163rd Attack Wing (Calif.)	MQ-9, FTU, WXF
164th AW (Tenn.)	C-17A
165th AW (Ga.)	C-130H, CRTC, AOS
166th AW (Del.)	C-130H, cyber
167th AW (W.Va.)	C-17A
168th Wing (Alaska)	KC-135R
169th FW (S.C.)	F-16C/D, ATCS
171st ARW (Pa.)	KC-135R/T, WXF
172nd AW (Miss.)	C-17, ALCF
173rd FW (Ore.)	F-15C/D, FTU, ATCS
174th Attack Wing (N.Y.)	MQ-9, RC-26B, AOC, FTU,
175th Wing (Md.)	A-10C, CEF, cyber, intel
176th Wing (Alaska)	C-17 (CA*), HC-130J, HH-60G, GA, RAOC
177th FW (N.J.)	F-16C, AOS, WXF
178th Wing (Ohio)	MQ-9, cyber, ISR, MCE
179th Cyberspace Wing (Ohio)	C-130H
180th FW (Ohio)	F-16C/D
181st Intelligence Wing (Ind.)	DCGS, ISR, TACP, WXF
182nd AW (Ill.)	C-130H, CC, TACP
183rd Wing (Ill.)	CRF, DCGS
184th Wing (Kan.)	CACS, cyber, DCGS, ISR, NOSS, TACP
185th ARW (Iowa)	KC-135R
186th ARW (Miss.)	KC-135R, RC-26B, AOG, ATCS
187th FW (Ala.)	F-16C/D, RC-26B
188th Wing (Ark.)	MQ-9, MCE, ISR, DCGS
189th AW (Ark.)	C-130H, intel, FTU, WXF
190th ARW (Kan.)	KC-135R, CW
192nd Wing (Va.)	F-22 (CA*), cyber, DCGS
193rd SOW (Pa.)	EC-130J, AOS, CC, cyber, TACP
194th Wing (Wash.)	CC, CW
195th Wing (Calif.)	DCGS, intel

*Classic associate

AFSOC

AIR FORCE SPECIAL OPERATIONS COMMAND

Hurlburt Field, Fla.
EST. May 22, 1990

MISSION Institutional Command responsible for organizing, training, equipping, maintaining, and providing special operations airpower forces to combatant commanders.

AFSOC COMMAND STRUCTURE

USAF

Commander
Lt. Gen. Tony D. Bauernfeind
(as of Dec. 3, 2022)

- **1st Special Operations Wing (SOW)** Hurlburt Field, Fla.
- **24th SOW** Hurlburt Field, Fla.
- **27th SOW** Cannon AFB, N.M.
- **352nd SOW** RAF Mildenhall, U.K.
- **353rd SOW** Kadena AB, Japan
- **492nd SOW** Hurlburt Field, Fla.

PERSONNEL	
Active-duty USAF	16,117
Active-duty USSF	10

EQUIPMENT (TAI)	
C3/BM/ISR	49
Special Operations Forces	129
TOTAL	**178**

MAJOR UNITS	LOCATION	AIRCRAFT/MISSION/WEAPON
1st Special Operations Group (SOG)	Hurlburt Field, Fla.	AC-130J, CV-22, MC-130H, MQ-9, U-28A
27th SOG	Cannon AFB, N.M.	AC-130W, C-146A, CV-22B, MC-130J, MQ-9, U-28A
720th Special Tactics Group (STG)	Hurlburt Field, Fla.	Special tactics operations
724th STG	Pope Field, N.C.	Special tactics operations
752nd SOG	RAF Mildenhall, U.K.	CV-22, MC-130J

AFSOC AIRCRAFT BY TYPE

A-29C	3	CV-22B	45	MC-130J	49
AC-130J	30	MC-130H	2	MQ-9A	49
				TOTAL	**178**

Source: U.S. Air Force Total Aircraft Inventory (TAI) as of Sept. 30, 2023

2d Lt. Merit Davey

Survival, Evasion, Resistance, Escape specialists and Explosive Ordnance Disposal technicians from the 27th Special Operations Wing, Cannon Air Force Base, take a tactical halt during an exercise on Melrose Range, N.M., Jan. 23, 2024.

AMC

AIR MOBILITY COMMAND

Scott AFB, Ill.
EST. June 1, 1992

MISSION Component Command responsible for organizing, training, equipping, maintaining, and providing air mobility forces to sustain worldwide airpower operations.

AMC COMMAND STRUCTURE

USAF

Commander
Gen. Michael A. Minihan
(as of Oct. 5, 2021)

- ★★ **18th Air Force** (Air Forces Transportation) Scott AFB, Ill.
- ★★ **U.S. Air Force Expeditionary Center** JB McGuire-Dix-Lakehurst, N.J.

PERSONNEL	
Active-duty USAF	41,256
Active-duty USSF	13

EQUIPMENT (TAI)	
Tanker	163
Airlift	250
TOTAL	**413**

MAJOR UNITS	LOCATION	AIRCRAFT/MISSION/WEAPON
6th Air Refueling Wing (ARW)	MacDill AFB, Fla.	C-37, KC-135R, KC-46A
19th Airlift Wing (AW)	Little Rock AFB, Ark.	C-130H/J
22nd ARW	McConnell AFB, Kan.	KC-135R, KC-46A
60th Air Mobility Wing (AMW)	Travis AFB, Calif.	C-5, C-17, KC-10
62nd AW	JB Lewis-McChord, Wash.	C-17
87th Air Base Wing (ABW)	JB McGuire-Dix-Lakehurst, N.J.	Joint base facilities support
89th AW	JB Andrews, Md.	C-20B, C-32A, C-37A/B, C-40B, VC-25A
92nd ARW	Fairchild AFB, Wash.	KC-135R
305th AMW	JB McGuire-Dix-Lakehurst, N.J.	C-17, KC-46A
317th Airlift Wing	Dyess AFB, Texas	C-130J
375th AMW	Scott AFB, Ill.	C-21, C-40 (AA), KC-135R (AA)
436th AW	Dover AFB, Del.	C-5, C-17
437th AW	JB Charleston, S.C.	C-17A
515th Air Mobility Operations Wing (AMOW)	JB Pearl Harbor-Hickam, Hawaii	Contingency airfield operations
521st AMOW	Ramstein AB, Germany	Contingency airfield operations
618th Air Operations Center	Scott AFB, Ill.	Tanker Airlift Control Center operations
621st Contingency Response Wing	JB McGuire-Dix-Lakehurst, N.J.	Rapidly deployable bare-base operations
628th ABW	JB Charleston, S.C.	Joint base facilities support

AMC AIRCRAFT BY TYPE	
C-130J	59
C-17A	120
C-21A	14
C-32A	4
C-37A	4
C-37B	7
C-40B	4
C-5M	36
KC-10A	21
KC-13R	84
KC-135T	18
KC-46A	40
VC-25A	2
TOTAL	**413**

Source: U.S. Air Force Total Aircraft Inventory (TAI) as of Sept. 30, 2023

Senior Airman Joshua Hastings

A C-17 from the 15th Airlift Squadron, Joint Base Charleston, S.C., approaches a 63rd Air Refueling Squadron KC-135 from MacDill Air Force Base, Fla., on Nov. 28, 2023.

PACAF

PACIFIC AIR FORCES

★★★★

JB Pearl Harbor-Hickam, Hawaii

EST. July 1, 1957

MISSION Component Command responsible for providing U.S. Pacific Command integrated expeditionary Air Force capabilities, including strike, air mobility, and rescue forces.

PACAF COMMAND STRUCTURE

USAF

Commander
Gen. Kevin B. Schneider
(as of Feb. 9, 2024)

- ★★★ **5th Air Force** Yokota AB, Japan
- ★★★ **7th Air Force** Osan AB, South Korea
- ★★★ **11th Air Force** JB Elmendorf-Richardson, Alaska

PERSONNEL	
Active-duty USAF	30,905
Active-duty USSF	10

EQUIPMENT (TAI)	
Fighter/Attack	287
Helicopter	12
C3/BM/ISR	0
Tanker	15
Airlift	30
TOTAL	**344**

MAJOR UNITS	LOCATION	AIRCRAFT/MISSION/WEAPON
3rd Wing	JB Elmendorf-Richardson, Alaska	C-12, C-17, E-3, F-22A
8th Fighter Wing (FW)	Kunsan AB, South Korea	F-16C/D
15th Wing	JB Pearl Harbor-Hickam, Hawaii	C-17A, C-37A, C-40B, F-22A (AA)
18th Wing	Kadena AB, Japan	E-3B/C, F-15C/D, HH-60G, KC-135R
35th FW	Misawa AB, Japan	F-16C/D, F-35A
36th Wing	Andersen AFB, Guam	Operational platform for rotating combat forces
51st FW	Osan AB, South Korea	A-10C, F-16C/D
354th FW	Eielson AFB, Alaska	F-16C/D
374th Airlift Wing	Yokota AB, Japan	C-12J, C-130H, UH-1N
607th Air Operations Center (AOC)	Osan AB, South Korea	Plan and direct air operations
611th AOC	JB Elmendorf-Richardson, Alaska	Plan and direct air operations
613th AOC	JB Pearl Harbor-Hickam, Hawaii	Plan and direct air operations
673rd Air Base Wing	JB Elmendorf-Richardson, Alaska	Joint base facilities support
Regional Support Center	JB Elmendorf-Richardson, Alaska	Remote facility operations, communications, engineering

PACAF AIRCRAFT BY TYPE

A-10C	24	E-3B	0	F-35A	54
C-12F	2	F-15C	21	HH-60G	8
C-12J	3	F-15D	1	KC-135R	10
C-130J	14	F-16C	121	KC-135T	5
C-17A	9	F-16D	12	UH-1	4
C-37A	2	F-22A	54	**TOTAL**	**344**

Source: U.S. Air Force Total Aircraft Inventory (TAI) as of Sept. 30, 2023

Staff Sgt. Peter Reft

Airman 1st Class Tristian Hansen, 13th Fighter Generation Squadron weapons load crew member, marshals 13th and 14th Fighter Squadron F-16s during a Joint Forcible Entry exercise May 1 at Misawa Air Base, Japan.

USAFE-AFA

U.S. AIR FORCES IN EUROPE-AIR FORCES AFRICA

Ramstein AB, Germany
EST. April 20, 2012

MISSION Serves as the air component for U.S. European Command and U.S. Africa Command, directing air operations, including warfighting and humanitarian/peacekeeping actions, and maintains combat-ready forces for NATO responsibilities.

USAFE-AFA COMMAND STRUCTURE

USAF

Commander
Gen. James B. Hecker
(as of Oct. 5, 2021)

- ★★ **3rd Air Force** Ramstein AB, Germany
- ★★★ **Hq. USAFE-AFAFRICA** Ramstein AB, Germany

PERSONNEL	
Active-duty USAF	23,666
Active-duty USSF	12

EQUIPMENT (TAI)	
Fighter/Attack	192
Helicopter	5
Tanker	15
Airlift	22
TOTAL	**234**

MAJOR UNITS	LOCATION	AIRCRAFT/MISSION/WEAPON
31st Fighter Wing (FW)	Aviano AB, Italy	F-16C/D, HH-60G
39th Air Base Wing	Incirlik AB, Turkey	Operational location for deployed U.S. and NATO forces
48th FW	RAF Lakenheath, U.K.	F-15C/D, F-15E
52nd FW	Spangdahlem AB, Germany	F-16J
86th Airlift Wing	Ramstein AB, Germany	C-21A, C-37A, C-130J
100th Air Refueling Wing	RAF Mildenhall, U.K.	KC-135R/T
435th Air Ground Operations Wing	Ramstein AB, Germany	Battlefield airmen support and operations
501st Combat Support Wing	RAF Alconbury, U.K.	Facilitate support for seven geographically separated units
603rd Air Operations Center	Ramstein AB, Germany	Plan and direct air operations

USAFE-AFA AIRCRAFT BY TYPE

C-130J	14	F-15D	0	F-35A	41
C-21A	5	F-15E	55	HH-60G	5
C-37A	3	F-16C	74	KC-135R	11
F-15C	18	F-16D	4	KC-135T	4
				TOTAL	**234**

Source: U.S. Air Force Total Aircraft Inventory (TAI) as of Sept. 30, 2023

Capt. Nicholas Essek, 494th Fighter Squadron pilot, conducts preflight checks of an F-15E at RAF Lakenheath, U.K., before deployment to an undisclosed location in Southwest Asia in 2023.

Airman 1st Class Seleena Muhammad-Ali

AFGSC

AIR FORCE GLOBAL STRIKE COMMAND

★★★★

Barksdale AFB, La.
EST. Aug. 7, 2009

MISSION Component Command responsible for ICBM forces and long-range bomber forces to combatant commanders.

AFGSC Structure

USAF

Commander:
Gen. Thomas A. Bussiere
(as of Dec. 7, 2022)

- ★★ **8th Air Force** Barksdale AFB, La.
- ★★ **20th Air Force** F. E. Warren AFB, Wyo.

PERSONNEL	
Active-duty USAF	27,801
Active-duty USSF	14

EQUIPMENT (TOTAL AIRCRAFT INVENTORY)	
Bomber	118
Helicopter	25
ICBM	400
C3/BM/ISR	4
Trainer	14
TOTAL	**561**

MAJOR UNITS	LOCATION	AIRCRAFT/MISSION/WEAPON
2nd Bomb Wing (BW)	Barksdale AFB, La.	B-52H
5th BW	Minot AFB, N.D.	B-52H
7th BW	Dyess AFB, Texas	B-1B
28th BW	Ellsworth AFB, S.D.	B-1B
90th Missile Wing (MW)	F. E. Warren AFB, Wyo.	Minuteman III, UH-1N
91st MW	Minot AFB, N.D.	Minuteman III, UH-1N
341st MW	Malmstrom AFB, Mont.	Minuteman III, UH-1N
377th Air Base Wing	Kirtland AFB, N.M.	Nuclear operations, expeditionary force training, base support
509th BW	Whiteman AFB, Mo.	B-2A, T-38C
576th Flight Test Squadron	Vandenberg SFB, Calif.	Minuteman III
595th Command and Control Group	Offutt AFB, Neb.	Command and control, E-4B

AFGSC AIRCRAFT BY TYPE

B-1B	43	B-52H	56	T-38A	14
B-2A	19	E-4B	4	UH-1N	25
				TOTAL	**161**

Airman 1st Class Luis Gomez

Air-Launched Cruise Missiles are loaded onto a B-52H Stratofortress during Exercise Prairie/Bayou Vigilance 24-2 at Minot Air Force Base, N.D., in January.

FOAS, DRUS, & CIVIL AIR PATROL

A FOA Is a Field Operating Agency, an organization that performs a specialized function not performed by any other command, which reports to Headquarters, USAF. A Direct Reporting Unit (DRU) reports directly to the Chief of Staff. The Air Force Auxiliary is the Civil Air Patrol. **Personnel numbers are for Active duty.**

Air Force Agency for Modeling and Simulation(AFAMS)

Headquarters: Orlando, Fla.
Date of Current Designation: June 3, 1996
Type: Field Operating Agency (FOA)
Reports to: Deputy Chief of Staff, Operations
Mission: Support and facilitate integrated, realistic and efficient operational training across warfighter domains to enhance full-spectrum readiness. **USAF Personnel:** 7
www.afams.af.mil

Air Force Audit Agency (AFAA)

Headquarters: Pentagon
Date of Current Designation: Dec. 31, 1971
Type: FOA
Reports to: Secretary of the Air Force
Mission: Provide independent, objective, and quality internal audit service. **Personnel:** 0
www.afaa.af.mil

Air Force Cost Analysis Agency (AFCAA)

Headquarters: Arlington, Va.
Date of Current Designation: Aug. 1, 1991
Reports to: SECAF/Deputy Assistant Secretary for Cost and Economics
Type: FOA
Mission: Develop life-cycle cost estimates and analyses and develop independent cost estimates, assessments and analyses on major space, aircraft, weapons, electronics, and information systems.
USAF Personnel: 12
www.saffm.hq.af.mil

Air Force District of Washington (AFDW)

Headquarters: JB Andrews, Md.
Date of Current Designation: July 7, 2005
Type: Direct Reporting Unit (DRU)
Reports to: Chief of Staff of the Air Force
Mission: Orchestrate support for National Capital Region activities; train, equip, and provide forces for contingency, homeland, and ceremonial support operations worldwide.
USAF Personnel: 105 **USSF Personnel:** 1
www.afdw.af.mil

Air Force Flight Standards Agency (AFFSA)

Headquarters: Tinker AFB, Okla.
Date of Current Designation: Oct. 1, 1991
Type: FOA
Reports to: Hq. Air Force, Dir. of Current Operations
Mission: Enable global combat power for the joint warfighter. Focus on the systems, software, and strategic support given to operational commanders; subject-matter experts maintain service-level flying and airfield operations publications, training regulations, and equipment; and the Regional Maintenance Center provides 24/7 air traffic control and landing systems support. **USAF Personnel:** 109 **Website:** not available

Air Force Historical Research Agency (AFHRA)

Headquarters: Maxwell AFB, Ala.
Date of Current Designation: Sept. 1, 1991
Type: FOA
Reports to: DAF
Mission: Research, record, and disseminate history; collect, preserve, and manage historical document collection and oral history program; determine unit lineage and honors; verify aerial victory credits. **Personnel:** 0
www.afhra.af.mil

Air Force Inspection Agency (AFIA)

Headquarters: Kirtland AFB, N.M.
Date of Current Designation: Aug. 1, 1991
Type: FOA
Reports to: SECAF, Inspector General
Mission: Provide independent assessments of operations and activities; conduct nuclear surety inspection oversight, training, and certification; serve as primary action arm of the Secretary of the Air Force's inspection system.
USAF Personnel: 80 **USSF Personnel:** 1
www.afinspectorgeneral.af.mil

Air Force Legal Operations Agency (AFLOA)

Headquarters: JB Andrews, Md.
Date of Current Designation: Sept. 1, 1991
Type: FOA
Reports to: AF Judge Advocate General
Mission: Administer military justice programs; provide legal research technology and train legal professionals; support the Department of Justice in civil or criminal litigation pertaining to the Air Force. **USAF Personnel:** 532
USSF Personnel: 1 **www.afjag.af.mil**

Air Force Manpower Analysis Agency (AFMAA)

Headquarters: JBSA-Randolph, Texas
Date of Current Designation: June 1, 2015
Type: FOA
Reports to: Headquarters, USAF
Mission: Shapes Air Force and DOD manpower resourcing decisions through the delivery of timely determinants, data analytics, consultant services, and enterprise tools and training.
USAF Personnel: 154
www.afmaa.af.mil

Air Force Medical Readiness Agency (AFMRA)

Headquarters: Falls Church, Va.
Date of Current Designation: June 28, 2019
Type: FOA
Reports to: AF Surgeon General
Mission: Provide enterprise-level policy development, management and oversight of medical readiness programs, strategic partnerships, medical capability development, operational medical logistics, dental operations, and programs unique to the deployed environment and to the Air Force. The Air Force activated the agency while simultaneously deactivating the Air Force Medical Operations Agency and Air Force Medical Support Agency.
USAF Personnel: 216
www.airforcemedicine.af.mil

Air Force Mortuary Affairs Operations (AFMAO)

Headquarters: Dover AFB, Del.
Date of Current Designation: Jan. 6, 2009
Type: FOA
Reports to: DCS, Manpower, Personnel, and Services, Hq. USAF
Mission: Ensure respectful handling, dignity, and honor of the fallen; provide care, service, and support to families of the fallen; transfer remains.
USAF Personnel: 24
www.mortuary.af.mil

Air Force Office of Special Investigations (AFOSI)

Headquarters: Quantico, Va.
Date of Current Designation: Dec. 20, 1971
Type: FOA
Reports to: IG, Office of the SECAF
Mission: Provide investigative service to USAF commanders; identify, exploit, and neutralize criminal, terrorist, and intelligence threats; combat threats to information systems and technologies; defeat fraud affecting acquisitions and base-level capabilities. **USAF Personnel:** 159
www.osi.af.mil

Air Force Operational Test and Evaluation Center (AFOTEC)

Headquarters: Kirtland AFB, N.M.
Date of Current Designation: April 4, 1983
Type: DRU
Reports to: Hq, USAF
Mission: Inform warfighters and acquisition professionals through operational testing.
USAF Personnel: 297
www.afotec.af.mil

Air Force Operations Group (AFOG)

Headquarters: Pentagon
Date of Current Designation: April 1, 1995
Type: FOA
Reports to: Deputy Chief of Staff, Operations
Mission: Provide 24-hour watch on current operations; train and staff Crisis Action Team; develop weather data for National Command Authority, Joint Chiefs of Staff, National Military Command Center, Army Operations Center, and other federal agencies.
USAF Personnel: 43
Website: not available

Air Force Personnel Center (AFPC)

Headquarters: JBSA-Randolph, Texas
Date of Current Designation: Oct. 1, 1995
Type: FOA
Reports to: Office of DCS, Manpower and Personnel, Hq USAF
Mission: Identify proper grades, specialties, and skill levels for USAF mission; manage assignments; monitor professional development; plan and schedule expeditionary forces; oversee Airmen and family readiness centers; assist casualty reporting and Missing in Action/Prisoner of War actions.
USAF Personnel: 642
www.afpc.af.mil

Air Force Public Affairs Agency (AFPAA)

Headquarters: JBSA-Lackland, Texas
Date of Current Designation: Oct. 1, 2008
Type: FOA
Reports to: Office of the SECAF for Public Affairs
Mission: Develop and sustain public affairs products; provide combat camera and graphics support; test emerging technologies; manage public affairs personnel deployments.
USAF Personnel: 46
www.publicaffairs.af.mil

Air Force Review Boards Agency (AFRBA)

Headquarters: JB Andrews, Md.
Date of Current Designation: Aug. 1, 1991
Type: FOA
Reports to: Assistant SECAF for Manpower and Reserve Affairs
Mission: Manage military and civilian appellate processes; serve as lead agent for DOD Physical Disability Board of Review.
USAF Personnel: 7
www.afrba-portal.cce.af.mil

Air Force Safety Center (AFSEC)

Headquarters: Kirtland AFB, N.M.
Date of Current Designation: Jan. 1, 1996
Type: FOA
Reports to: DAF
Mission: Manage mishap prevention, risk management, and nuclear surety programs; provide flight, ground, weapons, human factors, and space safety technical assistance; oversee major command mishap investigations and evaluate corrective actions; direct safety education programs.
USAF Personnel: 46
www.safety.af.mil

Air National Guard Readiness Center (ANGRC)

Headquarters: JB Andrews, Md.
Date of Current Designation: June 1, 1992
Type: FOA
Reports to: National Guard Bureau (Pentagon)
Mission: Provide resources, policy oversight, and guidance to ensure ANG wings and geographically separated units are ready, trained, and equipped for homeland and global operations.
USAF Personnel: 39
www.ang.af.mil/about/ANGRC

DOD Cyber Crime Center (DC3)

Headquarters: Linthicum, Md.
Date of Current Designation: Jan. 15, 2021
Type: FOA
Reports to: IG, Office of the SECAF
Mission: Provides digital and multimedia forensics, specialized cyber training, technical solutions development, and cyber analytics for the following DOD mission areas: cybersecurity and critical infrastructure protection; law enforcement and counterintelligence; document and media exploitation, counterterrorism, and safety inquiries.
USAF Personnel: 4
www.dc3.mil

National Air and Space Intelligence Center (NASIC)

Headquarters: Wright-Patterson AFB, Ohio
Date of Current Designation: Feb. 20, 2003
Type: FOA
Reports to: Deputy Chief of Staff for Intelligence, Surveillance, Reconnaissance, and Cyber Effects Operations
Mission: Discover and characterize air, space, missile, and cyber threats to enable full-spectrum multidomain operations, drive weapon system acquisition, and inform national defense policy.
USAF Personnel: 113
www.nasic.af.mil

US Air Force Academy (USAFA)

Headquarters: Colorado Springs, Colo.
Date of Current Designation: April 1, 1954
Type: DRU
Reports to: Chief of Staff of the Air Force
Mission: Develop, educate, and inspire young men and women to become USAF officers with knowledge, character, and discipline.
USAF Personnel: 225 **USSF Personnel:** 14
Cadets: 4,000+
www.usafa.edu

Civil Air Patrol (CAP)

Headquarters: Maxwell AFB, Ala.

Date of Current Designation: Dec. 1, 1941
Type: Auxiliary
Reports to: CAP Board of Governors/National Commander
Mission: Provide operational capabilities to support search and rescue, disaster relief, a nationwide communications network, and counterdrug and homeland security missions; conduct leadership training, and career and technical education for CAP Cadet Program; promote aerospace education.
Total Volunteers: ~61,000
www.gocivilairpatrol.com

AIR FORCE WINGS

There are 146 Active-duty wings in the U.S. Air Force. There are 37 wings in the Air Reserve (see list on p. 65) and 90 wings in the Air National Guard (see list on p. 70). All of them trace their history to the 1st Pursuit Wing, formed in France by the American Expeditionary Forces of the U.S. Army in July 1918. The term "wing" has remained in use ever since.

Air wings in World War II were administrative and operational organizations that typically controlled multiple combat groups and service organizations. Today's wings are smaller, dating their history to 1948, when the newly independent Air Force established permanent combat wings consisting of a combat group, an air base group, a maintenance and supply group, and a medical group.

In most cases, wings' numerical designator evolved from the combat group that preceded it. For example, today's 14th Flying Training Wing traces its history to the 14th Fighter Wing and, before that, the 14th Fighter Group. Each group within the wing takes on the wing's numerical designator.

Every wing has a distinct mission and scope, whether that is operational, managing an air base, or performing specialized missions such as intelligence or training. Operational wings typically consist of an operations group and provide their own maintenance, supply, munitions, and often base support. Those that are tenant organizations rely on host commands to provide base and related support services.

1st Fighter Wing
JB Langley-Eustis, Va.
ACC
F-22, T-38A

1st Special Operations Wing
Hurlburt Field, Fla.
AFSOC
AC-130J/U, CV-22, MC-130, MQ-9, U-28A

2nd Bomb Wing
Barksdale AFB, La.
AFGSC
B-52H

3rd Wing
JB Elmendorf-Richardson, Alaska
PACAF
C-12, C-17, E-3, F-22

4th Fighter Wing
Seymour Johnson AFB, N.C.
ACC
F-15E

5th Bomb Wing
Minot AFB, N.D.
AFGSC
B-52H

6th Air Refueling Wing
MacDill AFB, Fla.
AMC
C-37, KC-135

7th Bomb Wing
Dyess AFB, Texas
AFGSC
B-1B

8th Fighter Wing
Kunsan Air Base, South Korea
PACAF
F-16C/D

9th Reconnaissance Wing
Beale AFB, Calif.
ACC
RQ-4, T-38A, U-2

10th Air Base Wing
U.S. Air Force Academy, Colo.
USAFA
Education, Medical, Infrastructure

11th Wing
JB Anacostia-Bolling, Washington, D.C.
AFDW
Host Unit, Base Operations and Support, USAF Band, USAF Honor Guard

12th Flying Training Wing
JB San Antonio-Randolph, Texas
AETC
T-1A, T-6A, T-38C

14th Flying Training Wing
Columbus AFB, Miss.
AETC
T-1A, T-6A, T-38C

15th Wing
JB Pearl Harbor-Hickam, Hawaii
PACAF
C-17, C-37, C-40B, F-22

17th Training Wing
Goodfellow AFB, Texas
AETC
Technical Training, Crypto/Intelligence Training-All Services

18th Wing
Kadena Air Base, Japan
PACAF
E-3, F-15C/D, HH-60, KC-135

19th Airlift Wing
Little Rock AFB, Ark.
AMC
C-130H/J

20th Fighter Wing
Shaw AFB, S.C.
ACC
F-16CM

22nd Air Refueling Wing
McConnell AFB, Kan.
AMC
KC-46, KC-135

23rd Wing
Moody AFB, Ga.
ACC
A-10, HC-130J, HH-60

24th Operations Wing
Hurlburt Field, Fla.
AFSOC
Special Training and Tactics

27th Special Operations Wing
Cannon AFB, N.M.
AFSOC
AC-130J, C-46, CV-22, MC-130J, MQ-9, U-28A

28th Bomb Wing
Ellsworth AFB, S.D.
AFGSC
B-1B

31st Fighter Wing
Aviano Air Base, Italy
USAFE-AFAFRICA
F-16C/D, HH-60

33rd Fighter Wing
Eglin AFB, Fla.
AETC
F-35

35th Fighter Wing
Misawa Air Base, Japan
PACAF
F-16CM

36th Wing
Andersen AFB, Guam
PACAF
Host Unit, Base Operations

37th Training Wing
JB San Antonio-Lackland, Texas
AETC
Host Unit, Training Operations

39th Air Base Wing
Incirlik Air Base, Turkey
USAFE-AFAFRICA
Host Unit, Base Operations/Support

42nd Air Base Wing
Maxwell-Gunter AFB, Ala.
AETC
Host Unit, Air University Support

47th Flying Training Wing
Laughlin AFB, Texas
AETC
T-1A, T-6A, T-38C

48th Fighter Wing
RAF Lakenheath, U.K.
USAFE-AFAFRICA
F-15C/D, F-15E

49th Wing
Holloman AFB, N.M.
AETC
MQ-9

51st Fighter Wing
Osan Air Base, South Korea
PACAF
A-10, F-16C/D

52nd Fighter Wing
Spangdahlem Air Base, Germany
USAFE-AFAFRICA
F-16C/D

53rd Wing
Eglin AFB, Fla.
ACC
Testing and Evaluation. A-10, B-1B, B-2, B-52H, BQM-167, E-9A, F-15C/D/E, F-16C/D, F-22, F-35, HC-130J, HH-60, MQ-9, QF-16, RQ-4, U-2

55th Wing
Offutt AFB, Neb.
ACC
EC-130H, OC-135B, RC-135S/U/V/W, TC-135S/W, WC-135

56th Fighter Wing
Luke AFB Ariz.
AETC
Training. F-16, F-35

57th Wing
Nellis AFB, Nev.
ACC
Training and Tactics. A-10, E-3C, E-8C, EC-130, F-15C/C/E, F-16, F-22, F-35, HH-60, MQ-9, RC-135

58th Special Operations Wing
Kirtland AFB, N.M.
AETC
Training, Special Operations. Combat Search and Rescue. CV-22, HC-130J/P/N, HH-60, MC-130H/J/P, TH-1H, UH-1N

59th Medical Wing
JB San Antonio, Texas
AETC
Military Medical Services

60th Air Mobility Wing
Travis AFB, Calif.
AMC
C-5M, C-17, KC-10

62nd Airlift Wing
JB Lewis-McChord, Wash.
AMC
C-17

67th Cyberspace Wing
JB San Antonio-Lackland, Texas
ACC
Cyber Operations

70th Intelligence, Surveillance, and Reconnaissance Wing
Fort George Meade, Md.
AFISRA ACC
Primary provider of signals intelligence to national leaders and combat commanders

71st Flying Training Wing
Vance AFB, Okla.
AETC
T-1A, T-6A, T-38C

EXPEDITIONARY WINGS

Expeditionary wings include headquarters staffs, but do not own their own aircraft and personnel. Instead, deployed personnel and equipment are assigned based on mission requirements.

332nd Air Expeditionary Wing
Southwest Asia (Undisclosed Locations)
ACC
A-10C F-15E, F-16C, HC-130P, HH-60G, KC-135R, MQ-9

72nd Air Base Wing
Tinker AFB, Okla.
AFMC
Host Unit, Base Operations and Support

75th Air Base Wing
Hill AFB, Utah
AFMC
Host Unit, Base Operations and Support

76th Maintenance Wing
Tinker AFB, Okla.
AFMC
Aircraft Depot Maintenance, Repair, Modifications

379th Air Expeditionary Wing
Al Udeid Air Base, Qatar
ACC
B-1, B-52, C-17, C-21, C-130H/J, E-8C, KC-135, RC-135V/W

380th Air Expeditionary Wing
Al Dhafra Air Base, UAE
ACC
E-3, KC-10, RQ-4, U-2

386th Air Expeditionary Wing
Ali Al Salem Air Base, Kuwait
ACC
C-130E/H, EC-130

78th Air Base Wing
Robins AFB, Ga.
AFMC
Host Unit, Base Operations and Support

80th Flying Training Wing
Sheppard AFB, Texas
AETC
T-6A, T-38C

81st Training Wing
Keesler AFB, Miss.
AETC
Electronics Training for USAF, USN, USA, USMC, CG, Federal/Civilian Personnel

82nd Training Wing
Sheppard AFB, Texas
AETC
Host Unit, Base Operations and Support

86th Airlift Wing
Ramstein Air Base, Germany
USAFE-AFAFRICA
C-21, C-37A, C-40B, C-130J

87th Air Base Wing
JB McGuire-Dix-Lakehurst, N.J.
AMC
Host Unit, Base Operations and Support

88th Air Base Wing
Wright-Patterson AFB, Ohio
AFMC
Host Unit, Base Operations and Support

89th Airlift Wing
JB Andrews, Md.
AMC
C-20B, C-32A, C-37A/B, C-40B, VC-25A

90th Missile Wing
F.E. Warren AFB, Wyo.
AFGSC
Minuteman III, UH-1N

91st Missile Wing
Minot AFB, N.D.
AFGSC
Minuteman III, UH-1N

92nd Air Refueling Wing
Fairchild AFB, Wash.
AMC
C-17, KC-135

93rd Air Ground Operations Wing
Moody AFB, Ga.
ACC
Manage/Provide combat-ready TACAIR personnel, battlefield weather, and force protection assets

94th Airlift Wing
Dobbins ARB, Ga.
AFRC
C-130H

96th Test Wing
Eglin AFB, Fla.
AFMC
Aircraft Test and Evaluation Center. A-10, F-15C/E, F-16CG/CJ, UH-1N

97th Air Mobility Wing
Altus AFB, Okla.
AETC
C-17, KC-46, KC-135

99th Air Base Wing
Nellis AFB, Nev.
ACC
Host unit, base installation and support, Nevada Test and Training Range

100th Air Refueling Wing
RAF Mildenhall, U.K.
USAFE-AFAFRICA
KC-135R/T

301st Fighter Wing
Naval Air Station JRB, Fort Worth, Texas
AFRC
F-16C/D

302nd Airlift Wing
Peterson SFB, Colo.
AFRC
C-130H (Modular Airborne Firefighting System)

305th Air Mobility Wing
JB McGuire-Dix-Lakehurst, N.J.
AMC
C17, KC-46

307th Bomb Wing
Barksdale AFB, La.
AFRC
B-52H

310th Space Wing
Schriever SFB, Colo.
AFRC
Space operations, control, warning

314th Airlift Wing
Little Rock AFB, Ark.
AETC
C-130J

315th Airlift Wing
JB Charleston, S.C.
AFRC
C-17

316th Wing
JB Andrews, Md.
AFDW
Host Unit, Base Operations and Support
UH-1N

317th Airlift Wing
Dyess AFB, Texas
AMC
C-130J

319th Reconnaissance Wing
Grand Forks AFB, N.D.
ACC
RQ-4

325th Fighter Wing
Tyndall AFB, Fla.
ACC
F-22

341st Missile Wing
Malmstrom AFB, Mont.
AFGSC
Minuteman III, UH-1N

349th Air Mobility Wing
Travis AFB, Calif.
AFRC
C-5M, C-17, KC-10

352nd Special Operations Wing
RAF Mildenhall, U.K.
AFSOC
MC-130J, CV-22

353rd Special Operations Wing
Kadena Air Base, Japan
AFSOC
Special operations forces

354th Fighter Wing
Eielson AFB, Alaska
PACAF
F-16C/D

355th Fighter Wing
Davis-Monthan AFB, Ariz.
ACC
A-10, EC-130, F-16, HC-130J, HH-60

363rd Intelligence, Surveillance, and Reconnaissance Wing
JB Langley-Eustis, Va.
ACC
Analysis for air, space and cyber operations, ISR, testing, tactics development

366th Fighter Wing
Mountain Home AFB, Idaho
ACC
F-15E

374th Airlift Wing
Yokota Air Base, Japan
PACAF
C-12J, C-130J, UH-1N

375th Air Mobility Wing
Scott AFB, Ill.
AMC
C-21, C-40, KC-135, NC-21

377th Air Base Wing
Kirtland AFB, N.M.
AFGSC
Base support, nuclear operations, expeditionary force training

388th Fighter Wing
Hill AFB, Utah
ACC
F-35A

403rd Wing
Keesler AFB, Miss.
AFRC
C-130J, WC-130J

412th Test Wing
Edwards AFB, Calif.
AFTC
Base support, aircraft flying, systems testing, maintenance, engineering, test pilot school

419th Fighter Wing
Hill AFB, Utah
AFRC
F-35A

432nd Wing
Creech AFB, Nev.
ACC
MQ-9, RQ-170

433rd Airlift Wing
JB San Antonio-Lackland (Kelly Field Annex), Texas
AFRC
C-5M

434th Air Refueling Wing
Grissom AFB, Ind.
AFRC
KC-135

435th Air Ground Operations Wing
Ramstein Air Base, Germany
USAFE-AFAFRICA
Expeditionary airfield operations

436th Airlift Wing
Dover AFB, Del.
AMC
C-5M, C-17

437th Airlift Wing
JB Charleston, S.C.
AMC
C-17

439th Airlift Wing
Westover AFB, Mass.
AFRC
C-5M

442nd Fighter Wing
Whiteman AFB, Mo.
AFRC
A-10C

445th Airlift Wing
Wright-Patterson AFB, Ohio
AFRC
C-17

446th Airlift Wing
JB Lewis-McChord (McChord Field), Wash.
AFRC
C-17

448th Supply Chain Maintenance Wing
Tinker AFB, Okla.
AFMC
Supply chain management and global logistics

452nd Air Mobility Wing
March ARB, Calif.
AFRC
C-17, KC-135

459th Air Refueling Wing
JB Andrews, Md.
AFRC
KC-135

461st Air Control Wing
Robins AFB, Ga.
ACC
Ground-based tactical command/control

480th ISR Wing
JB Langley-Eustis, Va.
ACC
DCGS, ISR, cyber support/ operations for USAF

482nd Fighter Wing
Homestead AFB, Fla.
AFRC
F-16C

501st Combat Support Wing
RAF Alconbury, U.K.
USAFE-AFAFRICA
Administrative support

502nd Air Base Wing
JB San Antonio-Sam Houston, Texas
AETC
Installation support

505th Command & Control Wing
Hurlburt Field, Fla.
ACC
Training, tactics, operations, command/control

507th Air Refueling Wing
Tinker AFB, Okla.
AFRC
KC-135

509th Bomb Wing
Whiteman AFB, Mo.
AFGSC
B-2

512th Airlift Wing
Dover AFB, Del.
AFRC
C-5M, C-17

514th Air Mobility Wing
JB McGuire-Dix-Lakehurst, N.J.
AFRC
C-17, KC-46

515th Air Mobility Operations Wing
JB Pearl Harbor-Hickam, Hawaii
AMC
Contingency airfield operations/logistics

521st Air Mobility Operations Wing
Ramstein Air Base, Germany
AMC
Contingency airfield operations/logistics

552nd Air Control Wing
Tinker AFB, Okla.
ACC
Control and Reporting Center (CRC), E-3

557th Weather Wing
Offutt AFB, Neb.
ACC
Worldwide weather information for USAF and unified combatant commands

621st Contingency Response Wing
JB McGuire-Dix-Lakehurst, N.J.
AMC
Air mobility operations, training, development

628th Air Base Wing
JB Charleston, S.C.
AMC
Base support, administration, operations

633rd Air Base Wing
JB Langley-Eustis, Va.
ACC
Base support, administration, operations

635th Supply Chain Operations Wing
Scott AFB, Ill.
AFMC
Global supply chain management

655th Intelligence, Surveillance, and Reconnaissance Wing
Wright-Patterson AFB, Ohio
AFRC
Intelligence operations

673rd Air Base Wing
JB Elmendorf-Richardson, Alaska
PACAF
Joint base facilities support

688th Cyberspace Wing
JB San Antonio-Lackland, Texas
ACC
Cyberspace military operations, intelligence, communications

711th Human Performance Wing
Wright-Patterson AFB, Ohio
AFRL
Human performance research in air, space, cyberspace

910th Airlift Wing
Youngstown-Warren Air Reserve Station, Ohio
AFRC
C-130H

908th Airlift Wing
Maxwell AFB, Ala.
AFRC
MH-139A

Airman 1st Class Albert Morel

F-16 Fighting Falcons from the 480th Fighter Squadron participate in Astral Knight 24, at Geilenkirchen NATO Air Base, Germany, May 14, 2024. The exercise centers on restoring combat operational capability to main operating bases, if attacked, while simultaneously conducting offensive strikes from dispersed and forward operating locations.

911th Airlift Wing
Pittsburgh Air Reserve Station, Pa.
AFRC
C-17

914th Air Refueling Wing
Niagara Falls Air Reserve Station, N.Y.
AFRC
KC-135

916th Air Refueling Wing
Seymour Johnson AFB, N.C.
AFRC
KC-135

919th Special Operations Wing
Duke Field, Fla.
AFRC
C-145A, C-146A, MQ-9,

920th Rescue Wing
Patrick SFB, Fla.
AFRC
HC-130N, HH-60

926th Wing
Nellis AFB, Nev.
AFRC
F-16, F-22, F-35, MQ-9

927th Air Refueling Wing
MacDill AFB, Fla.
AFRC
KC-135

931st Air Refueling Wing
McConnell AFB, Kan.
AFRC
KC-46, KC-135

932nd Airlift Wing
Scott AFB, Ill.
AFRC
C-40

934th Airlift Wing
Minneapolis-St. Paul Joint Air Reserve Station, Minn.
AFRC
C-130

940th Air Refueling Wing
Beale AFB, Calif.
AFRC
KC-135

944th Fighter Wing
Luke AFB, Ariz.
AFRC
A-10, F-15E, F-16C, F-35A

USAF AIRCRAFT TAIL CODES

AC 177th FW (ANG), Atlantic City Arpt., N.J.
AF USAF Academy, Colo.
AK 3rd Wing (PACAF), JB Elmendorf-Richardson, Alaska
354th FW (PACAF), Eielson AFB, Alaska
176th Wing (ANG), JB Elmendorf-Richardson, Alaska
AL 187th FW (ANG), Montgomery Regional Arpt., Ala.
AP 12th FTW (AETC), NAS Pensacola, Fla.
AV 31st FW (USAFE), Aviano AB, Italy
AZ 162nd Wing (ANG), Tucson Arpt., Ariz.
BB 9th RW (ACC), Beale AFB, Calif.
Det. 2, 53rd Wing (ACC), Beale AFB, Calif.
BD 307th BW (AFRC), Barksdale AFB, La.
CA 129th RQW (ANG), Moffett ANGB, Calif.
144th FW (ANG), Fresno Yosemite Arpt., Calif.
163rd ATKW (ANG), March ARB, Calif.
CB 14th FTW (AETC), Columbus AFB, Miss.
CH 432nd Wing (ACC), Creech AFB, Nev.
CO 140th Wing (ANG), Buckley SFB, Colo.
CT 103rd AW (ANG), Bradley ANGB, Conn.
D 100th ARW (USAFE), RAF Mildenhall, U.K.
DC 113th Wing (ANG), JB Andrews, Md.
DM 355th FW (ACC), Davis-Monthan AFB, Ariz.
DR 943rd RQG (AFRC), Davis-Monthan AFB, Ariz.
DY 7th BW (AFGSC), Dyess AFB, Texas
ED 412th TW (AFMC), Edwards AFB, Calif.
EG 33rd FW (AETC), Eglin AFB, Fla.
EL 28th BW (AFGSC), Ellsworth AFB, S.D.
EN 80th FTW (AETC), Sheppard AFB, Texas
ET 96th TW (AFMC), Eglin AFB, Fla.
FC 336th TRG (AETC), Fairchild AFB, Wash.
FE 90th MW (AFGSC), F. E. Warren AFB, Wyo.
FF 1st FW (ACC), JB Langley-Eustis, Va.
192nd FW (ANG), JB Langley-Eustis, Va.
FL 920th RQW (AFRC), Patrick SFB, Fla.
FM 482nd FW (AFRC), Homestead ARB, Fla.
FS 188th Wing (ANG), Fort Smith Arpt., Ark.
FT 23rd Wing (ACC), Moody AFB, Ga.
GA 116th ACW (ANG), Robins AFB, Ga.
165th AW (ANG), Savannah Hilton Head Arpt., Ga.
HD Det. 1, 53rd Wing (ACC), Holloman AFB, N.M.
HH 15th Wing (PACAF), JB Pearl Harbor-Hickam, Hawaii
154th Wing (ANG), JB Pearl Harbor-Hickam, Hawaii
HL 388th FW (ACC), Hill AFB, Utah
419th FW (AFRC), Hill AFB, Utah
HO 49th Wing (ACC), Holloman AFB, N.M.
IA 132nd Wing (ANG), Des Moines Arpt., Iowa
ID 124th FW (ANG), Boise Air Terminal, Idaho
IN 122nd FW (ANG), Fort Wayne, Ind.
JZ 159th FW (ANG), NAS JRB New Orleans, La.
KC 442nd FW (AFRC), Whiteman AFB, Mo.
LA 2nd BW (AFGSC), Barksdale AFB, La.
LF 56th FW (AETC), Luke AFB, Ariz.
LI 106th RQW (ANG), F. S. Gabreski Arpt., N.Y.
LN 48th FW (USAFE), RAF Lakenheath, U.K.
MA 104th FW (ANG), Barnes Arpt., Mass.
MD 175th Wing (ANG), Warfield ANGB/Martin State Arpt., Md.
MI 127th Wing (ANG), Selfridge ANGB, Mich.
MM 341st MW (AFGSC), Malmstrom AFB, Mont.
MN 133rd AW (ANG), Minn.-St. Paul Arpt./ARS, Minn.
148th FW (ANG), Duluth Arpt., Minn.
MO 366th FW (ACC), Mountain Home AFB, Idaho
MT 5th BW (AFGSC), Minot AFB, N.D.
91st MW (AFGSC), Minot AFB, N.D.
NY 174th ATKW (ANG), Hancock Fld., N.Y.
OF 55th Wing (ACC), Offutt AFB, Neb.
OH 179th Cyberspace Wing (ANG), Mansfield Lahm Arpt., Ohio
180th FW (ANG), Toledo Express Arpt., Ohio
OK 137th SOW (ANG), Will Rogers ANGB, Okla.
138th FW (ANG), Tulsa Arpt., Okla.
552nd ACW (ACC), Tinker AFB, Okla.
OS 51st FW (PACAF), Osan AB, South Korea
OT 31st TES (ACC), Edwards AFB, Calif.
49th TES (ACC), Barksdale AFB, La.
53rd Wing (ACC), Eglin AFB, Fla.
88th TES (ACC), Nellis AFB, Nev.
337th TES (ACC), Dyess AFB, Texas
422nd TES (ACC), Nellis AFB, Nev.
556th TES (ACC), Creech AFB, Nev.
Det. 4, 53rd Wing (ACC), Creech AFB, Nev.
RA 12th FTW (AETC), JBSA-Randolph, Texas
RS 86th AW (USAFE), Ramstein AB, Germany
SA 149th FW (ANG), JBSA-Lackland, Texas
SC 169th FW (ANG), McEntire JNGB, S.C.
SD 114th FW (ANG), Joe Foss Fld., S.D.
SJ 4th FW (ACC), Seymour Johnson AFB, N.C.
SP 52nd FW (USAFE), Spangdahlem AB, Germany
SW 20th FW (ACC), Shaw AFB, S.C.
TD 53rd WEG (ACC), Tyndall AFB, Fla.
TX 147th ATKW (ANG), Ellington Fld., Texas
301st FW (AFRC), NAS Fort Worth JRB, Texas
TY 325th FW (ACC), Tyndall AFB, Fla.
VN 71st FTW (AETC), Vance AFB, Okla.
WA 57th Wing (ACC), Nellis AFB, Nev.
WI 115th FW (ANG), Truax Fld., Wis.
WM 72nd TES (AFGSC), Whiteman AFB, Mo.
509th BW (AFGSC), Whiteman AFB, Mo.
WP 8th FW (PACAF), Kunsan AB, South Korea
WV 130th AW (ANG), Yeager Arpt., W.Va.
WW 35th FW (PACAF), Misawa AB, Japan
XL 47th FTW (AETC), Laughlin AFB, Texas
YJ 374th AW (PACAF), Yokota AB, Japan
ZZ 18th Wing (PACAF), Kadena AB, Japan

Secretary of the Air Force Frank Kendall (left), Chairman of the Joint Chiefs of Staff Gen. C.Q. Brown Jr., and Air Force Chief of Staff Gen. David Allvin salute during the national anthem at Joint Base Andrews, Md., Nov. 17, 2023.

Eric Dietrich/USAF

AIR FORCE LEADERS THROUGH THE YEARS

The Nation's Air Arm and Its Early Leaders

DESIGNATION	COMMANDER	DATES OF SERVICE	
AERONAUTICAL DIVISION, US SIGNAL CORPS Aug. 1, 1907 - July 18, 1914			
Chief, Aeronautical Division	Capt. Charles deForest Chandler	Aug. 1, 1907	June 30, 1910
	Capt. Arthur S. Cowan	July 1, 1910	June 19, 1911
	Capt. Charles deForest Chandler	June 20, 1911	Sept. 9, 1913
	Maj. Samuel Reber	Sept. 10, 1913	July 17, 1914
AVIATION SECTION, US SIGNAL CORPS[a] July 18, 1914 - May 20, 1918			
Chief, Aviation Section	Lt. Col. Samuel Reber	July 18, 1914	May 5, 1916
	Lt. Col. George O. Squier	May 20, 1916	Feb. 19, 1917
	Lt. Col. John B. Bennet	Feb. 19, 1917	June 30, 1917
	Maj. Benjamin D. Foulois	June 30, 1917	Nov. 12, 1917
	Brig. Gen. Arthur I. Dade	Nov. 12, 1917	Feb. 27, 1918
	Col. Lawrence Brown	Feb. 27, 1918	May 20, 1918
DIVISION OF MILITARY AERONAUTICS, SECRETARY OF WAR May 20, 1918 - May 24, 1918			
Director of Military Aeronautics	Maj. Gen. William L. Kenly	May 20, 1918	August 1918
	(Kept same title three months into absorption by Air Service)		
AIR SERVICE May 24, 1918 - July 2, 1926			
Director of Air Service	John D. Ryan	Aug. 28, 1918	Nov. 27, 1918
	Maj. Gen. Charles T. Menoher	Jan. 2, 1919	June 4, 1920
Chief of Air Service	Maj. Gen. Charles T. Menoher	June 4, 1920	Oct. 4, 1921
	Maj. Gen. Mason M. Patrick	Oct. 5, 1921	July 2, 1926
AIR CORPS[b] July 2, 1926 - Sept. 18, 1947			
Chief of Air Corps	Maj. Gen. Mason M. Patrick	July 2, 1926	Dec. 13, 1927
	Maj. Gen. James E. Fechet	Dec. 14, 1927	Dec. 19, 1931
	Maj. Gen. Benjamin D. Foulois	Dec. 20, 1931	Dec. 21, 1935
	Maj. Gen. Oscar Westover	Dec. 22, 1935	Sept. 21, 1938
	Maj. Gen. Henry H. Arnold	Sept. 29, 1938	June 20, 1941
ARMY AIR FORCES (AAF) June 20, 1941 - Sept. 18, 1947			
Chief, Army Air Forces	Lt. Gen. Henry H. Arnold	June 20, 1941	March 9, 1942
Commanding General, AAF	Gen. of the Army Henry H. Arnold[c]	March 9, 1942	Feb. 9, 1946
	Gen. Carl A. Spaatz	Feb. 9, 1946	Sept. 26, 1947
UNITED STATES AIR FORCE[d] Sept. 18, 1947			
Chief of Staff	Gen. Carl A. Spaatz	Sept. 26, 1947	April 29, 1948

[a] Between April 1917 and May 1918, the Aviation Section was known by various other names: Aeronautical Division, Airplane Division, Air Division, and Air Service Division.

[b] The Air Corps became a subordinate element of the Army Air Forces June 20, 1941. Since the Air Corps had been established by statute in 1926, its disestablishment required an act of Congress, which did not take place until 1947. Between March 9, 1942, and Sept. 18, 1947, the Air Corps continued to exist as a combatant arm, and personnel of the Army Air Forces were still assigned to the Air Corps.

[c] The title General of the Army for Henry H. Arnold was changed to General of the Air Force by an act of Congress May 7, 1949. The position of Chief of Staff was established by a DOD-approved Army-Air Force Transfer Order issued Sept. 28, 1947.

[d] For U.S. Space Force lineage, see p. 94.

Air Force Leaders

SECRETARY OF THE AIR FORCE

Stuart Symington	Sept. 18, 1947	April 24, 1950
Thomas K. Finletter	April 24, 1950	Jan. 20, 1953
Harold E. Talbott	Feb. 4, 1953	Aug. 13, 1955
Donald A. Quarles	Aug. 15, 1955	April 30, 1957
James H. Douglas Jr.	May 1, 1957	Dec. 10, 1959
Dudley C. Sharp	Dec. 11, 1959	Jan. 20, 1961
Eugene M. Zuckert	Jan. 23, 1961	Sept. 30, 1965
Harold Brown	Oct. 1, 1965	Feb. 14, 1969
Robert C. Seamans Jr.	Feb. 15, 1969	May 14, 1973
John L. McLucas*	May 15, 1973	Nov. 23, 1975
James W. Plummer (acting)	Nov. 23, 1975	Jan. 2, 1976
Thomas C. Reed	Jan. 2, 1976	April 6, 1977
John C. Stetson	April 6, 1977	May 18, 1979
Hans M. Mark*	May 18, 1979	Feb. 9, 1981
Verne Orr	Feb. 9, 1981	Nov. 30, 1985
Russell A. Rourke	Dec. 6, 1985	April 7, 1986
Edward C. Aldridge Jr.*	April 8, 1986	Dec. 16, 1988
James F. McGovern (acting)	Dec. 16, 1988	April 29, 1989
John J. Welch Jr. (acting)	April 29, 1989	May 21, 1989
Donald B. Rice	May 22, 1989	Jan. 20, 1993
Michael B. Donley (acting)	Jan. 20, 1993	July 13, 1993
Gen. Merrill A. McPeak (acting)	July 14, 1993	Aug. 5, 1993
Sheila E. Widnall	Aug. 6, 1993	Oct. 31, 1997
F. Whitten Peters*	Nov. 1, 1997	Jan. 20, 2001
Lawrence J. Delaney (acting)	Jan. 20, 2001	June 1, 2001
James G. Roche	June 1, 2001	Jan. 20, 2005
Peter B. Teets (acting)	Jan. 20, 2005	March 25, 2005
Michael L. Dominguez (acting)	March 25, 2005	July 29, 2005
Preston M. Geren (acting)	July 29, 2005	Nov. 3, 2005
Michael W. Wynne	Nov. 3, 2005	June 20, 2008
Michael B. Donley*	June 21, 2008	June 21, 2013
Eric K. Fanning (acting)	June 21, 2013	Dec. 20, 2013
Deborah Lee James	Dec. 20, 2013	Jan. 19, 2017
Lisa S. Disbrow (acting)	Jan. 20, 2017	May 16, 2017
Heather A. Wilson	May 16, 2017	May 31, 2019
Matthew P. Donovan (acting)	June 1, 2019	Oct. 16, 2019
Barbara M. Barrett	Oct. 16, 2019	Jan. 20, 2021
John P. Roth (acting)	Jan. 20, 2021	July 28, 2021
Frank Kendall III	July 28, 2021	

*Served as acting Secretary: McLucas until July 18, 1973; Mark until July 26, 1979; Aldridge until June 9, 1986; Peters until July 30, 1999; Donley until Oct. 17, 2008.

CHIEF OF STAFF OF THE AIR FORCE

Gen. Carl A. Spaatz	Sept. 26, 1947	April 29, 1948
Gen. Hoyt S. Vandenberg	April 30, 1948	June 29, 1953
Gen. Nathan F. Twining	June 30, 1953	June 30, 1957
Gen. Thomas D. White	July 1, 1957	June 30, 1961
Gen. Curtis E. LeMay	June 30, 1961	Jan. 31, 1965
Gen. John P. McConnell	Feb. 1, 1965	July 31, 1969
Gen. John D. Ryan	Aug. 1, 1969	July 31, 1973
Gen. George S. Brown	Aug. 1, 1973	June 30, 1974
Gen. David C. Jones	July 1, 1974	June 20, 1978
Gen. Lew Allen Jr.	July 1, 1978	June 30, 1982
Gen. Charles A. Gabriel	July 1, 1982	June 30, 1986
Gen. Larry D. Welch	July 1, 1986	June 30, 1990
Gen. Michael J. Dugan	July 1, 1990	Sept. 17, 1990
Gen. John Michael Loh (acting)	Sept. 18, 1990	Oct. 27, 1990
Gen. Merrill A. McPeak	Oct. 27, 1990	Oct. 25, 1994
Gen. Ronald R. Fogleman	Oct. 25, 1994	Sept. 1, 1997
Gen. Ralph E. Eberhart (acting)	Sept. 1, 1997	Oct. 6, 1997
Gen. Michael E. Ryan	Oct. 6, 1997	Sept. 6, 2001
Gen. John P. Jumper	Sept. 6, 2001	Sept. 2, 2005
Gen. T. Michael Moseley	Sept. 2, 2005	July 12, 2008
Gen. Duncan J. McNabb (acting)	July 12, 2008	Aug. 12, 2008
Gen. Norton A. Schwartz	Aug. 12, 2008	Aug. 10, 2012
Gen. Mark A. Welsh III	Aug. 10, 2012	July 1, 2016
Gen. David L. Goldfein	July 1, 2016	Aug. 6, 2020
Gen. Charles Q. Brown Jr.	Aug. 6, 2020	Sept. 29, 2023
Gen. David W. Allvin	Nov. 2, 2023	

VICE CHIEF OF STAFF OF THE AIR FORCE

Gen. Hoyt S. Vandenberg	Oct. 10, 1947	April 28, 1948
Gen. Muir S. Fairchild	May 27, 1948	March 17, 1950
Lt. Gen. Lauris Norstad (acting)	May 22, 1950	Oct. 9, 1950
Gen. Nathan F. Twining	Oct. 10, 1950	June 29, 1953
Gen. Thomas D. White	June 30, 1953	June 30, 1957
Gen. Curtis E. LeMay	July 1, 1957	June 30, 1961
Gen. Frederic H. Smith Jr.	July 1, 1961	June 30, 1962
Gen. William F. McKee	July 1, 1962	July 31, 1964
Gen. John P. McConnell	Aug. 1, 1964	Jan. 31, 1965
Gen. William H. Blanchard	Feb. 19, 1965	May 31, 1966
Lt. Gen. Hewitt T. Wheless (acting)	June 13, 1966	July 31, 1966
Gen. Bruce K. Holloway	Aug. 1, 1966	July 31, 1968
Gen. John D. Ryan	Aug. 1, 1968	July 31, 1969
Gen. John C. Meyer	Aug. 1, 1969	April 30, 1972
Gen. Horace M. Wade	May 1, 1972	Oct. 31, 1973
Gen. Richard H. Ellis	Nov. 1, 1973	Aug. 18, 1975
Gen. William V. McBride	Sept. 1, 1975	March 31, 1978
Gen. Lew Allen Jr.	April 1, 1978	June 30, 1978
Gen. James A. Hill	July 1, 1978	Feb. 29, 1980
Gen. Robert C. Mathis	March 1, 1980	May 31, 1982
Gen. Jerome F. O'Malley	June 1, 1982	Oct. 5, 1983
Gen. Lawrence A. Skantze	Oct. 6, 1983	July 31, 1984
Gen. Larry D. Welch	Aug. 1, 1984	July 31, 1985
Gen. John L. Piotrowski	Aug. 1, 1985	Jan. 31, 1987
Gen. Monroe W. Hatch Jr.	Feb. 1, 1987	May 24, 1990
Gen. John Michael Loh	May 25, 1990	March 25, 1991
Gen. Michael P. C. Carns	May 16, 1991	July 28, 1994
Gen. Thomas S. Moorman Jr.	July 29, 1994	July 11, 1997
Gen. Ralph E. Eberhart	July 11, 1997	May 26, 1999
Gen. Lester L. Lyles	May 27, 1999	April 17, 2000
Gen. John W. Handy	April 17, 2000	Nov. 5, 2001
Gen. Robert H. Foglesong	Nov. 5, 2001	Aug. 11, 2003
Gen. T. Michael Moseley	Aug. 12, 2003	Sept. 2, 2005
Gen. John D. W. Corley	Sept. 2, 2005	Sept. 17, 2007
Gen. Duncan J. McNabb	Sept. 17, 2007	Sept. 4, 2008
Gen. William M. Fraser III	Oct. 8, 2008	Aug. 27, 2009
Gen. Carrol H. Chandler	Aug. 27, 2009	Jan. 14, 2011
Gen. Philip M. Breedlove	Jan. 14, 2011	July 27, 2012
Gen. Larry O. Spencer	July 27, 2012	Aug. 6, 2015
Gen. David L. Goldfein	Aug. 6, 2015	July 1, 2016
Gen. Stephen W. Wilson	July 22, 2016	Nov. 16, 2020
Gen. David W. Allvin	Nov. 16, 2020	Nov. 2, 2023
Gen. James C. Slife	Dec. 19, 2023	

CHIEF MASTER SERGEANT OF THE AIR FORCE

CMSAF Paul W. Airey	April 3, 1967	July 31, 1969
CMSAF Donald L. Harlow	Aug. 1, 1969	Sept. 30, 1971
CMSAF Richard D. Kisling	Oct. 1, 1971	Sept. 30, 1973
CMSAF Thomas N. Barnes	Oct. 1, 1973	July 31, 1977
CMSAF Robert D. Gaylor	Aug. 1, 1977	July 31, 1979
CMSAF James M. McCoy	Aug. 1, 1979	July 31, 1981
CMSAF Arthur L. Andrews	Aug. 1, 1981	July 31, 1983
CMSAF Sam E. Parish	Aug. 1, 1983	June 30, 1986
CMSAF James C. Binnicker	July 1, 1986	July 31, 1990
CMSAF Gary R. Pfingston	Aug. 1, 1990	Oct. 25, 1994
CMSAF David J. Campanale	Oct. 26, 1994	Nov. 4, 1996
CMSAF Eric W. Benken	Nov. 5, 1996	July 30, 1999
CMSAF Frederick J. Finch	July 30, 1999	July 1, 2002
CMSAF Gerald R. Murray	July 1, 2002	June 30, 2006
CMSAF Rodney J. McKinley	June 30, 2006	June 30, 2009
CMSAF James A. Roy	June 30, 2009	Jan. 24, 2013
CMSAF James A. Cody	Jan. 24, 2013	Feb. 17, 2017
CMSAF Kaleth O. Wright	Feb. 17, 2017	Aug. 14, 2020
CMSAF JoAnne S. Bass	Aug. 14, 2020	March 8, 2024
CMSAF David A. Flosi	March 8, 2024	

MAJOR COMMAND AND ANG LEADERS

This section presents the leaders of USAF's Major Commands and the Air National Guard (ANG) under a command's current designation. **Leaders of historic Air Force major commands (and of active commands' previous designations) are listed online.**

AIR COMBAT COMMAND

Gen. John Michael Loh	June 1, 1992	June 23, 1995
Gen. Joseph W. Ralston	June 23, 1995	Feb. 28, 1996
Lt. Gen. Brett M. Dula (acting)	Feb. 28, 1996	April 5, 1996
Gen. Richard E. Hawley	April 5, 1996	June 11, 1999
Gen. Ralph E. Eberhart	June 11, 1999	Feb. 8, 2000
Gen. John P. Jumper	Feb. 8, 2000	Aug. 25, 2001
Lt. Gen. Donald G. Cook (acting)	Aug. 25, 2001	Nov. 14, 2001
Gen. Hal M. Hornburg	Nov. 14, 2001	Nov. 17, 2004
Lt. Gen. Bruce A. Wright (acting)	Nov. 17, 2004	Feb. 3, 2005
Lt. Gen. William Fraser III (acting)	Feb. 3, 2005	May 27, 2005
Gen. Ronald E. Keys	May 27, 2005	Oct. 2, 2007
Gen. John D. W. Corley	Oct. 2, 2007	Sept. 10, 2009
Gen. William M. Fraser III	Sept. 10, 2009	Sept. 13, 2011
Gen. Gilmary Michael Hostage III	Sept. 13, 2011	Nov. 4, 2014
Gen. Herbert J. Carlisle	Nov. 4, 2014	March 10, 2017
Gen. James M. Holmes	March 10, 2017	Aug. 28, 2020
Gen. Mark D. Kelly	Aug. 28, 2020	Feb. 29, 2024
Gen. Kenneth S. Wilsbach	Feb. 29, 2024	

For past leaders, see Tactical Air Command in Historic Major Command Leaders.

AIR EDUCATION AND TRAINING COMMAND

Gen. Henry Viccellio Jr.	July 1, 1993	June 20, 1995
Gen. Billy J. Boles	June 20, 1995	March 17, 1997
Gen. Lloyd W. Newton	March 17, 1997	June 22, 2000
Gen. Hal M. Hornburg	June 22, 2000	Nov. 10, 2001
Lt. Gen. John D. Hopper Jr. (acting)	Nov. 10, 2001	Dec. 15, 2001
Gen. Donald G. Cook	Dec. 15, 2001	June 17, 2005
Gen. William R. Looney III	June 17, 2005	July 2, 2008
Gen. Stephen R. Lorenz	July 2, 2008	Nov. 17, 2010
Gen. Edward A. Rice Jr.	Nov. 17, 2010	Oct. 10, 2013
Gen. Robin Rand	Oct. 10, 2013	July 21, 2015
Lt. Gen. Darryl L. Roberson	July 21, 2015	Nov. 16, 2017
Lt. Gen. Steven L. Kwast	Nov. 16, 2017	July 26, 2019
Lt. Gen. Marshall B. Webb	July 26, 2019	May 20, 2022
Lt. Gen. Brian S. Robinson	May 20, 2022	

For past leaders see Air Training Command in Historic Major Command Leaders.

AIR FORCE GLOBAL STRIKE COMMAND

Lt. Gen. Frank G. Klotz	Aug. 7, 2009	Jan. 6, 2011
Lt. Gen. James M. Kowalski	Jan. 6, 2011	Oct. 23, 2013
Lt. Gen. Stephen W. Wilson	Oct. 23, 2013	July 28, 2015
Gen. Robin Rand	July 28, 2015	Aug. 21, 2018
Gen. Timothy M. Ray	Aug. 21, 2018	Aug. 27, 2021
Gen. Anthony J. Cotton	Aug. 27, 2021	Dec. 7, 2022
Gen. Thomas A. Bussiere	Dec. 7, 2022	

For past leaders, see Strategic Air Command in Historic Major Command leaders.

AIR FORCE MATERIEL COMMAND

Gen. Ronald W. Yates	July 1, 1992	June 30, 1995
Gen. Henry Viccellio Jr.	June 30, 1995	May 9, 1997
Lt. Gen. Kenneth Eickmann (acting)	May 9, 1997	May 29, 1997
Gen. George T. Babbitt Jr.	May 29, 1997	April 20, 2000
Gen. Lester L. Lyles	April 20, 2000	Aug. 22, 2003
Gen. Gregory S. Martin	Aug. 22, 2003	Aug. 19, 2005
Gen. Bruce Carlson	Aug. 19, 2005	Nov. 21, 2008
Gen. Donald J. Hoffman	Nov. 21, 2008	June 5, 2012
Gen. Janet C. Wolfenbarger	June 5, 2012	June 8, 2015
Gen. Ellen M. Pawlikowski	June 8, 2015	Sept. 1, 2018
Lt. Gen. Robert D. McMurry Jr. (interim)	Sept. 1, 2018	May 31, 2019
Gen. Arnold W. Bunch Jr.	May 31, 2019	June 13, 2022
Gen. Duke Z. Richardson	June 13, 2022	

AIR FORCE RESERVE COMMAND

Maj. Gen. Robert A. McIntosh	Feb. 17, 1997	June 9, 1998
Maj. Gen. David R. Smith (acting)	June 9, 1998	Sept. 25, 1998
Lt. Gen. James E. Sherrard III	Sept. 25, 1998	June 1, 2004
Maj. Gen. J. J. Batbie Jr. (acting)	June 1, 2004	June 24, 2004
Lt. Gen. John A. Bradley	June 24, 2004	June 24, 2008
Lt. Gen. Charles E. Stenner Jr.	June 24, 2008	July 30, 2012
Lt. Gen. James F. Jackson	July 30, 2012	July 15, 2016
Lt. Gen. Maryanne Miller	July 15, 2016	Sept. 7, 2018
Lt. Gen. Richard W. Scobee	Sept. 7, 2018	Aug. 3, 2022
Lt. Gen. John P. Healy	Aug. 3, 2022	

For past leaders, see Air Force Reserve in Historic Major Command Leaders.

AIR FORCE SPECIAL OPERATIONS COMMAND

Maj. Gen. Thomas E. Eggers	May 22, 1990	June 30, 1991
Maj. Gen. Bruce L. Fister	June 30, 1991	July 22, 1994
Maj. Gen. James L. Hobson Jr.	July 22, 1994	July 9, 1997
Maj. Gen. Charles R. Holland	July 9, 1997	Aug. 5, 1999
Lt. Gen. Maxwell C. Bailey	Aug. 5, 1999	Jan. 16, 2002
Lt. Gen. Paul V. Hester	Jan. 16, 2002	July 1, 2004
Lt. Gen. Michael W. Wooley	July 1, 2004	Nov. 27, 2007
Lt. Gen. Donald C. Wurster	Nov. 27, 2007	June 24, 2011
Lt. Gen. Eric E. Fiel	June 24, 2011	July 3, 2014
Lt. Gen. Bradley A. Heithold	July 3, 2014	July 19, 2016
Lt. Gen. Marshall B. Webb	July 19, 2016	May 31, 2019
Lt. Gen. James C. Slife	June 1, 2019	Dec. 9, 2022
Lt. Gen. Tony D. Bauernfeind	Dec. 9, 2022	

On Dec. 20, 2019, Air Force Space Command was redesignated U.S. Space Force, and Gen. John W. Raymond became Chief of Space Operations, USSF.

AIR MOBILITY COMMAND

Gen. Hansford T. Johnson	June 1, 1992	Aug. 25, 1992
Gen. Ronald R. Fogleman	Aug. 25, 1992	Oct. 18, 1994
Gen. Robert L. Rutherford	Oct. 18, 1994	July 15, 1996
Gen. Walter Kross	July 15, 1996	Aug. 3, 1998
Gen. Charles T. Robertson Jr.	Aug. 3, 1998	Nov. 5, 2001
Gen. John W. Handy	Nov. 5, 2001	Sept. 7, 2005
Lt. Gen. Christopher Kelly (acting)	Sept. 7, 2005	Oct. 14, 2005
Gen. Duncan J. McNabb	Oct. 14, 2005	Sept. 7, 2007
Gen. Arthur J. Lichte	Sept. 7, 2007	Nov. 20, 2009
Gen. Raymond E. Johns Jr.	Nov. 20, 2009	Nov. 30, 2012
Gen. Paul J. Selva	Nov. 30, 2012	May 5, 2014
Gen. Darren W. McDew	May 5, 2014	Aug. 11, 2015
Gen. Carlton D. Everhart II	Aug. 11, 2015	Sept. 7, 2018
Gen. Maryanne Miller	Sept. 7, 2018	Aug. 20, 2020
Gen. Jacqueline D. Van Ovost	Aug. 20, 2020	Oct. 5, 2021
Gen. Michael A. Minihan	Oct. 5, 2021	

For past leaders, see Military Airlift Command in Historic Major Command Leaders.

AIR NATIONAL GUARD

Col. William A. R. Robertson	Nov. 28, 1945	October 1948
Maj. Gen. George G. Finch	October 1948	Sept. 25, 1950
Maj. Gen. Earl T. Ricks	Oct. 13, 1950	Jan. 4, 1954
Maj. Gen. Winston P. Wilson	Jan. 26, 1954	Aug. 5, 1962
Maj. Gen. I. G. Brown	Aug. 6, 1962	April 19, 1974
Maj. Gen. John J. Pesch	April 20, 1974	Jan. 31, 1977
Maj. Gen. John T. Guice	Feb. 1, 1977	April 1, 1981
Maj. Gen. John B. Conaway	April 1, 1981	Nov. 1, 1988
Maj. Gen. Philip G. Killey	Nov. 1, 1988	Jan. 28, 1994
Maj. Gen. Donald W. Shepperd	Jan. 28, 1994	Jan. 28, 1998
Maj. Gen. Paul A. Weaver Jr.	Jan. 28, 1998	Dec. 3, 2001
Brig. Gen. David Brubaker (acting)	Dec. 3, 2001	June 3, 2002
Lt. Gen. Daniel James III	June 3, 2002	May 20, 2006
Lt. Gen. Craig R. McKinley	May 20, 2006	Nov. 17, 2008
Maj. Gen. Emmett Titshaw (acting)	Nov. 17, 2008	Feb. 2, 2009
Lt. Gen. Harry M. Wyatt III	Feb. 2, 2009	March 22, 2013
Lt. Gen. Stanley E. Clarke III	March 22, 2013	Dec. 18, 2015
Maj. Gen. Brian G. Neal (acting)	Dec. 18, 2015	May 10, 2016

MAJOR COMMAND AND ANG LEADERS (cont.)

Lt. Gen. L. Scott Rice	May 10, 2016	July 28, 2020
Lt. Gen. Michael A. Loh	July 28, 2020	

PACIFIC AIR FORCES

Gen. Laurence S. Kuter	July 1, 1957	Aug. 1, 1959
Gen. Emmett O'Donnell Jr.	Aug. 1, 1959	Aug. 1, 1963
Gen. Jacob E. Smart	Aug. 1, 1963	Aug. 1, 1964
Gen. Hunter Harris Jr.	Aug. 1, 1964	Feb. 1, 1967
Gen. John D. Ryan	Feb. 1, 1967	Aug. 1, 1968
Gen. Joseph J. Nazzaro	Aug. 1, 1968	Aug. 1, 1971
Gen. Lucius D. Clay Jr.	Aug. 1, 1971	Oct. 1, 1973
Gen. John W. Vogt Jr.	Oct. 1, 1973	July 1, 1974
Gen. Louis L. Wilson Jr.	July 1, 1974	June 3, 1977
Lt. Gen. James A. Hill	June 3, 1977	June 15, 1978
Lt. Gen. James D. Hughes	June 15, 1978	June 8, 1981
Lt. Gen. Arnold W. Braswell	June 8, 1981	Oct. 8, 1983
Gen. Jerome F. O'Malley	Oct. 8, 1983	Sept. 25, 1984
Gen. Robert W. Bazley	Sept. 25, 1984	Dec. 16, 1986
Gen. Jack I. Gregory	Dec. 16, 1986	July 22, 1988
Gen. Merrill A. McPeak	July 22, 1988	Nov. 5, 1990
Lt. Gen. James B. Davis	Nov. 5, 1990	Feb. 19, 1991
Gen. Jimmie V. Adams	Feb. 19, 1991	Jan. 22, 1993
Gen. Robert L. Rutherford	Jan. 22, 1993	Oct. 12, 1994
Gen. John G. Lorber	Oct. 12, 1994	July 7, 1997
Gen. Richard B. Myers	July 7, 1997	July 23, 1998
Gen. Patrick K. Gamble	July 23, 1998	April 9, 2001
Lt. Gen. Lansford E. Trapp (acting)	April 9, 2001	May 4, 2001
Gen. William J. Begert	May 4, 2001	July 2, 2004
Gen. Paul V. Hester	July 2, 2004	Nov. 30, 2007
Gen. Carrol H. Chandler	Nov. 30, 2007	Aug. 19, 2009
Gen. Gary L. North	Aug. 19, 2009	Aug. 3, 2012
Gen. Herbert J. Carlisle	Aug. 3, 2012	Oct. 16, 2014
Gen. Lori J. Robinson	Oct. 16, 2014	May 11, 2016
Lt. Gen. Russell J. Handy (acting)	May 11, 2016	July 12, 2016
Gen. Terrence J. O'Shaughnessy	July 12, 2016	May 20, 2018
Lt. Gen. Jerry P. Martinez (acting)	May 20, 2018	July 26, 2018
Gen. Charles Q. Brown Jr.	July 26, 2018	July 8, 2020
Gen. Kenneth S. Wilsbach	July 8, 2020	Feb. 9, 2024
Gen. Kevin B. Schneider	Feb. 9, 2024	

For past leaders, see Far East Air Forces in Historic Major Command Leaders.

U.S. AIR FORCES IN EUROPE-AIR FORCES AFRICA

Lt. Gen. John K. Cannon	Aug. 7, 1945	Aug. 14, 1947
Brig. Gen. John F. McBlain (acting)	Aug. 14, 1947	Oct. 20, 1947
Lt. Gen. Curtis E. LeMay	Oct. 20, 1947	Oct. 16, 1948
Lt. Gen. John K. Cannon	Oct. 16, 1948	Jan. 21, 1951
Gen. Lauris Norstad	Jan. 21, 1951	July 27, 1953
Lt. Gen. William H. Tunner	July 27, 1953	July 1, 1957
Gen. Frank F. Everest	July 1, 1957	Aug. 1, 1959
Gen. Frederic H. Smith Jr.	Aug. 1, 1959	July 1, 1961
Gen. Truman H. Landon	July 1, 1961	Aug. 1, 1963
Gen. Gabriel P. Disosway	Aug. 1, 1963	Aug. 1, 1965
Gen. Bruce K. Holloway	Aug. 1, 1965	Aug. 1, 1966
Gen. Maurice A. Preston	Aug. 1, 1966	Aug. 1, 1968
Gen. Horace M. Wade	Aug. 1, 1968	Aug. 1, 1969
Gen. Joseph R. Holzapple	Feb. 1, 1969	Sept. 1, 1971
Gen. David C. Jones	Sept. 1, 1971	July 1, 1974
Gen. John W. Vogt	July 1, 1974	Sept. 1, 1975
Gen. Richard H. Ellis	Sept. 1, 1975	Aug. 1, 1977
Gen. William J. Evans	Aug. 1, 1977	Aug. 1, 1978
Gen. John W. Pauly	Aug. 1, 1978	Aug. 1, 1980
Gen. Charles A. Gabriel	Aug. 1, 1980	June 30, 1982
Gen. Billy M. Minter	July 1, 1982	Nov. 1, 1984
Gen. Charles L. Donnelly Jr.	Nov. 1, 1984	May 1, 1987
Gen. William L. Kirk	May 1, 1987	April 12, 1989
Gen. Michael J. Dugan	April 12, 1989	June 26, 1990
Gen. Robert C. Oaks	June 26, 1990	July 29, 1994
Gen. James L. Jamerson	July 29, 1994	July 17, 1995
Gen. Richard E. Hawley	July 17, 1995	April 4, 1996
Gen. Michael E. Ryan	April 4, 1996	Oct. 6, 1997
Lt. Gen. William J. Begert (acting)	Oct. 6, 1997	Dec. 5, 1997
Gen. John P. Jumper	Dec. 5, 1997	Jan. 13, 2000
Gen. Gregory S. Martin	Jan. 13, 2000	Aug. 12, 2003
Gen. Robert H. Foglesong	Aug. 12, 2003	Dec. 6, 2005
Gen. William T. Hobbins	Dec. 6, 2005	Dec. 10, 2007
Lt. Gen. Robert D. Bishop Jr. (acting)	Dec. 10, 2007	Jan. 9, 2008
Gen. Roger A. Brady	Jan. 9, 2008	Dec. 13, 2010
Gen. Mark A. Welsh III	Dec. 13, 2010	July 31, 2012
Gen. Philip M. Breedlove	July 31, 2012	May 10, 2013
Lt. Gen. Noel T. Jones (acting)	May 10, 2013	Aug. 2, 2013
Gen. Frank Gorenc	Aug. 2, 2013	Aug. 11, 2016
Gen. Tod D. Wolters	Aug. 11, 2016	May 1, 2019
Gen. Jeffrey L. Harrigian	May 1, 2019	June 27, 2022
Gen. James B. Hecker	June 27, 2022	

For past leaders, see U.S. Strategic Air Forces in Europe in Historic Major Command Leaders.

Greg Davis/USAF

Gen. Paul J. Selva, left, commander, Air Mobility Command, listens as Col. Richard Moore, 436th Airlift Wing commander, points out an area of future construction from the air traffic control tower at Dover Air Force Base, Del., July 10, 2013.

Senior Airman Jason Wiese

Gen. Robin Rand, AFGSC commander, asks Tech. Sgt. Carey Burgess about his job in the 20th Air Force headquarters at F.E. Warren Air Force Base, Wyo., Sept. 22, 2015.

HEADQUARTERS DOD LEADERS

SECRETARY OF DEFENSE

James V. Forrestal	Sept. 17, 1947	March 28, 1949
Louis A. Johnson	March 28, 1949	Sept. 19, 1950
George C. Marshall	Sept. 21, 1950	Sept. 12, 1951
Robert A. Lovett	Sept. 17, 1951	Jan. 20, 1953
Charles E. Wilson	Jan. 28, 1953	Oct. 8, 1957
Neil H. McElroy	Oct. 9, 1957	Dec. 1, 1959
Thomas S. Gates	Dec. 2, 1959	Jan. 20, 1961
Robert S. McNamara	Jan. 21, 1961	Feb. 29, 1968
Clark M. Clifford	March 1, 1968	Jan. 20, 1969
Melvin R. Laird	Jan. 22, 1969	Jan. 29, 1973
Elliot L. Richardson	Jan. 30, 1973	May 24, 1973
James R. Schlesinger	July 2, 1973	Nov. 19, 1975
Donald H. Rumsfeld	Nov. 20, 1975	Jan. 20, 1977
Harold Brown	Jan. 21, 1977	Jan. 20, 1981
Caspar W. Weinberger	Jan. 21, 1981	Nov. 23, 1987
Frank C. Carlucci	Nov. 23, 1987	Jan. 20, 1989
Richard B. Cheney	March 21, 1989	Jan. 20, 1993
Les Aspin	Jan. 21, 1993	Feb. 3, 1994
William J. Perry	Feb. 3, 1994	Jan. 23, 1997
William S. Cohen	Jan. 24, 1997	Jan. 20, 2001
Donald H. Rumsfeld	Jan. 20, 2001	Dec. 18, 2006
Robert M. Gates	Dec. 18, 2006	July 1, 2011
Leon E. Panetta	July 1, 2011	Feb. 27, 2013
Chuck Hagel	Feb. 27, 2013	Feb. 17, 2015
Ashton B. Carter	Feb. 17, 2015	Jan. 19, 2017
James N. Mattis	Jan. 20, 2017	Dec. 31, 2018
Patrick. M. Shanahan (acting)	Jan. 1, 2019	June 24, 2019
Mark T. Esper	July 23, 2019	Nov. 9, 2020
Lloyd J. Austin III	Jan. 22, 2021	

CHAIRMAN OF THE JOINT CHIEFS OF STAFF

Gen. of the Army Omar N. Bradley	Aug. 16, 1949	Aug. 15, 1953
Adm. Arthur W. Radford, USN	Aug. 15, 1953	Aug. 15, 1957
Gen. Nathan F. Twining, USAF	Aug. 15, 1957	Sept. 30, 1960
Gen. Lyman L. Lemnitzer, USA	Oct. 1, 1960	Sept. 30, 1962
Gen. Maxwell D. Taylor, USA	Oct. 1, 1962	July 1, 1964
Gen. Earle G. Wheeler, USA	July 3, 1964	July 2, 1970
Adm. Thomas H. Moorer, USN	July 2, 1970	July 1, 1974
Gen. George S. Brown, USAF	July 1, 1974	June 20, 1978
Gen. David C. Jones, USAF	June 21, 1978	June 18, 1982
Gen. John W. Vessey Jr., USA	June 18, 1982	Sept. 30, 1985
Adm. William J. Crowe Jr., USN	Oct. 1, 1985	Sept. 30, 1989
Gen. Colin L. Powell, USA	Oct. 1, 1989	Sept. 30, 1993
Adm. David Jeremiah, USN (acting)	Oct. 1, 1993	Oct. 24, 1993
Gen. John M. Shalikashvili, USA	Oct. 25, 1993	Sept. 30, 1997
Gen. Henry H. Shelton, USA	Oct. 1, 1997	Oct. 1, 2001
Gen. Richard B. Myers, USAF	Oct. 1, 2001	Sept. 30, 2005
Gen. Peter Pace, USMC	Sept. 30, 2005	Oct. 1, 2007
Adm. Michael G. Mullen, USN	Oct. 1, 2007	Sept. 30, 2011
Gen. Martin E. Dempsey, USA	Sept. 30, 2011	Sept. 25, 2015
Gen. Joseph F. Dunford Jr., USMC	Sept. 25, 2015	Sept. 30, 2019
Gen. Mark A. Milley, USA	Oct. 1, 2019	Sept. 30, 2023
Gen. Charles Q. Brown Jr., USAF	Oct. 1, 2023	

VICE CHAIRMAN OF THE JOINT CHIEFS OF STAFF

Gen. Robert T. Herres, USAF	Feb. 6, 1987	Feb. 28, 1990
Adm. David E. Jeremiah, USN	March 1, 1990	Feb. 28, 1994
Adm. William A. Owens, USN	March 1, 1994	Feb. 27, 1996
Gen. Joseph W. Ralston, USAF	March 1, 1996	Feb. 29, 2000
Gen. Richard B. Myers, USAF	March 1, 2000	Oct. 1, 2001
Gen. Peter Pace, USMC	Oct. 1, 2001	Aug. 12, 2005
Adm. Edmund Giambastiani Jr., USN	Aug. 12, 2005	Aug. 3, 2007
Gen. James E. Cartwright, USMC	Aug. 4, 2007	Aug. 4, 2011
Adm. James A. Winnefeld Jr., USN	Aug. 4, 2011	July 31, 2015
Gen. Paul J. Selva, USAF	July 31, 2015	Nov. 21, 2019
Gen. John E. Hyten, USAF	Nov. 21, 2019	Nov. 19, 2021
Adm. Christopher W. Grady, USN	Dec. 20, 2021	

UNIFIED COMMAND, NATIONAL GUARD BUREAU, AND NORAD LEADERS

This section presents the leaders of DOD's Unified Commands, the National Guard Bureau, and NORAD under the current designation.

Leaders of historic DOD commands (and of active commands' previous designations) are listed online.

U.S. Embassy Bratislava

U.S. Army Gen. Christopher Cavoli, commander, U.S. European Command and Supreme Allied Commander Europe, speaks with allied service members at Military Training Area Lest, Slovakia, March 27, 2024.

U.S. AFRICA COMMAND

Gen. William E. Ward, USA	Oct. 1, 2008	March 9, 2011
Gen. Carter F. Ham, USA	March 9, 2011	April 5, 2013
Gen. David M. Rodriguez, USA	April 5, 2013	July 18, 2016
Gen. Thomas D. Waldhauser, USMC	July 18, 2016	July 26, 2019
Gen. Stephen J. Townsend, USA	July 26, 2019	Aug. 9, 2022
Gen. Michael Langley, USMC	Aug. 9, 2022	

U.S. CENTRAL COMMAND

Gen. Robert C. Kingston, USA	Jan. 1, 1983	Nov. 27, 1985
Gen. George B. Crist, USMC	Nov. 27, 1985	Nov. 23, 1988
Gen. H. Norman Schwarzkopf, USA	Nov. 23, 1988	Aug. 9, 1991
Gen. Joseph P. Hoar, USMC	Aug. 9, 1991	Aug. 5, 1994
Gen. J. H. Binford Peay III, USA	Aug. 5, 1994	Aug. 13, 1997
Gen. Anthony C. Zinni, USMC	Aug. 13, 1997	July 6, 2000
Gen. Tommy R. Franks, USA	July 6, 2000	July 7, 2003
Gen. John P. Abizaid, USA	July 7, 2003	March 16, 2007
Adm. William J. Fallon, USN	March 16, 2007	March 31, 2008
Lt. Gen. Martin Dempsey, USA (acting)	March 31, 2008	Oct. 31, 2008
Gen. David H. Petraeus, USA	Oct. 31, 2008	June 30, 2010
Lt. Gen. John R. Allen, USMC (acting)	June 30, 2010	Aug. 11, 2010
Gen. James N. Mattis, USMC	Aug. 11, 2010	March 22, 2013
Gen. Lloyd J. Austin III, USA	March 22, 2013	March 30, 2016
Gen. Joseph L. Votel, USA	March 30, 2016	March 28, 2019
Gen. Kenneth F. McKenzie Jr., USMC	March 28, 2019	April 1, 2022
Gen. Michael E. Kurilla, USA	April 1, 2022	

U.S. EUROPEAN COMMAND

Gen. Matthew B. Ridgway, USA	Aug. 1, 1952	July 11, 1953
Gen. Alfred M. Gruenther, USA	July 11, 1953	Nov. 20, 1956
Gen. Lauris Norstad, USAF	Nov. 20, 1956	Nov. 1, 1962
Gen. Lyman L. Lemnitzer, USA	Nov. 1, 1962	May 5, 1969
Gen. Andrew J. Goodpaster, USA	May 5, 1969	Nov. 1, 1974
Gen. Alexander M. Haig Jr., USA	Nov. 1, 1974	June 27, 1979
Gen. Bernard W. Rogers, USA	June 27, 1979	June 25, 1987

UNIFIED COMMAND, NATIONAL GUARD BUREAU, AND NORAD LEADERS (continued)

Gen. John R. Galvin, USA	June 25, 1987	June 23, 1992
Gen. John M. Shalikashvili, USA	June 23, 1992	Oct. 21, 1993
Gen. George A. Joulwan, USA	Oct. 21, 1993	July 10, 1997
Gen. Wesley K. Clark, USA	July 10, 1997	May 2, 2000
Gen. Joseph W. Ralston, USAF	May 2, 2000	Jan. 16, 2003
Gen. James L. Jones, USMC	Jan. 16, 2003	Dec. 4, 2006
Gen. Bantz J. Craddock, USA	Dec. 4, 2006	June 30, 2009
Adm. James G. Stavridis, USN	June 30, 2009	May 10, 2013
Gen. Philip M. Breedlove, USAF	May 10, 2013	May 3, 2016
Gen. Curtis M. Scaparrotti, USA	May 3, 2016	May 3, 2019
Gen. Tod D. Wolters, USAF	May 3, 2019	July 1, 2022
Gen. Christopher G. Cavoli, USA	July 1, 2022	

U.S. NORTHERN COMMAND

Gen. Ralph E. Eberhart, USAF	Oct. 1, 2002	Nov. 5, 2004
Adm. Timothy J. Keating, USN	Nov. 5, 2004	March 23, 2007
Gen. Victor E. Renuart Jr., USAF	March 23, 2007	May 19, 2010
Adm. James A. Winnefeld Jr., USN	May 19, 2010	Aug. 4, 2011
Gen. Charles H. Jacoby Jr., USA	Aug. 4, 2011	Dec. 5, 2014
Adm. William E. Gortney, USN	Dec. 5, 2014	May 13, 2016
Gen. Lori J. Robinson, USAF	May 13, 2016	May 24, 2018
Gen. Terrence J. O'Shaughnessy	May 24, 2018	Aug. 20, 2020
Gen. Glen D. VanHerck, USAF	Aug. 20, 2020	Feb. 5, 2024
Gen. Gregory M. Guillot	Feb. 5, 2024	

U.S. INDO-PACIFIC COMMAND

Adm. John H. Towers, USN	Jan. 1, 1947	Feb. 28, 1947
Adm. Louis E. Denfeld, USN	Feb. 28, 1947	Dec. 3, 1947
Adm. Dewitt C. Ramsey, USN	Dec. 3, 1947	April 30, 1949
Adm. Arthur W. Radford, USN	April 30, 1949	July 10, 1953
Adm. Felix B. Stump, USN	July 10, 1953	July 31, 1958
Adm. Harry D. Felt, USN	July 31, 1958	June 30, 1964
Adm. U. S. Grant Sharp, USN	June 30, 1964	July 31, 1968
Adm. John S. McCain Jr., USN	July 31, 1968	Sept. 1, 1972
Adm. Noel A. M. Gayler, USN	Sept. 1, 1972	Aug. 30, 1976
Adm. Maurice E. Weisner, USN	Aug. 30, 1976	Oct. 31, 1979
Adm. Robert L. J. Long, USN	Oct. 31, 1979	July 1, 1983
Adm. William J. Crowe Jr., USN	July 1, 1983	Sept. 18, 1985
Adm. Ronald J. Hays Jr., USN	Sept. 18, 1985	Sept. 30, 1988
Adm. Huntington Hardisty, USN	Sept. 30, 1988	March 1, 1991
Adm. Charles R. Larson, USN	March 1, 1991	July 11, 1994
Lt. Gen. Harold Fields, USA (acting)	July 11, 1994	July 19, 1994
Adm. Richard C. Macke, USN	July 19, 1994	Jan. 31, 1996
Adm. Joseph W. Prueher, USN	Jan. 31, 1996	Feb. 20, 1999
Adm. Dennis C. Blair, USN	Feb. 20, 1999	May 2, 2002
Adm. Thomas B. Fargo, USN	May 2, 2002	Feb. 26, 2005
Adm. William J. Fallon, USN	Feb. 26, 2005	March 12, 2007
Lt. Gen. Daniel Leaf, USAF (acting)	March 12, 2007	March 26, 2007
Adm. Timothy J. Keating, USN	March 26, 2007	Oct. 19, 2009
Adm. Robert F. Willard, USN	Oct. 19, 2009	March 9, 2012
Adm. Samuel J. Locklear III, USN	March 9, 2012	May 27, 2015
Adm. Harry B. Harris Jr., USN	May 27, 2015	May 31, 2018
Adm. Philip S. Davidson, USN	May 31, 2018	April 30, 2021
Adm. John C. Aquilino, USN	April 30, 2021	

U.S. SOUTHERN COMMAND

Gen. Andrew P. O'Meara, USA	June 6, 1963	Feb. 22, 1965
Gen. Robert W. Porter Jr., USA	Feb. 22, 1965	Feb. 18, 1969
Gen. George R. Mather, USA	Feb. 18, 1969	Sept. 20, 1971
Gen. George V. Underwood, USA	Sept. 20, 1971	Jan. 17, 1973
Gen. William B. Rosson, USA	Jan. 17, 1973	Aug. 1, 1975
Lt. Gen. Dennis P. McAuliffe, USA	Aug. 1, 1975	Oct. 1, 1979
Lt. Gen. Wallace H. Nutting, USA	Oct. 1, 1979	May 24, 1983
Gen. Paul F. Gorman, USA	May 24, 1983	March 1, 1985
Gen. John R. Galvin, USA	March 1, 1985	June 6, 1987
Gen. Fred F. Woerner, USA	June 6, 1987	Oct. 1, 1989
Gen. Maxwell R. Thurman, USA	Oct. 1, 1989	Nov. 21, 1990
Gen. George A. Joulwan, USA	Nov. 21, 1990	October 1993
Maj. Gen. W. Worthington, USAF (acting)	October 1993	Feb. 17, 1994
Gen. Barry R. McCaffrey, USA	Feb. 17, 1994	March 1, 1996
RAdm. James Perkins, USN (acting)	March 1, 1996	June 26, 1996
Gen. Wesley K. Clark, USA	June 26, 1996	July 13, 1997
RAdm. Walter F. Doran, USN (acting)	July 13, 1997	Sept. 25, 1997
Gen. Charles E. Wilhelm, USMC	Sept. 25, 1997	Sept. 8, 2000
Gen. Peter Pace, USMC	Sept. 8, 2000	Sept. 30, 2001
Maj. Gen. G. D. Speer, USA (acting)	Sept. 30, 2001	Aug. 18, 2002
Gen. James T. Hill, USA	Aug. 18, 2002	Nov. 9, 2004
Gen. Bantz J. Craddock, USA	Nov. 9, 2004	Oct. 19, 2006
Adm. James G. Stavridis, USN	Oct. 19, 2006	June 25, 2009
Gen. Douglas M. Fraser, USAF	June 25, 2009	Nov. 19, 2012
Gen. John F. Kelly, USMC	Nov. 19, 2012	Jan 14, 2016
Adm. Kurt W. Tidd, USN	Jan. 14, 2016	Nov. 26, 2018
Adm. Craig S. Faller, USN	Nov. 26, 2018	Oct. 29, 2021
Gen. Laura J. Richardson, USA	Oct. 29, 2021	

Formerly U.S. Caribbean Command Nov. 1, 1947. Redesignated June 6, 1963. For historical leaders, see U.S. Caribbean Command in Historic Unified Command Leaders section.

Mass Communication Specialist 2nd Class Gretchen Albrecht

U.S. Air Force Gen. Kevin Chilton, commander, U.S. Strategic Command, speaks to the crew of the fleet ballistic missile submarine USS Kentucky before presenting them with the Omaha Trophy at Naval Base Kitsap-Bangor, Wash., Oct. 29, 2010.

U.S. SPECIAL OPERATIONS COMMAND

Gen. James J. Lindsay, USA	April 16, 1987	June 27, 1990
Gen. Carl W. Stiner, USA	June 27, 1990	May 20, 1993
Gen. Wayne A. Downing, USA	May 20, 1993	Feb. 29, 1996
Gen. Henry H. Shelton, USA	Feb. 29, 1996	Sept. 25, 1997
Gen. Peter J. Schoomaker, USA	Nov. 5, 1997	Oct. 27, 2000
Gen. Charles R. Holland, USAF	Oct. 27, 2000	Sept. 2, 2003
Gen. Bryan D. Brown, USA	Sept. 2, 2003	July 9, 2007
Adm. Eric T. Olson, USN	July 9, 2007	Aug. 15, 2011
Adm. William H. McRaven, USN	Aug. 15, 2011	Aug. 28, 2014
Gen. Joseph L. Votel, USA	Aug. 28, 2014	March 30, 2016
Gen. Raymond A. Thomas, USA	March 30, 2016	March 29, 2019
Gen. Richard D. Clarke, USA	March 29, 2019	Aug. 30, 2022
Gen. Bryan P. Fenton, USA	Aug. 30, 2022	

U.S. STRATEGIC COMMAND

Gen. George L. Butler, USAF	June 1, 1992	Feb. 13, 1994
Adm. Henry G. Chiles Jr., USN	Feb. 14, 1994	Feb. 21, 1996
Gen. Eugene E. Habiger, USAF	Feb. 22, 1996	June 25, 1998
Adm. Richard W. Mies, USN	June 26, 1998	Nov. 30, 2001
Adm. James O. Ellis Jr., USN	Nov. 30, 2001	July 9, 2004
Gen. James E. Cartwright, USMC	July 9, 2004	Aug. 10, 2007
Lt. Gen. Robert Kehler, USAF (acting)	Aug. 10, 2007	Oct. 3, 2007
Gen. Kevin P. Chilton, USAF	Oct. 3, 2007	Jan. 28, 2011
Gen. Robert Kehler, USAF	Jan. 28, 2011	Nov. 15, 2013
Adm. Cecil D. Haney, USN	Nov. 15, 2013	Nov. 3, 2016
Gen. John E. Hyten, USAF	Nov. 3, 2016	No.v 18, 2019
Adm Charles A. Richard, USN	Nov. 18, 2019	Dec. 9, 2022
Gen. Anthony J. Cotton, USAF	Dec. 9, 2022	

The functions of U.S. Space Command were merged into U.S. Strategic Command Oct. 1, 2002.

UNIFIED COMMAND, NATIONAL GUARD BUREAU, AND NORAD LEADERS (continued)

U.S. TRANSPORTATION COMMAND

Gen. Duane H. Cassidy, USAF	July 1, 1987	Sept. 21, 1989
Gen. H. T. Johnson, USAF	Sept. 22, 1989	Aug. 24, 1992
Gen. Ronald R. Fogleman, USAF	Aug. 25, 1992	Oct. 17, 1994
Gen. Robert L. Rutherford, USAF	Oct. 18, 1994	July 14, 1996
Gen. Walter Kross, USAF	July 15, 1996	Aug. 2, 1998
Gen. Charles T. Robertson Jr., USAF	Aug. 3, 1998	Nov. 5, 2001
Gen. John W. Handy, USAF	Nov. 5, 2001	Sept. 7, 2005
Gen. Norton A. Schwartz, USAF	Sept. 7, 2005	Aug. 11, 2008
VAdm. Ann E. Rondeau, USN (acting)	Aug. 12, 2008	Sept. 4, 2008
Gen. Duncan J. McNabb, USAF	Sept. 5, 2008	Oct. 14, 2011
Gen. William M. Fraser III, USAF	Oct. 14, 2011	May 5, 2014
Gen. Paul J. Selva, USAF	May 5, 2014	July 31, 2015
VAdm. William Brown, USN (acting)	July 31, 2015	Aug. 26, 2015
Gen. Darren W. McDew, USAF	Aug. 26, 2015	Aug. 24, 2018
Gen. Stephen R. Lyons, USA	Aug. 24, 2018	Oct. 15, 2021
Gen. Jaqueline D. Van Ovost	Oct. 15, 2021	

NATIONAL GUARD BUREAU

Maj. Gen. Butler B. Miltonberger, USA	Feb. 1, 1946	Sept. 29, 1947
Maj. Gen. Kenneth F. Cramer, USA	Sept. 30, 1947	Sept. 4, 1950
Maj. Gen. Raymond H. Fleming, USA*	Sept. 5, 1950	Feb. 15, 1953
Maj. Gen. Earl T. Ricks, USAF (acting)	Feb. 16, 1953	June 21, 1953
Maj. Gen. Edgar C. Erickson, USA	June 22, 1953	May 31, 1959
Maj. Gen. Winston P. Wilson, USAF (acting)	June 1, 1959	July 19, 1959
Maj. Gen. Donald W. McGowan, USA	July 20, 1959	Aug. 30, 1963
Maj. Gen. Winston P. Wilson, USAF	Aug. 31, 1963	Aug. 31, 1971
Maj. Gen. Francis S. Greenlief, USA	Sept. 1, 1971	June 23, 1974
Lt. Gen. La Vern E. Weber, USA	Aug. 16, 1974	Aug. 15, 1982
Lt. Gen. Emmett H. Walker Jr., USA	Aug. 16, 1982	Aug. 15, 1986
Lt. Gen. Herbert R. Temple Jr., USA	Aug. 16, 1986	Jan. 31, 1990
Lt. Gen. John B. Conaway, USAF	Feb. 1, 1990	Dec. 1, 1993
Maj. Gen. Raymond Rees, USA (acting)	Jan. 1, 1994	July 31, 1994
Lt. Gen. Edward D. Baca, USA	Oct. 1, 1994	July 31, 1998
Lt. Gen. Russell C. Davis, USAF	Aug. 4, 1998	Aug. 3, 2002
Maj. Gen. Raymond Rees, USA (acting)	Aug. 4, 2002	April 10, 2003
Lt. Gen. H. Steven Blum, USA	April 11, 2003	Nov. 16, 2008
Gen. Craig R. McKinley, USAF	Nov. 17, 2008	Sept. 7, 2012
Gen. Frank J. Grass, USA	Sept. 7, 2012	Aug. 3, 2016
Gen. Joseph L. Lengyel, USAF	Aug. 3, 2016	Aug. 3, 2020
Gen. Daniel R. Hokanson, USA	Aug. 3, 2020	

*Fleming served as acting Chief until Aug. 14, 1951.

NORTH AMERICAN AEROSPACE DEFENSE COMMAND

Gen. Earle E. Partridge, USAF	Sept. 12, 1957	July 30, 1959
Gen. Laurence S. Kuter, USAF	Aug. 1, 1959	July 30, 1962
Gen. John K. Gerhart, USAF	Aug. 1, 1962	March 30, 1965
Gen. Dean C. Strother, USAF	April 1, 1965	July 29, 1966
Gen. Raymond J. Reeves, USAF	Aug. 1, 1966	July 31, 1969
Gen. Seth J. McKee, USAF	Aug. 1, 1969	Sept. 30, 1973
Gen. Lucius D. Clay Jr., USAF	Oct. 1, 1973	Aug. 29, 1975
Gen. Daniel James Jr., USAF	Sept. 1, 1975	Dec. 5, 1977
Gen. James E. Hill, USAF	Dec. 6, 1977	Dec. 31, 1979
Gen. James V. Hartinger, USAF	Jan. 1, 1980	July 30, 1984
Gen. Robert T. Herres, USAF	July 30, 1984	Feb. 5, 1987
Gen. John L. Piotrowski, USAF	Feb. 6, 1987	March 30, 1990
Gen. Donald J. Kutyna, USAF	April 1, 1990	June 30, 1992
Gen. Charles A. Horner, USAF	June 30, 1992	Sept. 12, 1994
Gen. Joseph W. Ashy, USAF	Sept. 13, 1994	Aug. 26, 1996
Gen. Howell M. Estes III, USAF	Aug. 27, 1996	Aug. 13, 1998
Gen. Richard B. Myers, USAF	Aug. 14, 1998	Feb. 22, 2000
Gen. Ralph E. Eberhart, USAF	Feb. 22, 2000	Nov. 5, 2004
Adm. Timothy J. Keating, USN	Nov. 5, 2004	March 23, 2007
Gen. Victor E. Renuart Jr., USAF	March 23, 2007	May 19, 2010
Adm. James A. Winnefeld Jr., USN	May 19, 2010	Aug. 4, 2011
Gen. Charles H. Jacoby Jr., USA	Aug. 4, 2011	Dec. 5, 2014
Adm. William E. Gortney, USN	Dec. 5, 2014	May 13, 2016
Gen. Lori J. Robinson, USAF	May 13, 2016	May 24, 2018
Gen. Terrance J. O'Shaughnessy, USAF	May 24, 2018	Aug. 20, 2020
Gen. Glen D. VanHerck, USAF	Aug. 20, 2020	

DOD

U.S. Air Force Gen. Glen VanHerck, front row, center left, commander, North American Aerospace Defense Command and U.S. Northern Command, stands with participants during the NORAD and USNORTHCOM Commander's Conference, May 19, 2021, outside the commands' headquarters at then-Peterson Air Force Base, Colo.

U.S. SPACE FORCE

The U.S. Space Force was created on Dec. 20, 2019. The Space Force exists as a separate military service within the Department of the Air Force, led by the Chief of Space Operations.

USSF/Lockheed Martin illustration

USSF

Gen. B. Chance Saltzman, Chief of Space Operations

Headquarters: Pentagon, Va.
Date of current designation: Dec. 20, 2019

Chief of Space Operations:
Gen. B. Chance Saltzman

Vice Chief of Space Operations:
Gen. Michael A. Guetlein

Chief Master Sergeant of the Space Force:
John F. Bentivegna

Space Staff

Deputy Chief of Space Operations for Human Capital
Katharine Kelley
CIV

Deputy Chief of Space Operations for Intelligence
Maj. Gen. Gregory Gagnon
★★

Deputy Chief of Space Operations for Operations, Cyber, and Nuclear
Lt. Gen. DeAnna Burt
★★★

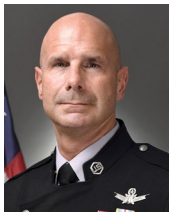
Deputy Chief of Space Operations for Strategy, Plans, Programs, and Requirenents
Lt. Gen. Shawn N. Bratton
★★★

Chief Technology & Innovation Officer
Lisa Costa
CIV

Director of Staff
Maj. Gen. Steven P. Whitney
★★

USAF

Gen. Michael A. Guetlein, Vice Chief of Space Operations



USAF

CMSgt. John F. Bentivegna, Chief Master Sergant of the Space Force

SPACE FORCE FIELD COMMANDS

★★★ **Space Operations Command (SpOC)** p. 88

★★★ **Space Systems Command (SSC)** p. 88

★★ **Space Training & Readiness Command (STARCOM)** p. 89

★★★ **Space Futures Command**

SPACE FORCE COMPONENT FIELD COMMANDS

★ **Space Forces-Indo-Pacific (USSPACEFOR-INDOPAC)**

✹ **Space Forces-Korea (USSPACEFOR-KOR)**

Space Forces-Europe and Africa (USSPACEFOR-EURAF)

★★★ **Space Forces-Space* (S4S)**

Space Forces- Central (USSPACEFOR-CENT)

DIRECT REPORTING UNITS

Space Development Agency

Headquarters: Pentagon
Date of Current Designation: Nov. 12, 2019
Reports to: Chief of Space Operations except for matters of space acquisition and integration, for which it reports to the Assistant Secretary of the Air Force for Space Acquisition and Integration.
Mission: Create and sustain military space capabilities that provide low-latency surveillance.
Personnel: 300+
sda.mil

Space Rapid Capabilities Office

Headquarters: Kirtland AFB, N.M.
Date of Current Designation: Dec. 11, 2018
Reports to: Chief of Space Operations
Mission: Develop and expedite delivery and deployment of space capabilities and respond to U.S. Space Command requirements.
Personnel: About 200
www.kirtland.af.mil/Units/Space-Rapid-Capabilities-Office/

*Space Delta 5 and Space Delta 15 (previously assigned to SpOC) are now assigned to Space Forces-Space (S4S).

SpOC

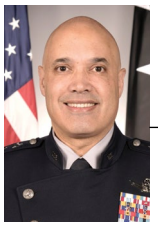
Headquarters: Peterson SFB, Colo.
Date of activation: Oct. 21, 2020
Commander: Lt. Gen. David N. Miller Jr.

SPACE OPERATIONS COMMAND

Peterson SFB, Colo.
Oct. 21, 2020

MISSION Generate, present, and sustain combat-ready intelligence, cyber, space, and combat support forces to combatant commands.

COMMAND STRUCTURE



USSF

Commander
Lt. Gen. David N. Miller Jr.

- **Space Base Delta 1** Peterson SFB, Colo.
- **Space Base Delta 2** Buckley SFB, Colo.
- **Space Delta 2** Peterson SFB, Colo.
- **Space Delta 3** Peterson SFB, Colo.
- **Space Delta 4** Buckley SFB, Colo.
- **Space Delta 6** Schriever SFB, Colo.
- **Space Delta 7** Peterson SFB, Colo.
- **Space Delta 8** Schriever SFB, Colo.
- **Space Delta 9** Schriever SFB, Colo.
- **Space Delta 18** Wright-Patterson AFB, Ohio
- **PNT Delta (Provisional)** Peterson SFB, Colo.

Space Base Delta 1
Peterson SFB, Colo.
Mission Support

Space Base Delta 2
Buckley SFB, Colo.
Installation Support

Space Delta 2
Peterson SFB, Colo.
Space Domain Awareness and Battle Management

Space Delta 3
Peterson SFB, Colo.
Electromagnetic Warfare

Space Delta 4
Buckley SFB, Colo.
Missile Warning

Space Delta 6
Schriever SFB, Colo.
Space Access and Cyberspace Operations

Space Delta 7
Peterson SFB, Colo.
Intelligence, Surveillance, and Reconnaissance

Space Delta 8
Schriever SFB, Colo.
SATCOM

Space Delta 9
Schriever SFB, Colo.
Orbital Warfare

Space Delta 18
Wright-Patterson AFB, Ohio
National Space Intelligence Center

PNT Delta (Provisional)
Peterson SFB, Colo.
Position, Navigation, and Timing

SSC

Headquarters: Los Angeles AFB, Calif.
Date of activation: Aug. 13, 2021
Commander: Lt. Gen. Philip A. Garrant

SPACE SYSTEMS COMMAND

Los Angeles AFB, Calif.
Aug. 13, 2021

MISSION Develop, acquire, equip and sustain lethal and resilient space capabilities against growing threats in a dynamic global environment.

COMMAND STRUCTURE

USSF

Commander
Lt. Gen. Philip A. Garrant

- ★ **Space Launch Delta 45** Patrick SFB, Fla.
- **Space Launch Delta 30** Vandenberg SFB, Calif.
- **Space Base Delta 3** Los Angeles AFB, Calif.

Space Launch Delta 30
Vandenberg SFB, Calif.
Space Launch, ICBM Test, Launch Range Operations

Space Launch Delta 45
Patrick SFB, Fla.
Space Launch, Launch Range Operations

Space Base Delta 3
Los Angeles AFB, Calif.
Mission Support

STARCOM

SPACE TRAINING AND READINESS COMMAND

Headquarters: Peterson SFB, Colo.*
Date of activation: Aug. 23, 2021
Commander: Maj. Gen. Timothy A. Sejba

Peterson SFB, Colo.
Aug. 23, 2021

MISSION Train and educate Guardians.

*The Department of the Air Force announced in May 2023 that its preferred permanent location for STARCOM's headquarters is Patrick Space Force Base, Fla.

COMMAND STRUCTURE

USSF

Commander
Maj. Gen. Timothy A. Sejba

- **SpaceDelta 1** Vandenberg SFB, Calif.
- **Space Delta 10** U.S. Air Force Academy, Colo.
- **Space Delta 11** Schriever SFB, Colo.
- **Space Delta 12** Schriever SFB, Colo.
- **Space Delta 13** Maxwell AFB, Ala.

Space Delta 1
Vandenberg SFB, Calif.
Space Training

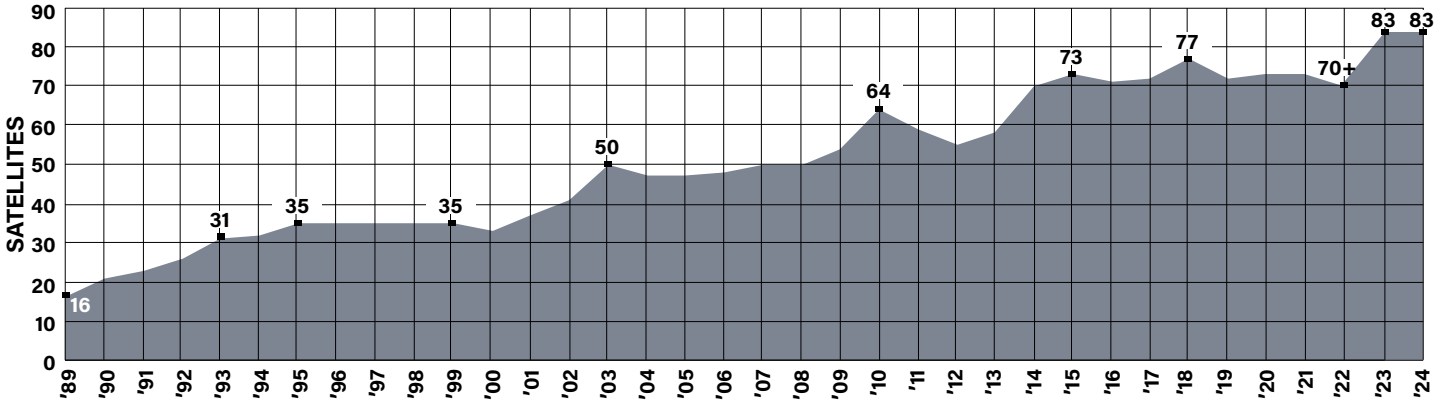
Space Delta 10
U.S. Air Force Academy, Colo.
Doctrine and Wargaming

Space Delta 11
Schriever SFB, Colo.
Range and Aggressors

Space Delta 12
Schriever SFB, Colo.
Test and Evaluations

Space Delta 13
Maxwell AFB, Ala.
Education

TOTAL SATELLITES OVER TIME



SATELLITES IN SERVICE OVER TIME

(As of Sept. 30, 2023)

TYPE OF SYSTEM	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AEHF	2	2	3	3	3	3	4	5	5	5	6	6	6
ATRR	1	1	0	0	0	1	1	1	1	1	1	1	1
DMSP	4	4	6	6	6	5	5	4	4	4	4	3	3
DSCS	8	8	7	6	6	6	6	6	6	6	6	4	4
GPS	30	31	38	41	37	35	31	29	31	31	32	31	31
GSSAP	0	0	2	2	4	4	4	4	4	4	6	6	6
Milstar	5	5	5	5	5	5	5	5	4	4	5	4	4
ORS-5								1	1	1	1	1	1
SBIRS	1	2	2	2	2	3	7	6	6	6	7	7	7
SBSS	1	1	1	1	1	1	2	1	1	1	1	1	1
WGS	3	3	4	6	7	7	9	10	10	10	10	10	10
MUOS												5	5
UFO												4	4
TOTAL SATELLITES*	**55**	**58**	**70**	**73**	**71**	**72**	**77**	**72**	**73+**	**73+**	**70+**	**83**	**83**

US SPACE FORCE DEMOGRAPHICS

(As of Sept. 30, 2023)

ENLISTED RANKS	E-1	%	E-2	%	E-3	%	E-4	%	E-5	%	E-6	%	E-7	%	E-8	%	E-9	%	Total	%	Space Force Total*	%
TOTAL	**133**		**113**		**940**		**651**		**1064**		**840**		**592**		**131**		**48**		**4,513***		**8,940**	
SEX																						
Female	24	18.0	23	20.4	211	22.4	117	18.0	174	16.4	135	16.1	107	18.1	32	24.4	13	27.1	836	18.5	1,696	19.0
Male	109	82.0	90	79.6	729	77.6	534	82.0	890	83.6	705	83.9	485	81.9	99	75.6	35	72.9	3,676	81.5	7,244	81.0
ETHNICITY																						
Declined to Respond	0	0.0	0	0.0	2	0.2	4	0.6	15	1.4	16	1.9	18	3.0	7	5.3	3	6.3	65	1.4	946	10.6
Hispanic or Latino	24	18.0	24	21.2	231	24.6	157	24.1	188	17.7	145	17.3	101	17.1	15	11.5	7	14.6	892	19.8	1,301	14.6
Not Hispanic or Latino	109	82.0	89	78.8	707	75.2	490	75.3	861	80.9	679	80.8	473	80.0	109	83.2	38	79.2	3,555	78.8	6,693	74.9
RACE																						
American Indian or Alaska Native	0	0.0	4	3.5	12	0.3	6	0.9	10	0.9	4	0.5	2	0.3	2	1.5	0	0.0	40	0.9	60	0.7
Asian	9	6.8	8	7.1	70	7.4	38	5.8	56	5.3	36	4.3	20	3.4	6	4.6	2	4.2	245	5.4	625	7.0
Black or African American	16	12.0	5	4.4	109	11.6	66	10.1	118	11.1	79	9.4	54	9.1	15	11.5	4	8.3	466	10.3	760	8.5
Declined to Respond	1	0.8	0	0.0	3	0.3	9	1.4	32	3.0	26	3.1	32	5.4	9	6.9	5	10.4	117	2.6	368	4.1
Identified More Than One Race	17	12.8	15	13.3	98	10.4	46	7.1	68	6.4	45	5.4	45	7.6	10	7.6	0	0.0	344	7.6	566	6.3
Native Hawaiian or Other Pacific Islander	1	0.8	1	0.9	19	2.0	8	1.2	10	0.9	8	1.0	7	1.2	3	2.3	1	2.1	58	1.3	83	0.9
White	89	66.9	80	70.8	629	66.9	478	73.4	770	72.4	642	76.4	432	73.0	86	65.6	36	75.0	3,242	71.9	6,478	72.5
MARITAL STATUS**																						
Divorced	0	0.0	2	1.3	9	0.1	24	3.6	70	6.6	73	6.8	58	9.3	14	10.7	3	5.8	253	5.4	433	4.7
Married	22	14.2	21	13.7	238	23.2	250	38.0	577	54	633	59.3	507	81.1	116	88.5	48	92.3	2,412	51.2	5,331	58.3
Single	133	85.8	130	85.0	780	76	383	58	420	39	132	12.4	60	9.6	1	0.8	1	1.9	2,040	43.3	3,381	37.0
Other***	0	0.00	0	0.00	1	0.1	1	0.2	1	0.1	0	0.00	0	0.00	0	0.00	0	0.00	3	0.10	4	0.0
HIGHEST EDUCATIONAL ACHIEVEMENT																						
No High School Diploma or GED	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
High School Diploma/GED	120	90.2	86	76.1	238	25.3	78	12	146	5.8	115	13.7	35	5.9	7	5.3	1	2.1	826	18.3	826	9.2
Some College	2	1.5	24	21.2	500	53.2	455	69.9	519	48.8	189	22.5	42	7.1	0	0.0	0	0.0	1,731	38.4	1,731	19.4
Associate Degree	0	0.0	0	0.0	12	1.3	52	8.0	235	22.1	295	35.1	211	35.6	32	24.4	4	8.3	841	18.6	841	9.4
Bachelor's Degree	0	0.0	0	0.0	45	4.8	62	9.5	134	12.6	192	22.9	227	38.3	54	41.2	21	43.8	735	16.3	2,441	27.3
Master's Degree	0	0.0	0	0.0	4	0.4	2	0.3	27	2.5	49	5.8	77	13.0	36	27.5	22	45.8	217	4.8	2,629	29.4
Ph.D. or Professional Degree	0	0.0	0	0.0	141	15.0	0	0.0	0	0.0	0	0.0	0	0.0	2	1.5	0	0.0	143	3.2	249	2.8
Unknown, None, or Not Applicable	11	8.3	3	2.7	0	0.0	2	0.3	3	0.3	0	0.0	0	0.0	0	0.0	0	0.0	19	0.4	223	2.5

OFFICER RANKS	0-1	%	0-2	%	0-3	%	0-4	%	0-5	%	0-6	%	0-7	%	0-8	%	0-9	%	0-10	%	Officer Total	%
TOTAL	**510**		**523**		**1317**		**1144**		**688**		**222**		**11**		**6**		**5**		**2**		**4428**	
SEX																						
Female	139	27.3	147	28.1	242	18.5	191	16.7	112	16.3	28	12.6	0	0.0	0	0.0	1	20.0	0	0.0	860	19.4
Male	371	72.7	376	72	1,075	81.6	953	83.3	576	83.7	194	87.4	11	100.0	6	100.0	4	80.0	2	100.0	3,568	80.6
ETHNICITY																						
Declined to Respond	166	32.5	177	33.8	243	18.5	130	11.4	159	23.1	6	2.7	0	0.0	0	0.0	0	0.0	0	0.0	881	20.0
Hispanic or Latino	56	11.00	49	9.4	149	11.3	100	8.7	45	6.5	10	4.5	0	0.0	0	0.0	0	0.0	0	0.0	409	9.2
Not Hispanic or Latino	288	56.5	297	56.8	925	70.2	914	79.9	484	70.3	206	92.8	11	100.0	6	100.0	5	100.0	2	100.0	3,138	70.9
RACE																						
American Indian or Alaska Native	0	0.0	2	0.4	7	0.5	8	0.7	2	0.3	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	20	0.5
Asian	52	10.2	43	8.2	133	10.1	98	8.6	49	7.1	5	2.3	0	0.0	0	0.0	0	0.0	0	0.0	380	8.6
Black or African American	40	7.8	31	5.9	95	7.2	74	6.5	39	5.7	12	5.4	2	18.2	1	16.7	0	0.0	0	0.0	294	6.6
Declined to Respond	26	5.1	30	5.7	68	5.2	73	6.4	40	5.8	14	6.3	0	0.0	0	0.0	0	0.0	0	0.0	251	5.7
Identified More Than One Race	28	5.5	35	6.7	82	6.2	53	4.6	17	2.5	7	3.2	0	0.0	0	0.0	0	0.0	0	0.0	222	5.0
Native Hawaiian or Other Pacific Islander	2	0.4	3	0.6	8	0.6	9	0.8	3	0.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	25	0.6
White	362	71.0	379	72.5	924	70.2	829	72.5	538	78.2	183	82.4	9	81.8	5	83.3	5	100.0	2	100.0	3,236	73.1
MARITAL STATUS**																						
Divorced	5	0.9	11	2	56	4.5	52	4.5	44	6.1	11	4.8	1	10.0	0	0.0	0	0.0	0	0.0	180	4.1
Married	145	27.5	204	37.7	771	62.2	926	80.0	636	88.2	213	93	9	90.0	7	100.0	5	100.0	3	100.0	2,919	65.7
Single	377	71.5	326	60.3	413	33.3	179	15.5	41	5.7	5	2.2	0	0.0	0	0.0	0	0.0	0	0.0	1,341	30.2
Other***	0	0.0	0	0.0	0	0.0	1.0	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
HIGHEST EDUCATIONAL ACHIEVEMENT																						
Bachelor's Degree	405	79.4	425	81.3	706	53.6	162	14.2	6	0.9	2	0.9	0	0.0	0	0.0	0	0.0	0	0.0	1,706	38.5
Master's Degree	20	3.9	68	13.0	569	43.2	929	81	610	89	192	86	11	100.0	6	100.0	5	100.0	2	100.0	2,412	54.5
Ph.D. or Professional Degree	2	0.4	0	0.0	8	0.6	26	2.3	49	7.1	21	9.5	0	0.0	0	0.0	0	0.0	0	0.0	106	2.4
Unknown, None, or Not Applicable	83	16.3	30	5.7	34	2.6	27	2.4	23	3.3	7	3.2	0	0.0	0	0.0	0	0.0	0	0.0	204	4.6

*1 enlisted member's data query returned an error.
**As of March 28, 2024.
***Includes annulled, legally separated, and widowed.

Active Duty as of Sept. 30, 2023: 8,941

SPACE FORCE PERSONNEL BY AFSC

As of Sept. 30, 2023

ENLISTED		TOTAL	% of Active Duty
1A1	Flight Eng	2	0.0%
1A3	Airborne Mission Sys Spc	3	0.0
1A8	Airborne ISR	1	0.0
1A9	Spc Mission Aviator	2	0.0
1C0	Aviation Rsc Mgmt	1	0.0
1C5	C2 Battle Mgmt Ops	1	0.0
1C6	Space Sys Ops	1	0.0
1C7	Airfield Mgmt	2	0.0
1D7	Defensive Cyber Ops	24	0.3
1N0	All-Source Intelligence Analyst	27	0.3
1N1	Imagery Analysis	20	0.2
1N2	SIGINT	12	0.1
1N3	Cryptologic Language Analyst	4	0.0
1N4	Network Intel Analysis	3	0.0
1N8	Targeting Analyst	2	0.0
1P0	Aircrew Flight Equip	1	0.0
1U0	RPA Sensor Operator Manager	3	0.0
1W0	Weather	1	0.0
2A0	Avionics	5	0.1
2A3	Fighter/RPA Maint	1	0.0
2A5	Airlift/Special Mission Aircraft Maint	2	0.0
2A6	Aircraft Sys	11	0.1
2A7	Aircraft Metals Technology	3	0.0
2A9	Bomber/Spc Integrated Comms/ Nav/Mission Sys	10	0.1
2T2	Air Trans	1	0.0
2T3	Vehicle Mgmt	1	0.0
2W0	Munitions Maint	2	0.0
2W1	Aircraft Armament Sys	2	0.0
3E7	Fire Protection	4	0.0
3F0	Personnel	4	0.0
3F2	Education and Training	3	0.0
3F5	Administration Manager	8	0.1
3N0	Public Affairs	2	0.0
4A2	Biomedical Equip	1	0.0
4E0	Public Health	3	0.0
4N0	Aerospace Medical Svc	1	0.0
4V0	Optometry	1	0.0
5C0	Cyper Ops USSF)	1,679	18.8
5I0	ISR Supt	341	3.8
5I1	GEOINT (USSF)	94	1.1
5I2	Signals Intel Analyst (USSF)	348	3.9
5I4	Intel Analyst (USSF)	115	1.3
5I8	Targeting Analyst (USSF)	40	0.5
5J0	Paralegal	1	0.0
5S0	Space Sys Ops (USSF)	1,416	15.8
5Z8	Space Ops Supt	118	1.3
5Z9	Space Ops	43	0.5
8A3	Protocol	1	0.0
8C0	Amn and Family Readiness Center NCO	1	0.0
8F0	First Sergeant	2	0.0
8G0	Premier Honor Guard	15	0.2
8R0	Enlisted Accessions Recruiter	4	0.0
8R2	Second-Tier Recruiter	1	0.0
8T0	PME Instructor	11	0.1
9A2	Enl Airman Awaiting Discharge, Separation, or Ret for Reasons Within Ctrl	1	0.0
9E2	Command Chief Master Sergeant	2	0.0
9N0	SECAF Enl Legislative Fellows	1	0.0
9S0	Chief Master Sergeant of the Space Force	1	0.0
9T0	Basic Enl Amn	100	1.1
9T1	Officer Trainee	4	0.0
	TOTAL SPACE FORCE ENLISTED	**4,514**	**50.5%**

OFFICERS		Total	% of Active Duty
10C	Ops Cmdr	6	0.1%
12R	Recon/Surveillance/EW CSO	1	0.0
13A	Astronaut	1	0.0
13B	Air Battle Mgr	1	0.0
13N	Nuclear and Missile Ops	1	0.0
13O	Multi-Domain Warfare Officer	1	0.0
13S	Space Ops	1,704	19.1
14N	Intelligence	222	2.5
15A	Operations Analysis Officer	2	0.0
16F	Regional Affairs Strategist	5	0.1
16G	AF Ops Staff Officer	20	0.2
16K	Software Development Officer	1	0.0
16P	Political-Military Affairs Strategist	9	0.1
16R	Planning and Programming	14	0.2
17D	Warfighter Comms Ops	130	1.5
17S	Cyberspace Effects Ops	93	1.0
18R	Recon RPA Pilot	1	0.0
21R	Logistics Readiness	1	0.0
30C	Support Cmdr	3	0.0
32E	Civil Eng	1	0.0
38F	Force Support Officer	3	0.0
41A	Health Services Admin	1	0.0
60C	Sr Materiel Leader-Upper Echelon	10	0.1
61D	Physicist/Nuclear Eng	2	0.0
62E	Development Eng	705	7.9
62S	Materiel Leader	64	0.7
63A	Acquisition Mgr	854	9.6
63G	Sr Materiel Leader-Lower Echelon	34	0.4
64P	Contracting	1	0.0
65F	Financial Mgmt	2	0.0
71S	Spc Investigations	1	0.0
80C	Cmdr, Cadet Squadron, USAF Academy	6	0.1
81C	Instructor	1	0.0
81D	ROTC Detachent Commander and Professor of Aerospace Studies	4	0.0
81L	Education and Training Leader	1	0.0
81T	Instructor	43	0.5
82A	Academic Program Mgr	2	0.0
83R	Recruiting Svc	15	0.0
87G	Wing IG	3	0.0
87I	Director	1	0.0
88A	Aide-de-camp	7	0.1
88B	Protocol Officer	1	0.0
90G	General Officer	21	0.2
91C	Cmdr	5	0.1
91W	Wing Cmdr	31	0.4
92S	Student Officer Authorization	177	2.0
97E	Executive Officer	44	0.5
99A	Unspecified AFSC	10	0.1
	Total Space Force Officers	**4,266**	**47.7%**
UNKNOWN/OTHER			
	Unknown/Other	161	1.8%
TOTAL SPACE FORCE ACTIVE DUTY			
	TOTAL SPACE FORCE	**8,941**	**100.0%**

U.S. SPACE FORCE BUDGET SUMMARY

Funding ($ billions)	**2024** (Requested)	**2025** (Requested)
Operations & Maintenance	$4.9	$5.2
Research, Development, Test & Evaluation	19.2	18.7
Military Personnel	1.2	1.2
Procurement	4.7	4.3
TOTAL	**30.0**	**29.4**
Authorized Manpower	**2024** (Enacted)	**2025** (Requested)
Military	9,400	9,800
Civilian	5,142	5,324
TOTAL FORCE PERSONNEL	**14,542**	**15,124**
Major USSF Procurement Quantities	**2024** (Enacted)	**2025** (Requested)
National Security Space Launches	$10.0	$7.0
SDA Launch	1.8	4.0
Space-Based Missile Warning Systems	.5	2.0

Source: Fiscal 2025 Department of the Air Force Budget Overview

MAJOR USSF PROGRAMS (RDT&E)

(Current $ millions)

		Requested					
	2023	**2024**	**2025 FYDP**	**2026 FYDP**	**2027 FYDP**	**2028 FYDP**	**2029 FYDP**
Counterspace Systems	32.683	36.537	37.078	37.385	38.155	39.532	40.313
Next-Gen OPIR	251.601	222.178	202.951	204.238	203.707	214.191	217.471
Weather System Follow-On	47.11	79.727	49.207	39.901	35.753	25.828	9.367
Protected Tactical Service	238.414	360.126	596.996	656.025	465.054	483.274	492.806
Protected Tactical Enterprise Service	106.895	76.554	79.709	38.592	36.245	87.712	89.442
Space Test Program	27.104	30.192	30.279	29.833	30.447	31.545	32.167
Evolved Strategic SATCOM	491.530	632.833	1,046.161	1,283.92	1,061.42	970.789	745.132
Polar MILSATCOM	65.028	73.757	-	-	-	-	-
Wideband Global SATCOM	46.618	49.445	-	-	-	-	-
GPS III Space Segment	1.467	-	-	-	-	-	-
GPS III Follow-On Satellites	278.758	308.999	244.752	189.659	160.487	130.374	106.704
GPS III Operational Control Segment	267.791	317.309	217.224	22.875	6.628	6.867	7.003
Ballistic Missile Defense Radars	23.194	20.752	12.024	-	-	-	-
Space Science and Technology Research and Development (Space Development Agency)	431.411	472.493	425.166	477.878	428.174	281.289	428.318
Space Development Agency Launch	-	-	-	-	-	-	-

MAJOR USSF PROGRAMS (PROCUREMENT)

(Current $ millions)

		Requested					
	2023	**2024**	**2025 FYDP**	**2026 FYDP**	**2027 FYDP**	**2028 FYDP**	**2029 FYDP**
Counterspace Systems	60.241	52.665	4.277	2.059	2.111	2.156	2.199
Next-Gen OPIR	-	-	-	-	-	-	-
Weather System Follow-On	-	-	-	-	-	-	-
Protected Tactical Service	-	-	-	-	-	-	-
Protected Tactical Enterprise Service	42.464	56.482	56.148	11.866	-	-	-
Space Test Program	-	-	-	-	-	-	-
Evolved Strategic SATCOM	-	-	-	-	-	-	-
Polar MILSATCOM	-	-	-	-	-	-	-
Wideband Global SATCOM	-	-	-	-	-	-	-
GPS III Space Segment	103.340	121.770	68.205	29.723	2.812	-	-
GPS III Follow-On Satellites	616.962	119.700	647.165	710.019	744.030	759.736	775.039
GPS III Operational Control Segment	-	-	-	-	-	-	-
Ballistic Missile Defense Radars	-	-	-	-	-	-	-
Space Science and Technology Research and Development (Space Development Agency)	-	-	-	-	-	-	-
Space Development Agency Launch	854.288	529.468	357.178	457.943	1,235.117	827.558	396.242

USSF HISTORICAL LINEAGE

The U.S. Space Force traces its roots to the beginning of the Cold War, with the first Air Force space programs starting in 1945. USAF's Western Development Division, under Gen. Bernard A. Schriever, was established in 1954 as the first dedicated space organization within the U.S. Armed Forces. Military space forces were organized under several different Air Force major commands until they were unified when Air Force Space Command was established in September 1982. In December 2019, AFSPC became the cornerstone for the U.S. Space Force as a separate military branch. Below, we trace space organizational lineage within the Department of the Air Force. Because the space mission was—and to some extent still is—spread across several commands, offices, organizations, divisions, and services, some entries are concurrent and non-USAF organizations are not listed. This Space Force history is not intended to be all-inclusive.

WESTERN DEVELOPMENT DIVISION		
Gen. Bernard A. Schriever	July 1, 1953	May 31, 1957

AIR FORCE BALLISTIC MISSILE DIVISION		
Gen. Bernard A. Schriever	June 1, 1957	April 24, 1959
Maj. Gen. Osmond J. Ritland	April 25, 1959	March 31, 1961

SPACE AND MISSILE SYSTEMS ORGANIZATION		
Lt. Gen. John W. O'Neill	July 1, 1967	Aug. 31, 1969
Lt. Gen. Samuel C. Phillips	Sept. 1, 1969	Aug. 24, 1972
Lt. Gen. Kenneth W. Schultz	Aug. 25, 1972	Aug. 28, 1975
Lt. Gen. Thomas W. Morgan	Aug. 29, 1975	April 28, 1978
Lt. Gen. Richard C. Henry	April 29, 1978	Sept. 30, 1979

SPACE DIVISION		
Lt. Gen. Richard C. Henry	Oct. 1, 1979	May 1, 1983
Lt. Gen. Forrest S. McCartney	May 1, 1983	Sept. 30, 1986
Lt. Gen. Aloysius G. Casey	Oct. 9, 1986	June 23, 1988
Lt. Gen. Donald L. Cromer	June 24, 1988	March 14, 1989

BALLISTIC MISSILE OFFICE		
Maj. Gen. John W. Hepfer	Oct. 1, 1979	Oct. 31, 1980
Maj. Gen. Forrest S. McCartney	Oct. 31, 1980	May 19, 1982
Maj. Gen. Aloysius G. Casey	May 19, 1982	Sept. 30, 1986
Maj. Gen. Edward P. Berry Jr.	Sept. 30, 1986	March 14, 1989

SPACE SYSTEMS DIVISION (SSD) AND BALLISTIC SYSTEMS DIVISION (BSD)		
Lt. Gen. Donald L. Cromer (SSD)	March 15, 1989	May 31, 1991
Lt. Gen. Edward P. Barry Jr. (SSD)	July 8, 1991	June 30, 1992
Lt. Gen. Edward P. Barry Jr. (BSD)	March 15, 1989	May 30, 1989
Brig. Gen. Ralph G. Tourino (BSD)	May 30, 1989	May 4, 1990

SPACE AND MISSILE SYSTEMS CENTER		
Lt. Gen. Edward P. Barry Jr.	July 1, 1992	Nov. 16, 1994
Lt. Gen. Lester L. Lyles	Nov. 16, 1994	Aug. 18, 1996

SPACE SYSTEMS DIVISION (SSD) AND BALLISTIC SYSTEMS DIVISION (BSD)		
Maj. Gen. Osmond J. Ritland (SSD)	April 1, 1961	May 13, 1962
Lt. Gen. Howell M. Estes Jr. (SSD)	May 14, 1962	Oct. 2, 1962
Maj. Gen. Ben I. Funk (SSD)	Oct. 3, 1962	Aug. 31, 1966
Maj. Gen. Paul T. Cooper (SSD)	Sept. 1, 1966	June 30, 1967
Maj. Gen. Thomas P. Gerrity (BSD)	April 1, 1961	June 30, 1962
Lt. Gen. W. Austin Davis (BSD)	July 1, 1962	July 18, 1964
Maj. Gen. Harry Sands Jr. (BSD)	July 20, 1966	June 30, 1967
Maj. Gen. John L. McCoy (BSD)	July 20, 1966	June 30, 1969

SPACE AND MISSILE SYSTEMS CENTER		
Lt. Gen. Roger G. DeKok	Aug. 18, 1996	Aug. 12, 1998
Lt. Gen. Eugene L. Tattini	Aug. 13, 1998	May 25, 2001
Lt. Gen. Brian A. Arnold	May 25, 2001	May 20, 2005
Lt. Gen. Michael A. Hamel	May 20, 2005	May 16, 2008
Lt. Gen. John T. Sheridan	May 16, 2008	June 3, 2011
Lt. Gen. Ellen M. Pawlikowski	June 3, 2011	June 19, 2014
Lt. Gen. Samuel A. Greaves	Jun 19, 2014	March 22, 2017
Lt. Gen. John F. Thompson	March 22, 2017	Aug. 1, 2021

Gen. Bernard A. Schriever was the chief architect of the U.S. Air Force's early ballistic missile and space programs.

AIR FORCE SPACE COMMAND		
Gen. James V. Hartinger	Sept. 1, 1982	July 30, 1984
Gen. Robert T. Herres	July 30, 1984	Oct. 1, 1986
Maj. Gen. Maurice C. Padden	Oct. 1, 1986	Oct. 29, 1987
Lt. Gen. Donald J. Kutyna	Oct. 29, 1987	March 29, 1990
Lt. Gen. Thomas S. Moorman Jr.	March 29, 1990	March 23, 1992
Gen. Donald J. Kutyna	March 23, 1992	June 30, 1992
Gen. Charles A. Horner	June 30, 1992	Sept. 13, 1994
Gen. Joseph W. Ashy	Sept. 13, 1994	Aug. 26, 1996
Gen. Howell M. Estes III	Aug. 26, 1996	Aug. 14, 1998
Gen. Richard B. Myers	Aug. 14, 1998	Feb. 22, 2000
Gen. Ralph E. Eberhart	Feb. 22, 2000	April 19, 2002
Gen. Lance W. Lord	April 19, 2002	April 1, 2006
Lt. Gen. Frank G. Klotz (acting)	April 1, 2006	June 26, 2006
Gen. Kevin P. Chilton	June 26, 2006	Oct. 3, 2007
Lt. Gen. Michael A. Hamel (acting)	Oct. 3, 2007	Oct. 12, 2007
Gen. C. Robert Kehler	Oct. 12, 2007	Jan. 5, 2011
Gen. William L. Shelton	Jan. 5, 2011	Aug. 15, 2014
Gen. John E. Hyten	Aug. 15, 2014	Oct. 25, 2016
Gen. John W. Raymond	Oct. 25, 2016	Jan. 14, 2020

U.S. SPACE FORCE		
Gen. John W. Raymond	Jan. 14, 2020	Nov. 2, 2022
Gen. B. Chance Saltzman	Nov. 22, 2022	

SPACE OPERATIONS COMMAND (SpOC)		
Lt. Gen. Stephen N. Whiting	Oct. 2020	Jan. 9, 2024
Lt. Gen. David N. Miller Jr.	Jan. 9, 2024	

SPACE SYSTEMS COMMAND (SSC)		
Lt. Gen. Michael A. Guetlein	Aug. 13, 2021	Dec. 21, 2023
Lt. Gen. Philip A. Garrant	Feb. 1, 2024*	

*Joy M. White was acting commander from Dec. 21, 2023, to Feb. 1, 2024.

SPACE TRAINING AND READINESS COMMAND (STARCOM)		
Maj. Gen. Shawn N. Bratton	Aug. 23, 2021	July 20, 2023
Maj. Gen. Timothy A. Sejba	July 20, 2023	

USAF & USSF INSTALLATIONS

Senior Airman John Lebens

An F-16 with the 354th Fighter Wing, Eielson Air Force Base, Alaska, flies over the Joint Pacific-Alaska Range Complex, during RED FLAG-Alaska 24-1, April 26, 2024.

Domestic

Listings include installations owned, operated by, or hosting substantial Department of the Air Force activities. For a map, see p. 98. ***For sources and definitions see p. 109.***

Active Reserve Guard Range USSF

ALABAMA

Dannelly Field, Montgomery Regional Airport, Ala. 36108. ***Nearest city:*** Montgomery. ***Phone:*** 334-394-7200. ***Acres***: 70. ***Total Force:*** civilian, 0; military, 1,153. ***Component:*** ANG. ***Unit/mission:*** 187th FW, fighter, ISR operations. ***History:*** Originally named for Ens. Clarence Dannelly, Navy pilot killed in WWII.

Hall ANGS, Dothan Regional Airport, Ala. 36303. ***Nearest city:*** Dothan. ***Phone:*** 334-596-0184. ***Acres:*** 21. ***Total Force:*** civilian, 0; military, 247. ***Component:*** ANG. ***Unit/mission:*** 280th Special Operations Communications Squadron, strategic air defense.

Maxwell AFB, Ala. 36112. ***Nearest city:*** Montgomery. ***Phone:*** 334-953-1110. ***Acres:*** 3,759 (Maxwell), 355 (Gunter annex). ***Total Force:*** civilian, 2,467; military, 3,862. ***Active-duty USAF:*** enlisted, 1,192; officer, 1,151; ***Active-duty USSF:*** enlisted, 17; officer, 49. ***Owning command:*** AETC. ***Unit/mission:*** 42nd ABW (AETC), support; 908th AW (AFRC), air mobility operations; Air Force Historical Research Agency (USAF), historical documentation, research; Air University (AETC); Hq. Civil Air Patrol (USAF), management; Hq. Air Force Judge Advocate General Corps (USAF), management; PEO-Business and Enterprise Systems (AFMC), acquisition. ***History:*** Activated 1918 at the site of the Wright brothers' flight school. Named for 2nd Lt. William C. Maxwell, killed in air accident Aug. 12, 1920. ***Museum:*** Air Park. ***Inn:*** 334-953-3931. (Maxwell); 334-416-2501 (Gunter). ***Golf:*** Cypress Tree.

Sumpter Smith JNGB, Birmingham-Shuttlesworth Intl. Airport, Ala. 35217. ***Nearest city:*** Birmingham. ***Phone:*** 205-714-2855. ***Acres:*** 134. ***Total Force:*** civilian, 0; military, 1,672. ***Component:*** ANG. ***Unit/mission:*** 99th ARS (AMC) (active associate), air mobility operations; 117th ARW, air mobility, intelligence operations. ***History:*** Named for Col. Walter Sumpter Smith, electrical engineer and pilot.

ALASKA

Clear SFS, Alaska 99704. ***Nearest city:*** Fairbanks. ***Phone:*** 907-585-6110. ***Acres:*** 11,438. ***Total Force:*** civilian, 0; military, 141. ***Owning command:*** USSF. ***Unit/mission:*** 13th SWS (USSF), 213th SWS (ANG), missile warning. ***History:*** Dates from 1961.

Eielson AFB, Alaska 99702. ***Nearest city:*** Fairbanks. ***Phone:*** 907-377-1110. ***Acres:*** 24,919. ***Total Force:*** civilian, 673; military, 3,734. ***Active-duty USAF:*** enlisted, 2,357; officer, 292. ***Active-duty USSF:*** enlisted, 1; officer, 0. ***Owning command:*** PACAF. ***Unit/mission:*** 168th Wing (ANG), air mobility operations; 354th FW (PACAF), aggressor force, fighter, Red Flag-Alaska operations, Joint Pacific Alaska Range Complex support; Arctic Survival School (AETC), training. ***History:*** Activated October 1944. Named for Carl Ben Eielson, Arctic aviation pioneer who died in Arctic rescue mission in November 1929. ***Museum:*** Heritage Park. ***Inn:*** 907-377-1844.

JBE-Richardson, Alaska 99506. ***Nearest city:*** Anchorage. ***Phone:*** 907-552-1110. ***Acres:*** 13,375 (Elmendorf), 59,790 (Richardson). ***Total Force:*** civilian, 298; military, 13,456. ***Active-duty USAF:*** enlisted, 3,610; officer, 545. ***Active-duty USSF:*** enlisted, 0; officer, 0. ***Owning command:*** PACAF. ***Unit/mission:*** 3rd Wing (PACAF), air mobility, C2, fighter operations; 176th Wing (ANG), air mobility, personnel recovery operations; 477th FG (AFRC), fighter operations; 673rd ABW (PACAF), support; 715th AMOG (AMC), air mobility operations; Alaskan NORAD Region, operational leadership; Hq. 11th Air Force (PACAF), operational leadership; Hq. Alaskan Command (PACOM), management. ***History:*** Activated July 1940. Formed as joint base under Air Force lead 2010.

Elmendorf named for Capt. Hugh M. Elmendorf, killed Jan. 13, 1933, flying an experimental fighter. Richardson named for Army Brig. Gen. Wilds P. Richardson, who served in Alaska territory from 1897 to 1917. ***Museum:*** Kulis ANGB Museum. ***Inn:*** 907-552-2454. ***Golf:*** Moose Run.

■ **Joint Pacific Alaska Range Complex,** Alaska. ***Nearest city:*** Fairbanks. ***Phone:*** 907-552-2341. ***Owning command:*** ALCOM. ***Available airspace:*** 65,000 square miles. ***Acres of maneuver land:*** 1.5 million. ***Unit/mission:*** Unit training, joint training exercises.

ARIZONA

■ **Barry M. Goldwater Range,** Ariz. ***Nearest city:*** Gila Bend. ***Phone:*** 623-856-7216. ***Acres:*** 1,152,999 (BMGR East, Air Force); 692,800 (BMGR West, Marine Corps). ***Owning command:*** AETC ***Unit/mission:*** 56th Range Management Office, range operations. Includes Gila Bend Air Force Auxiliary Field. ***History:*** Training range on the U.S. southern border used by military pilots since 1941 that now hosts more than 68,000 training sorties a year.

■ **Davis-Monthan AFB,** Ariz. 85707. ***Nearest city:*** Tucson. ***Phone:*** 520-228-1110. ***Acres:*** 10,518. ***Total Force:*** civilian, 1,801; military, 7,571. ***Active-duty USAF:*** enlisted, 4,165; officer, 641. ***Active-duty USSF:*** enlisted, 1; officer, 5. ***Owning command:*** ACC. ***Unit/mission:*** 55th ECG (ACC), electronic combat operations; 214th AG (ANG), RPA operations; 309th Aerospace Maintenance and Regeneration Group (AFMC), aerospace vehicle storage, regeneration; 355th Wing (ACC), fighter operations; 563rd RQG (ACC), personnel recovery operations; 924th FG (AFRC), fighter operations; 943rd RQG (AFRC), personnel recovery operations; Hq. 12th Air Force (ACC), operational leadership. ***History:*** Activated 1927. Named for two local aviators: 2nd Lt. Samuel H. Davis Jr., killed Dec. 28, 1921, and 2nd Lt. Oscar Monthan, killed March 27, 1924. ***Museum:*** Pima Air and Space Museum. ***Inn:*** 520-228-3309.

■ **Goldwater ANGB,** Phoenix Sky Harbor Intl. Airport, Ariz. 85034. ***Nearest city:*** Phoenix. ***Phone:*** 602-302-9004. ***Total Force:*** civilian, 0; military, 851. ***Component:*** ANG. ***Unit/mission:*** 161st ARW, air mobility operations.

■ **Luke AFB,** Ariz. 85309. ***Nearest city:*** Phoenix. ***Phone:*** 623-856-1110. ***Acres:*** 5,942. ***Total Force:*** civilian, 1,162; military, 6,570. ***Active-duty USAF:*** enlisted, 3,159; officer, 345. ***Active-duty USSF:*** enlisted, 1; officer, 0. ***Owning command:*** AETC. ***Unit/mission:*** 56th FW (AETC), training, Barry M. Goldwater Range operations; 944th FW (AFRC), training. ***History***: Activated 1941. Named for 2nd Lt. Frank Luke Jr., observation balloon-busting ace of WWI and first aviator to receive MOH, killed in action Sept. 29, 1918. ***Museum:*** Air Park. ***Inn:*** 623-935-2641. ***Golf:*** Falcon Dunes.

■ **Morris ANGB, Tucson Intl. Airport,** Ariz. 85706. ***Nearest city:*** Tucson. ***Phone:*** 520-295-6192. ***Total Force:*** civilian, 0; military, 1,466. ***Component:*** ANG. ***Unit/mission***: 162nd Wing, fighter, ISR, RPA (at Davis-Monthan AFB, Ariz.) operations, training.

ARKANSAS

■ **Ebbing ANGB, Fort Smith Regional Airport,** Ark. 72903. ***Nearest city:*** Fort Smith. ***Phone:*** 479-573-5100. ***Acres:*** 144. ***Total Force:*** civilian, 0; military, 866. ***Component:*** ANG. ***Unit/mission:*** 188th Wing, RPA, ISR.

■ **Little Rock AFB,** Ark. 72099. ***Nearest city:*** Jacksonville. ***Phone:*** 501-987-1110. ***Acres:*** 6,829. ***Total Force:*** civilian, 672; military, 4,902. ***Active-duty USAF:*** enlisted, 2,476; officer, 362. ***Active-duty USSF:*** enlisted, 1; officer, 0. ***Owning command:*** AMC. ***Unit/mission:*** 19th AW (AMC), air mobility operations; 913th AG (AFRC), 189th AW (ANG), air mobility operations, training; 314th AW (AETC), training. ***History:*** Base opened Oct. 9, 1955. ***Inn:*** 501-988-1141. ***Golf:*** Deer Run.

CALIFORNIA

■ **Beale AFB,** Calif. 95903. ***Nearest city:*** Marysville. ***Phone:*** 530-634-3000. ***Acres:*** 22,454. ***Total Force:*** civilian, 844; military, 4,814. ***Active-duty USAF:*** enlisted, 2,134; officer, 361. ***Active-duty USSF:*** enlisted, 19; officer, 26. ***Owning command:*** ACC. ***Unit/mission:*** 7th Space Warning Squadron (Space Delta 4), missile warning; 9th RW (ACC), ISR, RPA operations; 195th Wing (ANG), DCGS, intel; 548th ISRG (ACC), DCGS; 940th Air Refueling Wing (AFRC), KC-135R. ***History:*** Opened October 1942 as Army's Camp Beale. Named for Edward F. Beale, a former Navy officer who became a hero of the Mexican-American War and early developer of California, as well as a senior appointee/diplomat for four presidents. Transferred to USAF 1948. Designated AFB April 1951. ***Museum:*** Edward F. Beale Museum. ***Inn:*** 530-634-3662. ***Golf:*** Coyote Run.

■ **California ANGB,** Fresno Yosemite Intl. Airport, Calif. 93727. ***Nearest city:*** Fresno. ***Phone:*** 559-454-5100. ***Acres:*** 77. ***Total Force:*** civilian, 0; military, 1,675. ***Component:*** ANG. ***Unit/mission:*** 144th FW, fighter, ISR operations.

■ **Channel Islands ANGS,** Calif. 93041. ***Nearest city:*** Oxnard. Phone: 805-986-8000. ***Acres:*** 206. ***Total Force:*** civilian, 3,674; military, 1,092. ***Component:*** ANG. ***Unit/mission:*** 146th AW, air mobility, MAFFS operations.

■ **Edwards AFB,** Calif. 93524. ***Nearest city:*** Rosamond. ***Phone:*** 661-277-1110. ***Acres:*** 307,517. ***Total Force:*** civilian, 3,865; military, 2,134. ***Active-duty USAF:*** enlisted, 1,633; officer, 533. ***Active-duty USSF:*** enlisted, 1; officer, 18. ***Owning command:*** AFMC. ***Unit/mission:*** 412th TW (AFMC), T&E, base support; Hq. Air Force Test Center (AFMC), T&E management; U.S. Air Force Test Pilot School (AFMC), training. ***History:*** Muroc Bombing and Gunnery Range established September 1933. Designated Muroc AAB 1942. Renamed in 1949 for Capt. Glen W. Edwards, killed June 5, 1948, in crash of YB-49 "Flying Wing." ***Museum:*** Air Force Flight Test Museum. ***Inn:*** 661-277-3394/4101. ***Golf:*** Muroc Lake.

■ **Los Angeles AFB,** Calif. 90245. ***Nearest city:*** El Segundo. ***Phone:*** 310-653-1110. ***Acres:*** 56. ***Total Force:*** civilian, 1,231; military, 1,440. ***Active-duty USAF:*** enlisted, 179; officer, 196. ***Active-duty USSF:*** enlisted, 50; officer, 612. ***Owning command:*** USSF. ***Unit/mission:*** 61st ABG (USSF), support; Hq. Space Systems Command (USSF), acquisition, R&D. ***History:*** Designated Los Angeles AFS April 30, 1964. Redesignated Los Angeles AFB Sept. 15, 1987. SMC, activated July 1, 1992, dates from Air Research and Development Command's Western Development Division, activated July 1, 1954. ***Museum***. SMC Heritage Center. ***Inn:*** 310-653-8296.

■ **March ARB,** Calif. 92518. ***Nearest city:*** Moreno Valley/Riverside. ***Phone:*** 951-655-4138. ***Acres:*** 2,394. ***Total Force:*** civilian, 0; military, 6,203. ***Component:*** AFRC/ANG. ***Unit/mission:*** 452nd AMW (AFRC), air mobility operations; 163rd ATKW (ANG), RPA operations, training; Hq. 4th Air Force (AFRC), operational leadership. ***History:*** Activated March 1, 1918. Named for 2nd Lt. Peyton C. March Jr., who died of injuries sustained in a crash Feb. 18, 1918. ***Inn:*** 951-655-5241. ***Golf:*** General Old.

■ **Moffett Federal Airfield,** Calif. 94035. ***Nearest city:*** Mountain View. ***Phone:*** 650-603-9129. ***Acres:*** 112. ***Total Force:*** civilian, 528; military, 974. ***Component:*** ANG. ***Unit/mission:*** 129th RQW, personnel recovery operations. ***History:*** Activated as NAS Sunnyvale April 1933. Renamed Moffett Field June 1933 for Rear Adm. William A. Moffett, killed in crash of USS Akron airship April 4, 1933. Later renamed to Moffett Air National Guard Base.

■ **Pillar Point AFS,** Calif. 94019. ***Nearest city:*** Half Moon Bay. ***Phone:*** 650-728-3246. ***Acres:*** 55. ***Total Force:*** civilian, 1; military, 974. ***Owning Command:*** USSF. ***Unit/mission:*** supports space and ballistic missile launches. ***History:*** Opened as an Army observation post in 1940; taken over by the Navy in 1958 as a control site for missile testing; transferred to the Air Force in 1964.

■ **Sepulveda ANGS,** Calif. 91406. ***Nearest city:*** Van Nuys. ***Phone:*** 858-276-9351. ***Acres:*** 26. ***Total Force:*** civilian, 0; military, 55. ***Component:*** ANG. ***Unit/mission:*** 261st Cyberspace Operations Squadron, mission assurance and threat mitigation support.

■ **Travis AFB,** Calif. 94535. ***Nearest city:*** Fairfield. ***Phone:*** 707-424-1110. ***Acres:*** 6,633. ***Total Force:*** civilian, 1,552; military, 9,454. ***Active-duty USAF:*** enlisted, 4,128; officer, 842. ***Active-duty USSF:*** enlisted, 0; officer, 1. ***Owning command:*** AMC. ***Unit/mission:*** 60th AMW (AMC), 349th AMW (AFRC), air mobility operations; David Grant USAF Medical Center. ***History:*** Activated May 17, 1943. Named for Brig. Gen. Robert F. Travis, killed Aug. 5, 1950. ***Museum:*** Heritage Center. ***Inn:*** 707-424-8000. ***Golf:*** Cypress Lakes.

■ **Vandenberg SFB,** Calif. 93437. ***Nearest city:*** Lompoc. ***Phone:*** 805-606-1110. ***Acres:*** 54,466. ***Total Force:*** civilian, 1,196; military, 2,696. ***Active-duty USAF:*** enlisted, 1,523; officer, 327. ***Active-duty USSF:*** enlisted, 500; officer, 321. ***Owning command:*** USSF. ***Unit/mission:*** Space Launch Delta 30 (USSF), space and launch range operations, host unit; 381st TRG (AETC), training; 576th FLTS (AFGSC), test; 21st SOPS (USSF), space operations; Combined Space Operations Center (SPACECOM), space C2 operations. ***History:*** Originally Army's Camp Cooke; activated October 1941. Reassigned to USAF June 7, 1957. Renamed for Gen. Hoyt S. Vandenberg, USAF's second Chief of Staff. ***Museum:*** Space and Missile Heritage Center. ***Inn:*** 805-606-1844.

COLORADO

■ **Buckley SFB,** Colo. 80011. ***Nearest city:*** Aurora. ***Phone:*** 720-847-9431. ***Acres:*** 4,299. ***Total Force:*** civilian: 1,111; military, 6,350. ***Active-duty USAF:*** enlisted, 647; officer, 146. ***Active-duty USSF:*** enlisted, 521; officer, 229. ***Owning command:*** USSF. ***Unit/mission:*** 140th Wing (ANG), air mobility, fighter operations, mobile missile warning; Space Base Delta 2 (USSF); Space

Delta 4, strategic and theater missile warning; 566th IS (ACC), intelligence; Air Reserve Personnel Center, Guard and Reserve personnel support. ***History:*** Activated April 1, 1942, as gunnery training facility. ANG assumed control from Navy 1959. Became Active-duty Air Force facility Oct. 1, 2000. Renamed Buckley Space Force Base on June 4, 2021. Named for 1st Lt. John H. Buckley, WWI flier, killed Sept. 17, 1918. ***Inn:*** 720-847-5899.

Cheyenne Mountain SFS, Colo. 80914. ***Nearest city:*** Colorado Springs. ***Phone:*** 719-556-7321 (Peterson SFB). **Acres:** 567. ***Total Force:*** part of Peterson SFB. ***Owning command:*** USSF. **Unit/mission**: NORAD/NORTHCOM Alternate Command Center, Integrated Tactical Warning and Attack Assessment operations, training. ***History:*** operational April 20, 1966.

Greeley ANGS, Colo. 80631. ***Nearest city:*** Greeley. ***Phone:*** 303-929-7768. ***Acres:*** 17. ***Total Force:*** civilian, 87; military, 286. ***Component:*** ANG. ***Unit/mission:*** 233rd Space Group, missile warning and space launch detection. ***History:*** Activated January 1996.

Peterson SFB, Colo. 80914. ***Nearest city:*** Colorado Springs. ***Phone:*** 719-556-7321. ***Acres:*** 1,738. ***Total Force:*** civilian, 3,521; military, 6,088. ***Active-duty USAF:*** enlisted, 1,438; officer, 365. ***Active-duty USSF:*** enlisted, 790; officer, 577. ***Owning command:*** USSF. ***Unit/mission:*** Hq. Space Operations Command (USSF), operational leadership; Space Delta 2, space domain awareness; Space Delta 3, space electromagnetic warfare; Space Delta 6, space access and cyberspace operations; Space Delta 7, ISR; Space Delta 8, satellite communications; Space Delta 9, orbital warfare; PNT Delta (provisional), positioning, navigation, and timing; Space Base Delta 1, base operations; 52nd AS (AMC) (active associate), 200th AS (ANG), air mobility operations; 302nd AW (AFRC), air mobility, MAFFS operations; Hq. NORAD, Hq. NORTHCOM, operational leadership. ***History:*** Activated 1942. Named for 1st Lt. Edward J. Peterson, killed Aug. 8, 1942. ***Museum:*** Peterson Air and Space Museum. ***Inn:*** 719-556-7851. ***Golf:*** Silver Spruce.

Schriever SFB, Colo. 80912. ***Nearest city:*** Colorado Springs. ***Phone:*** 719-567-1110. ***Acres:*** 5,634. **Total Force:** civilian, 0; military, 3,130. ***Active-duty USAF:*** enlisted, 2,742 officer, 85. ***Active-duty USSF:*** enlisted, 1,041; officer, 677. ***Owning command:*** USSF. ***Unit/mission:*** Space Base Delta 1, base operations (USSF); 310th SW (AFRC), space operations; Detachment 1, USAF Warfare Center (ACC/USSF), R&D. ***History:*** Activated as Falcon AFS Sept. 26, 1985. Redesignated AFB June 13, 1988. Renamed for Gen. Bernard A. Schriever June 5, 1998.

U.S. Air Force Academy, Colo. 80840. ***Nearest city:*** Colorado Springs. ***Phone:*** 719-333-1110. ***Acres:*** 18,569. ***Total Force:*** civilian, 1,483; military, 2,286. ***Active-duty USAF***: enlisted, 792; officer, 724. ***Active-duty USSF***: enlisted, 16; officer, 51. ***Next higher echelon of command:*** HQ Air Force. ***Unit/mission:*** U.S. Air Force Academy (USAFA), education/training; Preparatory School, education/training; 10th ABW (Air Force Academy), support; 306th FTG (AETC), training. ***History:*** established April 1, 1954; headquartered at Lowry AFB until August 1958. Moved to permanent location in Colorado Springs August 1958. ***Museum:*** Visitor Center. ***Inn:*** 719-472-1940. ***Golf:*** Eisenhower.

CONNECTICUT

Bradley ANGB, Conn. 06026. ***Nearest cities:*** Hartford, Conn., and Springfield, Mass. ***Phone***: 860-292-2460. ***Acres:*** 148. ***Total Force:*** civilian, 207; military, 0. ***Component:*** ANG. ***Unit/mission:*** 103rd AW, air mobility operations. ***History:*** Named for Lt. Eugene M. Bradley, killed in P-40 crash August 1941.

DELAWARE

Dover AFB, Del. 19902. ***Nearest city:*** Dover. ***Phone:*** 302-677-3000. ***Acres:*** 3,824. ***Total Force***: civilian, 0; military, 4,901. ***Active-duty USAF:*** enlisted, 2,399; officer, 286. ***Owning command:*** AMC. ***Unit/mission:*** 436th AW (AMC), 512th AW (AFRC), air mobility operations; Air Force Mortuary Affairs Operations (USAF). ***History:*** Activated December 1941. Inactivated 1946. Reactivated February 1951. ***Museum:*** Air Mobility Command Museum. ***Inn:*** 302-677-2840. ***Golf:*** Eagle Creek.

New Castle ANGB, New Castle Airport, Del. 19720. ***Nearest city:*** Wilmington. ***Phone:*** 302-323-3408. ***Acres:*** 78. ***Total Force:*** civilian, 398; military, 1,502. ***Component:*** ANG. ***Unit/mission:*** 166th AW, air mobility, cyber operations.

DISTRICT OF COLUMBIA

JB Anacostia-Bolling, D.C. 20032. ***Nearest city:*** Washington, D.C. ***Phone:*** 703-545-6700. ***Acres:*** 5,711. ***Total Force:*** civilian, 1,620; military, 3,346. ***Active-duty USAF:*** enlisted, 1,242; officer, 733. ***Active-duty USSF:*** enlisted, 27; officer, 44. ***Bolling owning command:*** AFDW. ***Unit/mission:*** 11th Wing (AFDW), helicopter operations, support; 579th MDG (AFDW), clinic operations; Hq. Surgeon General (USAF). ***History:*** Activated October 1917 with Army air and Navy elements. Formed joint base under Navy lead 2010. Naval Support Facility Anacostia named for adjacent Anacostia River. Bolling named for Col. Raynal C. Bolling, first high-ranking Army Air Service officer killed in WWI. ***Inn:*** Navy Gateway: 202-664-8587.

FLORIDA

Avon Park AFR, Fla. ***Nearest city:*** Avon Park. ***Phone:*** 863-452-4120. ***Acres:*** 100,929. ***Total Force:*** civilian, 62; military, 52. ***Owning command:*** ACC. ***Unit/mission:*** 598th Range Squadron, training.

Cape Canaveral SFS, Fla. 32920. ***Nearest city:*** Cocoa Beach. ***Phone:*** 321-494-5933. ***Acres:*** 16,239. ***Total Force:*** civilian, 517; military, 372. ***Active-duty USSF:*** enlisted, 8; officer, 59 (Part of Patrick SFB). ***Owning command:*** USSF. ***Unit/mission:*** Space Launch Delta 45th (USSF), space launch operations; 114th EWS (ANG), offensive counterspace, space situational awareness. ***History:*** formerly NAS Banana River. Site of Joint Long Range Proving Ground 1949. USAF took sole control 1950. Combined with NASA to form John F. Kennedy Space Center 1973. Designated Cape Canaveral AS in 1974. ***Museums:*** Air Force Space and Missile Museum, Sands Space History Center.

Duke Field, Fla. 32542. ***Nearest city:*** Crestview. ***Phone:*** 850-883-6347. ***Acres:*** 1,946. ***Total Force:*** part of Eglin AFB. ***Component:*** AFRC. ***Unit/mission:*** 919th SOW (classic associate), special operations. ***History:*** named for Lt. Robert L. Duke, pilot killed Dec. 29, 1943, in test flight. Also known as Eglin AFB Auxiliary Field 3.

Eglin AFB, Fla. 32542. ***Nearest city:*** Niceville-Valparaiso. ***Phone:*** 850-882-1110. ***Acres:*** 449,177. ***Total Force:*** civilian, 5,781; military, 10,628. ***Active-duty USAF:*** enlisted, 3,409; officer, 1,001 ***Active-duty USSF:*** enlisted, 40; officer, 28. ***Owning command:*** AFMC. ***Unit/mission:*** 20th SPSS (USSF), space surveillance; 33rd FW (AETC), training; 53rd Wing (ACC), OT&E; 96th TW (AFMC), T&E, base support; 350th Spectrum Warfare Wing (AFMC), electronic warfare; AFRL Munitions Directorate (AFMC), R&D; PEO-Weapons/Air Force Life Cycle Management Center Armament Directorate (AFMC), acquisition. ***History:*** Activated 1935. Named for Lt. Col. Frederick I. Eglin, WWI flier killed in aircraft accident Jan. 1, 1937. ***Museum:*** Air Force Armament Museum. ***Inn:*** 850-389-4943/8761. ***Golf:*** Eglin.

Homestead ARB, Fla. 33039. ***Nearest city:*** Homestead. ***Phone:*** 786-415-7000. ***Acres:*** 2,465. ***Total Force:*** civilian, 485; military, 2,152. ***Component:*** AFRC. ***Unit/mission:*** 367th FS (active associate), 125th FW Det. 1 (ANG), 482nd FW (AFRC), fighter operations. ***Inn:*** 786-415-7198.

Hurlburt Field, Fla. 32544. ***Nearest city:*** Fort Walton Beach. ***Phone:*** 850-884-1110. ***Acres:*** 6,341. ***Total Force:*** civilian, 1,656; military, 9,277. ***Active-duty USAF:*** enlisted, 5,156; officer, 1,657. ***Active-duty USSF:*** enlisted, 1; officer, 9. ***Owning command:*** AFSOC. ***Unit/mission:*** 1st SOW (AFSOC), special operations; 24th SOW (AFSOC), special tactics operations; 39th IOS (ACC), training; 361st ISRG (ACC), ISR operations; 492nd SOW (AFSOC) training; 505th CCW (ACC), C2, ISR TTP development, test; 556th RED HORSE (AFRC), 823rd RED HORSE (ACC), bare base operations; 2nd Combat Weather Systems Squadron (ACC), OT&E, training; Hq. AFSOC, management. ***History:*** Activated 1943. Named for Lt. Donald W. Hurlburt, WWII pilot killed Oct. 1, 1943. ***Museum:*** Memorial Air Park. ***Inn:*** 850-884-7115. ***Golf:*** Gator Lakes.

Jacksonville ANGB, Jacksonville Intl. Airport, Fla. 32218. ***Nearest city:*** Jacksonville. ***Phone:*** 904-741-7030. ***Acres:*** 342. **Total Force:** civilian, 0; military, 1,090. ***Component***: ANG. ***Unit/mission:*** 125th FW, fighter, ISR operations.

MacDill AFB, Fla. 33621. ***Nearest city:*** Tampa. ***Phone:*** 813-828-1110. ***Acres:*** 5,826. ***Total Force:*** civilian, 0; military, 8,322. ***Active-duty USAF:*** enlisted, 2,244; officer, 521. ***Active-duty USSF:*** enlisted, 10; officer, 22. ***Owning command:*** AMC. ***Unit/mission:*** 6th ARW (AMC), 927th ARW (AFRC), air mobility operations; Hq. CENTCOM, operational leadership; Hq. SOCOM, operational leadership; Hq. Joint Communications Support Element, C4 operations, management; Joint Special Operations University (SOCOM), education. ***History:*** Activated April 15, 1941. Named for Col. Leslie MacDill, killed in aircraft accident Nov. 8, 1938. ***Inn:*** 813-828-4259. ***Golf:*** Bay Palms.

Patrick SFB, Fla. 32925. ***Nearest city:*** Cocoa Beach. ***Phone:*** 321-494-1110. ***Acres:*** 2,324. ***Total Force:*** civilian, 1,678; military, 2,989. ***Active-duty USAF:*** enlisted, 991; officer, 295. ***Active-duty USSF:*** enlisted, 50; officer, 47. **Owning command:** USSF. ***Unit/mission:*** Space Launch Delta 45 (USSF), space launch operations; 920th RQW (AFRC), personnel recovery operations; Air Force Technical Applications Center (ACC), nuclear monitoring. ***History:*** Activated 1940. Named for Maj. Gen. Mason M. Patrick, Chief of American Expeditionary Forces' Air Service in WWI and

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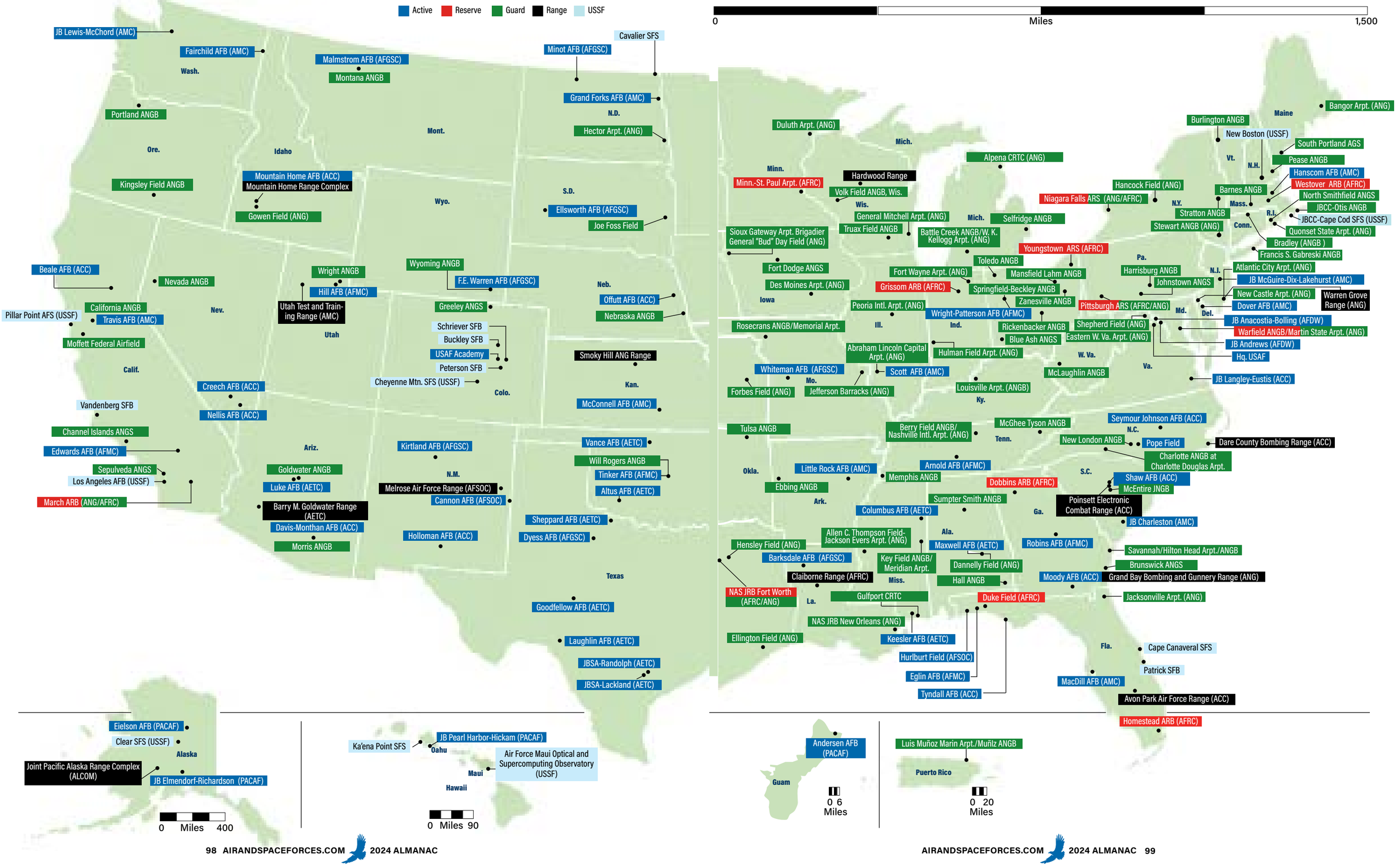


Tech. Sgt. Zade Vadnais

A B-52H Stratofortress deploys its drogue parachute as it lands at Andersen Air Force Base, Guam, in June 2023.

Chief of Air Service/Air Corps, 1921-27. ***Museum:*** Khobar Tower Memorial. ***Inn:*** 321-494-5428. ***Golf:*** Manatee Cove.

Tyndall AFB, Fla. 32403. ***Nearest city***: Panama City. ***Phone:*** 850-283-1110. ***Acres:*** 28,891. ***Total Force:*** civilian, 2,709; military, 2,723. ***Active-duty USAF:*** enlisted, 1,516; officer, 325. ***Active-duty USSF***: enlisted, 0; officer, 1. ***Owning command:*** ACC. ***Unit/mission:*** 53rd WEG (ACC), T&E; 101st AOG (ANG), C2 operations; 325th FW (ACC); 601st AOC (ACC/ANG), plan/direct air operations; Air Force Rescue Coordination Center (ACC), plan/direct inland rescue operations; Hq. Continental U.S. NORAD Region (NORAD)/1st Air Force (Air Forces Northern) (ACC/ANG), operational leadership. ***History:*** Activated Dec. 7, 1941. Named for 1st Lt. Frank B. Tyndall, WWI fighter pilot killed July 15, 1930. ***Inn:*** 850-283-4210. ***Golf:*** Pelican Point.

GEORGIA

Brunswick ANGS, Brunswick Golden Isles Airport, Ga. 31525. ***Nearest city:*** Brunswick. ***Phone:*** 912-261-5604. ***Acres:*** 14. ***Total Force:*** civilian, 0; military, 184. ***Component:*** ANG. ***Unit/mission:*** 224th Joint Communications Support Squadron, combat communications.

Dobbins ARB, Ga. 30069. ***Nearest city:*** Marietta. ***Phone:*** 678-655-5000. ***Acres:*** 1,907. ***Total Force:*** civilian, 0; military, 1,645. ***Component:*** AFRC. ***Unit/mission:*** 94th AW, aeromedical evacuation, air mobility operations; Hq. 22nd Air Force, operational leadership. ***History:*** Activated 1943. Named for Capt. Charles Dobbins, pilot killed in WWII. ***Inn:*** 678-655-4745.

Grand Bay Bombing and Gunnery Range, Ala. ***Nearest city:*** Lakeland. ***Phone:*** 229-257-3510/2765. ***Acres***: 5,874. ***Owning command:*** ACC. ***Unit/mission:*** tactical air and ground maneuvers, weapons training.

Moody AFB, Ga. 31699. ***Nearest city:*** Valdosta. ***Phone:*** 229-257-1110. ***Acres:*** 5,627. ***Total Force:*** civilian, 0; military, 4,568. ***Active-duty USAF:*** enlisted, 3,262; officer, 355. ***Owning command:*** ACC. ***Unit/mission:*** 23rd Wing (ACC), fighter, personnel recovery operations; 93rd AGOW (ACC), battlefield airmen operations, expeditionary force protection, support; 476th FG (AFRC), fighter operations. ***History:*** Activated June 1941. Named for Maj. George P. Moody, killed May 5, 1941. ***Inn:*** 229-257-3893. ***Golf:*** Quiet Pines.

Robins AFB, Ga. 31098. ***Nearest city:*** Warner Robins. ***Phone:*** 478-926-1110. ***Acres:*** 6,935. ***Total Force***: civilian, 14,586; military, 5,525. ***Active-duty USAF:*** enlisted, 1,642; officer, 511. ***Active-duty USSF:*** enlisted, 2; officer, 9. ***Owning command:*** AFMC. ***Unit/mission:*** 78th ABW (AFMC), support; 94th APS (AFRC), aerial port operations; 116th ACW (ANG), 461st ACW (ACC), C2 operations; 638th SCMG (AFMC), systems life-cycle support; 5th CCG (ACC), combat communications operations; Hq. AFRC, management; Warner Robins ALC (AFMC), weapons maintenance, repair. ***History:*** Activated March 1942. Named for Brig. Gen. Augustine Warner Robins, an early chief of the Air Corps' Materiel Division, who died June 16, 1940. ***Museum:*** Museum of Aviation. ***Inn:*** 478-926-2100. ***Golf:*** Pine Oaks.

Savannah ANGB, Savannah/Hilton Head Intl. Airport, Ga. 31408. ***Nearest city:*** Garden City. ***Phone:*** 912-966-8290. ***Acres:*** 257. ***Total Force:*** civilian, 4; military, 962. ***Component:*** ANG. ***Unit/mission:*** 165th AW, air mobility, tactical communications, TACP operations, Air Dominance Center.

GUAM

Andersen AFB, Guam APO AP 96543. ***Nearest city:*** Yigo. ***Phone:*** 671-366-1110. ***Acres:*** 15,940. ***Total Force:*** civilian, 0; military, 3,316. ***Active-duty USAF:*** enlisted, 1,591; officer, 130. ***Active-duty USSF:*** enlisted, 1; officer, 0. ***Owning command:*** PACAF. ***Unit/mission:*** 9th Operations Group Det. 4 (ACC), RPA operations; 22nd SOPS Det. 5 (USSF), space operations; 36th Wing (PACAF), support; 36th CRG (PACAF), bare base operations; 44th APS (AFRC), aerial port operations; 254th ABG (ANG), support, bare base operations (254th RED HORSE); 724th ASTF (AFRC); 734th AMS (AMC), air transportation services. ***History:*** Activated 1945 as North Field. Renamed 1949 for Brig. Gen. James R. Andersen, lost at sea Feb. 26, 1945. Became part of Joint Region Marianas 2009. ***Inn:*** Navy Gateway: 671-979-5501. ***Golf:*** Palm Tree.

HAWAII

Air Force Maui Optical and Supercomputing Observatory, Hawaii, 96790. ***Nearest city:*** Kahului. ***Phone:*** 719-556-6660 (Peterson SFB operator). ***Owning command:*** USSF. ***Unit/mission:*** On the island of Maui, Detachment 15 of the Air Force Research Laboratory operates the observatory as part of Space Base Delta 1, Colo., providing space domain awareness.

JB Pearl Harbor-Hickam, Hawaii 96853. ***Nearest city:*** Honolulu. ***Phone:*** 808-449-7110. ***Acres:*** 6,242. ***Total Force***: civilian, 6,390; military, 12,612. ***Active-duty USAF:*** enlisted, 3,328; officer, 834. ***Active-duty USSF:*** enlisted, 24; officer, 35. ***Hickam owning command:*** PACAF. ***Unit/mission:*** 15th Wing (PACAF), 154th Wing (ANG), air mobility, fighter operations; 515th AMOW (AMC); 613th AOC (PACAF), C2 operations; 624th RSG (AFRC), bare base operations; 647th ABG (PACAF), support; Hq. PACAF, management, operational leadership. ***History:*** Pearl Harbor established 1908. Hickam dedicated 1935. Activated 1938. Formed as joint base under Navy lead 2010. Hickam named for Lt. Col. Horace M. Hickam, aviation pioneer killed in crash in Texas Nov. 5, 1934. ***Museums:*** USS Arizona Memorial, Bowfin Memorial and Museum. ***Inn:*** Navy Gateway: 808-800-2337. ***Golf:*** Mamala Bay.

Ka'ena Point SFS, Hawaii, 96791. ***Nearest city:*** Honolulu. ***Phone***: 719-556-6660 (Peterson SFB operator). ***Acres:*** 153. ***Total Force:*** civilian, 14; military, 0. **Owning command:** USSF. ***Unit/mission:*** On the island of Oahu, Detachment 3 of the 21st Space Operations Squadron operates the remote tracking station of the Satellite Control Network as part of Space Base Delta 1, Colo. Personnel are responsible for tracking satellites in orbit, receiving and processing data, and enabling control of satellites by relaying commands. ***History:*** The station opened in 1959 to support the Corona reconnaissance program.

IDAHO

Gowen Field, Boise Air Terminal, Idaho 83705. ***Nearest city:*** Boise. ***Phone:*** 208-422-5333. ***Acres:*** 745. ***Total Force:*** civilian, 0; military, 2,041. ***Component:*** ANG. ***Unit/mission:*** 124th FW, fighter, cyber, TACP operations. ***History:*** Named for Lt. Paul R. Gowen, killed in B-10 crash in Panama July 11, 1938.

Mountain Home AFB, Idaho 83648. ***Nearest city:*** Mountain Home. ***Phone:*** 208-828-6800. ***Acres:*** 6,858. ***Total Force***: civilian, 438; military, 3,605. ***Active-duty USAF***: enlisted, 2,450; officer, 274 ***Owning command:*** ACC. ***Unit/mission:*** 366th FW (ACC), fighter operations, range management. ***History:*** Activated August 1943 as B-24 training base. Inactivated October 1945. Reactivated December 1948. Inactivated April 1950. Reactivated 1951. ***Inn:*** 208-828-5200. ***Golf:*** Silver Sage.

Mountain Home Range Complex, Idaho. ***Nearest city:*** Bruneau. ***Phone:*** 208-828-0154. ***Acres:*** 12,141 (Juniper Butte); 109,466 (Saylor

Creek). ***Owning command:*** ACC (366th FW, Mountain Home AFB). ***Unit/mission:*** 266th Range Squadron (squadron is based at Mountain Home AFB), unit-level and composite force training with air-to-ground training ranges, no-drop target complexes, and electronic combat sites.

ILLINOIS

Capital Airport ANGS, Abraham Lincoln Capital Airport, Ill. 62707. ***Nearest city:*** Springfield. ***Phone:*** 217-757-1267. ***Acres:*** 78. ***Total Force:*** civilian, 0; military, 857. ***Component:*** ANG. ***Unit/mission:*** 183rd Wing, 183rd Centralized Repair Facility (CRF), 183rd Air Operations Group (AOG).

Peoria ANGB, Gen. Wayne A. Downing Peoria Intl. Airport, Ill. 62707. ***Nearest city:*** Peoria. ***Acres:*** 720. ***Phone:*** 800-942-3771. ***Total Force:*** civilian, 19; military, 1,840. ***Component:*** ANG. ***Unit/mission:*** 182nd AW, air mobility, combat communications, TACP operations. Group (AOG).

Scott AFB, Ill. 62225. ***Nearest city:*** Belleville. ***Phone:*** 618-256-1110. ***Acres:*** 3,799. ***Total Force:*** civilian, 3,539; military, 6,964. ***Active-duty USAF:*** enlisted, 3,639; officer, 1,154. ***Active-duty USSF:*** enlisted, 0; officer, 4. ***Owning command:*** AMC. ***Unit/mission:*** 126th ARW (ANG), 375th AMW (AMC), air mobility operations; 618th AOC (TACC) (AMC), planning/directing worldwide air mobility operations; 635th SCOW (AFMC), global logistics support; 932nd AW (AFRC), air mobility operations; Cyberspace Capabilities Center (ACC), network integration, engineering, simulation; Hq. 18th Air Force (AMC), operational leadership; Hq. AMC, management; Hq. TRANSCOM, operational leadership. ***History:*** Activated June 14, 1917. Named for Cpl. Frank S. Scott, first enlisted man to die in an aircraft accident, Sept. 28, 1912. ***Museum***: Heritage Air Park. ***Inn:*** 618-256-1844. ***Golf:*** Cardinal Creek.

INDIANA

Fort Wayne ANGB, Fort Wayne Intl. Airport, Ind. 46809. ***Nearest city:*** Fort Wayne. ***Phone:*** 260-478-3700. ***Acres:*** 69. ***Total Force:*** civilian, 0; military, 1,263. ***Component:*** ANG. ***Unit/mission:*** 122nd FW, fighter operations.

Grissom ARB, Ind. 46971. ***Nearest city:*** Kokomo. ***Phone:*** 765-688-5211. ***Acres:*** 1,751. ***Total Force:*** civilian, 466; military, 1,629. ***Component:*** AFRC. ***Unit/mission***: 434th ARW, air refueling operations. ***History:*** Activated 1942 as NAS Bunker Hill. Reactivated June 1954 as Bunker Hill AFB. Renamed May 1968 for Lt. Col. Virgil I. "Gus" Grissom, killed Jan. 27, 1967, in Apollo capsule fire. Realigned as AFRC base Oct. 1, 1994. Home to Air Force Reserve, Army Reserve, and Marine Corps Reserve units. ***Inn:*** 765-681-5082. ***Golf:*** Grissom.

Senior Airman Phoenix Lietch/ANG

U.S. Air Force Airmen with the 190th Air Refueling Wing and 131st Bomb Wing teamed up to conduct training for hot-pit refueling of B-2 Spirit stealth bombers at Forbes Field Air National Guard Base, Kan., in March.

Hulman Field ANGB, Ind. 47803. ***Nearest city:*** Terre Haute. ***Phone:*** 812-877-5210. ***Acres:*** 121. ***Total Force:*** civilian, 0; military, 951. ***Component:*** ANG. ***Unit/mission:*** 181st IW, DCGS, TACP operations.

IOWA

Des Moines ANGB, Des Moines Intl. Airport, Iowa 50321. ***Nearest city:*** Des Moines. ***Phone:*** 515-261-8290. ***Acres:*** 172. ***Total Force:*** civilian, 0; military, 932. ***Component:*** ANG. ***Unit/mission:*** 132nd Wing, DTOC and RPA, cyber, and ISR operations.

Fort Dodge ANGS, Iowa 50501. ***Nearest city:*** Fort Dodge. ***Phone:*** 515-574-3209. ***Acres:*** 13. ***Total Force***: civilian, 33; military, 237. ***Component:*** ANG. ***Unit/mission:*** 133rd Test Squadron, command and control.

Sioux Gateway Airport Brigadier General "Bud" Day Field, Iowa 51111. ***Nearest city:*** Sioux City. ***Phone:*** 712-233-0732/0809. ***Acres:*** 167. ***Total Force:*** civilian, 0; military, 1,108. ***Component:*** ANG. ***Unit/mission:*** 185th ARW, air mobility operations. ***History:*** Activated as Sioux City AAB in July 1942. Closed in December 1945. Reopened in September 1946 as Sioux City ARB. Returned to joint civil-military use. Named in 2002 for retired Col. George E. "Bud" Day, Vietnam POW and MOH recipient, and renamed in 2018 following Day's posthumous promotion to brigadier general.

KANSAS

Forbes Field ANGB, Kan. 66619. ***Nearest city:*** Topeka. ***Phone:*** 785-862-1234. ***Acres:*** 215. ***Total Force:*** civilian, 272; military, 1,737. Component: ANG. ***Unit/mission:*** 190th ARW, air mobility, combat weather operations. ***History:*** Named for Maj. Daniel H. Forbes Jr., pilot killed June 5, 1948, test-flying Northrop YB-49 "Flying Wing."

McConnell AFB, Kan. 67221. ***Nearest city:*** Wichita. ***Phone:*** 316-759-6100. ***Acres:*** 3,438. ***Total Force:*** civilian, 0; military, 4,641. ***Active-duty USAF:*** enlisted, 2,079; officer, 282. ***Owning command:*** AMC. ***Unit/mission:*** 22nd ARW (AMC), air mobility operations; 184th Wing (ANG), cyber, DCGS, ISR operations, space C2, TACP operations; 931st ARW (AFRC), air mobility operations. ***History:*** Activated June 5, 1951. Named for three Wichita natives, the McConnell brothers—Lt. Col. Edwin M. (died Sept. 1, 1997), Capt. Fred J. (died in a private airplane crash Oct. 22, 1945), and 2nd Lt. Thomas L. (killed July 10, 1943)—all WWII B-24 pilots. ***Inn:*** 316-759-6999.

Smoky Hill Weapons Range, Kan. 67401. ***Nearest city:*** Salina. ***Acres***: 33,878. ***Component***: ANG. ***Unit/mission:*** 284th Air Support Operations Squadron; bombing range, combined arms training.

KENTUCKY

Louisville ANGB, Louisville Intl. Airport, Ky. 40213. ***Nearest city:*** Louisville. ***Phone:*** 502-413-4400. ***Acres:*** 76. ***Total Force:*** civilian, 0; military, 1,168. ***Component:*** ANG. ***Unit/mission***: 123rd AW, air mobility, bare base, special tactics operations.

LOUISIANA

Barksdale AFB, La. 71110. ***Nearest city:*** Bossier City. ***Phone:*** 318-456-1110. ***Acres:*** 22,504. ***Total Force:*** civilian, 1,394; military, 6,346. ***Active-duty USAF:*** enlisted, 3,180; officer, 788. ***Owning command:*** AFGSC. ***Unit/mission:*** 2nd BW (AFGSC), bomber operations; 307th BW (AFRC), bomber operations, training; Hq. AFGSC, management; Hq. 8th Air Force (AFGSC), operational leadership. ***History:*** Activated Feb. 2, 1933. Named for Lt. Eugene H. Barksdale, WWI airman killed in August 1926 crash. ***Museum:*** Barksdale Global Power Museum. ***Inn:*** 318-456-3091. ***Golf:*** Bomber Bayou.

Claiborne Range, La. ***Nearest city:*** Alexandria. ***Phone:*** 318-487-0378. ***Acres:*** 7,800. ***Owning command:*** AFRC. ***Unit/mission:*** 307th Operations Support Squadron; bombing, exercise and target training, and electronic countermeasure training.

NAS JRB New Orleans, La. 70143. ***Nearest city:*** New Orleans. ***Phone:*** 504-678-3260. ***Acres:*** 4,934 (ANG: 89). ***Total Force:*** civilian, 0; military, 2,673. ***Component:*** ANG. ***Unit/mission:*** 122nd ASOS (Pineville, La.), TACP; 159th FW, fighter operations; 214th EIS, cyber operations; 236th CBCS (Hammond, La.), combat communications.

MAINE

Bangor ANGB, Bangor Intl. Airport, Maine 04401. ***Nearest city:*** Bangor. Phone: 207-404-7700 ***Acres:*** 133. ***Total Force***: civilian, 634; military, 1,422. ***Component:*** ANG. ***Unit/mission:*** 101st ARW, air mobility, combat communications.

South Portland AGS, Maine 04106. ***Nearest city:*** South Portland. ***Phone:*** 207-756-7904 ***Acres:*** 12. ***Total Force***: civilian, 0; military, 8. ***Component***: ANG. ***Unit/mission:*** 265th Combat Communications Squadron, 243rd Engineering Installation Squadron.

MARYLAND

JB Andrews, Md. 20762. ***Nearest city:*** Washington, D.C. ***Phone***: 301-981-1110. ***Acres***: 4,903. ***Total Force:*** civilian, 0; military, 10,229. ***Active-duty USAF:*** enlisted, 2,850; officer, 1,176. ***Active-duty USSF:*** enlisted, 0; officer, 1. ***Owning command:*** AFDW. ***Unit/mission:*** 89th AW (AMC), air mobility operations; 113th Wing (ANG), air mobility, fighter operations; 459th ARW (AFRC), air mobility operations; 844th CG (AFDW), cyber operations; Air Force Legal Operations Agency (USAF); Air Force Review Boards Agency (USAF); ANG Readiness Center (ANG), support. ***History:*** Activated May 1943. NAF Washington dates from 1919 at Anacostia; moved to Andrews 1958. Formed JB Andrews-NAF Washington under Air Force lead 2010. Andrews named for Lt. Gen. Frank M. Andrews, military air pioneer and WWII commander of the European theater, killed in aircraft accident May 3, 1943, in Iceland. ***Inn:*** 301-981-4614. ***Golf:*** The Courses at Andrews.

Warfield ANGB, Martin State Airport, Md. 21220. ***Nearest city***: Baltimore. ***Phone:*** 410-918-6001. ***Acres:*** 175. ***Total Force***: civilian, 189;

military, 1,213. ***Component:*** ANG. ***Unit/mission:*** 175th Wing, cyber, fighter operations.

MASSACHUSETTS

Barnes ANGB, Westfield-Barnes Regional Airport, Mass. 01085. ***Nearest city:*** Westfield. ***Phone***: 413-568-9151. ***Acres:*** 137. ***Total Force:*** civilian, 339; military, 1,023. ***Component:*** ANG. ***Unit/mission:*** 104th FW, fighter operations.

Hanscom AFB, Mass. 01731. ***Nearest city:*** Boston. ***Phone:*** 781-225-1110. ***Acres:*** 959. ***Total Force:*** civilian, 2,734; military, 1,400. ***Active-duty USAF:*** enlisted, 552; officer, 605. ***Active-duty USSF:*** enlisted, 0; officer, 9. ***Owning command:*** AFMC. ***Unit/mission:*** 66th ABG (AFMC), support; PEO-C3BM, PEO-C3I and Networks (AFMC), PEO-Nuclear Command, Control, and Communications (NC3) (AFMC) acquisition. ***History:*** Activated 1941. Named for Laurence G. Hanscom, a pre-WWII advocate of private aviation, killed in light plane accident 1941. ***Inn:*** 781-225-4444. ***Golf:*** Patriot.

Joint Base Cape Cod, Mass., 02542. ***Nearest city:*** Buzzards Bay. ***Phone:*** 508-968-4000. ***Total Force:*** civilian, 302; military, 2,177. ***Major components:*** Camp Edwards, Massachusetts Army National Guard; Otis ANGB; Cape Cod AFS; Coast Guard Air Station Cape Cod.

JBCC-Cape Cod SFS, Mass. 02561. ***Nearest city:*** Sandwich. ***Phone:*** 508-968-3277. ***Acres:*** 101. ***Total Force:*** civilian, 2; military, 86. ***Owning command:*** USSF. ***Unit/mission:*** 6th SWS (USSF), missile warning. ***History:*** Established April 4, 1980, as Cape Cod Missile Early Warning Station. Renamed Jan. 5, 1982.

JBCC-Otis ANGB, Mass. 02542. ***Nearest city:*** Falmouth. ***Phone:*** 508-968-4003. ***Acres:*** 3,619. ***Total Force:*** civilian, 302; military, 2,177. ***Component:*** ANG. ***Unit/mission:*** 102nd IW, C2, DCGS operations, EIG, WXF; 202nd ISRG, cyber intelligence; 253rd CEIG, combat communications, cyber. ***History:*** Named for 1st Lt. Frank J. Otis, Massachusetts ANG flight surgeon and pilot, killed in 1937 crash.

Westover ARB, Mass. 01022. ***Nearest city:*** Chicopee. ***Phone:*** 413-557-1110. ***Acres:*** 2,181. ***Total Force:*** civilian, 603; military, 2,817. ***Component:*** AFRC. ***Unit/mission:*** 439th AW, C-5M air mobility operations. ***History:*** Dedicated April 6, 1940. Named for Maj. Gen. Oscar Westover, Chief of the Air Corps, killed Sept. 21, 1938. ***Inn:*** 413-593-5421.

MICHIGAN

Alpena CRTC, Alpena County Regional Airport, Mich. 49707. ***Nearest city:*** Alpena. ***Phone:*** 989-354-6583. ***Acres:*** 657. ***Total Force:*** civilian, 8; military, 123. ***Component:*** ANG. ***Unit/mission:*** training support and facilities.

Battle Creek ANGB, W. K. Kellogg Airport, Mich. 49037. ***Nearest city:*** Battle Creek. ***Phone:*** 269-969-3234. ***Acres:*** 155. ***Total Force:*** civilian, 0; military, 1,239. ***Component:*** ANG. ***Unit/mission:*** 110th Wing, MQ-9 Reaper, C2, cyber, agile combat support.

Selfridge ANGB, Mich. 48045. ***Nearest city:*** Mount Clemens. ***Phone:*** 586-239-4011. ***Acres:*** 3,603. ***Total Force:*** civilian, 1,007; military, 2,260. ***Component:*** ANG. ***Unit/mission:*** 127th Wing, air mobility, fighter operations. ***History:*** Activated July 1917. Transferred to Michigan ANG July 1971. Named for 1st Lt. Thomas E. Selfridge, killed Sept. 17, 1908, at Fort Myer, Va., when airplane piloted by Orville Wright crashed. ***Museum:*** Selfridge Military Air Museum. ***Golf:*** Selfridge.

MINNESOTA

Duluth ANGB, Duluth Intl. Airport, Minn. 55811. ***Nearest city:*** Duluth. ***Phone:*** 218-788-7210. ***Acres:*** 494. ***Total Force:*** civilian, 0; military, 1,314. ***Component:*** ANG. ***Unit/mission:*** 148th FW, EOD, fighter operations.

Minneapolis-St. Paul ARS, Minneapolis-St. Paul Intl. Airport, Minn. 55450. ***Nearest city:*** Minneapolis. ***Phone:*** 612-713-1000. ***Acres:*** 179. ***Total Force:*** civilian, 0; military, 783. ***Component:*** ANG/AFRC. ***Unit/mission:*** 133rd AW (ANG), air mobility operations; 934th AW (AFRC), air mobility, cyber operations.

MISSISSIPPI

Allen C. Thompson Field ANGB, Jackson-Medgar Wiley Evers Intl. Airport, Miss. 39232. ***Nearest city:*** Jackson. ***Phone:*** 601-405-8300. ***Acres:*** 126. ***Total Force:*** civilian, 1,139; military, 1,205. ***Component:*** ANG. ***Unit/mission:*** 172nd AW, 183rd AS, 183rd Aeromedical Evacuation Squadron, air mobility operations.

Senior Airman Marcelo Arias/ANG

The 139th Airlift Wing conducted a mass generation of seven C-130 Hercules aircraft at Rosecrans Air National Guard Base, St. Joseph, Mo., in 2023.

Columbus AFB, Miss. 39710. ***Nearest city:*** Columbus. ***Phone:*** 662-434-1110. ***Acres:*** 4,919. ***Total Force:*** civilian, 588; military, 1,436. ***Active-duty USAF:*** enlisted, 361; officer, 764. ***Owning command:*** AETC. ***Unit/mission:*** 14th FTW (AETC), pilot training. ***History:*** Activated 1942 for pilot training. ***Inn:*** 662-434-2548.

Gulfport CRTC, Gulfport-Biloxi Intl. Airport, Miss. 39507. ***Nearest city:*** Gulfport. ***Phone:*** 228-214-6047. ***Acres:*** 142 ***Total Force:*** civilian, 756; military, 2,987. ***Component:*** ANG. ***Unit/mission:*** 209th Special Operations Civil Engineering Squadron, 255th Air Control Squadron; cross-domain training.

Keesler AFB, Miss. 39534. ***Nearest city:*** Biloxi. ***Phone:*** 228-377-1110. ***Acres:*** 996. ***Total Force:*** civilian, 1,569; military, 6,142. ***Active-duty USAF:*** enlisted, 2,614, officer, 467. ***Active-duty USSF:*** enlisted, 93, officer, 17. ***Owning command:*** AETC. ***Unit/mission:*** 81st TRW (AETC), training; 403rd Wing (AFRC), air mobility operations, weather reconnaissance; Hq. 2nd Air Force (AETC), operational leadership. ***History:*** Activated June 12, 1941. Named for 2nd Lt. Samuel R. Keesler Jr., a native of Mississippi and WWI aerial observer killed in action Oct. 9, 1918. ***Inn:*** 228-374-0088. ***Golf:*** Bay Breeze.

Key Field ANGB, Meridian Regional Airport, Miss. 39307. ***Nearest city:*** Meridian. ***Phone:*** 601-484-9000. ***Acres:*** 138. ***Total Force:*** civilian, 0; military, 1,262. ***Component:*** ANG. ***Unit/mission:*** 186th ARW, air mobility, C2, ISR, TACP operations. ***History:*** Named after Fred and Al Key, air-to-air refueling pioneers and 1935 flight-endurance record holders for 27 days aloft in their aircraft Ole Miss, on permanent display at the National Air and Space Museum.

MISSOURI

Jefferson Barracks ANGB, Mo. 63125. ***Nearest city:*** St. Louis. ***Phone:*** 314-527-8000. ***Acres:*** 135. ***Total Force:*** civilian, 105; military, 1,245. ***Component:*** ANG. ***Unit/mission:*** 131st MSG, support; 157th AOG, C2 operations; 239th CBCS, combat communications.

Rosecrans ANGB, Rosecrans Memorial Airport, Mo. 64503. ***Nearest city:*** St. Joseph. ***Phone:*** 816-236-3300. ***Acres:*** 90. ***Total Force:*** civilian, 0; military, 1,004. ***Component:*** ANG. ***Unit/mission***: 139th AW (ANG), air mobility operations; Advanced Airlift Tactics Training Center (ANG/AFRC).

Whiteman AFB, Mo. 65305. ***Nearest city:*** Knob Noster. ***Phone:*** 660-687-1110. ***Acres:*** 5,566. ***Total Force:*** civilian, 938; military, 5,697. ***Active-duty USAF:*** enlisted, 2,713; officer, 430. ***Active-duty USSF:*** enlisted, 0; officer, 0. ***Owning command:*** AFGSC. ***Unit/mission:*** 72nd Test and Evaluation Squadron (AFGSC), T&E; 131st BW (ANG), bomber operations; 325th WPS (ACC), tactics training; 442nd FW (AFRC), fighter operations; 509th BW (AFGSC), bomber operations. ***History:*** Activated 1942. Named for 2nd Lt. George A. Whiteman, first pilot to die in aerial combat during the attack on Pearl Harbor. ***Inn:*** 660-687-1844. ***Golf:*** Royal Oaks.

MONTANA

Malmstrom AFB, Mont. 59402. ***Nearest city:*** Great Falls. ***Phone:*** 406-731-1110. ***Acres:***

Airman 1st Class Elizabeth Tan

Airmen load AIM-120 munitions onto an F-35 for a cold integrated combat turn at Nellis Air Force Base, Nev., in April 2024.

2,598. ***Total Force:*** civilian, 599; military, 3,258. ***Active-duty USAF:*** enlisted, 2,165; officer, 367. ***Active-duty USSF:*** enlisted, 14; officer, 2. ***Owning command:*** AFGSC. ***Unit/mission:*** 341st MW (AFGSC), ICBM operations; 819th RED HORSE (ACC/ANG), bare base operations. ***History:*** Activated Dec. 15, 1942. Named for Col. Einar A. Malmstrom, WWII fighter commander killed in air accident Aug. 21, 1954. ***Inn:*** 406-727-8600.

Montana ANGB, Great Falls Intl. Airport, Mont. 59404. ***Nearest city:*** Great Falls. ***Phone:*** 406-791-0159. ***Acres:*** 137. ***Total Force:*** civilian, 0; military, 777. ***Component***: ANG. ***Unit/mission:*** 120th AW, air mobility operations, RED HORSE.

NEBRASKA

Nebraska ANGB, Lincoln Airport, Neb. 68524. **Nearest city:** Lincoln. ***Phone:*** 402-309-1219. ***Acres:*** 129. ***Total Force:*** civilian, 0; military, 1,734. ***Active-duty USAF:*** enlisted, 4; officer, 4. ***Component:*** ANG. ***Unit/mission:*** 155th ARW, air mobility operations.

Offutt AFB, Neb. 68113. ***Nearest city:*** Bellevue. ***Phone***: 402-294-1110. ***Acres:*** 1,923. ***Total Force:*** civilian, 2,500; military, 7,004. ***Active-duty USAF:*** enlisted, 3,691; officer, 1,005. ***Active-duty USSF:*** enlisted, 7; officer, 7. ***Owning command:*** ACC. ***Unit/mission:*** 55th Wing (ACC), ISR, electronic attack; Hq. STRATCOM, operational leadership; 557th Weather Wing (ACC), management; 595th C2 Group (AFGSC), operations (NC2); 170th Group (ANG), support, training. ***History:*** Activated 1896 as Army's Fort Crook. Used for airships from 1918 and aircraft cross-country stop from 1921. Landing field named May 10, 1924, for 1st Lt. Jarvis J. Offutt, WWI pilot who died Aug. 13, 1918. Served as bomber production facility January 1942 to September 1945. Redesignated Offutt Field June 1946. Redesignated Offutt AFB on Jan. 13, 1948, transferred to USAF. ***Museum:*** Zorinsky Memorial Air Park. ***Inn:*** 402-294-3671. ***Golf:*** Willow Lakes.

NEVADA

Creech AFB, Nev. 89018. ***Nearest city:*** Indian Springs. ***Phone:*** 702-652-1110. ***Acres:*** 2,318. ***Total Force:*** civilian, 101; military, 3,437. ***Active-duty USAF:*** enlisted, 1,697; officer, 915. ***Owning command:*** ACC. ***Unit/mission:*** 432nd Wing (ACC), 726th OG (AFRC), 556th Test and Evaluation Sq. (ACC), 232nd Operations Sq. (ANG), RPA operations; 432nd MSG (ACC), support. ***History:*** Built in 1943 as auxiliary landing field to support air-to-air gunnery and other AAF training. Called Indian Springs Airport. Closed in 1947. Reopened in 1949. Became Indian Springs AFB in 1950. Transferred to Air Research and Development Command in 1952. Redesignated Indian Springs Air Force Auxiliary Field and assigned to Nellis AFB in 1964. In 2005, renamed Creech AFB for Gen. Wilbur L. "Bill" Creech, commander, Tactical Air Command, 1978 to 1984.

Nellis AFB, Nev. 89191. ***Nearest city:*** Las Vegas. ***Phone:*** 702-652-1110. ***Acres:*** 26,539. ***Total Force:*** civilian, 1,628; military, 8,746. ***Active-duty USAF:*** enlisted, 4,856; officer, 934. ***Active-duty USAF:*** enlisted, 7; officer, 24. ***Owning command:*** ACC. ***Unit/mission:*** 57th Wing (ACC), combat training; 99th ABW (ACC), support; 820th RED HORSE (ACC), bare base operations; 926th Wing (AFRC), associate missions at Beale, Creech, Eglin, Hurlburt, Nellis, Schriever; USAF Warfare Center (ACC), operational testing, tactics development, training; Nevada Test and Training Range (ACC), range management, operations. ***History:*** Activated July 1941 as Las Vegas AAF with Army Air Corps Flexible Gunnery School. Closed 1947. Reopened 1948. Named for 1st Lt. William H. Nellis, WWII P-47 fighter pilot, killed Dec. 27, 1944. ***Museum:*** The Thunderbirds Museum. ***Inn:*** 702-652-2711. ***Golf:*** Sunrise Vista.

Nevada ANGB, Reno-Tahoe Intl. Airport, Nev. 89502. ***Nearest city:*** Reno. ***Phone:*** 775-788-4515. ***Acres:*** 60. ***Total Force:*** civilian, 0; military, 1,131. ***Component:*** ANG. ***Unit/mission***: 152nd AW, air mobility, DCGS operations. ***History:*** Named for Maj. Gen. James A. May, Nevada adjutant general, 1947 to 1967.

NEW HAMPSHIRE

New Boston SFS, N.H. 03070. ***Phone:*** 719-567-5040 (Space Delta 6). ***Acres:*** 2,873. ***Total Force:*** civilian, 38; military, 5. ***Component:*** USSF. ***Unit/mission:*** 23rd Space Operations Squadron, satellite command and control. ***History:*** Began as a research-and-development facility in 1960 with van-mounted equipment, becoming part of the operational Air Force in 1987.

Pease ANGB, Portsmouth Intl. Airport at Pease, N.H. 03803. ***Nearest city:*** Portsmouth. ***Phone:*** 603-430-3577. ***Acres:*** 215. ***Total Force:*** civilian, 0; military, 1,101. ***Component:*** ANG. ***Unit/mission:*** 64th ARS (AMC) (active associate), 157th ARW (ANG), air mobility operations. ***History:*** Site of former Portsmouth AFB, activated June 1956. Renamed Sept. 7, 1957, for Capt. Harl Pease Jr., MOH recipient, B-17 pilot killed in WWII. Air Force base closed March 31, 1991.

NEW JERSEY

Atlantic City ANGB, Atlantic City Intl. Airport., N.J. 08234. ***Nearest city:*** Egg Harbor Township. ***Phone:*** 609-761-6000. ***Acres:*** 11. ***Total Force:*** civilian, 0; military, 1,390. ***Component:*** ANG. ***Unit/mission:*** 177th FW, fighter, TACP operations.

JB McGuire-Dix-Lakehurst, N.J. 08641. ***Nearest city:*** Wrightstown. ***Phone:*** 609-754-1100. ***Acres:*** 3,945 (McGuire AFB); 39,111 (Fort Dix). ***Total Force:*** civilian, 2,620; military, 13,337. ***Active-duty USAF:*** enlisted, 3,643; officer, 553. ***Owning command:*** AMC. ***Unit/mission:*** 87th ABW (AMC), support; 108th Wing (ANG), air mobility, bare base operations; 305th AMW (AMC), 514th AMW (AFRC), air mobility operations; 621st CRW (AMC), bare base operations; U.S. Air Force Expeditionary Center (AMC), training. ***History:*** McGuire activated 1941 as Fort Dix AAB. Closed after WWII. Reopened as McGuire 1948. Dix activated 1917. Navy purchased Army's Camp Kendrick in 1921 for airship station, renamed Lakehurst for city of Lakehurst, N.J. Formed as joint base under Air Force lead 2009. McGuire named for Maj. Thomas B. McGuire Jr., P-38 pilot, second leading U.S. ace of WWII, MOH recipient, killed in action Jan. 7, 1945. Dix named for Maj. Gen. John Adams Dix, War of 1812 and Civil War veteran and U.S. senator. ***Museum:*** Fort Dix Military Heritage Hall, Army Reserve Mobilization Museum. ***Inn:*** 609-754-4667; 732-323-2266 (Lakehurst). ***Golf:*** Fountain Green, Pine Ridge.

Warren Grove Range, N.J. ***Nearest city:*** Warren Grove. ***Phone:*** 609-754-1100. (108th Wing at JB McGuire-Dix-Lakehurst). ***Acres:*** 9,536. ***Component:*** ANG. ***Unit/mission:*** air and ground combat training. ***History:*** Began as a World War II weapons research location and became part of the New Jersey Air National Guard in the early 1960s.

NEW MEXICO

Cannon AFB, N.M. 88103. ***Nearest city:*** Clovis. ***Phone:*** 575-784-4131. ***Acres:*** 2,960. ***Total Force:***

Airman 1st Class Michelle Ferrari

Airmen from the 311th Aircraft Maintenance Unit conduct an F-16 afterburner maintenance procedure at Holloman Air Force Base, N.M., in November 2023.

civilian, 0; military, 5,125. ***Active-duty USAF:*** enlisted, 3,597; officer, 804. ***Active-duty USSF:*** enlisted, 2; officer, 0. ***Owning command:*** AFSOC. ***Unit/mission:*** 27th SOW (AFSOC), special operations. ***History:*** Activated August 1942. Named for Gen. John K. Cannon, WWII commander of all Allied air forces in the Mediterranean theater and former commander, Tactical Air Command. ***Inn:*** 575-784-2918/2919. ***Golf:*** Whispering Winds.

Holloman AFB, N.M. 88330. ***Nearest city:*** Alamogordo. ***Phone:*** 575-572-7381. ***Acres:*** 51,813. ***Total Force:*** civilian, 809; military, 4,590. ***Active-duty USAF:*** enlisted, 3,530; officer, 521. ***Active-duty USSF:*** enlisted, 0; officer, 2. ***Owning command:*** AETC. ***Unit/mission:*** 49th Wing (AETC), RPA training; 54th FG (AETC), fighter operations; 704th TG (AFMC), test; 429th ACTS (AFRC), RPA training. ***History:*** Activated 1941. Named for Col. George Holloman, guided-missile pioneer. ***Inn:*** 505-595-1905. ***Golf:*** Apache Mesa.

Kirtland AFB, N.M. 87117. ***Nearest city:*** Albuquerque. ***Phone:*** 505-846-0011. ***Acres:*** 43,842. ***Total Force:*** civilian, 2,695; military, 4,942. ***Active-duty USAF:*** enlisted, 1,853; officer, 550. ***Active-duty USSF:*** enlisted, 28; officer, 148. ***Owning command:*** AFGSC. ***Unit/mission:*** 58th SOW (AETC), 150th SOW (ANG), special operations, CSAR training; 377th ABW (AFGSC), executive agent for installation, support, nuclear operations; AFNWC (AFMC), acquisition, sustainment; Air Force Safety Center (USAF), management; AFRL Directed Energy Directorate (AFMC), R&D; PEO-Strategic Systems (AFMC), acquisition; Advanced Systems and Development Directorate (AFSPC), test; AFRL Space Vehicles Directorate (AFMC), R&D. ***History:*** Activated January 1941. Named for aviation pioneer Col. Roy C. Kirtland. ***Inn:*** 505-846-9653. ***Golf:*** Tijeras Arroyo.

Melrose AF Range, N.M. ***Nearest city:*** Floyd. ***Acres:*** 79,973. ***Owning command***: AFSOC. ***Unit/mission:*** part of 27th Special Operations Wing. ***History:*** Established as a bombing range in 1952.

NEW YORK

Francis S. Gabreski ANGB, Francis S. Gabreski Airport, N.Y. 11978. ***Nearest city:*** Westhampton Beach. ***Phone:*** 631-723-7470. ***Acres:*** 82. ***Total Force:*** civilian, 154; military, 1,116. ***Component:*** ANG. ***Unit/mission***: 106th RQW, personnel recovery operations. ***History:*** Named for Col. Francis S. Gabreski, WWII and Korean War ace.

Hancock Field ANGB, N.Y. 13211. ***Nearest city***: Syracuse. ***Phone:*** 800-982-3696. ***Acres:*** 322. ***Total Force:*** civilian, 16; military, 2,249. ***Component:*** ANG. ***Unit/mission***: 174th ATKW, ISR, RPA, space C2, TACP operations; ISR, RPA training.

Niagara Falls ARS, Niagara Falls Intl. Airport, N.Y. 14304. ***Nearest city:*** Niagara Falls. ***Phone:*** 716-236-2000. ***Acres:*** 986. ***Total Force:*** civilian, 0; military, 2,095. ***Component:*** ANG/AFRC. ***Unit/mission:*** 107th ATKW (ANG), RPA operations; 914th ARW (AFRC), air mobility operations.

Stewart ANGB, Stewart Intl. Airport, N.Y. 12550. ***Nearest city:*** Newburgh. ***Phone:*** 845-563-2031. ***Acres:*** 308. ***Total Force:*** civilian, 276; military, 1,933. ***Component:*** ANG. ***Unit/mission:*** 105th AW, air mobility, EIS. ***History:*** Stewart AFB until 1969. Acquired by state of New York 1970.

Stratton ANGB, Schenectady County Airport, N.Y. 12302. ***Nearest city:*** Scotia. ***Phone:*** 518-344-2000. ***Acres:*** 129. ***Total Force:*** civilian, 207; military, 1,349. ***Component:*** ANG. ***Unit/mission:*** 109th AW, air mobility operations, Antarctic support.

NORTH CAROLINA

Charlotte ANGB, Charlotte Douglas Intl. Airport, N.C. 28208. ***Nearest city:*** Charlotte. ***Phone***: 704-391-4100. ***Acres:*** 110. ***Total Force:*** civilian, 0; military, 1,558. ***Component:*** ANG. ***Unit/mission:*** 145th AW, aeromedical evacuation, air mobility, combat communications, TACP operations.

Dare County Bombing Range, N.C. ***Nearest city:*** Goldsboro. ***Phone:*** 919-722-1110 (Seymour Johnson AFB operator). ***Acres:*** 46,604. ***Owning command:*** ACC. ***Unit/mission:*** air-to-surface target training.

New London ANGB, Stanly County Airport, N.C. 28127. ***Phone:*** 704-391-4141 (145th AW public affairs). ***Acres:*** 114. ***Total Force:*** civilian, 28; military, 291. ***Component:*** ANG. ***Unit/mission:*** 263rd CCS, strategic emergency communications; 118th ASOS, terminal attack control of joint close air support missions; 235th ATC, air traffic control.

Pope Field, N.C. 28308. ***Nearest city:*** Fayetteville. ***Phone:*** 910-394-9000. ***Acres:*** N/A. ***Total Force:*** civilian, 215; military, 1,414. ***Active-duty USAF:*** enlisted, 1,540; officer, 396. ***Unit/mission:*** 18th ASOG (ACC), combat weather, TACP operations; 21st STS, 24th STS (AFSOC), special tactics operations; 43rd AMOG (AMC), air mobility operations; USAF Combat Control School (AF SOC), training. ***History:*** Activated 1919. Pope AFB became Pope Field, part of Fort Bragg, March 1, 2011. Named for 1st Lt. Harley H. Pope, WWI pilot, killed Jan. 7, 1919. ***Museum:*** Air Park. ***Inn:*** IHG Army Hotels, 910-396-7700.

Seymour Johnson AFB, N.C. 27531. ***Nearest city:*** Goldsboro. ***Phone:*** 919-722-1110. ***Acres:*** 4,129. ***Total Force:*** civilian, 0; military, 5,953. ***Active-duty USAF:*** enlisted, 3,079; officer, 388. ***Owning command:*** ACC. ***Unit/mission:*** 4th FW (ACC), 414th FG (AFRC), fighter operations; 567th RED HORSE (ACC), bare base operations; 916th ARW (AFRC), air mobility operations. ***History:*** Activated Sept. 12, 1942, and named for Navy Lt. Seymour A. Johnson, Goldsboro native, killed March 5, 1941. ***Inn:*** 919-722-0385.

NORTH DAKOTA

Cavalier SFS, N.D. 58220. ***Nearest city:*** Cavalier. ***Phone:*** 701-993-3292. ***Acres:*** 295. ***Total Force:*** civilian, 6; military, 47. ***Owning command:*** USSF. ***Unit/mission:*** 10th SWS (USSF), missile warning. ***History:*** Established 1975 as Army's Mickelsen Complex, an anti-ballistic missile facility. All but perimeter acquisition radar inactivated 1976. USAF took radar operational control 1977 and site control 2007.

Grand Forks AFB, N.D. 58205. ***Nearest city:*** Grand Forks. ***Phone:*** 701-747-3000. ***Acres:*** 5,420. ***Total Force:*** civilian, 0; military, 1,679. ***Active-duty USAF:*** enlisted, 1,146; officer, 173. ***Owning command:*** ACC. ***Unit/mission:*** 319th RW (ACC), support. ***History:*** Activated 1956. Named after town of Grand Forks, whose citizens bought the property for the Air Force. ***Inn:*** 701-747-7200. ***Golf:*** Plainsview.

Hector Field, Hector Intl. Airport, N.D. 58102. ***Nearest city:*** Fargo. ***Phone:*** 701-451-2259. ***Acres:*** 255. ***Total Force***: civilian, 320; military, 1,739. ***Component:*** ANG. ***Unit/mission:*** 119th Wing, 178th ATKS (MQ-9 operations), 119th ISRG (targeting).

Minot AFB, N.D. 58705. ***Nearest city:*** Minot. ***Phone:*** 701-723-7979. ***Acres:*** 5,615. ***Total Force:*** civilian, 0; military, 5,637. ***Active-duty USAF:*** enlisted, 3,804; officer, 553. ***Owning command:*** AFGSC. ***Unit/mission:*** 5th BW (AFGSC), bomber operations; 91st MW (AFGSC), ICBM operations. ***History:*** Activated January 1957. Named after city of Minot, whose citizens donated $50,000 toward purchase of the land. ***Inn:*** 701-723-6161. ***Golf:*** Rough Rider.

OHIO

Blue Ash ANGS, Ohio 45242. ***Nearest city:*** Cincinnati. ***Phone:*** 513-936-2982. ***Acres:*** 12. ***Total Force:*** civilian, 0; military, 189 (unit deployed overseas in November 2020). ***Component:*** ANG. ***Unit/mission:*** 123rd ACS, command and control.

Mansfield Lahm ANGB, Ohio 44903. ***Nearest city:*** Mansfield. ***Phone:*** 419-520-6420. ***Acres:*** 91. ***Total Force:*** civilian, 0; military, 1,297. ***Component:*** ANG. ***Unit/mission:*** 179th Cyberspace Wing, air mobility operations transitioning to cyber space and intelligence. ***History:*** Named in 1948 for nearby city and aviation pioneer Brig. Gen. Frank P. Lahm.

Rickenbacker ANGB, Rickenbacker Intl. Airport, Ohio 43217. ***Nearest city:*** Columbus. ***Phone:*** 614-492-3269. ***Acres:*** 169. ***Total Force:*** civilian, 329; military, 2,842. ***Component:*** ANG. ***Unit/mission:*** 121st ARW, air mobility operations. ***History:*** Activated 1942. Formerly Lockbourne AFB. Renamed May 7, 1974, for Capt. Edward V. Rickenbacker. Base transferred from Strategic Air Command to ANG April 1, 1980.

Springfield-Beckley ANGB, Springfield-Beck-

Clayton Cummins/USAF

A B-1B Lancer aircraft nicknamed "Lancelot," touches down at Tinker Air Force Base, Okla., in February. The bomber is being regenerated to the active bomber fleet after previously being retired.

ley Intl. Airport, Ohio 45502. ***Nearest city:*** Springfield. ***Phone:*** 800-851-4503. ***Acres:*** 180. ***Total Force:*** civilian, 0; military, 599. ***Component:*** ANG. ***Unit/mission:*** 178th Wing, cyber, ISR, space, RPA operations.

Toledo ANGB, Toledo Express Airport, Ohio 43558. ***Nearest city:*** Swanton. ***Phone:*** 419-868-4250. ***Acres:*** 100. ***Total Force:*** civilian, 0; military, 999. ***Component:*** ANG. ***Unit/mission:*** 180th FW, fighter operations.

Wright-Patterson AFB, Ohio 45433. ***Nearest city:*** Dayton. ***Phone:*** 937-257-1110. ***Acres:*** 11,455. ***Total Force:*** civilian, 15,075; military, 7,486. ***Active-duty USAF:*** enlisted, 1,893; officer, 2,100. ***Active-duty USSF:*** enlisted, 125; officer, 104. ***Owning command:*** AFMC. ***Unit/mission:*** 88th ABW (AFMC), support; 445th AW (AFRC), air mobility operations; 655th ISR Wing (AFRC), intelligence; 711th HPW (AFRL) Airmen performance; Air Force Installation Contracting Center (AFMC) operational acquisition; Air Force Institute of Technology (AETC), education; PEO-Agile Combat Support, PEO-Fighters and Bombers, PEO-ISR and SOF, PEO-Mobility, PEO-Tanker (AFMC), acquisition; Hq. Air Force Life Cycle Management Center (AFMC), acquisition and development; Hq. AFMC, management; Hq. AFRL (AFMC), R&D; National Air and Space Intelligence Center (USAF), foreign aerospace analysis; National Museum of the U.S. Air Force (AFMC). ***History:*** Originally separate, Wright Field and Patterson Field were merged and redesignated Wright-Patterson AFB on Jan. 13, 1948. Named for aviation pioneers Orville and Wilbur Wright and for 1st Lt. Frank S. Patterson, killed June 19, 1918. ***Museum:*** National Museum of the U.S. Air Force. ***Inn:*** 937-257-3451. ***Golf:*** Prairie Trace, Twin Base.

Youngstown ARS, Ohio 44473. ***Nearest city:*** Youngstown. ***Phone:*** 330-609-1000. ***Acres:*** 659. ***Total Force:*** civilian, 2; military, 1,421. ***Component:*** AFRC. ***Unit/mission:*** 910th AW, air mobility operations.

Zanesville ANGB, Zanesville Municipal Airport, Ohio 43701. ***Nearest city:*** Zanesville. ***Phone:*** 740-450-4748. ***Acres:*** 13. ***Total Force:*** civilian, 28; military, 109. ***Component:*** ANG. ***Unit/mission:*** 220th Engineering Installation Squadron.

OKLAHOMA

Altus AFB, Okla. 73523. ***Nearest city:*** Altus. ***Phone:*** 580-482-5110. ***Acres:*** 5,400. ***Total Force:*** civilian, 1,236; military, 1,363. ***Active-duty USAF:*** enlisted, 777 officer, 209. ***Owning command:*** AETC. ***Unit/mission:*** 97th AMW (AETC), training. ***History:*** Activated January 1943. Inactivated May 1945. Reactivated August 1953. ***Inn:*** 580-481-7356. ***Golf:*** Windy Trails.

Tinker AFB, Okla. 73145. ***Nearest city:*** Oklahoma City. ***Phone:*** 405-739-2026. ***Acres:*** 5,288. ***Total Force:*** civilian, 0; military, 7,801. ***Active-duty USAF:*** enlisted, 2,846; officer, 842. ***Active-duty USSF:*** enlisted, 3; officer, 2. ***Owning command:*** AFMC. ***Unit/mission:*** 72nd ABW (AFMC), support; 448th SCMW (AFMC), supply chain management; 507th ARW (AFRC), air mobility operations; 513th ACG (AFRC), 552nd ACW (ACC), C2 operations; Hq. Air Force Sustainment Center (AFMC), weapon systems sustainment; Oklahoma City ALC (AFMC), weapon systems maintenance, repair, overhaul. ***History:*** Activated March 1942. Named for Maj. Gen. Clarence L. Tinker, who went down at sea June 7, 1942, leading a group of LB-30 bombers against Japan. ***Museum:*** Tinker AFB Museum, Charles B. Hall Air Park. ***Golf:*** Tinker.

Tulsa ANGB, Tulsa Intl. Airport, Okla. 74115. ***Nearest city:*** Tulsa. ***Phone:*** 918-833-7206. ***Acres:*** 145. ***Total Force:*** civilian, 0; military, 1,054. ***Component:*** ANG. ***Unit/mission:*** 138th FW, fighter, cyber operations, TACP training.

Vance AFB, Okla. 73705. ***Nearest city:*** Enid. ***Phone:*** 580-213-5000. ***Acres:*** 3,749. ***Total Force:*** civilian, 0; military, 1,543. ***Active-duty USAF:*** enlisted, 213; officer, 768. ***Active-duty USSF:*** enlisted, 0; officer, 1. ***Owning command:*** AETC. ***Unit/mission:*** 71st FTW (AETC), training. ***History:*** Activated November 1941. Named for Lt. Col. Leon R. Vance Jr., Enid native, 1939 West Point graduate, and MOH recipient, killed July 26, 1944. ***Museum:*** Air Park. ***Inn:*** 580-213-7358.

Will Rogers ANGB, Will Rogers World Airport, Okla. 73179. ***Nearest city:*** Oklahoma City. ***Phone:*** 405-686-5227. ***Acres:*** 135. ***Total Force:*** civilian, 0; military, 1,150. ***Component:*** ANG/AFSOC. ***Unit/mission:*** 137th SOW, ISR operations; 146th ASOS, TACP operations; 205th EIS, cyber operations.

OREGON

Kingsley Field, Crater Lake-Klamath Regional Airport, Ore. 97603. ***Nearest city:*** Klamath Falls. ***Phone:*** 541-885-6350. ***Acres:*** 808. ***Total Force:*** civilian, 0; military, 878. ***Component:*** ANG. ***Unit/mission:*** 173rd FW (active associate), training. ***History:*** Named for 2nd Lt. David R. Kingsley, MOH recipient, killed June 23, 1944, on Ploesti, Romania, oil field bombing mission.

Portland ANGB, Portland Intl. Airport, Ore. 97218. ***Nearest city:*** Portland. ***Phone:*** 503-335-4104. ***Acres:*** 227. ***Total Force:*** civilian, 0; military, 1,434. ***Component:*** ANG/AFRC. ***Unit/mission:*** 123rd WF (ANG), combat weather operations; 125th STS (ANG), special tactics operations; 142nd Wing (ANG), fighter operations; 304th RQS (AFRC), personnel recovery operations.

PENNSYLVANIA

Harrisburg ANGB, Harrisburg Intl. Airport, Pa. 17057. ***Nearest city:*** Middletown. ***Phone:*** 717-948-2311. ***Acres:*** 42. ***Total Force:*** civilian, 178; military, 1,036. ***Component:*** ANG. ***Unit/mission:*** 193rd SOW, C2, combat communications, cyber, special, TACP operations.

Johnstown ANGS, John Murtha Johnstown-Cambria County Airport, Okla. 15904. ***Nearest city:*** Johnstown. ***Phone:*** 814-532-5901 ***Acres:*** 10. ***Total Force:*** civilian, 0; military, 443. ***Component:*** ANG. ***Unit/mission:*** 258th ATCS, air traffic control.

Pittsburgh ARS, Pittsburgh Intl. Airport, Pa. 15108. ***Nearest city:*** Coraopolis. ***AFRC phone:*** 412-474-8511. ***ANG phone:*** 412-776-8010. ***Acres:*** 205. ***Total Force:*** civilian, 190; military, 1,073. ***Components:*** ANG/AFRC. ***Unit/mission:*** 171st ARW (ANG), air mobility operations; 911th AW (AFRC), aeromedical evacuation, air mobility operations.

PUERTO RICO

Muñiz ANGB, Luis Muñoz Marin Intl. Airport, Puerto Rico 00979. ***Nearest city:*** San Juan. ***Phone:*** 787-253-5100. ***Acres:*** 95. ***Total Force:*** civilian, 0; military, 855. ***Component:*** ANG. ***Unit/mission:*** 156th Wing, air mobility operations, weather reconnaissance.

RHODE ISLAND

North Smithfield ANGS, R.I. 02986. ***Nearest city:*** Johnston. ***Phone:*** 401-762-8600. ***Acres:*** 34. ***Total Force:*** civilian, 0; military, 176. ***Component:*** ANG. ***Unit/mission:*** 282nd CCS, combat communications.

Quonset ANGB, Quonset State Airport, R.I. 02852. ***Nearest city:*** North Kingstown. ***Phone:*** 401-267-3229. ***Acres:*** 104. ***Total Force:*** civilian, 272; military, 1,144. ***Component:*** ANG. ***Unit/mission:*** 143rd AW, air mobility operations, cyber.

SOUTH CAROLINA

JB Charleston, S.C. 29404. ***Nearest city:*** Charleston. ***Phone:*** 843-963-1110. ***Acres***: 2,238 (Charleston AFB). ***Total Force:*** civilian, 1,375; military, 15,148. ***Active-duty USAF:*** enlisted, 2,418; officer, 390. ***Active-duty USSF:*** enlisted, 1; officer, 0. ***Owning command:*** AMC. ***Unit/mission:*** 315th AW (AFRC), 437th AW (AMC), air mobility operations; 628th ABW (AMC), support. ***History:*** Activated 1942. Inactivated March 1946. Reactivated August 1953. Formed joint base with Naval Weapons Station Charleston under Air Force lead 2010. Named for city of Charleston. ***Museum:*** Air Park. ***Inn:*** 843-963-8000. ***Golf:*** Wrenwoods.

McEntire JNGB, S.C. 29044. ***Nearest city:*** Columbia. ***Phone:*** 803-647-8200. ***Acres:*** 2,421. ***Total Force:*** civilian, 659; military, 3,257. ***Component:*** ANG. ***Unit/mission:*** 169th FW, 316th Fighter Squadron (active associate), fighter operations. ***History:*** Named for ANG Brig. Gen. B. B. McEntire Jr., killed in F-104 accident 1961.

Poinsett Electronic Combat Range, S.C. ***Nearest city:*** Wedgefield. ***Phone:*** 803-895-1110 (Shaw AFB operator); 803-895-2019 (20th FW public affairs). ***Acres:*** 20,321. ***Owning command:*** ACC. ***Unit/mission:*** air and ground training such as close air support controls and roadside bombing training in field conditions.

Shaw AFB, S.C. 29152. ***Nearest city:*** Sumter. ***Phone:*** 803-895-1110. ***Acres:*** 3,465. ***Total Force:*** civilian, 813; military, 5,866. ***Active-duty USAF:*** enlisted, 4,791; officer, 813. ***Active-duty USSF:*** enlisted, 1; officer, 3. ***Owning command:*** ACC. ***Unit/mission:*** 20th FW (ACC), fighter operations; Hq. 9th Air Force (ACC), management (Hq. Air Forces Central in Southwest Asia, operational leadership); 15th Air Force (ACC), operational readiness. ***History:*** Activated Aug. 30, 1941. Named for 1st Lt. Ervin D. Shaw, one of the first Americans to see air action in WWI, killed in France July 9, 1918. ***Inn:*** 803-895-3803. ***Golf:*** Carolina Lakes.

SOUTH DAKOTA

Ellsworth AFB, S.D. 57706. ***Nearest city:*** Rapid City. ***Phone:*** 605-385-1000. ***Acres:*** 4,137. ***Total Force:*** civilian, 602; military, 3,349. ***Active-duty USAF:*** enlisted, 2,363; officer, 265. ***Active-duty USSF:*** enlisted, 3; officer, 1. ***Owning command:*** AFGSC. ***Unit/mission:*** 28th BW (AFGSC), bomber operations. ***History:*** Activated January 1942 as Rapid City AAB. Renamed June 13, 1953, for Brig. Gen. Richard E. Ellsworth, killed March 18, 1953, in RB-36 crash. ***Museum:*** South Dakota Air and Space Museum. ***Inn:*** 605-593-0415. ***Golf:*** Prairie Ridge.

Joe Foss Field, S.D. 57104. ***Nearest city:*** Sioux Falls. ***Phone:*** 605-988-5700. ***Acres***: 288. ***Total Force:*** civilian, 0; military, 475. ***Component:*** ANG. ***Unit/mission:*** 114th FW, fighter operations. ***History:*** Named for ANG Brig. Gen. Joseph J. Foss, WWII USMC ace and MOH recipient, former governor, former Air Force Association national president and board chairman, and founder of the South Dakota ANG.

TENNESSEE

Arnold AFB, Tenn. 37389. ***Nearest city:*** Manchester. ***Phone:*** 931-454-3000. ***Acres:*** 38,862. ***Total Force:*** civilian, 446; military, 58. ***Owning command:*** AFMC. ***Unit/mission:*** Arnold Engineering Development Complex (AFTC/AFMC), flight, space, and missile ground testing. ***History:*** Dedicated June 25, 1951. Named for General of the Air Force Henry H. "Hap" Arnold, legendary air power advocate and co-founder of the Air Force Association (now Air & Space Forces Association). ***Inn:*** 931-454-3051. ***Golf:*** Arnold.

JB Berry Field, Nashville Intl. Airport, Tenn. 37217. ***Nearest city:*** Nashville. ***Phone:*** 615-660-8062. ***Acres:*** 88. ***Total Force:*** civilian, 0; military, 1,378. ***Component:*** ANG. ***Unit/mission:*** 118th Wing, cyber, intel, RPA operations.

McGhee Tyson ANGB, McGhee Tyson Airport, Tenn. 37777. ***Nearest city:*** Knoxville. ***Phone:*** 865-336-3205. ***Acres:*** 363. ***Total Force:*** civilian, 96; military, 1,446. ***Component:*** ANG. ***Unit/mission:*** 134th ARW, air mobility operations; 119th CACS, space C2 operations; 228th CBCS, combat communications; I. G. Brown ANG Training and Education Center. ***History:*** Named for Naval aviator Lt. j.g. Charles McGhee Tyson, killed in WWI.

Memphis ANGB, Memphis Intl. Airport, Tenn. 38118. ***Nearest city:*** Memphis. ***Phone:*** 901-291-7435. ***Acres:*** 119. ***Total Force:*** civilian, 0; military, 1,194. ***Component:*** ANG. ***Unit/mission:*** 164th AW, air mobility operations.

TEXAS

Dyess AFB, Texas 79607. ***Nearest city:*** Abilene. ***Phone:*** 325-696-1921. ***Acres:*** 6,337. ***Total Force:*** civilian, 487; military, 4,866. ***Active-duty USAF:*** enlisted, 3,339; officer, 398. ***Owning command:*** AFGSC. ***Unit/mission:*** 7th BW (AFGSC), bomber operations; 317th AW (AMC), air mobility operations. ***History:*** Abilene AAB opened Dec. 18, 1942. Inactivated Jan. 31, 1946. Reopened and renamed Dec. 1, 1956, for Lt. Col. William E. Dyess, WWII pilot who escaped from a Japanese prison camp, killed in P-38 crash in December 1943. ***Museum:*** Dyess AFB Memorial Museum and Linear Air Park. ***Inn:*** 325-696-2681/1874. ***Golf:*** Mesquite Grove.

Ellington Field, Ellington Airport, Texas 77034. ***Nearest city:*** Houston. ***Phone:*** 281-929-2662. ***Acres:*** 213. ***Total Force:*** civilian, 0; military, 3,624. ***Component:*** ANG. ***Unit/mission:*** 147th Attack Wing, ISR, RPA, TACP operations. ***History:*** Named for Lt. Eric L. Ellington, pilot killed November 1913.

Goodfellow AFB, Texas 76908. ***Nearest city:*** San Angelo. ***Phone:*** 325-654-1110. ***Acres:*** 1,083. ***Total Force:*** civilian, 655; military, 2,473. ***Active-duty USAF:*** enlisted, 2,119; officer, 364. ***Owning command:*** AETC. ***Unit/mission:*** 17th TRW (AETC), training. ***History:*** Established August 1940. Officially activated January 1941. Named for 1st Lt. John J. Goodfellow Jr., WWI observation airplane pilot killed in combat Sept. 14, 1918. ***Inn:*** 325-654-5870.

Hensley Field AGS, Grand Prairie Armed Forces Reserve Complex, Texas 75211. ***Nearest city:*** Dallas. ***Phone:*** 972-619-4444. ***Acres:*** 23. ***Total Force:*** civilian, 0; military, 7. ***Component:*** ANG. ***Unit/mission:*** 254th CCG, combat communications.

JB San Antonio, Texas 78234 (Fort Sam Houston). ***Nearest city:*** San Antonio. ***Phone:*** 210-221-1211 (Fort Sam Houston operator). ***Acres:*** 2,808 (Fort Sam Houston). ***Total Force:*** civilian, 8,519; military, 13,888 (JBSA-Fort Sam Houston only). ***Major components:*** JBSA-Fort Sam Houston, JBSA-Lackland, JBSA-Randolph, JBSA-Camp Bullis. ***Unit/mission:*** 502nd ABW (AETC), located at Fort Sam Houston, support. ***History:*** Established 2009 to consolidate the installation management and support functions for the military facilities in San Antonio as part of 2005 base realignment and closure actions. ***Museum:*** Fort Sam Houston. ***Inn:*** IHG Army Hotel at JBSA-Fort Sam Houston, 210-357-2705. ***Golf:*** Fort Sam Houston.

JBSA-Lackland, Texas 78236. ***Nearest city:*** San Antonio. ***Phone:*** 210-671-1110. ***Acres:*** 2,723. ***Medina Annex acres:*** 4,028. ***Total Force:*** civilian, 5,852; military, 18,994. ***Active-duty USAF:*** enlisted, 6,757; officer, 1,802. ***Active-duty USSF:*** enlisted, 124; officer, 13. ***Owning command:*** AETC. ***Unit/mission:*** 37th TRW (AETC), training; 59th MDW (AETC), ambulatory surgical, management, training; 67th CW (ACC), network defense operations; 149th FW (ANG), cyber, fighter operations; 433rd AW (AFRC), air mobility operations; 616th Operations Center (ACC), cyberspace operations; 688th Cyberspace Wing (ACC), information operations, engineering infrastructure services; 960th Cyberspace Wing (AFRC), cyberspace operations; Air Force Civil Engineer Center (AFMC), engineering services; Air Force Installation and Mission Support Center (AFMC), resourcing and combat support; Air Force Services Center (AFMC) support; Hq. 16th Air Force (ACC), Air Forces Cyber, information warfare; Hq. Air Force Security Forces Center (AFMC), management. ***History:*** Activated 1941 as part of Kelly Field, designated an independent installation July 1942 as San Antonio Aviation Cadet Center. Placed under Joint Base San Antonio installation management umbrella 2009. (See JBSA entry.) Named 1947 for Brig. Gen. Frank D. Lackland, early commandant of Kelly Field flying school, who died 1943. (Note: Several USAF agencies reside within Port San Antonio, the business development area created from the former Kelly AFB, but maintain JBSA-Lackland mailing addresses.) ***Museum:*** Airman Heritage Museum. ***Inn:*** 210-673-6930. ***Golf:*** Gateway Hills.

JBSA-Randolph, Texas 78150. ***Nearest city:*** San Antonio. ***Phone:*** 210-652-1110. ***Acres:*** 3,218. ***Total Force:*** civilian, 1; military, 3,216. ***Active-duty USAF:*** enlisted, 1,003; officer, 997. ***Active-duty USSF:*** enlisted, 13; officer, 14. ***Owning command:*** AETC. ***Unit/mission:*** 12th FTW (AETC), training; 340th FTG (AFRC), training; 502nd ABW (AETC), support; Air Force Personnel Center (USAF), management; Air Force Recruiting Service (AETC), management; 19th Air Force, Hq. (AETC), training. ***History:*** Dedicated June 20, 1930. Placed under Joint Base San Antonio installation management umbrella 2009. (See JBSA.) Named for Capt. William M. Randolph, died Feb. 17, 1928, on a training mission. ***Inn:*** 210-652-1844. ***Golf:*** Randolph Oaks.

Laughlin AFB, Texas 78843. ***Nearest city:*** Del Rio. ***Phone:*** 830-298-1110. ***Acres:*** 4,695. ***Total Force:*** civilian, 0; military, 1,362. ***Active-duty USAF:*** enlisted, 312; officer, 745. ***Owning command:*** AETC. ***Unit/mission:*** 47th FTW (AETC), training. ***History:*** Activated July 1942. Named for 1st Lt. Jack Thomas Laughlin, Del Rio native, B-17 pilot, killed Jan. 29, 1942. ***Museum:*** Laughlin Heritage Foundation. ***Inn:*** 830-298-5741. ***Golf:*** Leaning Pine.

NAS JRB Fort Worth, Texas 76127. ***Nearest city:*** Fort Worth. ***Navy-hosted switchboard:*** 817-782-5000. ***ANG Phone:*** 817-852-3136. ***Acres:*** 2,342. ***Total Force:*** civilian, 139; military, 7,423. ***Component:*** ANG/AFRC. ***Unit/mission:*** 136th AW (ANG), air mobility, combat communications operations; 301st FW (AFRC), fighter operations; Hq. 10th Air Force (AFRC), operational leadership. ***Inn:*** Navy Gateway, 817-782-5393.

Sheppard AFB, Texas 76311. ***Nearest city:*** Wichita Falls. ***Phone:*** 940-676-2511. ***Acres:*** 5,336. ***Total Force:*** civilian, 1,050; military, 5,389. ***Active-duty USAF:*** enlisted, 3,941; officer, 490. ***Owning command:*** AETC. ***Unit/mission:*** 80th FTW (AETC), Euro-NATO Joint Jet Pilot Training Program; 82nd TRW (AETC), training. ***History:*** Activated June 14, 1941. Named for U.S. Sen. Morris Sheppard, who died April 9, 1941. ***Museum:*** Heritage Center. ***Inn:*** 940-676-2707/2970.

UTAH

Hill AFB, Utah 84056. ***Nearest city:*** Salt Lake City. ***Phone:*** 801-777-1110. ***Acres:*** 6,683. ***Total Force:*** civilian, 13,256; military, 5,406. ***Active-duty USAF:***

enlisted, 2,926; officer, 521. ***Active-duty USSF:*** enlisted, 0; officer, 3. ***Owning command:*** AFMC. ***Unit/mission:*** 75th ABW (AFMC), support; 388th FW (ACC), fighter, Utah Test and Training Range operations; 419th FW (AFRC), fighter operations; 748th SCMG (AFMC), systems life cycle support; AFNWC ICBM Systems Directorate (AFMC), ICBM acquisition, support; Ogden ALC (AFMC), weapons maintenance, repair. ***History:*** Activated 1940. Named for Maj. Ployer P. Hill, killed Oct. 30, 1935, test-flying first B-17. ***Museum:*** Hill Aerospace Museum. ***Inn:*** 801-777-1844, ***Golf:*** Hubbard Memorial.

■ **Utah Test and Training Range,** Utah. ***Acres:*** 572,656 (South); 366,877 (North). ***Total Force:*** part of Hill AFB. ***Owning command:*** ACC. ***Unit/mission:*** training for air-to-air combat, air-to-ground inert and live practice bombing, gunnery training by aircrews, large force training exercises and large footprint weapons testing. ***History:*** First parcel activated in 1942 as Wendover Army Air Base; consolidated ranges redesignated UTTR in 1979.

■ **Wright ANGB**, Salt Lake City Intl. Airport, Utah 84116. ***Nearest city:*** Salt Lake City. ***Phone:*** 801-245-2200. ***Acres:*** 140. Total Force: civilian, 0; military, 1,478. ***Component:*** ANG. ***Unit/mission:*** 151st ARW, air mobility operations; 130th EIS, cyber operations; 169th IS, intelligence operations.

VERMONT

■ **Burlington ANGB,** Burlington Intl. Airport., Vt. 05403. ***Nearest city:*** South Burlington. ***Phone***: 802-660-5379 (Public Affairs). ***Acres:*** 248. ***Total Force:*** civilian, 0; military, 1,138. ***Component:*** ANG. ***Unit/mission:*** 158th FW, fighter operations; 229th COS, cyber training.

VIRGINIA

■ **JB Langley-Eustis,** Va. 23665. ***Nearest city:*** Hampton. ***Phone:*** 757-764-1110. ***Acres:*** 3,712 (Langley), 8,274 (Eustis). ***Total Force***: civilian, 2,298; military, 5,500. ***Active-duty USAF***: enlisted, 6,419; officer, 1,363. ***Active-duty USSF:*** enlisted, 1; officer, 9. ***Langley owning command:*** ACC. ***Unit/mission:*** 1st FW (ACC), 192nd Wing (ANG), cyber, fighter operations; 480th ISRW (ACC), ISR operations; 633rd ABW (ACC), support; 363rd ISRW (ACC), ISR operations; Hq. ACC, management. ***History:*** Activated Dec. 30, 1916. Formed as joint base under Air Force lead 2010. Langley is first military base in U.S. purchased and built specifically for military aviation. Langley named for aviation pioneer and scientist Samuel Pierpont Langley, who died 1906. Eustis named for Brevet Brig. Gen. Abraham Eustis, first commanding officer of Fort Monroe, Va. ***Inn:*** 757-764-4667. ***Golf:*** Eaglewood.

WASHINGTON

■ **Fairchild AFB,** Wash. 99011. ***Nearest city:*** Spokane. ***Phone:*** 509-247-1212. ***Acres:*** 6,102. ***Total Force:*** civilian, 820; military, 5,106. ***Active-duty USAF:*** enlisted, 3,085; officer, 351. ***Owning command:*** AMC. ***Unit/mission:*** 92nd ARW (AMC), 141st ARW (ANG), air mobility operations; USAF SERE School (AETC), training. ***History:*** Activated January 1942. Named for Gen. Muir S. Fairchild, USAF Vice Chief of Staff at his death in 1950. ***Museum:*** Heritage Museum and Air Park. ***Inn:*** 509-247-5519.

■ **JB Lewis-McChord,** Wash. 98438. ***Nearest city:*** Tacoma. ***Phone:*** 253-967-1110. ***Acres:*** 87,851. ***Total Force:*** civilian, 641; military, 4,844. ***Active-duty USAF:*** enlisted, 2,523; officer, 500. ***Active-duty USSF:*** enlisted, 2; officer, 1. ***McChord Field owning command:*** AMC. ***Unit/mission:*** 446th AW (AFRC), air mobility operations; 627th ABG (AMC), support; Western Air Defense Sector (NORAD/ANG), warning and control. ***History:*** Fort Lewis established 1917; McChord Field activated July 3, 1940. Formed as joint base under Army lead in 2010. Lewis named for Capt. Meriwether Lewis of Lewis and Clark Expedition (1804-05). McChord named for Col. William C. McChord, died in aircraft crash, Aug. 18, 1937. ***Museums:*** Heritage Air Park, Lewis Army Museum, McChord AFB Museum. ***Inn:*** IHG Army Hotels, 253-982-5613. ***Golf:*** Eagle's Pride, Whispering Firs.

WEST VIRGINIA

■ **McLaughlin ANGB,** Yeager Airport, W.Va. 25311. ***Nearest city:*** Charleston. ***Phone:*** 304-341-6249. ***Acres:*** 129. ***Total Force:*** civilian, 0; military, 1,279. ***Component:*** ANG. ***Unit/mission:*** 130th AW, air mobility, ISR operations. ***History:*** Named for Brig. Gen. Charles E. "Chuck" Yeager; and Brig. Gen. James K. McLaughlin, West Virginia ANG's first commanding officer.

■ **Shepherd Field ANGB, Eastern West Virginia Regional Airport,** W.Va. 25401. ***Nearest city:*** Martinsburg. ***Phone:*** 304-616-5100. ***Acres:*** 339. ***Total Force:*** civilian, 0; military, 144. ***Component:*** ANG. ***Unit/mission***: 167th AW, air mobility operations.

WISCONSIN

■ **General Mitchell Field,** Milwaukee Mitchell Intl. Airport, Wis. 53207. ***Nearest city:*** Milwaukee. ***Phone:*** 414-944-8715. ***Acres:*** 67. ***Total Force:*** civilian, 0; military, 1,197. ***Component:*** ANG. ***Unit/mission:*** 128th ARW, air mobility operations. ***History:*** Named for Brig. Gen. William "Billy" Mitchell.

■ **Hardwood Range**, Wis. 54646 ***Nearest city:*** Necedah. ***Acres:*** 7,865. ***Component:*** ANG. ***Unit/mission:*** air-to-ground weapons delivery and threat awareness training for combat aircrews.

■ **Truax Field ANGB,** Dane County Regional Airport, Wis. 53704. ***Nearest city:*** Madison. ***Phone:*** 608-245-4395. ***Acres:*** 152. ***Total Force:*** civilian, 0; military, 2,925. ***Component:*** ANG. ***Unit/mission:*** 115th FW, fighter, ISR operations (active associate), WFX. ***History:*** Activated June 1942 as AAF base. Taken over by Wisconsin ANG April 1968. Named for Lt. T. L. Truax, killed in P-40 training accident 1941.

■ **Volk Field ANGB,** Wis. 54618. ***Nearest city:*** Madison. ***Phone:*** 608-427-1448. ***Acres:*** 2,385. ***Total Force:*** civilian, 147; military, 588. ***Component:*** ANG. ***Unit/mission:*** Combat Readiness Training Center; 128th ACS, C2 operations. ***History:*** Named for Lt. Jerome A. Volk, first Wisconsin ANG pilot to be killed in the Korean War.

WYOMING

■ **F.E. Warren AFB,** Wyo. 82005. ***Nearest city:*** Cheyenne. ***Phone:*** 307-773-1110. ***Acres:*** 2,009. ***Total Force:*** civilian, 0; military, 3,637. ***Active-duty USAF:*** enlisted, 2,007; officer, 407. ***Owning command:*** AFGSC. ***Unit/mission:*** 90th MW (AFGSC), ICBM operations; 153rd CACS (ANG), space C2 operations; Hq. 20th Air Force (AFGSC), operational leadership. ***History:*** Activated as Fort D. A. Russell July 4, 1867. Renamed in 1930 for Francis Emory Warren, Wyoming senator and first state governor. Reassigned to USAF in 1947 and received current designation in 1949. ***Museum:*** Warren ICBM and Heritage Museum. ***Inn:*** 307-773-1844. ***Golf:*** Warren.

■ **Wyoming ANGB,** Cheyenne Regional Airport, Wyo. 82001. ***Nearest city:*** Cheyenne. ***Phone:*** 307-772-6424. ***Acres:*** 719. ***Total Force:*** civilian, 970; military, 1,017. ***Component:*** ANG. ***Unit/mission:*** 153rd AW, air mobility, MAFFS operations.

Overseas

Overseas installations owned, operated by, or housing substantial U.S. Air Force or U.S. Space Force activities. Individual listings may not include all units or agencies at every location.

BELGIUM

■ **Kleine Brogel AB,** Belgium APO AE 09719. ***Nearest city:*** Peer. ***Phone:*** 011-003-211-51-9412. ***Total Force:*** 168. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 701st Munitions Support Squadron, receive, store and maintain U.S. munitions for Belgium's F-16 aircraft in support of NATO. ***History:*** Established as an Allied airfield in 1944, expanded by the Belgian Air Force in 1951, and first joined by U.S. support personnel in 1962. ***Museum:*** Kleine-Brogel Air Museum.

GERMANY

■ **Buechel AB,** Germany APO AE 09719. ***Nearest city:*** Cochem. ***Phone:*** 49-2678-94011162. ***Total Force:*** 157. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 702nd Munitions Support Squadron, receive, store and maintain U.S. munitions for Germany's PA-200 Tornado aircraft in support of NATO.

■ **Ramstein AB,** Germany APO AE 09094. ***Nearest city:*** Landstuhl. ***Phone:*** 011-49-6371-47-1110. ***Acres:*** 3,094. ***Total Force:*** 8,299. ***Active-duty USAF:*** enlisted, 8,122; officer, 1,381. ***Active-duty USSF:*** enlisted, 93; officer, 34. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 86th AW (USAFE-AFAFRICA), air mobility operations, support (including Kaiserslautern Military Community); 435th AGOW (USAFE-AFAFRICA), bare base, combat communications, combat weather, TACP operations; 521st AMOW (AMC), air transportation services; 603rd AOC (USAFE), C2 operations; Hq. 3rd Air Force (USAFE-AFAFRICA), operational leadership; Hq. USAFE-AFAFRICA, management, operational leadership. ***History:*** Originally Landstuhl AB, activated August 1952. Reactivated December 1957 as Ramstein-Landstuhl AB; later redesignated Ramstein AB. ***Inn:*** 011-49-6371-47-4920. ***Golf:*** Woodlawn.

■ **Spangdahlem AB,** Germany APO AE 09126. ***Nearest city:*** Bitburg. ***Phone:*** 011-49-6565-61-1110. ***Acres:*** 1,617. ***Total Force:*** 2,733. ***Active-duty USAF:*** enlisted, 3,435; officer, 526. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 52nd FW (USAFE), fighter operations, 726th AMS (AMC), air transport services. ***History:*** Built by French 1951 and turned over to U.S. 1952. ***Museum:*** Air Park. ***Inn:*** 011-49-06565-0500. ***Golf:*** Eifel Mountain.

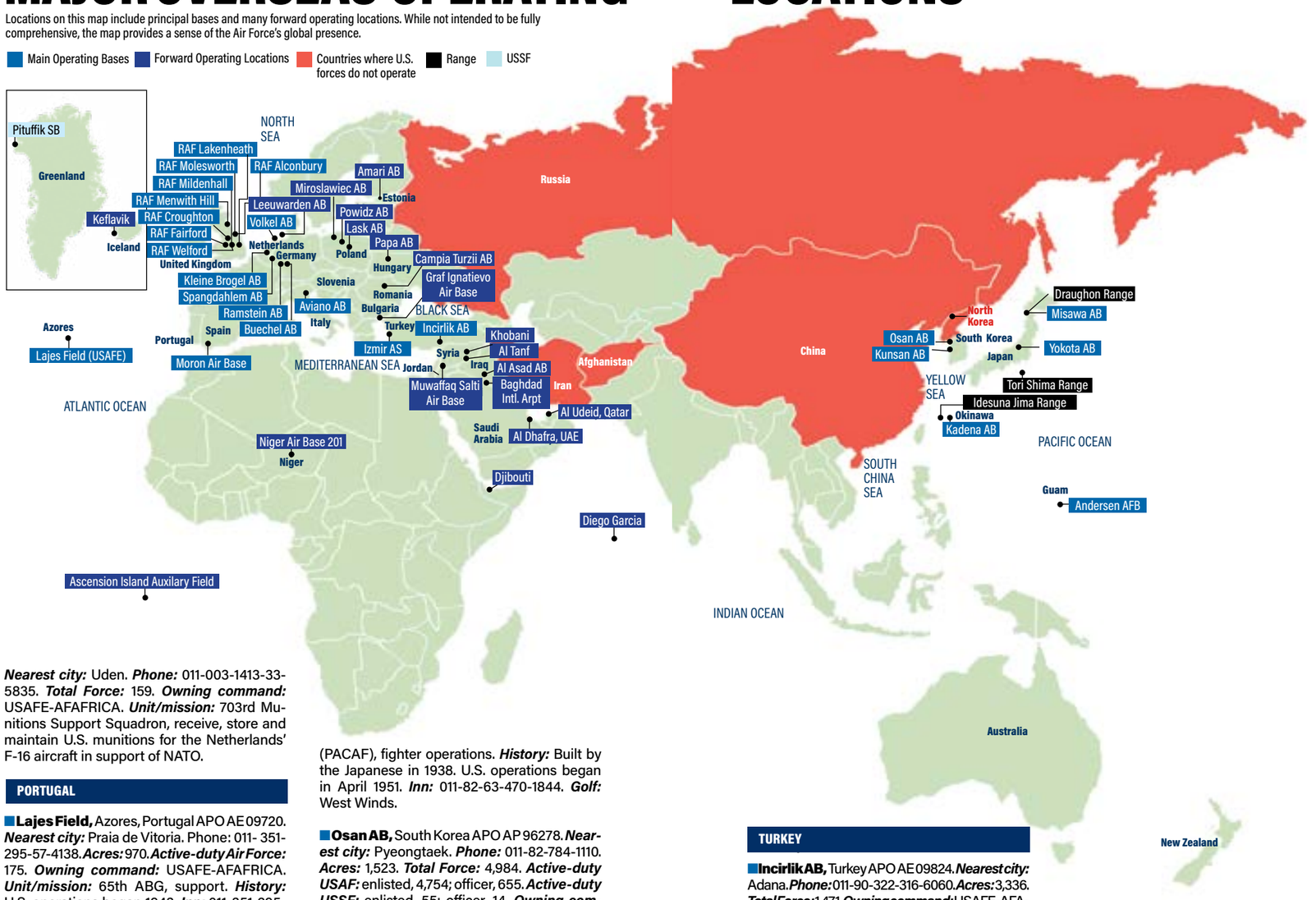
GREENLAND

■ **Pituffik SB,** Greenland APO AE 09704. ***Nearest city:*** Qaanaaq. ***Phone:*** (through Peterson AFB operator) 719-556-7321. ***Acres:*** 233,034. ***Total Force:*** 135. ***Owning command:*** USSF. ***Unit/***

MAJOR OVERSEAS OPERATING LOCATIONS

Locations on this map include principal bases and many forward operating locations. While not intended to be fully comprehensive, the map provides a sense of the Air Force's global presence.

Main Operating Bases | Forward Operating Locations | Countries where U.S. forces do not operate | Range | USSF



mission: 12th SWS (USSF), missile warning; 821st SBG (USSF), support. ***History:*** Dates from 1946 as a Danish-American radio and weather station. USAF Ballistic Missile Early Warning System radar began operations 1961. ***Inn:*** 719-474-3840, ext. 3276. ***Golf:*** Mount Dundas.

ITALY

■**Aviano AB,** Italy APO AE 09604. ***Nearest city:*** Aviano. ***Phone:*** 011-39-0434-30-5407. ***Acres:*** 1,226. ***Total Force:*** 4,204. ***Active-duty USAF:*** enlisted, 4,116; officer, 457. ***Active-duty USSF:*** enlisted, 1; officer, 1. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 31st FW (USAFE-AFAFRICA), fighter operations; 724th AMS (AMC), air transportation services. ***History:*** Dates from 1911 as Italian air base. USAF began operations 1954. ***Inn:*** 011-39-0434-94-7111. ***Golf:*** Alpine.

JAPAN

■**Draughon Range,** Japan. ***Phone***: 011-81-176-77-4713 (35th Operations Group, Misawa AB). ***Acres:*** 1,889. ***Owning command:*** PACAF. ***Unit/mission:*** training for U.S., Japanese, and multilateral forces.

■**Idesuna Jima Range,** Japan (uninhabited island). ***Acres:*** 61. ***Owning command:*** PACAF. ***Unit/mission:*** managed by 18th Wing, live-fire exercises from the air onto the island.

■**Kadena AB,** Japan APO AP 96368. ***Nearest city:*** Naha. ***Phone:*** 011-81-98-961-1110. ***Total Force:*** 6,750. ***Active-duty USAF:*** enlisted, 5,581; officer, 719. ***Active-duty USSF:*** enlisted, 45; officer, 2. ***Owning command:*** PACAF. ***Unit/mission:*** 18th Wing (PACAF), air mobility, fighter, ISR, personnel recovery operations; 82nd RS (ACC), reconnaissance; 353rd SOW (AFSOC), special operations; 733rd AMS (AMC), air transportation services. ***History:*** Occupied by U.S. forces April 1945. Named for city of Kadena on island of Okinawa. ***Inn:*** 01-81-98-962-1100. ***Golf:*** Banyan Tree.

■**Misawa AB,** Japan APO AP 96319. ***Nearest city:*** Misawa. ***Phone:*** 011-81-176-53-5181. ***Acres:*** 3,864. ***Total Force:*** 3,050. ***Active-duty USAF:*** enlisted, 2,539, officer, 277. ***Active-duty USSF:*** enlisted, 14; officer, 2. ***Owning command:*** PACAF. ***Unit/mission:*** 35th FW (PACAF), fighter operations. ***History:*** Occupied by U.S. forces September 1945. ***Inn:*** 011-81-176-66-0282. ***Golf:*** Gosser Memorial.

■**Tori Shima Range,** Japan (uninhabited island). ***Acres:*** 10. ***Owning command:*** PACAF. ***Unit/mission:*** managed by 18th Wing.

■**Yokota AB,** Japan APO AP 96328. ***Nearest city:*** Tokyo. ***Phone:*** 011-81-425-52-2510-5-1110. ***Acres:*** 1,750. ***Total Force:*** 3,519. ***Active-duty USAF:*** enlisted, 2,979; officer, 443. ***Active-duty USSF:*** enlisted, 4; officer, 5. ***Owning command:*** PACAF. ***Unit/mission:*** 374th AW (PACAF), air mobility, personnel recovery operations; 515th AMOG (AMC), air transportation services; Hq. 5th Air Force (PACAF), Hq. US Forces Japan (PACOM), operational leadership. ***History:*** Opened as Tama AAF by Japan 1939. Turned over to U.S. forces and renamed Yokota AB on Sept. 6, 1945. ***Inn:*** 011-81-42-507-6533. ***Golf:*** Yokota Golf Center, Tama Hills.

NETHERLANDS

■**Volkel AB,** Netherlands APO AE 09717. ***Nearest city:*** Uden. ***Phone:*** 011-003-1413-33-5835. ***Total Force:*** 159. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 703rd Munitions Support Squadron, receive, store and maintain U.S. munitions for the Netherlands' F-16 aircraft in support of NATO.

PORTUGAL

■**Lajes Field,** Azores, Portugal APO AE 09720. ***Nearest city:*** Praia de Vitoria. Phone: 011- 351-295-57-4138. ***Acres:*** 970. ***Active-duty Air Force:*** 175. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 65th ABG, support. ***History:*** U.S. operations began 1943. ***Inn:*** 011-351-295-545-100.

SAINT HELENA

■**Ascension Island Auxiliary Airfield,** Saint Helena (U.K. island territory in the South Atlantic). ***Phone:*** 321-494-1110 (Space Launch Delta 45 operator at Patrick SFB). ***Acres:*** 3,463. ***Owning command:*** USSF. ***Unit/mission:*** 45th Mission Support Squadron, Det. 2, airfield maintenance, radar and telemetry tracking of space launches.

SOUTH KOREA

■**Kunsan AB**, South Korea APO AP 96264. ***Nearest city:*** Gunsan City. ***Phone:*** 011-82-63-470-1110. ***Acres:*** 2,549. ***Total Force:*** 2,472. ***Active-duty USAF:*** enlisted, 2,191; officer, 204. ***Active-duty USSF:*** enlisted, 1; officer, 0. ***Owning command:*** PACAF. ***Unit/mission:*** 8th FW (PACAF), fighter operations. ***History:*** Built by the Japanese in 1938. U.S. operations began in April 1951. ***Inn:*** 011-82-63-470-1844. ***Golf:*** West Winds.

■**Osan AB,** South Korea APO AP 96278. ***Nearest city:*** Pyeongtaek. ***Phone:*** 011-82-784-1110. ***Acres:*** 1,523. ***Total Force:*** 4,984. ***Active-duty USAF:*** enlisted, 4,754; officer, 655. ***Active-duty USSF:*** enlisted, 55; officer, 14. ***Owning command:*** PACAF. ***Unit/mission:*** 5th RS (ACC), reconnaissance operations; 51st FW (PACAF), fighter operations; 694th ISRG (ACC), DCGS operations; 731st AMS (AMC), air transportation services; Hq. 7th Air Force (PACAF), operational leadership. ***History:*** Originally designated K-55. Runway opened December 1952. Renamed Osan AB in 1956 for nearby town that was the scene of first fighting in July 1950 between U.S. and North Korean forces. ***Inn:*** 011-82-31-661-1844. ***Golf:*** The Lakes at Osan.

SPAIN

■**Moron AB,** Spain, APO AE 09643. ***Nearest city:*** Moron de la Frontera. ***Phone:*** 011-34-955-84-1110. ***Acres:*** 3,433. ***Total Force:*** 154. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 496th ABS, base support; 725th AMS, air mobility. ***Inn:*** 011-34-95-584-8686.

TURKEY

■**Incirlik AB,** Turkey APO AE 09824. ***Nearest city:*** Adana. ***Phone:*** 011-90-322-316-6060. ***Acres:*** 3,336. ***Total Force:*** 1,471. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 39th ABW (USAFE-AFAFRICA), support; 728th AMS (AMC), air transportation services. ***History:*** Activated 1954. Named Adana AB Feb. 21, 1955. Renamed Incirlik AB on Feb. 28, 1958. ***Inn:*** 011-90-322-316-9357. ***Golf:*** Hodja Lakes.

■**Izmir AS,** Turkey APO AE 09821. ***Nearest city:*** Izmir. ***Phone:*** 011-90-232-455-6694. ***Total Force:*** 101. ***Unit/mission:*** 425th ABS, support.

UNITED KINGDOM

■**RAF Alconbury,** UK APO AE 09470. ***Nearest city:*** Huntingdon. ***Phone:*** 011-44-1480-84-3557 (Alconbury/Molesworth). ***Acres:*** 218. ***Total Force:*** 352 (includes RAF Molesworth). ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 423rd ABG, including munitions, civil engineer, communications, medical, and Security Forces squadrons. ***History:*** Began in WWII. The U.S. 93rd Bombardment Group arrived in 1942 flying B-24 Liberators. ***Inn:*** 011-44-01480-84-6000.

■**RAF Croughton,** UK APO AE 09494. ***Nearest City:*** Brackley. ***Phone:*** 011-44-1280-70-8716 (RAF Croughton/Fairford/Welford). ***Acres:*** 699. ***Total Force:*** 386. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 422nd ABG, civil engineer, communications, medical and Security Forces squadrons. ***History:*** Built in 1938 and originally known as Brackley Landing Ground, in use by U.S. since 1950. ***Inn:*** 011-44-128-070-8158.

■**RAF Fairford,** UK APO AE 09456. ***Nearest city:*** Fairford. ***Phone:*** 011-44-1280-70-8158 (RAF Croughton/Fairford/Welford). ***Acres:*** 1,284. ***Total Force:*** 56. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 420th ABS, mission support. ***History:*** Built in 1944 to support D-Day operations, in use by U.S. since 1950.

■**RAF Lakenheath,** UK APO AE 09461. ***Nearest city:*** Cambridge. ***Phone:*** 011-44-1638-52-1110. ***Acres:*** 1,879. ***Total Force:*** 4,908. ***Active-duty USAF:*** enlisted, 4,510; officer, 549. ***Active-duty USSF:*** enlisted, 19; officer, 2. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 48th FW (USAFE-AFAFRICA), fighter, personnel recovery operations. ***History:*** Began as Royal Air Force decoy field in 1930s. Activated as RAF airfield November 1941. USAF bombers arrived August 1948. USAF took administrative control May 1951. Named after nearby village. ***Inn:*** 011-44-1638-52-6713. ***Golf:*** Breckland Pines.

■**RAF Menwith Hill,** UK APO AE 09468. ***Nearest city:*** Harrogate. ***Phone:*** 011-44-01423-777886. ***Acres:*** 545. ***Total Force:*** 22. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 421st Air Base Squadron, communications and intelligence support services. ***History:*** Became operational in 1959.

■**RAF Mildenhall,** UK APO AE 09459. ***Nearest city:*** Cambridge. ***Phone:*** 011-44-1638-54-1110. ***Acres:*** 1,163. ***Total Force:*** 3,405. ***Active-duty USAF:*** enlisted, 3,768; officer, 507. ***Active-duty USSF:*** enlisted, 8; officer, 5. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 95th RS (ACC), reconnaissance operations; 100th ARW (USAFE), air mobility operations; 352nd SOW (AFSOC), special operations; 488th IS (ACC), intelligence operations; 727th AMS (AMC), air transportation services. ***History:*** Activated as RAF bomber base October 1934. Named after nearby town. U.S. bomber operations began July 1950. Strategic Air Command had control from October 1951 to September 1959, when USAFE took over. ***Inn:*** 011-44-1638-71-1236.

■**RAF Molesworth,** UK APO AE 09470. ***Nearest city:*** Huntingdon. ***Phone:*** 011-44-1480-84-3557 (Alconbury/Molesworth). ***Acres:*** 659. ***Total Force:*** 352 (includes RAF Alconbury). ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** Joint Intelligence Operations Center Europe Analytic Center. ***History:*** Started as a WWI airfield.

■**RAF Welford,** UK APO AE 09494. ***Nearest city:*** Welford. ***Phone:*** 011-44-128-070-8158 (RAF Croughton/Fairford/Welford). ***Acres:*** 736. ***Total Force:*** 386. ***Owning command:*** USAFE-AFAFRICA. ***Unit/mission:*** 420th Munitions Squadron; munitions storage area. ***History:*** First used by U.S. Army Air Forces in 1943.

Sources and definitions

Addresses, phone numbers, and the names of museums and golf courses are from official installation web sites, the Air National Guard's recruiting website goang.com, the Defense Department's Military OneSource listings, and the official online directories of Air Force Inns and other DOD lodging. Acres are the total acres reported in the DOD's Base Structure Report—Fiscal Year 2023 Baseline, the most recent available in which installations are listed by name; or in the Base Structure Report—Fiscal Year 2018 Baseline if not included in the 2023 report. Acres may not include storage annexes or other associated sites. Total Force combines all Active, Reserve, and appropriated fund civilian personnel, regardless of military service branch, derived from ZIP code data provided by the Defense Manpower Data Center.

USAF & USSF ALMANAC 2024

WEAPONS & PLATFORMS

By Aaron M. U. Church

Senior Airman Zachary Rufus

Richard Gonzales/USAF

B-1B LANCER

Long-range conventional bomber

Brief: The B-1B is a conventional, long-range, supersonic, penetrating strike aircraft derived from the canceled B-1A. The B-1A first flew on Dec. 23, 1974, and four prototypes were developed and tested before program cancellation in 1977. The Reagan administration revived the program as the B-1B in 1981, adding 74,000 lb of usable payload, improved radar, and reduced radar cross section, but reducing speed to Mach 1.2. Its three internal weapons bays can carry the largest payload of guided/unguided weapons in the Air Force inventory, and its blended wing/body and variable-geometry wing permit long-range/loiter time. Offensive avionics include terrain-following SAR and a fully integrated Sniper ATP to track and target moving vehicles. B-1B made its combat debut over Iraq during Desert Fox in 1998. The fleet completed its most comprehensive upgrade to date in September 2020. The three-part Integrated Battle Station (IBS) program added an all-digital glass cockpit, Fully Integrated Data Link (FIDL) to enhance targeting/LOS/BLOS C2, and a Central Integrated Test System (CITS) for real-time simplified troubleshooting. The fleet is also undergoing Multifunctional Information Distribution System/Joint Tactical Radio System (MIDS/JTRS) data link modernization to improve situational awareness and retargeting abilities, as well as BLOS cryptography updates to connectivity. The B-1B is USAF's sole Long-Range Anti-Ship Missile (LRASM) carrier and its range, speed, and payload make it a key power-projection asset in USAF's Indo-Asia Pacific strategy. USAF is expanding the B-1B's capacity to carry future weapons such as hypersonic missiles or 5,000 lb-class guided bombs. Recent demonstrations reconfigured the bomb bay to expand internal capacity, as well as use of the bomber's previously deactivated external pylons. The Load Adaptable Modular (LAM) pylon system currently in testing would enable carriage of large stores such as the AGM-183 ARRW or future hypersonic weapons. AFGSC retired 17 of the least serviceable airframes in FY21 but is regenerating a previously stored aircraft to replace one damaged beyond repair in a ground fire at Dyess in 2022. Another B-1B was severely damaged in a landing accident at Ellsworth Jan. 4, 2023, though all four crew members safely ejected. Recent retirements increased the fleet's mission capable rate, and USAF plans to keep enough B-1Bs to maintain capacity until the fleet is fully replaced by the B-21, targeted for 2032.

Contractor: Boeing (formerly Rockwell International).
First Flight: Oct. 18, 1984 (B-1B).
Delivered: June 1985-May 1988.
IOC: Oct. 1, 1986, Dyess AFB, Texas.
Production: 104.
Inventory: 45.
Operator: AFGSC, AFMC.
Aircraft Location: Dyess AFB, Texas; Edwards AFB, Calif.; Eglin AFB, Fla.; Ellsworth AFB, S.D.
Active Variant:
▪B-1B. Upgraded production version of the B-1A.
Dimensions: Span 137 ft (forward sweep) to 79 ft (aft sweep), length 146 ft, height 34 ft.
Weight: Max T-O 477,000 lb.
Power Plant: Four GE Aviation F101-GE-102 augmented turbofans, each 30,780 lb thrust.
Performance: Speed 900+ mph at S-L, range approx. 7,455 miles (farther with air refueling).
Ceiling: 30,000+ ft.
Armament: 84 Mk 82 (500-lb) or 24 Mk 84 (2,000-lb) general-purpose bombs; 84 Mk 62 (500-lb) or eight Mk 65 (2,000-lb) Quickstrike naval mines; 30 CBU-87/89 cluster bombs or 30 CBU-103/104/105 WCMDs; 24 GBU-31 or 15 GBU-38 JDAMs/GBU-54 JDAM; 24 AGM-158A JASSM, JASSM-ER, or LRASM.
Accommodation: Pilot, copilot, and two WSOs (offensive/defensive) on ACES II zero/zero ejection seats.

B-2 SPIRIT

Long-range heavy bomber

Brief: The B-2 is a stealthy, long-range, penetrating nuclear and conventional strike bomber. It is based on a flying wing design combining low observability (LO) with high aerodynamic efficiency. The aircraft's blended fuselage/wing holds two weapons bays capable of carrying nearly 60,000 lb in various combinations. Spirit entered combat during Allied Force on March 24, 1999, striking Serbian targets. Production was completed in three blocks, and all aircraft were upgraded to Block 30 standard with AESA radar. Construction was limited to 21 aircraft due to cost and political considerations and a single B-2 was subsequently lost in a crash at Andersen on Feb. 23, 2008. Modernization is focused on safeguarding the B-2A's penetrating strike capability in high-end threat environments and integrating advanced weapons. Recent upgrades significantly enhance the B-2's ability to deliver precision nuclear and conventional weapons under GPS-denied or degraded conditions. The aircraft is now capable of using radar to supply targeting data, or by feeding coordinates to weapons pre-release to thwart jamming. A B-2A successfully employed the longer-range JASSM-ER cruise

Airman First Class Ivy Thomas/ANG

missile in a test launch last December, clearing the way for full integration. Ongoing efforts include Advanced Communications upgrades to provide Mobile User Objective System (MUOS) secure, jam-resistant SATCOM and NATO-interoperable SATURN UHF/VHF as well as Link 16-based in-flight retasking, replacing the primary cockpit displays, advanced IFF, and weapons integration. These upgrades collectively shift the B-2 to an easily upgradable open-system architecture to keep pace with emerging threats. USAF is also working to enhance the fleet's maintainability with LO signature improvements to coatings, materials, and radar-absorptive structures such as the radome and engine inlets/exhausts. The fleet returned to flight in May 2023 following a six-month fleetwide stand-down in the wake of a pair of landing accidents in 2021 and 2023, which severely damaged two aircraft. USAF plans to retire the fleet once the B-21 Raider enters service in sufficient numbers around 2032.

Contractors: Northrop Grumman; Boeing; Vought; Sierra Nevada (ACS).
First Flight: July 17, 1989.
Delivered: December 1993-December 1997.
IOC: April 1997, Whiteman AFB, Mo.
Production: 21.
Inventory: 20.
Operator: AFGSC, AFMC, ANG (associate).
Aircraft Location: Edwards AFB, Calif.; Whiteman AFB, Mo.
Active Variant:
▪B-2A. Production aircraft upgraded to Block 30 standards.
Dimensions: Span 172 ft, length 69 ft, height 17 ft.
Weight: Max T-O 336,500 lb.
Power Plant: Four GE Aviation F118-GE-100 turbofans, each 17,300 lb thrust.
Performance: Speed high subsonic, range 6,900 miles (farther with air refueling).
Ceiling: 50,000 ft.
Armament: Nuclear: 16 B61-7, B61-12, B83, or eight B61-11 bombs (on rotary launchers). Conventional: 80 Mk 62 (500-lb) sea mines, 80 Mk 82 (500-lb) bombs, 80 GBU-38 JDAMs, or 34 CBU-87/89 munitions (on rack assemblies); or 16 GBU-31 JDAMs, 16 Mk 84 (2,000-lb) bombs, 16 AGM-154 JSOWs, 16 AGM-158 JASSM/JASSM-ERs, or eight GBU-28 LGBs.
Accommodation: Two pilots on ACES II zero/zero ejection seats.

Edwards Air Force Base/Facebook

B-21 RAIDER

Long-range heavy bomber

Brief: The B-21 Raider is a developmental, penetrating strike bomber planned to deliver both conventional and nuclear munitions. The low-observable flying-wing design was christened "Raider" in honor of the WWII Doolittle Raiders, who mounted the surprise attack on Japan in April 1942. Though similar in shape to the B-2, the B-21 features more deeply recessed engine inlets, dual-wheel main-landing gear, unique trapezoidal windscreens, and more advanced low-observable designs. The Air Force awarded Northrop Grumman the Long-Range Strike Bomber contract in 2015, aimed at developing an affordable, next-generation stealth bomber utilizing modern systems and materials. The type is the Air Force's first new bomber design since the B-2 Spirit, introduced in 1988, and is planned to become the mainstay of the strategic fleet alongside the modernized B-52J. USAF is developing the B-21 as part of a "family of systems" encompassing complementary ISR, C2, and electronic warfare platforms and capabilities designed for survivability in high-end threat environments. Northrop Grumman is using digital design techniques to quickly incorporate changes and speed fielding, as well as an open-system architecture to easily enable future upgrades and modernization. Notional nuclear armament includes the planned Long-Range Standoff (LRSO) missile and B61-12 guided free-fall weapons, as well as a range of advanced conventional weapons. AFGSC plans to acquire a fleet of at least 100 B-21s would be delivered starting in the mid-2020s. Concurrent development and low-rate initial production aim to accelerate fielding, starting with the first LRIP contract awarded in late 2023. LRIP will notionally include 21 aircraft over five lots, followed by full-rate production as soon as FY25. At least six airframes are in production at Northrop Grumman's Palmdale, Calif., facility where the initial aircraft was unveiled to the public in December 2022. The first aircraft completed ground testing and taxi trials at Palmdale, before making the type's first flight on Nov. 10, 2023, en route to Edwards. The aircraft, dubbed "Cerberus," launched flight-testing there on Jan. 17, 2024, and will continue development and flight-testing. Initial operational aircraft will be delivered to AFGSC's formal training and operational units at Ellsworth, followed by Whiteman and Dyess.

Contractors: Northrop Grumman (aircraft); Pratt & Whitney (engines); Collins Aerospace; GKN Aerospace; BAE Systems; Spirit Aerosystems; Janicki Industries (advanced structures).
First Flight: Nov. 10, 2023.
Delivered: Nov. 10, 2023-present.
IOC: Unknown
Production: ≥100 (projected).
Inventory: One.
Operator: AFMC. Planned: AFGSC.
Aircraft Location: Edwards AFB, Calif. (test location); Planned: Ellsworth AFB, N.D.; Whiteman AFB, Mo.; Dyess AFB, Texas.
Active Variant:
▪B-21. Developmental Long-Range Strike Bomber.
Dimensions: Span 140 ft (estimated), length 55 ft (estimated), height 18 ft (estimated).
Weight: Max T-O unknown.
Power Plant: Undisclosed number of Pratt & Whitney engines.
Performance: Speed high-subsonic (estimated), range intercontinental.
Ceiling: Unknown.
Armament: Nuclear and conventional (planned).
Accommodation: Two pilots; autonomous control (planned).

Senior Airman Celeste Zuniga

B-52 STRATOFORTRESS

Long-range heavy bomber

Brief: The B-52H is a long-range nuclear/conventional bomber and USAF's primary standoff cruise missile carrier. The YB-52 prototype first flew on April 15, 1952, and Strategic Air Command declared IOC with the B-52A on June 19, 1955. Boeing produced a total of 744 B-52s culminating in the last Stratofortress variant still in service, the B-52H. Multimission capabilities include long-range precision strike, CAS, air interdiction, defense suppression, and maritime surveillance utilizing both Litening and Sniper targeting pods. The B-52 is undergoing major upgrades to replace key obsolescent systems including engines, radar, comms, and weapons interface to extend the fleet through the 2050s. Combat Network Communications Technology (CONECT) recently replaced cockpit displays and comms and added integrated mission-management, including Link 16, and machine-to-machine tasking/ retargeting. It forms the digital backbone of the Internal Weapons Bay Upgrade transitioning the Conventional Rotary Launchers designed for CALCM to carry the modern AGM-158B JASSM-ER. This nearly doubles the B-52's payload of JASSM, JDAM, and MALD, while reducing drag and increasing range. CONECT also enables associated mods including Tactical Data Link to add low-latency, jam-resistant C2/comms, and GPS updates. USAF is pursuing both the Radar Modernization Program to replace the B-52's AN/APQ-166 with AESA and the Commercial Engine Replacement Program (CERP) to re-engine the fleet. CERP will replace the B-52's current engines with modern, efficient and reliable Rolls-Royce F130-200 turbofans in a modified pylon-mounted eight-engine arrangement. Re-engined aircraft will be redesignated B-52J and fleetwide retrofits are expected to be completed by 2038. AESA radar is planned for introduction in 2026, and future upgrades include VLF/LF receiver modernization, ATP color MFDs to enhance targeting and situational awareness, AEHF SATCOM installation, and crypto modernization. Integration of the future Long-Range Standoff (LRSO) nuclear cruise missile will cement the B-52's nuclear role, complementing the B-21 Raider after retirement of the B-1 and B-2, potentially continuing to serve through the 2050s. B-52s have conducted at least nine successful LRSO test flights, culminating in a free-flight launch in October 2022.

Contractors: Boeing (airframe/CONECT); Rolls-Royce (CERP)/Collins Aerospace (nacelles); Raytheon (RMP).
First Flight: July 20, 1960 (B-52H).
Delivered: May 9, 1961-Oct. 26, 1962 (B-52H).
IOC: May 1961 (B-52H).
Production: 102 (B-52H).
Inventory: 76.
Operator: AFGSC, AFMC, AFRC.
Aircraft Location: Barksdale AFB, La.; Edwards AFB, Calif.; Minot AFB, N.D.
Active Variants:
▪B-52H. Longer-range development of the original B-52A with more efficient turbofan engines.
▪B-52J. Future modernized B-52H, retrofitted with more efficient Rolls-Royce F130-200 turbofans.
Dimensions: Span 185 ft, length 159.3 ft, height 40.7 ft.
Weight: Max T-O 488,000 lb.
Power Plant: Eight Pratt & Whitney TF33-P-3 turbofans, each 17,000 lb thrust.
Performance: Speed 650 mph, range 8,800 miles (further with air refueling).
Ceiling: 50,000 ft.
Armament: Nuclear: 12 AGM-86B ALCMs externally, and eight ALCMs or gravity weapons internally. Conventional: 12 AGM-158 JASSM externally, and eight JASSM-ER/MALD/ MALD-J internally (upgraded aircraft), as well as Mk 62 sea mines, Mk 82/84 bombs, CBU-87/89 cluster bombs, CBU-103/104/105 WCMDs, GBU-31/38 JDAMs, AGM-158A JASSMs, and GBU-10/12/28 LGBs, MALD, and MALD-J jammer variant.
Accommodation: Two pilots, navigator, radar navigator, and EWO on upward/downward ejection seats. (Radar navigator position will be eliminated on the B-52J).

USAF

A-10 THUNDERBOLT II

Attack, close-air support, forward air control

Brief: The A-10 "Warthog" is a specialized CAS aircraft tasked with interdiction, Forward Air Controller-Airborne (FAC-A), CSAR, and Strike Control & Reconnaissance. It combines a heavy, diverse weapons load with low-level maneuverability, a large combat radius, and long loiter time. The A-10 is capable of carrying up to 16,000 lb of ordnance in addition to its 30 mm cannon which can destroy heavy armor while the pilot is protected by a titanium-armored cockpit. The prototype YA-10A first flew on May 10, 1972, winning USAF's A-X competition for a new attack aircraft. The A-10A development aircraft first flew on Feb. 15, 1975, and A-10As were delivered between October 1975 and March 1984. USAF declared A-10A IOC in October 1977. The fleet was modernized under the Precision Engagement Program, resulting in the A-10C which first flew at Eglin in 2005. The A-10C adds color cockpit MFDs, a Helmet Mounted Cueing System (HMCS), Hands-on Throttle and Stick, digital stores management, improved fire-control, GPS-guided weapons, Litening/Sniper pods, advanced data links, and integrated sensors. The A-10C debuted in combat during Iraqi Freedom in 2007. With NVGs and targeting pods, the A-10C can operate under ceilings as low as 1,000 ft including at night. The Operational Flight Program (OFP) continuously updates the A-10's systems and software, and following current OFP Suite 11 the program will shift to more frequent rolling software upgrades. USAF did not request FY24 modernization funding, though FY23 supported replacing primary cockpit instruments with a high-resolution digital glass display, adding directional audio threat cueing, modernizing ARC-210 UHF/VHF comms, adding Ethernet, integrating Small Diameter Bomb I, and transition to Onboard Oxygen Generation Systems (OBOGS). Re-winging is key to the aircraft's longevity and extends airframe life to at least 10,000 hours. A total of 173 aircraft received new wingsets prior to modifications recommencing in 2022, and all remaining aircraft will be re-winged through FY26. Congress lifted its ban on A-10 divestitures in FY23, allowing the service to cut the Indiana ANG's 21 aircraft. The ANG announced Idaho's 124th Fighter Wing will follow suit in early 2027, and USAF plans to continue retirements in FY24. ACC plans to eliminate 42 A-10s from Davis-Monthan and Moody, eventually reducing the fleet to 218 upgraded aircraft which will fly through 2030 or beyond. USAF surged A-10 deployments to CENTCOM following Hamas terrorist attacks on Israel in October 2023, with units from Davis-Monthan augmenting aircraft deployed from Moody through the end of the year.

Contractors: Fairchild Republic (Lockheed Martin); Boeing/Korean Aerospace Industries (re-wing).
First Flight: Jan. 20, 2005 (A-10C).
Delivered: 2006-2012 (A-10C).
IOC: September 2007 (A-10C).
Production: 713.
Inventory: 261.
Operator: ACC, AFMC, PACAF, ANG, AFRC.
Aircraft Location: Boise Air Terminal, Idaho; Davis-Monthan AFB, Ariz.; Eglin AFB, Fla.; Martin State Arpt., Md.; Moody AFB, Ga.; Nellis AFB, Nev.; Osan AB, South Korea; Selfridge ANGB, Mich.; Whiteman AFB, Mo.
Active Variant:
▪A-10C. Upgraded version of the A-10A ground attack aircraft.
Dimensions: Span 57.5 ft, length 53.3 ft, height 14.7 ft.
Weight: Max T-O 51,000 lb.
Power Plant: Two GE Aviation TF34-GE-100 turbofans, each 9,065 lb thrust.
Performance: Speed 518 mph, range 800 miles (farther with air refueling).
Ceiling: 45,000 ft.
Armament: One internally mounted 30 mm, seven-barrel GAU-8/A cannon (1,174 rd of high-explosive incendiary (HEI) or HEI/armor-piercing incendiary); four AIM-9 Sidewinders, AGM-65 Mavericks, laser-guided rockets, most free-fall or guided air-to-surface weapons in USAF inventory, as well as ECM and advanced targeting pods.
Accommodation: Pilot on ACES II zero/zero ejection seat.

Tyler Greenlees/USAF

F-15 EAGLE

Air superiority fighter

Brief: The F-15 Eagle was the world's dominant, supersonic, all-weather, day/night air-superiority fighter for more than 40 years. The F-15A first flew on July 27, 1972, and F-15A/Bs were delivered between 1974 and 1979, attaining IOC in September 1975. F-15C/Ds began replacing F-15A/Bs in 1979, offering superior maneuverability, acceleration, range, weapons, and avionics. The C/D incorporates internal EW countermeasures and an added 2,000 lb of internal fuel (with provision for CFTs). The aircraft accounted for 34 of 37 USAF air-to-air kills in combat during Desert Storm. The final 43 production aircraft received the F-15E's APG-70 radar, and the subsequent Multi-Stage Improvement Program (MSIP) enhanced its tactical capabilities. USAF received the first APG-63(V)3 AESA-modified F-15 in 2010, but comprehensive modernization, including the Eagle Passive/ Active Warning Survivability System (EPAWSS) was cut after the decision to replace the fleet with new-build F-15EX. USAF also reduced the number of aircraft slated for MIDS/JTRS upgrades that add higher capacity, jam-resistant Link 16 and UHF SATCOM. Two-thirds of F-15C/D's have exceeded their design lives and suffer performance-limiting structural issues. USAF determined SLEP is not cost-effective and reduced mods to only 63 airframes ending in FY24. USAF declared the Legion Pod initially operationally capable and fielded it on Kadena-based F-15s in 2022. Legion IRST gives the F-15 passive detection capability to enable long-range air-to-air engagement without exposing intent to adversary aircraft. USAF requested to cut 57 aircraft in FY24 ahead of replacement by the F-15EX. Kadena began F-15 drawdown in late 2022, and USAF is backfilling with rotational fighters until a final force-structure decision is made. An F-15D was severely damaged when it overran the runway at Klamath Falls on May 15, 2023.

Contractors: Boeing (previously McDonnell Douglas).
First Flight: Feb. 26, 1979 (F-15C).
Delivered: 1979-85 (F-15C/D).
IOC: 1979 (F-15C/D).
Production: 874.
Inventory: 145 (F-15C); 12 (F-15D).
Operator: ACC, PACAF, ANG.
Aircraft Location: Barnes Arpt., Mass.; Fresno ANGB, Calif.; Jacksonville Arpt., Fla.; Kadena AB, Japan; Klamath Falls (Kingsley Field), Ore.; NAS JRB New Orleans, La.; Portland Arpt., Ore.
Active Variants:
▪F-15C. Upgraded version of the single-seat F-15A.
▪F-15D. Upgraded version of the two-seat F-15B.
Dimensions: Span 42.8 ft, length 63.8 ft, height 18.7 ft.
Weight: Max T-O 68,000 lb.
Power Plant: Two Pratt & Whitney F100-PW-220 augmented turbofans, each 23,450 lb thrust; or two P&W F100-PW-229 augmented turbofans, each 29,000 lb thrust.
Performance: Speed Mach 2.5, ferry range 2,878 miles (3,450 miles with CFTs and three external tanks; farther with air refueling).
Ceiling: 60,000 ft.
Armament: One internally mounted M61A1 20 mm six-barrel cannon (940 rd); four AIM-9 Sidewinders and four AIM-120 AMRAAMs, or eight AIM-120s as well as ECM pods; in a one-time test, an Eagle successfully launched an anti-satellite missile.
Accommodation: Pilot (C); two pilots (D), on ACESII zero/zero ejection seats.

USAF

F-15E STRIKE EAGLE

Multirole fighter

Brief: F-15E is an upgraded, two-seat, all-weather F-15 capable of deep interdiction/attack, tactical nuclear delivery, and air-to-air combat. Strike Eagle is capable of sustaining 9 Gs throughout the flight envelope. It first saw combat in Desert Storm in 1991. F-15E's large, varied load of precision weapons and 20 mm cannon make it a potent ground-attack platform, and radar-guided and IR-homing missiles give it an additional air-to-air capability. Its advanced cockpit includes a wide-field-of-view HUD and helmet mounted cockpit-cueing. The F-15E's avionics permit all-weather day/night engagement and it carries LANTIRN, Sniper, and Litening ATPs on dedicated pylons. The "Dragon's Eye" SAR pod fielded in 2009 provides all-weather surveillance/reconnaissance capability. The Strike Eagle is undergoing major avionics modernization centered on the new APG-82(V)1 AESA radar which will increase its lethality against more capable targets fleetwide in 2024. The Eagle Passive/Active Warning Survivability System (EPAWSS) is simultaneously replacing the Strike Eagle's obsolete self-defense suite to increase survivability in future high-threat environments. Supporting upgrades include color Large Area Digital (LAD) displays and processors to fully exploit AESA and EPAWSS' targeting and situational awareness improvements, and MIDS/JTRS to enable higher capacity, jam-resistant Link 16. F-15Es recently began transition to Mobile User Objective System (MUOS) secure, jam-resistant SATCOM and NATO-interoperable SATURN UHF. Boeing completed EPAWSS installation on the first two F-15Es in 2022 and launched operational testing in 2024 with the intent of fielding the capability as soon as 2025. Future enhancements include IRST to discreetly engage airborne targets, GPS hardening, and updated EW protection and warning. USAF recently announced plans to retire roughly half the F-15E fleet through 2028, retaining and upgrading only 99 late-model PW-229-engined aircraft to fund other priorities. Congress is likely to limit reductions to 68 airframes.

Contractors: Boeing (previously McDonnell Douglas); BAE Systems (EPAWSS); Raytheon (AESA).
First Flight: Dec. 11, 1986.
Delivered: April 1988-2004.
IOC: September 1989.
Production: 236.
Inventory: 218.
Operator: ACC, AFMC, USAFE.
Aircraft Location: Eglin AFB, Fla.; Mountain Home AFB, Idaho; Nellis AFB, Nev.; RAF Lakenheath, U.K.; Seymour-Johnson AFB, N.C.
Active Variant:
▪F-15E. All-weather strike aircraft derived from the F-15C/D.
Dimensions: Span 42.8 ft, length 63.8 ft, height 18.5 ft.
Weight: Max T-O 81,000 lb.
Power Plant: Two Pratt & Whitney F100-PW-220 augmented turbofans, each 23,450 lb thrust; or two F100-PW-229 augmented turbofans, each 29,000 lb thrust.
Performance: Speed Mach 2.5, range 2,762 miles with CFTs and three external tanks (farther with air refueling).
Ceiling: 50,000 ft.
Armament: One internally mounted M61A1 20 mm six-barrel cannon (500 rd); four AIM-9 Sidewinders and four AIM-120 AMRAAMs or eight AIM-120s; most air-to-surface weapons in USAF inventory (nuclear and conventional) including GBU-53 Stormbreaker and B61-12 nuclear free-fall weapon, as well as ECM, SAR, and advanced targeting pods.
Accommodation: Pilot and WSO on ACES II zero/zero ejection seats.

Staff Sgt. Blake Wiles

F-15EX EAGLE II

Multirole fighter

Brief: F-15EX is the most advanced Eagle variant based on the F-15QA as a replacement for the legacy F-15C/D. The Eagle II is the first USAF F-15 to boast digital fly-by-wire flight controls, LAD glass-cockpit with touch-screen interface, and incorporate APG-82 AESA radar, Joint Helmet Mounted Cueing System (JHMCS), and EPAWSS self-defensive suite from the outset. The aircraft pioneers Open Mission System (OMS) software to enable rapid upgrades and capability enhancement, as well as the latest Suite 9.1 software in common with upgraded legacy aircraft. F-15EX promises higher speed, longer range, increased 29,500 lb payload (including two additional weapon stations), and lower operating costs than previous variants. The type also boasts the longest stand-off air-to-air engagement range of any fighter in the USAF inventory. Due to insufficient F-22 procurement, the F-15C/D fleet has continued flying beyond its designed service life, posing a serious risk of structural failure. Similar infrastructure, support, and training requirements will permit existing F-15 units to quickly transition to the F-15EX. The F-15EX incorporates two seats enabling future crew/mission expansion. USAF awarded Boeing a $1.2 billion contract for the first eight new-build F-15EX on July 13, 2020. FY21 funded 12 aircraft and FY22 funded 12 airframes plus a congressional add of five aircraft. FY23 and FY24 fund 24 airframes to speed phase-out of the F-15C/D, though the Air Force now plans to purchase 104 aircraft rather than the originally planned 144. The first aircraft was delivered to Eglin on March 11, 2021, and aircraft EX3 and EX4 arrived at Eglin a year late due to supply chain issues on Dec. 20, 2023. A further two airframes will round out the six-strong test fleet. USAF must receive the first two operational aircraft slated for the ANG at Portland to meet its revised IOC target of July 2024, with the required 44-jet fleet for FOC planned for 2027. FY24 funds stand up depot maintenance, upgrade initial aircraft to operational standards, and buy initial conformal fuel tank sets. Capability development includes IR Search and Track integration for discrete targeting, Auto Ground Collision Avoidance (AGCAS), ejection seat improvements, advanced INS/GPS, and improved mission planning/debrief. The F-15EX completed combined developmental and operational testing in August 2023, participating in 19 Large Force Employment Exercises against fourth- and limited fifth-generation threats. Tests included AIM-9X and AIM-120 live fire as well as employment of SDB I, GBU-38 JDAM, and JASSM. Testers are currently evaluating the aircraft's self-defensive capabilities ahead of Full Operational Testing and Evaluation (FOT&E) which will evaluate the aircraft against more capable fifth-generation threats in complex scenarios. USAF announced plans to replace legacy F-15s at Fresno and New Orleans as well as backfilling Kadena with a permanent force of 36 F-15EX.

Contractors: Boeing; BAE Systems (EPAWSS); Raytheon (AESA).
First Flight: Feb. 2, 2021.
Delivered: March 11, 2021-present.
IOC: July 2023 (originally planned).
Production: 104 (planned).
Inventory: Two.
Operator: ACC, AFMC. Planned: ANG.
Aircraft Location: Eglin AFB, Fla. Planned: Fresno ANGB, Calif.; Kadena AB, Japan; Klamath Falls (Kingsley Field); NAS JRB New Orleans, La.; and Portland Arpt., Ore.
Active Variant:
▪F-15EX. Future F-15C/D replacement based on the F-15QA developed for Qatar.
Dimensions: Span 42.8 ft, length 63.8 ft, height 18.5 ft.
Weight: Max T-O 81,000 lb.
Power Plant: Two General Electric F110-GE-129 augmented turbofans, each 29,000 lb thrust.
Performance: Speed Mach 2.5, range approx. 2,762 miles (air refuelable).
Ceiling: 60,000 ft.
Armament: One internally mounted M61A1 20 mm six-barrel cannon (500 rd); combination of up to 12 AIM-9 Sidewinders or AIM-120 AMRAAMs, or combination of up to 24 air-to-ground munitions.
Accommodation: Pilot and (optional) second aircrew member on ACES 5 zero/zero ejection seats.

Airman Raina Dale

F-16 FIGHTING FALCON

Multirole fighter

Brief: The F-16 is a lightweight, multirole fighter capable of air-to-air, CAS, SEAD, interdiction, FAC-A, tactical nuclear delivery and all-weather strike missions. The "Viper" makes up roughly half the fighter inventory, carries the majority of PGMs in service, and is one of the most maneuverable fighters ever built. The prototype YF-16 first flew Feb. 2, 1974, competing in the USAF Lightweight Fighter competition. After selection, F-16A flew on Dec. 8, 1976, followed by the two-seat F-16B on Aug. 8, 1977. Deliveries began in August 1978, and USAF declared F-16A IOC in October 1980. F-16C/D deliveries began at Block 25 in 1984, adding the APG-68 radar and AMRAAM missile as well as cockpit, airframe, and avionics improvements. Block 30/32 added the HARM missile and more powerful engines, and Block 40/42 introduced the terrain-following LANTIRN pod and wide-angle HUD for high-speed night/all-weather penetration. These airframes boasted higher takeoff weight and G-limits and an expanded flight envelope starting in 1988. Block 50/52 was introduced to replace the F-4G in the "Wild Weasel" SEAD-role armed with the HARM missile, longer-range radar, and even higher-performance engines. The F-16 entered combat during Desert Storm in 1991 and scored its first USAF air-to-air kill during Southern Watch on Dec. 27, 1992. The fleet is now cockpit-standardized with color MFD, modular mission computer, Helmet Mounted Integrated Targeting (HMIT), and Link 16. The Operational Flight Program (OFP) continuously updates the F-16's software, most recently adding JASSM-ER and enhanced AMMRAM. USAF is retiring 49 of the older Block 30-32 aircraft through FY25 while simultaneously modernizing late-block aircraft as a low-cost "capacity" fleet to augment fifth-generation fighters. Modernization centers on the new AN/APG-83 AESA radar, specifically aimed at countering cruise missile threats to the homeland. An initial 72 AESA-equipped aircraft were fielded under an emergent operational need and a further 443 will be upgraded. A total of 450 airframes are also undergoing SLEP to stretch beyond 8,000 flying hours. USAF aims to expand digital RWR upgrades into a future, fully integrated, internal EW suite for active jamming as well as self-defense. The rapidly developed Integrated Viper Electronic Warfare Suite (IVEWS) will leverage AESA and will be rapidly upgradable against new threats with fleet mods potentially starting in FY25. Comm suite upgrades will integrate Mobile User Objective System (MUOS) secure, jam-resistant BLOS and NATO-interoperable LOS SATURN, while MIDS/JTRS will provide higher capacity, jam-resistant Link 16. Other efforts include modernizing mission computer and cockpit displays in conjunction with offensive/defensive upgrades, and Mode 5 IFF. USAF plans to continue upgrading the F-16 to keep pace with threats through 2040 or beyond. The Indiana ANG's 122nd FW reverted to F-16 operations in 2023, and Idaho's 124th FW will also transition in 2026 as the A-10 fleet is retired. Over the last year, three F-16s were lost in separate crashes in South Korea, while a fourth was severely damaged in a ground mishap at Misawa.

Contractors: Lockheed Martin (previously General Dynamics); Northrop Grumman (AESA/ IVEWS).
First Flight: June 19, 1984 (F-16C).
Delivered: July 13, 1984-2005 (F-16C/D).
IOC: 1981 (Block 25-32); 1989 (Block 40/42); 1994 (Block 50/52).
Production: 2,206 fo USAF (nearly 5,000 for global users).
Inventory: 726 (F-16C); 136 (F-16D).
Operator: ACC, AETC, AFMC, PACAF, USAFE, ANG, AFRC.
Aircraft Location: Aviano AB, Italy; Edwards AFB, Calif.; Eglin AFB, Fla.; Eielson AFB, Alaska; Holloman AFB, N.M.; Homestead ARB, Fla.; Kunsan AB, South Korea; Luke AFB, Ariz.; Misawa AB, Japan; NAS JRB Fort Worth, Texas; Nellis AFB, Nev.; Osan AB, South Korea; Shaw AFB, S.C.; Spangdahlem AB, Germany; and ANG in Arizona, Colorado, District of Columbia (flying from Maryland), Indiana, Minnesota, New Jersey, Ohio, Oklahoma, South Carolina, South Dakota, and Texas. Planned: Gowen Field ANGB, Idaho.
Active Variants:
- F-16C/D Block 30/32. Multinational Staged Improvement Program II upgraded with new engines, flown by ANG, AFRC, and test/aggressor units.
- F-16CG Block 40/42. Optimized for night/all-weather attack.
- F-16CJ Block 50/52. Optimized for SEAD with long-range radar, engines, and weapons.

Dimensions: Span 32.8 ft, length 49.3 ft, height 16.7 ft.
Weight: Max T-O 37,500 lb (Block 30/32); 42,300 lb (Block 40/42); 48,000 lb (Block 50/52).
Power Plant: GE Aviation F110-GE-100 augmented turbofan, 29,000 lb thrust (Block 30); Pratt & Whitney F100-PW-220 augmented turbofan, 24,000 lb thrust (Block 32/42); F110-GE-129 turbofan, 29,000 lb thrust (Block 50); F100-PW-229 augmented turbofan, 29,000 lb thrust (upgraded Block 42, Block 52).
Performance: Speed Mach 2+, ferry range 2,002+ miles.
Ceiling: 50,000 ft.
Armament: One M61A1 20 mm cannon (500 rd); up to six AIM-9 Sidewinder or AIM-120 AMRAAMs air-to-air missiles; most air-to-surface weapons in USAF inventory (nuclear and conventional) including JASSM-ER, as well as ECM and advanced targeting pods.
Accommodation: Pilot (C), two pilots (D), on ACESII zero/zero ejection seats.

Master Sgt. Morgan Whitehouse/ANG

F-22 RAPTOR

Air superiority/multirole fighter

Brief: The F-22 is a stealthy, penetrating, air dominance, and multirole fighter built for day, night, and adverse weather, full-spectrum operations. The prototype YF-22 first flew as part of USAF's Advanced Tactical Fighter competition on Sept. 29, 1990, followed by the flight of the first F-22 test aircraft in 1997. The Raptor debuted in combat striking Islamic State ground targets during Inherent Resolve in 2014, and achieved its first air-to-air kill downing a Chinese surveillance balloon off the coast of North Carolina on Feb. 3, 2023. It is the world's most advanced fighter and its mix of stealth, long-range supercruise, and multitarget engagement capability make it a key platform in USAF's Indo/Asia-Pacific strategy. F-22's advanced flight controls and high-performance thrust-vectoring engine enable extreme maneuverability. Features include six LCD color cockpit displays, APG-77 AESA radar, EW system with RWR and missile launch detection, and advanced comm/navigation and data links. USAF is aggressively testing enhancements to ensure the F-22's "first-shot, first-kill" advantage against advanced threats until replaced by the Next Generation Air Dominance (NGAD) fighter in the 2030s. Combat-coded aircraft recently completed Increment 3.2B software upgrades adding high-resolution ground mapping SAR, threat geolocation, EA capability, and integrated SDB I, AIM-120D, and AIM-9X. The program employs an "agile" strategy to continuously develop, test and rapidly field improvements, including rolling NGAD technologies back into the Raptor. Ongoing efforts include IRST to stealthily track and target airborne threats, stealthy external fuel tanks/pylons to extend unrefueled range, and AIM-260 Joint Advanced Tactical Missile testing. Other significant efforts include the Reliability, Availability, and Maintainability Program (RAMP), Link 16, IFF enhancement, and engine reliability and performance improvements. RAMP improves electrical power, replaces avionic-fiberoptics, adds more durable LO, and fixes structures and wiring. Link 16 will enable two-way networking with legacy aircraft via Multifunctional Information Distribution System/Joint Tactical Radio System (MIDS/JTRS). Initial installs began in FY22 and fleetwide upgrade has been extended an additional year to FY26. USAF proposed retiring noncombat-coded Block 20 aircraft to fund NGAD development in FY23, retaining only modernized Block 30/35s. Congress blocked the move pending analysis of the costs to upgrade Block 20s to full combat capability. The F-22 severely damaged in a 2018 takeoff accident at NAS Fallon was restored to flight May 4, 2023, rejoining the fleet at Elmendorf.

Contractors: Lockheed Martin; Boeing (production partner).
First Flight: Sept. 7, 1997.
Delivered: Oct. 23, 2002-May 2, 2012.
IOC: Dec. 15, 2005.
Production: 195.
Inventory: 185.
Operator: ACC, AFMC, AFRC (associate), PACAF, ANG.
Aircraft Location: Edwards AFB, Calif.; JB Elmendorf-Richardson, Alaska; JB Langley-Eustis, Va.; JB Pearl Harbor-Hickam, Hawaii; Nellis AFB, Nev.
Active Variant:
- F-22A. Fifth-generation air dominance fighter.

Dimensions: Span 44.5 ft, length 62 ft, height 16.6 ft.
Weight: Max T-O 83,500 lb.

Power Plant: Two Pratt & Whitney F119-PW-100 augmented turbofans, each 35,000 lb thrust.
Performance: Speed Mach 2 with supercruise capability, ferry range 1,850+ miles with two external wing fuel tanks (farther with air refueling).
Ceiling: Above 50,000 ft.
Armament: One internal M61A2 20 mm gun (480 rds); two AIM-9 Sidewinders inside internal weapons bays; six AIM-120 AMRAAMs (air-to-air loadout), or two AIM-9, two AIM-120s, two GBU-32 JDAMs or eight SDBs (air-to-ground loadout) in main internal weapons bay.
Accommodation: Pilot on ACES II zero/zero ejection seat.

Ralph Branson/ANG

F-35 LIGHTNING II

Multirole fighter

Brief: The F-35 Lightning II is a multirole, stealthy, penetrating, all-weather fighter/attack family of tactical aircraft developed under the multinational Joint Strike Fighter program. USAF's conventional F-35A is complemented by the F-35B short takeoff and vertical landing (STOVL) version for USMC, and the carrier-capable F-35C for the Navy. The X-35 demonstrator first flew on Oct. 24, 2000, winning the go-ahead for the F-35A which first flew in developmental form in 2006. Lightning II is replacing the A-10 and some F-16s, offering better penetrating capability against advanced A2/AD threats to strike heavily defended targets. USAF's F-35A can carry up to 22,000 lb of weapons on 10 stations: two internal bays for stealth, and/or six wing and fuselage pylons for max loadout. Air Force F-35s first saw combat on April 30, 2019, during Inherent Resolve. The current fleet-standard Block 3F software gives the F-35A full combat capability with an array of precision guided weapons across mission sets including interdiction, basic CAS, and limited SEAD. Continuous Capability Development and Delivery (C2D2) will provide ongoing development and modernization. The next Block 4 iteration will give the F-35A a new maritime strike role and add weapons including the nuclear B61-12, developmental Stand-in Attack Weapon (SiAW), and SDB II, as well as APG-85 radar and EW improvements. Block 4 also corrects deficiencies discovered in concurrent development/testing but is roughly three years behind schedule. The Lot 15 through 17 production deal agreed in December 2022 will include the first Tech Refresh 3 (TR-3) aircraft specifically equipped to support Block 4 retrofit. The F-35A requires increased engine performance to fully exploit Block 4. Both GE and Pratt & Whitney tested prototype engines that offered as much a 30 percent range increase, but USAF opted for an Engine Core Upgrade to the current power plant instead on cost and variant-interoperability grounds. The F-35A was approved for full rate production on March 12, 2024, following completion of initial operational and live-fire testing which will enable future cost-saving mutiyear block buys. Despite the decision, more the 30 undelivered USAF aircraft are in storage at Lockheed's facilities pending completion of TR-3 testing which is expected in mid-2024. FY24 funds procure 48 airframes as well as standing up engine depot-level maintenance. The fleet continues to struggle with low availability rates due to maintenance and supply system delays, particularly with engines. Tyndall received its first F-35s on Aug. 1, 2023, while the Alabama Air National Guard's 187th Fighter Wing received their first Lightning IIs on Dec. 5, 2023.

Contractors: Lockheed Martin; BAE Systems; Northrop Grumman; Pratt & Whitney (engine and Engine Core Upgrade).
First Flight: Dec. 15, 2006.
Delivered: April 2011-present.
IOC: Aug. 2, 2016.
Production: Planned: 1,763 (USAF F-35As).
Inventory: 408 (USAF).
Operator: ACC, AETC, AFMC, AFRC (associate), ANG, PACAF, USAFE.
Aircraft Location: Burlington ANGB, Vt.; Dannelly Field, Ala.; Edwards AFB, Calif.; Eglin AFB, Fla.; Eielson AFB, Alaska; Hill AFB, Utah; Luke AFB, Ariz.; Nellis AFB, Nev.; RAF Lakenheath, U.K.; Truax Field, Wis.; Tyndall AFB, Fla. Planned: Barnes ANGB, Mass.; Jacksonville ANGB, Fla.; Kingsley Field, Ore.; Moody AFB, Ga.; NAS JRB Fort Worth, Texas.
Active Variant:
▪F-35A. Conventional takeoff and landing (CTOL) variant for the Air Force.
Dimensions: Span 35 ft, length 51.4 ft, height 14.4 ft.
Weight: Max T-O 70,000 lb.
Power Plant: F-35A: one Pratt & Whitney F135-PW-100 augmented turbofan, 40,000 lb thrust.
Performance: Speed Mach 1.6 with full internal weapons load, range 1,380 miles. Ceiling: 50,000 ft.
Armament: F-35A: one 25 mm GAU-22/A cannon; standard internal loadout: two AIM-120 AMRAAMs and two GBU-31 JDAMs.
Accommodation: Pilot on Martin Baker MK16 zero/zero ejection seat.

Sheila deVera/USAF

F-117 NIGHTHAWK

Test and training

Brief: The F-117 was the world's first operational stealth aircraft, designed to expand USAF's ability to strike critical, heavily defended targets. Its small radar signature, LO technologies, and advanced targeting system allowed the aircraft to penetrate dense threat environments and deliver precision weapons against heavily defended, high-value targets with pinpoint accuracy. Primary missions included precision attack, air interdiction, SEAD, and special operations. The type was first publicly acknowledged in November 1988 and conducted its first operational deployment during Just Cause over Panama in 1989. Highly classified F-117A development and manufacturing began simultaneously in November 1978, using many parts transferred or modified from existing aircraft. The F-117As were first stationed at Tonopah Test Range in Nevada to conduct test flying before transferring operationally to Holloman in 1992. A single aircraft was shot down in combat over Serbia on March 27, 1999, and the F-117 fleet was officially retired on April 22, 2008. The remaining airframes entered climate-controlled storage at Tonopah, with several being maintained in flyable condition for the Air Force Flight Test Center. F-117s have recently reemerged, notably supporting several exercises in 2020, operating more frequently and openly alongside Aggressor aircraft at Nellis and MCAS Miramar. USAF has acknowledged a need for more advanced, threat-representative training and recently reactivated the 65th Aggressor Squadron at Nellis with early F-35As to enhance fifth-generation combat training. F-117s most recently flew dissimilar air combat training alongside ANG F-15s at Fresno in September 2021, and took part in ANG's large-force employment Exercise Sentry Savannah in May 2022. A combined 45 aircraft remain in flying (or regeneratable stored) condition with approximately three airframes undergoing demilitarization and disposal each year. USAF contracted to maintain the type for test and training support through at least 2034.

Contractor: Lockheed Martin.
First Flight: June 18, 1981.
Delivered: 1982-summer 1990.
IOC: October 1983.
Production: 59.
Inventory: 45 (Type 1000 storage).
Operator: AFMC.
Aircraft Location: Tonopah Test Range, Nev.
Active Variants:
▪F-117A. First-generation stealth attack aircraft.
Dimensions: Span 43.3 ft, length 65.9 ft, height 12.4 ft.
Weight: Max gross 52,500 lb.
Weight: Max T-O 70,000 lb.
Power Plant: Two General Electric F404-GE-F1D2 non-afterburning turbojets, each 9,040 lb thrust.
Performance: Speed 0.9 Mach, mission radius unrefueled (5,000 lb weapons load) 656 miles.
Ceiling: 35,000 ft.
Armament: Full internal carriage of a variety of tactical weapons, including laser- and GPS-guided 2,000 lb munitions.
Accommodation: Pilot on ACES II zero/zero ejection seat.

Sierra Nevada Corp.

A-29 SUPER TUCANO

Light attack

Brief: The A-29 Super Tucano is a turboprop light attack/armed reconnaissance aircraft designed by Embraer in Brazil and built under license by Sierra Nevada Corp. USAF has long sought a cost-effective, manned light CAS/tactical ISR platform for operations in permissive counterinsurgency scenarios. The A-29 was initially a contender for the Air Force's Light Attack/Armed Reconnaissance (LAAR) requirement for approximately 100 aircraft that fell prey to budget cuts a decade ago. The service launched a renewed effort in 2017, kicking off the Light Attack Experiment (OA-X) to rapidly evaluate off-the-shelf CAS/ISR platforms to relieve pressure on existing, higher-cost fleets such as the A-10 and F-16. A fatal A-29 crash abruptly ended the flight segment of evaluations at Holloman on June 22, 2018. Trials, however, yielded sufficient data for USAF to opt for two AT-6Bs, and two—later increased to three—A-29s to form a Combat Aviation Advisor and SOF-support capability. The A-29 was not selected as one of the five aircraft USSOCOM evaluated to replace the AFSOC-operated U-28A fleet that was ultimately won by the AT-802U Sky Warden. AETC's 81st Fighter Squadron at Moody also operated the A-29, training Afghan and Nigerian Air Force pilots through September 2021. A total of 16 countries operate the type worldwide. Sierra Nevada delivered the aircraft to Hurlburt in early 2021, but the Air Force plans to divest the fleet in FY24, potentially supplying them to the Philippines, pending approval of the foreign military sale.

Contractor: Sierra Nevada Corp.
First Flight: June 2, 1999.
Delivered: Feb. 23, 2021-March 31, 2021.
IOC: N/A.
Production: Three.
Inventory: Three.
Operator: AFSOC.
Aircraft Location: Hurlburt Field, Fla.
Active Variants:
▪A-29 Super Tucano. License-built version of the Embraer EMB-314 light attack aircraft.
Dimensions: Span 36.5 ft, length 37.3 ft, height 13 ft.
Weight: Max T-O 11,905 lb.
Power Plant: One Pratt & Whitney Canada PT6A-68C turboprop, 1,604 shp.
Performance: Speed 368 mph, range 1,900 miles (with wing-mounted external tanks).
Ceiling: 35,000 ft.
Armament: Two internal wing-mounted .50-caliber machine guns (200 rd each), up to 3,714 lb of external weapons on four wing and one centerline station.
Accommodation: Two aircrew on Martin Baker MK10 zero/zero ejection seats.

AC-130J GHOSTRIDER

Attack

Brief: The AC-130J is AFSOC's primary CAS, air interdiction, and armed reconnaissance platform optimized for convoy escort, point defense, and supporting urban combat. The next-generation gunship is designed to provide ground forces a persistent direct-fire platform and is based on a highly modified MC-130J. Airframes are retrofitted after delivery with the modular Precision Strike Package, wing-mounted weapons, and gunship-specific systems. The initial aircraft was overstressed beyond repair when it departed controlled flight during a test sortie on April 21, 2015. Ghostrider deployed to combat for the first time in Afghanistan in June 2019. AC-130Js are upgraded and managed in common with the HC/MC-130J, and are receiving Block 8.1 avionics upgrades along with the baseline C-130J. SOF-specific enhancements are rapidly developed and integrated in response

Senior Airman Wyatt Stabler

to operational requirements. The aircraft's PSP weapons system, initially developed on the AC-130W, includes a dual mission management console, robust communications suite, two EO/IR sensors, advanced fire-control equipment, PGM delivery capability, and trainable cannons. Block 20 added a 105 mm gun, laser-guided SDB, side-facing pilot tactical HUD, and Large Aircraft Infrared Countermeasures (LAIRCM). Block 20+/30 improved gun accuracy, hardened GPS, and added Hellfire missile and Small Glide Munition as a result of lessons learned in operational testing. The first Block 30 was delivered for testing in 2019 and retrofit of the last five aircraft is slated for FY24. AFSOC recently reduced its planned buy from 37 to 30 aircraft, receiving the final aircraft at Cannon Nov. 2, 2022. The command scrapped plans to demonstrate an Airborne High Energy Laser (AHEL) weapon that could have added low probability of detection strike capability against electronics, and light vehicle targets this year. AFSOC is considering removing the 105 mm gun from equipped airframes to reduce aircrew as well as adding AESA radar to improve range, accuracy, and all-weather targeting. Ongoing upgrades include reengineering and modernizing of the 105 mm gun, radio frequency countermeasures (RFCM) to detect, locate, and respond to threats, defensive systems upgrades, and HF/VHF/UHF/SATCOM suite modernization. AFSOC plans to shift AC-130J formal training from Hurlburt to Kirtland, though implementation has been delayed.

Contractors: Lockheed Martin, Sierra Nevada Corp. (RFCM).
First Flight: Jan. 31, 2014.
Delivered: July 29, 2015-Nov. 2, 2022.
IOC: Sept. 30, 2017.
Production: 31.
Inventory: 30.
Operator: AFSOC; Planned: AETC.
Aircraft Location: Hurlburt Field, Fla.; Cannon AFB, N.M. Planned: Kirtland AFB, N.M.
Active Variants:
▪AC-130J Ghostrider Block 20+. Production standard gunship with additional 105 mm gun.
▪AC-130J Ghostrider Block 30. Production aircraft with post operational test upgrades.
Dimensions: Span 132.6 ft, length 97.7 ft, height 39.1 ft.
Weight: Max T-O 164,000 lb.
Power Plant: Four Rolls-Royce AE 2100D3 turboprops, each 4,700 shp.
Performance: Speed 416 mph, range 3,000 miles (farther with air refueling).
Ceiling: 28,000 ft.
Armament: Trainable 30 mm GAU-23/A cannon; 105 mm cannon; up to eight wing pylon-mounted GBU-39 SDB or AGM-114 Hellfire; aft-firing GBU-69B Small Glide Munition or AGM-176 Griffin (deployed from 10 Common Launch Tubes integrated into the aircraft's ramp/door).
Accommodation: Two pilots, CSO, WSO, sensor operator, loadmaster, and three gunners.

C-146 WOLFHOUND

Special operations mobility

Brief: The C-146 provides flexible, responsive airlift for special operations teams flying from austere and semi-prepared airfields worldwide. Wolfhound is based on the German-built Dornier 328 regional airliner and was purchased by USSOCOM, modified by Sierra Nevada Corp., and designated C-146. The aircraft are operated by AFSOC as a nonstandard fleet providing direct support to SOF teams worldwide. Modifications include ARC-231, PRC-117, and Iridium communications suite, troop/cargo-capable cabin, casualty evacuation capability, NVG compatibility, and STOL/austere operations enhancements. The aircraft first deployed in support of USAFRICOM in 2011. Recent upgrades include navigation enhancements to permit ops in GPS-degraded environments. C-146s notably participated in tactical landing operation on an Alaskan highway during Exercise Arctic Edge in May 2023, proving austere extreme cold weather capabilities within the NORTHCOM area of operations.

Tech. Sgt. Victor Caputo

Contractors: Fairchild-Dornier; Sierra Nevada Corp.
First Flight: December 1991 (Dornier 328).
Delivered: 2011-2017.
IOC: Circa 2011.
Production: 20 (converted).
Inventory: 20 (USSOCOM-owned).
Operator: AFSOC.
Aircraft Location: Cannon AFB, N.M.; Duke Field, Fla.
Active Variant:
▪C-146A. Pre-owned civil Dornier 328 modified for SOF airlift.
Dimensions: Span 69.6 ft, length 68.8 ft, height 23.8 ft.
Weight: Max T-O 30,843 lb.
Power Plant: Two Pratt & Whitney PW-119C turboprops, each 2,282 shp.
Performance: Speed 310 mph, range 1,500 miles (2,000 lb cargo).
Ceiling: 31,000 ft.
Accommodation: Two pilots, one loadmaster.
Load: 27 passengers; up to four litters; max cargo 6,000 lb.

Senior Airman Wyatt Stablerr

CV-22 OSPREY

Multimission lift

Brief: The CV-22 is a medium-lift, vertical takeoff and landing (VTOL) tilt-rotor, primarily used for clandestine long-range, all-weather penetration to insert, recover, and support SOF teams in hostile, denied, and politically sensitive areas. Derived from the V-22, which flew in prototype form on March 19, 1989, USAF CV-22Bs are equipped with a fully integrated precision TF/TA radar navigation, digital cockpit management system, FLIR, integrated NVG/HUD, digital map system, robust self-defense systems, and secure antijam comms. The CV-22 can conduct shipboard and austere forward operations and is USAF's sole high-speed vertical lift asset. It is also fully capable of operating in nuclear, biological, and chemical (NBC) warfare conditions. CV-22s first deployed to Africa in November 2008 and debuted in combat in Iraq in 2009. The Department of the Navy leads joint-service sustainment with USAF funds, while SOCOM foots special operations specific mods. The program is currently retrofitting CV-22s to Block 20 standard, in common with USMC's MV-22s. Mods include new cabin lighting, Color Helmet Mounted Displays, IR searchlight, lightweight ballistic armor, EW upgrades, avionics, self-defensive improvements, weapons integration, and ISR and situational awareness enhancements. USSOCOM is replacing the CV-22's legacy APQ-186 radar with the Silent Knight TF/TA radar (in common with the MC-130J) under a three-year contract awarded in FY21. A CV-22 test-flew the stealthier, low-altitude, night/all-weather navigation radar for the first time in 2020 and FY24 funds retrofit a second test aircraft to support full fielding. Priority modifications include improving the Osprey's rapid, long-distance self-deployment capabilities, modifying its nacelles to improve maintainability, improving engine IR suppression, and reducing dust/debris ingestion. Airborne Mission Networking (AbMN) will eventually give the aircrew a common air/ground picture and manage complex workloads (in common with the AC/MC-130 fleet), and TacNet will add lightweight Link-16. The Pentagon grounded all V-22 variants for three months following the crash off the coast of Japan which killed eight USAF personnel on Nov. 29, 2023. AFSOC previously grounded the fleet in 2022 due to engine-gearbox issues affecting controllability and cited material failure as the primary cause of the most recent crash. The joint service fleet returned to flight March 8, 2024, and AFSOC plans to take a phased approach to resuming full operations on top of previously implemented training and procedural changes. FY24 additionally funds gearbox, clutch, and proprotor safety improvements. USAF is considering using the CV-22 as an interim long-range CSAR platform to augment the HH-60W in the Pacific region.

Contractors: Boeing; Bell Helicopter Textron.
First Flight: February 2000 (CV-22).
Delivered: Sept. 19, 2005-May 22, 2021.
IOC: 2009.
Production: 54.
Inventory: 52.
Operator: AETC, AFSOC, ANG (associate).
Aircraft Location: Cannon AFB, N.M.; Hurlburt Field, Fla.; Kirtland AFB, N.M.; RAF Mildenhall, U.K.; Yokota AB, Japan.
Active Variant:
▪CV-22B. Air Force special operations variant of the V-22 Osprey.
Dimensions: Span 84.6 ft, length 57.3 ft, height 22.1 ft, rotor diameter 38 ft.
Weight: Max vertical T-O 52,870 lb; max rolling T-O 60,500 lb.
Power Plant: Two Rolls-Royce-Allison AE1107C turboshafts, each 6,200 shp.
Performance: Cruise speed 277 mph, combat radius 575 miles with one internal auxiliary fuel tank, self-deploys 2,100 miles with one in-flight refueling.
Ceiling: 25,000 ft.
Armament: One ramp-mounted .50-caliber machine gun.
Accommodation: Two pilots, two flight engineers.
Load: 24 troops seated, 32 troops on floor, or 10,000 lb cargo.

Tech. Sgt. Tony Harp/ANG

EC-130J COMMANDO SOLO/SUPER J

Psychological warfare/special operations airlift

Brief: The EC-130J is the Air Force's primary psychological warfare platform, providing Military Information Support Operations (MISO) and civil affairs broadcast. Roles include offensive counterinformation radio, television, and military communications broadcast, EA, and/or SOF mobility. Aircraft are also equipped with enhanced self-protection including Large Aircraft IR Countermeasures (LAIRCM) to counter MANPAD threats. Legacy Commando Solo variants conducted psychological operations in almost every U.S. contingency since 1980 and the EC-130J debuted in combat during Enduring Freedom in 2001. With transition to the J model, USAF added a new, secondary mission resulting in the "Super J" variant. Three heavily modified EC-130J Commando Solos serve as a standard broadcasting station for psychological warfare operations while the four "Super J's" perform secondary, low-cost EA in addition to special operations. USAF began modernizing the fleet with the new Multi-Mission Platform-Heavy (MMP-H) digital broadcast system in 2018. The system includes a roll-on internal payload as well as the external podded Communication EA Surveillance and Reconnaissance (CEASAR) and Long-Range Broadcast System (LRBS), giving both variants full MISO/EA capabilities. The software-defined digital system is capable of UHF/VHF and AM/FM radio, cellular, and television broadcast as well as advanced EA at a stand-off range of up to 175 miles. The MC-130J Commando II is replacing both Commando Solo and Super-J as part of AFSOC's multimission fleet consolidation. Commando Solo flew its final broadcast sortie on Sept. 16, 2022, and will be de-converted to

standard C-130J configuration. The four Super-J's will also revert to C-130J configuration for transfer to the ANG schoolhouse at Little Rock in FY24 with the 193rd SOW's transition to the MC-130J.

Contractors: Lockheed Martin; Raytheon; Sierra Nevada Corp. (Link 16/AbMN).
First Flight: November 2003.
Delivered: Oct. 17, 1999-2006.
IOC: 2004.
Production: Seven.
Inventory: Five.
Operator: ANG.
Aircraft Location: Harrisburg Arpt., Pa.
Active Variants:
▪EC-130J Commando Solo. Modified C-130J used for broadcast and psyops.
▪EC-130J Super J. Modified C-130J used for SOF mobility and psyops.
Dimensions: Span 132.6 ft, length 97.8 ft, height 38.8 ft.
Weight: Max T-O 164,000 lb.
Power Plant: Four Rolls-Royce-Allison AE2100D3 turboprops, each 4,637 shp.
Performance: Speed 335 mph cruise, range 2,645 miles (air refuelable).
Ceiling: 28,000 ft.
Accommodation: Two pilots, flight systems officer, mission systems officer, two loadmasters, five electronic communications systems (CS) operators.

Airman Erika Chapa/ANG

MC-12W LIBERTY

Tactical ISR

Brief: The MC-12W is a crewed, medium/low-altitude tactical ISR, SIGINT, and targeting platform based on the Beechcraft King Air 350ER (Extended Range). It was hastily developed under Project Liberty to meet an urgent operational need for crewed battlefield ISR and deployed to Iraq and Afghanistan in less than a year in 2009. MC-12W is capable of complete ISR collection, processing, analysis, and dissemination. The aircraft provides targeting data and tactical ISR direct to special operations ground forces. Specialized equipment includes FMV, laser designation, SIGINT, advanced BLOS connectivity, and advanced SATCOM. ACC passed 20 airframes to USSOCOM in 2015, and the Oklahoma ANG formed a dedicated SOF support mission with the remaining aircraft, deploying for the first time to Afghanistan in 2015. Pooling aircraft within SOCOM initially hampered the 137th SOW's effort to reach full capability. Coordination between AFSOC and the ANG eventually freed 13 aircraft, enabling the aircrew qualifications and availability needed to reach full operational capability in 2022. The fleet requires sensor modernization to meet COCOM requirements including SAR for ground-moving target tracking in poor visibility, and a second high-fidelity EO/IR/full-motion video sensor in addition to a modernized tactical data link. SOCOM is replacing both the MC-12W and U-28 with a fleet of 75 AT-802U Sky Warden light attack/armed reconnaissance aircraft. The MC-12 fleet will be reduced to nine aircraft in FY24 as the 137th SOW begins transition to the AT-802.

Contractors: Beechcraft; L3Harris (EO/IR sensors).
First Flight: April 28, 2009.
Delivered: April 2009-2012.
IOC: June 2009.
Production: 42.
Inventory: 13.
Operator: ANG.
Aircraft Location: Will Rogers ANGB, Okla.
Active Variant:
▪MC-12W. Modified Beechcraft King Air 350ER equipped for battlefield ISR and targeting.
Dimensions: Span 57.9 ft, length 46.7 ft, height 14.3 ft.
Weight: Max T-O 16,500 lb.
Power Plant: Two Pratt & Whitney Canada PT6A-60A turboprops, each 1,050 shp.
Performance: Speed 359 mph, range 2,760 miles.
Ceiling: 35,000 ft.
Accommodation: Two pilots, combat systems operator, tactical systems operator.

Senior Airman Natalie Fiorilli

MC-130J COMMANDO II

Special operations airlift/aerial refueling

Brief: The MC-130J is USAF's next-generation special operations tanker/mobility aircraft based on the C-130J. Designated Commando II (previously Combat Shadow II) in honor of the WWII C-47, the aircraft are tasked with covert day, night, and adverse weather infiltration, exfiltration, and resupply of special operations forces in hostile or denied territory. They also provide airdrop resupply, rotary wing aerial refueling, psyops, and rubber raiding craft deployment for littoral ingress/egress. Specialized mission systems include advanced, integrated defensive systems including LAIRCM, EO/IR targeting sensor, and an added CSO flight-deck station to manage refueling, tactical navigation, and comms. MC-130Js are equipped with wing-mounted external tanks and drogue refueling pods to provision tilt-rotor and rotary-winged aircraft as well as a boom-style receptacle to receive fuel in flight. The MC-130J shares system commonality with both the HC-130J rescue and AC-130J gunship versions, sharing overlapping upgrades and modernization with both types. The MC-130J was pulled out of baseline C-130J Block 7/8.1 software upgrades, which were then merged with comm/nav modernization in 2022. "Block 8.X" now comprises critical software for HF/VHF/UHF SATCOM upgrades, including secure, jam-resistant Mobile User Objective System (MUOS) BLOS and antijam NATO-interoperable SATURN UHF. Link 16 mods were delayed for funding and a planned switch to high-capacity, jam-resistant MIDS-JTRS. AFSOC is significantly enhancing the MC-130J's ability survive an operate in future high-end-threat environments under Capability Release 2, which includes Terrain-Following/ Terrain Avoidance (TF/TA) radar, Radio Frequency Countermeasure (RFCM), and Airborne Mission Networking (AbMN). Upgraded aircraft are redesignated Combat Talon III and will pave the way toward future open-architecture, highly integrated, and automated mission and defensive systems. Silent Knight TF/TA is housed in a second radome below the cockpit and enables the MC-130J to fully replace the MC-130H in the low-level nighttime/adverse weather penetration role. RFCM modernizes EW, improves detection, location, and response to emerging threats, while AbMN gives the aircrew a common air/ground picture to manage complex workloads. Modernization also includes the radar warning receivers, chaff, and flare systems. AFSOC delayed demonstrating a float-equipped MC-130J for nonrunway operations to 2026 but is pushing forward with prototyping, testing, and evaluation. The final legacy MC-130H retired on April 10, 2023, and AFSOC is also divesting the EC-130J to consolidate its C-130-based special mission fleet.

Contractors: Lockheed Martin (airframe); Boeing; Sierra Nevada Corp. (RFCM); Raytheon (TF/TA radar).
First Flight: April 20, 2011.
Delivered: Sept. 29, 2011-present.
IOC: Dec. 7, 2012.
Production: 64 (planned).
Inventory: 57.
Operator: AETC, AFSOC, ANG.
Aircraft Location: Cannon AFB, N.M.; Harrisburg Arpt., Pa.; Kadena AB, Japan; Kirtland AFB, N.M.; RAF Mildenhall, U.K. Planned: Davis-Monthan AFB, Ariz.
Active Variant:
▪MC-130J. Commando II. SOF support and aerial refueling tanker based on the C-130J.

▪MC-130J. Combat Talon III. MC-130J upgraded with TF/TA radar, RFCM, and AbMN.
Dimensions: Span 132.6 ft, length 97.8 ft, height 38.8 ft.
Weight: Max T-O 164,000 lb.
Power Plant: Four Rolls-Royce AE2100D3 turboprops, each 4,591 shp.
Performance: Speed 416 mph, range 3,000 miles (further with air refueling).
Fuel Capacity: 61,360 lb at 150-300 gpm (100 gpm dual, simultaneous refueling).
Ceiling: 28,000 ft with 42,000-lb payload.
Accommodation: Two pilots, CSO, two loadmasters. **Load:** 42,000 lb of cargo/personnel (see C-130J for configurations).

Senior Airman Ty Pilgrim

U-28A DRACO

Tactical ISR

Brief: The U-28A is a crewed, tactical ISR and targeting platform based on the Pilatus PC-12. The USSOCOM-owned aircraft are operated by AFSOC as a nonstandard fleet. Draco is employed worldwide in support of special operations ground forces, humanitarian efforts, and search and rescue. AFSOC first employed the aircraft during Enduring Freedom in Afghanistan as well as Iraqi Freedom. Mission equipment includes advanced radio/comms suite, IR suppression, missile, hostile fire and laser warning, EO sensors, remote SIGINT, and advanced navigation systems. The primary Multispectral Targeting System includes FMV, EO-IR, IR real-time video, and coaligned laser designator. Recent upgrades include U-28 EQ+ mods that add high-definition FMV to EQ/PC-12 configured aircraft for extended standoff "find, fix, finish" capabilities in support of counter-ISIS ops. Additional improvements include Enhanced Ground Proximity Warning to prevent flight-into-terrain accidents, updated BLOS SATCOM connectivity, and navigation mods to enable ops in GPS-degraded environments. Two aircraft were lost to fatal mishaps in Djibouti in 2012 and at Cannon in 2017, and FY21 funds were allocated to replace an airframe lost in an airfield attack at a forward location. AFSOC surpassed 600,000 flying hours including 328,000 in direct support of combat operations in early 2021. SOCOM announced it is procuring a fleet of 75 AT-802U (OA-1K) Sky Warden light attack/armed reconnaissance aircraft to replace the U-28A as well as the MC-12W. AFSOC plans to complete transition from the U-28 by 2029 & FY24 funds are limited to low-cost sensor, data link, electrical, and comms upgrades.

Contractor: Pilatus Aircraft Ltd.
First Flight: May 31, 1991 (PC-12).
Delivered: 2006-present.
IOC: June 2006.
Production: 36.
Inventory: 30 (U-28A); five (PC-12) (USSOCOM-owned).
Operator: AFSOC, AFRC.
Aircraft Location: Cannon AFB, N.M.; Hurlburt Field, Fla.
Active Variant:
▪U-28A. Special operations tactical ISR aircraft based on the Pilatus PC-12.
▪PC-12. Converted civilian Pilatus PC-12 equipped for SOF support/training.
Dimensions: Span 53.3 ft, length 47.3 ft, height 14 ft.
Weight: Max T-O 10,935 lb.
Power Plant: Single Pratt & Whitney PT6A-67B, 1,200 shp.
Performance: Speed 253 mph, range 1,725 miles.
Ceiling: 30,000 ft.
Accommodation: Two pilots, CSO, tactical systems officer; up to nine passengers or 3,000 lb cargo (configuration dependent).

William Lewis/USAF

COMMAND, CONTROL, COMMUNICATIONS/BATTLE MANAGEMENT/ISR AIRCRAFT

E-3 SENTRY

Battle management/early warning/C2

Brief: The E-3 Airborne Warning and Control System (AWACS) is a heavily modified Boeing 707-320B tasked with all-weather, air and maritime surveillance, command and control, battle management, target, threat, and emitter detection, classification, and tracking. The aircraft is capable of surveilling airspace in excess of a 250-mile radius from surface to stratosphere. AWACS coordinates theater air operations in direct subordination to joint/combined air and space operations centers. It can simultaneously conduct C2, BM, and target detection/tracking. E-3Bs were upgraded to Block 30/35 standards in 2001. Block 40/45 aircraft are redesignated E-3G. The upgrade is the most comprehensive enhancement to date and improves tracking/identification, system reliability, and life-cycle cost. Mods include open-architecture computing, operator workload reduction, new consoles, improved electronic support measures (ESM), and passive surveillance capability. DRAGON (Diminishing manufacturing sources Replacement of Avionics for Global Operations and Navigation) upgrades added a digital cockpit and next-generation CNS/GATM. The E-3 is increasingly unable to counter current and emerging threats and suffers less than a 60 percent mission capable rate due to obsolescence. USAF sharply curtailed E-3 modernization, retired 13 airframes in FY23, and awarded Boeing a $1.2 billion replacement contract to adapt the E-7A Wedgetail currently operated by Australia and several allies to meet USAF requirements. The service plans to procure up to 26 E-7As with two prototypes slated for testing starting in 2027. Future E-3 upgrades will be limited to sensors, comms, networking, and computing improvements to maintain capability until retirement. Development includes Communication Network Upgrade (CNU) to add high-speed jam-resistant Link 16, high-bandwidth internet to quickly prosecute time-sensitive targets, and AWACS Communications Integration Program (ACIP) which will include BLOS SATCOM/second-generation NATO UHF, and anti-jam GPS. USAF began retiring E-3s in FY23 and continued this year reducing the fleet to 15 aircraft to improve sustainment through phaseout targeted for FY29.

Contractors: Boeing, Northrop Grumman (radar); Lockheed Martin (computer); Collins Aerospace (DRAGON cockpit upgrade).
First Flight: Oct. 31, 1975 (full mission equipment).
Delivered: March 1977-1984.
IOC: 1977; July 28, 2014 (Block 40/45).
Production: 31.
Inventory: One (E-3B); 14 (E-3G).
Operator: ACC, AFRC (associate).
Aircraft Location: JB Elmendorf-Richardson, Alaska; Kadena AB, Japan; Tinker AFB, Okla.
Active Variants:
▪E-3B. Block 30/35 upgraded aircraft.
▪E-3G. Block 40/45 upgraded aircraft.
Dimensions: Span 145.8 ft, length 152.9 ft, height 41.8 ft.
Weight: Max T-O 335,000 lb.
Power Plant: Four Pratt & Whitney TF33-PW-100A turbofans, each 21,000 lb thrust.
Performance: Speed 360 mph, range 5,000+ miles (air refuelable).
Ceiling: Above 35,000 ft.
Accommodation: Two pilots, navigator, flight engineer, 13-19 mission specialists.

Justin Oakes/USAF

E-4 NATIONAL AIRBORNE OPERATIONS CENTER

Nuclear command and control

Brief: The E-4B is a highly survivable flying C3 center enabling national leaders to direct nuclear and conventional forces, execute emergency war orders, and coordinate civil response actions in support of the National Military Command System (NMCS). The early E-4A first flew on June 13, 1973, reaching IOC in December 1974. The fleet was fully upgraded to E-4B standards in 1985. It is hardened against the effects of nuclear detonations, including electromagnetic pulse (EMP). Comms and data processing capabilities include EHF Milstar SATCOM, six-channel International Maritime Satellite, and a tri-band radome that houses the SHF communications antenna. All aircraft underwent Block 1 upgrades, enhancing electronic and communications infrastructure with commercial off-the-shelf (COTS) systems. Ongoing upgrades include replacing Milstar data links with AEHF-compatible FAB-T, replacing the VLF/LF transmitter, and replacing legacy SHF with Survivable Super High Frequency (SSHF), enabling uninterrupted, jam-resistant nuclear C2 fleetwide. E-4B airframes are viable to approximately 2033, but phaseout of commercial 747-200s hampers continued sustainment. USAF plans to replace the E-4B with the Survivable Airborne Operations Center (SAOC) and issued a request to industry for development of up to four, potentially used, but similarly sized commercial-derivative airframes in December 2020. Changes to acquisition strategy delayed solicitations but the service aims to award an engineering development contract in early FY24, fielding an initial capability no later than 2032.

Contractors: Boeing; Raytheon (FAB-T); L3Harris (SSHF); Boeing/Collins Aerospace (Low-Frequency Transmit System).
First Flight: June 10, 1978 (E-4B).
Delivered: December 1974-1985.
IOC: January 1980 (E-4B).
Production: Four.
Inventory: Four.
Operator: AFGSC.
Aircraft Location: Offutt AFB, Neb.
Active Variant:
▪E-4B. Modified Boeing 747-200 equipped as a NAOC.
Dimensions: Span 195.7 ft, length 231.3 ft, height 63.4 ft.
Weight: Max T-O 800,000 lb.
Power Plant: Four General Electric CF6-50E2 turbofans, each 52,500 lb thrust.
Performance: Speed 602 mph, range 7,130 miles, 12-hr normal endurance, 72-hr with air refueling.
Ceiling: Above 30,000 ft.
Accommodation: Two pilots, navigator, flight engineer, up to 110 battle staff/mission crew.

E-8 JSTARS

Command and control/ISR

Brief: E-8C was a ground moving target indication (GMTI), airborne battlefield management/command and control platform. Its primary mission was providing theater commanders with ground surveillance data to support tactical operations. E-8 evolved from the Army/Air Force Joint Surveillance Target Attack Radar System (JSTARS) program. The aircraft made its first radar-equipped test flight in December 1988, and the first two aircraft deployed for Desert Storm while the system was still under development. Early airframes were eventually retrofitted to Block 20 production standards featuring more powerful computers, an internet protocol local area network, and BLOS connectivity. JSTARS' side-looking phased array radar could locate, classify, and track vehicles and ships at distances exceeding 124 miles, and more recent refinements added human-target tracking. Target data was transmitted via data link to ground stations or other aircraft. USAF dropped plans to replace JSTARS with a modern aircraft, pursuing the Advanced Battle Management System (ABMS) instead. ABMS notionally disaggregated JSTARS functions among several platforms but was drastically cut in FY21, refocusing on technology development. USAF plans to shift to a space-based approach to GMTI to overcome anti-access/area denial threats. Congress approved divestiture of JSTARS starting with four airframes in FY22. The final eight aircraft were retired in FY23 and JSTARS flew its final operational sortie in September 2023 supporting USAFE ahead of its final flight Nov. 4, 2023. E-8C serial number 00-2000 was transferred to the Museum of Aviation in Warner Robins, Ga., for preservation and display.

irman 1st Class Jared Lovett

Contractors: Northrop Grumman; Raytheon.
First Flight: April 1, 1988.
Delivered: March 22, 1996-March 23, 2005.
IOC: Dec. 18, 1997.
Production: 18.
Inventory: zero (E-8C); zero (TE-8).
Operator: ANG.
Aircraft Location: Robins AFB, Ga.
Active Variants:
▪E-8C. Block 20 upgraded JSTARS platform based on the Boeing 707-300.
▪TE-8A. Crew training aircraft based on the E-8.
Dimensions: Span 145.8 ft, length 152.9 ft, height 42.5 ft.
Weight: Max T-O 336,000 lb.
Power Plant: Four Pratt & Whitney TF33-102C turbojets, each 19,200 lb thrust.
Performance: Speed 584 mph (optimal orbit), range 11 hr normal endurance (longer with air refueling).
Ceiling: 42,000 ft.
Accommodation: Two pilots, navigator, flight engineer, 15 Air Force/three Army mission crew (mission dependent).

Staff Sgt. Bennie Davis III

E-9A WIDGET

Range control

Brief: The E-9A is a modified DHC-8 commuter aircraft that provides air-to-air telemetry support for weapons testing, target drone operations, and range clearance. The aircraft supports operations at the Eglin Test and Training Range over the Gulf of Mexico and provides telemetry for weapons system evaluation at Holloman and the Utah Test and Training Range. Mission modifications include AN/APS-143(V-1) airborne sea surveillance radar, UHF telemetry, and signal relay systems. The E-9 is able to track flying and surface targets. It can detect small watercraft at ranges up to 25 miles. The fleet operates in concert with three drone recovery vessels and two patrol boats to clear waterways and airspace of civil traffic before live-fire testing or hazardous military activities commence. It also provides tracking and assistance with recovering targets. The aircraft can remotely initiate destruction of damaged or malfunctioning aerial target drones.

Contractors: Bombardier (formerly De Havilland Canada); Sierra Nevada Corp. (conversion).

First Flight: June 1983 (DHC-8).
Delivered: 1988.
IOC: June 1988.
Production: Two.
Inventory: Two.
Operator: ACC.
Aircraft Location: Tyndall AFB, Fla.
Active Variant:
▪E-9A. Military surveillance version of the DHC-8 commuter airliner.
Dimensions: Span 85 ft, length 73 ft, height 24.5 ft.
Weight: Max T-O 34,500 lb.
Power Plant: Two Pratt & Whitney PW-120A turboprop engines, each 1,800 shp.
Performance: Speed 280 mph, range 1,000 miles.
Ceiling: 30,000 ft.
Accommodation: Two pilots, two mission operators.

Senior Airman Ashley Richards

E-11A BATTLEFIELD AIRBORNE COMMUNICATIONS NODE

Communications relay

Brief: The E-11 is a modified Bombardier Global 6000/BD-700-1A10 or Global 6500 business jet equipped with specialized communications relay equipment to translate between tactical comm and data links. It provides joint range extension, BLOS C2, and internet protocol-based data transfer between dissimilar systems. E-11A was fielded to meet an urgent operational need for BLOS air-to-ground relay and enables troops to overcome comm limitations in rugged terrain. The system entered combat in Afghanistan in 2008, and a single E-11 crashed near Kandahar Airfield on Jan. 27, 2020, killing both aircrew members. The fleet was designated E-11A after USAF purchased the first (previously leased) aircraft in 2011. The Battlefield Airborne Communications Node (BACN) payload was initially integrated on a mixed fleet of manned E-11As and unmanned EQ-4B Global Hawks. ACC retired the EQ-4B in July 2021 and began procuring six additional airframes to expand the E-11 fleet to nine aircraft. USAF has procured a single airframe each year from FY21 to complete the fleet by 2026. The first E-11 based on the newer Global 6500 was delivered to 430th Expeditionary Electronic Combat Squadron at Prince Sultan AB, Saudi Arabia, Dec. 16, 2022. The fifth and sixth airframes were delivered in FY23 with the seventh following in early FY24. FY24 funds will purchase and modify one E-11. Northrop Grumman was awarded a $3.6 billion five-year support contract in early 2021, which also includes funding for research, development and testing, as well as the integration of future payloads. USAF plans to upgrade the E-11 with a High-Capacity Backbone (HCB) to support advanced battle management connectivity. Ongoing upgrades include adding military GPS to operate in higher-end threat environments, advanced navigation, along with flight safety, reliability, performance, and self-defensive improvements. ACC and the Georgia ANG at Robins transitioned from JSTARS to operating BACN in 2023. Robins received its first E-11A on April 24, 2023, and plans reach full operational capability by 2027.

Contractors: Bombardier; Northrop Grumman (integration and support).
First Flight: August 2007.
Delivered: December 2008-present.
IOC: Circa 2011.
Production: Five (nine planned).
Inventory: Five.
Operator: ACC, ANG (associate).
Aircraft Location: Al Dhafra AB, UAE; Prince Sultan AB, Saudi Arabia; Robins AFB, Ga.
Active Variant:
▪E-11A. Modified Bombardier Global 6000, BD-700, or Global 6500 equipped with the BACN payload.
Dimensions: Span 94 ft, length 99 ft 5 in, height 25 ft 6 in.
Weight: Max T-O 99,500 lb.
Power Plant: Two Rolls-Royce BR710A2-20 turbofans, each 14,750 lb thrust (Global 6000/BD-700); two BR700-710D5-21 turbofans, each 15,125 lb thrust (Global 6500).
Performance: Speed Mach 0.88, range 6,900 miles (Global 6000); speed Mach 0.9, range, 7,595 miles (Global 6500).
Ceiling: 51,000 ft.
Accommodation: Two pilots.

L3Harris

EA-37B COMPASS CALL (PREVIOUSLY EC-37B)

Electronic warfare/electronic attack

Brief: The EA-37B is a next-generation, tactical jamming platform tasked with disruption of enemy C3, radar, and navigation. It will also offer offensive counterinformation, EA, and SEAD support. The aircraft is based on the ultra-long-range Gulfstream G550 business aircraft and adapted from the Navy's special mission configuration. USAF awarded L3 Technologies a contract on Sept. 7, 2017, to replace the EC-130H in the tactical EA role and transport its "Compass Call" systems to a more modern aircraft. The program, originally dubbed "EC-X" is "rehosting" upgraded EC-130H mission equipment directly to the EA-37 with nearly 70 percent remaining unchanged. Redesignated from EC-37B to EA-37B in November 2023, the aircraft is faster, more economical, capable of higher altitude operations, and is more survivable than the EC-130H. Upgrades will allow it to conduct standoff jamming/EA from greater distances for attacks against A2/AD targets. The first aircraft was purchased in FY17, followed by a second in FY18. Congress accelerated the program by funding two airframes in FY19, and USAF plans to procure and modify one aircraft a year through FY25. The first five aircraft will receive the EC-130H's upgraded Baseline 3 package, including Advanced Radar Countermeasure System (ARCS) and other significant capability enhancements. The EA-37 will not receive comparable low-band capability until Baseline 4, which will debut on the sixth airframe. Baseline 4 will add System-Wide Open Reconfigurable Dynamic Architecture (SWORD-A) to enable rapid future upgrades. USAF postponed buying a seventh airframe in FY22 to focus on Baseline 4 development, installation of equipment on the sixth airframe, and implementing technical changes. Congress approved the service's FY23 unfunded request for four aircraft, restoring the planned fleet to 10. BAE Systems and L3 Harris delivered the first EA-37B to begin combined Baseline 3 development and operational testing Sept. 12, 2023, paving the way for initial crew training in 2024. The existing fleet will begin upgrade to Baseline 4 starting in 2026, coinciding with planned IOC.

Contractors: Gulfstream Aerospace (airframe); BAE Systems; L3 Harris (mission equipment).
First Flight: Aug. 25, 2021.
Delivered: Sept. 12, 2023-present.
IOC: 2026 (planned).
Production: 10 (planned).
Inventory: One.
Operator: ACC (planned).
Aircraft Location: Edwards AFB, Calif. Planned: Davis-Monthan AFB, Ariz.
Active Variant:
▪EA-37B. Military Electronic Attack special-mission variant of the Gulfstream G550.
Dimensions: Span 93.5 ft, length 96.4 ft, height 25.8 ft.
Weight: Max T-O 91,000 lb.
Power Plant: Two BR710C4-11 turbofans, each 15,385 lb thrust.
Performance: Speed 767 mph, range 5,074 miles.
Ceiling: 45,000 ft.
Accommodation: Two pilots; mission crew: two EWOs, mission crew supervisor (cryptologic), two cryptologic linguists, acquisition operator, and airborne maintenance technician.

Master Sgt. Wolfram Stumpf

EC-130H COMPASS CALL

Electronic warfare/electronic attack

Brief: The EC-130H is a modified C-130H designed to disrupt enemy C3 and limit adversary coordination and force management. Tasks include tactical jamming/disruption of communications, radar, and navigation, offensive counterinformation, EA, and SEAD support. The fleet has been deployed near-constantly since the beginning of combat operations in Afghanistan in 2001. The aircraft was designed to be easily updated and modified. All aircraft have been retrofitted to Block 35 standards and are air refuelable. Mission equipment upgrades occur approximately every three years to ensure continued protection and effectiveness against evolving threats. Baseline 2 mods are ongoing, and the Baseline 3 configuration, including the Advanced Radar Countermeasure System (ARCS) and other significant capability enhancements, is slated for fielding in 2023. Baseline 4 will be fielded on the next-generation EC-37B in 2026, and some 70 percent of the EC-130H's mission equipment will be directly cross-decked to its successor platform. Funding delays required extending the EC-130H with center wing box replacement/structural mods (in common with the C-130H fleet) and upgrades include digital glass cockpits, Mode 5 IFF/airspace compliant CNS/ATM, and color weather radar. EC-130H airframes have reached the limit of their planned service life and the first aircraft retired to the boneyard at Davis-Monthan on Aug. 31, 2021. ACC plans to divest two airframes in FY24, reducing the fleet to five and freeing mission equipment for use on the EA-37B.

Contractors: Lockheed Martin; BAE Systems (mission equipment); L3Harris (integration and sustainment).
First Flight: 1981.
Delivered: March 19, 1982-unknown.
IOC: 1983; Block 35 from 2011.
Production: (Converted).
Inventory: Six (EC-130H).
Operator: ACC.
Aircraft Location: Davis-Monthan AFB, Ariz.
Active Variant:
▪EC-130H. Electronic attack variant of the C-130H.
Dimensions: Span 132.6 ft, length 99 ft, height 38 ft.
Weight: Max T-O 155,000 lb.
Power Plant: Four Allison T56-A-15 turboprops, each 4,910 shp.
Performance: Speed 300 mph at 20,000 ft, unrefueled range 2,295 miles, seven-hour normal endurance (air refuelable).
Ceiling: 25,000 ft.
Accommodation: Two pilots, navigator, flight engineer; mission crew: two EWOs; mission crew supervisor (cryptologic), four cryptologic linguists, acquisition operator, and airborne maintenance technician.

P-9A PALE ALE

Maritime patrol, detection, and monitoring

Brief: The P-9A is a heavily modified Bombardier Q202 (DHC-8) commuter aircraft equipped for maritime patrol as well as advanced detection and monitoring (D&M) missions. The three-aircraft fleet is owned by ACC and primarily tasked to USSOUTHCOM to detect and monitor narcotic and illicit trafficking from South and Central America, as well as the Caribbean and Eastern Pacific. The P-9A is a government-owned, contractor-operated (GOCO) fleet and conducts more than 7,200 flying hours per year, primarily based from the Navy's counterdrug cooperative security location in Comalapa, El Salvador. Aircraft also conduct forward-deployed operations from airfields throughout the Caribbean as well as South and Central America, lasting approximately 730 days.

Contractors: Bombardier (formerly De Havilland Canada); Sierra Nevada Corp. (operator).

Tomas Acevedos/Vlimages

First Flight: N/A.
Delivered: N/A.
IOC: 2013.
Production: Four.
Inventory: Four (Contractor operated).
Operator: ACC.
Aircraft Location: Comalapa, El Salvador; forward operating locations across USSOUTHCOM.
Active Variant:
▪P-9A. Maritime patrol, detection and monitoring aircraft converted from the Bombardier Q202 commuter airliner.
Dimensions: Span 85 ft, length 73 ft, height 24.6 ft.
Weight: Max T-O 37,300 lb.
Power Plant: Two Pratt & Whitney PW-123C/D turboprop engines, each 2,380 shp.
Performance: Speed 333 mph, range 2,300 miles.
Ceiling: 25,000 ft.
Accommodation: Two pilots, two sensor operators.

Senior Airman Jacob Skovo

RC-135S COBRA BALL

Electronic reconnaissance

Brief: The RC-135S gathers measurement and signature intelligence (MASINT) on missile-associated signatures and tracks during boost and reentry. Cobra Ball superseded Rivet Ball and Rivet Amber, receiving the current designation on Oct. 24, 1969, and collects both optical and electronic data on ballistic missile activity. An aircraft was lost in a crash during inclement weather at Shemya AFB, Alaska, on March 15, 1981. The variant's specialized equipment includes the long-range Medium Wave Infrared Array (MIRA) EO/IR sensor suite, all-weather tracking radar, and an advanced communications suite. Reconnaissance data is used to assess missile threats, evaluate missile performance, characterize adversary missiles, and analyze weapons testing and technology. Data also supports treaty verification and theater ballistic missile nonproliferation. It can deploy anywhere in the world in 24 hours and provide on-scene EO reconnaissance. Continuous baseline upgrades are now projected to keep the fleet viable through 2050, and flexible funding permits rapid, variant-specific mods in response to emerging/evolving threats. Aircraft are currently undergoing integration of Baseline 7 mods (similar to Rivet Joint Baseline 12). Baseline 7 includes integrating Rivet Joint's COMINT suite, digital electromagnetic signature direction finding, digital search, and SATCOM-aided target discrimination. Baseline 14 is finishing development and will include SIGINT direction finding and steerable K-

band collection antennas, digital search and recording, improved signal identification, SATCOM target identification, and Rivet Joint Baseline 14 COMINT suite integration.

Contractors: Boeing (airframe); L3Harris, Textron Systems (mission systems).
First Flight: Circa 1969.
Delivered: Jan. 11, 1970-November 2000 (redelivery as RC-135S).
IOC: March 1972 (Cobra Ball II).
Production: Four converted.
Inventory: Three.
Operator: ACC.
Aircraft Location: Offutt AFB, Neb.
Active Variant:
▪RC-135S Cobra Ball. Modified C-135 equipped for MASINT/treaty verification.
Dimensions: Span 131 ft, length 135 ft, height 42 ft.
Weight: Max T-O 297,000 lb.
Power Plant: Four CFM International F108-CF-201 turbofans, each 21,600 lb thrust.
Performance: Speed 517+ mph, range 3,900 miles (farther with air refueling).
Ceiling: 45,000 ft.
Accommodation: Two pilots, navigator, three EWOs, two airborne systems engineers, two airborne mission specialists.

SuneKuma

RC-135U COMBAT SENT

Electronic reconnaissance

Brief: The RC-135U is tasked with strategic reconnaissance and technical intelligence (TECHINT) gathering on radar/emitter systems. Three Combat Sent aircraft were converted from RC-135Cs in 1970-71 to fill a critical need for data collection on adversary radar threats and defenses. Combat Sent's distinctive chin and wingtip antenna arrays, large cheek fairings, and extended tail contain specialized sensor suites to collect data and analyze airborne, land, and naval radar/emitter systems. Each airframe incorporates a different, tailored sensor suite, and the data gathered is critical to the effective design and programming of RWR (radar warning receivers), jammers, decoys, antiradiation missiles, and threat simulators. Combat Sent additionally enables strategic analysis for National Command Authorities and combatant forces. The aircraft utilizes radar/solid-state doppler, INS, celestial, and GPS for navigation, and is capable of both operator, automated, and blended signal gathering and analysis. Continuous baseline upgrades are now projected to keep the fleet viable through 2050, and flexible funding permits rapid variant-specific mods in response to emerging/evolving threats. FY24 focuses on sustaining and completing enhancements to Baseline 6 (similar to Rivet Joint Baseline 12). Baseline 6 includes wideband SATCOM reachback, integrating Rivet Joint's Baseline 13 COMINT suite, improving operator interface, enhancing antennas and processors, and providing capability upgrades for dense signal environments.

Contractors: Boeing (airframe); L3Harris, Textron (mission systems).
First Flight: N/A.
Delivered: May-December 1971 (RC-135U).
IOC: 1971.
Production: Three converted.
Inventory: Two.
Operator: ACC.
Aircraft Location: Offutt AFB, Neb.; forward operating locations: Al Udeid AB, Qatar; NSF Diego Garcia, U.K.; Eielson AFB, Alaska; Kadena AB, Japan; RAF Mildenhall, U.K.; NSA Souda Bay, Greece.
Active Variant:
▪RC-135U Combat Sent. Modified C-135 equipped for radar/emitter analysis.
Dimensions: Span 135 ft, length 140 ft, height 42 ft.
Weight: Max T-O 299,000 lb.
Power Plant: Four CFM International F108-CF-201 turbofans, each 21,600 lb thrust.
Performance: Cruise speed 517 mph, range 4,140 miles, 8-hr normal endurance, 24-hr crew endurance (farther with air refueling).
Ceiling: 42,000 ft.
Accommodation: Two pilots, one navigator, two airborne systems engineers; mission crew: 10 EW officers, six or more electronic, technical, mission-area specialists.

Josh Plueger/USAF

RC-135V/W RIVET JOINT

Electronic reconnaissance

Brief: The RC-135V/W is tasked with real-time electronic and signals intelligence gathering, analysis, and dissemination in support of theater and strategic-level commanders. The extensively modified C-135s detect, identify, and geolocate signals throughout the electromagnetic spectrum. Rivet Joint is mostly used to exploit electronic battlefield intelligence and deliver near-real-time ISR information to tactical forces, combatant commanders, and National Command Authorities. The British Royal Air Force also operates three RC-135W Airseeker aircraft, which are co-crewed by USAF/RAF personnel under an agreement through at least 2035. Onboard capabilities encompass rapid search, detection, measurement, identification, demodulation, geolocation, and fusion of data from potentially thousands of electronic emitters. Continuous baseline upgrades keep the fleet viable and drive standards for Combat Sent/Cobra Ball. Flexible funds permit rapid, variant-specific mods in response to emerging/evolving threats. The current Baseline 11/12 modernized cockpit and operator interface, added new direction finding COMINT, precision ELINT/SIGINT, improved collection in dense-signal environments, enhanced near-real-time data dissemination, and integrated RC-135 with the Distributed Common Ground Station (DCGS). USAF is currently upgrading the recently fielded Baseline 13 aircraft and launching future Baseline 14 integration. Baseline 13 included signal search and geolocation improvements, wideband signal recording, jam-resistant search, moving emitter target location and tracking, and wideband datalink improvement. Baseline 14 will incorporate signal recording and spectral receiver enhancements, modernized navigation, surveillance, and air traffic management (CNS/ATM), advanced Mode 5 IFF, and upgraded autopilot. Development includes Baseline 15, automated search and detection, employment of artificial intelligence, and collaboration to speed collection, analysis, and distribution. USAF recently tested an Electromagnetic Warfare Integrated Reprogramming (EWIR) concept to enable the RC-135 to quickly respond to evolving adversary tactics in a high-threat environment. Rivet Joint conducted multiple Agile Combat Employment exercises in 2023 to rapidly operate from dispersed locations and stood up a new forward operating location at Elmendorf to meet increased Pacific taskings. AFMC retired the fleet's sole legacy-engined NC-135W systems test bed Sept. 5, 2023, backfilling the aircraft's role with a single TC-135W.

Contractors: Boeing (airframe); L3Harris (mission systems).
First Flight: N/A.
Delivered: Circa 1973-99 (continuous equipment updates).
IOC: Circa 1973.
Production: Converted.
Inventory: Eight (RC-135V); nine (RC-135W); three (TC-135W).
Operator: ACC, AFMC.
Aircraft Location: Offutt AFB, Neb.; forward operating locations: Elmendorf AFB, Alaska; Kadena AB, Japan; RAF Mildenhall, U.K.; RAF Waddington, U.K. (USAF co-manned).
Active Variants:
▪RC-135V/W Rivet Joint. Standoff airborne SIGINT variant of the C-135.
▪TC-135W. Training version of the operational aircraft.
Dimensions: Span 131 ft, length 135 ft, height 42 ft.
Weight: Max T-O 297,000 lb.
Power Plant: Four CFM International F108-CF-201 turbofans, each 21,600 lb thrust.
Performance: Speed 500+mph, range 3,900 miles (farther with air refueling).
Ceiling: 50,000 ft.
Accommodation: Three pilots, two navigators, three EWO, 14 intelligence operators, four airborne maintenance technicians (six additional, if required).

Nicholas Harnack/USAF

U-2S DRAGON LADY

High-altitude reconnaissance

Brief: U-2S is the Air Force's only manned, strategic, high-altitude, long-endurance ISR platform and is capable of SIGINT, IMINT, and MASINT collection. The aircraft's modular payload systems allow it to carry a wide variety of advanced optical, multispectral, EO/IR, SAR, SIGINT, and other payloads simultaneously. Its open system architecture also permits rapid fielding of new sensors to counter emerging threats and requirements. The original U-2A first flew on Aug. 4, 1955. The type was further developed into the larger, more capable U-2R, which first took flight on Aug. 28, 1967, and was delivered between 1967 and 1968. Current U-2s date to the 1980s when U-2R production was reopened under the designation TR-1 (later returned to U-2R designation in 1992). The TR-1A first flew on Aug. 1, 1981, and was re-engined and modernized starting in 1994, emerging as the U-2S. Current Block 20 U-2S feature glass cockpits, digital autopilot, modernized EW systems, and updated data links. Its major sensors are the ASARS-2A SAR, modernized SYERS-2C multispectral EO/IR imagery system, and enhanced Airborne Signals Intelligence Payload (ASIP). The aircraft is also capable of mounting the legacy optical bar camera for broad-area synoptic imagery, though operations from Beale concluded in 2022. Modification and upgrades are focused on sustaining U-2 capability through its currently planned retirement, while meeting current and emerging requirements. Current development and mods support Block 20.1 upgrades. Major efforts include ASARS-2B/C integration, avionics and navigation refresh, (Link-16/IFDL, MADL) modernization, next-generation SIGINT, and quick-response capabilities to meet emergent ISR requirements. ASARS-2B/C significantly improves the U-2's high-altitude, deep-look radar ground mapping, moving target, and maritime capabilities and moves to an open, easily upgradable architecture. ASARS-2B/C will continue flight-testing through expected IOC with two sensors in 2024. The 2B/C will replace the current 2A and its open architecture makes it transferable to future platforms. A U-2 upgraded to Avionics Technical Refresh (ATR) standards flew for the first time in September 2023, adding open-architecture systems, enhanced C2 networking, and pilot workload management features. Development and modification efforts include ATR Phase 2, SIGINT and IR sensor technical refresh, stellar navigation for GPS-denied operations, SIGINT modernization, quick-change modular mission systems, unmanned-system interoperability, and a helmet and pressure suit refresh. The program continues to prioritize experimental sensors, systems, and software to meet emerging threats, and development of networked, next-generation BM/C2. Two U-2s notably intercepted and photographed a Chinese ISR balloon over the central U.S. on Feb. 3, 2023. ACC retired the first TU-2S and two U-2S in early 2024, and plans to retire the entire fleet by 2026.

Contractors: Lockheed Martin, Northrop Grumman (ASIP); Raytheon (ASARS); UTC Aerospace (SYERS/Optical Bar Camera).
First Flight: October 1994 (U-2S).
Delivered: September 1981-October 1989 (TR-1/U-2R).
IOC: Circa 1981 (U-2R).
Production: 35 (T/U-2S).
Inventory: 27 (U-2); four (TU-2).
Operator: ACC.
Aircraft Location: Beale AFB, Calif.; forward operating locations: Al Dhafra AB, U.A.E; Osan AB, South Korea; RAF Akrotiri, Cyprus; RAF Fairford, U.K.
Active Variants:
▪U-2S. Current variant of the U-2/TR-1.
▪TU-2S. A two-seat trainer aircraft originally designated U-2ST.
Dimensions: Span 105 ft, length 63 ft, height 16 ft.
Weight: Max T-O 40,000 lb.
Power Plant: GE Aviation F118-GE-101A turbofan, 17,000 lb thrust.
Performance: Speed 410 mph, range 7,000+ miles.
Ceiling: Above 70,000 ft.
Accommodation: Pilot (U-2S); two pilots (TU-2S) on RQ201 zero/zero ejection seats.

USAF

WC-130J

Weather reconnaissance

Brief: The WC-130J "Weatherbird" is a modularly configurable C-130J equipped with specialized systems to penetrate tropical and winter storms, capture meteorological data, and aid severe weather forecasting. Early WC-130Bs entered service in 1959, followed by the WC-130E in 1962, and WC-130H in 1964. The WC-130J began replacing legacy variants in 1999, though several H models remained in service with the Puerto Rico ANG until a fatal crash resulted in the fleet's retirement in 2019. All WC-130Js are operated by AFRC's 53rd Weather Reconnaissance Squadron "Hurricane Hunters" at Keesler. Mission equipment includes a pod-mounted Stepped-Frequency Microwave Radiometer (SFMR) for monitoring surface winds and precipitation rates, parachute-deployed GPS dropsondes to gather vertical atmospheric profiles, and palletized operator stations/equipment running specialized software. WC-130Js are optionally equipped with two external wing tanks, as well as an internal auxiliary fuel tank to increase range and endurance. Crews include an added aerial weather reconnaissance officer/flight director and weather system specialist/loadmaster. Aircraft are capable of penetrating tropical cyclones from up to 10,000 ft to as low as 500 ft. The fleet primarily monitors oceanic weather over the Atlantic, Central Pacific, Caribbean, and Gulf of Mexico. Airframes are modernized alongside the baseline C-130J fleet, including Block 8.1 upgrades, and enhanced service-life center wing sections. WC-130Js recently tested a new SATCOM that would enable continuous real-time streaming of radar and storm data from the aircraft to forecasters on the ground. The modular X-band antenna tested during the 2021 hurricane season was mounted in a dome fairing in place of the flight deck escape hatch. AFRC is returning the fleet to the more weather-resistant and durable gloss-gray paint scheme worn by WC-130s prior to 2007. WC-130Js flew more than 990 flight hours collecting data on 10 named storms in the Atlantic and Caribbean and six in the Pacific during the 2023 storm season, making it the unit's fourth busiest.

Contractor: Lockheed Martin.
First Flight: April 5, 1996 (C-130J).
Delivered: Sept. 30, 1999-September 2005.
IOC: October 2006.
Production: 10.
Inventory: 10.
Operator: AFRC.
Aircraft Location: Keesler AFB, Miss.
Active Variant:
▪WC-130J. Weather reconnaissance version of the C-130J.
Dimensions: Span 132.6 ft, length 97.8 ft, height 38.8 ft.
Weight: Max T-O 155,000 lb; max payload 42,000 lb.
Power Plant: Four Rolls-Royce AE2100D3 turboprops, each 4,700 shp.
Performance: Speed 417 mph; range with 35,000 lb payload 1,841 miles (3,000+ miles with external/auxiliary tanks).
Ceiling: With max payload, 26,000 ft.
Accommodation: Two pilots, aerial reconnaissance weather officer, loadmaster/dropsonde operator.
Load: palletized weather systems.

Tech. Sgt. Anthony Hetlage

WC-135 CONSTANT PHOENIX

Air sampling and collection

Brief: : WC-135's mission is nuclear test monitoring, airborne radiological sampling, and arms control treaty verification. The KC-135R-based aircraft is equipped with air sampling and collection equipment and primarily support monitoring under the 1963 Limited Nuclear Test Ban Treaty. Air sampling WB-29s detected debris from the Soviet Union's first atomic test in 1949, and subsequent aircraft have monitored recent weapons tests in North Korea, as well as the Chernobyl and Fukushima nuclear disasters. The original fleet of modified C-135Bs was delivered between 1965 and 1996 and was fully retired in 2022 with delivery of the first modernized WC-135R. The WC-135R features modernized glass cockpits and uprated CFM-56 turbofans (common with the KC-135 fleet) which significantly improves the aircraft's range, service ceiling, performance, and maintainability. Constant Phoenix' sampling and collection suite allows mission crew to detect radioactive "clouds" in real time. The collection system uses external flow-through devices to collect particles on filter paper for later analysis. The podded particulate sampler/Radiation Monitoring and Analysis System (RMAS) detects radiation contact, and the Directional Gamma Sensor System (DGSS) guides the crew toward the plume for collection. The Whole Air Collection System (WACS) captures and stores radioactive samples from the aircraft's bleed-air system. An integrated control system permits real-time mission system interface and monitors internal and external radiation levels for safety and analysis. L3 Technologies completed retrofit and redelivery of the first modernized WC-135R Constant Phoenix on July 11, 2022, followed by a second aircraft on May 11, 2023. The third and final aircraft was delivered to Offutt on Dec. 4, 2023.

Contractors: Boeing; L3 Technologies (WC-135R conversion).
First Flight: June 2022 (WC-135R).
Delivered: July 11, 2022-Dec. 4, 2023 (WC-135R).
IOC: 2022 (WC-135R).
Production: Two (WC-135C/W); three (WC-135R).
Inventory: Three (WC-135R).
Operator: ACC.
Aircraft Location: Offutt AFB, Neb.
Active Variants:
▪WC-135R. Modified KC-135R tankers, replacing the aging WC-135C/W fleet.
Dimensions: Span 130.8 ft, length 136.3 ft, height 41.7 ft.
Weight: Max T-O 322,500 lb.
Power Plant: Four CFM International CFM56-2 turbofans, each 21,634 lb thrust.
Performance: Speed 530 mph, range approx. 3,900 miles (farther with air refueling).
Ceiling: 50,000 ft.
Accommodation: Two pilots, navigator, up to 31 special equipment operators/observers as required.

TANKER AIRCRAFT

HC-130J COMBAT KING II

Aerial refueling/airlift

Brief: The HC-130J is tasked with helicopter in-flight refueling support for CSAR/personnel recovery, tactical C2, and pararescue (PJ) deployment. It replaces legacy HC-130N/Ps and is based on the USMC's KC-130J tanker. It adds an enhanced service-life wing, improved cargo handling system, refueling receptacle, EO/IR sensor, flight deck CSO console, and dual SATCOM. Features include integrated INS/GPS, NVG-compatible lighting, FLIR, and integrated situational awareness. Recently added Advanced Threat Warning and RF countermeasures, as well as chaff/flares give the HC-130 the latest self-defensive capability for recovery operations in contested environments. USAF plans to standardize HC/AC/MC-130J block upgrades, and current efforts bring all HC-130Js to a common standard. Avionics Block 8.1 development (in common with the C-130J fleet) was completed in FY23 and large-scale retrofits are planned starting in FY26. This year launches Comm Modernization Phase I including Mobile User Objective System (MUOS) and crypto updates as well as Link 16 certification, Star mission computer refresh, and EO/IR sensor life-extension. Future Comm Modernization Phase II will add NATO-interoperable LOS SATURN and updated UHF/VHF radios. ACC completed fleetwide recapitalization of its fixed-wing rescue capability with delivery of the 39th HC-130J in 2022. New York ANG HC-130Js notably assisted efforts to locate the submersible that imploded during a dive to the RMS Titanic, conducting three long-range sorties in June 2023. The ANG recently evaluated an aft-door mounted Litening targeting pod to potentially enhance the aircraft's search and rescue capabilities.

Tech. Sgt. Dhruv Gopinath

Contractor: Lockheed Martin.
First Flight: July 29, 2010.
Delivered: Sept. 24, 2010-2022.
IOC: April 25, 2013.
Production: 39.
Inventory: 39.
Operator: ACC, AETC, AFRC, ANG.
Aircraft Location: Davis-Monthan AFB, Ariz.; Francis S. Gabreski Arpt., N.Y.; JB Elmendorf-Richardson, Alaska; Kirtland AFB, N.M.; Moffett Field, Calif.; Moody AFB, Ga.; Patrick SFB, Fla.
Active Variants:
▪HC-130J. KC-130J modified for CSAR and aerial refueling.
Dimensions: Span 132.6 ft, length 97.8 ft, height 38.8 ft.
Weight: Max T-O 164,000 lb.
Power Plant: Four Rolls-Royce AE2100D3 turboprops, each 4,591 shp.
Performance: Speed 363.4 mph at S-L, range 4,000+ miles (farther with air refueling).
Ceiling: 33,000 ft.
Fuel Capacity: 61,360 lb at 150-300 gpm (100 gpm dual, simultaneous refueling).
Accommodation: Two pilots, CSO, two loadmasters, three PJs.

Senior Airman Sergio Avalos

KC-10 EXTENDER

Aerial refueling/airlift

Brief: The KC-10 is a multirole tanker/transport capable of aeromedical evacuation, based on the McDonnell Douglas DC-10-30CF. The aircraft is USAF's largest air-refueling aircraft. It is simultaneously capable of tanker and cargo roles, enabling it to support worldwide fighter deployments. The aircraft employs an advanced aerial refueling boom and hose/drogue system allowing it to refuel a wide variety of U.S. and allied aircraft, including the CV-22 tilt-rotor, within the same mission. The aircraft has three large fuel tanks under the cargo floor and an air-refueling operator's station recessed into the aft fuselage. It is also refuelable by boom-equipped tankers. The fleet amassed more than 2.3 million flying hours before the first three tankers retired in 2020. Congress prevented USAF from making drastic KC-10 cuts in 2021 citing capacity concerns with

delays to the KC-46 program but removed limitations starting in FY22. AMC has steadily retired KC-10s as KC-46s are delivered, maintaining a required floor of no fewer than 446 overall tankers. McGuire ended KC-10 operations with a final departure on June 22, 2023, leaving Travis as the type's final main operating location. USAF cut 15 aircraft in FY23 and plans to retire the final aircraft by the end of FY24.

Contractors: McDonnell Douglas (now Boeing); Collins Aerospace (CNS/ ATM).
First Flight: April 1980.
Delivered: March 1981-April 1990.
IOC: August 1982.
Production: 60.
Inventory: 21.
Operator: AMC, AFRC (associate).
Aircraft Location: Travis AFB, Calif.
Active Variant:
▪KC-10A. Modified McDonnell Douglas DC-10 designed as a multirole cargo-tanker.
Dimensions: Span 165.4 ft, length 181.6 ft, height 58 ft.
Weight: Max T-O 590,000 lb.
Power Plant: Three GE Aviation CF6-50C2 turbofans, each 52,500 lb thrust.
Performance: Speed 619 mph, range 11,500 miles, or 4,400 miles with max cargo (air refuelable).
Ceiling: 42,000 ft.
Fuel Capacity: 356,000+ lb. at 1,100 gpm (boom), 470 gpm (drogue).
Accommodation: Two pilots, flight engineer, boom operator; AE crew: two flight nurses, three medical technicians; other crew depending on mission.
Load: Up to 75 people and 17 pallets or 27 pallets up to approx. 170,000 lb.

Bryce Bennett/USAF

KC-46 PEGASUS

Aerial refueling/airlift

Brief: The KC-46A is a heavily modified Boeing 767-200ER multirole passenger/cargo-tanker equipped with flying boom and probe/drogue refueling capability using the Wing Air Refueling Pod (WARP) system. It is also equipped for aeromedical evacuation. KC-46 incorporates the 787's state-of-the-art cockpit, a fly-by-wire boom, remote boom-operator's station, advanced self-defensive suite including Large Aircraft IR Countermeasures (LAIRCM), RWR, tactical situational awareness, comms relay hosting, and nuclear/chem/bio hardening. In 2011 Boeing was awarded a contract for 179 KC-46A tankers, the first increment (KC-X), to replace about half of USAF's KC-135R fleet. Compared to the 50-year-old KC-135, the KC-46A has more fuel capacity, improved efficiency, and enhanced cargo and AE capability. Like the KC-10, it employs an advanced refueling boom and independently operating hose/drogue system. The program's provisioned 767-2C prototype (minus refueling boom) flew on Dec. 28, 2014, and received FAA type certification in December 2017. USAF accepted its first production KC-46 on Jan. 10, 2019. The service awarded the first LRIP contract for 19 aircraft in 2016, and most recently awarded Lot 10 in November 2023, raising the quantity on contract to 143 airframes. Full-rate production was initially planned for Lot 3 but a decision is now expected in late FY24 or beyond, while current year funds purchase 15 tankers. The KC-46 completed developmental testing and entered operational testing in 2019. Planned IOC and full-rate production have slipped to FY24 or later due to remaining deficiencies with the boom and remote vision system (RVS). USAF accepted Boeing's revised 3D RVS design comprised of six color/IR cameras in April 2022, and now aims to field the system on the KC-46 in 2026. The Wing Aerial Refueling Pods (WARP) have also faced certification delays. KC-46 is cleared to refuel receivers in combat (except for the A-10) while awaiting resolution of the final six critical deficiencies. The KC-46 will begin testing a C2 pod which is the first element of the Advanced Battle Management System (ABMS) to network fifth-generation aircraft in high-threat environments this year. The service is considering an upgraded KC-46 as one option for a 75-aircraft "bridge" fleet to a next-generation, possibly stealthy, tanker. Selfridge was selected as the next preferred base to host KC-46s as soon as 2029, and Travis took delivery of its first aircraft on July 28, 2023, following a five-month delivery pause due to subcontractor deficiencies.

Contractor: Boeing.
First Flight: Sept. 25, 2015 (KC-46A).
Delivered: December 2018-present.
IOC: FY24 (planned).
Production: 179 (planned).
Inventory: 72 (KC-46A).
Operator: AETC, AFMC, AFRC, AMC, ANG.
Aircraft Location: Altus AFB, Okla.; Edwards AFB, Calif.; JB McGuire-Dix-Lakehurst, N.J.; McConnell AFB, Kan.; Pease ANGB, N.H.; Seymour-Johnson AFB, N.C.; Travis AFB, Calif. Planned: MacDill AFB, Fla.; March ARB, Calif.; Selfridge ANGB, Mich.; others TBD.
Active Variant:
▪KC-46A. Modified Boeing 767 designed as a multirole cargo tanker.
Dimensions: Span 156 ft, length 165.5 ft, height 52.8 ft.
Weight: Max T-O 415,000 lb.
Power Plant: Two Pratt & Whitney PW4062, each 62,000 lb thrust.
Performance: Speed 650 mph, range 7,350 miles (farther with air refueling).
Ceiling: 43,000 ft.
Fuel Capacity: 212,299 lb., max transfer load 207,672 lb at 1,200 gpm (boom), 400 gpm (drogue).
Accommodation: Two pilots, boom operator, and up to 12 additional crew; 15 crew seats, incl AE crew. **Passenger Load:** 58 or up to 114 for contingency operations. **AE load:** 58 patients (24 litters and 34 ambulatory).
Cargo Load: 18 pallet positions, max 65,000 lb.

KC-135 STRATOTANKER

Aerial refueling/airlift

Brief: The KC-135 is an aerial tanker capable of simultaneous cargo and AE missions and has been the mainstay of the USAF tanker fleet for more than 60 years. The C-135 family is similar in appearance to the commercial 707 but designed to unique military specifications and first flew on

Staff Sgt. Ryan Gomez

Aug. 31, 1956. The KC-135A fleet was delivered between June 1957 and January 1965, reaching IOC at Castle AFB, Calif., in 1957. KC-135s were re-engined under two separate but concurrent programs and redelivered as the KC-135E and the current KC-135R beginning in July 1984. Twenty KC-135Rs received Multipoint Refueling System (MPRS) hose/drogue pods on each wing to simultaneously refuel two NATO or Navy aircraft. (Standard KC-135s can use a single drogue adapter attached to the boom). A small number of McConnell-based aircraft are also receiver-capable, incorporating a forward-fuselage receptacle. KC-135s can be equipped with a podded Large-Aircraft IR Countermeasures (LAIRCM) system to track/jam IR missiles for high-threat missions. Block 45 cockpit upgrades were initially planned to stretch through 2027 but fleet reductions will speed completion to FY24 at 207 total aircraft. Block 45 cockpit mods enhance the modernized PACER CRAG flight deck with an additional glass cockpit display for engine instrumentation, a radar altimeter, advanced autopilot, and modern flight director. Other upgrades include replacing Aero-I long-distance oceanic satellite tracking/C2 replacement with Iridium, Mobile User Objective System (MUOS) secure, jam-resistant BLOS, NATO-interoperable LOS SATURN, and crypto modernization. Real Time in the Cockpit (RTIC) began adding battlefield threat awareness to Active-duty aircraft through FY26, and addition of rudder instrumentation aims to prevent accidents like the fatal 2013 Kyrgyzstan crash. The service plans to test prototype winglets to increase fuel efficiency over the next two years. USAF will retain the fleet until at least 2050, but issued a request for information to partially recapitalize KC-135 pending the notional Next-Generation Air-refueling System (NGAS) emergence. USAF aims to retire 15 KC-135s per year through the late 2030s, maintaining a minimum force of 466 tankers.

Contractors: Boeing; Collins Aerospace (Block 45/Iridium SATCOM).
First Flight: Aug. 4, 1982 (KC-135R).
Delivered: July 1984-June 9, 2005 (KC-135R).
IOC: June 1957.
Production: 732 (420 converted to KC-135R).

Inventory: 325 (KC-135R); 51 (KC-135T).
Operator: AETC, AFMC, AMC, PACAF, USAFE, ANG, AFRC.
Aircraft Location: Altus AFB, Okla.; Beale AFB, Calif.; Fairchild AFB, Wash.; Grissom ARB, Ind.; JB Andrews, Md.; Kadena AB, Japan; MacDill AFB, Fla.; March ARB, Calif.; McConnell AFB, Kan.; RAF Mildenhall, U.K.; Seymour-Johnson AFB, N.C.; Tinker AFB, Okla.; and ANG in Alabama, Alaska (active associate), Arizona, Hawaii, Illinois, Iowa, Kansas, Maine, Michigan, Mississippi, Nebraska, New Jersey, New York, Ohio, Pennsylvania, Tennessee, Utah, Washington, Wisconsin.
Active Variants:
▪KC-135R. Reengined KC-135A fitted with CFM turbofan engines.
▪KC-135T. Reengined former KC-135Qs, able to carry different fuels in wing and fuselage tanks.
Dimensions: Span 130.8 ft, length 136.3 ft, height 41.7 ft.
Weight: Max T-O 322,500 lb.
Power Plant: Four CFM International CFM56-2 (USAF designation F108) turbofans, each 21,634 lb thrust.
Performance: Speed 530 mph at 30,000 ft, range 1,500 miles with 150,000 lb transfer fuel, up to 11,015 miles for ferry missions.
Ceiling: 50,000 ft.
Fuel Capacity: Max transfer load 200,000 lb at 1,100 gpm (boom), 450 gpm (MPRS pods).
Accommodation: Two pilots, navigator, boom operator; AE crew: two flight nurses, three medical technicians (adjusted as needed).
Load: 37 passengers, six cargo pallets, max 83,000 lb.

AIRLIFT AIRCRAFT

Roland Balik/USAF

C-5 GALAXY

Strategic airlift

Brief: The C-5 is USAF's largest airlifter and one of the world's largest aircraft, capable of carrying unusually large/heavy cargo over intercontinental ranges. It can also take off and land in relatively short distances, and taxi on substandard surfaces if required. The Galaxy's front and rear cargo doors permit simultaneous drive-through loading/unloading. The aircraft's unique upper deck is split between the flight deck—with galley and crew rest area forward of the wing—and a troop compartment seating 75 passengers and a second gallery/lavatory aft of the wing. The C-5A first flew on June 30, 1968, and a total of 81 were delivered between 1969 and 1973, reaching IOC in September 1970. C-5As underwent major wing modifications to extend their service lives and all but one (converted to C-5M) were retired. The C-5B first flew in 1985 and was delivered between 1986 and 1989. C-5Bs incorporated all C-5A improvements including strengthened wings, uprated turbofans, color weather radar, triple INS, and defensive systems (on some aircraft). Two C-5As were modified for outsize space cargo and redelivered as C-5Cs in 1989 and 1990. The combined Avionics Modernization Program (AMP) and Reliability Enhancement and Re-engining Program (RERP) resulted in the C-5M Super Galaxy. Upgraded aircraft incorporate new engines with a 20 percent increase in thrust, as well as avionics, structural, and reliability fixes. A total of 49 B models, two C models, and a single C-5A were converted. Ongoing modifications include CNS/ATM upgrades, new mission computers and off-the-shelf color weather radar, Large Aircraft IR Countermeasures (LAIRCM) improvements, and a lavatory redesign to address corrosion. Development to replace the aircraft's flight deck displays and support future upgrades and modernization began in FY23. A C-5M reverse-flow refueled a KC-10 for the first time as part of a capability demo in 2023, to augment and extend tanker capacity in a high-end Pacific conflict. C-5s also demonstrated 35-hour long endurance sorties and capacity to download fuel to sustain dispersed, austere operations.

Contractors: Lockheed Martin; Collins Aerospace and Honeywell (CNS/ATM, weather radar/mission computer).
First Flight: June 6, 2006 (C-5M).
Delivered: Feb. 9, 2009-Aug. 2, 2018 (C-5M).
IOC: Feb. 21, 2014 (C-5M).
Production: 131 (52 converted to C-5M).
Inventory: 50 (C-5M); two (C-5M-SCM).
Operator: AMC, AFRC.
Aircraft Location: Dover AFB, Del.; JBSA-Lackland, Texas; Travis AFB, Calif.; Westover ARB, Mass.
Active Variants:
▪C-5M. Super Galaxy converted from C-5A/B, incorporating AMP and RERP.
▪C-5M-SCM. Super Galaxy converted from C-5C to carry large NASA/space cargo.
Dimensions: Span 222.8 ft, length 247.8 ft, height 65.1 ft.
Weight: Max T-O 840,000 lb.
Power Plant: Four GE Aviation F138-GE-100 (CF6-80C2) turbofans, each 50,580 lb thrust.
Performance: Speed 518 mph, range 5,524 miles with 120,000 lb of cargo.
Ceiling: 45,000 ft.
Accommodation: Two pilots, two flight engineers, three loadmasters.
Load: 81 troops and 36 standard pallets, max 285,000 lb; incl seven MRAP vehicles, six AH-64 Apache helicopters, four M2 Bradley fighting vehicles, or two M1 Abrams main battle tanks.

Adam Bowles/USAF

C-12 HURON

Light airlift

Brief: C-12 is tasked with multimission passenger and priority light-cargo airlift, medevac, as well as diplomatic and flight-test support. The family of aircraft includes military versions of the Beechcraft King Air and 1900C (C-12J). Flight decks and cabins are pressurized for high-altitude flight. The C-12D incorporates a cargo door with an integral airstair, high-flotation landing gear, structural improvements, and optional external wingtip tanks. Both C-12C and C-12D are deployed to U.S. embassies worldwide and incorporate earlier three-bladed propellers. The C-12F incorporated uprated engines, four-bladed propellers, and an increased service ceiling. The C-12J is a completely different aircraft based on the Beechcraft 1900C commuter airliner with a large, aft cargo door. C-12Js are operated by AFMC for testing and PACAF in support of U.S. Forces Japan with provision for two litters or 10 ambulatory patients in the AE role. C-12Js incorporate extensive avionics upgrades, including three MFDs, integrated GPS, flight management systems, autopilot, VHF/UHF radios, and weather radar.

Contractor: Beechcraft.
First Flight: Oct. 27, 1972 (Super King Air 200), March 1, 1990 (1900C).
Delivered: 1974-mid 1990s.
IOC: Circa 1974.
Production: 30 (C-12A/C); six (C-12D); 46 (C-12F): four (C-12J).
Inventory: 16 (C-12C); six (C-12D); three (C-12F); four (C-12J).
Operator: AFMC, PACAF.
Aircraft Location: Edwards AFB, Calif.; Holloman AFB, N.M. (J); JB Elmendorf-Richardson, Alaska; Yokota AB, Japan (J); various U.S. embassies.
Active Variants:
▪C-12C. C-12As retrofit with PT6A-41 engines.
▪C-12D. C-12 with an enlarged cargo door and strengthened wings.
▪C-12F. C-12 with uprated PT6A-42 engines, eight-passenger seating, and AE capability.
▪C-12J. Military version of the Beechcraft Model 1900C commuter airliner.
Dimensions: Span 54.5 ft, length 43.8 ft, height 15 ft (C/D/F); span 54.5 ft, length 57 ft, height 15 ft (J).
Weight: Max T-O 15,000 lb (F); 16,710 lb (J).
Power Plant: Pratt & Whitney Canada PT6A-41 (C/D) or PT6A-42 (F) turboprops, each 850 shp; PT6A-65B turboprops, each 1,173 shp (J).
Performance: Speed 300 mph (C/D), 336 mph (F), range 2,271 miles; 284 mph, range 1,669 miles (J).
Ceiling: 31,000 ft (C/D); 35,000 ft (F); 25,000 ft (J).
Accommodation: Two pilots.
Load: Eight passengers (C/D/F), 19 passengers or 3,500 lb cargo (C-12J).

Airman 1st Class Adriana Jordan-Alcañiz

C-17 GLOBEMASTER III

Tactical/strategic airlift

Brief: C-17 is a heavy-lift, strategic transport capable of direct tactical delivery of all classes of military cargo. It is the U.S. military's core airlift asset, capable of operating on small, austere airfields (3,500 ft by 90 ft) previously limited to C-130s. It is the only aircraft able to directly deliver or airdrop outsize cargo into a tactical environment, and it is the first military transport to feature fully digital, fly-by-wire control. Boeing delivered the 223rd and final USAF aircraft on Sept. 12, 2013, and the final international aircraft on Nov. 29, 2015. The C-17 fleet was heavily tasked evacuating U.S. and allied personnel from Afghanistan during Operation Allies Refuge, including carrying a record-breaking 823 passengers on a single flight on Aug. 15, 2021. Major Block 20 upgrades included some 60 programs to bring early production aircraft to a common configuration, and the most recent Block 21 including Mode 5 IFF and airspace compliance were completed fleetwide in 2020. FY24 continues fleetwide HUD replacement through FY28, and begins install of enhanced high-bandwidth BLOS voice/data SATCOMS. Ongoing upgrades also include next-generation Large Aircraft Infrared Counter-measures (LAIRCM) to combat man-portable air defenses, as well as safety and sustainment mods. The Roll-on/Roll-off Conference Capsule to replace the "Silver Bullet" for in-flight conferencing is currently finishing testing and integration. This year launches Flight Deck Replacement development which will introduce an easily upgradable modular cockpit infrastructure. The C-17 fleet is currently the largest consumer of jet fuel in the inventory. USAF awarded Pratt & Whitney a $55 billion contract add in 2023, to upgrade the fleet's F117 engines to improve fuel efficiency and increase maintenance intervals by 2027.

Contractor: Boeing (previously McDonnell Douglas).
First Flight: Sept. 15, 1991.
Delivered: June 1993-September 2013.
IOC: Jan. 17, 1995.
Production: 257.
Inventory: 222.
Operator: AETC, AMC, PACAF, ANG, AFRC.
Aircraft Location: Altus AFB, Okla.; Dover AFB, Del.; JB Charleston, S.C.; JB Elmendorf-Richardson, Alaska; JB Lewis-McChord, Wash.; JB McGuire-Dix-Lakehurst, N.J.; JB Pearl Harbor-Hickam, Hawaii; March ARB, Calif.; Pittsburgh Arpt., Pa.; Travis AFB, Calif.; Wright-Patterson AFB, Ohio; and ANG in Hawaii (associate), Mississippi, North Carolina, West Virginia, and New York.
Active Variant:
▪C-17A. Long-range tactical/strategic airlifter.
Dimensions: Span 169.8 ft, length 174 ft, height 55.1 ft.
Weight: Max T-O 585,000 lb.
Power Plant: Four Pratt & Whitney F117-PW-100 turbofans, each 40,440 lb thrust.
Performance: Speed 518 mph at 25,000 ft, range 2,760 miles with 169,000 lb payload (farther with air refueling).
Ceiling: 45,000 ft.
Accommodation: Two pilots, loadmaster; AE crew: Two flight nurses, three medical technicians (mission dependent).
Load: 102 troops/paratroopers; 36 litter and 54 ambulatory patients; 18 pallets up to max payload 170,900 lb.

C-21

Light airlift

Brief: The C-21 "Cougar" is a militarized Learjet 35 used for passenger and priority light-cargo airlift and aeromedical transport. It is equipped with color weather radar, TACAN, and HF/VHF/UHF radios. It provides medium-range operational support for time-sensitive movement of people and cargo throughout the U.S. and the European theater, including AE missions if required. Recent upgrades include the C-21 Avionics Upgrade Program (AUP), which added a modern glass cockpit, digital weather radar, GPS, flight management system, satellite-updating real-time flight information, digital black boxes, and ADS-B/Mode 5 transponder. USAF added BLOS comms concurrently with AUP to save costs. The fleet was also retrofitted with enlarged aft-fuselage "delta fins" to improve low-speed stability and control, eliminating previous approach/landing flight restrictions. C-21s ended 32 years of detached aeromedical and DV support to USCENTCOM with a final flight from Al Udeid AB, Qatar, on June 30, 2023. Ongoing aircraft modifications are limited to required low-cost airworthiness and safety upgrades.

Airman 1st Class De'Quan Simmons

Contractor: Bombardier (previously Gates Learjet).
First Flight: January 1973.
Delivered: April 1984-October 1985.
IOC: April 1984.
Production: 84.
Inventory: 19.
Operator: AMC, USAFE.
Aircraft Location: Ramstein AB, Germany; Scott AFB, Ill.
Active Variant:
▪C-21A. Military version of the Learjet 35A.
Dimensions: Span 39.5 ft, length 48.6 ft, height 12.2 ft.
Weight: Max T-O 18,300 lb.
Power Plant: Two AlliedSignal TFE731-2-B2 turbofans, each 3,500 lb thrust.
Performance: Speed 530 mph at 41,000 ft, range 2,306 miles.
Ceiling: 45,000 ft.
Accommodation: Two pilots; AE crew: Flight nurse, two medical technicians (mission dependent).
Load: Eight passengers, 3,153 lb cargo; one litter or five ambulatory patients (AE role).

Tech. Sgt. Benjamin Mota

C-32

VIP transport

Brief: The C-32A provides dedicated vice presidential and DV airlift while the C-32B is tasked with politically sensitive crisis-mobility. Both types were acquired as commercial Boeing 757s. Aircraft assigned to the 89th Airlift Wing at JB Andrews fly under the call sign "Air Force Two" during vice presidential missions, but additionally serve the First Lady, Congress, and Cabinet officials. The cabin is divided into sections, including a worldwide clear and secure voice and data communications suite, first-class cabin, two business-class cabins, center galley, lavatories, fully enclosed stateroom, and a conference and staff area. The C-32B provides DOD discreet, rapid, global airlift in support of government crisis response efforts. The C-32's modern flight deck is designed to be easily upgraded. The C-32A fleet recently underwent a full cabin refurbishment to match the VC-25, as well as installation of fully reclining crew rest seats to enable long-endurance missions without pre-positioned relief crews. The C-32A fleet is undergoing significant comm-suite modernization including a Senior Leader Communication System (SLC C3), next-generation Presidential

and National Voice Conferencing (PNVC), and replacement of obsolescent UHF SATCOM with Mobile User Objective System (MUOS) compatible BLOS. SLC is installing Wideband SATCOM, secure air-to-air/ground comms, commercial WiFi, in-flight information, and enhanced airborne executive phones across USAF's executive fleets. A single C-32A will undergo installation in FY24 with modification fleetwide planned for by 2027. Two aircraft received PNVC and FY24 funds a third install, as well as launching MUOS-compatible crypto modernization for install through FY26. DOD scraped plans to replace the C-32A, opting to retain the fleet through 2038 or beyond. The Pentagon is now assessing options to augment the C-32 fleet with up to 10 modified commercial aircraft.

Contractors: Boeing; L3 Harris (Senior Leader Communications Modernization).
First Flight: Feb. 11, 1998 (C-32A).
Delivered: June-December 1998.
IOC: 1998.
Production: Six.
Inventory: Four (C-32A); two (C-32B).
Operator: AMC, ANG.
Aircraft Location: JB Andrews, Md. (A); JB McGuire-Dix-Lakehurst, N.J. (B).
Active Variants:
▪C-32A. Presidential support-configured commercial Boeing 757-200 airliner.
▪C-32B. Commercial Boeing 757-200 tasked with global crisis response airlift.
Dimensions: Span 124.6 ft, length 155.2 ft, height 44.5 ft.
Weight: Max T-O 255,000 lb.
Power Plant: Two Pratt & Whitney PW2040 turbofans, each 41,700 lb thrust.
Performance: Speed 530 mph, range 6,325 miles.
Ceiling: 42,000 ft.
Accommodation: Two pilots, up to 14 cabin and maintenance crew (varies with mission).
Load: Up to 45 passengers.

Senior Airman Shelimar Rivera Rosado

C-37

VIP transport

Brief: The C-37 family provides worldwide special air mission and DV support, consisting of military versions of the ultra-long-range Gulfstream business aircraft. The C-37A is based on the Gulfstream V and is equipped with separate VIP and passenger areas, secure global voice and data communications suites, enhanced weather radar, autopilot, and advanced HUD. The C-37B, first delivered in 2004, is based on the G550 and adds directional IR countermeasures for self-defense and the advanced Honeywell Plane-View flight deck. Ongoing mods include commercial wideband SATCOM, to ensure leaders' access to secure data and voice networks, and FAA-required CNS/ATM updates. FY24 continues comm suite upgrades as part of the Senior Leader Communication Modernization effort across USAF's executive fleets. A total of 16 aircraft will be modified, including six in FY24, to ensure redundant, survivable and secure/top-secret voice, data, and videoconferencing for uninterrupted worldwide C2. Existing aircraft will receive modernized en route air traffic SATCOMS, which will be standard on future airframes. USAF aims to acquire as many as 40 additional aircraft to backfill the now-retired C-20 and two aircraft were added to the fleet in 2019 and 2020, followed by two delivered under a fleet expansion contract through 2022. FY24 funds MUOS-compatible crypto to support secure, jam-resistant BLOS UHF SATCOM upgrades by FY26.

Contractors: Gulfstream Aerospace; Honeywell (commercial SATCOM replacement); L3 Harris (Senior Leader Communications Modernization).
First Flight: October 1998 (C-37A).
Delivered: Oct. 14, 1998-February 2022.
IOC: Dec. 9, 1998.
Production: 16 (planned).
Inventory: Nine (C-37A); seven (C-37B).
Operator: AMC, PACAF, USAFE.
Aircraft Location: JB Andrews, Md.; JB Pearl Harbor-Hickam, Hawaii; Ramstein AB, Germany.
Active Variants:
▪C-37A. Military version of the Gulfstream V.
▪C-37B. Military version of the Gulfstream G550.
Dimensions: Span 93.5 ft, length 96.4 ft, height 25.8 ft.
Weight: Max T-O 90,500 lb. (A); 91,000 lb. (B).
Power Plant: Two BMW/Rolls-Royce BR710A14-10 turbofans, each 14,750 lb thrust (A); two BMW/Rolls-Royce BR710C4-11 turbofans, each 15,385 lb thrust (B).
Performance: Speed 600 mph (cruise 345 mph); range 6,300 miles (A), 6,700 miles (B).
Ceiling: 51,000 ft.
Accommodation: Two pilots, flight attendant, crew chief.
Load: Up to 12 passengers (A); 14 passengers (B).

Airman 1st Class Luis Rios Calderon

C-40 CLIPPER

VIP transport

Brief: The C-40 is a medium-range DV airlift aircraft based on the commercial Boeing 737-700. It is used to transport senior military commanders, Cabinet officials, and members of Congress, as well as performing other support missions. C-40Bs are equipped with an office-in-the-sky arrangement, including clear and secure voice/data communication and broadband data/video. C-40Cs lack the advanced communications suite, are VIP configured with sleep accommodations, and are reconfigurable to carry 42 to 111 passengers. Both versions have modern avionics, integrated GPS and flight-management system/electronic flight instrument system, and HUD. Each aircraft has auxiliary fuel tanks and managed passenger communications. Recent mods add fully reclining crew rest seats to enable long-endurance missions without pre-positioned relief crews. Both variants are receiving updated Large Aircraft Infrared Countermeasures (LAIRCM) through FY27 to sustain self-defensive capabilities. FY24 continues Senior Leader Communication Modernization across the executive fleets, including Wideband SATCOM, secure air-to-air/ground comms, commercial WiFi, in-flight information, and enhanced airborne executive phones. Two C-40Bs will be upgraded in FY24 to ensure redundant, survivable and secure/top-secret voice, data, and video conferencing for uninterrupted worldwide C2. C-40Bs are also receiving MUOS-compatible crypto to support upgraded secure, jam-resistant BLOS UHF SATCOM.

Contractors: Boeing; L3Harris (Wideband SATCOM/Senior Leader Communication Modernization).
First Flight: April 14, 1999 (C-40A).
Delivered: 2002-2007.
IOC: Feb. 28, 2003.
Production: 11.
Inventory: Four (C-40B); seven (C-40C).
Operator: AMC, ANG, AFRC.
Aircraft Location: JB Andrews, Md.; Scott AFB, Ill.
Active Variants:
▪C-40B. VIP military-configured Boeing 737-700 with advanced comms.
▪C-40C. Passenger-configured Boeing 737-700, lacking advanced comms.
Dimensions: Span 117.4 ft, length 110.3 ft, height 41.2 ft.
Weight: Max T-O 171,000 lb.
Power Plant: Two GE Aviation CFM56-7 turbofans, each 27,000 lb thrust.
Performance: Speed 530 mph, range 5,750 miles.
Ceiling: 41,000 ft.
Accommodation: Two pilots, up to eight cabin and maintenance crew (varies by model/mission).
Load: Up to 89 passengers (B); up to 111 passengers (C).

Staff Sgt. Janae Masoner

C-130H HERCULES

Tactical airlift

Brief: The C-130H is an all-purpose theater transport that performs diverse roles, including tactical and intertheater airlift and airdrop, AE, aerial spraying, aerial firefighting, and humanitarian support. The developmental YC-130A first flew in August 1954 with the C-130A entering USAF service in 1956. The H model improved on the later C-130E and was delivered starting in 1965, with delivery of the current, more advanced models starting in 1974. Improvements included uprated engines, redesigned outer wing, improved pneumatic systems, new avionics, improved radar, and NVG lighting. USAF intends to recapitalize the C-130H fleet with the C-130J while modernizing the remaining fleet with new avionics, safety, and performance improvements in the interim. Ongoing upgrades include critical center wing box replacement, C-130H Avionics Modernization Program (previously Viability and Airspace Access Program), and NP2000 propeller retrofits. AMP Increment 1 was completed fleetwide in 2021, adding new CNS/ATM and bringing legacy C-130s into compliance with international airspace rules. L3Harris completed the first Increment 2-upgraded aircraft in 2022. A decreased total of 77 ANG and AFRC aircraft will now receive Increment 2 mods to add terrain awareness and warning, new flight management, and modern glass cockpit displays through 2028. UHF SATCOM modernization was added to Increment 2 in FY23, rolling in Mobile User Objective System (MUOS) secure, jam-resistant BLOS, and NATO-interoperable LOS SATURN. The fleet also began eight-bladed NP2000 propellor retrofits, which enhance performance up to 20 percent. USAF currently has 83 aircraft on contract for NP2000 and will likely accelerate retrofits following a fleetwide grounding in 2022 due to cracks in the four-bladed units. Georgia ANG's 165th AW transferred its final C-130H to the Delaware ANG on Aug. 18, 2023, upgrading to the C-130J. ANG units in Connecticut, Illinois, Minnesota, and Montana will also upgrade to the C-130J in the coming years. USAF will cut two C-130Hs in FY24, replacing aircraft with C-130Js on a one-for-one basis to maintain the congressionally mandated minimum 271-airframe tactical fleet.

Contractors: Lockheed Martin (airframe); L3Harris (AMP Increment 2); Collins Aerospace (NP2000).
First Flight: 1965 (C-130H).
Delivered: April 1975-96 (current C-130H2/H3).
IOC: Circa 1974.
Production: 1,202 (C-130H).
Inventory: 126.
Operator: ANG, AFRC.
Aircraft Location: Dobbins ARB, Ga.; Little Rock AFB, Ark.; Minneapolis-St. Paul Arpt./ARS, Minn.; Peterson SFB, Colo. (MAFFS); Youngstown ARS (Electronic Modular Aerial Spray System (EMASS), and ANG in Arkansas, Connecticut, Delaware, Illinois, Minnesota, Missouri, Montana, Nevada (MAFFS), Texas, Wyoming (MAFFS).
Active Variant:
▪C-130H Hercules. Updated late-production version of the legacy C-130.
Dimensions: Span 132.6 ft, length 97.8 ft, height 38.8 ft.
Weight: Max T-O 155,000 lb; max payload 42,000 lb.
Power Plant: Four Allison T56-A-15, or Rolls-Royce T56 3.5 turboprops, each 4,591 shp (approx. 20 percent increased thrust with NP2000 propellers).
Performance: Speed 366 mph; range with 35,000 lb payload 1,496 miles.
Ceiling: With max payload, 23,000 ft.
Accommodation: Two pilots, navigator, flight engineer, loadmaster.
Load: Up to 92 combat troops or 64 paratroopers or 74 litters or six cargo pallets or 16 Container Delivery System (CDS) bundles or any combination of these up to max weight.

Yasuo Osakabe/USAF

C-130J/C-130-J-30 SUPER HERCULES

Tactical airlift

Brief: The C-130J is the redesigned, current production version of the C-130 all-purpose theater transport. Missions include tactical and intertheater airlift, airdrop, AE, and wildfire suppression using the Modular Airborne Fire Fighting System (MAFFS), and humanitarian relief. The aircraft first deployed to combat in Southwest Asia in 2004. The Super Hercules features three-crew flight operations, more powerful engines, composite six-blade propellers, and digital avionics and mission computers. The C-130J can fly faster, higher, and farther than the C-130H. The C-130J-30 variant features a 15-foot-longer "stretched" fuselage. The combined fleet is sustained via block upgrades. USAF combined Block 7/8.1 upgrades to reduce modification downtime. Block 7 includes Link 16, new flight management systems, civil GPS, and a special mission processor. Ongoing Block 8.1 upgrades add improved LOS data link and BLOS comms, improved precision navigational aids, enhanced covert lighting, replace UHF comms with SATCOMS, and update mission planning systems. Block 8.1's Mode 5 IFF and air traffic management upgrades were successfully fielded ahead of cycle to meet airspace requirements and the first full 7/8.1 aircraft was redelivered in late 2020 with 15 slated for upgrade in FY24. Airframes delivered since 2009 incorporate enhanced service-life center wings, and three early production airframes will be retrofitted in 2024. Major development focuses on modernized secure, jam-resistant HF/UHF/SATCOM voice and data (MUOS and NATO Saturn) as well as data links to keep pace with newer satellites and networking. Congress added funds beyond the current multiyear C-130J contract, including 16 C-130Js for the ANG units and four for AFRC, bringing planned C-130J procurement to 202 aircraft. Four former EC-130J Super-Js are undergoing deconversion to standard C-130Js and will be redelivered to Little Rock by late 2027. AFRC successfully flight-tested the Electronic Modular Aerial Spray System (EMASS) on a C-130J at Youngstown in March 2024, paving the way for the J-model to take over the aerial spray mission from the C-130H. The Georgia ANG transitioned from the C-130H to the C-130J in 2023 and USAF announced plans to transition units in Connecticut, Montana, Minnesota, and Illinois to the Super Hercules.

Contractor: Lockheed Martin.
First Flight: April 5, 1996.
Delivered: February 1999-present.
IOC: October 2006.
Production: 2,600+ worldwide, 202 (USAF).
Inventory: 151.
Operator: AETC, AMC, PACAF, USAFE, ANG, AFRC.
Aircraft Location: Dyess AFB, Texas; Keesler AFB, Miss.; Little Rock AFB, Ark.; Ramstein AB, Germany; Yokota AB, Japan; and ANG in California, Georgia, Kentucky, Rhode Island, Kentucky, Texas, and West Virginia. Planned: Youngstown ARS; ANG in Arkansas, Connecticut, Montana, Minnesota, and Illinois.
Active Variants:
▪C-130J Super Hercules. Current production version.
▪C-130J-30 Super Hercules. Stretched version capable of accommodating larger loads.
Dimensions: Span 132.6 ft, length 97.8 ft, height 38.8 ft.; (J-30 length) 112.8 ft.
Weight: Max T-O 155,000 lb (J), 164,000 lb (J-30); max payload 42,000 lb (J), 44,000 lb (J-30).
Power Plant: Four Rolls-Royce AE2100D3 turboprops, each 4,700 shp.
Performance: Speed 417 mph (J), 410 mph (J-30); range with 35,000 lb payload 1,841 miles (J), 2,417 miles (J-30).
Ceiling: With max payload, 26,000 ft (J), 28,000 ft (J-30).
Accommodation: Two pilots, loadmaster.
Load: Up to 92 combat troops or 64 paratroopers or 74 litters or six cargo pallets or 16 Container Delivery System (CDS) bundles or any combination of these up to max weight (J); 128 combat troops or 92 paratroopers or 97 litters or eight pallets or 24 CDS bundles or any combination of these up to max weight (J-30).

Jaclyn Lyons/USAF

LC-130H SKIBIRD

Arctic support/tactical airlift

Brief: The LC-130H is a ski-equipped, Arctic-support derivative of the C-130H. It is capable of direct resupply of Antarctic research stations and high-arctic radar sites with ice and snowpack runways. The LC-130H fleet supports the National Science Foundation's (NSF) Antarctic research, ferrying much of the material, provisions, and personnel between Christchurch, New Zealand, and McMurdo Station, Antarctica. The aircraft also provide ongoing support to the remote Amundsen-Scott South Pole Station. USAF began augmenting the Navy's "Operation Deep Freeze" with the C-124 in 1956. C-130s began Antarctic support in 1959, operating without skis until the initial ski-borne deployment of the C-130D in January 1960. By 1975, the New York ANG's 109th AW operated USAF's only ski-equipped LC-130 supporting Distant Early Warning sites in the high Arctic. The unit began augmenting Navy LC-130s during Deep Freeze in 1988, before taking over primary responsibility in 1999. Three aircraft were converted from ex-Navy LC-130Rs, and the NSF funded an additional three new-build aircraft in 1995-96. LC-130s have been upgraded with eight-bladed NP-2000 propellers to increase takeoff performance, digital cockpit displays and flight management systems, multifunction radar, modernized comms, and a single air data computer. LC-130s are upgraded along with the baseline C-130H fleet, including center wing box replacement, Mode 5 IFF, and the Avionics Modernization Program that launched Increment 2 in 2022. Required upgrades include NVG-compatible flight deck, secure BLOS data link, increased reliability commercial SATCOM, and self-defensive/missile warning capability. The ANG test-flew an LC-130 with upgraded T56 3.5 engine enhancements for the first time in October 2022. Paired with the NP2000 propellers, the upgrade improves payload, range, high-altitude performance, and reliability. The ANG planned to retrofit all 10 aircraft by early 2024. LC-130s flew a total of 114 Operation Deep Freeze missions supporting NSF research during the 2023-2024 season. Aircraft carried a total of 1,500 passengers and 1,100 tons of cargo, logging 52 long-range flights between Christchurch, New Zealand, and Antarctica, as well as on the continent. LC-130s also flew 2.4 million pounds of cargo and 1,300 passengers supporting NSF research on the Greenland Ice Cap from April to August 2023, and airlifted U.S. and Canadian ground forces to the high Arctic during Exercise Guerrier Nordique. Congress has pushed USAF to recapitalize the LC-130 (likely with C-130J) fleets citing increased Russian and Chinese activity in the Arctic.

Contractor: Lockheed Martin.
First Flight: 1957 (ski-equipped C-130D).
Delivered: 1974-96.
IOC: Circa October 1984.
Production: 10.
Inventory: 10.
Operator: ANG.
Aircraft Location: Stratton ANGB, N.Y.
Active Variants:
▪LC-130H Skibird. Arctic support variant with wheel-ski gear and eight-bladed propellers.
Dimensions: Span 132.6 ft, length 97.8 ft, height 38.8 ft; Nose Ski 10 ft by 6 ft wide, main gear skis 12 ft by 6 ft wide.
Weight: Max T-O 155,000 lb; max payload 45,000 lb.
Power Plant: Four Rolls-Royce T56 3.5 turboprops, each 4,591 shp.
Performance: Speed 366 mph; range with 35,000 lb payload 1,636 miles (with engine upgrades).
Ceiling: With max payload, 23,000 ft.
Accommodation: Two pilots, navigator, flight engineer, loadmaster. **Load:** Up to 92 passengers or 74 litters; six cargo pallets, 16 Container Delivery System (CDS) bundles, or any combination up to max weight.

Adam Schultz/White House

VC-25 AIR FORCE ONE

Presidential airlift

Brief: The VC-25 is a specially configured Boeing 747-200B equipped for airlifting the President and his entourage. VC-25s operate under the call sign "Air Force One" when the President is aboard, and SAM (Special Air Mission) during non presidential flights. Aircraft are equipped with staff work areas, a conference room, a general seating area, and an executive office. Communications capability includes worldwide secure and clear communications and a full suite of strategic C2 comm/data links. The aircraft also have a full self-defensive suite. The fleet is operated by the Presidential Airlift Group of the 89th Airlift Wing at JB Andrews. Congress directed retirement of the VC-25A by the end of 2025 and FY20 funded the fleet's final block upgrade, which included protected SATCOM, weather radar, digital voice/data comms, and networking. The modifications aim to maintain fleet viability until the VC-25B (based on Boeing's modernized 747-8 Intercontinental) enters service. Future upgrades encompass mission comms, notably the Senior Leader Communication Modernization effort across the executive fleets, low-latency satellite teleconferencing and higher-capacity tactical data links. USAF issued Boeing a $3.9 billion presidential aircraft replacement contract to modify two undelivered commercial 747-8s to VC-25B standards in 2018. Boeing began modifications in 2020, to add mission comms, DV interior, self-defensive systems, integral airstairs/ground-level boarding, autonomous baggage handling, a second auxiliary power unit, and uprated electrical systems. Specifications exclude aerial refueling capability to reduce program cost. Delivery of the first aircraft has slipped three years to 2027 due to manufacturing delays, jeopardizing the VC-25A's planned out-of-service date. Delivery of the second and final aircraft is now planned for 2028. The White House announced VC-25B will retain a modernized version of its traditional livery, reversing previous administration plans to radically change the scheme.

Contractor: Boeing.
First Flight: Sept. 6, 1990 (VC-25A).
Delivered: August-December 1990.
IOC: Dec. 8, 1990; planned 2027 (VC-25B).
Production: Two VC-25A; two VC-25B (undergoing modification).
Inventory: Two (VC-25A).
Operator: AMC.
Aircraft Location: JB Andrews, Md.
Active Variants:
▪VC-25A. Specially configured presidential support version of the Boeing 747-200B.
▪VC-25B. Next-generation presidential aircraft based on the Boeing 747-8 Intercontinental.
Dimensions: Span 195.8 ft, length 231.8 ft, height 63.4 ft (A); span 224.5 ft, length 250.2 ft, height 63.4 ft (B).
Weight: Max T-O 833,000 lb (A); max T-O 987,000 lb (B).
Power Plant: Four GE Aviation CF6-80C2B1 turbofans, each 56,700 lb thrust (A); four GE Aviation GEnx-2B turbofans, each 66,500 lb thrust (B).
Performance: Speed 630 mph, range 7,800 miles (farther with air refueling) (A); speed 660 mph, range 8,900 miles (B).
Ceiling: 45,100 ft.
Accommodation: Two pilots, navigator, flight engineer, up to 22 cabin and maintenance crew; **Load:** Up to 102 passengers (A); TBD (B).

Staff Sgt. Jessi Roth

HH-60 PAVE HAWK

Personnel recovery/medium lift

Brief: The HH-60G Pave Hawk is an armed, all-weather day/night CSAR helicopter derived from the UH-60 Black Hawk. Additional missions include casualty/medical evacuation, disaster and humanitarian response, firefighting, and combat/utility support. The HH-60G is equipped with advanced INS/GPS/Doppler navigation systems, SATCOM, and secure/antijam communications, and personnel locating system (PLS) that aids location of a survivor's radio. It includes automatic flight control, NVG lighting, FLIR, an engine/rotor blade anti-ice system, in-flight refueling probe, additional fuel tanks, and an integral rescue hoist. Combat enhancements include a full, self-defensive suite and two miniguns (or .50-caliber guns). Major upgrades include Block 162, which encompasses Avionics Communications Suite Upgrade and replaces obsolete systems with color weather radar, improved TACAN, new RWR, auto direction finding, and digital intercoms. HH-60U are modified UH-60Ms operated by AFMC for testing and support. USAF initially pursued new-build UH-60Ms as loss replacements for the HH-60G, ultimately modifying Army surplus UH-60Ls instead. The first of 21 UH-60L combat loss replacements was delivered in 2016 with the final aircraft entering service in 2022. Ongoing mods include color cockpit displays, Mode 5 IFF, loss-replacement mission systems, and defensive system support. USAF plans to fully replace the Pave Hawk fleet with new-build HH-60W by 2026 and began retirements in 2022, with plans to cut 37 airframes in 2024. ACC inactivated the 66th Rescue Squadron at Nellis with the retirement of its HH-60Gs on June 1, 2023, and Kadena's 33 Rescue Squadron began transition to the HH-60W in February 2024.

Contractor: Lockheed Martin Sikorsky.
First Flight: October 1974.
Delivered: 1982-1998 (HH-60G).
IOC: 1982.
Production: 112 (HH-60G); three (HH-60U).
Inventory: 61 (HH-60G); three (HH-60U).
Operator: ACC, AETC, AFMC (HH-60U), PACAF, USAFE, ANG, AFRC.
Aircraft Location: Aviano AB, Italy; Davis-Monthan AFB, Ariz.; Eglin AFB, Fla.; Francis S. Gabreski Arpt., N.Y.; JB Elmendorf-Richardson, Alaska; Kadena AB, Japan; Kirtland AFB, N.M.; Moffett Field, Calif.; Patrick SFB, Fla.
Active Variants:
•HH-60G. Modified UH-60 helicopter equipped for CSAR.
•HH-60U. Modified UH-60M helicopters utilized by AFMC for utility and test support.
Dimensions: Rotor diameter 53.6 ft, overall length 64.7 ft, height 16.7 ft.
Weight: Max T-O 22,000 lb.
Power Plant: Two GE Aviation T700-GE-700/701C turboshafts, each 1,560-1,940 shp.
Performance: Speed 184 mph; range 580 miles (farther with air refueling).
Ceiling: 14,000 ft.
Armament: Two 7.62 mm miniguns or two .50-caliber machine guns.
Accommodation: Two pilots, flight engineer, gunner.
Load: Up to three PJs and four nonambulatory patients.

HH-60 JOLLY GREEN II

Personnel recovery/medium lift

Brief: The HH-60W is an armed, all-weather day/night CSAR helicopter meant to replace the HH-60G. The type is derived from the UH-60M Black Hawk and dubbed "Jolly Green II" in honor of the Vietnam-era HH-3 and HH-53. Additional missions include casualty/medical evacuation, disaster and humanitarian response, firefighting, and combat/utility support. The HH-60W features a fully digital glass cockpit, improved hot weather/high-altitude performance, onboard self-defenses capable of

Senior Airman Zachary Rufus

defeating higher-end threats, an enlarged cabin, and double the internal fuel capacity of the HH-60G. Features include digital RWR, laser/missile/hostile fire warning, integrated chaff/flares, cabin and cockpit armor, externally mounted 7.62 mm and .50-cal weapons, LINK 16, SADL, integrated cockpit/cabin displays, advanced comms, ADSB, tactical moving map displays, upturned IR-masking exhausts, and efficient wide-chord rotor blades. USAF awarded Sikorsky Aircraft the $1.28 billion Combat Rescue Helicopter contract to replace the HH-60G on June 26, 2014. USAF revised its accelerated procurement plans to buy a total of 75 HH-60Ws over five lots (decreased from a planned 113 aircraft). A total of 55 LRIP helicopters would be procured in four lots from FY19 to FY22, with the final two lots procured through 2024. USAF accepted the first production aircraft from Sikorsky on May 18, 2021, and requested funds to procure 10 aircraft completing its planned buy in FY23. Congress, however, doubled the FY23 request—boosting the overall program to 85 airframes. Planned capability improvements include adding Distributed Aperture IR Counter Measure (DAIRCM), jam-resistant GPS, Degraded Visual Environment (DVE) system, Video Data Link (VDL), improved Blue Force Tracker, integrated system diagnostics, wideband-UHF and narrowband SATCOMS, and airspace compliance updates. The HH-60W completed developmental testing and established the helicopter's baseline configuration in April 2022. USAF approved full-rate production in April 2023 and shifted to full operational testing at Nellis, evaluating deficiency corrections, integrating an additional weapon, and verifying low-visibility hover instrumentation. Kadena began transition from the HH-60G with the arrival of the first HH-60Ws on Jan. 26, 2024.

Contractor: Lockheed Martin Sikorsky.
First Flight: May 17, 2019.
Delivered: 2019-present.
IOC: Sept. 7, 2022.
Production: 85 (planned).
Inventory: 32 (HH-60W).
Operator: ACC, AETC, PACAF. Planned: USAFE, ANG, AFRC.
Aircraft Location: Davis-Monthan AFB, Ariz.; Duke Field, Fla.; Kadena AB, Japan; Kirtland AFB, N.M.; Moody AFB, Ga. Planned: Aviano AB, Italy; Francis S. Gabreski Arpt., N.Y.; JB Elmendorf-Richardson, Alaska; Moffett Field, Calif.; Nellis AFB, Nev.; Patrick SFB, Fla.
Active Variants:
•HH-60W. Developmental next-generation Combat Rescue Helicopter based on the UH-60M.
Dimensions: Rotor diameter 53.6 ft, overall length 64.7 ft, height 16.7 ft.
Weight: Max T-O 22,500 lb.
Power Plant: Two GE Aviation T700-GE-701D turboshafts, each 1,857 shp.
Performance: Speed 176 mph; range 690 miles (air refuelable).
Ceiling: 20,000 ft.
Armament: Two 7.62 mm miniguns or two .50-caliber machine guns.
Accommodation: two pilots, flight engineer, gunner, two PJs.
Load: TBD.

MH-139 GREY WOLF

Missile field security/light lift

Brief: The MH-139 is based on the Leonardo AW139 and is modified with mission-specific equipment, systems, and armament by prime contractor Boeing. Features include an open-architecture glass cockpit, weather radar, enhanced ground proximity warning, radar altimeter, engine IR signature reduction, and military UHF/SATCOMS. The helicopter also features defensive systems such as chaff/flares and missile warning, cockpit and cabin ballistic protection, and crashworthy, self-sealing fuel tanks. AFGSC aircraft will be optionally armed with cabin-mounted 7.62 mm M240 machine guns. USAF awarded Boeing the $2.4 billion UH-1N replacement contract on Sept. 24, 2018, following cancellation of the earlier Common Vertical Lift Support Program (CVLSP). Requirements were driven by the MH-139's primary ICBM-field security and support role, but targeted to eventually replace UH-1Ns in the DV lift and aircrew survival training roles as well. Since the commercial AW139 is a mature system,

Senior Airman Breanna Christopher Volkmar

USAF streamlined developmental testing to focus on mission requirements. IOC was initially pegged for 2021 but developmental flight-testing uncovered performance-limiting deficiencies in crosswinds, degraded visual conditions, and austere operating conditions which delayed FAA and subsequent military certification to August 2022. Six helicopters are supporting 15-months of USAF-led developmental testing to expand the flight envelope, validate mission suitability, and develop tactics and procedures ahead of operational testing in mid-2024. Development is focused on fixing intercom, machine-gun ammunition feed system, mission-planning, and cabin layout problems. USAF is also working to solve engine debris ingestion issues that have restricted operations from unimproved surfaces, evaluate heavy-weight, hot/high-density altitude performance, and validate the effectiveness of the IR self-defense systems. USAF approved low-rate initial production in March 2023, and FY24 funds procure seven aircraft. A decision to ramp up to full rate production of 15 helicopters per year is expected in FY25, though the service wanted to reduce the planned 84-helicopter fleet to 42 aircraft due to budgetary constraints. AFGSC's three missile bases and the schoolhouse at Maxwell are unaffected by the change, though Andrews, Fairchild, and Yokota will continue to operate the UH-1N. Malmstrom took delivery of the first operational MH-139 on March 9, 2024.

Contractors: Boeing (prime contractor); Leonardo (formerly Agusta-Westland) (airframe); Honeywell (avionics).
First Flight: 2019.
Delivered: August 2022-present; (USAF/contractor-operated test aircraft delivered Dec. 19, 2019).
IOC: 2023 (planned).
Production: 80 (planned).
Inventory: Five.
Operator: AFGSC. Planned: AETC, AFRC.
Aircraft Location: Duke Field, Fla.; Malmstrom AFB, Mont. Planned: F. E. Warren AFB, Wyo.; Maxwell AFB, Ala.; Minot AFB, N.D.
Active Variants:
▪MH-139A. Military version of the Agusta Westland AW139 for utility support and light lift.
Dimensions: Rotor diameter 45.2 ft, length 54.7 ft, height 16.3 ft.
Weight: Max gross 14,110 lb.
Power Plant: Two Pratt & Whitney PT6C-67C turboshaft, each 1,100 shp.
Performance: Speed 167 mph, range 890 miles.
Ceiling: 20,000 ft.
Armament: Two M240 7.62 mm machine guns (mission dependent).
Accommodation: Two pilots, flight engineer.
Load: 15 passengers (depending on fuel, equipment, and atmospheric conditions) or up to four litters and five medical personnel.

UH-1 HUEY/IROQUOIS

Light lift/training

Brief: The UH-1N aircraft initially provided search and rescue capabilities before replacing earlier Huey variants in the ICBM field security and support role. UH-1Ns also provide administrative/DV lift to U.S. National Capital Region at JB Andrews and U.S. Forces-Japan at Yokota, as well as supporting aircrew survival training at Fairchild. The TH-1H fleet provides Air Force helicopter pilot training at Fort Novosel (formerly Fort Rucker). USAF converted all single-engine UH-1H models to TH-1H variants, extending their service lives by at least 20 years. USAF awarded Boeing the $2.4 billion UH-1N replacement contract for up to 84 MH-139s in 2018, but contract delays pushed initial fielding to 2023 or beyond. The fleet recently received NVG-compatible cockpits, upgraded sensors, and safety and sustainment improvements. The UH-1N is the only DOD aircraft fleet to consistently achieve its target mission capable rate over the past decade. The ongoing SLEP of up to 63 airframes aims to bridge the gap until the MH-139A is fielded. USAF planned to begin retiring

2nd Lt. Rebecca Abordo

the fleet in 2022 with full retirement by 2032, though no airframes have yet been divested and budget cuts to the MH-139 mean Andrews, Fairchild, and Yokota will continue flying the UH-1N for the foreseeable future.

Contractors: Bell Helicopter; Lockheed Martin (TH-1H prime).
First Flight: April 1969 (UH-1N).
Delivered: September 1970-1974; November 2005-2013 (TH-1H).
IOC: October 1970 (UH-1N); circa 2009 (TH-1H).
Production: 28 (TH-1H); 79 (USAF UH-1Ns).
Inventory: 28 (TH-1H); 63 (UH-1N).
Operator: AETC, Air Force District of Washington, AFGSC, AFMC, PACAF.
Aircraft Location: Eglin AFB, Fla.; Fairchild AFB, Wash.; F. E. Warren AFB, Wyo.; Fort Novosel, Ala.; JB Andrews, Md.; Kirtland AFB, N.M.; Malmstrom AFB, Mont.; Minot AFB, N.D.; Yokota AB, Japan.
Active Variants:
▪TH-1H. Modified twin-engine version of UH-1H used for flight training.
▪UH-1N. Military version of the Bell 212 used for utility support and light lift.
Dimensions: Rotor diameter 48 ft, length 57 ft, height 13 ft. (TH-1H); rotor diameter 48 ft, length 57.1 ft, height 12.8 ft. (UH-1N).
Weight: Max gross 10,500 lb.
Power Plant: One Honeywell T53-L-703 turboshaft, 1,800 shp (TH-1H); two Pratt & Whitney Canada T400-CP-400 turboshafts, 1,290 shp (UH-1N).
Performance: Speed 149 mph, range 300+ miles (UH-1N).
Ceiling: 15,000 ft (10,000 ft with 10,000+ lb).
Armament: (Optional) two General Electric 7.62 mm miniguns or two 40 mm grenade launchers; two seven-tube 2.75-in rocket launchers.
Accommodation: Two pilots, flight engineer.
Load: Six to 13 passengers (depending on fuel, equipment, and atmospheric conditions) or up to six litters or, without seats, bulky, oversize cargo (UH-1N).

TRAINER AIRCRAFT

Airman 1st Class Keira Rossman

T-1 JAYHAWK

Advanced trainer

Brief: The T-1A is a military version of the Beechcraft 400A business jet used in the advanced phase of JSUPT for tanker/transport pilot and CSO training pipelines. The cockpit seats an instructor and two students. Militarization includes UHF/VHF radios, INS, TACAN, airborne direction finder, increased bird-strike resistance, and an additional fuselage fuel tank. CSO training aircraft also incorporate GPS-driven synthetic aperture radar (SAR) and simulated RWR, as well as a second student and instructor station. Upgrade efforts are focused on avionics modernization and include new MFD and terrain collision avoidance systems. USAF awarded a $156 million Avionics Modernization Program (AMP) contract to replace the type's obsolescent flight deck with a commercial glass cockpit in 2018, and the first modified aircraft flew in March 2019. A total of 73 aircraft (including all CSO-training aircraft) were upgraded through completion of the curtailed program in March 2023. USAF began divesting the majority of the fleet in FY23 cutting a total of 50 airframes due to cost-prohibitive obsolescence issues. Congress

barred AETC from retiring an additional 52 aircraft in FY24 until the command fully implements its revamped Undergraduate Pilot Training. AETC plans to retain only the 21 CSO-configured trainers at Pensacola, relying instead on simulators to conduct mobility pilot qualifications.

Contractors: Beechcraft (airframe); Field Aerospace/Collins Aerospace (AMP).
Operator: AETC.
First Flight: July 5, 1991.
Delivered: Jan. 17, 1992-July 1997.
IOC: January 1993.
Production: 180.
Inventory: 127.
Aircraft Location: Columbus AFB, Miss.; Laughlin AFB and JBSA-Randolph, Texas; Vance AFB, Okla.; NAS Pensacola, Fla.
Active Variant:
▪T-1A. Military trainer version of Beechcraft 400A.
Dimensions: Span 43.5 ft, length 48.4 ft, height 13.9 ft.
Weight: Max T-O 16,100 lb.
Power Plant: Two Pratt & Whitney Canada JT15D-5B turbofans, each 2,900 lb thrust.
Performance: Speed 538 mph, range 2,555 miles.
Ceiling: 41,000 ft.
Accommodation: Three pilots (two students side-by-side, instructor in jump-seat); one pilot, one CSO trainee side-by side, instructor in jump-seat, one radar/system student and one instructor at aft-consoles (CSO-training configured aircraft).

Airman 1st Class Keira Rossman

T-6 TEXAN II

Primary trainer

Brief: The T-6 is a joint Air Force/Navy undergraduate pilot trainer developed under the Joint Primary Aircraft Training System program. The aircraft is based on the Swiss-designed Pilatus PC-9, and the Navy version is designated T-6B. Mods include a strengthened fuselage, zero/zero ejection seats, upgraded engine, increased fuel capacity, pressurized cockpit, bird-resistant canopy, and digital avionics with sunlight-readable LCDs. The tandem student and instructor positions are interchangeable, including single-pilot operation from either seat. The T-6 is fully aerobatic and features an anti-G system. USAF production was completed in 2010, with an expected service life of 21 years. Ongoing mods include a crash-survivable flight data recorder, updated training aids and Next-Generation Onboard Oxygen Generation System (OBOGS) to combat hypoxia-like incidents. Improved maintenance and inspections have resulted in an 82 percent reduction in hypoxic incidents and will continue until fleetwide retrofit is completed in mid-2024. FY23 launched the Avionics Replacement Program (ARP) to replace the T-6A's aging HUD cockpit displays and interface, integrate simulated air-to-air/air-to-ground weapons and EW, and modernize debriefing aids. Future development includes controlled flight-into-terrain-avoidance systems.

Contractor: Beechcraft/Textron Aviation Defense (formerly Raytheon).
First Flight: July 15, 1998.
Delivered: May 2000-May 2010.
IOC: May 2000.
Production: 452 (USAF); 328 (USN).
Inventory: 442 (USAF).
Operator: AETC, USN.
Aircraft Location: USAF: Columbus AFB, Miss.; Laughlin AFB, JBSA-Randolph, and Sheppard AFB, Texas; Vance AFB, Okla.; NAS Pensacola, Fla.
Active Variants:
▪T-6A. Joint service primary training aircraft, based on the Pilatus PC-9.
Dimensions: Span 33.5 ft, length 33.4 ft, height 10.7 ft.
Weight: Max T-O 8,300 lb (T-6).
Power Plant: One Pratt & Whitney Canada PT6A-68 turboprop, 1,100 shp.
Performance: Speed 320 mph, range 1,035 miles.
Ceiling: 31,000 ft.
Accommodation: Two pilots on Martin Baker MK16LA zero/zero ejection seats.

Joshua McClanahan/USAF

T-7A RED HAWK

Advanced trainer

Brief: The T-7A Red Hawk is the Air Force's developmental next-generation, supersonic advanced jet trainer. The service selected the joint-venture Boeing-SAAB aircraft as the winner of its $9.2 billion "T-X" competition to replace the T-38 on Sept. 20, 2018. The Air Force dubbed the type "Red Hawk" in honor of the WWII Tuskegee Airmen. The T-7A was rapidly developed in fewer than three years using digital design techniques to quickly field new, low-cost designs. The aircraft was designed from the outset to replicate the systems and performance of advanced fourth- and fifth-generation aircraft including high-G/high angle of attack performance and a blend of synthetic and onboard systems, including simulated radar, defensive systems, data links, and smart weapons. It incorporates fly-by-wire controls, a fully digital glass cockpit, "stadium seating" to improve backseat visibility, next-gen ACES 5 ejection seats, modular systems architecture, and maintainer-friendly design to cut downtime and life-cycle cost. T-7A is being developed in tandem with the Ground-Based Training System simulator and courseware to provide AETC with a seamless, comprehensive flight training program. The first of two "production ready" airframes flew from Boeing's facility at St. Louis on Dec. 21, 2016, launching initial flight-testing with the manufacturer. Boeing delivered the first of five production-representative aircraft to Edwards on Nov. 9, 2023, launching USAF and Boeing developmental flight-testing. Two aircraft are conducting flight-envelope expansion at Edwards and a third is in extreme weather-testing at Eglin prior to supporting systems testing. Instability at high angles of attack discovered in early trials as well as concerns with ejection seat performance and supply chain issues have delayed testing. A decision to begin low-rate production was likewise delayed a year to 2025 and initial operational capability was postponed from 2024 to 2028 or later. USAF recently reduced its planned procurement from 351 aircraft to an initial 346 with the first production T-7A slated for delivery to Randolph.

Contractors: Boeing-SAAB; General Electric (engine); Collins Aerospace (cockpit/ejection seats).
First Flight: Dec. 20, 2016 (T-X).
Delivered: 2023 onward (planned).
IOC: 2028 (planned).
Production: 351 (planned).
Inventory: One (contractor-owned test airframe).
Operator: AETC; Planned: AFMC.
Aircraft Location: Edwards AFB, Calif.; Eglin AFB, Fla. Planned: Columbus AFB, Miss.; Laughlin AFB, JBSA-Randolph, and Sheppard AFB, Texas; Vance AFB, Okla.
Active Variants:
▪T-7A. Developmental next-generation advanced trainer.
Dimensions: Span 30.6 ft, length 46.9 ft, height 13.5 ft.
Weight: Max T-O 12,125 lb.
Power Plant: General Electric F404-GE-103 augmented turbofan, 17,200 lb thrust.
Performance: Speed Mach 1+, range approx. 1,140 miles.
Ceiling: 50,000 ft+.
Accommodation: Two pilots on ACES 5 zero/zero ejection seats.

T-38 TALON

Advanced trainer

Brief: The T-38 was the first supersonic trainer aircraft and primarily serves AETC's advanced JSUPT fighter/bomber tracks and Introduction to Fighter Fundamentals. The aircraft is used to teach supersonic techniques, aerobatics, formation, night and instrument flying, and cross-country/low-level navigation. The T-38 is also used by the USAF Test Pilot School

Jet Fabara/USAF

to train test pilots and flight-test engineers and by ACC and AFGSC as a companion trainer to maintain pilot proficiency. ACC uses regenerated T-38s as dedicated Aggressor aircraft for F-22 training and companion trainers for the B-2 and U-2 programs. T-38Bs are equipped with a gunsight and centerline station for mounting external stores including ECM pod/practice bomb dispensers. Aircraft were redesignated T-38Cs after avionics modernization that added a glass cockpit and HUD, color MFDs, mission computer, integrated INS/GPS, and reshaped engine inlets. T-38s were designed for 7,000 flying hours but many have surpassed 20,000 hours, requiring life-extension to bridge the gap to replacement by the T-7A. Pacer Classic III is the type's third structural renewal effort and the most intensive in its history. It replaces major longerons, bulkheads/formers, intakes, internal skins, and structural floors on 180 high-risk T-38Cs. The first airframe was redelivered in 2015 and a total of 18 aircraft will undergo rework in FY24. USAF increased the number of T-38s receiving selected structural improvements by 21 aircraft in FY24 and now plans to upgrade a total of 182 under the Talon Repair Inspection and Maintenance (TRIM) program through 2028. Other key efforts also include digital cockpit display replacement, HUD and flight data-transfer refresh, and navigation system fixes to prevent spatial disorientation. USAF is working to resolve a shortage of overhauled engines due to parts obsolescence which has limited fleet availability and delayed pilot training over the last few years.

Contractors: Northrop Grumman; Boeing (sustainment); CPI Aerostructures (Pacer Classic III kits).
First Flight: April 1959 (T-38A); July 8, 1998 (T-38C).
Delivered: 1961-72 (T-38A); 2002-07 (T-38C).
IOC: March 1961.
Production: 1,187.
Inventory: 52 (T-38A); six (AT-38B); 437 (T-38C).
Operator: ACC, AETC, AFGSC, AFMC.
Aircraft Location: Beale AFB and Edwards AFB, Calif.; Columbus AFB, Miss.; Holloman AFB, N.M.; JB Langley-Eustis, Va.; JBSA-Randolph and Sheppard AFB, Texas; Eglin AFB (temporarily relocated from Tyndall AFB), Fla., Vance AFB, Okla.; Whiteman AFB, Mo.
Active Variants:
▪T-38A. Upgraded version with Pacer Classic I and II mods.
▪AT-38B. Armed weapons training version.
▪T-38C. Modernized airframes incorporating glass cockpits and upgraded engines.
Dimensions: Span 25.3 ft, length 46.3 ft, height 12.8 ft.
Weight: Max T-O 12,093 lb.
Power Plant: Two General Electric J85-GE-5 augmented turbojets, each 2,900 lb thrust.
Performance: Speed 812 mph, range 1,093 miles.
Ceiling: 55,000 ft+.
Accommodation: Two pilots on Martin Baker US16T zero/zero ejection seats.

EXPERIMENTAL AND TEST VEHICLES

X-37B ORBITAL TEST VEHICLE

Orbital test

Brief: X-37B is an unmanned experimental Orbital Test Vehicle (OTV) aimed at developing and maturing a reusable space-launch capability and conducting classified, extended, on-orbit missions/experiments and/or launching small satellites. NASA began the X-37 program in 1999, with the intention of building two demonstrators to validate technologies for both launch/on-orbit flight, and reentry/landing. Only the Approach and Landing Test Vehicle (ALTV) was built before NASA handed over the program to DARPA, which completed ALTV captive-carry/drop testing

USAF

with the subscale X-40A in 2006. The X-37B is based on NASA's notional OTV and is boosted into low-Earth orbit atop a standard Atlas V or SpaceX Falcon 9 launch vehicle for long-endurance space missions. The craft has an internal payload bay similar to the space shuttle orbiter's and can deploy satellites or conduct on-orbit experimentation. The vehicle autonomously reenters the atmosphere upon command from a ground control station (GCS), and it lands conventionally on the runway. Development includes advanced guidance, navigation and controls, avionics, thermal-resistant materials, propulsion, and autonomous control systems. The program's two test vehicles have successfully completed six orbital missions. The first mission (OTV-1) launched in 2010 and remained on orbit 224 days. The OTV-2 and OTV-3 missions launched in 2011 and 2012, and remained on orbit 468 days and 674 days, respectively. The OTV-4 mission remained aloft for 718 days and landed at Cape Canaveral for the first time on March 25, 2017. The OTV-5 mission marked the type's first launch atop a SpaceX Falcon 9 on Sept. 7, 2017, setting a record of 780 days on orbit, returning to Earth on Oct. 27, 2019. USSF launched its inaugural X-37B mission, OTV-6 (USSF-7), on May 17, 2020, which surpassed all previous flights, logging 908 days on orbit before landing at Kennedy Space Center on Nov. 12, 2022. OTV-6 was equipped with an aft-mounted service module enabling it to carry a larger research payload. The craft successfully deployed the U.S. Air Force Academy's experimental FalconSAT-8 as well as conducted a demonstration converting solar to RF microwave energy and transmitting it back to Earth. OTV-7 was carried aloft by a Falcon Heavy rocket for the first time Dec. 28, 2023, from Cape Canaveral, potentially targeting higher geosynchronous orbit. The launch closely followed deployment of a Chinese space plane dubbed "Shenlong" on Dec. 14, 2023.

Contractor: Boeing.
Operator: USSF SPoC, Delta 9 Detachment 1, (DEL 9 Det 1).
First Launch: April 22, 2010.
IOC: N/A.
Launch Vehicle: Atlas V, Falcon 9, Falcon Heavy.
Production: Two.
Inventory: Two.
Operational Location: Cape Canaveral SFS, Fla. (launch/landing); Vandenberg SFB, Calif., Kennedy Space Center, Fla. (landing).
Active Variant:
▪X-37B. DARPA/USAF-developed Orbital Test Vehicles.
Dimensions: Span 14 ft, length 29.25 ft (without service module), height 9.5 ft.
Weight: 11,000 lb at launch.
Propulsion: Single liquid-propellant rocket motor.
Endurance: 908+ days on orbit.
Orbit Altitude: Low-Earth orbit (LEO) at 110-500 miles.
Power: Gallium arsenide solar cells with lithium-ion batteries.

Kyle Brasier/USAF

X-62 VARIABLE-STABILITY IN-FLIGHT TEST AIRCRAFT

In-flight simulator

Brief: The X-62 Variable-stability In-flight Simulator Test Aircraft (VISTA) is a highly modified F-16D Block 30 capable of replicating the flight characteristics of a wide array of aircraft. VISTA was initially modified to support the Multi-Axis Thrust-Vectoring (MATV) program that tested the combat potential of high-angle-of-attack maneuvers starting in July 1993. VISTA completed 95 test flights with the Axisymmetric Vectoring Exhaust Nozzle (AVEN) and General Electric F110-GE-100 engine before

the program terminated in 1994. The aircraft subsequently became a mainstay of the USAF Test Pilot School, training test pilots and flight-test engineers to evaluate unstable or unpredictable aircraft with relative safety. The VISTA aircraft recently aided in the development and testing of Automatic Integrated Collision Avoidance Systems (ICAS), enhancing the safety of the F-16 and other fighter fleets. Originally designated NF-16D, the aircraft was equipped with the VISTA Simulation System (VSS) which could generate differing flight dynamics for the pilot, linked to a second control stick in the cockpit. VISTA incorporates an enlarged dorsal spine for additional equipment as well as a drag chute in common with some export variants of the F-16. It was redesignated X-62 in 2021 as part of a radical modernization effort that included upgrading VSS and integrating the new System for Autonomous Control of Simulation (SACS) and Model Following Algorithm (MFA). SACS permits the aircraft to be remotely controlled from the ground or operated via reprogramable synthetic artificial intelligence (AI), though with a safety pilot onboard. Open-architecture upgrades permit rapid reprogramming of various AI or control dynamics to replicate a broader variety of aircraft including uncrewed platforms. X-62 became the first supersonic aircraft to fly under AI control in December 2022 and Air Force Research Laboratory is employing X-62 as a surrogate to test software for the Skyborg paired, autonomous aircraft program. Algorithms flown on the X-62 enabled an unmanned XQ-58A Valkyrie to successfully fly via synthetic AI control. USAF is also modifying six F-16s with autonomous flight controls under the separate Viper Experimentation and Next-gen Operations Model-Autonomy Flying Testbed program (VENOM-AFT), which is likewise developing Collaborative Combat Aircraft (CCA) concepts. The X-62 is operated in partnership with Calspan Aviation and continues to support the Air Force Test Pilot School syllabus in addition to test work.

Contractors: Lockheed Martin; Calspan Aviation (VISTA VSS).
First Flight: April 1992 (NF-16D VISTA).
Delivered: January 1995.
IOC: 1992.
Production: One.
Inventory: One.
Operator: AFMC (AFRL, AFTPS).
Aircraft Location: Edwards AFB, Calif.
Active Variants:
▪X-62A. Highly modified F-16D Variable stability In-Flight Simulator Aircraft (VISTA).
Dimensions: Span 32.8 ft, length 49.3 ft, height 16.7 ft.
Weight: Max T-O 42,300 lb.
Power Plant: F100-PW-229 augmented turbofan, 29,000 lb thrust.
Performance: Speed Mach 2+, range 3,200 miles.
Ceiling: 50,000 ft.
Accommodation: Two pilots on ACES II zero/zero ejection seats; remote or AI algorithm control (with safety pilot).

UNCREWED AIRCRAFT SYSTEMS

Sara Vidoni/USAF

BQMS-167 SUBSCALE AERIAL TARGET

Full-scale aerial target

Brief: BQM-167A is a subscale, unmanned aerial target and threat simulator serving missile/weapons development, testing, validation, and training over the Eglin Test and Training Range. The 82nd Aerial Targets Squadron employs the cheaper subscale targets to complement its QF-16 full scale aerial target fleet operating from Tyndall. The BQM-167 is boosted to flying speed from a launch rail via a solid-fuel Rocket-Assisted Take Off (RATO) motor that is then jettisoned. BQM-167 is capable of representing air targets maneuvering at up to 9 Gs at speeds up to Mach 0.91 and altitudes between 50 and 50,000 feet. The drone is constructed of durable, lightweight composites, equipped with a recovery parachute, and depending on its condition capable of being refurbished and reused. BQM-167s incorporate a scoring system and a range of threat-simulating systems/stores, including IFF, EA pods, IR/radar countermeasures as well as IR/radar signature augmentation to simulate a variety of threats. The Air Force competitively awarded the first BQM-167 production contract in 2002 and most recently awarded a $338 million contract for Lot 17 through 21 covering 79 targets in September 2021. FY24 funds support production of 20 subscale targets.

Contractor: Kratos Unmanned Aerial Systems.
First Flight: Dec. 8, 2004.
Delivered: 2004-present.
IOC: 2008.
Production: 800+ (planned).
Inventory: Approx. 37.
Operator: ACC.
Aircraft Location: Tyndall AFB, Fla.
Active Variants:
▪BQM-167A. Subscale aerial target.
Dimensions: Span 10.5 ft, length 20 ft, height 4 ft.
Weight: Max T-O 2,050 lb.
Power Plant: MicroTurbo (Safran) Tri 60-5 turbofan, 1,000 lb thrust.
Performance: Speed Mach 0.91, range unknown.
Ceiling: 50,000 ft.
Defensive Systems: Chaff/flares, EA pods, IR/RF wing pods (augmentation).
Accommodation: Preprogramed, unmanned.

Airman 1st Class Victoria Nuzzi

MQ-9 REAPER

Attack/armed reconnaissance

Brief: The MQ-9B is a medium- to high-altitude, long-endurance hunter-killer RPA, primarily tasked with eliminating time-critical and high-value targets in permissive environments. Additional roles include CAS, CSAR, precision strike, armed overwatch, target development/designation, and terminal weapon guidance. The MQ-9 fulfills a secondary tactical ISR role utilizing its Multispectral Targeting System-B (MTS-B), upgraded Lynx SAR, and/or Gorgon Stare wide-area surveillance (fielded on seven modified aircraft). MTS-B integrates EO/ IR, color/monochrome daylight TV, image-intensified TV, and a laser designator/illuminator. MTS-B provides FMV as separate video streams or fused together. The MQ-9 employs SAR for JDAM targeting and dismounted target tracking. A Reaper system comprises three aircraft, upgraded Block 30 GCS, LOS/BLOS satellite and terrestrial data links, support equipment/personnel, and crews for deployed 24-hour operations. MQ-9B debuted in combat in Afghanistan in 2007. The fleet is split between earlier Block 1 and later Block 5 aircraft that are retrofitted to meet operational needs. Extended Range (ER) mods adding external fuel tanks, a four-bladed propeller, engine alcohol/water injection, heavyweight landing gear, longer wings and tail surfaces, and other enhancements were completed fleetwide in 2023. The future Multi-Domain Operations (M2DO) configuration flew for the first time in 2022, and will add enhanced data link and control robustness, plug-and-play system integration, and double the power to integrate future advanced sensors, systems, and algorithms. M2DO enhancements will include antijam GPS, Link 16, internet-protocol and modular mission system architecture, enhanced C2 resiliency, and greater flight autonomy/automation. Ongoing mods include DAS-4 high-definition EO/IR sensor and capability enhancements. The service is transitioning the fleet from counterinsurgency to future roles in or near contested airspace and Reapers have recently demonstrated maritime support, C2, and ISR roles flying from forward operating locations in the Pacific. Developmental Automatic Take-Off and Land Capability (ATLC) is enabling MQ-9 to operate from airfields worldwide without a line-of-sight ground station, vastly increasing flexibility. An AFSOC crew also demonstrated flying three MQ-9s simultaneously and using the aircraft as a mothership to launch smaller, networked UAS in 2023. USAF plans to retire all Block 1s in 2024 followed by the highest-time Block 5 airframes through 2027. Plans call for retaining 140 Reapers through 2035, until a more survivable, flexible, and advanced platform can be fielded. An MQ-9 was lost in a high-profile midair collision with a Russian Su-27 following a botched intercept over the Black Sea on March 14, 2023, and two were damaged by Russian fighters in incidents over Syria that July. Two more MQ-9s were shot down by Houthi rebels in

November 2023 and February 2024.

Contractors: General Atomics Aeronautical Systems; L3Harris; Raytheon (sensors).
First Flight: February 2001.
Delivered: November 2003-present.
IOC: October 2007; 2015 (ER).
Production: 338.
Inventory: 244.
Operator: ACC, AFMC, AFRC (associate), AFSOC, ANG.
Aircraft Location: Cannon AFB, N.M.; Creech AFB, Nev.; Eglin AFB, Fla.; Ellington Field, Texas; Fort Drum, N.Y.; Fort Huachuca, Ariz.; Hancock Field, N.Y.; Hector Arpt., N.D.; Holloman AFB, N.M.; March ARB, Calif.; Nellis AFB, Nev., and deployed locations worldwide. Planned: Tyndall AFB, Fla.; Whiteman AFB, Mo.
GCS Location: Cannon AFB, N.M.; Creech AFB, Nev.; Battle Creek ANGB, Mich.; Davis-Monthan AFB, Ariz.; Des Moines Arpt., Iowa; Ellington Field, Texas; Ellsworth AFB, S.D.; Fort Smith Arpt., Ark.; Hancock Field, N.Y.; Hector Arpt., N.D.; Holloman AFB, N.M.; Horsham AGS, Pa.; Hurlburt Field, Fla.; March ARB, Calif.; Springfield-Beckley Arpt., Ohio. Planned: Niagara Falls Arpt., N.Y.; Shaw AFB, S.C.; Tyndall AFB, Fla.; Whiteman AFB, Mo.
Active Variants:
▪MQ-9B Reaper Block 1. Air Force version of the General Atomics Predator B.
▪MQ-9B Reaper Block 5. Improved, current production Reaper.
▪MQ-9B Reaper ER. Extended-range MQ-9 with external fuel tanks, longer wings, and other enhancements.
Dimensions: Span 79 ft (ER), length 36 ft, height 12.5 ft.
Weight: Max T-O 10,500 lb.
Power Plant: One Honeywell TPE331-10GD turboprop, max 900 shp.
Performance: Cruise speed 230 mph, range 1,150+ miles, endurance 34 hr (ER).
Ceiling: 50,000 ft.
Armament: Combination of AGM-114 Hellfire (up to eight), GBU-12/49 Paveway II, and GBU-38 JDAMs.
Accommodation: Pilot, sensor operator (operating from GCS).

Airman 1st Class Emily Kenney

QF-16 FULL-SCALE AERIAL TARGET

Full-scale aerial target

Brief: QF-16 is a manned/unmanned aerial target and threat simulator serving missile/weapons development, testing, validation, and training. QF-16s began replacing the dwindling and obsolescent QF-4 Full-Scale Aerial Target (FSAT) starting in 2015, through the type's retirement in December 2017. QF-16s are capable of manned or "not under live local operator" (NULLO) control operations. The first of 13 LRIP QF-16s was delivered to Tyndall in early 2015. Boeing is under contract to deliver converted airframes in six production lots through April 2025. Recent upgrades include EA pod and software modernization to more accurately replicate adversary capabilities and tactics, ground-control modernization, and threat realism/countermeasure improvements. Boeing and USAF opened a second QF-16 conversion line at Davis-Monthan to augment production at Cecil Field in Jacksonville, Fla., in 2020, which delivered approximately 75 conversions before closing in July 2022. Conversions will continue at Davis-Monthan through the life of the program. USAF is seeking a follow-on supersonic Next Generation Aerial Target (NGAT) to better replicate advanced adversary platforms' performance, radar, IR, and system signatures. The service is transitioning funds from QF-16 procurement to sustainment starting in FY24.

Contractors: Lockheed Martin; Boeing (drone conversion).
First Flight: May 4, 2012.
Delivered: February 2015-present.
IOC: Sept. 23, 2016.
Production: 126 (planned).
Inventory: 11 (QF-16A); 62 (QF-16C).
Operator: ACC.
Aircraft Location: Holloman AFB, N.M.; Tyndall AFB, Fla.
Active Variants:
▪QF-16A. Converted from retired F-16A Block 15.
▪QF-16C. Converted from retired F-16C Block 25 and Block 30.
Dimensions: Span 32.8 ft, length 49.3 ft, height 16.7 ft.
Weight: Max T-O 37,500 lb.
Power Plant: Pratt & Whitney F100-PW-200 augmented turbofan, 23,830 lb thrust (Block 15); Pratt & Whitney F100-PW-220 augmented turbofan, 23,830 lb thrust (Block 25); GE Aviation F110-GE-100 augmented turbofan, 29,000 lb thrust (Block 30).
Performance: Speed Mach 2, ferry range 2,000+ miles.
Ceiling: 50,000 ft.
Defensive Systems/stores: Chaff/flares; EA pods: ALQ-188, ALQ-167; Towed Aerial Target Gunnery System.
Accommodation: Safety pilot (optional) on ACES II zero/zero ejection seat.

Bryce Bennett/USAF

RQ-4 GLOBAL HAWK

High-altitude reconnaissance

Brief: The Global Hawk is a strategic, long-endurance, high-altitude "deep look" ISR platform complementing satellite and manned ISR. The system consists of the aircraft and sensors, launch and recovery element (LRE), mission control element (MCE), and comms/mission planning cell. The preproduction Block 10 debuted in combat in 2001 and retired in 2011. Block 20 was initially equipped with the Enhanced Integrated Sensor Suite (EISS) for imagery intelligence (IMINT). Five were eventually converted as EQ-4B Battlefield Airborne Communications Node (BACN) relays before being retired in 2021. Block 30 was a multi-intelligence fleet equipped with EO/IR, SAR, and SIGINT sensors. ACC's final Block 30 departed Beale on July 7, 2022, destined for conversion by Northrop Grumman as a telemetry platform to support hypersonic weapons testing. Block 40 is a ground-moving target surveillance platform equipped with the Multiplatform Radar Technology Insertion Program (MP-RTIP) and the last USAF variant remaining in service. Its AESA and SAR simultaneously conduct moving target and cruise missile tracking, as well as stationary imagery collection. NATO operates a pooled fleet of RQ-4Ds based on the Block 40, which declared initial operating capability with the Allied Ground Surveillance fleet in 2021. FY24 funds support Block 40 and Ground Station sustainment through planned retirement in 2027. The Ground Station Modernization Program is currently fielding a completely redesigned "cockpit" that incorporates aircraft control, system and ISR sensor monitoring, data dissemination, and adds automated sensor operations and mission planning. USAF concluded Edwards-based RQ-4 operations in June 2023, transitioning all-variant development and sustainment testing to Palmdale.

Contractors: Northrop Grumman; Raytheon; L3Harris.
First Flight: Feb. 28, 1998.
Delivered: August 2003-present.
IOC: August 2011 (Block 30); August 2016 (Block 40).
Production: 45 (USAF).
Inventory: Nine (Block 40).
Operator: ACC, AFMC.
Aircraft Location: Grand Forks AFB, N.D. (Block 40); forward operating locations: Andersen AFB, Guam; NAS Sigonella, Italy; Yokota AB, Japan.
Active Variants:
▪RQ-4B Block 30. Multi-intelligence platform equipped with EO/IR, SAR and SIGINT sensors.
▪RQ-4B Block 40. AESA and SAR equipped ground moving target indica-

tion (GMTI) and battlefield ISR platform.
Dimensions: Span 130.9 ft, length 47.6 ft, height 15.3 ft.
Weight: Max T-O 32,250 lb; max payload 3,000 lb.
Power Plant: One Rolls-Royce North American F137-RR-100 turbofan, 7,600 lb thrust.
Performance: Speed 356.5 mph, range 14,150 miles, endurance 32+ hrs (24 hrs on-station loiter at 1,200 miles).
Ceiling: 60,000 ft.
Accommodation: LRE Pilot, MCE pilot, MCE sensor operator (operating from LRE/MCE) and/or maintainer at four work-stations (in GSMP-upgraded ground segments).

USAF

RQ-170 SENTINEL

Unmanned surveillance and reconnaissance

Brief:RQ-170 is an unmanned, stealthy, penetrating, day/night tactical ISR platform. Although the RQ-170 was still under development and testing, USAF employed it in Southwest Asia during Enduring Freedom. The RPA was developed in response to DOD's call for additional RPA support for combatant commanders. USAF publicly acknowledged the aircraft after photos appeared in foreign news media of operations over Afghanistan in 2009. The type is operated by the 432nd Wing at Creech and the 30th Reconnaissance Squadron at Tonopah Test Range. In 2011, an RQ-170 was captured almost intact by Iranian forces. Iran allegedly reverse-engineered a copy of the aircraft, which the Israeli Air Force reported shooting down during an engagement inside Israeli territory on Feb. 10, 2018. The RQ-170 took part in a joint exercise at Nellis in August 2020, testing its ability to accompany a B-2 on penetrating operations aided by SEAD F-35s.

Contractor: Lockheed Martin.
Operator: ACC.
GCS Location: Creech AFB, Nev.; Tonopah Test Range, Nev.
Aircraft Location: Tonopah Test Range, Nev.; deployed worldwide.
Known Active Variant:
▪RQ-170. No data available.
Dimensions: Span 65.6 ft, length 14.75 ft.

STRATEGIC WEAPONS

Airman 1st Class Jacob Wrightsman

AGM-86 AIR-LAUNCHED CRUISE MISSLE (ALCM)

Strategic air-to-surface cruise missle

Brief: The AGM-86 is a low-level, penetrating nuclear strike weapon for use against strategic surface targets. ALCM's small radar signature and low-level flight capability enhance the missile's effectiveness. The nuclear AGM-86B was the first production version with a total of 1,715 delivered through 1986. USAF plans to cut the inventory to an eventual 528 ALCM. Some ALCMs were modified for conventional use with INS/GPS-guidance and a blast fragmentation warhead and redelivered in 1987 as the AGM-86C CALCM and were operationally employed for the first time in Desert Storm and widely used in subsequent operations. CALCM was capable of adverse weather, day/night, air-to-surface, accurate, standoff strike at ranges greater than 500 miles. The AGM-86D was CALCM's Block II penetrator version with AUP-3(M) warhead used for standoff strikes on hardened, deeply buried targets in Afghanistan. CALCM was retired in early 2019 and the remaining AGM-186C/D were sent to Barksdale for storage awaiting disposal. ALCM is undergoing SLEP/component remanufacture to stretch its service life to 2030, pending replacement by the Long-Range Standoff (LRSO) missile. USAF awarded technology-maturation and risk-reduction contracts for the LRSO in 2017, resulting in the selection and continued development of Raytheon's AGM-181 Long-Range Standoff Weapon in April 2020. Plans call for fielding the nuclear AGM-181 by the late 2020s, possibly followed by a conventional derivative thereafter.

Contractor: Boeing.
First Flight: June 1979 (full-scale development).
Delivered: 1981-1986.
IOC: December 1982 (B); January 1991 (C); November 2001 (D).
Production: 1,715.
Inventory: Approx. 536 (B).
Operator: AFGSC.
Unit Location: Barksdale AFB, La.; Minot AFB, N.D.
Active Variants:
▪AGM-86B. Nuclear ALCM variant.
Dimensions: Span 12 ft, length 20.8 ft, body diameter 2 ft.
Weight: 3,150 lb.
Power Plant: Williams/Teledyne CAE F107-WR-10 turbofan, 600 lb thrust.
Performance: Speed 550 mph, range 1,500+ miles (B).
Guidance: Inertial plus Terrain Contour Matching (B).
Warhead: W80-1 nuclear warhead (B).
Estimated Yield: W80-1 warhead: five-150 kilotons (preselectable).
Integration: B-52H.

Giancarlo Casem/USAF

AGM-183 AIR-LAUNCHED RAPID RESPONSE WEAPON (ARRW)

Hypersonic air-to-surface weapon

Brief: The AGM-183A is a developmental boost-glide hypersonic missile to provide future, nonnuclear strike against time-sensitive, heavily defended, high-value targets from standoff range. The missile is designed to accelerate to speeds well in excess of Mach 5 before releasing a nonpowered glide vehicle that maneuvers a warhead to the intended target. USAF completed a series of seven captive flight tests utilizing an instrumented test article on a B-52H at Edwards, culminating in an aborted boost test in December 2020. An attempted boost test over the Point Mugu Sea test range on April 5, 2021, failed to leave the aircraft. A third attempt on July 28, 2021, proved safe separation and targeting acquisition but the booster failed to ignite. USAF conducted a series of six ground detonations quantifying the characteristics of the weapon's warhead in early FY22. ARRW achieved safe separation and booster ignition for the first time on May 14, 2022, attaining Mach 5 after release from a B-52. A second successful launch on July 12 concluded booster testing, paving the way for operational testing. An AGM-183 completed the first live-fire test of a full-up weapon on Dec. 9, 2022, successfully flying its planned route before impacting the predetermined target. USAF conducted three all-up round tests in 2023 including a March 19 test in which the shroud failed to separate from the glide vehicle, invalidating terminal performance data. An additional shot Aug. 19, achieved proper release, boost, and ascent as well as "nominal" glide vehicle and warhead detonation, followed by a similarly successful over-water shot Oct. 12. Assessments indicate ARRW is survivable against advanced defenses, though early failures may limit the program's ability to fully prove its lethality against intended targets. USAF conducted the second to last all-up round tests, aimed at proving the weapons against land-targets on March 17, 2024. The service plans to finish the test program this year. An acquisition decision and previ-

ously planned fielding on the B-1, B-52, and possibly F-15E/EX are now uncertain pending the results of testing.

Contractor: Lockheed Martin.
First Flight: May 14, 2022.
Delivered: TBD.
IOC: 2022 (planned).
Production: TBD.
Inventory: N/A.
Operator: AFMC, Planned: AFGSC.
Unit Location: Edwards AFB, Calif.
Active Variants:
▪AGM-183A. Developmental prototype hypersonic boost-glide weapon.
Dimensions: Unknown.
Weight: Unknown.
Propulsion: Solid fuel rocket.
Performance: Mach 5+, range approx. 1,000 miles.
Guidance: Unk.
Warhead: Boost-glide vehicle with explosive warhead.

Airman 1st Class Devan Halstead

B61 THERMONUCLEAR BOMB

Air-to-surface thermonuclear bomb

Brief: B61 is an air-dropped battlefield/tactical nuclear weapon equipping the F-16 and F-15E in the forward-deployed, allied extended deterrent role. It is also the B-2's primary strategic weapon. B61 was first delivered in 1966, and the B61 Mod 11 introduced in 1997 adds a ground-penetrating capability, enhancing its effect against buried and hardened targets. The weapon incorporates several preselectable yield options tailored to mission requirements. The B61 Mod 12 Life Extension Program (LEP) begun in 2016 is consolidating the B61-3, -4, -7, and -10 into a single, standardized configuration. The LEP refurbishes the warhead to improve the safety, security, and reliability through 2040. B61-12 also adds a guided tail kit, making it the first precision guided weapon of its type, thus permitting higher effectiveness at lower yields. USAF and the National Nuclear Security Administration finished B61-12 qualification flight-testing on June 9, 2018. The 31 inert test drops greatly exceeded performance requirements, validating nonnuclear components such as arming/fire control, guidance, spin-rocket motors, and software. B61-12 was approved for production and completed operational flight-testing on the F-15E and B-2A in 2019. Operational testing included 15 drops, certifying the F-15E on June 8, 2020, as the first aircraft capable of delivering the B61-12. The Department of Energy conducted nine additional drops, culminating in a full weapon system demo on the B-2A in July 2020. The B-2A conducted a test drop using the Radar Aided Targeting System (RATS) in July 2022, which was a major milestone for full integration on the aircraft. The F-35A dropped an inert B61-12 for the first time in 2020 and completed the final full weapon system drops required toward certification on Sept. 21, 2021. Full integration is planned as part of ongoing Block 4 development. The first production B61-12 emerged in November 2021 ahead of full-rate production ramp-up in October 2022. The entire B61 inventory is slated for upgrade to B61-12 through FY26, though DoD announced plans to develop a B61-13 variant using -12 enhancement to modernize the higher yield -7, Oct. 27, 2023. If funded, B61-13 would modernize existing weapons for use against "harder and large area military targets," replacing the 1.2 megaton B83-1 and approximately 360 kiloton-yield B61-7 without increasing the existing stockpile.

Contractors: Los Alamos National Laboratory, Sandia National Laboratory (weapon); Boeing (B61-12 tail kit).
Delivered: 1979-1998 (legacy stockpile); 2022-present (B61-12 mod).
IOC: 1968.
Production: Approx. 1,840 (current active variants).
Inventory: Approx. 725 (including stockpiled and deployed).
Operator: AFMC, USAFE.
Deployed locations: Aviano AB, Italy; Büchel AB, Germany; Ghedi AB, Italy; Incirlik AB, Turkey; Kleine Brogel AB, Belgium; Volkel AB, Netherlands.
Active Variant:
▪B61-3. Free-fall thermonuclear weapon with 0.3-170kt selectable yield.
▪B61-4. Free-fall thermonuclear weapon with 0.3-50kt selectable yield.
▪B61-7. Free-fall thermonuclear weapon with 10-360kt selectable yield.
▪B61-11. Ground-penetrating free-fall thermonuclear weapon with 400kt fixed yield.
▪B61-12. Modernized free-fall thermonuclear weapon with 0.3-50kt selectable yield and precision-guidance tail kit.
Dimensions: Length 11 ft 8 in., diameter 1 ft 1 in.
Weight: 700 lb; 825 lb (B61-12).
Performance: 0.3-400 kiloton thermonuclear yield air-droppable at speeds in excess of Mach 1.
Guidance: None (B61 Mod 1 to 11); unknown, likely INS (B61 Mod 12).
Warhead: One B61 -3, -4, -7, or -11.
Estimated Yield: 0.3 kilotons, 1.5 kilotons, 10 kilotons, 50 kilotons, (pre-selectable); 360 kilotons (B61-7), 400 kilotons (B61-11) (fixed yield).
Integration: B-2A, F-15E, and F-16C/D; NATO: F-16A/B Mid-Life Upgrade (MLU), and Panavia Tornado IDS.

Senior Airman Abbigayle Williams

LGM-30 MINUTEMAN III

Strategic surface-to-surface ballistic missile

Brief: Minuteman is a three-stage, solid-propellant nuclear deterrent ICBM housed in a survivable underground silo. Minuteman III became operational in 1970, providing improved range, rapid retargeting, and the capability to place up to three reentry vehicles on three targets with high accuracy. It is currently the sole operational U.S. land-based ICBM. AFGSC initially deployed 550 missiles, later reducing that number to 400 based at Malmstrom, Minot, and F.E. Warren. Deployed ICBMs were also reduced to a single-warhead configuration in 2014 under limits imposed by the New START agreement. Minuteman III is already more than 40 years beyond its initially planned service life, and USAF expects the system will begin falling below readiness standards as early as 2026 if not replaced. USAF awarded Northrop Grumman the Ground Based Strategic Deterrent (GBSD) development contract in 2019, resulting in the future LGM-35A Sentinel. AFGSC plans to begin replacing Minuteman III in 2027, with Sentinel fully replacing legacy ICBMs by 2036. Current Minuteman III efforts are focused on sustaining the ICBM's critical deterrent capability through the full fielding of Sentinel. Upgrades to guidance and propulsion will extend key systems to 2030, while modernized reentry vehicles and fuzes will serve both Minuteman and Sentinel. Flight-testing of the replacement fuse will culminate with the last of four test launches in 2024. USAF paused launches following Russian noncompliance with New START in 2022, but resumed testing with a shot on April 19, 2023. The service conducted four launches last year including one which was terminated in midflight due to an anomaly on Nov. 1, 2023. FY24 additionally funds Minuteman Essential Emergency Communication Network (MEECN) mods, generator reliability improvement, and access denial system life extension.

Contractors: Boeing; General Electric; Lockheed Martin; Northrop Grumman (formerly Orbital ATK).
First Flight: February 1961.
Delivered: 1962-1978.
IOC: December 1962, Malmstrom AFB, Mont.
Production: 1,800.
Inventory: Approx. 400 deployed.
Operator: AFGSC.
Unit Location: F. E. Warren AFB, Wyo.; Malmstrom AFB, Mont.; Minot AFB,

N.D.; Vandenberg SFB, Calif. (test location).
Active Variant:
▪LGM-30G. Current Minuteman III variant.
Dimensions: Length 59.9 ft, diameter 5.5 ft.
Weight: 79,432 lb.
Propulsion: Stage 1: Orbital ATK refurbished M55 solid-propellant motor, 202,600 lb thrust; Stage 2: Orbital ATK refurbished SR19 solid-propellant motor, 60,721 lb thrust; Stage 3: Orbital ATK refurbished SR73 solid- propellant motor, 34,400 lb thrust.
Performance: Speed at burnout approx 15,000 mph, range 6,000+ miles.
Guidance: Inertial guidance system.
Reentry Vehicle: One Mk 21 RV; one to three Mk 12/12A MIRVs.
Warhead: One W87 or up to three W78 enriched uranium thermonuclear weapons.

USAF illustration

LGM-35 SENTINEL

Strategic surface-to-surface ballistic missile

Brief: The LGM-35A Sentinel is a developmental three-stage, solid-propellant, silo-based nuclear ICBM designed to replace the Minuteman III as the land-based element of USSTRATCOM's nuclear triad. Nuclear deterrent modernization is the Defense Department's top priority and USAF exhaustively studied further extending the 50-year-old Minuteman III before determining full replacement would be the most cost-effective investment. USAF awarded Boeing and Northrop Grumman technology maturation and risk-reduction contracts for a future Ground-Based Strategic Deterrent (GBSD) in 2017. Boeing declined to bid on full development in 2019, leaving Northrop Grumman to develop GBSD, which was officially designated LGM-35A Sentinel in April 2022. AFGSC plans to modernize and/or replace existing Minuteman III launch control, alert, and C2 facilities at Malmstrom, Minot, and F.E. Warren to accommodate Sentinel, which is targeted to reach IOC with nine alert missiles by 2029. The overall program will replace the 400 deployed Minuteman IIIs and 450 silos on a one-for-one basis, with the addition of 242 missiles to support developmental testing as well as reliability validation over the life of the program. Sentinel will incorporate modular design and open system architecture to ease both maintenance and future modernization. The service plans to initially deploy Sentinel with a single thermonuclear warhead aligning it to New START treaty limits, though the ICBM's increased performance could permit a multiple-warhead configuration. Sentinel will utilize both the Mk21 reentry vehicle and ICBM fuse, which are already undergoing modernization and replacement for the Minuteman III. AFGSC projects the LGM-35A will reach full operational capability by 2036, providing land-based strategic deterrence capability through at least 2075. FY24 procurement primarily funds converting Minuteman launch control centers and test facilities, as well as procuring guidance, electronics, propulsion, and test equipment. Northrop Grumman conducted the first test firing of the LGM-35A's first stage solid rocket motor at its static-test facility at Promontory, Utah, in 2023 followed by a test of the second stage in a vacuum chamber at Arnold Engineering Development Complex, Tenn., in early 2024. The successful engine tests along with wind-tunnel testing completed last year pave the way for a planned test flight in 2024. The technical complexity of the project has likely delayed planned IOC by at least a year to early 2030.

Contractors: Northrop Grumman (prime contractor); Aerojet Rocketdyne (third-stage solid fuel rocket); Bechtel, Clark Construction (launch infrastructure); CAE (training system); Collins Aerospace (training system/ C2); General Dynamics (C2, digital engineering, aerospace equipment); Honeywell (guidance and control); Textron (reentry system); Lockheed Martin (payload support); Kratos, HDT Global (transport systems).

First Flight: 2024 (planned).
Delivered: N/A.
IOC: 2029 (planned).
Production: 642 (planned).
Inventory: Zero.
Operator: Planned: AFGSC.
Unit Location: Planned: F. E. Warren AFB, Wyo.; Malmstrom AFB, Mont.; Minot AFB, N.D.; Vandenberg SFB, Calif. (test location).
Variant:
▪LGM-35A. Developmental Minuteman III replacement.
Dimensions: Unknown.
Weight: Unknown.
Propulsion: Stage 1: Northrop Grumman solid-propellant motor, thrust TBD; Stage 2: Northrop Grumman solid-propellant motor, thrust TBD; Stage 3: Aerojet Rocketdyne solid-propellant motor, thrust TBD.
Performance: Speed hypersonic, range 6,000+ miles.
Guidance: Unknown.
Reentry Vehicle: Mk 21 or Mk 21A RV.
Warhead: W87-0 or W87-1 enriched uranium thermonuclear weapons.

LONG-RANGE STANDOFF WEAPONS

Airman 1st Class Celeste Zuniga

ADM-160 MINIATURE AIR LAUNCHED DECOY (MALD)

Aircraft decoy; close-in radar jammer

Brief: MALD is a programmable, low-cost, modular, autonomous flight vehicle that mimics U.S. or allied aircraft to confuse enemy Integrated Air Defense Systems (IADS). MALD-J adds radar jamming capability to the basic decoy platform and can operate alone or in concert with other EW platforms. The jammer version is designed as an expendable, close-in jammer to degrade and deny an early warning or acquisition radar's ability to establish a track on strike aircraft. It also maintains the ability to fulfill the basic decoy mission. The F-16 or B-52 are lead employment aircraft for MALD. USAF capped procurement in FY12, converting Lot 4 to the MALD-J variant. Plans call for 3,000, of which 2,400 are the jammer version. USAF demonstrated in-flight retargeting capabilities and is integrating GPS-Aided Inertial Navigation System (GAINS II) to improve navigational accuracy in GPS-denied environments. An upgraded Jammer variant dubbed "MALD-X" successfully demonstrated future, low-level flight capabilities, improved EW payloads, and enhanced data links in 2018. MALD-X aims to establish USAF's future baseline and serves as the basis of the Navy's developmental MALD-N variant. USAF awarded a MALD-J contract option for Lot 10 production in 2016 and a follow-on Lot 11 contract for 250 weapons in 2018. A-10s demonstrated a MALD standoff support capability, escorting B-1s during Exercise Iron Thunder near the Philippines in 2022.

Contractor: Raytheon.
First Flight: 1999 (MALD); 2009 (MALD-J).
Delivered: Sept. 6, 2012 (MALD-J).
IOC: 2015 (MALD-J).
Active Variants:
▪ADM-160B. MALD base decoy variant.
▪ADM-160C. MALD-J jammer/decoy variant.
Dimensions: Span 5.6 ft (extended), length 9.3 ft.
Weight: Less than 300 lb.
Power Plant: Hamilton Sundstrand TJ-150 turbojet, 337 lb thrust.

Performance: Range up to 575 miles, endurance 90 minutes (50 minutes on-station loiter).
Guidance: GPS/INS.
Integration: A-10, B-52H, F-16C. Planned: B-1B.

USAF

AGM-154 JOINT STANDOFF WEAPON (JSOW)

Guided air-to-surface glide bomb

Brief: JSOW is a joint USAF-Navy family of medium-range, GPS/INS guided, standoff air-to-ground glide weapons. It is used to attack a variety of soft and armored area targets during day and night and adverse weather conditions. The baseline BLU-97 CEM variant is used against soft and area targets. The BLU-108 variant provides anti-armor capability. The AGM-154C incorporates an additional imaging IR seeker and is intended for use against hardened, stationary targets. The new AGM-154C-1 variant adds moving, maritime strike capability to the baseline C variant, which reached IOC with the Navy in 2016. The weapon completed operational flight testing on the F-35C in 2019, clearing the way for ongoing internal integration and testing on the F-35A targeted for 2023.

Contractor: Raytheon.
First Flight: December 1994.
Delivered: 2000-2005 (USAF).
IOC: 2000.
Active Variants:
▪AGM-154A. Baseline BLU-97 CEM variant for soft/area targets.
▪AGM-154B. The BLU-108 submunition variant for anti-armor.
▪AGM-154C. Imaging IR-guided variant for hardened tactical targets.
Dimensions: Length 13.3 ft, diameter 13 in.
Performance: Range 13.8 miles low altitude, 73 miles high altitude.
Guidance: GPS/INS.
Warhead: See variants above.
Integration: A-10, B-1, B-2, B-52, F-15E, and F-16. Planned: F-35A.

Senior Airman Jonathan Ramos

AGM-158 JOINT AIR-TO-SURFACE STANDOFF MISSILE (JASSM)

Air-to-surface cruise missile

Brief: JASSM is a joint USAF-Navy autonomous, precision cruise missile for use against heavily defended or high-value targets at standoff range. It can attack fixed, relocatable, and moderately hardened/buried targets. The base variant is a stealthy, low-cost airframe equipped with GPS/INS guidance and imaging IR terminal seeker. The JASSM-Extended Range (JASSM-ER) version uses the same baseline body but a new engine and fuel system that increase range to more than 500 miles. The ER was cleared for combat on the B-1B in 2015, reached full operational capability on the F-15E in 2018, and is planned for use on all fighter/bomber platforms. Full-rate production began in 2018 and production shifted to ER-only in FY16. Further development has resulted in the extended range AGM-158B and "extreme range" AGM-158D, which is re-targetable via data link after launch. JASSM-ER production is shifting to AGM-158B-2 and production of the jam-resistant B-3 is projected for 2026. Prior production JASSM will not be upgraded though USAF aims to modify existing contract lots to procure B-2/B-3 instead. The AGM-158D is also currently in development and planned for delivery starting in 2027. Lockheed Martin is further developing the Long-Range Anti-Ship Missile (LRASM), which reached early operational capability on the B-1B in December 2018 and is planned for fielding on the B-52. USAF conducted a proof-of-concept employing palletized JASSM from mobility aircraft in 2020 in a massed standoff attack. JASSM and LRASM are USAF's premiere weapons for use in a high-end threat scenario. Notable efforts include Weapon Data Link (WDL) development to enable post-launch retargeting and precision guidance for GPS-denied environments. The service increased its JASSM stockpile objective by 47 percent, and FY24 funds continue maximum-rate procurement of 550 JASSM-ER as well as continuing LRASM purchases of 27 weapons. The manufacturer is opening a second production facility to double JASSM/LRASM production, and USAF plans to increase purchases to 810 missile a year due to threats in Europe and the Pacific. A B-2A successfully launched JASSM-ER for the first time during an integration test flight in 2022, and an F-15EX conducted its first shot as part of integrated testing in August 2023.

Contractors: Lockheed Martin; Raytheon; Honeywell.
First Flight: April 8, 1999.
Delivered: 2001-present.
IOC: September 2003; December 2014 (ER variant); 2018 (LRASM).
Production: 10,000 JASSM (planned); 400 LRASM (planned).
Active Variants:
▪AGM-158A JASSM. Base-variant.
▪AGM-158B JASSM-ER. Extended-Range variant (including B-2 and B-3).
▪AGM-158C LRASM. Long-Range Anti-Ship Missile, based on JASSM.
▪AGM-158D JASSM-ER. Developmental extreme-range variant of JASSM- ER (previously XR).
Dimensions: Length 14 ft, diameter approx. 2 ft, wingspan 7.8 ft.
Power Plant: Teledyne Technologies J402 turbojet (JASSM); Williams Intl. F107-WR-105 turbofan (JASSM-ER).
Performance: Speed subsonic, range 200+ miles (baseline), 500+ miles (ER), approx. 1000 miles (XR).
Guidance: GPS/INS and imaging IR terminal seeker.
Warhead: 1,000-lb class penetrator (JASSM); 1,000-lb blast fragmentation (LRASM).
Integration: B-1B, B-2, B-52H, F-15E, and F-16 Block 40-52; planned: F-35A (JASSM). B-1B, B-2A, B-52H, F-15E, F-16 Block 40-52; planned: F-15EX, F-35A, (JASSM-ER). Planned: B-52 (LRASM).

AIR-TO-AIR MISSILES

Tom Demerly/ANG

AIM-9 SIDEWINDER

Air-to-air missile

Brief: Sidewinder is an IR-guided short-range, supersonic air-to-air missile. It was developed by the Navy for fleet air defense and adapted for USAF fighters. Early versions were used extensively in the Vietnam War. The AIM-9M is a joint Navy-USAF, all-altitude, all-aspect intercept missile. It has improved defense against IR countermeasures, background discrimination, and reduced-smoke rocket motor. AIM-9X is the newest jointly funded variant. It employs passive IR tracking, jet-vane steering for increased maneuverability and Joint Helmet-Mounted Cueing System (JHMCS) compatibility for high-angle, off-boresight targeting. The enhanced AIM-9X Block II was cleared for full-rate production in September 2015 and adds improved lock-after-launch and maneuverability, a new data link for beyond-visual range engagement, enhanced anti-countermeasures, a new fuse, and safer ground-handling characteristics. AIM-9X production includes 67 converted AIM-9Ms, 1,289

Block I, and planned joint-service procurement of 11,635 Block II/II-plus (nearly double the number originally planned) through 2035. FY24 funds decreased from FY23, procuring a combined 192 AIM-9X Block II/II+ missiles. An F-22 scored its first kill on Feb. 4, 2023, using an AIM-9X to down a Chinese ISR balloon flying at 60,000 feet off the South Carolina coast.

Contractors: Raytheon; Northrop Grumman (propulsion).
First Flight: September 1953; July 1999 (AIM-9X); 2016 (AIM-9X Block II).
Delivered: AIM-9M 1983; AIM-9X from 2002-2011 (Block I); 2011-present (Block II); 2017-present (Block II+).
IOC: Circa 1983 (9M); November 2003 (9X); September 2016 (9X Block II).
Production: 1,289 (Block I); 11,635 (Block II/Block II+) (planned).
Active Variants:
- AIM-9M. Early variant.
- AIM-9M-9. Expanded anti-countermeasure capability variant.
- AIM-9X. Newest, highly maneuverable, JHMCS compatible variant.

Dimensions: Span 2.1 ft (M), 1.4 ft (X); length 9.4 ft (M), 9.9 ft (X); diameter 5 in.
Propulsion: Mk 36 Mod 11 (9M); Orbital ATK Mk 139 solid-propellant rocket motor (9X).
Performance: Speed Mach 2+, range 10+ miles.
Guidance: Passive IR homing guidance.
Warhead: HE annular blast fragmentation.
Integration: F-15C/D/E, F-16C/D, F-22A (AIM-9X). Planned: F-15EX, F-35A.

USAF

AIM-120 ADVANCED MEDIUM-RANGE AIR-TO-AIR MISSILE (AMRAAM)

Air-to-air guided missile

Brief: AMRAAM is an active, radar-guided, medium-range, supersonic air-to-air missile. It is a joint USAF-Navy follow-on to the AIM-7 Sparrow with launch-and-leave capability. The AIM-120B is an upgraded, re-programmable variant of the original missile. The AIM-120C incorporates smaller control surfaces for internal carriage on F-22 and F-35 and a high- angle off-boresight (HOBS) launch capability. AIM-120D offers improved range, GPS-assisted guidance, updated data links, and jam resistance in addition to greater lethality. Ongoing upgrades will further enhance weapon performance and electronic protection. The second phase of the AIM-120D System Improvement Program (SIP II) completed operational testing and was fielded in 2020. SIP III completed operational testing in 2022 and is planned for timely fielding to keep pace with emerging threats. Ongoing development also includes Form, Fit, and Function (F3R) mods and replacing obsolete electronic elements. An F-15E conducted the first of five live-fire tests of the resulting AIM-120D3 on June 30, 2022, paving the way for production and fielding. In 2019, USAF announced it is developing the AIM-260 Joint Air Tactical Missile (JATM) with the Navy to replace AMRAAM with a longer-range, more capable weapon to counter high-end threats. USAF successfully demonstrated an AIM-120 using passive infrared search and track (IRST) in lieu of radar against an airborne target in 2021, and an F-15E fired the first updated F3R AIM-120D3 in a live-shot against a QF-16 on June 30, 2022. The F-15EX fired an AIM-120D for the first time as part of integrated testing at Eglin Jan. 25, 2022. FY24 begins a multiyear/large lot procurement boosting USAF production from 320 to 457 AIM-120Ds.

Contractors: Raytheon; Northrop Grumman; Nammo Group (propulsion).
First Flight: December 1984.
Delivered: 1988-present.
IOC: September 1991; July 2015 (120D).
Active Variants:
- AIM-120B. Upgraded, reprogrammable variant of AIM-120A.
- AIM-120C. Production variant optimized for the F-22/F-35.
- AIM-120D. Latest variant with GPS guidance, improved range, lethality, and jam-resistance.

Dimensions: Span 1.7 ft (A/B), 1.5 ft (C/D); length 12 ft; diameter 7 in.
Propulsion: Boost-sustain solid-propellant rocket motor.
Performance: Supersonic, range 20+ miles.
Guidance: Active radar terminal/inertial midcourse.
Warhead: HE blast-fragmentation.
Integration: F-15C/D/E/, F-16C/D, F-22A, F-35A. Planned: F-15EX.

AIR-TO-GROUND MISSILES/ROCKETS

Courtesy illustration

WGU-59 ADVANCED PRECISION KILL WEAPON SYSTEM (APKWS) II

Air-to-surface guided rocket

Brief: APKWS II is a low-cost, semi-active laser-guidance system sized to fit the 2.75-in aerial rocket. It is optimized for precision, low-collateral-damage strike against moving or stationary light vehicle and personnel targets. APKWS can be fitted with HE or penetrating warheads as well as visual and IR illuminating, or white phosphorous rounds for target marking by forward air control aircraft. USAF acquired the system as an urgent operational requirement, and an F-16 employed it in combat for the first time in June 2016. The weapon employs a midbody guidance package to convert the standard rocket into a guided weapon. APKWS was already in service with the three other services and initial weapons were procured from Navy stocks. The rockets are launched from multiround reusable pods. An F-16 successfully destroyed an airborne target using APKWS as part of an anti-cruise missile demo in 2019 and an A-10 tested it against vehicles with advanced reactive armor in 2022. BAE introduced a block upgrade capable of increasing APKWS' range as much as 30 percent in 2021. USAF had nearly fulfilled its required inventory, however FY24 funds 2,059 HE warheads and 91 guidance kits in addition to motors and launch tubes. The AT-802U was tested with APKWS during evaluation prior to its selection as SOCOM's future light attack/armed overwatch platform.

Contractor: BAE Systems.
First Flight: May 2013 (USAF).
Delivered: October 2012-present.
IOC: Circa 2016.
Active Variant:
- WGU-59B. Semi-active, laser-guided 2.75-in rocket, adapted for fixed-wing use.

Dimensions: Span 9.5 in, length 6.25 ft, diameter 2.75 in.
Propulsion: Solid-propellant rocket motor.
Performance: Subsonic, range 1.2 to 6.8 miles.
Guidance: Semi-active laser.
Warhead: HE, armor-penetrating, white phosphorous, or illuminating round.
Integration: AT-6, A-10, A-29, F-16. Planned: AT-802U.

Tom Demerly/ANG

AGM-65 MAVERICK

Air-to-surface guided missile

Brief: Maverick is a TV, imaging IR, or laser-guided standoff air-to-surface missile employed by fighter/attack aircraft against tanks, vehicles, and air defenses. It was first employed during the Vietnam War and was used extensively in Desert Storm and Iraqi Freedom. AGM-65B is a launch-

and-leave, EO/TV guided missile, equipped with "scene magnification" allowing acquisition of small/distant targets. Fielded in 1986, AGM-65D employs an imaging IR seeker for all-weather day/night use. The AGM-65E is laser guided with a heavyweight penetrator warhead. The AGM-65G fielded in 1989 combines an imaging IR seeker, software to track larger targets, with a heavyweight penetrator warhead, digital autopilot, and a pneumatic actuation system. The AGM-65H is an upgraded B variant that recently completed tracker upgrades. The AGM-65K is a modified G variant that replaces IR guidance with EO TV and is also undergoing a tracker upgrade. The AGM-65L is the newest EO TV/semiactive-laser seeker equipped "Laser Maverick" designed to strike high-speed moving targets. USAF is gradually modifying legacy missiles to Laser Maverick standards, but the FY24 budget does not include additional procurement.

Contractors: Raytheon (missile body); Northrop Grumman (propulsion).
First Flight: August 1969.
Delivered: August 1972.
IOC: February 1973.
Active Variants:
- AGM-65B. A launch-and-leave EO TV seeker variant.
- AGM-65D. Adverse weather B variant.
- AGM-65E. Laser-guided version heavyweight penetrator variant.
- AGM-65G. Imaging IR seeker heavyweight penetrator variant.
- AGM-65H. Upgraded B variant.
- AGM-65K. Modified EO TV seeker G variant.
- AGM-65L. Laser-guided EO TV seeker variant for fast-moving targets.

Dimensions: Span 2.3 ft, length 8.2 ft, diameter 12 in.
Propulsion: Two-stage, solid-propellant rocket motor.
Performance: Supersonic, approx. 714 mph, range 20 miles.
Guidance: EO TV guidance system (B/H/K); imaging IR seeker (D/G); laser seeker (E).
Warhead: 125-lb cone-shaped (B/D/H); 300-lb delayed-fuse penetrator (E/G/K).
Integration: A-10C, F-15E, F-16C/D.

Jim Haseltine/courtesy photo via PACAF

AGM-88 HIGH-SPEED ANTI-RADIATION MISSILE (HARM)

Air-to-surface anti-radiation missile

Brief: HARM is an anti-radiation, air-to-surface missile highly effective against enemy ground radar. AGM-88 is a joint USAF-Navy weapon carried by SEAD-dedicated F-16CJs. AGM-88B is equipped with erasable and electronically programmable read-only memory, permitting in-field changes to missile memory. The AGM-88C is the current production model with a more lethal warhead. Raytheon began a HARM Control Section Mod (HCSM) in 2013 to convert current models to more precise AGM-88Fs with improved GPS/INS guidance, anti-countermeasure performance, and reduced risk of collateral damage. The Navy is further retrofitting its missiles with advanced networking, digital homing, and terminal millimeter-wave radar seeker resulting in the AGM-88E Advanced Anti-Radiation Guided Missile (AARGM). USAF dropped sole-source plans to pursue the extended-range AGM-88G AARGM-ER as the basis for its next-generation Stand-in Attack Weapon (SiAW), issuing a request to industry in March 2021 for proposals instead. SiAW will give the F-35 the ability to strike advanced threats including theater ballistic missile and land attack/anti-ship missile sites, GPS jammers, and anti-satellite systems. USAF is pursuing Navy-led fielding of AARGM-ER as an interim SEAD capability for the F-35A, procuring 42 missiles in FY23 and 14 in FY24 as a bridge to SiAW. AARGM-ER differs significantly from the legacy AGM-88, incorporating a new motor, larger diameter, and blended conformal strakes in place of forward stabilizing fins. A Navy F-18F successfully test-fired the first AARGM-ER over the Point Mugu test range on July 19, 2021, and the sea service's plan to reach IOC last year slipped to 2024 or later due to testing and certification delays.

Contractors: Raytheon (HARM); Northrop Grumman (AARGM).
First Flight: April 1979 (HARM); July 19, 2021 (AARGM-ER).
Delivered: 1982-98.
IOC: Circa 1984.
Active Variants:
- AGM-88B. Early production variant.
- AGM-88C. Current production variant.
- AGM-88E. Next-generation Advanced Anti-Radiation Guided Missile.
- AGM-88F. Upgraded variant with greater accuracy and precision.
- AGM-88G. Next-generation Advanced Anti-Radiation Guided Missile Extended-Range variant.

Dimensions: Span 3.7 ft, length 13.7 ft, diameter 10 in.
Propulsion: Thiokol dual-thrust, solid-propellant rocket motor.
Performance: Mach 2+, range 30+ miles.
Guidance: Proportional passive RF broadband via fixed antenna and seeker head in missile nose.
Warhead: HE fragmentation.
Integration: F-16CJ (Block 50); planned: B-21, F-35A (AARGM-ER).

Staff Sgt. Brian Ferguson

AGM-114 HELLFIRE

Air-to-surface guided missile

Brief: Hellfire is a low-collateral damage, precision air-to-ground missile with semi-active laser guidance for use against light armor and personnel. Missiles are employed on the MQ-9 Reaper and the AC-130J gunship. Hellfire is procured through the Army and numerous variants are utilized based on overseas contingency demands. An MQ-1 Predator employed Hellfire in combat for the first time in Afghanistan on Oct. 7, 2001. The latest AGM-114R replaces several types with a single, multitarget weapon and USAF is also buying variable height-of-burst (HOB) kits to enhance lethality. The next-generation Joint Air-to-Ground Missile (JAGM) is also procured via the Army and adds a new multimode guidance section to the AGM-114R. JAGM is used against high-value moving or stationary targets in all weather. Recent AC-130J block upgrades added a wing-pylon-mounted Hellfire to the gunship's arsenal.

Contractors: Lockheed Martin (missile body); Northrop Grumman (propulsion).
First Flight: Feb. 16, 2000 (USAF).
Delivered: March 2016-present.
IOC: N/A.
Active Variants:
- AGM-114. Numerous subvariants, depending on target and mission requirements.
- AGM-169. JAGM, incorporating a multimode seeker on the advanced AGM-114R.

Dimensions: Span 28 in, length 5.33 ft, diameter 17 in.
Propulsion: Solid-propellant rocket motor.
Performance: Subsonic, range 5+ miles.
Guidance: EO TV guidance system (B/H/K); IIR seeker (D/G); laser seeker (E).
Warhead: Shaped charge and blast fragmentation.
Integration: AC-130J, MQ-9.

AGM-176 GRIFFIN

Air-to-surface guided missile

Brief: Griffin is a light, low-cost, multiservice air-launched weapon with GPS-aided inertial guidance and semi-active laser seeker. The weapon is used for high-precision, low-collateral damage attack against light surface targets. The AGM-176A forms part of the PSP employed on AFSOC's AC-130J Ghostrider gunship, which employs the aft-firing weapon from ramp-mounted common-launch tubes. The forward-firing AGB-176B is employable on RPAs. USAF issued Raytheon a $105.2 million contract

Raytheon

modification to supply additional Griffin missiles in 2018. FY21 SOCOM-wide funds supported production of 226 AGM-176, including data links. FY22 ended additional procurement as USSOCOM shifts funds to confront future threats by developing small, Standoff Precision Guided Munitions (SOPGM) for use in contested environments. SOCOM plans to include AGM-176 in the future AT-802U armed overwatch platform's arsenal.

Contractor: Raytheon.
First Flight: Feb. 16, 2000 (USAF).
Delivered: September 2001.
IOC: N/A.
Active Variants:
▪AGM-176A. Aft-ejecting missile employed as part of the PSP.
▪AGM-176B. Forward-firing variant optimized for light aircraft/RPAs.
Dimensions: Length 43 in, diameter 5.5 in.
Propulsion: Solid-propellant rocket motor.
Performance: Subsonic, range 12+ miles.
Guidance: GPS/INS/semi-active laser.
Warhead: Blast fragmentation.
Integration: AC-130J (A), MQ-9 (B). Planned: AT-802U.

AREA WEAPONS

Senior Airman Jonathan Ramos

CBU-105 SENSOR FUZED WEAPON (SFW)

Wide-area munition

Brief: SFW is a tactical area weapon for use against massed stationary or moving armor and ground vehicles. The munitions dispenser contains a payload of 10 BLU-108 submunitions each containing four skeet-shaped copper disks totaling 40 lethal, target-seeking projectiles. The skeet's active laser and passive IR sensors can detect a vehicle's shape and IR signature. If no target is detected, the warhead instead detonates at a preset time. Primary targets are massed tanks, armored personnel carriers, and other self-propelled targets. SFWs can be delivered from high altitude and in adverse weather. It debuted in combat in Iraq in 2003. DOD ceased cluster munition procurement in 2007 and has only employed the weapons in combat once since 2003. CBU-105 was the standard USAF cluster munition that met the less-than-1-percent failure rate previously mandated by DOD for use beyond 2018. DOD has since reversed course, retaining existing weapons for deterrence on the Korean Peninsula. USAF is now testing the 500-lb class and 2,000-lb-class Next-Generation Area Attack Weapons (NGAAW), which replaces explosive submunitions with a high-fragmentation warhead, reducing the risk of unexploded munitions injuring noncombatants.

Contractor: Textron Systems.
First Flight: Circa 1990.
IOC: 1997.
Active Variants:
▪CBU-105. CBU-97 casing with Wind-Corrected Munitions Dispenser (WCMD) tail kit.
Dimensions: Length 7.7 ft, diameter 15 in.
Performance: Delivers 40 lethal projectiles over an area of about 500 ft x 1,200 ft.
Guidance: IR targeting in each warhead; INS (via WCMD tail kit pre-dispersal) and GPS-data (via aircraft, prerelease).
Warhead: Shaped charge and blast fragmentation.
Integration: A-10C, B-1B, B-52H, F-15E; F-16C/D, (tested on MQ-9).

Tech. Sgt. Marvin Lynchard

CBU-107 PASSIVE ATTACK WEAPON

Wide-area munition

Brief: Passive Attack Weapon is a nonexplosive, kinetic penetrating area weapon for use against sensitive targets. The CBU-107's penetrator rods limit collateral damage and do not scatter potentially contaminating debris when used against enemy WMD stockpiles. The weapon glides toward its target after release. Before impact, its inner chamber begins to rotate, and projectiles are ejected in rapid succession by centrifugal force, penetrating targets within a 200-ft radius. The weapon contains various-sized penetrating projectiles, but no explosive. Full production was completed in six months. The weapon was used during Iraqi Freedom.

Contractors: General Dynamics (kinetic energy penetrator payload and canister); Lockheed Martin (WCMD); Textron (tactical munition dispenser kit).
First Flight: 2002.
IOC: December 2002.
Active Variant:
▪CBU-107A. Centrifugally dispersed, armor-penetrating weapon with Wind-Corrected Munitions Dispenser (WCMD) tail kit.
Dimensions: Length 7.7 ft, diameter 15 in.
Performance: Delivers a high-speed volley of nearly 4,000 metal projectiles in three sizes from a single canister; projectiles: 15-inch rods (350), 7-inch rods (1,000), and small-nail size (2,400).
Guidance: INS (via WCMD tail kit) and GPS-data (via aircraft) pre-release.
Warhead: Non-explosive projectiles.
Integration: B-52, F-15E, F-16C/D.

NEXT-GENERATION AREA ATTACK WEAPON (NGAAW)

Wide-area munition

Brief: Next-Generation Area Attack Weapon (NGAAW) is a blast-fragmentation area weapon designed as an alternative to cluster bomb munitions banned by DOD mandate beyond 2018. DOD ceased cluster munition procurement in 2007 and implemented a less-than-one-percent failure rate mandate on area weapons to prevent civilian casualties from

unexploded ordnance. USAF awarded the $60 million NGAAW procurement contract for a compliant family of weapons in 2019. NGAAW is being developed in two increments, the 500-lb Improved Lethality Warhead (ILW) anti-personnel/materiel weapon based on the BLU-134B, followed by the more potent 2,000-lb high-fragmentation warhead. An F-16 conducted initial live-developmental test drops of the 2,000-lb-class BLU-136 at the Nellis Range in July 2020. The 10-weapon series proved the effectiveness of the weapon against light vehicles, structures, and personnel in excess of a 225-ft radius. The 2,000-lb weapon is externally similar to the standard JDAM when fitted with the precision-guided tail kit, requiring little adaptation to existing platforms for operational use. The NGAAW family of weapons will primarily be aimed at replacing the remaining CBU-105/107 stockpile, with potential to replace additional area weapons.

Contractors: Major Tool & Machine; Faxon Machining.
First Flight: 2020.
IOC: N/A.
Active Variant:
▪NGAAW Increment I. Optionally GPS/INS-guided Improved Lethality Warhead area weapon based on the 500-lb-class BLU-134/B.
▪NGAAW Increment II. Optionally GPS/INS-guided 2,000-lb area weapon, based on the BLU-136/B.
Dimensions: Length approx. 12 ft (2,000-lb class with tail kit), diameter approx. 14.5 in.; length approx. 7.8 ft, diameter approx. 10.7 in. (500-lb class with tail kit).
Performance: Range up to 15 miles (based on JDAM guidance/BLU-136 mass and form factor), 225+ ft effective radius (based on initial testing).
Guidance: GPS/INS.
Warhead: 2,000-lb high-fragmentation area-attack warhead with height-of-burst sensor (BLU-136/B); 500-lb fragmentation area-attack warhead (BLU-134/B).
Integration: N/A.

PRECISION GUIDED WEAPONS

Airman 1st Class Jessi Monte

GBU-10/12/49 PAVEWAY II

Air-to-surface guided munition

Brief: Paveway II is a laser-guided, free-fall bomb for use against surface targets at short to standoff range. The kit is a folding-wing version of the earlier fixed-wing Paveway I with seeker and reliability improvements. The recent Paveway II Plus adds a modernized, more precise guidance package. GBU-10 is the Paveway II seeker and tail kit mounted on a 2,000-lb general-purpose bomb and primarily used against nonhardened targets. It is, however, capable of penetration. The GBU-12 uses a 500-lb bomb body and is primarily used against stationary armored targets. GBU-49 is also a 500-lb body but adds GPS guidance for all-weather precision delivery from 2,500 ft up to 40,000 ft. GBU-49 currently provides the F-35A an interim moving target capability until its Block 3F software is fully fielded. An F-35 dropped the weapon for the first time in a test at Eglin on Nov. 7, 2018, and operational testing was conducted at Nellis.

Contractors: Lockheed Martin; Raytheon.
First Flight: Early 1970s.
IOC: 1976.
Active Variants:
▪GBU-10. Laser/GPS guided 2,000-lb bomb.
▪GBU-12. Laser guided 500-lb bomb.
▪GBU-16. Laser guided 1,000-lb bomb.
▪GBU-49. Laser/GPS guided 500-lb bomb.
Dimensions: Span 5.5 ft, length approx. 14.8 ft, diameter 18 in (GBU-10); span 4.4 ft, length 10.8 ft, diameter 11-18 in (GBU-12/49).
Performance: CEP 29.7 ft, range 9.2 miles (GBU-10); CEP 29.7 ft, range about six miles (GBU-12/49).
Guidance: Semi-active laser.
Warhead: Mk 84 bomb 2,000 lb (GBU-10); Mk 82 500-lb blast/fragmentation bomb (GBU-12/49).
Integration: A-10, B-1B, B-52, F-15E, F-16C/D, F-35 (GBU-49), MQ-9.

Master Sgt. Carl Clegg

GBU-24/28 PAVEWAY III

Air-to-surface penetrating glide bomb

Brief: Paveway III is a laser-guided free-fall bomb for use against surface targets from medium standoff range. The third-generation laser-guided seeker/tail kit package enables greater precision over Paveway II, and its high-lift airframe enables longer glide slopes for greater standoff employment. It can be dropped from low, medium, or high altitude and is effective against a broad range of high-value targets. GBU-24 is fitted to a 2,000-lb bomb body with a BLU-109 penetrating warhead. GBU-28 variants are large 5,000-lb-class air-to-ground penetrators initially developed for use against Iraq's deeply buried, hardened C2 facilities. The GBU-28B adds GPS/INS guidance to the existing laser seeker for all-weather targeting. It entered production in 1999. The GBU-28C adds a more powerful penetrating BLU-122 warhead in addition to the enhanced guidance package. It entered production in 2005 and quantities are purchased as needed to replenish and maintain stockpiles. GBU-28 will eventually be replaced by the JDAM-based GBU-72 "A5K" penetrator currently under development.

Contractor: Raytheon.
First Flight: Early 1980s (GBU-24); Feb. 24, 1991 (GBU-28).
IOC: 1986 (GBU-24); 1991 (GBU-28).
Active Variants:
▪GBU-24. Laser-guided 2,000-lb penetrating bomb.
▪GBU-28B/B. Laser/GPS/INS-guided 5,000-lb penetrating bomb.
▪GBU-28C/B. Laser/GPS/INS-guided 5,000-lb improved penetrating bomb.
Dimensions: Span 6.7 ft, length 14.4 ft, diameter 18 in (GBU-24); length approx. 20 ft, diameter 15 in (GBU-28).
Performance: Range more than 11 miles (GBU-24); range more than 5.75 miles (GBU-28).
Guidance: Semi-active laser.
Warhead: BLU-109 2,000-lb bomb (GBU-24); BLU-113 or BLU-122 5,000-lb bombs (GBU-28).
Integration: B-52, F-15E, F-16C/D (GBU-24); B-2A, B-52, F-15E (GBU-28).

Ilka Cole/USAF

GBU-31/32/38 JOINT DIRECT ATTACK MUNITION (JDAM)

Air-to-surface guided bomb

Brief: JDAM is a GPS/INS-guided, autonomous, all-weather surface attack weapon. The joint USAF-Navy program upgrades the existing inventory of general-purpose bombs by adding a GPS/INS guidance kit for accurate all-weather attack from medium/high altitudes. The weapons acquire targeting information from the aircraft's avionics. After release, an inertial guidance kit directs the weapon aided by periodic GPS updates. JDAM seeker/tail kits can be mounted on general-purpose or penetrating warheads in each weight class. JDAM can also utilize the 500-lb carbon fiber-cased Very Low Collateral Damage Weapon (VLCDW) for sensitive targets. A JDAM kit is under development for the 5,000-lb BLU-113 penetrating weapon slated for integration and flight-testing on the F-15E. The Advanced 2,000-lb (A2K) BLU-137/B weapon is also being developed for integration onto the F-15E and B-2A. A2K will improve both precision and penetration to strike a wider variety of targets, eventually replacing the BLU-109 bunker buster. JDAM-class weapons are the most frequent air-to-ground munition expended in combat. USAF is working to field an upgraded tail kit with anti-jam receiver for use in GPS degraded conditions under an Urgent Operational Requirement. The service is also seeking to develop a lighter-weight successor class of weapons incorporating IR/GPS guidance, maneuver wings, stealth, and EW capabilities. USAF drastically reduced combat stockpile replenishment in FY22 before slightly increasing procurement to 4,200 tail kits in FY23. FY24 funds procure 1,772 tail kits.

Contractors: Boeing; Textron; Honeywell.
First Flight: Oct. 22, 1996.
IOC: 1998.
Active Variants:
- GBU-31. GPS/INS-guided 2,000-lb GP, or BLU-109 penetrating weapon.
- GBU-32. GPS/INS-guided 1,000-lb GP, or BLU-110 penetrating weapon.
- GBU-38. GPS/INS-guided 500-lb GP, or BLU-140 (prev. BLU-111) penetrating weapon.

Dimensions: Span 25 in (GBU-31), 19.6 in (GBU-32), 14 in (GBU-38); length (with JDAM and warhead) approx. 12 ft (GBU-31), 10 ft (GBU-32), 7.8 ft (GBU-38).
Performance: Range up to 15 miles, CEP with GPS 16.4 ft, CEP with only INS 98 ft.
Guidance: GPS/INS.
Warhead: 2,000-lb Mk 84/BLU-109 (GBU-31); 1,000-lb Mk 83/BLU-110 (GBU-32); 500-lb Mk 82/BLU-111 (GBU-38).
Integration: A-10C, B-52H, B-2A, B-1B, F-15E, F-16, F-22A, F-35A (GBU-31/32), and MQ-9.

GBU-39 SMALL DIAMETER BOMB I (SDB I)

Guided air-to-surface glide bomb

Brief: SDB is a low-yield, all-weather precision guided munition designed to limit collateral damage and strike targets from up to 46 miles away. Experimentation began in 2001 in response to an ACC requirement for a miniaturized precision weapon. Boeing was selected to fully develop and produce the weapon in 2003 and low-rate initial production began in 2005. Its size allows it to be carried in fighter or bomber internal weapons bays or to increase overall loadout for more independent strikes per sortie. SDB I employs advanced anti-jam GPS/INS, and target coordinates are loaded on the ground or received from the aircraft before release. Several SDBs can be simultaneously released against multiple targets. The weapon was first employed by an F-15E over Iraq in 2006. The Focused Lethality Munition (FLM) is a low-collateral version employing a carbon fiber case to limit damage to structures. Laser SDB is capable of self-targeting as well as GPS-only modes and is equipped with a selectable HOB fuse to tailor kinetic effects. Current production versions incorporate Strategic Anti-Jam Beamforming Receiver Y-Code (SABR-Y) for use in GPS-denied/degraded environments. USAF reduced combat stockpile replenishment from over 2,000 weapons in FY21 to an actual total of 545 weapons in FY23, reflecting a shift to advanced standoff weapons to confront more advanced future threats. Procurement in FY24 increased to 874 and Ground-Launched SDB propelled by a 227 mm rocket are a significant part of U.S. military aid currently supplied to Ukraine. A-10C integration testing culminated a live-load of 23 SDB 1s in a flight test at Davis Monthan on Aug. 22, 2023.

William Lewis/USAF

Contractor: Boeing.
First Flight: May 23, 2003.
IOC: Oct. 2, 2006.
Production: 24,000 (planned).
Active Variant:
- GBU-39/B SDB I. GPS/INS-guided 250-lb low-yield bomb.
- GBU-39A/B SDB I. GPS/INS-guided Focused Lethality Munition.
- GBU-39B/B SDB I. Semiactive laser/GPS-guided 250-lb low-yield bomb.

Dimensions: Length 6 ft, width 7.5 in; BRU-61/A carriage (four bombs) length 12 ft, width 16 in, height 16 in.
Performance: Near-precision capability at standoff range up to 46 miles.
Guidance: GPS/INS.
Warhead: 250-lb class penetrating and blast fragmentation munition.
Integration: A-10, AC-130J, F-15E, F-16, F-22, F-35A. Planned: B-1, B-52, B-21, MQ-9.

Raytheon Missile and Defense

GBU-53 STORMBREAKER (SMALL DIAMETER BOMB II)

Guided air-to-surface glide bomb

Brief: StormBreaker (formerly SDB II) is a joint USAF-Navy program to develop a low-yield, precision guided munition capable of striking moving targets in all weather from up to 46 miles away. Its size allows it to be carried in fighter or bomber internal weapons bays or to increase overall loadout to enable more independent strikes per sortie. Several StormBreakers can be simultaneously released against multiple targets. SDB II adds a millimeter-wave radar, imaging IR, and semi-active laser packaged into a tri-mode seeker. The bomb is retargetable after release. Improvements over SDB I include reduced susceptibility to countermeasures and network-enablement through Link 16/UHF data links. LRIP began in 2015, and USAF awarded the current production Lot 7 on April 30, 2021. Development includes integrating anti-jam GPS receiver, crypto and cyber security improvements, as well as guidance and lethality enhancements. SDB II began operational testing in June 2018 and achieved initial field-

ing on the F-15E on Sept. 23, 2020, followed by IOC in September 2022. Navy testing is underway with the F-35B/C and the service declared early operational capability on the F-18E/F in October 2023 with IOC targeted for 2024. FY24 funding supports production of up to 920 SDB IIs.

Contractor: Raytheon.
First Flight: 2012.
IOC: September 2022.
Production: 21,610 (planned).
Active Variant:
▪GBU-53/B SDB II. Tri-mode guided 250-lb low-yield bomb.
Dimensions: Length 5.75 ft, wingspan 5.6 ft, diameter 7 in.
Performance: Near-precision capability at standoff range up to 46 miles.
Guidance: Tri-mode seeker millimeter-wave radar, uncooled IIR, and digital semi-active laser.
Warhead: 250-lb-class penetrating blast fragmentation munition.
Integration: F-15E. Planned: A-10, AC-130J, B-1, B-2, B-52, F-16, F-22, F-35, MQ-9.

Dynetics

GBU-69 SMALL GLIDE MUNITION

Guided air-to-surface glide bomb

Brief: Small Glide Munition is a standoff precision guided munition specifically tailored to SOF mission requirements. Internally carried GBU-69/B were integrated onto the next-generation AC-103J gunship as part of Block 20+ upgrades following initial operational testing. USSOCOM is currently working to integrate the weapon onto RPA platforms including the MQ-9. The weapon is deployable from the AC-130J's ramp-mounted Common Launch Tubes or dropped conventionally. It is capable of quietly reaching targets from standoff range using its deployable wings to minimize risk to delivery platforms. The weapon utilizes semi-active laser and lattice-type control fins (similar to the GBU-57) for guidance and terminal stability, and is capable of receiving in-flight targeting updates via two-way data link. The weapon was jointly developed between Dynetics and USSOCOM. The company was awarded two contracts in FY18 totaling $104 million for delivery of approximately 1,000 weapons through 2022. Procurement beyond FY21 decreased to align with future priorities such as Stand-Off Precision Guided Munitions (SOPGM) for use in contested environments.

Contractor: Dynetics.
First Flight: Feb. 16, 2000 (USAF).
Delivered: 2020-present.
IOC: 2017 (USSOCOM).
Active Variants:
▪GBU-69. Semi-active laser-guided 36-lb low-yield bomb.
Dimensions: Span 28 in, length 3.5 ft, diameter 4.5 in.
Propulsion: None.
Performance: Near-precision capability at standoff range of 20+ miles.
Guidance: Semi-active laser.
Warhead: 36-lb blast fragmentation.
Integration: AC-130J; planned: MQ-9.

GBU-72 ADVANCED 5,000-POUND PENETRATOR

Massive PGM

Brief: A5K is a GPS/INS-guided next-generation penetrating weapon for striking high-priority hardened and deeply buried targets. The GBU-72 comprises the BLU-138 5,000-lb-class weapon paired with a modified JDAM tail kit. The weapon is being developed as a more survivable, lethal, and affordable replacement to the current Paveway III-based GBU-28. A5K's successful ground detonation test was the largest open-air "Arena" test ever conducted at Eglin, and an F-15E successfully completed the first

Samuel King Jr./USAF

weapon release over the Eglin Range on July 23, 2021. The drop was the first of a three-flight-test series and demonstrated both safe separation from the aircraft and the JDAM tail kit's ability to guide the weapon. The weapon is undergoing integration test flights which are supposed to be completed by the end of FY24. Procurement of 125 weapons began FY22, and FY23 and FY24 fund 80 BLU-138/A5K weapons.

Contractor: Air Force Armament Directorate.
First Flight: July 23, 2021.
Delivered: 2022-present.
IOC: N/A.
Active Variants:
▪GBU-72. GPS/INS guided 5,000-lb BLU-138 penetrating weapon.
Guidance: Semi-active laser.
Warhead: 5,000-lb (BLU-138/GBU-72) penetrating warhead.
Dimensions: N/A.
Integration: Planned: F-15E.

USAF

GBU-43 MASSIVE ORDNANCE AIR BLAST (MOAB) BOMB

Massive guided bomb

Brief: MOAB is the largest satellite-guided, air-delivered weapon ever employed. It is designed for use against large area targets, deeply buried targets, or targets in tunnels or caves. The conventional HE bomb is GPS-guided, with fins and inertial gyro for pitch and roll. It was developed by the Air Force Research Laboratory Munitions Directorate at Eglin in only nine weeks to be available for the 2003 Iraq campaign. The weapon was designated Massive Ordnance Air Blast (MOAB) but is unofficially known as "Mother of All Bombs." The weapon is designed for deployment from the ramp of an MC-130H without a parachute. A total of 18,700 lb of the weapon's 21,000-lb weight is attributed to the BLU-120/B warhead. It was used operationally for the first time in April 2017 against an ISIS-occupied cave complex in Afghanistan.

Contractors: AFRL; Dynetics.
First Flight: March 11, 2003.
IOC: April 2003.
Active Variant:
▪GBU-43/B. GPS-guided 21,000-lb bomb.
Guidance: GPS/INS.

Warhead: BLU-120/B 18,700-lb HE.
Dimensions: Length 30 ft, diameter 3.3 ft.
Integration: MC-130H.

Tech. Sgt. Alex Fox Echols III

GBU-54 LASER JOINT DIRECT ATTACK MUNITION (LJDAM)

Air-to-surface guided bomb

Brief: LJDAM is a GPS/INS guided, autonomous, all-weather attack weapon for use against fixed as well as moving ground and maritime targets. It is a joint USAF-Navy development that combines a laser guidance kit with the GPS/INS-based navigation of the existing GBU-38 JDAM. Laser JDAM made its combat debut in Iraq in August 2008. The initial LJDAM was a dual-mode, 500-lb guided weapon capable of attacking moving targets with precision using a semi-active laser guidance set. It was developed as an urgent operational need, and testing was completed in less than 17 months. The 500-lb variant was delivered in May 2008 and deployed in combat in Iraq three months later. Boeing more recently developed the GBU-56 (2,000-lb) variant, which uses a similar semi-active laser guidance set.

Contractor: Boeing.
First Flight: 2005.
IOC: 2008.
Active Variant:
▪GBU-54 Laser JDAM. Laser/GPS/INS-guided 500-lb GP, or BLU-111 penetrating weapon.
▪GBU-56 Laser JDAM. Laser/GPS/INS-guided 2,000-lb GP, or BLU-109 penetrating weapon.
Dimensions: Length 7.7 ft, diameter 17 in. (GBU-54); length 12.6 ft, diameter 25.3 in (GBU-56).
Performance: Range up to 15 miles (40+ miles with JDAM ER wing set).
Guidance: GPS/INS with semi-active laser.
Warhead: Mk 82/BLU-111/BLU-126/BLU-129 500-lb munition (GBU-54); Mk 84/BLU-117/BLU-109/BLU-116 2,000-lb munition (GBU-56).

GBU-57 MASSIVE ORDNANCE PENETRATOR (MOP)

Massive PGM

Brief: MOP is a GPS-guided, earth-penetrating strike weapon for use against hardened and deeply buried targets. It was developed and tested through a USAF and Defense Threat Reduction Agency partnership in 2004 and is now managed by AFGSC. Flight-testing was conducted from 2008 to 2010, when the program transitioned to USAF. A B-2 successfully test-dropped the GBU-57 in 2014, 2015, and 2016. Several B-2s completed a total of four test drops at White Sands Missile Range in 2017 validating the effectiveness of mods made under the Enhanced Threat Response IV upgrade. MOP proved effective, clearing the way for potential early fielding, though the Air Force's recommendation was classified. The service is currently testing the Large Penetrator Smart Fuse (LPSF) to increase precision and lethality, though delays constructing representative test targets have pushed potential fielding of the upgrade to FY25 or beyond. A B-2 employed

509th Bomb Wing

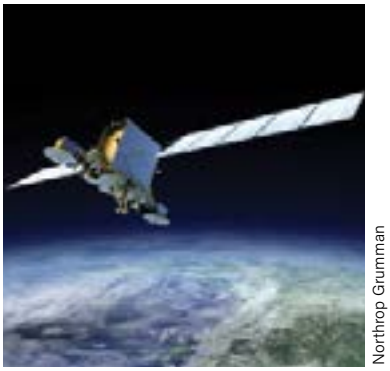
an LPSF-equipped weapon against a tunnel test target in 2020 to validate the design, followed by a series of three performance test drops between August 2021 and May 2022. No significant testing was conducted in 2023 but the program aims to formalize a test plan in FY24. Recent work includes adding jam-resistant GPS for operations against advanced A2/AD targets as well as procuring warheads, guidance kits, and fuses.

Contractor: Boeing.
First Flight: 2008.
IOC: 2011.
Operator: AFGSC.
Active Variant:
▪GBU-57B. GPS-guided 30,000-lb penetrating weapon.
Guidance: GPS.
Warhead: 5,740-lb HE.
Dimensions: Length 20.5 ft, diameter 31.5 in.
Integration: B-2A (tests also conducted on the B-52).

COMMUNICATIONS SATELLITES

ADVANCED EXTREMELY HIGH FREQUENCY (AEHF) SATELLITE SYSTEM

Communications



Northrop Grumman

Brief: AEHF provides global, secure, protected, and jam-resistant military communications. It enhances the previous Milstar satellites and operates at a much higher capacity and data rate. It offers secure, anti-jam tactical and strategic communications around the world. AEHF uses cross-linked satellites, eliminating the need for ground relay stations. The program is a collaboration with Australia, Canada, the Netherlands, and the United Kingdom. Launch of SV-4 was originally slated for Oct. 17, 2017, but an issue with the system's power regulator prompted USAF to delay launch a year to enable a hardware fix. SV-4 launched on Oct. 17, 2018, paving the way for full operational capability to be declared when the vehicle joined the constellation on May 3, 2019. SV-5 launched Aug. 8, 2019, and SV-6 launched from Cape Canaveral on March 26, 2020, marking the newly formed USSF's first launch. SV-6 became operational after completing on-orbit checks on Aug. 22, 2020, completing the constellation. USSF completed the fourth of five planned incremental software upgrades to the mission planning element in May 2021. The final increment was planned for late 2022. USSF plans to begin replacing AEHF with the next-generation Evolved Strategic SATCOM (ESS) for nuclear C2 starting in the early 2030s, while developing Protected Tactical SATCOM (PTS) to relive AEHF of providing contested battlefield comms. Both Boeing and Northrop Grumman received ESS prototype contracts ahead of a competitive selection. USSF is developing the Protected Tactical Enterprise Service (PTES) to enable global anti-jam, low-probability of intercept comms. PTES waveforms will initially be fielded on WGS, later expanding to commercial satellites and eventually to PTS. USSF plans to complete prototype PTS payloads in FY25 for hosted launch on WGS-11 as well as a second stand-alone satellite.

Contractors: Lockheed Martin; Northrop Grumman.
Operator/Location: USSF SpOC, Delta 8 (DEL 8), 4th Space Operations Squadron (4 SOPS), Schriever SFB, Colo.
First Launch: Aug. 14, 2010.
IOC: 2015.
Design Life: 14 yrs.
Launch Vehicle: Atlas V.
Constellation: Six.
Active Satellites:
▪AEHF SV-1. Launched in 2010, on orbit and operational.
▪AEHF SV-2. Launched in 2012, on orbit and operational.
▪AEHF SV-3. Launched in 2013, on orbit and operational.
▪AEHF SV-4. Launched in 2018, on orbit and operational.

▪AEHF SV-5. Launched in 2019, on orbit and operational.
▪AEHF SV-6. Launched in 2020, on orbit and operational.
Dimensions: Length 31 ft, width 98 ft (with full solar array extension).
Weight: 14,500 lbs at launch, 9,000 lbs on-orbit.
Performance: 24-hr low, medium, and extended data rate connectivity from 75 bps to approximately 8 Mbps, from 65 north to 65 south latitude worldwide.
Orbit Altitude: Geosynchronous at 22,500 miles.
Power: Solar arrays generating 20,000 watts.

USAF

MILSTAR SATELLITE COMMUNICATIONS SYSTEM (MILSTAR)

Communications

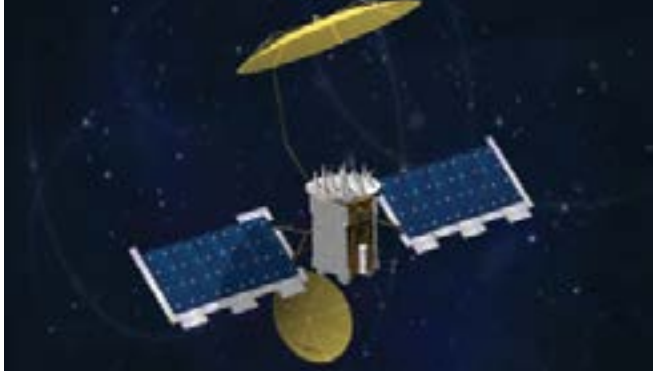
Brief: Milstar is the legacy joint-service backbone of strategic/tactical DOD communications. It provides encrypted, secure, anti-jam communications around the world and uses cross-linked satellites, eliminating the need for ground relay stations. Block I satellites incorporate a low-data-rate payload capable of transmitting 75 to 2,400 bps over 192 EHF channels. Block II satellites carry both the low-data-rate payload and a medium-data-rate payload capable of transmitting 4,800 bps to 1.5 Mbps over 32 channels, allowing larger data to be passed more quickly. Interoperable terminals allow third-party land/sea-based units to upload data in real time to cruise missiles or other compatible weapons. Milstar provides continuous coverage between 65 degrees north and 65 degrees south latitude. The systems utilize multiple-redundant command and control for high survivability. The last of six satellites launched in 2003 and was augmented by the sixth and final AEHF satellite in 2020. AEHF now supplants Milstar as DOD's primary system in the combined, fully back-compatible AEHF-Milstar constellation. Milstar surpassed 30 years of operations Feb. 7, 2024, exceeding its on-orbit design life by three times.

Contractors: Lockheed Martin; Boeing; Northrop Grumman (formerly TRW).
Operator/Location: USSF SpOC, Delta 8 (DEL 8), 4th Space Operations Squadron (4 SOPS), Schriever SFB, Colo.
First Launch: Feb. 7, 1994.
IOC: July 1997 (Milstar I).
Design Life: 10 yr.
Launch Vehicle: Titan IV/Centaur.
Constellation: 5: two Milstar I; three Milstar II.
Active Satellites:
▪Block I. Milstar I satellites launched 1994-95.
▪Block II. Milstar II satellites launched 1999-2003.
Dimensions: Length 51 ft, width 116 ft with full solar array extension.
Weight: 10,000 lb.
Performance: Milstar I low-data-rate (LDR) payload transmitting 75 to 2,500 bps of data over 192 channels of EHF; Milstar II LDR and medium-data-rate (MDR) payloads, transmitting 4,800 bps to 1.5 Mbps over 32 channels.
Orbit Altitude: Geosynchronous at 22,000+ miles.
Power: Solar arrays generating 8,000 watts.

MOBILE USER OBJECTIVE SYSTEM (MUOS)

Communications

Brief: MUOS provides next-generation global UHF narrowband and BLOS military SATCOMS. The constellation was originally developed by Lockheed Martin for the Navy and is designed to replace the legacy UHF Follow-On (UFO) system, enabling a 10-fold increase in capacity as well as interoperability with legacy terminals. Each satellite is equipped with an advanced SATCOM payload that converts 3G cellular-like service to military UHF as well as a UHF payload compatible with UFO terminals. MUOS provides tactical air, land, and sea platforms reliable SATCOMS even in challenging terrain and weather conditions and also extends SATCOMS to the high Arctic. The system utilizes both geosynchronous satellites and ground-station relays to provide mobile phone-type, voice, text, and data to users in the field. MUOS can interface with the Defense Switched Network and DOD's Global Information Grid offering clear voice and videoconferencing



USN

over existing networks. The system comprises four operational satellites, an on-orbit spare, and four ground relay stations in addition to networking and satellite control. USSF aims to procure two additional MUOS satellites targeted for launch by 2030, coinciding with the projected end-of-life of the initial vehicles. Service life extension efforts initiated by the Navy would procure two additional satellites, equipped only with the advanced Wideband Code Division Multiple Access (WCDMA) payload to replace the oldest satellites in orbit by 2030. Full exploitation of MUOS' capabilities has been hampered by the slow modernization of user platforms to date, and many USAF platforms are in the process of transition. The Naval Satellite Operations Center transferred its remaining UHF satellites, including five legacy UHF Follow-Ons, a single remaining UHF FLTSAT, and two range-extending nanosats to the USSF along with control of MUOS on June 6, 2022. FY24 funds focus on modernizing software and correcting cyber vulnerabilities to the network's six Ground Segment sites. Canada is set to become the first allied MUOS user starting in early 2024 with FOC for Canadian Forces planned in 2026.

Contractor: Lockheed Martin.
Operator/Location: USSF SpOC, Space Delta 8 (DEL 8), 10th Space Operations Squadron (10 SOPS), Naval Base Ventura County, Calif.; Schriever SFB, Colo.
First Launch: Feb. 24, 2012.
IOC: N/A; October 2019 (FOC).
Design Life: 14 yrs. Launch Vehicle: Atlas V.
Launch Vehicle: Atlas V.
Constellation: Four (plus one on-orbit spare).
Active Satellites:
▪MUOS-1. Launched in 2012, on orbit and operational (CONUS/Americas).
▪MUOS-2. Launched in 2013, on orbit and operational (Pacific).
▪MUOS-3. Launched in 2015, on orbit and operational (Atlantic).
▪MUOS-4. Launched in 2015, on orbit and operational (Indo-Asia).
▪MUOS-5. Launched in 2016, on-orbit spare.
Dimensions: Length 21.9 ft, height 12 ft, width 6 ft (with full solar array stowed), 90 ft (with solar arrays deployed); two deployable reflector arrays 17.7 ft (legacy UHF), and 45.9 ft (MUOS).
Weight: 8,405 lb (including 6,450 lb of fuel).
Performance: UHF narrowband/BLOS 3G-equivalent voice, chat, and data 89.5 north to 65 south latitude worldwide.
Orbit Altitude: Geosynchronous at 22,236 miles.
Power: Two deployable solar arrays.

Boeing

WIDEBAND GLOBAL SATCOM (WGS) SATELLITE

Communications

Brief: WGS provides worldwide, high-capacity communications for deployed air, land, and sea forces. The system is designed to augment and then replace DSCS X-band frequency service. It also augments the one-way Global Broadcast Service Joint Program Ka-band frequency capabilities and provides a new high-capacity, two-way Ka-band frequency service. Block I includes: SV-1 (Pacific region), SV-2 (Middle East), and SV-3 (Europe and Africa). Block II satellites are modified to better support the airborne ISR mission and include: SV-4 (Indian Ocean), and SV-5 and SV-6, purchased by Australia in 2013. The U.S. is partnering with Canada, Denmark, Luxembourg, the Netherlands, and New Zealand on Block II follow-on satellites SV-7 to SV-10. The Space and Missile Systems Center conducted tests to field anti-jamming capability for SV-1 through SV-10 starting in 2022. Congress

added funds beyond USAF's FY18 request to procure the 11th and 12th satellites, but USSF opted for the single, modernized WGS-11+ platform. USSF issued Boeing a $20.6 million contract modification for the design and launch of WGS-11+ on June 21, 2021. The satellite will offer roughly twice the capability, in addition to stronger, more reliable coverage and is tentatively slated for completion in 2024. Congress again added FY23 funds to procure WGS-12 to ensure depth of coverage, augmenting the future Protected Tactical SATCOM (PTS), which will provide battlefield coverage in contested spectrum environments. USSF conducted a demonstration and is working to field an IOC PTS capability using a WGS satellite in 2024 specifically to address needs in the Indo-Asia Pacific theater. This capability could be extended to the full constellation, permitting an advanced anti-jam/low probability of interception bridge to PTS, and eventually augmenting the future constellation. WGS-11 slated for launch in 2024 will host a dedicated PTS payload in addition to being the first WGS satellite carried into orbit by a ULA Vulcan Centaur.

Contractor: Boeing.
Operator/Location: USSF SpOC, Delta 8 (DEL 8), 4th Space Operations Squadron (4 SOPS), Schriever SFB, Colo.
First Launch: October 2007.
IOC: April 16, 2008.
Design Life: 14 yr.
Launch Vehicle: Atlas V, Delta IV; planned: Vulcan Centaur (WGS-11).
Constellation: 10 satellites.
Active Satellites:
- SV-1. Block I, launched in 2007; active.
- SV-2. Block I, launched in 2009; active.
- SV-3. Block I, launched in 2009; active.
- SV-4. Block II, launched in 2009; active.
- SV-5. Block II, launched in 2013; active.
- SV-6. Block II, launched in 2013; active.
- SV-7. Block II follow-on, launched in 2015; active.
- SV-8. Block II follow-on, launched in 2016; active.
- SV-9. Block II follow-on, launched in 2017; active.
- SV-10. Block II follow-on, launched in 2019; active.

Dimensions: Based on Boeing 702 Bus.
Weight: 13,000 lb at launch.
Performance: Approx. 10 times the capability of a DSCS satellite.
Orbit Altitude: Geosynchronous at 22,000+ miles.
Power: Solar arrays generating 9,934 watts.

METEOROLOGICAL SATELLITES

USAF

DEFENSE METEOROLOGICAL SATELLITE PROGRAM (DMSP)

Space and Earth environmental data collection

Brief: DMSP is tasked with environmental data collection for worldwide, military weather forecasting. It provides timely and high-quality weather information to strategic and tactical combat units worldwide. DMSP uses an operational line-scan sensor to image cloud cover in visible and thermal IR and analyze cloud patterns. It is equipped with microwave imagers and sounders and a suite of space environment sensors that provide critical land, sea, and space data. Block 5D-3 improved spacecraft bus and sensors for longer and more capable missions. Six operational DMSP satellites now survey the entire Earth four times a day. The oldest operational satellite, DMSP-13, suffered an apparent electrical short and exploded, creating a cloud of debris in space in 2015. DMSP-19 most recently launched in 2014. The vehicle subsequently suffered a power failure in early 2016, rendering it uncontrollable. Data from the craft remain usable until its orbit decays. Congress canceled the DMSP program before the final spacecraft (DMSP-20) could be launched. DMSP-20 was stored, awaiting a launch decision to replace DMSP-19. DMSP-17 ultimately assumed the failed satellite's coverage, and DMSP-20 went on permanent display at Los Angeles AFB, Calif. DMSP-14, the last operational Block 5D-2 satellite, was decommissioned Feb. 11, 2020, after 22 years. USAF awarded Ball Aerospace a $255.4 million development contract for the Weather System Follow-On-Microwave (WSF-M) in November 2018, to partially replace DMSP starting in FY24. WSF-M will measure oceanic winds and precipitation and space weather, augmented by the future Electro-Optical/Infrared Weather System (EWS), monitoring cloud cover and other conditions. USSF awarded General Atomics Electromagnetic Systems and Orion Space Solutions demonstrator contracts. Orion launched its experimental cubesat on Jan. 3, 2023, and General Atomics is expected to launch its demo in 2024. USSF estimates the DMSP constellation will reach the end of its useful life by 2026.

Contractors: Lockheed Martin; Northrop Grumman.
Operator/Location: National Oceanic and Atmospheric Administration; NOAA Operations Facility, Suitland, Md.; Schriever SFB, Colo. (backup).
First Launch: May 23, 1962.
IOC: 1965.
Design Life: Five yr (Block 5D-3). **Launch Vehicle:** Delta IV; Atlas V.
Constellation: Four low-Earth orbit (LEO).
Active Satellites:
- Block 5D-3. Improved spacecraft bus and sensors for longer, more capable missions.

Dimensions: Length 25 ft (with array deployed), width 4 ft.
Weight: 2,545 lb, incl 772-lb sensor; 2,270 lb with 592-lb sensor payload.
Performance: Polar orbits; covers Earth in about 6 hr.; primary sensor scans 1,800-mile-wide area.
Orbit Altitude: Approx. 527 miles.
Power: Solar arrays generating 1,200-1,300 watts.

ELECTRO-OPTICAL/INFRARED WEATHER SYSTEM – GEOSTATIONARY (EWS-G)

Space Operations Command

DEFENSE SUPPORT PROGRAM (DSP)

Strategic and tactical launch detection

Brief: EWS-G is an environmental data collection constellation for military weather forecasting over the Indian Ocean region. The system uses EO/IR sensors to image cloud layers and analyze environmental conditions in support of military operations and planning. EWS-G uses a Solar X-ray Imager (SXI) to map cloud cover in tandem with a sounding sensor that measures vertical temperature, humidity, and ozone layers. The satellites are also equipped with radiation and energetic particle sensors to monitor solar activity and electromagnetic "space weather," as well as a search and rescue transponder to extend aircraft, vessel, and personnel distress beacons. Data is transmitted to a Remote Ground Station (RGS) in Dongara, Australia, and relayed to DOD weather centers for analysis, forecasting, and dissemination to tactical users. The first satellite, EWS-G1 was launched as the National Oceanic and Atmospheric Administration (NOAA) Geostationary Operational Environmental Satellite (GOES)-13 in 2006. It was replaced on orbit in 2017 and subsequently transferred to the USSF to fill a gap in meteorological coverage in September 2020. EWS-G1 reached the end of its planned service life in February 2024, and USSF secured transfer of a second satellite (former GOES-15) redesignated EWS-2, which was maneuvered to a new geostationary orbit over the Indian Ocean in 2023. EWS-2 will provide coverage through 2030 or beyond. USSF awarded General Atomics Electromagnetic Systems a contract to develop a purpose-built EWS platform, issuing a follow-on option to build a prototype satellite in March 2023. The prototype is planned for launch in 2024 and EWS is intended to bridge the gap between anticipated DSMP retirement and USSF's next-generation small weather satellites.

Contractors: Boeing.
Operator/Location: USSF SpOC, Delta 2 (DEL 2), 19th Space Defense Squadron (19 SDS), NAF Dahlgren, Va.; National Oceanic and Atmospheric

Administration Wallops Command and Data Acquisition Station (WCDAS), Va.; NOAA Operations Facility, Suitland, Md. (backup).
First Launch: May 24, 2006.
IOC: 2020 (with USSF).
Design Life: 14 yrs.
Launch Vehicle: Delta IV.
Constellation: Four low-Earth orbit (LEO).
Active Satellites:
▪EWS-G1. Formerly NOAA GEOS-13, launched in 2006; active.
▪EWS-G2. Formerly NOAA GEOS-15, launched in 2010; active.
Dimensions: 13.7 x 6.16 ft x 9.5 ft with 27.5 ft solar array (deployed).
Weight: 7,075 lb at launch.
Performance: Geostationary orbit; provides constant near-real-time coverage of the Indian Ocean region.
Orbit Altitude: 22,236 miles.
Power: Solar array generating 2,300 watts.

MISSILE WARNING SATELLITES

DOD

DEFENSE SUPPORT PROGRAM (DSP)

Strategic and tactical launch detection

Brief: DSP provides ballistic missile early warning and is a key part of North American and theater early warning systems. It is capable of detecting missile launches and nuclear detonations and was initially meant to watch the Soviet military. It was used extensively in the 1991 Gulf War to detect Iraqi theater missile launches against coalition forces and allies in the region. The 23rd and final DSP satellite launched in December 2007 but malfunctioned and began drifting outside its intended orbit in 2008. Block 5 is the latest variant and is more survivable than predecessors. It includes a medium wavelength IR sensor for more mission utility and accommodates 6,000 detectors. The constellation hosts X-ray, optical, and radiation sensors that form a key part of the Radiation Detection Capability (RADEC) supporting the U.S. Nuclear Detonation Detection System (USNDS). USNDS is capable of near-real-time atmospheric and near-space detection and location of nuclear blasts supporting tactical warning, nuclear forces, space control, treaty monitoring, and classified missions. Nine Block 5 satellites were deployed between 1989 and 2007. Control of the constellation was consolidated to the new Block 10 Mission Control Station at Buckley in early 2016. SBIRS is integrated with DSP, augments its role, and is designed to eventually replace the constellation on orbit. The constellations jointly enabled early detection of ballistic missiles launched by Iran against U.S. forces at Al Asad AB, Iraq, on Jan. 7, 2020, reducing casualties. FY24 funds support DSP and SBIRS fixed and mobile ground station comms, crypto, cybersecurity, and processing modernization. The Army transferred the combined constellations' four Joint Tactical Ground Stations (JTAGS) located in Japan, Italy, South Korea, and Qatar to USSF as part of overall consolidation efforts on Oct. 1, 2023. USSF announced retirement of DSP-17, launched in 1994, on March 22, 2023.

Contractors: Northrop Grumman (formerly TRW); Aerojet.
Operator/Location: USSF SpOC, Space Delta 4 (DEL 4); Buckley SFB, Colo.
First Launch: November 1970.
IOC: Circa 1972.
Design Life: Three-year requirement and five-year goal.
Launch Vehicle: Titan IV with inertial upper stage; Delta IV Heavy NSSL.
Constellation: 23 deployed/five operational.
Active Satellites:
▪DSP-18. Launched in 1997, on orbit and operational.
▪DSP-19. Launched in 1999, on orbit and operational.
▪DSP-20. Launched in 2000, on orbit and operational.
▪DSP-21. Launched in 2001, on orbit and operational.
▪DSP-22. Launched in 2004, on orbit and operational.
▪DSP-23. Launched in 2007, on orbit and nonoperational.
Dimensions: Diameter 22 ft, height 32.8 ft, with paddles deployed.
Weight: Approx. 5,200 lb.
Performance: Uses IR sensors to sense heat from missile and booster plumes against Earth's background.
Orbit Altitude: Geosynchronous at 22,000+ miles.
Power: Solar arrays generating 1,485 watts.

SPACE-BASED INFRARED SYSTEM (SBIRS)

USSF

SPACE-BASED INFRARED SYSTEM (SBIRS)

Space-based surveillance/missile warning

Brief: SBIRS provides advanced space surveillance and missile warning, battlespace characterization, and technical intelligence gathering. It is the follow-on to the Defense Support Program satellite. The system includes IR sensor payloads on host satellites in highly elliptical orbit (HEO), two IR sensors each on dedicated satellites in geosynchronous Earth orbit (GEO), and ground assets. The HEO sensor detects launch of submarine-launched ballistic missiles (SLBMs) from the North Pole region and can be tasked for other IR detection missions. GEO scanning IR sensor performs the strategic missile warning mission, global technical intelligence, and initial phase for the strategic missile defense mission, providing two times the revisit rate and three times the sensitivity of DSP. GEO-5 and -6 are based on a modernized spacecraft that will begin migration to the next-generation Enterprise Ground Service (EGS), consolidating control of multiple systems. USSF also awarded Raytheon a contract in 2020 to modernize ground data processing. The Future Operationally Resilient Ground Evolution (FORGE) system will serve both SBIRS and the future Next-Generation Overhead Persistent Infrared (OPIR) system. OPIR will comprise three GEO satellites built by Lockheed Martin and two polar HEO sensors from Northrop Grumman. Delivery of the first OPIR GEO satellite is slated for FY25 followed by the first HEO sensor in FY28. The final SBIRS GEO satellite (GEO-6) successfully blasted off from Cape Canaveral on Aug. 4, 2022, and was operationally accepted March 24, 2023. GEO-5 and GEO-6 will replace the oldest satellites on orbit. FY24 funds support SBIRS and DSP fixed and mobile ground station comms, crypto, cyber security, and processing modernization. The Army transferred the combined constellations' four Joint Tactical Ground Stations (JTAGS) located in Japan, Italy, South Korea, and Qatar to USSF as part of overall consolidation efforts on Oct. 1, 2023.

Contractors: Lockheed Martin (prime contractor); Northrop Grumman (payload); Raytheon (data processing modernization).
Operator/Location: USSF SpOC, Space Delta 4 (DEL 4); Buckley SFB, Colo.
First Launch: GEO 1, May 2011.
IOC: HEO 1, Dec. 5, 2008. (Increment 1, Dec. 8, 2001).
Launch Vehicle: Atlas V (GEO).
Constellation: Six GEO sats, two HEO sensors and two HEO on-orbit reserve (hosted).
Active Satellites/Payloads:
▪SBIRS HEO-1. Payload operational in 2008; on-orbit reserve.
▪SBIRS HEO-2. Payload operational in 2009; on-orbit reserve.
▪SBIRS HEO-3. Payload operational in 2015; active.
▪SBIRS HEO-4. Payload operational in 2017; active.
▪SBIRS GEO-1. Launched in 2011; active.
▪SBIRS GEO-2. Launched in 2013; active.
▪SBIRS GEO-3. Launched in 2017; active.
▪SBIRS GEO-4. Launched in 2018; active.

▪SBIRS GEO-5. Launched in 2021; active.
▪SBIRS GEO-6. Launched in 2022; active.
Dimensions: 49 x 22 x 20 ft (GEO on orbit); 7 x 4 x 3 ft (HEO sensor).
Weight: 5,525 lb (GEO on orbit); 530 lb (HEO sensor).
Orbit Altitude: Geosynchronous (GEO satellites) and highly elliptical (HEO sensors).
Power: Solar array, 2,435 watts (GEO), batteries.

PRECISION TIMING AND NAVIGATION SATELLITES

Courtesy

NAVSTAR GLOBAL POSITIONING SYSTEM (GPS)

Worldwide navigation, timing, and velocity data

Brief: GPS supplies space-based military and civil radio-positioning for geolocation, navigation, and timing. It is a fundamental enabler of precision bombing, CSAR, mapping, and rendezvous. It provides accurate and uninterrupted 3D (latitude, longitude, and altitude) position, velocity, and time data. The last of the GPS Block IIA satellites, launched between 1990 and 1997 was decommissioned in 2020. GPS Block IIR and IIR-M (modernized) included 21 vehicles launched between 2005 and 2009. Modernization upgrades included two new signals, enhanced encryption, anti-jamming capabilities, a second civil signal, and electromagnetic pulse sensors that form part of the U.S. Nuclear Detonation Detection System (NDS). GPS Block IIF is a follow-on to IIR-M. Upgrades include extended design life, faster processors, and improved anti-jam and accuracy, a new military signal, and a second and third dedicated civil signal. The GPS Block IIIA, first launched on Dec. 23, 2018, has improved accuracy, availability, and integrity, and incorporates a steerable, high-power, anti-jam capability. Lockheed Martin completed Block IIIA production at SV-10 in 2022. The company was awarded a follow-on contract for Block IIIF SV-11 and SV-12 as well as up to 22 additional vehicles in 2018. USSF executed options for SV-13 and SV-14 in October 2020, SV-15 to -17 in November 2021, and SV-18 through SV-20 in November 2022. Block IIIF will add a hosted search and rescue payload, as well as geographically targetable high-power military signal. USSF is working to field the delayed Next-Generation Operational Control Segment (OCX), which will enable advanced GPS III features. The launch and on-orbit check segment of OCX went operational in 2017, but concurrent Blocks 1 and 2 to enable use of modernized civil, aviation, military signals, and advanced cyber defenses have been further delayed and are now not expected until mid-2024 or beyond. OCX is currently one of the last key elements to GPS Block III reaching IOC. USSF most recently launched GPS III SV-6 on Jan. 18, 2023, and vehicles 7 and 8 are awaiting launches planned for June 2024 and an undetermined launch date in 2025, respectively. The first IIIF is slated to be launch-ready by 2026.

Contractors: Boeing (IIF); Lockheed Martin (IIR, IIR-M, III/IIIF).
Operator/Location: USSF SpOC, Delta 8 (DEL 8), 2nd Space Operations Squadron (2 SOPS), Schriever SFB, Colo.
First Launch: Feb. 22, 1978.
IOC: Dec. 9, 1993.
Design Life: 7.5 yr (IIR/IIR-M); 12 yr (IIF); 15 yr (IIIA).
Launch Vehicle: Delta II, Delta IV, Falcon 9.
Constellation: 31 spacecraft (not including decommissioned or on-orbit spares).
Active Satellites:
▪GPS Block IIR. Launched 1997 to 2004; six active.
▪GPS Block IIR-M. Launched 2005 to 2009; seven active.
▪GPS Block IIF. Launched 2010 to 2016; 12 active.
▪GPS Block IIIA/IIIF. New generation launched in 2018; six active.
Dimensions: (IIR/IIR-M) 5 x 6.3 x 6.25 ft, span incl solar panels 38 ft; (IIF) 9.6 x 6.5 x 12.9 ft, span incl solar panels 43.1 ft.
Weight: On orbit, 2,370 lb (IIR/IIR-M); 3,439 lb (IIF).
Performance: Orbits the Earth every 12 hr, emitting continuous signals, providing time to within one-millionth of a second, velocity within a fraction of a mile per hour, and location to within a few feet.
Orbit Altitude: Medium-Earth Orbit (MEO) at between 10,988 and 12,550 miles.
Power: Solar panels generating 1,136 watts (IIR/IIR-M); up to 2,900 watts (IIF).

SPACE DOMAIN AWARENESS SATELLITES

GEOSYNCHRONOUS SPACE SITUATIONAL AWARENESS PROGRAM (GSSAP)

Situational awareness/orbital tracking

Brief: GSSAP supplies space-based tracking and characterization of manmade objects in geosynchronous orbit, aiding safety and enabling avoidance. They are the "neighborhood watch" satellites augmenting the legacy Space Based Space Surveillance (SBSS) system. SBSS tracks and classifies manmade objects in low-Earth orbit and GSSAP extends this coverage to geosynchronous orbit. The satellites themselves operate in near-geosynchronous orbit to effectively monitor objects and aid in preventing collisions in space. GSSAP carry EO/IR sensors and are able to maneuver to observe objects at close range or conduct rendezvous. They can track objects without the weather and atmospheric disruptions that affect ground-based systems. Two GSSAP satellites were launched in 2014 and attained IOC in 2015. Two more replenishment satellites launched Aug. 19, 2016, and became operational Sept. 12, 2017. USSF completed a significant overhaul and upgrade of the GSSAP ground system software to enhance the reliability, speed, and security of the system in February

USAF

2020. The upgrades also pave the way for future expansion of the constellation. The fifth and sixth sensors successfully launched aboard the USSF-8 mission from Cape Canaveral on Jan. 21, 2022, and were declared operational several months later. USSF announced the on-orbit decommissioning of GSSAP 2, Aug. 2, 2023. The space service plans to launch two additional GSSAP satellites into orbit in 2024 and 2027.

Contractor: Northrop Grumman Space Systems (formerly Orbital ATK).
Operator/Location: USSF SpOC, Delta 9 (DEL 9), 1st Space Operations Squadron (1 SOPS), Schriever SFB, Colo.
First Launch: July 28, 2014.
IOC: Sept. 29, 2015.
Launch Vehicle: Delta IV, Atlas V (USSF-8).
Constellation: Six spacecraft.
Active Satellites:
▪GSSAP 1. Launched in 2014; on orbit, active.
▪GSSAP 2. Launched in 2014, non-operational orbit, decommissioned in 2023.
▪GSSAP 3. Launched in 2016, on orbit, active.
▪GSSAP 4. Launched in 2016, on orbit, active.
▪GSSAP 5. Launched in 2022, on orbit, active.
▪GSSAP 6. Launched in 2022, on orbit, active.
Orbit Altitude: Near-geosynchronous at 22,300 miles.
Power: Solar panels.

Boeing

SPACE-BASED SPACE SURVEILLANCE (SBSS)

Orbital surveillance and object identification

Brief: SBSS is designed to track, characterize, measure, and collect optical signatures of Earth-orbiting objects, including space vehicles and debris. The Missile Defense Agency originally launched SBSS as a technology demonstrator to classify and track ballistic missiles in mid-course flight, before handing it over to AFSPC in 2011. SBSS primarily uses a trainable, ground-controlled Space-Based Visible Sensor to track targets without repositioning. Potential high-end and even kinetic space threats from China and Russia have pushed orbital domain awareness to the top of AFSPC's priority list. AFSPC worked to extend SBSS service life and tasked one of its experimental Operationally Responsive Space satellites to cover a four-year gap in coverage until the newly established Space Force can launch a follow-on spacecraft. ORS-5 launched Aug. 26, 2017, and is equipped with an optical sensor to provide rapid, continuous scanning to detect movement in geosynchronous orbit. The Space Force is seeking funds for a follow-on satellite to ORS-5 to enhance surveillance. SBSS works in concert with an array of networked, ground-based sensors including the Space Fence wide-area search and surveillance system recently commissioned on Kwajalein Atoll in the Marshall Islands. SBSS collision-warning data were made openly available to the public in 2020 to improve domain awareness and orbital safety, and USSF is considering handing off operations to a contracted service provider. USSF and the National Reconnaissance Office (NRO) launched the first three of a series of satellites intended to replace SBSS, dubbed "Silent Barker," from Cape Canaveral Sept 10, 2023. The next-generation system is slated to become fully operational in 2026.

Contractors: Boeing (system integration, ground segment, operations and sustainment); Ball Aerospace (satellite); Orbital ATK (ORS-5).
Operator/Location: USSF SpOC, Delta 9 (DEL 9), 1st Space Operations Squadron (1 SOPS), Schriever SFB, Colo.
First Launch: Sept. 25, 2010.
IOC: Aug. 17, 2012 (SBSS); May 31, 2018 (ORS-5).
Design Life: Seven yr.
Launch Vehicle: Minotaur IV.
Constellation: One LEO satellite; one LEO augmentation satellite.
Active Satellites:
- SBSS Block 10. Launched in 2010; active.
- ORS-5. Experimental satellite launched in 2017 to augment SBSS; active.

Dimensions: Height approx 49 ft; 22 ft x 20 ft (SBSS on-orbit); 5 ft x 2.5 ft (ORS-5).
Weight: Approx 5,525 lb (SBSS on orbit); approx 250 lbs (ORS-5).
Orbit Altitude: 390 miles, sun-synchronous orbit (SBSS); 372 miles, geosynchronous orbit (ORS-5).
Power: Solar arrays and batteries generating 750 watts (SBSS); solar array and batteries (ORS-5).

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United Launch Alliance

The final United Launch Alliance Delta IV Heavy rocket carrying the NROL-70 mission for the National Reconnaissance Office lifts off from Space Launch Complex-37 at Cape Canaveral Space Force Station, Fla., on April 9, 2024.

GLOSSARY OF ACRONYMS & ABBREVIATIONS

A nonexhaustive list of acronyms and abbreviations found in the 2024 Almanac.

A2/AD	Anti-access, area-denial
AA	Active associate: ANG/AFRC-owned aircraft
AAB	Army Air Base
AAF	Army Airfield
AATTC	Advanced Airlift Tactics Training Center
AB	Air Base
ABG	Air Base Group
ABW	Air Base Wing
ABMS	Advanced Battle Management System
ACC	Air Combat Command
ACG	Air Control Group
ACS	Air Control Squadron
ACTS	Air Combat Training Squadron
ACW	Air Control Wing
ADS-B	Automatic Dependent Surveillance-Broadcast
AE	aeromedical evacuation
AEHF	Advanced Extremely High Frequency
AESA	active electronically scanned array
AETC	Air Education and Training Command
AFB	Air Force Base
AFDW	Air Force District of Washington
AFGSC	Air Force Global Strike Command
AFLCMC	Air Force Life Cycle Management Center
AFMC	Air Force Materiel Command
AFNWC	Air Force Nuclear Weapons Center
AFRC	Air Force Reserve Command
AFRL	Air Force Research Laboratory
AFS	Air Force Station
AFSC	Air Force Specialty Code
AFSOC	Air Force Special Operations Command
AFSMO	Air Force Spectrum Management Office
AFSPC	Air Force Space Command
AFTC	Air Force Test Center
AG	Airlift Group
AGM	air-to-ground missile
AGOW	Air Ground Operations Wing
AGS	Air Guard Station
AGS	Alliance Ground Surveillance
AIM	Air intercept missile
ALC	Air Logistics Complex
ALCM	Air-Launched Cruise Missile
ALCF	Airlift Control Flight
ALCOM	Alaskan Command
ALTV	Approach and Landing Test Vehicle
AMC	Air Mobility Command
AMOG	Air Mobility Operations Group
AMOW	Air Mobility Operations Wing
AMRAAM	Advanced Medium-Range Air-to-Air Missile
AMS	Air Mobility Squadron
AMW	Air Mobility Wing
ANG	Air National Guard
ANGB	Air National Guard Base
ANGS	Air National Guard Station
APO AP	Army/Air Force Post Office Pacific
APO AE	Army/Air Force Post Office Europe
AOC/G/S	Air and Space Operations Center/Group/Squadron
APS	Aerial Port Squadron
ARB	Air Reserve Base
ARG	Air Refueling Group
Arpt.	Airport
ARS	1) Air Refueling Squadron 2) Reserve Station
ARW	Air Refueling Wing
AS	1) Air Station 2) Airlift Squadron
ASIP	Airborne Signals Intelligence Payload
ASOS/G	Air Support Operations Squadron/Group
ASTF	Aeromedical Staging Flight
ATCS	Air Traffic Control Squadron
ATKW	Attack Wing
ATP	advanced targeting pod
AW	Airlift Wing
AWACS	Airborne Warning and Control System
BACN	Battlefield Airborne Communications Node
BLOS	beyond line of sight
BLU	Bomb Live Unit
BM	battle management
BMEWS	Ballistic Missile Early Warning System
BW	Bomb Wing
C2	command and control
C3	command, control, and communications
C3I	command, control, communications and intelligence
C4	command, control, communications, and computers
CACS	Command and Control Squadron (Space)
CALCM	Conventional Air-Launched Cruise Missile
CAS	close air support
CBCS	Combat Communications Squadron
CBU	cluster bomb unit
CC	combat communications
CCG	Combat Communications Group
CCW	Command and Control Wing
CDS	Container Delivery System
CEF	civil engineering flight
CEM	combat effects munition
CEP	circular error probable
CENTCOM	U.S. Central Command
CFIN	combat flight inspection
CFAC	combined force air component commander
CFT	conformal fuel tank
CG	Communications Group
CNS/ATM	Communications, navigation, surveillance/air traffic management
COMINT	Communications intelligence
CONECT	Combat Network Communications Technology
CSO	combat systems officer
CONUS	Continental U.S.
COS	Cyberspace Operations Squadron
CRF	Centralized repair facility
CRG	Contingency Response Group
CRTC	Combat Readiness Training Center
CRW	Contingency Response Wing
CSAR	combat search and rescue
CTOL	Conventional Takeoff and Landing
CTS	Combat Training Squadron
CW	1) Cyberspace Wing 2) Combat Weather
DAF	Department of the Air Force
DCGS	Distributed Common Ground System
DMOC	Distributed Mission Operations Center
DMSP	Defense Meteorological Satellite Program
DOD	Department of Defense
DSCS	Defense Satellite Communications System
DSP	Defense Support Program
DSRP	Defense Space Reconnaissance Program
DTOC	Distributed Training Operations Center
DV	distinguished visitors
EA	electronic attack
ECG	Electronic Combat Group
ECM	Electronic countermeasures
EELV	Evolved Expendable Launch Vehicle
EHF	extremely high frequency
EIS(G)	Engineering Installation Squadron/Group
EISS	Enhanced Integrated Sensor Suite
ELINT	Electronic intelligence
ENG	Engineering/Engineer
EO	electro optical
EOD	explosive ordnance disposal
ER	extended range
ESS	Evolved Strategic SATCOM
EW	electronic warfare
EWO	electronic warfare officer
FAB-T	Family of Advanced Beyond Line-of-Sight Terminals
FAC-A	forward air controller airborne
FG	Fighter Group
FLIR	forward-looking infrared

FLTS Flight Test Squadron
FMV full-motion video
FTG Flying Training Group
FTU Formal Training Unit
FTW Flying Training Wing
FW Fighter Wing
FY fiscal year
GA Guardian Angel (pararescuemen, combat rescue officers, and survival, evasion, resistance, and escape specialists)
GATM Global Air Traffic Management
GBU Guided Bomb Unit
GCS ground control station
GEODSS Ground-based Electro-Optical Deep Space Surveillance System
GPS Global Positioning System
GSSAP Geosynchronous Space Situational Awareness Program
HARM High-speed Anti-Radiation Missile
HE high explosive
HUD head-up display
Helo helicopter
IADS integrated air defense system
IBS Integrated Battle Station
ICBM Intercontinental ballistic missile
IFF identification, friend or foe
IIR imaging infrared
INS inertial navigation system
IOC initial operational capability
IOF/S Information Operations Flight/Squadron
IOW Information Operations Wing
IR infrared
IS Intelligence Squadron
ISR/G/W Intelligence, Surveillance, and Reconnaissance Group/Wing
IVEWS Integrated Viper Electronic Warfare Suite
IW Intelligence Wing
IWS Information Warfare Squadron
JADC2 Joint All-Domain Command and Control
JASSM Joint Air-to-Surface Standoff Missile
JB Joint Base
JBSA Joint Base San Antonio
JDAM Joint Direct Attack Munition
JHMCS Joint Helmet-Mounted Cueing System
JMS Joint Mission System
JNGB Joint National Guard Base
JRB Joint Reserve Base
JROTC Junior Reserve Officers' Training Corps
JSOW Joint Standoff Weapon
JSpOC Joint Space Operations Center
JSTARS Joint Surveillance Target Attack Radar System
JSUPT Joint Specialized Undergraduate Pilot Training
JTIDS Joint Tactical Information Distribution System
LAAR Light Attack/Armed Reconnaissance
LAD Large Area Display
LANTIRN Low-Altitude Navigation and Targeting Infrared for Night
LCD liquid crystal display
LDM Loadmaster
LGB laser-guided bomb
LJDAM Laser Joint Direct Attack Munition
LO low observable
LOS line of sight
LRASM Long-Range Anti-Ship Missile
MAFFS Modular Airborne FireFighting System
MALD Miniature Air-Launched Decoy
MASINT Measurement and signature intelligence
MCB Marine Corps Base
MCE mission control element
MDG Medical Group
MDW Medical Wing
MEECN Minuteman Essential Emergency Communication Network
MFD Multifunction display
MILSATCOM Military Satellite Communications
MISS Mission/s
MOH Medal of Honor
MSG Mission Support Group
MW Missile Wing
N/A not available
NAF Naval Air Facility
NAS Naval Air Station
NAOC National Airborne Operations Center
NAV Navigation/Navigator
NGAAW Next Generation Area Attack Weapons
NORTHCOM U.S. Northern Command
NOSS network operations security squadron
NSSL National Security Space Launch
NVG night vision goggles
OFP Operational Flight Program
O&M Operations and Maintenance
OPS Operations/Operators
OT&E operational test and evaluation
PACAF Pacific Air Forces
PACOM U.S. Indo-Pacific Command
PAR Presidential Aircraft Replacement
PARCS Perimeter Acquisition Radar Attack Characterization System
PEO Program Executive Officer
PGM precision guided munition
PSP Precision Strike Package
PTS Protected Tactical SATCOM
RAMP Reliability, Availability, and Maintainability Program
RAOC Regional Air Operations Center
RATO Rocket-Assisted Take Off
RATS Radar Aided Targeting System
R&D research and development
RDT&E research, development, test, and evaluation
RED HORSE Rapid Engineer Deployable Heavy Operational Repair Squadron Engineers
RG Reconnaissance Group
RPA remotely piloted aircraft
RQG Rescue Group
RQS Rescue Squadron
RQW Rescue Wing
ROTC Reserve Officer's Training Corps
ROVER Remotely Operated Video Enhanced Receiver
RS Reconnaissance Squadron
RSC Resource/s
RSG Regional Support Group
RW Reconnaissance Wing
RWR radar warning receiver
SACU Situational Awareness Capabilities Upgrade
SAR synthetic aperture radar
SATCOM satellite communications
SBIRS Space-Based Infrared System
SCMS Supply Chain Management Squadron
SCMG Supply Chain Management Group
SCMW Supply Chain Management Wing
SCOW Supply Chain Operations Wing
SDB Small Diameter Bomb
SEAD suppression of enemy air defenses
SERE survival, evasion, resistance, and escape
SHF superhigh frequency
shp shaft horsepower
SiAW Stand-in Attack Weapon
SIGINT signals intelligence
S-L sea level
SLEP Service Life Extension Program
SMC Space and Missile Systems Center
SOCOM U.S. Special Operations Command
SOF Special Operations Forces
SOG Special Operations Group
SOPS Space Operations Squadron
SOW Special Operations Wing
SPADOC Space Defense Operations Center
SPC Specialist
SPCS Space Control Squadron
SPOS Space Operations Squadrons
START Strategic Arms Reduction Treaty
STOL short takeoff and landing
STRATCOM U.S. Strategic Command
STS Special Tactics Squadron
SUPT Superintendent
SW Space Wing
SWS Space Warning Squadron
SYS System/s
T&E test and evaluation
TACAN tactical air navigation
TACC Tanker Airlift Control Center
TACP tactical air control party
TAI total active inventory
TBD to be determined
TF/TA terrain-following/terrain-avoidance
TG Test Group
T-O takeoff
TRANSCOM U.S. Transportation Command
TRG Training Group
TRW Training Wing
TTP tactics, techniques, and procedures
TW Test Wing
UAV unmanned aerial vehicle
UHF ultra-high frequency
USAFA U.S. Air Force Academy
USAFE U.S. Air Forces in Europe
USAG U.S. Army Garrison
VHF very high frequency
VLF very low frequency
WCMD Wind-Corrected Munitions Dispenser
WEG Weapons Evaluation Group
WGS Wideband Global SATCOM
WF Weather Flight
WPS Weapons Squadron
WSO weapon systems officer
WXF Weather Forecast/Weather Flight

By Patrick Reardon

'To Those Who Have Gone': AFA Revives Doolittle Raiders' Toast in Worldwide Event

It's been eight decades since AFA's founding president, Gen. Jimmy Doolittle, and his fellow Raiders first raised a glass to their fallen comrades of the legendary air raid over Tokyo in 1942, and five years since the last surviving Raider passed away. But on April 18—the 82nd anniversary of the raid—hundreds of Airmen, Guardians, veterans, and AFA members around the globe revived the Raiders' time-honored tradition by toasting "to those who have gone."

The worldwide event was organized by the Doolittle Leadership Center (DLC), AFA's leader-development program, and was hosted at AFA's operations center in Arlington, Va. Dozens of distinguished guests attended the in-person portion of the ceremony, including Gen. Jim Slife, the Air Force's Vice Chief of Staff; Dr. Ravi I. Chaudhary, Assistant Secretary of the Air Force for Energy, Installations, and Environment; and retired Air Force Gen. Lori Robinson, former USNORTHCOM Commander. The event was sponsored by Northrop Grumman.

Jud McCrehin/staff

Gen. Thomas Bussiere, Commander of Air Force Global Strike Command, leads the toast at AFA's celebration of the 82nd Anniversary of the Doolittle Raid, held at AFA Headquarters in Arlington, Va., on April 18, 2024.

Gen. Thomas A. Bussiere, Commander of Air Force Global Strike Command, was the toastmaster and keynote speaker.

"The Airmen that performed this raid, those 52 officers and 28 enlisted warriors, were ordinary American Airmen," Bussiere said. "Ordinary American Airmen that did extraordinary things when the challenge or the opportunity presented itself—that's the secret sauce of American warriors. That's the secret sauce of America when challenged and attacked. Whether it's 1941 and '42 or 2023 and 2024, our nation knows how to come together, pick the right leader, develop a team, and launch with a vengeance. We've done it before, and make no mistake about it: if challenged, we will do it again."

While some 70 people attended the toast in person, more than 250 organizations, Air Force units, AFA Chapters, and interested individuals tuned in for the live ceremony via YouTube. Virtual toasters participated all over the world, from the 673rd Air Base Wing at Joint Base Elmendorf-Richardson in Alaska to Headquarters French Strategic Air Forces in Taverny, France; and from Air Force veterans and personal friends of the Doolittle Raiders to a host of officer candidates and cadets from Air Force ROTC, Officer Training School, and Civil Air Patrol units around the nation. Many AFA Chapters integrated the nationally broadcast toast into their own traditions and celebrations of the raid's anniversary.

"Many of [AFA's] chapters have honored the Doolittle Raiders over the years, especially the Central Oklahoma Gerrity Chapter, which kept this tradition going and inspired the national event," said Chris Canada, AFA's Vice Chair of the Board for Field Operations.

With a glass of Jimmy Doolittle's favorite cognac in hand, Bussiere led the global assembly in toasting the Raiders' legacy with the traditional words used by the Raiders for decades: "A toast to those who gave their all in success of their mission, and to those who have since joined them. Our fondest memories, sincere appreciation, and gratitude—to those who have gone."

This was the first official toast to the Raiders since 2022, when Air Force leaders gathered to remember Col. Dick Cole, Doolittle's copilot, whose passing in 2019 marked an end to the tradition. The 80 silver goblets engraved with the Raiders' names and once used during their annual reunions are now a part of the National Museum of the U.S. Air Force, but AFA's Doolittle Leadership Center is ensuring this storied Air Force tradition remains relevant for years to come.

"This historic [raid] and the courage, selflessness, and innovation that enabled it are truly worth celebrating and internalizing," said DLC Director and retired Air Force Col. Dr. Patrick Donley. "So too are the tremendous sacrifices of the Raiders' families, and the hundreds of thousands of Chinese citizens who lost their lives at the hands of their Japanese occupiers in retaliation for their efforts to save the Raiders in China. This is truly an event that all Airmen—no, all Americans—can get behind and celebrate. We sincerely hope this toast becomes a tradition that continues to grow each year."

The event simultaneously commemorates an important piece of Air Force heritage while also looking into the future. The spirit of the 80 Doolittle Raiders in 1942 stands as "an exemplar of courage and leadership" for the forces of tomorrow, Bussiere said.

"That's the spirit that we hope to see in our Airmen and our Guardians, in our Air Force and in our Space Force, in our partners and our allies, as we move forward in this century," said AFA's President & CEO Lt. Gen. Burt Field, USAF (Ret.). "We need that spirit of boldness, of audacity, of leadership, and of vision and courage to face the threats that we see around the world today."

By Patrick Reardon

Retired Lt. Gen. Burt Field, USAF, took office as president and CEO of the Air & Space Forces Association in April.

Jud McCrehin/staff

Our New President & CEO's 3 Key Visions for AFA

After 35 years of Air Force service and 3,400 hours flying F-16s and F-22s, Lt. Gen. Burt Field retired in 2015 as Deputy Chief of Staff for Operations, Plans, and Requirements. After a stint as the Vice President of Strategic Planning for Lockheed Martin Aeronautics, he retired again—until 2024, when the Air & Space Forces Association, the nation's largest independent nonprofit association dedicated to air and space power, tapped him to be its next President & Chief Executive Officer.

"There are not a lot of things that could take me out of retirement. But this was it," Field said.

Field took AFA's helm on April 1. As the organization's 113,000-plus members and 200 chapters head into an exciting new phase under his leadership, here are three things they should know about his vision for AFA.

1. Provide a Platform for DAF Leaders

Field was first exposed to AFA while he was discerning what career path to take after graduating high school. Although his dad was a fighter pilot in both the Korean and Vietnam wars, he never considered joining the Air Force to follow in his father's contrails. That is, until the day he saw his dad's latest issue of AFA's Air Force Magazine (now Air & Space Forces Magazine) on the living room table. A picture of an F-15 was face-up, and Field thought: "That's not going to be boring. I think I want to do that."

Field graduated from the U.S. Air Force Academy in 1979 and attended pilot training in 1981. Over the course of his 33 years in uniform, he held various command assignments at the squadron level, the Air Force Weapons School, three wings, a numbered Air Force, and a sub-unified command. His last assignment was at the Pentagon as the Air Force's A3/5, formulating policies on air, space, and cyber operations.

When he reflects on his time in the Pentagon, Field said he saw AFA's programs—like its two main conferences, Air & Space Forces Magazine, and the Mitchell Institute for Aerospace Studies—as priceless resources for amplifying the mission and operations at Air Force Headquarters. Just like his father's magazine lured him into the world of air and space power, Field said its AFA's mission to be a voice for the services and keep the public informed.

Master Sgt. Jerry Morrison/DOD

Burt Field, as Commander of U.S. Forces Japan in 2011, jokes with visiting Secretary of Defense Robert Gates. The following year, Field went to work in the Pentagon as the Air Force A-3/5.

"I think one of the greatest things that Air & Space Forces Magazine provides, and the Mitchell Institute provides, is a way to help Air and Space Force leaders reach a much broader audience than they could reach individually," said Field. "There are too many people who don't see what all the leadership out here in the D.C. area are trying to do for them. It just never gets transmitted down. AFA provides a broader platform for senior leaders to communicate what's most important. Not just in the Air Force, not just in the Space Force, but across America."

2. Capitalize on Space, Education, and the Future Fight

Field had an ulterior motive for wanting to fly fighters and go to test pilot school—he'd heard that was the quickest way to get into NASA and become an astronaut. But, after falling in love with fighter jets, Field never made it higher in the atmosphere than 65,000 feet. Still, that passion for space has never gone away—in fact, he said, it's served as a guiding light throughout his entire career.

"Inside my graduate ring from the Air Force Academy is the test pilot school motto, 'Ad Inexplorata.' 'Toward the unexplored, toward the unknown,'" Field said. "I still have that same passion for what

Jud McCrehin/Staff

From left: Frank Kendall, Secretary of the Air Force; Kristyn Jones, (PDO) Undersecretary of the Air Force; Gen. David Allvin, Chief of Staff of the Air Force; Gen. B. Chance Saltzman, Chief of Space Operations, share ideas at AFA's Air Warfare Symposium in Colorado.

space will bring to humans in the future. It's probably unimaginable at this time, but we're on the ground floor of that future."

As for how AFA can impact the future fight of both the Space Force and Air Force, Field said he's looking forward to helping AFA expand its education programs. The Doolittle Leadership Center is providing cadets, enlisted Airmen and Guardians, and officers with new leadership skills, while AFA's two renowned STEM programs—CyberPatriot and StellarXplorers—are inspiring our nation's youth to pursue futures in STEM, cybersecurity, and space technology.

"AFA's STEM programs are extremely attractive to me because I think our country needs to focus way more on our youth and getting them involved in science and technology if our nation is going to stay at the same level of leadership we are at now in the future," Field said.

3. Support the Entire Military Family

Both Field and his wife, Lisa, were Air Force brats. They have two sons, both Air Force officers themselves. His oldest son is a maintenance officer, and his youngest son and his wife are both C-130 pilots. So, the Fields are well acquainted with the life and struggles of military family life—challenges that Field is keen to address at AFA.

Dual-income families in the Air and Space Forces are of special importance to Field. His mother worked for the last few years of his dad's service. His wife, Lisa, worked for the first 10 years of his Air Force career. He estimates that he spent four whole years away from Lisa during his service, leaving her with "the hard job" of caring for their children.

"When you're married to somebody in the military and they go off for a year to a remote assignment, six months on some deployment, or three weeks on a TDY, it's hard for the person left behind," he said. "You not only have to balance your home life and your children, but when you do that with a professional, it's exponentially harder, especially with your spouse deployed to execute the military mission."

With the seismic shift in military families over the last decades, Field said the Department of the Air Force needs help in retaining

Ralph Branson/ANG

Tech. Sgt. Sarah Schaffer, 121st Medical Group, reunites with her family as Airmen of the 121st ARW arrive home from deployment at Rickenbacker Air National Guard Base, Ohio, Feb. 2, 2024.

families and easing their burdens. That's where AFA can step in to support families as they transition, move, and grow throughout their career, Field said.

Looking ahead, Field said AFA's members can expect his personal passions and drive to directly align with AFA's mission to Advocate, Educate, and Support.

"We are at a pivotal time in our history. There are a lot of things going on in this world, and a lot of them are not good. And we need to be prepared so that it doesn't get worse," Field said. "I think every member of the Air & Space Forces Association can be a part of that team. We can bring this passion to help our Air Force, to help our Space Force, to help our Guardians, and to help our Airmen in the future. That's what I hope to do here at the Air & Space Forces Association."

By Col. Phillip S. Meilinger, USAF (Ret.)

George C. Kenney

Creator, Innovator, and Advocate for an Independent Air Force.

Kenney was known as "MacArthur's Airman" due to his connection with the famous general during World War II. But Kenney was notable for more than that.

George attended MIT, but quit to join the Air Service when the U.S. entered the war in 1917. He became a pilot, and in France shot down two German aircraft, earning a Distinguished Service Cross and Silver Star. He returned to the States where he endured the slow promotions and budgetary austerity so prevalent at the time. He was an attack pilot—a first cousin to a pursuit (fighter) pilot—and taught at the Air Corps Tactical School at Langley Field in Virginia.

After Pearl Harbor, Gen. Douglas MacArthur needed someone to command his air forces. Kenney got the job and quickly won his boss's trust and confidence. That is, once he got past his staff. Kenney told the story that MacArthur's chief of staff started directing air matters—ignoring the air commander. Kenney went to his office, put down a piece of blank paper with a dot in one corner and said "the dot is how much you know about airpower; I'm the rest of the page. Let me do my job."

Kenney tutored MacArthur on the characteristics and abilities of airpower, who quickly became a believer. When he was Army Chief of Staff from 1930 to 1934, MacArthur had not been an air advocate, but his opinion changed in war, and he stated in 1944: "I probably did the American Air Forces more harm than any man living when I was Chief of Staff by refusing to believe in the future of the airplane as a weapon of war. I am now doing everything I can to make amends for that great mistake." MacArthur and Kenney were a close team.

Kenney had worked in the Engineering Division at McCook Field, Ohio, and this was important because it gave him a good understanding of aeronautics, aerodynamics, and engineering principles. These insights would be crucial when assigned to the Southwest Pacific where his air forces were at the end of a very long supply line. He used his initiative, creativity, and engineering experience to experiment and modify his aircraft to better their combat performance.

For example, one mission was to attack Japanese supply ships. This was not something the Air Corps had anticipated. Kenney took the radical step of modifying his B-25s by removing the plexiglass nose where the bombardier sat, and replacing it with a solid front that housed machine guns and a cannon. The result was an extremely effective ship killer. He also pushed the practice of skip bombing—an aircraft attacking a ship at low level and dropping the bomb so that it would skip across the water like a stone and hit a ship at its waterline.

The closeness between Kenney and his boss was not seen as a good thing in some quarters. MacArthur was a political general, and that tendency rubbed off. In March 1943 Kenney flew back to Washington for consultations with Army leaders. While there he met secretly with Republican Party officials to discuss the possibility of a MacArthur presidential run. Henry "Hap" Arnold heard of these meetings and was disturbed.

In March 1945 Kenney was promoted to full general—he was the ranking four-star Airman behind Arnold—and finished the war with a well-deserved outstanding reputation. When Arnold retired, Carl "Tooey" Spaatz was named his successor. This troubled Kenney somewhat because he outranked Spaatz, but when the youthful Hoyt Vandenberg was named Spaatz's successor, he was seriously miffed. He told Vandenberg that he thought he should have been named Chief, but nonetheless, would support him faithfully.

Air & Space Forces Association Library

Gen. George Kenney during World War II was the commander of Allied Forces in the Southwest Pacific.

Kenney took over Strategic Air Command (SAC), the premier operational job in the Air Force. Moreover, it was believed the United Nations would have its own air force, and Kenney was to be its commander as well. This did not occur, but while the notion was discussed, Kenney spent much time at U.N. Headquarters in New York City, away from his command.

When the Soviets blockaded Berlin in June 1948, war talk was rife. Vandenberg was concerned about SAC's readiness—if war did break out, SAC would play a key role. He therefore sent three of his trusted agents, including Charles Lindbergh, on separate inspection tours of SAC. Their reports were not favorable. The Joint Chiefs of Staff summoned Kenney to give them a readiness briefing on his command. Kenney's performance was poor—he seemed unprepared. Six days later Vandenberg relieved him as SAC commander, replacing him with Curtis LeMay.

*Kenney served out his final years as Air University commander, retiring in September 1951. He wrote three books regarding his experiences in the war, the best being **General Kenney Reports** (Duell, Sloan and Pearce, 1949). His biography taking him through the war by Thomas E. Griffith, **MacArthur's Airman** (Kansas, 1998), is excellent.*

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