USAF's Capacity, Capability, and Readiness Crisis 34

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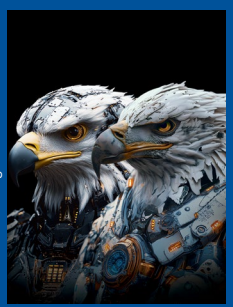

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EDITORIAL

By Tobias Naegele

Preparing for a Fight

It is a law of survival, if not physics: In war, any advantage wielded by one side will be countered with an opposite, if not equal force, in a continuous back-and-forth until one or the other capitulates. The resultant innovation can be fleeting or enduring, limited to the conflict's particular attributes or universal in their application. As a result, wars rarely go exactly as expected.

Russia promised to crush Ukraine in days or weeks; three years later, Ukraine continues to flummox their larger rival with innovative drones and audacious tactics and planning. The United States must not mimic Russia's complacency and must adopt Ukraine's creative spirit. Discipline is required for both.

Germany and Japan went into World War II with superior forces, training, and technology. Yet Britain fended off the Luftwaffe with radar and a small number of air defenders. American resistance bought time, and the world's first nuclear bombs could induce surrender.

Our present age can be defined both by rapid technological change and rising tension, a combination that poses substantial risk to our long-term national security. How America responds will determine the future world order: whether it is the United States whose economic, political, and military might deters others from unwarranted aggression or, alternatively, if an unprepared United States must instead be deterred from defending our interests and allies.

Today there are many challenges to U.S. national security and they are growing in number and complexity. China is a peer threat, possessing a larger navy, comparable air forces, and growing nuclear and space capabilities. Russia is a disruptive force capable of expanding its war into other countries and always rattling its nuclear sword. North Korea and Iran are each technologically adept and dangerous. Proxy forces add additional threat complexity.

America owned unparalleled technological advantage for most of the past half-century: Space-based navigation and intelligence, precision munitions, radar-evading stealth. But superior technology alone will not deter every adversary, nor can it assure victory in war. Preparedness is crucial but victory demands more: national will, persistence, and clear objectives.

Arrogance is the Achilles' heel of every great power. It helped bring down Germany and Japan and was among the causes that led to America's misadventures in Vietnam, Afghanistan, and Iraq. It is also on display in Congress, where leaders willfully ignore the waste and damage caused by chronic reliance on continuing resolutions.

In Vietnam, the United States had superior technology but neither the will, persistence, nor objectives to win. The Army embraced agility with then-newfangled helicopters, but bet wrongly that it could win a war of attrition. The Air Force, shaped by nearly two decades of Cold War competition, was built for nuclear war with the Soviet Union, not a civil war in Southeast Asia. America's fighters were faster and its bombers superior, but U.S. tactics proved predictable and training inadequate. Politicians imposed illogical limits on targeting, and Russian-built MiGs and surface-to-air missiles proved more formidable than anticipated. Only gradually, and late, did a relative few innovative Airmen regain the upper hand against an inferior foe.

American forces today may not be as ready as necessary to deter or prevail over these threats. Our Air Force pilots fly too infrequently. Its combat aircraft are mission-ready only half the time. Weapons stockpiles are inadequate for a prolonged fight. While the U.S. has key advantages in stealth, electronic warfare, space capabilities, and experience, those assets are all in short supply; rivals are catching up.

There are no simple solutions. The public debt is ballooning. Defense spending, approaching $1 trillion annually, is substantial. Critics rightfully question whether we aren't getting enough for our money and whether the nation can afford its growing bills.

Our government processes and discipline, meanwhile, are broken. It's no longer just that Congress can't pass a budget on time—it can't pass a budget at all. The nation is operating on a modified full-year continuing resolution. Clarity and transparency are disappearing. Lawmakers argue and vote but don't pass legislation by traditional means, instead relying on a budget reconciliation process that limits debate and forces votes on legislation no one can read in its entirety.

Congress' central effort right now is a measure that is, no kidding, officially named the "One Big Beautiful Bill Act," containing more than 1,000 pages. The House passed the bill on partisan lines; not surprisingly, some Republicans who supported it expressed regrets over language they had not read. Now in the Senate, the measure includes some $150 to $155 billion for defense, including $25 billion for the Golden Dome missile defense project.

About half the additional defense spending in the House version of the bill would go to the Navy and defense agencies; the Air Force portion, $18.9 billion, is less than half of what the House wants to spend on the Navy. The Space Force portion, though substantial—more than $20 billion mostly for classified programs, equal to nearly 70 percent of the overall Space Force budget. The Senate version has less for shipbuilding investments, more for airpower, nuclear modernization, technological innovation, and industrial base investment. Combined with the 2025 CR, it would push this year's total defense spending over $1 trillion for the first time ever.

It's time to return to disciplined budget preparation and careful strategic investment.

If you're confused, that's no surprise. This Big Beautiful Bill has so completely overshadowed and obscured the annual budget process that even lawmakers are concerned they're being bamboozled. By law, the President's budget plan should reach Congress in February. Delays to April or May are now common. This year, however, the next budget won't materialize until the end of June.

What we do know is concerning. The 2026 budget plan appears to be roughly flat compared to 2024 and 2025, and while the Air Force would eek out a 1 percent increase, that amounts to less spending power in an era of 3 percent inflation. Worse, the Space Force would face it's second cut in a row, suggesting a surprising lack of commitment to a new military branch that was created to ensure space got the focus and funding necessary to ensure American space superiority.

Golden Dome will, of course, also include substantial investment in space-based systems. The concept is worthy because, though much of the project will require substantial development, it may be the best, if not only, recourse in a world with three nuclear peer powers, especially because the other two powers—China and Russia—are aligned together. Note that it is Russia and China that see Golden Dome as destabilizing, precisely because it has the potential to radically decrease the deterrent power of their nuclear arsenals.

The United States needs to return to disciplined budget preparation and careful strategic investment. We need legislators to step up to the job, which requires debate, teamwork, and compromise. It is right to invest more now for a national defense that can stand up to the tests of the future. But without some thoughtful spending and process control in the face of an uncertain future, the only certainty we can be sure of is that a fiscal reckoning is inevitable. It's just a matter of when.

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LETTERS

The Future is Here

Reference your January/February Editorial, "Eyes on the Prize," as well as various articles and letters in the issue, as well as many others in past issues. In the face of ever-increasing threats from China, Russia, Iran and other potential adversaries, we have defined the problems: underfunded, underequipped and undermanned.

Administrations have been myopic in their inabilities to look at the future, best summarized by the "Next War-itis" charge against our Air Force leadership by former Secretary of Defense Robert Gates. Congress' bailout on timely and underfunded budgets with multiple continuing resolutions exacerbates our problems. The inability of the Pentagon bureaucracy to adequately manage weapons acquisition has wasted valuable resources.

As well, fiscal irresponsibility leading to a massive public debt burden, and a staggering cost to service that debt, handcuffs our efforts to maintain a credible deterrent and warfighting capability. Without doubt, we know what the problem is, but do we know how to solve this multiheaded monster? A few suggestions:

1. Continue to impress on our political leadership what the cost of failure, certainly more than the cost of success, will be.

2. Inform the public and media at every opportunity on these same costs.

3. Finally, get our own "act together" on weapons acquisition in order to use whatever resources we have wisely.

As a final thought, when every new system, fighters, bombers, tankers, airlift, space and cyber needs funding in the face of limited resources, then we will have to make hard choices about the priority of new systems in each domain. While those hard choices will be daunting, nonetheless they have to be made.

Our future efforts must focus at least as much on the solution as our past efforts have focused on the problem.

Lt. Col. Gary M. Bone,
USAF (Ret.)
Castle Rock, Colo.

Stay Ready

It is my honor to relate the following incidents in person and from reading an older article in the magazine archives ["Aerospace World: Fogleman: "Exit Was Early Retirement," Not Protest ..." May 2001, p. 22].

Gen. Ronald R. Fogleman was my instructor in the T-37 in 1955 at Vance Air Force Base, Okla. First Lt. Fogleman was already known as the most difficult instructor in the class.He insisted that the three students assigned to him memorize the whole small checklist word for word. I had a poor memory, so my wife helped me for hours to learn the checklist Fogleman demanded.

His explanation was simply, you won't have time to look up emergency procedures and what to do for each type of emergency (or words to that effect). There was an incident where Fogleman tapped my helmet after several attempts to teach me a barrell roll. I misinterpreted his tap as being unable to learn what was how to do the barrel roll. It wasn't.

Fogleman was frustrated at his having a problem finding a way to help me. Four-star Fogleman saved me from being killed or injured in Laos and Vietnam, because I reacted immediately, not having to "look the procedures up before acting."

The article shows [one of] the most honorable and dedicated men in our great nation continuing to put others

WRITE TO US

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before himself. General Fogleman served so "Others May Live."

Capt. Frank Dare,
USAF (Ret.)
Olympia, Wash.

Golden Shield

Regarding "World: Space and Missile Defense Leaders Ponder Golden Dome" [March/April, p. 25], trying to protect the entire U.S. from ballistic missiles from anywhere and in any numbers is just not feasible. Space-based interceptors necessary to defend a mass launch in boost-phase from existing ICBM bases require huge numbers, even without allowing for interceptor failures. And then consider the safeguards to ensure they never engage an unoffending civil space vehicle. Everyone needs to understand the numbers involved before supporting a space-based interceptor concept.

Space-based sensors are essential and can provide the needed tracking, but targets must be engaged in the boost phase (before decoys), or during reentry where the atmosphere can screen out the decoys. During my years at the Missile Defense Agency, my team verified that the simple AIM-9X Seeker was adequate to intercept boosting missiles (see NCADE Test) and likely had the capability to intercept ICBMs during reentry, when countermeasures are stripped away. A small interceptor capable of boost and terminal phase operations, carried internally within the F-35 or F-47 is feasible.

Combining air sovereignty alert with missile defense makes a lot of sense and can provide a USA-wide terminal defense against ICBMs from ANG ground alert, scalable based upon mobilization, and also provide theater capabilities from CAP.

The concept was not of interest to the USAF in 2012, but it may be now. See the papers I and Paul Zarchan published in the Air & Space Power Journal, "The Role of Airpower in Active Missile Defense," July 2010.

Col. Mike Corbett,
USAF (Ret.)
Rome, N.Y.

Early Training

"Fixing the Air Force Pilot Crisis," by Heather Penny [March/April, p. 48] addresses the need for more aircraft, but not how to recruit more pilots.

The pilot shortage has been prevalent for at least 10 years, and I have not seen any effective program to resolve the problem. During World War II and the Korean War, high school graduates were recruited to attend flight training and eventually to fly in combat. When I entered Active duty in 1967, many of the colonels I worked for were former pilots without college degrees and many received their college degrees after the wars they fought in.

By the time I met them, they were filling rated positions in nonflying organizations. Some of my most memorable leaders came from this group of pilots.

In my humble opinion as a former nonrated officer, I would have no qualms in seeing again student pilots recruited straight out of high school. Of course, they would have to score high on the Air Force Qualification and Air Force Officer Qualification tests, medical exams, and physical training.

They can be assigned as warrant officers (WO) during training until they earn their college degrees at which time they can become commissioned officers. While they are attending college, they can be assigned to Active, Reserve, or Air Guard units for additional training and earning flying hours. WO promotions can be based on flying hours earned at their units.

The number of years of required active service after being commissioned can be five years, like other rated officers entering Active duty.

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

In "Strategy & Policy" March/April, p. 6, I'm pleased to see our Air Force institute IPT/CPT (Initial Pilot Training/Civilian Pilot Training) outside the Air Force much as our nation did during WWII. Having served 31 years in our Air Force and as a team member of the Command Senior Enlisted Group reporting to the Assistant Secretary of Defense, we often reflected on past successes rather than invent another wheel.

World War II Civilian Pilot Training schools were successful teaching basic flying skills and this led to success and cost savings. The IPT program can relieve the demands on current formal Air Force pilot training while providing basic flying skills before advanced training in Air Force aircraft.

CMSgt. Dick Russell, USAF (Ret.)
Past AFA Chapter President, Reno Nev.
Holt, Fla.

Regarding the "New Undergraduate Pilot Traing Program ..." [p. 6], I see the Air Force still retains the option for self removal from undergraduate pilot training ("self-initiated elimination" in the 1970s) at any time. Previously, this involved no further cost to the student or commitment to military service, with the exception of Academy graduates or ROTC scholarship recipients who had independent service obligations.

Now, Lt. Gen. Brian Robinson states that one of about 64 officers completing the new IPT program, "decided flying for the Air Force was 'not for them.' I think future numbers will be higher following IPT.

Problem? Upon completion of IPT, the article states students receive private pilot licenses from the FAA with instrument and multiengine ratings, based on their civilian institution training program. What deterrent is being implemented to prevent any—or all—UPT candidates from quitting the program at the end of IPT, now that they are qualified for civilian employment?

Civilian training is expensive, especially to get the required hours for a multiengine rating. College and vocational funding programs are being reduced at the Federal level, and by many states. Signing up for IPT with no intention of remaining in military service becomes attractive, once the word gets around. In Brig. Gen. Matthew Leard's words, "We are literally just paying the tuition for the students [during IPT]."

Further, if the Air Force bans self-initiated removal from UPT, it should be relatively easy for a reticent student to quickly "flunk out" of the follow-on UPT course.

Proposed solutions?

Maj. James N. McCormick,
USAF (Ret.)
Lakewood, Wash.

Be Specific

Having written four books about Tuskegee Airmen history, I was glad to see Col. Phillip Meilinger's tribute to Benjamin O. Davis Jr., the most famous Tuskegee Airman of all, in the March/April issue [p. 56].

Most of the article is excellent, but there are two [issues in question]: One is the statement that, "When the 99th Fighter Squadron was formed with only Black pilots who had attended Tuskegee Institute in Alabama, Lt. Col. Davis was named its commander." Of the first five pilots in the 99th Fighter Squadron, including Davis, George Roberts, Lemuel

Curtis, Mac Ross, and Charles DeBow, none attended Tuskegee Institute as a student, unless one counts the contract primary pilot school operated by Tuskegee Institute.

Davis had graduated from the U.S. Military Academy at West Point; Roberts and Ross had graduated from West Virginia State College; Curtis graduated from Howard University, and DeBow graduated from Hampton Institute. Moreover, when the 99th Fighter Squadron was formed, Davis was not its commander; the first commanders of the 99th Fighter Squadron were White.

The other issue relates to the assertion that Davis "was a fighter wing commander in the Korean War." Davis served at the Pentagon during the Korean War, and did not assume command of the 51st Fighter Wing in Korea until Nov. 12, 1953—more than three months after the Korean War armistice of July 27, 1953.

Daniel Lee Haulman,
Retired USAF Historian
Montgomery, Ala.

Ultimate Sacrifice

As an Air Force historian, I read Naylor's article on "Battle of Takur Ghar Controversy Continues," [March/April, p. 32] with continued disgust. I deployed in 2004 to Iraq and Afghanistan with special operators as their historian. As I got to know personnel in the various commands, I continued to hear incredible stories of heroism from the Battle of Takur Ghar from two years earlier.

The two names I heard over and over were Tech. Sgt. John Chapman and Senior Airman Jason Cunningham. The charge up the mountain to take out the bunker by Chapman was already legendary. The mortally wounded Cunningham selflessly rendering aid to others as he was dying was equally mentioned. These stories came firsthand from some as I interviewed almost 100 individuals across commands, from private to two-star general. Praise came equally from Delta operators, Navy SEALS, Army Rangers, SOAR pilots, and 24th Special Tactics Squadron personnel.

I questioned then why the Medal of Honor was not given, but there were so few given in those early years, it was almost impossible to earn one. As more Medals of Honor were awarded through the years, comparisons started to be made and it was clear to me that both of these were deserved for their actions on Takur Ghar. Of course, at the time, we had no clue that the predator feed existed, and I am shocked that those who had seen the footage did not make the heroics of Chapman known then. It has also bothered me as to why the Air Force did not push the medal upgrades for 15 years either.

Fast-forward to 2011, and I deployed to Bagram Air Base, Afghanistan, as the 455th Air Expeditionary Wing historian with an office in the old Russian Tower, which I practically turned into a museum. Lo and behold, the Army doctor who was deployed there in 2002, came back through and told me firsthand of the seven bodies coming back from Takur Ghar. He knew Chapman and Cunningham personally and even told me what rooms they stayed in before the mission.

We immediately dedicated the Tech. Sgt. John Chapman and Senior Airman Jason Cunningham Memorial Rooms. Clearly to me, there was no doubt both these two deserved the Medal of Honor and I am glad Chapman was finally recognized (in all honesty, he deserves two: for individually taking the bunker while fighting alone and later dying while protecting the second infil).

Now that there is a National Medal of Honor Museum, to know that there will be no John Chapman exhibit is incomprehensible. It is not just because of the Air Force for me, as I am prior Army and prior enlisted. To have so few Medals of Honor for enlisted Air Force personnel alone is enough reason to justify an exhibit. His actions that day were incredible, and I hope the museum will quickly correct their gross oversight. Air Force military and civilian leadership should also reexamine the long-neglected upgrade for Jason Cunningham.

Heros such as Chapman and Cunningham are few and they selflessly gave their lives to save their teammates … what more could they give?

Lt. Col. Ken Tilley,
908th FTW Historian
USAFR (Ret.)
Wetumpka, Ala.

Mission Capability

"Anything less than 100 percent is a matter of national survival," said Gen. Avihu Ben-nun, former Commander Israeli Air Force.

Our generals must think differently, else why our dismal mission capable rates? Ben-nun's thinking and action could nearly double our bomber and fighter strength.

Factors in mission capability are: parts, management, and leadership. Well, "parts is parts." Buy them! And, I'm sure we have enough trained maintenance officers and technicians. What we need are leaders—not maintainers—commanding our maintenance squadrons.

In 1980 the 479th Flying Training Wing could launch fewer than 80 of its 130 AT-38s. Col. Russ Violett dumped me, a Mustang fighter pilot, into the command slot of the 479th Aircraft Generation Squadron—the one 460 with men and women fixing and launching planes.

Two weeks later a plane landed with no nose wheel. Three Article 15s [for minor misconduct] followed—for the Airman first class improperly mounting the wheel, the staff sergeant failing to observe the error, and the tech. sergeant who pencil-whipped the signing off of the RED-X write up. (Those three went on to excellence and promotion.)

I imposed more Article 15s, month after month than the three larger F-15 maintenance squadrons at Holloman Air Force Base, N.M., or the 479th CRS of the AT-38 Wing. At the end of my short 16 months tenure I had discharged 50 nonperformers. And … by then we were at high 80s and low 90s in MC rate and enjoying the highest reenlistment rate in all of the Tactical Air Command!

I'm pushing 90 now, but my uniforms still fit. Put me in command of your worst performing squadron and I can give you the same results as in 1980 to 1982. Or, find others today to LEAD our maintainers.

Lt. Col. John Piowaty,
USAF (Ret.)
Cape Canaveral, Fla.

Bird Call

Might I suggest a nickname for the new Wedgetail AWACS aircraft coming online soon to replace the aging E-3s.

I suggest we name it the "Suli". This is the Cherokee name for the american turkey vulture, a common bird of prey in the U.S. In English it translates as "peace eagle" because while a raptor it feeds mainly on carrion without killing. I thought this appropriate with its mission with the wedgetail not directly killing, but bringing peace and it would honor not only our mission, but a common American bird, and our Native American brothers and sisters.

This is particularly dear to me as I started my military career performing maintenance on E-3 AWACS before mustanging to the Army.

Hopefully someone with the authority to name aircraft will see this in your great magazine I've been devouring since a young age.

Capt. Benjamin V. Lentz,
USA (Ret.)
Enid, Okla.

By John A. Tirpak

Senior Airman Nicholas Rupiper

F-35A Lightning IIs are the only fifth-generation fighter jets in production today. Prime contractor Lockheed Martin sees upgrades in the future, while critics see delays and technical challenges as problems that still must be overcome.

Just What is the Future of the F-35?

As futuristic aviation programs gain priority, the F-35—the only in-production, fifth-generation American fighter—is facing new headwinds. Fresh debate over its challenges and its potential in the coming months will shape its future role in the force.

The House's $150 billion reconciliation package of defense add-ons contains $7.2 billion for cutting-edge tactical aviation accounts, including USAF's new sixth-generation F-47 and its autonomous Collaborative Combat Aircraft (CCA), and largest of all, $3.15 billion for additional F-15EX fighters. Notably absent: even a single penny for the F-35.

"Think about it: It's the largest acquisition program in DOD," said Todd Harrison of the American Enterprise Institute. "Congress gets an extra $150 billion, and they don't put any of it toward that program? That says something about the sentiment around the F-35."

Asked for comment, a spokesperson for F-35 prime contractor Lockheed Martin said only that: "We appreciate the additional investment in national defense that Congress is considering through the budget reconciliation process, as well as the strong and continued support for the F-35 program."

As Congress put the final touches on the reconciliation package in April, the F-35 Joint Program Office (JPO) released an unasked-for explainer in defense of estimated lifetime program costs that have swelled to $2.1 trillion. The estimate includes the cost of 2,456 aircraft for the Air Force, Navy and Marine Corps, plus operations, sustainment, upgrades, military construction, personnel, and inflation over 94 years. Fully half the estimate is inflation, the JPO said. This calculus is unique; F-35 is the first major defense program required to predict all those future costs.

A JPO spokesperson said Program Executive Officer Lt. Gen. Michael Schmidt "wanted to provide a breakdown of costs and ... context directly from the program." To date, the F-35 program has delivered nearly 1,200 aircraft to the three U.S. branches and foreign allies and partners; of these, the Air Force has more than 450 jets, or about a quarter of its planned 1,763.

CHRONIC IRRITANTS

With a sprawling supply chain and shifting annual buys, it's not surprising that the F-35 is in constant flux, or that Congress is impatient.

■ From mid-2023 to mid-2024, the government wouldn't accept delivery of F-35s until new processors, software and displays, included with the Tech Refresh 3 upgrade had been fully tested. Then Schmidt cleared deliveries to resume last summer, even though TR-3 testing was still underway, saying the software was safe for flight and required less in-flight reboots.

■ Overall procurement costs per jet are low, but costs per flying hour have remained stubbornly high across all variants. That's led the Air Force and Navy to fly their F-35s much less—19 percent less for the Air Force and 45 percent less for the Navy—over the life of the program. They intend for pilots to make up for lost flying time in simulators.

■ It took until 2024 for the Pentagon to declare initial devel-

opment complete, 23 years after the program got underway. Achieving "Milestone C" cleared the F-35 for full-rate production, but production has essentially been at full-rate capacity for several years. The last few years of delay in achieving Milestone C were pegged to challenges integrating the F-35 into the Joint Simulation Environment.

NO DEAL YET

One ongoing hangup is that the JPO and its suppliers have not settled the details for the next two lots of F-35 production. Negotiations on Lots 18 and 19 dragged on nearly three years before Lockheed and the JPO reached a "handshake agreement" on the price last November, but the two parties have yet to achieve a "definitized" contract that spells out unit costs.

Inflation, supply chain, and labor cost issues dating back to the COVID-19 pandemic have often been cited for the extended bargaining, but more recently tariffs imposed by President Donald J. Trump have added additional concerns. The JPO declined comment on how tariffs could affect costs for imported raw materials and parts, referring questions to the State Department, which did not respond to calls and emails. The F-35 is globally sourced, with production contracts spread among dozens of countries, most of which are developmental partners or customers for the aircraft.

"The tariff situation changes almost by the day, if not the hour," said one industry source. "How do you plan in this environment?"

Chauncey McIntosh, Lockheed's F-35 chief, told Air & Space Forces Magazine in March that "working with our supply base, we've really been able to keep the price of the airplane under that inflation curve [despite] inflation."

The last negotiated unit cost for the F-35A—the Air Force's conventional takeoff and landing variant—was about $85 million per airframe. Pratt & Whitney's F135 powerplant—which is purchased separately and arrives at Lockheed's factory as government-furnished equipment—is believed to cost about $15 million per engine. The engine cost, which Pratt says is proprietary, is the sticking point. Industry sources said negotiations could drag into late summer or fall.

Lockheed officials say Lot 18 and later jets are more capable and will cost more, which could push the unit price of the F-35 over the $100 million mark.

Once Lots 18 and 19 are finalized, multiyear contracting can begin with Lot 20 and beyond. Lockheed Chief Financial Officer Evan Scott said in May the two lots now under negotiation could be combined into a single contract.

MIXED MESSAGES FROM THE WHITE HOUSE

The White House could be a wildcard for the F-35 program. Elon Musk has posted derogatory remarks on "X," his social media site, calling the F-35 obsolete and a "jack-of-all-trades, master of none." He champions autonomous, uncrewed aircraft, even as the Air Force sees such equipment as complementary, rather than replacing the Lightning II.

Trump, on the other hand, has praised the F-35 as the "greatest fighter jet in the world," touting its stealth as "almost … invisible," while acknowledging that it is "more expensive than we expected it to be."

He has also expressed misgivings about the international nature of F-35 production. "We have the wings built in one country, we have the tail rudders built in another country, we have the seats built in another country, we have the electronics built in seven countries," he said in September 2024. "What the hell would we do if there's a war, and we'll end up fighting half those countries?"

Trump promised instead, that "we will require all essential materials for our national security to be produced here in the United States," which he said would create "millions and millions of manufacturing jobs."

Secretary of Defense Pete Hegseth ordered the Pentagon to find 8 percent savings annually for five years, and provided a list of priority programs and activities excluded from the cuts. Those included CCAs, munitions and shipbuilding, but made no mention the F-35.

A 'FERRARI' F-35

Meanwhile, Lockheed is still smarting from losing the competition to build the Next-Generation Air Dominance fighter now known as the F-47. Boeing won that deal in March. Lockheed has also been eliminated from the competition to build the Navy's NGAD counterpart, the F/A-XX, and it lost out to Anduril Industries and General Atomics on the Air Force's CCA program.

Now Lockheed is touting a proposal to soup up the F-35 as either a cost-saving complement or alternative to the F-47.

Company CEO Jim Taiclet told analysts on an earnings call that the technologies Lockheed developed for NGAD can be applied "fairly quickly" to the F-35, creating a "supercharged … fifth-generation-plus" fighter.

"I feel that we can have 80 percent" of the NGAD capability "potentially, at 50 percent of the cost-per-unit," Taiclet said, "by taking the F-35 chassis and applying numerous advanced technologies, some of which are already in process" as part of the Block 4 upgrade.

"There will be 3,500 of those chassis out there, at various stages of technology and capability," he added, including both U.S. and partner fleets, and "we can get most of the way to sixth-gen" with them.

If F-47 is to cost some $300 million per copy—an estimate offered by former Air Force Secretary Frank Kendall—Taiclet's "Ferrari" version of the F-35 could be had for perhaps $150 million per copy.

Many of the technologies that could be applied to an uprated F-35 have already been paid for, Taiclet said, both through government and Lockheed's own investment. Taiclet described passive infrared sensing and long-range missiles, but otherwise didn't elaborate on specifics. He said it would employ "key techniques and approaches that [the] fighter pilot needs to have to be competitive and win," he said.

The JPO had no comment on the proposal, which it called "notional."

THE BIRD IN HAND

Mark Gunzinger, director of future concepts and capability assessments at AFA's Mitchell Institute for Aerospace Studies, called the exclusion of extra funds for F-35 in the reconciliation package "very, very worrisome." Neglecting the F-35 "does not make sense," he said, given that the Tech Refresh 3 jets are "rolling off the line" now, and "the software is almost there, as well."

The F-15EX has a useful role to play as a munition truck and a platform for hypersonic missiles, he said, and USAF should "buy them as fast as we can," they should not be prioritized over the F-35.

"Given the requirement" for a stealthy, penetrating, stand-in fighter and the long development pipeline to fully prove out F-47 and CCAs, "pushing F-35 buys to the right" is the wrong approach, Gunzinger said.

"They are in production. They're what we can buy now," he said. "They … enhance deterrence [and] create a much more capable force."


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Crew from the 9th Expeditionary Bomb Squadron cross the apron to their waiting B-1B Lancer while deployed to Misawa Air Base, Japan, in April. During Bomber Task Force 25-2, a pair of B-1s flew with Korean and Japanese allies, executed a dual hot-pit refueling operation in Japan and certified two new hot-pit refueling sites in Korea. The B-1s combine speed with cargo capacity, advantages the BONE offers over other bombers. Spring 2025 was a busy stretch for Air Force Global Strike Command, which simultaneously deployed B-1s to the Far East, and B-2 Spirits and B-52 Stratofortresses to Diego Garcia in the Indian Ocean.

Airman 1st Class Mathison Cole/USAF

Technology, power, and capability change with the seasons—but aerobatic grace endures. An Air Force F-22 Raptor formed up with a World War II-era P-51 Mustang for a Heritage Flight tribute and air show at Altus Air Force Base, Okla., in April. The Air Force acquired some 15,000 Mustangs from 1940 to 1946. By contrast, only 187 F-22 were built between 1996 and 2011, a fraction of USAF's stated requirement. The Air Force continues to invest in upgrades for the Raptors to meet modern threats, but chronic parts and funding shortages limit their mission readiness to roughly 50 percent, well below historic norms.

Staff Sgt. Lauren Cobin/USAF

AIRFRAMES

A Russian Tu-95 and a Su-35 military aircraft are positively identified and intercepted by a North American Aerospace Defense Command (NORAD) F-35 Lightning II (right) aircraft over the Bering Sea, in the Alaskan Air Defense Identification Zone, April 14, 2025. NORAD employs a layered defense network of satellites, ground-based and airborne radars, and fighter aircraft to detect and track aircraft and inform appropriate actions. NORAD remains ready to employ a number of response options in defense of North America, including meeting presence with presence.

U.S. Department of Defense photo

VERBATIM

Airpower at Every Price

"When we say airpower, anytime, anywhere, it doesn't have to be the most exquisite, exclusive, expensive, sophisticated player. It just needs to be able to generate effects for the commander and for the President."

—Air Force Chief of Staff of the David W. Allvin, June 2.

Dylan Smith/USAF

Now the Work Begins

"This is just the beginning. ... You need to keep the momentum as you lead in our rapidly changing geopolitical landscape. ... Many of you have come a long way from arriving in flip-flops, showing up without paperwork, or packing like you were going on a European vacation [jokingly]. But today you are our warrior leaders ready to lead in our Air Force and our Space Force."

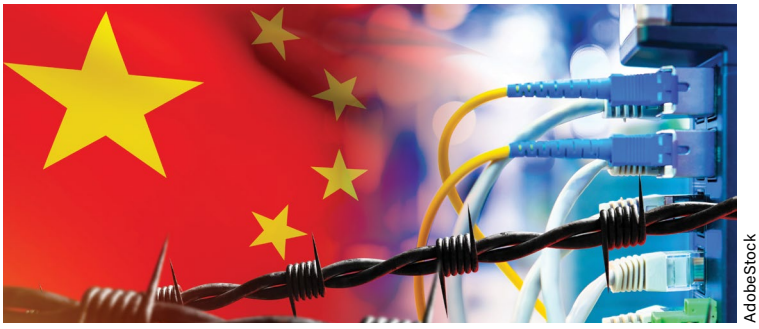
—Lt. Gen. Tony Bauernfeind, Superintendent of the USAFA addressing this year's graduating Class of 2025 [May 29].

Still Smaller, Still Older

EJ Hersom/DOD

"The fleet is aging; 30-plus years on average. Some of the ... critical platforms, are significantly older than that. When I was a navigator, I never flew a KC-135 that was younger than me. They're still flying today. ... They are definitely getting old, still a very capable platform, but they're definitely, definitely aging. ...
My sense, though, is [the fleet's] probably too small, both on the fighter and the bomber side of the house."

—Troy E. Meink, at his March 27 confirmation hearing to be **Secretary of the Air Force,** responds to questions from Sen. Tedd Budd (R-N.C.) about whether the Air Force's fleet is too small for the missions it's asked to perform.



AdobeStock

YOU'RE BEING WATCHED

"The PRC has developed what we've kind of, you know, tongue in cheek, called a 'kill web,' and it's nothing more than a series of hundreds of satellites that are a sensor network that provide real-time updates, targeting quality information of our force. ...
We have to remember space capabilities can be negated using ground techniques ... cyber techniques, so we have to defend our assets in not just the orbit, but the ground as well."

—Chief of Space Operations Gen. B. Chance Saltzman on the People's Republic of China at the Politico Security Summit [May. 15].

A WEAPONS PORTFOLIO YOU CAN COUNT ON

"We don't want to put our [forces] in a position where the exquisite weapons they have on Day One turn into, you know, moderately exquisite weapons on Day 15, and then by Day 30, they're out of exquisite weapons.
And they're dropping, you know, Mark 82 and dumb bombs that we've had since World War II. We want to put them in a position where this weapons portfolio we have is pretty solid, and you can count on the same from Day One through Day 600, if needed."

—Maj. Gen. Joe Kunkel, Air Force director of force design, integration and wargaming, speaking at an AFA event about the new push to co-develop with industry a new generation of low-cost weapons for which production can be surged when needed [April 24].

Mission Ready

"Our Air Force exists to kill people and blow s--- up—it's always been our purpose. ... We exist to defend the Nation and provide the President with credible options across the scale of conflict. Chief Initial Mission Command Training brings us to our first principle. ... We didn't just talk about warfighting—we demonstrated it. ... Chiefs experienced what it means to operate in a contested environment, including limited communications, contested logistics, and unfamiliar terrain. They'll take this back and apply it locally so that Airmen train and prepare together before they ever deploy."

—Chief Master Sgt. of the Air Force David Flosi explaining the new Chief Initial Mission Command Training held at Tyndall AFB, Fla., for newly selected chief master sergeants [May 19-23].

HIGH-LEVEL THINKING

"Warfare in the air domain or land domain—none of those are shrouded in secrecy. We understand how the Air Force fights, how the Army fights. We should also understand how the Space Force fights. ... Part of it is just removing the mystery."

—U.S. Space Force Lt. Gen. Shawn N. Bratton, deputy Chief of Space Operations for strategy, plans, programs, and requirements on the space warfighting framework during an event at AFA's Mitchell Institute for Aerospace Studies [May 15].

Courtesy photo

Secretary of the Air Force Troy Meink walks the Pentagon hallway with Air Force Chief of Staff Gen. David Allvin and Chief of Space Operations Gen. B. Chance Saltzman after his swearing-in.

Meink, 27th Secretary, Gets to Work

Air Force vet brings deep space experience.

By Chris Gordon and Rachel Cohen

Troy E. Meink was sworn in as Secretary of the Air Force May 16, a career civil servant who brings extensive experience in space intelligence to the helm of the Air Force and Space Force.

A former KC-135 navigator, Meink spent the past four years as the No. 2 civilian at the National Reconnaissance Office (NRO), a space intelligence agency that works closely with the Space Force.

"I am looking forward to leading such an amazing team—the most talented, professional, and capable air and space professionals the world has ever seen," Meink said. "We have a lot of work to do."

Meink became principal deputy director at the NRO during the first Trump administration, overseeing billions of dollars in satellite acquisitions; he previously was deputy undersecretary of the Air Force for space during the Obama administration. Meink was a KC-135 tanker navigator from 1988 to 1993 before switching into space technology.

In his first major address after becoming Secretary, Meink told members of the Air Force Academy graduating Class of 2025 that the Air Force and Space Force are in the midst of a transition that will demand tenacity and innovation from even the services' newest officers. The challenge before them is China's quest for dominance in the Pacific, as the U.S. military presses to counter the rapid growth and modernization of China's People's Liberation Army Air Force.

"The Indo-Pacific will be your generation's fight," Meink said. "You will deliver the most lethal force that this nation has ever existed, or we will not succeed."

Modernizing the Air Force will be a central focus for the new Secretary, but securing the space domain could be his greatest challenge. The Department of the Air Force is reorienting its budget toward the Trump administration's priorities, especially his Golden Dome missile defense initiative, which calls for more advanced space tracking, interceptors, and lightning-fast data transfer.

Space Force leaders have said they need more resources and manpower to keep up with their growing mission portfolio. President Donald Trump is seen as friendly to the Space Force, having championed its establishment in his first term, and Meink is the most space-experienced senior leader in the Pentagon.

AFA President & CEO Lt. Gen. Burt Field, USAF (Ret.), congratulated the new Secretary. "The Air & Space Forces Association wishes you massive success as you take on the thorny issues facing our Space Force and Air Force," he said. "We look forward to helping you wherever or whenever we can to ensure our Guardians and Airmen are able to dominate every future fight."

During his confirmation hearing in March, Meink said the Air Force is "probably too small, both on the fighter and the bomber side of the house."

He expressed concern about the challenges posed by U.S. rivals. "First, near-peer competitors such as China are evolving faster than we are in some cases, which will eventually result in the U.S. losing our technological advantage," Meink said during his confirmation hearing. "Second, some competitors, such as Russia, are fielding highly escalatory asymmetric capabilities. And third, our homeland is increasingly put on the defensive from threats such as cyberattack, unmanned aerial systems, and illegal activities at the border, including illicit drug trafficking."

Guetlein to Lead 'Golden Dome' Missile Shield Program

By Chris Gordon

President Donald Trump aims to deploy his signature Golden Dome missile defense shield before the end of his term and he picked the Space Force's No. 2 officer, Gen. Michael A. Guetlein to lead the effort.

"This is very important for the success and even survival of our country," Trump said in announcing his plan. "It's an evil world out there, so this is something that goes a long way toward the survival of this great country."

Guetlein is well-suited to the role, having led Space Systems Command, the service's primary procurement agency, prior to becoming Vice Chief of Space Operations, where he took part in the Pentagon's Joint Requirements Oversight Council, a key panel overseeing major acquisition programs.

White House

President Donald Trump announced the Golden Dome missile defense program in the Oval Office May 20, setting a goal to deploy the system in just three years.

Golden Dome will require integrating sensors and shooters in space, on the ground, and at sea in a complex network to protect the U.S. homeland. While likened to the Iron Dome system over Israel, Golden Dome envisions a defensive shield over the entire United States, an area 441 times larger.

Trump said he wants to finish the project in "less than three years," an extremely aggressive timeline for which there is no precedent for delivering such a complex system. The President promised a "state-of-the-art system that will deploy next-generation technologies across the land, sea, and space, including space-based sensors and interceptors."

Golden Dome will be a "system of systems," integrating existing technology, new satellite sensors, and potentially space-based missile interceptors. "This design for the Golden Dome will integrate with our existing defense capabilities and should be fully operational before the end of my term," Trump said. "Once fully constructed, the Golden Dome will be capable of intercepting missiles even if they are launched from other sides of the world, and even if they are launched from space."

China and Russia called the system destabilizing, and critics have suggested it could unleash a nuclear arms race. But proponents see in Golden Dome the same ambitious, cost-imposing challenges posed by President Ronald Reagan's Strategic Defense Initiative in the 1980s, a system some say contributed to the collapse of the Soviet Union.

Trump estimated Golden Dome could cost about $175 billion—but that could be only a down payment for a program likely to evolve over a far longer period than its initial three years. The nonpartisan Congressional Budget Office pegs the cost of Golden Dome at $542 billion over the next 20 years.

The administration is seeking the first $25 billion installment in the Republican-led tax reform and spending bill passed in May by the House and now awaiting Senate action at press time.

"We will truly be completing the job that President Reagan started 40 years ago, forever ending the missile threat to the American homeland," Trump said. "This is something that's going to be very protective. You can rest assured, there'll be nothing like this. Nobody else is capable of building it, either."

In testimony before Congress in March, Guetlein compared Golden Dome to the Manhattan Project. The Space Force's No. 2 often warns of the new dangers America faces and defends the creation of a separate space-focused service and its niche capabilities.

"Our adversaries have become very capable and very intent on holding the homeland at risk," Guetlein said. "Our adversaries have been quickly modernizing their nuclear forces, building out ballistic missiles capable of hosting multiple warheads, building out hypersonic missiles capable of attacking the United States within an hour and traveling at 6,000 miles an hour, building cruise missiles that can navigate around our radar and our defenses, building submarines that can sneak up on our shores, and, worse yet, building space weapons."

Congress will ultimately have to go along. And while lawmakers welcome the concept, some expressed concern about the speed, cost, and realism required to execute the president's vision.

"To build a system over the entire country would be incredibly hard, and we're not sure it's going to work," said retired NASA astronaut Sen. Mark Kelly (D-Ariz.) at a Politico event in May.

Sen. Jack Reed (D-R.I.), ranking member of the Senate Armed Services Committee told reporters in May that the details must be explained. "They have to identify the technologies," Reed added. "They have to go ahead and design an integrated plan. From what I've heard, it's more of a warning system than it is a firing system, although they will develop firing units to complement it. But the key now is to identify [incoming] hypersonic [weapons] as soon

as they launch, so that we can engage them. That's still a work in progress."

Chief of Space Operations Gen. B. Chance Saltzman said the challenge will be the many advanced elements "that you have to stitch together in very technical ways."

"You don't buy Golden Dome," he said, explaining that challenge. "You orchestrate a program that includes a lot of programs … it's a system of systems." The trick will be in identifying "which systems are critical … which ones are affordable, and which ones are practical in terms of the technology we can rapidly bring to bear."

SPACECOM Wants to Be Dynamic in Orbit. The Question Is How?

By Greg Hadley

U.S. Space Command wants to be able to maneuver satellites without having to worry about conserving fuel. But figuring out how remains an open question, says SPACECOM's deputy commander.

"Dynamic space operations" promise to make space assets more effective, said Army Lt. Gen. Thomas L. James while visiting AFA's Mitchell Institute for Aerospace Studies. "We've done enough of the exercises, we've done enough of the training … and see what dynamic maneuver would do for us if we had it."

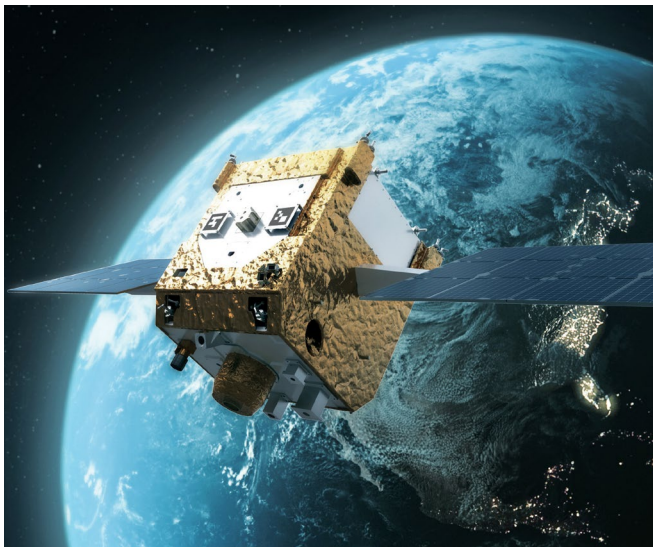
SPACECOM Commander Gen. Stephen N. Whiting strongly stated his support for "on-orbit logistics and infrastructure" a year ago at the 2024 Space Symposium. Such capabilities would enable refueling by spacecraft equipped to do refueling and repair.

"Refueling has some disadvantages … because it's a big fat target, depending on how you establish your refueling systems," James said. Yet "our analysis … kind of shows there's a real case for the refueling."

The Space Force remains unconvinced. USSF is responsible for developing and acquiring space capabilities, while SPACECOM is the operational command responsible for combat in space.

Lt. Gen. Shawn Bratton, deputy chief of space operations for strategy, plans, programs and requirements, questioned the concept only days earlier: "I don't know that I see the clear military advantage of refueling," reported SpaceNews. And Chief of Space Operations Gen. B. Chance Saltzman told Congress last year that the Space Force was still weighing the benefits and cost of refueling.

At this year's Space Symposium, industry and defense officials described plans for on-orbit demonstrations in 2026 and 2028. But foreshadowing Bratton's comments, Lt. Gen. Philip A. Garrant told reporters he was waiting for the refueling "business case" to be proven.



Astrosclae

Astroscale is among the companies pursuing development of a refueling satellite, such as the APS-R in this rendering.

One alternative to extending satellite life with additional fuel could be rapid satellite deployment. James acknowledged that May 8, saying: "If General Bratton were here right now, he'd say, 'Or, I just give you more satellites rapidly, and that's cheaper and easier for us to do than refueling.'"

Operationally speaking, SPACECOM sees a clear need to move satellites around when needed, which is why SPACECOM and USSF's SpaceWERX innovation shop plans to award 10 contracts worth $1.9 million each for small companies to demonstrate technologies in a "Sustained Space Maneuver Challenge."

AIR OPERATIONS

US Doubles Airstrikes in Somalia, Surpassing 2024 Levels

By Chris Gordon

U.S. Africa Command has ratcheted up airstrikes in Somalia as it looks to pressure militants there, the head of the command told reporters May 30.

Marine Corps Gen. Michael E. Langley said the U.S. has already carried out more than 25 airstrikes in Somalia this year, "double the number of strikes that we did last year." The operations mostly involved American drones and Navy aircraft.

"The U.S. is actively pursuing and eliminating jihadists," Langley said.

The expanding air campaign comes as the Trump administration has given commanders more leeway to conduct attacks without first securing White House approval and reflects the

persistent efforts of Islamic State and al-Shabab militants to entrench themselves in the East African country.

"ISIS-Somalia has proved both its will and capability to attack U.S. and partner forces," the command said in a release in April. This group's malicious efforts threaten U.S. national security interests."

"AFRICOM, alongside the Federal Government of Somalia and Somali Armed Forces, continues to take action to degrade al-Shabab's ability to plan and conduct attacks that threaten the U.S. homeland, our forces, and our citizens abroad," the command added May 27.

While the command's work has been overshadowed in recent months by U.S. military operations against the Houthis in Yemen, the terrorist threat on the African continent has become a nagging concern for the Pentagon. The withdrawal of U.S. forces from Niger last September, carried out at the insistence of the government there, has also made it more difficult for the U.S. to use drones to monitor militant activity in the area.

"Unfortunately, with our withdrawal from the region, we have lost the ability to monitor these terrorist groups closely," Langley said in response to a question from Air & Space Forces Magazine. He said extremist violence is also a growing worry in central African nations Niger, Nigeria, Burkina Faso, and Mali.

The stepped-up violence, he said, "is measurable by both frequency and complexity of these attacks." Terror groups are trying to gain access to the West African Coast to facilitate weapons trafficking and other smuggling. But in East Africa, Somalia remains a major focus. Langley said the U.S. airstrikes have supported ground operations by Somali government forces against the Islamic State and al-Shabaab, which he described as entrenched, wealthy, and linked to al-Qaeda.

"We know that these groups have been adapting and increasing their reliance on ambushes and [improvised explosive devices]," he added. "These increased strikes have achieved tactical gains against both groups. The lasting success will require a comprehensive strategy and addressing the root causes of instability."

US, UK Secure Access to Diego Garcia for Next Century

By John A. Tirpak

The U.K. and the U.S. will continue to enjoy access to the ports, airfield, and workshops at Diego Garcia in the Indian Ocean for at least another century, under a deal inked between the U.K. and Mauritius May 22.

The agreement transfers sovereignty over the Chagos Archipelago—of which Diego Garcia is the largest island—to Mauritius, but permits the U.K. and U.S. continued exclusive access to the military infrastructure on the island for another 99 years, with an option for 40 years more beyond that. The U.K. government said the deal, which also includes an annual lease payment in exchange for Mauritius agreeing not to permit any interference with base operations, was essential to keep "adversary" nations from establishing a presence in the archipelago.

Although the U.S. is not a signatory to the agreement, U.S. officials praised the deal.

"Diego Garcia is a vital military base for the U.S.," Defense Secretary Pete Hegseth said in a post on X. "The U.K.'s (very important) deal with Mauritius secures the operational capabilities of the base and key U.S. national security interests in the region. We are confident the base is protected for many years ahead."

The U.S. and U.K. have used the island for the past 50 years, and the base there was a key operating location and way station for U.S. bombers, intelligence, surveillance and reconnaissance aircraft, fighters, aerial tankers, and other platforms during the 1991 Gulf War and beyond, including throughout the wars in Afghanistan and Iraq. It is also a routine operating location during peacetime, but with rotational forces.

Staff Sgt. Whitney Erhart

A U.S. Air Force B-2 Spirit refuels at Diego Garcia, an island belonging to Mauritius in the Indian Ocean. A new deal locks in access to the base for at least 99 years.

Most recently, the Air Force positioned six B-2 bombers at Diego Garcia between March and May, the longest and largest overseas deployment for the stealth bomber to date. The aircraft conducted strikes against Houthi targets in Yemen during the deployment, which also may have signaled U.S. resolve to Iran, which is within 2,600 miles of Diego Garcia. In late May, the B-2s flew home, while B-52 bombers and F-15s arrived on the island.

As part of the deal, Mauritius agreed to a 24-nautical-mile buffer zone around the island "where nothing can be built or placed without U.K. consent," the U.K. Ministry of Defense said. No "activities" will be permitted on the neighboring islands—some more than 50 miles away—that would disrupt base operations, and no development can take place within the archipelago without "a rigorous process of joint decision-making" and U.K. approval.

The deal also secured "a strict ban on foreign security forces on the outer islands, whether civilian or military," and a "binding obligation" that the base "is never undermined."

Air Force Reveals Range and Inventory Goals for F-47, CCAs

By John A. Tirpak

The F-47 Next-Generation Air Dominance fighter will have a combat radius greater than 1,000 miles—nearly double that of the F-22—and the Air Force plans to acquire more than 185 of them, Chief of Staff Gen. David W. Allvin revealed in May.

Alongside the F-47, the first Collaborative Combat Aircraft, dubbed Increment 1, will have a combat radius of more than 700 miles, greater than both the F-22 and F-35. The Air Force plans to acquire more than 1,000 of the autonomous drones.

"Our [Air Force] will continue to be the world's best example of speed, agility, and lethality," Allvin wrote on social media. "Modernization means fielding a collection of assets that provide unique dilemmas for adversaries—matching capabilities to threats—while keeping us on the right side of the cost curve."

The revelations came in a graphic accompanying Allvin's post, which shows the F-15E/EX, F-16, F-22, F-35, F-47, and the two CCAs—the YFQ-42A and YFQ-44A. Each is labeled with the date of their entry into operational service, combat radius, speed, and a very basic description of their stealth capabilities. The graphic indicates a later entry for the CCAs than anticipated.

While the F-47's 1,000-mile combat radius is impressive, it falls short of what would be needed to take off from Guam and reach mainland China or Taiwan using only internal fuel. Aerial refueling would be necessary to extend its reach, although fewer tankings would be needed.

With a combat radius of 700 nautical miles, the CCAs would be able to fly out ahead of the F-22 and F-35.

While former Air Force Secretary Frank Kendall said at AFA's 2023 Air Warfare Symposium that 200 F-47s was the acquisition target, the graphic mentioned "185+", revealing that the Air Force now plans the F-47 to be a virtual one-for-one replacement for the F-22, of which there are also 185. Cost is undoubtedly a factor: Estimates run as high as $300 million per copy.

Both the F-47 and the CCAs were labeled as planned to enter service between 2025 and 2029. The F-47's maximum speed was labeled as being "Mach 2+," less than the F-15, which was rated at Mach 2.5.

The graphic offered a rudimentary assessment of each aircraft's observability: The F-35 and CCAs were described as "stealth" aircraft, the F-22 was described as "Stealth+" and the F-47 as "Stealth ++."

USAF graphic

The F-22's combat radius was described as 590 nautical miles, above the 470 nm more commonly reported. Combat radius, however, is a fungible figure, dependent on the flight profile to the target, and whether the aircraft is expected to perform aggressive combat maneuvers along the way. The Air Force's official F-22 fact sheet doesn't provide a combat radius, but the figure in Allvin's graphic suggests a range augmented by external fuel tanks.

To be "stealth ++" though, it's likely that the F-47's range does not count any external fuel tanks, which would increase its radar signature.

The graphic also confirmed that the two CCAs have a primary mission of "air superiority," meaning they will largely serve as missile carriers for the fifth-generation crewed fighters they will escort into battle, expanding the number of shots each crewed fighter can take per sortie.

The Air Force and its CCA contractors Anduril Industries and General Atomics Aeronautical Systems, have been promoting speed in the CCA program, and have said the two aircraft will fly "this summer." However, the Air Force said in response to a query that Anduril and General Atomics "will fly their production-representative test aircraft by the end of the calendar year," indicating a possible delay of three to five months.

It's not clear if the inventory objective of 1,000 CCAs in the graphic refers to the Increment 1 aircraft now in ground testing, or CCAs of all increments. The Air Force has said it will launch Increment 2 next year, and service leaders have suggested that it could be a less sophisticated and less costly aircraft than in Increment 1. Senior Air Force officials have referred to future iterations known as Increment 3 and 4 without providing further details.

JetZero: Blended-Wing-Body Tanker is 'Game-Changer'

By David Roza

When the last Air Force KC-10 tanker flew its final sortie in September 2024, Airmen mourned the loss of an aircraft that could haul a "staggering" amount of gas and nearly as much cargo as a C-17.

But a new aircraft under development in California could fill that void with a novel design that could fly even more gas even farther afield than anything in today's fleet.

Aerospace startup JetZero's Z4 is a blended-wing-body aircraft that its makers say will use 50 percent less fuel than conventional tube-and-wing designs. For tankers, that means fueling more aircraft at longer range. Its lift property also means the Z4 can use shorter runways, and its unusual cabin can accommodate taller pallets of cargo.

"The capability that the Z4 brings, for the tanker mission specifically, is a quantum leap," said Brian Tighe, a retired B-52 pilot who is now executive vice president of the aviation consulting company Allied Defense Services International, a division of Consolidated Air Support Systems (CASS).

CASS helped JetZero refine its proposal to the Air Force, which in 2023 announced a $235 million contract to fly a


Image courtesy of JetZero

The JetZero KC-Z4 tanker refuels a B-2 bomber in this concept rendering. The company claims its notional tanker could deliver six-times the fuel on a transpacific refueling mission over today's KC-46.

full-scale commercial demonstrator in 2027. Nearly two years and many subscale demonstrator flights later, JetZero officials expect to deliver on schedule.

The full-scale fuel tanks are built, the cockpit tooling is complete, and a wing test article is being evaluated, said JetZero's head of engineering, Florentina Viscotchi.

Nate Metzler, head of strategic programs and partnerships at JetZero, said a potential KC-Z4 could carry enough gas after 4,000 nautical miles (about the distance from Joint Base Pearl-Harbor Hickam, Hawaii, to 500 miles off Taiwan) to offload about 10,000 pounds each to six F-35s, compared to just one for a KC-46 flying the same mission.

"You could sit in a refueling track for 45 minutes as the F-35s fill up and go on to do their work," Metzler said. "And then the Z4 could go back to base 4,000 miles and land without having to refuel."

RUNNING ON EMPTY

When it comes to tankers, the Air Force is running out of gas. The KC-135 makes up the bulk of the tanker fleet, but the sexagenarian aircraft will soon be too difficult to keep flying.

"Over the next decade, the aging KC-135 aircraft fleet will be an ever-increasing readiness concern," Gen. Randall Reed, the head of U.S. Transportation Command, wrote in a statement for Congress on March 5. The air refueling fleet, he added, is "the most stressed deployment, sustainment, and combat capability," as well as "the lifeblood of the joint force's ability to deploy forces."

The new KC-46 brings fresh iron, but the Air Force has not ordered enough of them to replace every KC-135. Air Mobility Command is completing an analysis of alternatives for the Next-Generation Air refueling System (NGAS). Air Force officials previously said the performance of the blended-wing body would inform that work, and former Air Force pilots believe the Z4 could be revolutionary.

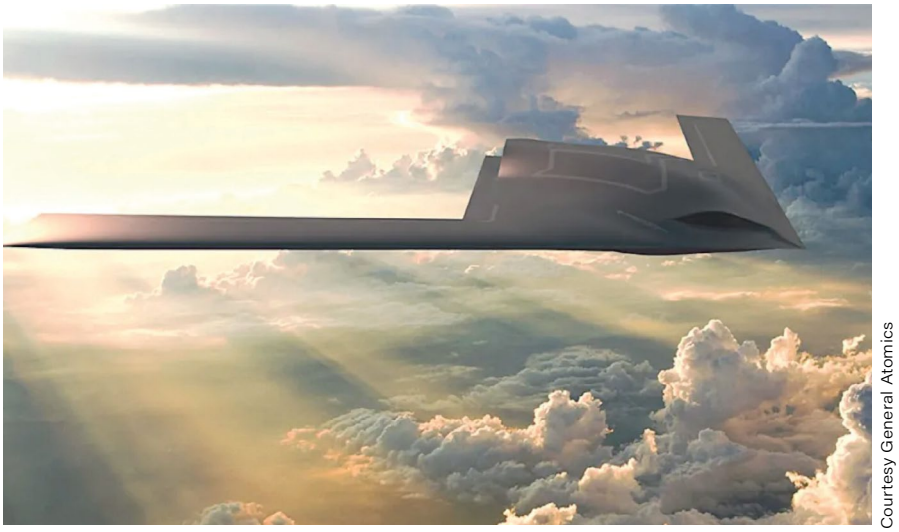
"This is the game-changer," said retired Maj. Gen. Erich Novak, a former KC-135 and KC-10 pilot who is now chief financial officer at CASS. "Energy efficiency, payload, range, those are the brass rings for tanker aircraft."

AFRL, Bets on Hybrid-Electric Drone From General Atomics to Replace U-2

By John A. Tirpak

Drone manufacturer General Atomics (GA) is developing a new autonomous, stealthy, ultra-long-endurance reconnaissance and strike platform for the Air Force under a $99.3 million Air Force Research Laboratory contract awarded May 27.

The aircraft will be powered by "hybrid-electric propulsion" using a ducted fan. The Air Force dubbed the program GHOST, but did not explain the acronym. The sole-source contract is a cost-plus-fixed-fee deal, and GA is to complete work by August 2028.



Courtesy General Atomics

The Air Force Research Laboratory has contracted with General Atomics for $99.3 million to develop a next-generation unmanned replacement for the U-2.

The Air Force plans to retire the venerable U-2 Dragon Lady, a crewed ISR aircraft, beginning in 2026. The new GHOST could fill that requirement. At one time, the U-2 was to have been replaced by the uncrewed RQ-4 Global Hawk, but USAF has been retiring those aircraft in recent years and plans to retire all variants by the end of 2027. The Air Force is believed to be operating an ultra-stealthy RQ-180 long-range ISR platform built by Northrop Grumman, but has repeatedly declined to comment on that program.

Neither the U-2 nor the RQ-4 ever had a kinetic strike mission, while GHOST seems slated to have that capability. GA had worked on an "MQ-X" program—a stealth version of the MQ-9 Reaper—something the Air Force has pulled in and out of its budget for at least 10 years.

General Atomics showed a photo of a flying-wing-type ISR aircraft at its booth at the 2022 AFA Air, Space & Cyber conference. GA Aeronautical Systems President David Alexander, in two appearances on the "Tomorrow's World Today" podcast that year, said GA was working on a "game-changing" aircraft using ducted fan technology employing diesel fuel.

The flying-wing design is "not a 'me too' for us," Alexander said, but a new concept that could expand the range of an aircraft of the size and weight of the company's MQ-9 Reaper to "triple the endurance."

The Reaper's publicly acknowledged endurance is about 27 hours; tripling it would extend beyond 80 hours.

The hybrid electric ducted fan engine "will have three times the endurance of a buried turbofan" with "the same size and weight" of the MQ-9, Alexander said in one of the podcasts. "It's highly efficient."

Hybrid-electric motors save fuel and extend range by combining the benefits of powered combustion with batteries. They also run quieter than typical engines, and, combined with diffusive exhausts, can reduce infrared signature. The Defense Advanced Research Projects Agency announced

last year that it had assigned the nomenclature XRQ-73 to an autonomous flying-wing reconnaissance aircraft, which it touted as offering "extra-quiet" propulsion. That aircraft was given the name SHEPARD, for Series Hybrid Electric Propulsion AiR Demonstration.

A very similar concept to what GA displayed at its 2022 ASC booth is part of its "Gambit" scheme—four different-planform autonomous aircraft that can share a common chassis consisting of an engine, processors and landing gear. The company describes Gambit's flying-wing element as an "ultra-long-endurance, multi-domain sensing, persistent battlespace awareness" platform.

Netflix' Thunderbirds Documentary Puts Viewers in the Pilot's Seat

Netflix courtesy image

"Air Force Elite: Thunderbirds," a documentary by Netflix, portrays the highs and lows of life on the Air Force's premier demonstration team. Breathtaking cockpit footage makes viewers feel like they are along for the ride.

By David Roza

A new Netflix documentary about the Air Force's Thunderbirds aerial demonstration team "wonderfully" captures the highs and lows of life on the air show circuit, where extraordinary is the norm, and anything less puts lives at risk.

"Watching it brought back all of those wonderful feelings of being on point with five other jets tucked in neatly right underneath my wings," said retired Col. John "JV" Venable, who commanded the team from 2000 to 2001. Venable is now a senior resident fellow for airpower studies at AFA's Mitchell Institute for Aerospace Studies.

"Air Force Elite: Thunderbirds," The 91-minute documentary follows the 2023 Thunderbirds team through winter training at Spaceport America, deep in the desert of southern New Mexico. Six F-16 pilots, including three newcomers, come together to put on a demo that goes against nearly every safety instinct drilled into them as tactical fighter pilots.

"Flying aerobatics is just not something we train for," said Lt. Col. Justin "Astro" Elliott, the team commander at the time. "You have to divorce yourself from your survival instincts to fly this demonstration."

To bring that to life, the film focuses on Maj. Jake "Primo" Impellizzeri, who flew the right wing as Thunderbird 3. Impellizzeri had previously flown on the single-jet Pacific Air Forces F-16 demonstration team, but much of the film centers on his struggle to master the Thunderbirds' "high bomb burst" maneuver.

The jet on the right wing has to rejoin the four-ship formation after the upward "burst," a punishing move that requires pinpoint precision at high speeds and almost seven times the force of gravity.

"It's the most frustrating thing I've ever done," says Impellizzeri in the film, after missing the rejoin again. Retired Maj. Michelle "Mace" Curran, who flew with the Thunderbirds from 2019 to 2021, understands just what that means.

"Everyone who shows up is really excited that they were chosen to be part of this amazing organization, and then they go through their own struggle trying to learn their new job in this new place with new standards that are very high," she told Air & Space Forces Magazine. "Those feelings that Primo had of 'am I the right person for this job?' and feeling like a bit of an impostor, every person on the team goes through that in a different way."

Curran recalled her first time flying the show in the back of the two-seat F-16.

"I was flinching left and right, like, 'That jet is so close to us, we're about to hit him, this is it, this is how I die,'" she said.

The documentary's breathtaking cockpit footage, frequently shows the Earth rising to meet viewers at incredible speed, helping viewers get that sense firsthand. Thunderbird pilots fly twice a day, five days a week, throughout the winter training season to develop the muscle memory needed to do their job. Pilots progressively build their skills, starting far from the ground and in pairs before switching to a looser diamond formation, then gradually move closer to each other and the ground as they improve.

By the end of the season, "it becomes almost like a flow state that you're in. It just feels like second nature," Curran said. "It's really cool to experience that, and you trust each other at such an extreme level."

Overseeing it all is Thunderbird 1, who—depending on the season—must learn in parallel not only how to fly an air show, but also how to command it. The story's second main character is Elliott, who the rest of the formation can follow right into the ground if he isn't careful.

"The wingmen don't know where the ground and the sky are. They only know where the boss is," air show announcer Rob Reider told Netflix. "They trust him without reservation."

It was the same way when Venable commanded the team in the early 2000s. "Any time the formation was tucked underneath my wing … the guys are so fixated on my aircraft that they really can't check their peripherals in time to save their own lives," he said. "It's up to me and the trust that I built, just like it was in the movie with Astro."

When things go wrong, it's deadly. Maj. Stephen "Cajun" Del Bagno died in training on April 4, 2018, after losing consciousness due to G-forces, doing the same rejoin maneuver Primo struggled with in the documentary. Del Bagno's parents share their story in the film.

"I cannot overemphasize how much that crash shook the team," said Curran, who had been stationed with Del Bagno in a prior assignment and who got to know his parents well during her show seasons. "I can't imagine [Netflix] doing this documentary without telling his story, because he was really an exceptional person."

Del Bagno's death, plus the cancellation of shows during the COVID-19 pandemic in 2020, gave then-Thunderbird 1 Lt. Col. John "Brick" Caldwell the time and focus to rethink the performance routine. The new demonstration brought jets closer to each other, which counterintuitively made the show look better and fly safer by focusing the pilots' attention, experts said in the documentary.

Replacing Caldwell required someone special: "Somebody who's got the tactical sense of like, a weapons school graduate, the physics and the aerodynamics sense of a test pilot school graduate," says then-Air Combat Command boss Gen. Mark Kelly in the documentary. "Those people don't exist. Well, one existed."

That was Elliott, who gave up a childhood dream of becoming an astronaut to complete the Thunderbirds' transformation.

Taking the role also meant missing his family nearly every weekend for two years straight. "I think anyone in this position would question, 'Am I doing damage here that I can't recover from?'" Elliott said. "I hope I'm right, when I say, 'No, we're going to be just fine.'"

Elliott's sacrifice, the impact of Del Bagno's death, and Primo's journey makes "Air Force Elite: Thunderbirds" more than remarkable airplane footage; it really is a compelling human story.

Curran's only regret? That the film didn't spend more time with the rest of the team.

"They mentioned several times that the team is 135 people, and each of them is on their own version of Primo's journey," she said. The team's maintainers get only a brief shoutout, where they describe working all night in the cold desert to fix a broken servo on an F-16's right horizontal stabilizer.

"You're tired, you're cold, you're hungry, you just want to go home and go to bed," said Crew Chief Staff Sgt. Xavier Knapp. "But if we want that jet to fly tomorrow, it's going to fly tomorrow."

Venable and Curran were excited that the film might reach a wide, public audience through Netflix. "I've watched it once, and I'll watch it several more times," Venable said. "It is wonderful and well worth the time to see and see again."

Hegseth Cuts DOD's Test Enterprise; Critics Fear Loss of 'Honest Broker'

By John A. Tirpak

Chris Gordon/staff

Secretary of Defense Pete Hegseth's plans to cut the staff and budget of the Director of Operational Test and Evaluation has critics worried about the loss of independent checks and balances.

The Pentagon will drastically reduce the staff and budget of the Director of Operational Test and Evaluation, Defense Secretary Pete Hegseth announced in May. The move is intended to get weapons to the field more quickly but at the cost of removing what many consider a critical layer of independent oversight.

DOT&E performs "redundant, nonessential, non-statutory functions ... that do not support agility or resource efficiency," Hegseth's order said. Citing a "comprehensive internal review," he said the agency is a drag on "our ability to rapidly and effectively deploy the best systems to the warfighter."

The order slashed staff from about 94 to 46, leaving 30 civilians, 15 uniformed personnel and a Senior Executive Service leader. All told, Hegseth said, the cuts will save about $300 million annually, mostly by cutting contract staff and support.

Much of that money funds contracts with the Institute for Defense Analyses (IDA) and MITRE Corp., federally funded research-and-development corporations that provide contract engineering support. Defense contractor CACI and academic institutions including the Massachusetts Institute of Technology are also agency contractors.

Greg Zacharias, who was chief scientist at DOT&E from 2018 to 2021, told Air & Space Forces Magazine that the cuts involve "maybe 250 testers who are the cream of the crop"—talent and expertise he called vital to ensuring new weapons work as advertised.

"We're looking at an 80 percent reduction in manpower," said Zacharias, bluntly adding: "They will unquestionably fail at their mission."

Zacharias said DOD's plans to field new weapons programs like the Golden Dome missile defense system on aggressive timelines are driving the push to cut testing. "No testers, no failures," Zacharias said.

DOT&E's contributions include designing tests, lending design expertise, and training the testers themselves. It "oversees that a test was designed correctly, was actually executed correctly, and then the analysis results are supported by the data," Zacharias said.

William LaPlante, who was undersecretary of defense for acquisition and sustainment during the Biden administration, said DOT&E is uniquely valuable.

"You need that independent view," he said. While the services have their own test organizations, DOT&E's role in overseeing the design of test plans ensures neither the military services nor their contractors cut corners or game the system. "You need to keep people honest," LaPlante said. "You need those checks and balances ... a common interpretation of the facts. DOT&E really pays attention, and people really pay attention to what they say."

The Air Force Operational Test and Evaluation Center, which does the bulk of Air Force testing, may not "have the clout ... if something needs work, to get it fixed," LaPlante said. "DOT&E puts out that annual report, the press picks it up, Congress pays attention to it."

Former Air Force Secretary Frank Kendall agreed that formulating the Test & Evaluation Master Plan is among DOT&E's "primary values." But he also said, "their scope expanded over the years and scaling it back might make some sense," acknowledging that while DOT&E "is value-added ... it is burdensome."

DOT&E reports provide a counterpoint to service claims about how well their programs are progressing, Kendall said, and their message gets heard: "They're seen as an honest broker on the Hill."

Indeed, Sen. Jack Reed (D-R.I.), ranking member on the Senate Armed Services Committee, lashed out against the move. "Secretary Hegseth's decision to gut the Pentagon's Director of Operational Test and Evaluation office is reckless and damaging to military accountability and oversight," Reed said in a release. Reducing DOT&E to "a skeleton crew and limited contractor backing," he added, means the agency cannot provide "adequate oversight for critical military programs, risking operational readiness and taxpayer dollars."

FACES OF THE FORCE

Staff Sgt. Heather Ley

While skiing in the Italian Alps, **Senior Airman Sebastian d'Alton,** an Air Force Pararescueman with the 57th Rescue Sq., Aviano AB, Italy, put his rescue training to use when he encountered an injured Austrian skier. The man had a deep leg wound, and d'Alton immediately applied a tourniquet and packed the wound to stop the bleeding until a helicopter arrived. Despite never having performed a real-world alpine rescue and having limited medical supplies, he improvised and, with help from a nearby Italian couple, stabilized the skier. "The training we receive does a great job of pushing you through stressful moments over and over again," d'Alton said. "You start with intense physical training, but by the end, it's all about technical skill and problem-solving under pressure."

Airman 1st Class Raina Dale

After returning from a birthday trip to London, **Lt. Col. Jeremy Strohmayer** expected a quiet evening at Anchorage, Alaska's airport—but things quickly changed. While waiting for his luggage, he saw a woman collapse and he immediately jumped into action. Strohmayer, the anesthesia flight commander at Joint Base Elmendorf-Richardson, performed lifesaving measures, including CPR, airway suctioning, and oxygen support. His medical training kicked in as he stayed calm and followed emergency protocols. "My thought process at this point was she's a patient and this patient needs compressions, so I just fell into the protocol of doing the job," said Strohmayer.

Courtesy photo

Lt. Col. Kari Armstrong, commander of the 142nd Maintenance Squadron, help save a leukemia patient's life after being matched through the Department of Defense Bone Marrow Program. More than 10 years after registering, she was contacted as a match and underwent five days of injections followed by a six-hour duration of blood cycling to extract needed cells in San Diego. Despite discomfort, she didn't hesitate. "Once they start preparing the patient [for donation], if you pull out, they will die. That was all I need to know," she said. Months later, she learned the patient had survived. Armstrong called it an honor and encourages more service members to join the donor registry.

Airman 1st Class Paula Arce

Senior Airman Nicole Kleymenov, a boom operator with the 344th Air Refueling Squadron, played a key role in Exercise Fighting Wyvern 25-01, refueling fighter jets midair over Italy as part of ACE, enhancing combat readiness with allies and partners. Originally on a path to become a lawyer, she changed direction after taking a discovery flight, which explores the world of aviation for newcomers. "That's when I knew I wanted to be in aviation," Kleymenov said. Now training to become a boom operator instructor, she's focused on developing her teaching skills and plans to apply for Officer Training School. "I wouldn't trade this experience for anything," she said. "I love it."

Airman 1st Class Nelvis Sera

Senior Airman Christopher Neal, a physical medicine technician with the 42nd Medical Group at Maxwell Air Force Base, Ala., delivers targeted physical therapy to help Airmen stay mission-ready in support of Human Performance Flight. A former student athletic trainer with a degree in health promotion, Neal now treats 80 to 120 patients weekly as part of a two-person team. "Each patient is like a puzzle," he said. "You build relationships while trying to figure out what's best for them." From dry needling to high-intensity rehab, Neal tailors care for individual needs. He plans to pursue a career in law enforcement to continue serving others beyond the clinic.

Photo courtesy

Senior Airman Yasmin Freckleton, a mental health technician with the 386th Expeditionary Medical Squadron at Ali Al Salem Air Base, Kuwait, is strengthening Airmen's mental resilience in high-stress environments. When two mental health incidents struck her squadron in December 2024, Freckleton led crisis response efforts, offering stability and support. She was later recognized as an Air Force Medical Service Trusted Care Hero. "In contested environments, mental resilience is just as critical as physical readiness," she said. Through daily check-ins, wellness sessions and resource sharing, Freckleton empowers Airmen to stay focused, adaptable, and mission-ready under any condition.

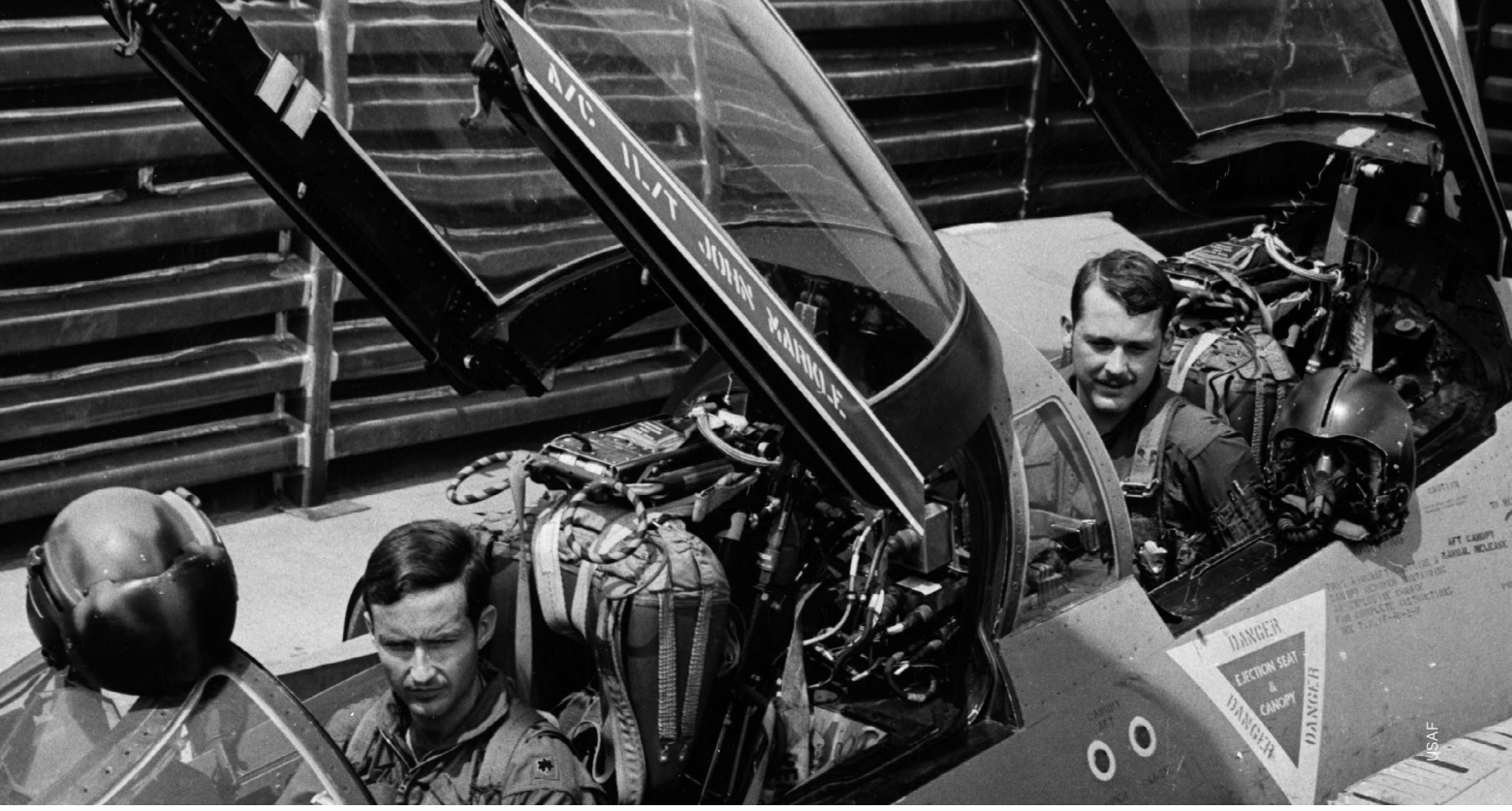
Tech. Sgt. Della Creech

A joint task force of Air National Guardsmen and Reservists conducted human space flight support training Jan. 14–17 at Patrick Space Force Base, Fla. Units from Hawaii's **204th Airlift Squadron,** South Carolina's **315th Airlift Wing**, and Florida's **308th Rescue Squadron** practiced open-ocean search and rescue airdrop techniques for astronaut recovery. "We're conducting realistic drops of both personnel and equipment," said Capt. Nicolas Walsh, 308th RQS. With the rise in missions like SpaceX and Artemis, human space flight support alerts are expected to increase. The exercise included 10 airdrops and 30 pararescuemen jumps, enhancing readiness for future spaceflight recovery operations.

Gabrielle Terrett

Maj. Jennifer Trewett, a reservist with the 307th Bomb Wing, co-founded the Red River Raiders Futbol Club (RRFC) in Bossier City, La., in December 2024. The nonprofit team, now competing in the United Soccer League 2 (USL2), offers local athletes a path to professional soccer. Initially hesitant, Trewett was inspired by community support and her own lifelong love of the game. "This USL2 team . . . is a path to pro," she said. "This gives them the ability to get more time on the pitch, videotape, build highlight reels, and send that off to professional MLS soccer teams." Balancing military duties and club leadership, Trewett credits a strong team effort for RRFC's early success.

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



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Maj. Robert Lodge (left) and Capt. Roger Locher in the cockpit of their F-4D at Udorn Royal Thai Air Base, Thailand, in 1972. As a Weapons Officer for the 555th Fighter Squadron, Lodge developed the tactics that defeated North Vietnamese MiGs during Operation Linebacker.

Bob Lodge and the Making of Air Force Vietnam Aces

How one pilot's unblinking focus on technology, tactics, and preparation helped turn the tide in the air war over North Vietnam.

By Col. Charles B. DeBellevue, USAF (Ret.)

Operation Linebacker was conceived and promulgated from discussions at the bar at Udorn Royal Thai Air Force Base, Thailand, and at 7th Air Force and became the major battle plan for prosecuting the air war over North Vietnam in 1972.

The story begins nearly six years earlier, with the September 1966 arrival of Col. Robin Olds as commander of the 8th Fighter Wing at Ubon Royal Thai Air Base, in southeastern Thailand. Olds was a WWII ace with 13 kills against the best pilots the Germans could muster, and he didn't take long to start making changes. Olds brought in Daniel Chappie James Jr. to be his vice wing commander, which allowed Olds to lead flights into North Vietnam and see and direct the fight first-hand.

He wasn't pleased. Olds launched a training program to get the 8th Tactical Fighter Wing pilots thinking and flying more tactically, demanding his pilots think outside the restrictive rules that had constrained the 8th Wing. Then he and Weapons Officer J.B. Stone developed a new concept of operations to make the North Vietnamese MiG-21s and MiG-17s come up and fight.


USAF

Lodge decided on his own that he knew too much to risk being captured if shot down over hostile territory.

Olds employed deception, having his F-4s use F-105 call signs, carry F-105 jamming pods, and fly familiar F-105 routes. The ploy tricked the MiG air defense commanders into anticipating a cake walk against bomb-laden foes.

It worked: By the time the MiG pilots realized the trap, it was too late.

That mission changed the tide of the air war. Olds flew 151 combat missions during his year at Ubon, during a time when most pilots completed just 100 missions. He scored a total of four MiG kills on three of those missions and, at least according to legend, passed subsequent kills to his wingmen rather claiming a tour-ending fifth kill.

Still, the war dragged on. By late 1971, with peace talks in Paris unproductive, the U.S. had spent six years at war in Vietnam and still had no clear strategy for winning. The Air Force

was hog-tied by restrictions. The Navy, meanwhile, used the three-year hiatus after Rolling Thunder to implement its Top Gun training. The course focused specifically on dogfighting small, lightweight, highly maneuverable Russian-built fighters. They trained in Dissimilar Air Combat Tactics (DACT), anticipating that President Richard Nixon would reintroduce strikes into North Vietnam if peace talks failed.

The Air Force's Fighter Weapons School was slower to adopt this approach. The Weapons School focused on training instructors who would return to their squadrons to train other aircrews. The focus was primarily air-to-ground weapons employment. Unlike the Navy, the Air Force did not fly DACT, practicing only against other F-4s. In training, USAF pilots never had to outfly their adversary; they had only to beat the adversary pilot. Air Force leadership was leery of the Navy approach, fearing that it would result in aircraft and crew losses in training.

So, when I arrived at Udorn on Nov 30, 1971, I had only fought other F-4s. I found myself—and my squadron mates—at a severe disadvantage.

Courtesy photo

The legendary Robin Olds (right) took over the 8th Fighter Wing at Ubon Royal Thai Air Base, Thailand in 1966. A combat veteran of World War II and Korean War fame, he overhauled the wing's culture and challenged pilots and navigators to think outside the box.

THE 13th AND THE 555th

All my buddies were in the 13th Tactical Fighter Squadron, and they believed the 13th was the better squadron. I wasn't so sure. I thought the Triple Nickel (555th) had the better history as a result of Olds' command's 20 kills with the 8th Wing at Ubon.

Maj. Dean White from the 13th met my C-130 rotator when we landed at Udorn, and arrived prepared to capture my services. He wanted to make a trade that would put me in the 13th in exchange for another captain who was arriving on the same flight. Although the two of us had about the same qualifications, the deal did not go through. Master Sgt. Gerry Roy, the 555th's first sergeant, refused.

Arriving in the Triple Nickel squadron building, I signed in and dropped off my gear with the personal equipment sergeant and began looking around. The building was mostly empty. I finally found the scheduling shop and walked in.

"What do you want?" asked Maj. Dick Stamm, gruffly looking up from his desk. I introduced myself. I told him I had 550 hours in the F-4 and was qualified to do anything the F-4 could do.

Major Stamm looked at his watch. "Damn, the afternoon goes have already stepped! You can't fly today!"

Most of the new backseaters came directly from training squadrons, so he needed experienced weapons systems officers. He told me to go to Intel and get an E&E (Escape and Evasion) kit, and that I was already on tomorrow's schedule. I asked what I'd need to do to get signed in to the base; he was unmoved.

"Are you getting paid?" he asked.

"Yes."

"Then you have a year to do that," he said. "If you live!"

When Roy took me over to billeting for a room, I found out why the squadron was empty. Afternoon sorties had already stepped, and the rest of the squadron was night flying.

The next morning, Dec. 1, 1971, I went to breakfast at the Officers' Club, entering through the stag bar, where night flyers from the Triple Nickel were pounding bloody marys from water glasses, 10 glasses for $1. They had been there for a while.

Lt. Col. Mike Cooper, the operations officer, stopped me, looked at my patches and name tag: *DeBellevue*. "You're the new guy! You're French! You're a f_____ frog!"

You never want to be named by a bunch of guys who have been drinking for a while.

As it turned out, I did not fly that day, gaining time instead to settle into the squadron and check out my home for the next year. It was quickly apparent that besides 1st Lt. Roger Locher, I was one of the most experienced weapons systems officers in the squadron. New guys had to complete a mission check on their 10th flight to ensure they could handle combat. But my experience enabled the squadron to waive that requirement for a while, and my "10th mission check ride" didn't come until my 25th mission.

That December was not a good month for the 432nd. Udorn lost four F-4s—two were shot down by MiGs and two because

they ran out of gas chasing MiGs. Both F-4s shot down were from the Nickel.

BOB LODGE, WEAPONS OFFICER

Capt. Bob Lodge was the Nickel's weapons officer, the driving force in developing the counter MiG mission at Udorn. Lodge was focused and deliberate, and always devising new tactics, keeping Nickel crews thinking about air-to-air combat. He was on the latest major's promotion list—three years early—and was going to move up to the wing weapons officer's position, working for then-Col. Charlie Gabriel, the 432nd Wing Commander, as soon as Bob pinned on major. (Gabriel would go on to become the Air Force's 11th Chief of Staff, holding that job from 1982 to 1986.) Lodge's job was to determine how the 432nd planned and flew air-to-air missions, which gave him access to all-source intelligence.

In late December, Locher's roommate finished his tour and returned to the United States, and I moved into Locher's hooch. There we spent hours comparing our flights—hours, sorties, and bombs dropped. Locher was the one WSO who flew regularly with Lodge.

Lodge was intense, always planning his next step, both in the air and in training the squadron. Locher could meet Lodge's demands in the air and keep up with his thinking as missions evolved. On occasions when he was not available, either I or a couple of other senior WSOs would fill in. Once, I was scheduled to fly with Lodge on two bombing missions on the same day. Afterward, at 5 p.m. we arrived at the Papa alert pad, where we would sit air-to-air alert for the next 24 hours. You started the 24-hour alert tour in crew rest. Regardless of how many times you flew during that 24-hour period, you came off alert at 1700, also in crew rest. So, after flying two sorties during the day, then flying three sorties off the alert pad, Bob and I came off alert and immediately flew two sorties at night. We were beat. On the second night sortie, we were running on fumes. While refueling, Bob asked me if we were upside down.

"No," I told him. "Why did you ask?"

There was no moon up and the stars in the sky blended into the cooking fires on the ground, erasing the visible horizon. Lodge had vertigo. Officially, WSOs were not allowed to refuel the F-4, but I was able to refuel and asked him if he wanted me to take over. He declined. After refueling, I talked our attitude to him to let him know we were upright, wings level.

Bob coordinated closely with Red Crown, the radar controllers on the Navy cruiser USS Chicago, which was operating in the Gulf of Tonkin, and with Disco, the EC-121 radar aircraft operating from Korat RTAFB. Senior Chief Petty Officer Larry Newell worked hard to keep both Air Force and Navy combat air patrol flights informed about the movements and locations of the MiGs, their tactics, and other critical information. Enabled by Col. Gabriel, Bob was starting to formulate a plan to increase Air Force MIG kills.

He and the commander made numerous trips down to 7th Air Force at Than Son Nhut to plan how the Air Force would protect its strike flights from the MIGs. Early in 1972, he had 10 F-4Ds transferred from South Korea to Udorn. These aircraft had a special radar modification called AN/APX-81, a highly classified system that used the MIG-21's (only) SOD 57 Identification Friend or Foe (IFF) system to identify them beyond visual range. By electronically eavesdropping on the very system the North Vietnamese used to control the MiG-21s, the 432nd aircrews suddenly gained a tremendous advantage. This system was so secret even its code name, Combat Tree, was classified. Documentation was nil. The only information available was in the head of the flight test WSO who came to Udorn with the aircraft; he sat on the left intake with the right engine running and told me how to test the system and what its returns looked like. That was our training.

With this new combat edge, our MiG combat air patrol F-4s, which led the chaff flights into North Vietnam, now had the ability to identify and shoot the 21s beyond visual range. So long as the lead MiGCAP F-4 had a positive Enemy IFF return, he could shoot at an unseen target.

Bob continued to develop tactics with Capt. Steve Ritchie, the 555th's Weapons Officer who replaced him, and Lt. Col. Griff Bailey and Captain Fred Olmsted of the 13th. I was Ritchie's assistant in the Nickel's weapons shop.

On the night of Feb. 21, 1972, Lodge and Locher were flying a MiGCAP mission when Senior Chief Newell directed them against a MiG-21 coming out of North Vietnam. Bob sent his wingman home, then used the Combat Tree system to maneuver to intercept the MiG-21 as he headed into Laos. Closing in, Bob and Roger set up to fire AIM-7 Sparrow missiles, locking on to the 21 at maximum range. Soon after, Bob fired three missiles, but the AIM-7s had not been well-maintained. The first AIM-7 simply fell off the F-4. The second missile exploded out in front shortly after the warhead armed. Finally, the third AIM-7 headed to the target. Soon they observed a small explosion followed by a larger one—the Nickel's 21st kill.

Bob slice-turned to head out of the target area at the minimum safe altitude for the mountainous terrain and accelerated in military power. He did not use afterburner to avoid highlighting his position. A clean F-4D at 100 percent power is a fast jet.

We continued to prepare for a return to bombing missions into North Vietnam. The Older AIM-7s were a problem. We had flown with them—but had not fired any—for four years since Rolling Thunder ended in March 1968. Bob ensured we got the latest AIM-7E2 (dogfight) missiles with improved fusing and a maneuvering mode, and made sure they were taken back to the test bench every 10 flights to ensure they'd work when needed.

The short-range heat- seeker missiles standard armament on the F-4D were the AIM-4D Falcons, which had a small warhead and a seeker head that had to be cooled to work. It lacked a proximity fuse, so it had to hit the target to detonate, and the seeker's field of view was so wide we could not launch it at a MiG that was in the same piece of sky with a friendly aircraft. The logic tree for cooling the seeker was long and detailed, and once cooled the missile had to be launched within a two-minute window.

If the missiles weren't already cooled when you engaged MiGs, you would not have time to go through the switchology in a turning fight. Robin Olds had rejected them five years earlier, in 1967, when he got his new F-4Ds. He replaced them with the AIM-9s the Navy was using. We were to follow suit, but not before the AIM-4's limitations prevented his wingman from aiding Bob on May 10. We later received AIM-9Es, and then in the late summer received AIM-9Js, which gave the F-4s a dogfight advantage.

When he was not flying and fine-tuning tactics, Bob was guiding counterair tactics at 7th AF in Saigon and tweaking the systems we used. No one knew more, and he was acutely aware of his extraordinary knowledge. To protect his technical, tactical, and intelligence knowledge, he had long ago decided that if he were shot down in a place where rescue could not be attempted, he would not eject. The risk of capture was too great, and he feared divulging under tortured interrogation

Courtesy photo

Lodge (left) was a demanding pilot who expected much from his weapons systems officer. He found Locher could meet his demands, keep him informed, and keep up with his thinking as missions evolved. They flew together almost exclusively. On their final flight together, Locher ejected, but Lodge stayed with the plane as it crashed.

secrets that would remove the F-4's advantages. He had announced to his fellow 432nd crew members and even to his family back in the States that if he was shot down deep in North Vietnam, he would not eject, and would instead ride the aircraft into its crash.

BOB LODGE'S FINAL FLIGHT

On May 10, 1972, the first day of Linebacker, Bob Lodge came face-to-face with his decision and commitment not to risk capture. On that day, as in early 1972, the Navy's Top Gun program gave their F-4 crews the edge they needed to win against the predominantly MiG-17 adversaries they faced in Route Package 6B on the east side of the Red River Valley. Navy crews killed more MiGs than the Air Force killed MiG-21s and MiG-19s on their west side, Route Package 6A. Navy Lts. Randy Cunningham and Willy Driscoll both became aces, together shooting down three MiG-17s. Their Jet was hit, either by an SA-2 or, as the North Vietnamese would later say, by an Atoll missile fired from a MiG-21. Either way, it shows the lethality of the threats our U.S. aircrews faced. They still got their crippled Phantom out to the Gulf of Tonkin before ejecting for their rescue. The Air Force needed aces, and its top contenders had just been shot down.

The 432nd crews were struggling against the most capable North Vietnamese MiGs. It was only through Bob Lodge's tenacity and vision that the Air Force success rate increased.

The strikes on May 10, 1972, were a major attack against North Vietnamese transportation infrastructure, and the greatest single-day clash between the North Vietnamese and U.S. fighters. Bob Lodge had devised the overall attack plan. A total of 11 MiGs were destroyed that day, three by the Air Force and eight by the Navy. Bob Lodge and Roger Locher were the flight leads of Oyster flight, a four-ship of F-4s loaded for air-to-air combat. I was in Oyster 3 crewed with Captain Steve Ritchie. Our mission was the Ingress CAP for the Air Force strikes into North Vietnam that day. We preceded the strike flights into the target area and patrolled between Phuc Yen and Yen Bai, the two largest MiG airfields, to ensure that the MiGs did not interfere with the bomb-laden flights attacking targets in the heart of the Red River Valley.

After dropping off the KC-135 tanker at the northern end of its track, Oyster flight headed into North Vietnam. As we crossed south of Yen Bai, northwest of Hanoi on a northeast heading, Disco's EC-121 and Red Crown's USS Chicago were starting to broadcast bandit calls, alerting us to enemy aircraft. Oyster 1 and Oyster 3 were flying two of the 10 Combat Tree-equipped aircraft that Bob had brought down from South Korea.

We were in a spread formation heading northeast at low altitude when we started to get enemy IFF returns in front of us. We figured that the two enemy returns meant that there were four MiG-21s headed our way. As the returns closed with us at 1,000 knots, they soon came into our radar contact range, about 17 miles for a head-on MiG-21. Oyster 1 and 2 locked onto the two MiGs leading the enemy formation. As soon as the 21s came into missile range, both fired AIM-7 missiles,

and both hit their targets.

Steve and I, in Oyster 3, locked onto our target who was trailing the first element of 21s. The MiG we were targeting was high enough to be pulling a contrail. The AIM-7 leaves a smoke trail when it is fired, and when the MiG came in range and we fired an AIM-7, the missile's smoke trail climbed to meet the MiG. Its pilot must have been looking out of his cockpit, because his contrail made an omega in the sky, putting the missile out of range since we had fired it at max range. The number four MiG flew by us a few seconds later and we turned in behind him. We locked on to him at 6,000 feet and fired two AIM-7s; one struck home. The Mig pilot ejected from his burning aircraft and as we passed him, he was already hanging in a dirty yellow parachute.

We turned back to the north to rejoin with Oyster 1 and 2. Oyster 1, after getting his third MiG kill, was engaged with another MiG-21. They were too close to the MiG to fire an AIM-7 and were focused, "padlocked," on increasing their distance and then guiding their AIM-7 to the target when two unobserved MiG-19s converged on them, high to low, sandwiching our leader. They began firing their 30 mm cannons.

Oyster 2 yelled for Bob to break right, but it was too late. Oyster 2's AIM-4 missiles were useless because the MiGs were too close to the F-4, and the AIM-4's wide field of view could not discriminate between friend and foe. The cannon fire from the MiG-19 destroyed Oyster 1's right engine and the strike also took out the left engine hydraulics. The burning aircraft was ballistic and headed into its crash. Roger's back canopy turned brown from the fire and Roger said, "I think I am going to have to eject!"

Bob looked over his shoulder and said, "Why don't you then?!" Roger ejected over a ridge and landed on the opposite side from where the F-4 crashed.

Bob stayed with the airplane, protecting to his death the vital information only he held.

Steve Ritchie and I both saw Bob's F-4 before it crashed. We saw no chutes.

About this time a MiG-21 came up behind us as we turned southwest. We had our engines tuned hotter for more speed, and as we accelerated above the supersonic limiting airspeed for the F-4 at low altitude, the MiG-21 stayed with us. Since the older 21s couldn't keep up with us, we realized this was a new MiG-21MF that we'd been briefed on by intel.

Roger spent 23 days evading capture, and a few days after his rescue, he and I discussed how many MiGs we had seen during that mission. Besides the four that we initially engaged, there were two Bob and Roger engaged at the end, the 21 that chased us out and the two MiG-19s, one of which shot Oyster Lead. We figured we had fought at least 10 MiGs.

In August, a message went to the USS Hancock requesting two F-8s deploy to Udorn to teach us dogfighting, since Top Gun had left the Navy in so much better shape. Cmdr. John Nichols brought his three F-8s up initial at Udorn at 600 knots, irritating the Air Force leadership there. But Nichols was not there to make people happy. He was teaching our crews the Navy's fighting formations and tactics, and he set up a training program to teach us how to use the vertical and mutual support in a four-ship fight. He assessed our tactics as setting us up to be killed. Even after a few weeks, they were still beating us.

In mid-August, I was flying with Capt. John Madden on a MiGCAP. We briefed that if we did not engage MiGs, we would hit a tanker on the way home and launch the F-8s to meet us in the hills west of Udorn for training. As we came over the hills at about 500 feet, I picked up the F-8s on radar at about 13 miles. The lead F-8 called tallyho, and the "fight" was on. We had jettisoned our tanks in North Vietnam so as to fight the F-8s in the same configuration as against the MIGs. When we merged with the F-8s, we were able to maintain our formation and gain the advantage in a very fluid fight. We had finally graduated.

A short time later, on Aug. 28, Steve and I were on a MiGCAP leading the strike force against the Thai Nguyen steel mills. The weather was very cloudy and we ended up having to overfly the target to ensure the weather was workable for the strike force. The weather was good, but we had burned more fuel than planned and had to egress early. As we headed out on a westerly heading, I picked up an EIFF return on the Combat Tree about 70 miles in front. I interrogated him a few minutes later and the return was now closing, head-to-head. Things were getting interesting. Not only were we beak-to-beak with the 21, but there was also a flight of F-4s trailing them, and another F-4 flight converging from the north. We were in the best position to get him.

The MiG was at 25,000 feet, and we were at 10,000 feet. To ensure that our radar did not transfer lock to one of the converging F-4 flights, we had to do a snap up attack to reach his altitude at the same time as we converted to his 6 o'clock. Steve fired two AIM-7s during the conversion to get the MiG pilot to turn into us, but he did not see the missiles. We converted to his tail supersonic, and the radar maintained its lock the entire time. We ended up 4 miles behind the MiG with 100 knots of overtake. After a few minutes, the in-range light came on and Steve fired the two remaining AIM-7s. The first missile missed, but when the MiG turned away from that missile, the second missile struck, scoring Steve's fifth kill and my fourth. Steve was the first Air Force Ace of the war. When we landed at Udorn, Ritchie was done with combat. John Madden moved up to mission lead for the 555th.

Five days later, John and I intercepted two 21s and I set up a head-on snap-up attack. As we pulled up under the MiGs, John fired two AIM-7s which guided perfectly, but failed to detonate; the MiGs escaped. A week later, on Sept. 9, John and I were leading Olds flight on a MiGCAP when we received a call from TeaBall that they had a Black (low on fuel) bandit returning to Phuc Yen. We were ordered to orbit the MiG base. That seemed high risk, but we headed into the Valley. We were just north of Phuc Yen when Lt. Bud Hargrove, the backseater in Olds 3, called out a SAM at our right 3 o'clock. We did not see it, but we did see a MiG trying to land. I locked on to the MiG, and John fired two radar missiles. Since we were above the MiG the radar transferred lock to the ground return and both missiles hit the ground. We turned behind the MiG on final and tried to bleed off airspeed so we would not overshoot him and become his target. John cross-controlled the jet and bled off our airspeed from 600 to 225 knots, and we ended up beside the MiG, who pulled up his gear and flaps and turned into us. After a few turns, the MiG climbed up out of the fight. Capt. Brian Tibbets in a gun-equipped F-4E had been hawking the fight, and we cleared him to engage. He closed to about 600 feet behind the MiG and destroyed it with 20 mm cannon fire. The MiG pilot ejected and the MiG rolled into the ground.

As we headed back to Thud Ridge to reform the flight, I picked up a huge radar return, 8 miles in front of us. We were higher than they and did not have fuel to disengage. We had to fight. As we turned to meet them, Olds 2 identified them as MIG-19s and they both jettisoned their fuel tanks. The fight was on, a high-G close-in turning dogfight. We fired two AIM-

A1C Larry Groom/AFA Library

The author, then-Capt. Charles DeBellevue (left), with crew chief Sgt. Reggie Taylor, Pilot Capt. Steve Ritchie, and assistant crew chief Staff Sgt. Frank Falcone, celebrate Ritchie's fifth kill on Aug. 28, 1972, and DeBellevue's fourth. Ritchie became an Ace that day. DeBellevue would join him later, gaining two more kills with Pilot John Madden.

9Js at the wingman, but did not see the missiles hit. The lead MiG was turning hard and moving quickly to our 6 o'clock. I figured he would fire in about 15 seconds. Time was short. The third AIM-9J was growling loudly, meaning it had a heat source, so we fired. At first, the missile appeared attracted to the sun, but soon enough it veered back to hit the 19 in its afterburner. The pilot rolled wings level, then inverted, and flew into the ground.

Once the MiGs were no longer a factor, the AAA around Yen Bai opened up. Olds 4 took a hit and started losing fuel. They left with 1,800 pounds of fuel, not enough to get back to Udorn, over 250 miles away. Olds 3 stayed with them until they ejected. Olds 5, our airborne spare, got the rescue forces moving, and our crew was on the ground only briefly before the helicopter picked them up. We had Olds 2 with us, and we flew a weaving path to cover the straight-line egress of Olds 3 and 4. Clear of North Vietnam, we climbed for the heavens to squeeze the last bit of range out of our remaining fuel. As we touched down at Udorn with fuel near zero, my combat flying days were over. One of the AIM-9Js we fired at the wing MiG-19 actually hit him, and he crashed before he could land at Yen Bai Airfield, giving me a sixth kill.

LODGE'S LEGACIES

From Feb. 21 to the end of Linebacker II in December, the Nickel was credited with 19 MiG kills, the most of any fighter squadron in Southeast Asia. Our sister air-to-air squadron at Udorn, the 13th, was credited with eight additional kills. They had one Ace, Capt. Jeff Feinstein.

Those successes were due to Bob Lodge's tenacity, focus, and unwillingness to risk compromising the secrets he held at his moment of truth on May 10, 1972. Enabled by Col. Gabriel, Bob guided the planning for Linebacker. By bringing Combat Tree and improved AIM-7s and AIM-9s to Udorn, hard-forming crews and flights always to fly together, Lodge made us as ready for the coming fight as we could have been.

Bob's position as the 555th Tactical Fighter Squadron weapons Officer and later at the 432nd Tactical Reconnaissance Wing weapons officer and his MIT engineering education gave him unique knowledge of the Combat Tree system. He was the only person flying combat into North Vietnam who was briefed on, had access to, and knew the Combat Tree system down to an engineering level. Combined with the All-Source Intelligence information he had assess to, he was uniquely equipped as an informed individual whose insights, if exposed to the enemy, could have a devastating effect on the U.S. Air Force and its air war. He knew that he had to protect that knowledge. He chose to do so even at the cost of his own life.

Bob left us lessons that increased our lethality: We abandoned the dogfight-useless AIM-4s for AIM-9s, and mixed internally gunned F-4Es into our counter MIG flights. TeaBall was established in July under Col. Bill Kirk to institutionalize the flow of derivative tactical information to aircrews. Bob's out-of-the-box approach empowered us to not be too proud to seek dogfight help from the Navy's F-8 experts.

If Bob had not laser-focused the air-to-air crews at Udorn on the coming task before the war resumed with Linebacker—and had he not laid down his life to protect our secrets—we would not have been so successful.

Col. Charles B. DeBellevue, USAF (Ret.), *was an Air Force Weapons Systems Officer and one of only five American flying aces during the Vietnam War. He was the first WSO to become an ace and was credited with a total of six MiG kills, the most earned by any U.S. aviator during that war.*

USAF's Capacity, Capability, and Readiness Crisis

The Cold War Air Force was bigger, deeper, and readier than today's. Here's why it's time for a reset.

In 1987, U.S. Air Force aircrews were dominant, largely due to training. Fighter pilots averaged more than 200 flying hours a year, bomber crews flew at least one eight-hour sortie a week, and ISR crews were equally well trained—while Soviet pilots struggled to get 120 hours a year. Today, Chinese fighter pilots are getting 200 hours a year, while USAF fighter pilots get only about 120.

By Col. John "JV" Venable, USAF (Ret.)

For the first time since the collapse of the Soviet Union, the United States faces a true peer potential adversary in China and an unprecedented array of threats from others, including nuclear-armed Russia and North Korea and a near-nuclear power in Iran. Yet at the very moment when the nation most needs a ready, capable, deterrent force, its Air Force is in crisis. Its dwindling capacity and readiness are undermining its ability to deter or defeat competitors' aggression. Because today's Air Force is the oldest, smallest, and least ready in its history, it is becoming unable to simultaneously fight a peer adversary and fend off threats elsewhere around the globe.

Air Force Chief of Staff Gen. David W. Allvin has reinforced the fact that the nation needs a larger, more ready Air Force through multiple interviews and congressional testimony. At the heart of this is a drive for more funding. The situation facing his Air Force is dire, and the consequences of inaction threaten to be dire for the nation.

Fully grasping the state of the service is best understood by comparing today's Air Force with that of the Cold War era, the last time the nation faced a true peer rival. Doing so not only highlights how much the service's capacity, capability, and readiness have withered over the past 30 years but also provides a benchmark for restoring the Air Force to health. Without a bold reset, the United States risks ceding its ability to conduct air dominance, strike, and intelligence, surveillance, and reconnaissance (ISR) missions in the Indo-Pacific and beyond, with catastrophic implications for global order.

The Air Force endured ups and downs over the course of the Cold War and entered both the Korean and Vietnam wars ill-equipped for the fights it encountered. Yet by 1987, fueled by lessons from Vietnam, massive investment, and resultant advances in technology, weapons, and training, the U.S. Air Force was a formidable and capable instrument of national power. It was an effective counter to the Soviet Union's numerical military advantage that effectively deterred aggression against NATO.

In 1987, the Air Force's Active component fielded 1,941 combat-coded fighters organized into 81 squadrons, 29 of which were forward-based in Europe to blunt a Soviet advance. In addition, the Air National Guard and the Air Force Reserve (collectively referred to as the Air Reserve Component or ARC) bolstered the Active force with another 1,389 fighters in 53 squadrons. The ARC was trained and equipped to reinforce NATO within 60 days. The average age of those fighters was 14 years. USAF's bomber fleet was equally impressive, comprising 325 aircraft, averaging less than 21 years of age. On any given day, roughly eight out of 10 Air Force combat jets were ready for combat.

The service's ISR capabilities were similarly robust. The Active Air Force had 54 RF-4s, 22 U-2s, 21 SR-71s, and about 25 RC-135s for additional strategic reconnaissance. The Air National Guard had another 153 combat-coded RF-4s. All told, after accounting for readiness and the ability to deploy, the Total Force had 154 RF-4s, 16 U-2s, 18 RC-135s, and three SR-71s available for employment on any given day.

The United States built that force for a peer fight, one that could absorb significant losses in a lengthy, high-intensity conflict. The service's depth of 2,091 employable fighters and 217 bombers provided a buffer against attrition estimates, which was meant to ensure sustained combat power. The United States and NATO together could generate as many as 11,500 sorties daily, which was enough because, even though it was far fewer sorties than the Soviet Union could generate—16,500—it was a more ready force. Robust logistics, superior training, and a steady supply of munitions postured allied forces to dominate that fight. The U.S. military's industrial base was also producing new, cutting-edge aircraft at scale, in all mission categories, bolstering operator confidence. The Air Force took possession of hundreds of new fighters annually.

U.S. aircrews were superior. The average U.S. fighter pilot flew more than three times a week, and U.S. bomber crews flew at least one eight-hour sortie every seven days in high-threat, high-intensity training scenarios. It was the same for ISR crews. Collectively, the U.S. Air Force had the capacity, capability, and readiness to deter Soviet aggression and to crush Soviet forces should conflict arise in Western Europe.

Staff Sgt. Lauren Cobin

THE MODERN-DAY AIR FORCE

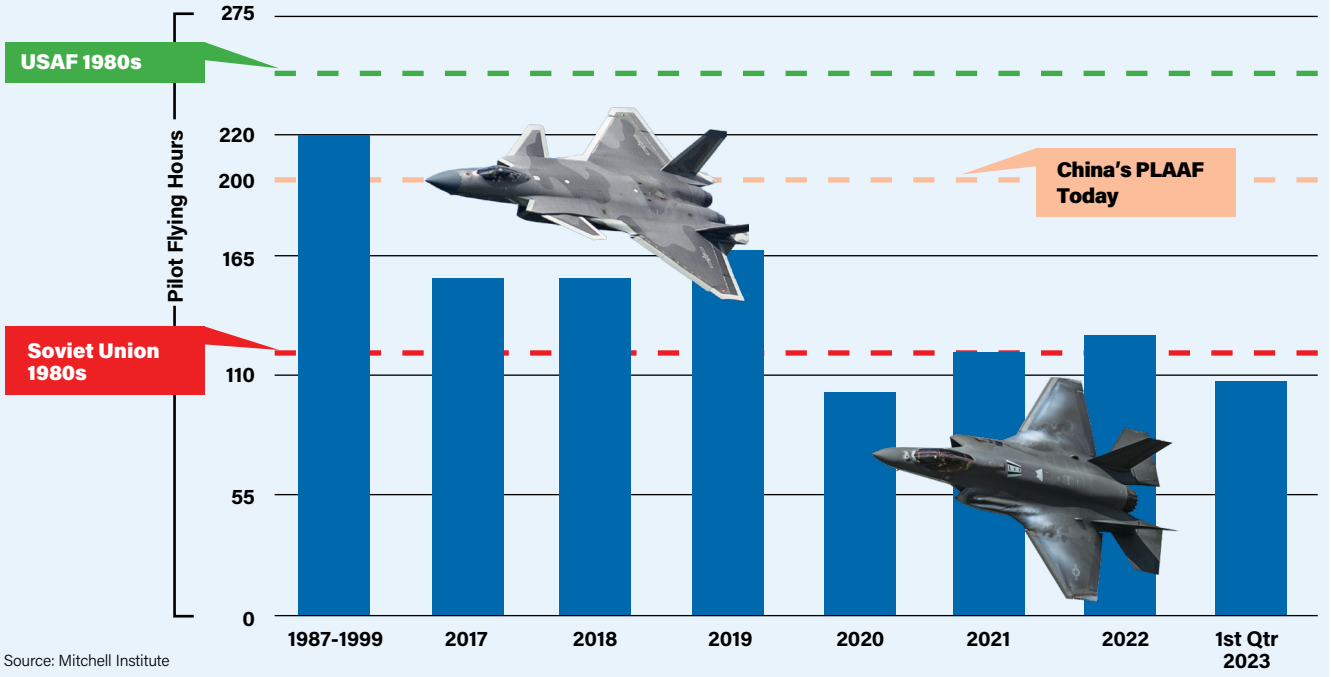
Fast forward to 2025. Today, the U.S. Air Force inventory is the smallest in the service's 78-year history. As reported by the Air Force Chief of Staff Gen. David W. Allvin at the AFA Warfare Symposium in March, the average age of all USAF aircraft is now over 31 years old. Gen. Allvin told Airmen at the symposium that readiness, as measured by aircraft availability rates, is now 54 percent on average for all Air Force aircraft, meaning just over five out of every 10 aircraft are ready to fly on a given day because of funding and parts shortfalls. If called to fight tonight, the Air Force could generate just 56 combat-coded F-22s for air superiority and 354 combat-coded F-15Es, F-16s, and F-35s for strike and interdiction.

The bomber fleet is similarly diminished. Its 140 total aircraft—B-52s, B-1s, and B-2s spread across nine squadrons—average 48 years old. Only 19 are stealthy B-2s, and even those average 31 years of age. Just 52 percent of the bomber fleet is mission-capable on any given day.

The ARC combined have 640 fighters; subtracting training

Less Training for Fighter Pilots

The U.S. Air Force has reduced the number of flight hours for combat pilot training by roughly half since the 1990s, while China's People's Liberation Army Air Force pilots now fly nearly twice as much as American pilots. How U.S., Chinese, and Soviet-era flying hours compare.



Source: Mitchell Institute

and test jets, that leaves 434 fighters in operational units. Subtracting further due to mission capability rates, the ARC can muster just 66 air superiority fighters and 155 strike and interdiction fighters against China on any given day.

The Air Force has roughly 272 known air-breathing ISR aircraft that include 22 RC-135, 9 RQ-4 Global Hawks, 27 U-2s, an estimated 20 to 30 RQ-170 Sentinels, and 184 MQ-9 Reapers for armed ISR. While the different aircraft all have unique attributes, the MQ-9 demonstrates the broadening of the mission area, providing a unique sensor-shooter capability that did not exist in the Cold War. While space plays an increasing role in ISR, airborne assets remain essential to modern combat.

Factoring in readiness, the Total Force could deploy only 523 fighters and 51 bombers into the Indo-Pacific today if war broke out, and just 308 of those fighters and 27 of the bombers would be mission ready upon landing in theater. While the macro ISR number has held steady since the Cold War, demand signals from combatant commands continue to increase, which risks stretching the force too thin. Combat losses, inevitable against a peer threat, would reduce those numbers further.

This significantly reduced combat force structure compared to the Cold War era comes just as China's People's Liberation Army Air Force (PLAAF) is growing. Over the past 14 years, China fielded some 1,300 combat-coded fighters, including 320 fifth-generation J-20s. Another 120 J-20s alone come hot off production lines annually, more than double the number of new combat jets the U.S. Air Force is buying. China's 185 H-6 bombers, less advanced some than U.S. bombers, provide significant regional strike capability, and China's industrial base, unencumbered by budget constraints, delivers the PLAAF a numerical edge, and a superior ability to backfill attrition.

THE ROOTS OF DECLINE

The Air Force's current force structure and readiness crisis stems from decades of underfunding and strategic miscalculations. To pay for a post-Cold War "peace dividend," the Pentagon and Congress slashed Air Force procurement funding by 52 percent between 1989 and 2001—cutting USAF buys deeper than either Army or Navy procurement. The Air Force adopted a "divest to invest" strategy, intended to retire legacy aircraft to fund modernization. In actuality, it became a divest-only policy. The Air Force retired 33 B-1s in 2003 and 250 fighters in 2009; it acquired no new bombers and only 120 fighters over that same six-year period.

High operational tempos during the Global War or Terrorism elevated demand for USAF fighters, bombers, and ISR aircraft over those same years, with every weapon system in the USAF inventory flying thousands of hours in low-threat environments. But instead of convincing lawmakers to buy more combat aircraft, those actions only further eroded the service life of Air Force combat aircraft. The one exception to this was ISR: The Air Force acquired large numbers of MQ-1 Predators and MQ-9 Reapers, yet demand for their services soared and supply was never sufficient.

Modernization in the rest of the Air Force lagged. F-22 production, initially planned for 750 jets, was cut short at 187. The Air Force envisioned 800 F-35s by 2020, but instead acquired only 272. Instead of dominating the Air Force inventory, stealthy fifth-generation aircraft that can penetrate China's layered air defenses make up just 28 percent of U.S. fighters. Fourth-generation fighters like the F-16 and F-15, while still capable, lack the stealth and sensor fusion needed to survive those defenses, which include Russian S-400 air defenses. Curtailed production buys were not restricted to fighters. Funding was slashed for the B-2, with just 21 of the stealth bombers purchased versus the 120 stipulated in the original requirement. On top of all this, slow weapons procurement means a single week of sustained combat against China could deplete the U.S. inventory of long-range munitions, such as the Joint Air-to-Surface Standoff Missile (JASSM).

Yet the worst indicator of Air Force health is pilot readiness.

For more than 12 years, the Air Force has not funded the flying hours or sortie rates, nor the spare parts required to sustain all mission ready aircrew training requirements. Over the past seven years, fighter pilots have averaged two or fewer sorties a week—below the minimum sortie requirement for any pilot or squadron to be considered combat mission ready. Pilots are flying at basic mission capable rates, which is below what is needed to form the habit patterns and develop the judgment that comes with frequent reps of individual combat tasks and regular large force employment training. At best, U.S. front-line fighter pilots—and therefore every combat fighter squadron in the Air Force—are qualified to conduct only limited wartime missions.

USAF

In 1987, the average mission capable rate for the active fighter inventory that included F-15s, F-16s, A-10s, F-111s, and F-4s (above) was 81 percent. Today the average is 64 percent.

U.S. bomber crews are in even worse shape. Years of underfunding flying-hour programs and weapons system sustainment accounts make it unlikely that a single bomber squadron can execute peer-level mission requirements within their respective designed operational capability statements. Employing forces that are not trained for a high-end fight would undoubtedly suffer higher loss rates, not just in combat, but during the more benign phases of flight, like taking off and landing. Recent accident reports, like one that followed the January 2024 crash of a B-1, confirm this. That $300 million bomber was lost during a routine instrument approach into its home field. The mishap pilot had three sorties in the previous month, and the instructor pilot had just two in the previous 60 days.

Independent operational readiness exercises, once a regular part of annual training to prepare for semiannual operational readiness inspections, are no longer part of the regular unit training and evaluation regimen, nor are rigorous survive-to-operate scenarios currently integrated into training plans. Without intense, regular training under simulated combat conditions, Airmen are ill-prepared to operate on an airfield under attack. This shortfall is nearly certain to present a critical factor in the event of an adversary attack on a U.S. base. Those skills—operating while under attack—are ones U.S. Airmen must regain. Perhaps that is why Gen. Allvin before a Senate subcommittee in 2024 testified, "We are also committed to building forward basing resilient enough to enable continued sortie generation, even while under attack."

At the tail end of the Cold War, the Air Force and the broader U.S. defense enterprise invested in superior training to offset the Soviet adversary's numerical advantages—both in the air and for base defense contingencies. Today, U.S. Airmen no longer train more than their Chinese rivals.

During the Cold War, U.S. fighter pilots flew more than 200 hours each year, far more than Soviet fighter pilots who flew closer to 120 hours. Today, Chinese fighter pilots are reportedly getting more than 200 hours or 160 sorties in the air annually,

Airman 1st Class Mattison Cole

B-1 bombers first flew in 1974, but didn't see combat until 1998. Over the next 20 years, the B-1 fleet would see near nonstop combat operations, wearing down the fleet.

or three or four sorties per week. That's far more than U.S. fighter pilots, who are lucky to get 120 hours a year, equating to fewer than 1.5 sorties a week.

Allies and partners are also critical to any peer-level fight, and Australia, Taiwan, Japan, South Korea, and India are the nations most closely aligned to the United States that hold the highest potential for partnership should a war with China erupt. While each of those nations have multiple combat-coded squadrons, they would need to hold back a significant portion of their fighters for homeland defense should war arise, meaning only a fraction of those aircraft could be committed to a forward fight. Assuming Australian fighters move to the first island chain, and that all five allies fly their apportioned fighters for five missions every day, they could add roughly 400 missions a day, before accounting for attrition. These nations do not have bombers and field limited ISR capabilities.

Perhaps the biggest limitation with the United States' Indo-Pacific allies (as well as those in NATO) is their lack of munitions. Assuming fighter pilots expend every long-range missile they carry on every sortie they fly, Australia, Japan, and South Korea would exhaust their existing weapons supply executing the first day's air tasking order (ATO). After that, they would be reliant on the limited U.S. stockpile and USAF's ability to get those weapons into theater in a relevant time.

MISMATCHED CAPACITY, READINESS, GEOGRAPHY

China possesses 799 mission-capable fighters and 138 bombers. Operating from mainland bases with internal lines of communication, China can generate nearly 4,000 sorties daily, and every jet has the unrefueled range to easily reach Taiwan with more than adequate station time to employ weapons over that island.

The United States, by contrast, must operate from afar to overcome the tyranny of distance in the Pacific, imposing severe logistical challenges on its combat operations. The 3,400 nautical mile round trip from Guam to Taiwan would limit the U.S. Air Force to about 740 fighter sorties and 33 bomber sorties daily, even after reinforcements. The total number of fighter and bomber sorties the U.S. and allied air forces could muster from the second island chain, including Guam, would be roughly 26 percent of what China's PLAAF can generate. If the decision were made to move U.S. fighters to forward basing in the first island chain—Japan, South Korea, and the Philippines—the USAF could almost double its sortie rate to roughly 1,850 sorties a day, but that is still less than half what the PLAAF could generate.

THE ATTRITION PROBLEM: NO BUFFER FOR LOSSES

The Cold War Air Force was designed with attrition in mind, maintaining a deep bench of aircraft to absorb losses while sustaining combat power. It has been decades since leaders have had to account for these realities. They have no experience with attrition. Backfill aircraft and crews were cut years ago in the name of efficiency. Modern wargames simulating a U.S.-China conflict estimate 5 percent daily attrition, a factor that would cut Air Force capacity by more than two-thirds within 19 days.

The Air Force's acquisition pace exacerbates its vulnerabilities. In 2025, the USAF will buy just 42 F-35s and 18 F-15EXs, far below the rate needed to replace losses or rebuild capacity. B-21s have yet to achieve operational-level production. The service is no longer buying new ISR types, with the last MQ-9 purchased in fiscal year 2021. During the 1980s, the U.S. industrial base produced hundreds of aircraft yearly, supported by a robust supply chain and multiyear procurement contracts. Today, ramping up production of F-35s, F-15EXs, B-21s, or MQ-9Bs would take years due to supply chain constraints, workforce shortages, and budget

Senior Airman Nicholas Rupiper

The Air Force envisioned having 800 F-35s by 2020 but only acquired 272, allowing fighter retirements to far outpace acquisitions. Instead of dominating the Air Force inventory, stealthy fifth-generation aircraft that can penetrate China's layered air defenses make up just 28 percent of U.S. fighters.

Airman 1st Class Zachary Jakel

The Air Force is retiring older F-16s that still have service life as part of a divest-to-invest strategy. The author argues such retirements should be stopped to preserve combat capacity.

limitations. China, by contrast, is better positioned to rapidly scale production of its J-20 and other combat aircraft.

The shift from a U.S. and allied capacity, capability, and readiness advantage toward a PLAAF advantage is growing. So much so, in fact, that if we succeed in thwarting Chinese aggression in the region, we may suffer significant attrition, and it may rely more on the PLAAF's inexperience in employing its force than on the allied capability to defeat it. Reversing the decline in Air Force capacity and readiness must become a DOD and congressional priority to avoid losing.

RESTORING CAPACITY, CAPABILITY, READINESS

To close the capacity and readiness gaps and restore airpower dominance, the Air Force must adopt a multipronged strategy, drawing on lessons from the Cold War era. The following steps are critical:

■ Halt "divest to invest." The 2018 "Air Force We Need" study called for 1,200 combat-coded fighters and 210 bombers, increasing the number of operational squadrons by 25 percent. Similar requirements were also set for ISR. Today's force is far short of those targets. The Air Force must immediately freeze retirements of serviceable fighters, Bombers, and ISR aircraft, and keep them until new acquisitions rebuild capacity to the levels required to meet the National Defense Strategy.

■ Accelerate procurement. The Air Force should increase acquisition plans and acquire annually 72 F-35s, 24 F-15EXs, and 21 B-21s by 2029. Robust purchases of Collaborative Combat Aircraft (CCA) will also be crucial to growing combat capability and capacity. To achieve that, Congress should approve multiyear procurement contracts to stabilize production and reduce costs. Shifting funds from research and development to procurement in fiscal 2026 could jump-start this effort, but sustained budget increases are essential.

■ Significantly improve readiness. Fighter and bomber aircrew should fly a minimum of three sorties a week and four sorties a month respectively. Increasing mission-capable rates to 80 percent for fighters and 70 percent for bombers requires investments in maintenance, personnel, spare parts (weapons sustainment), and training. Similar standards are needed for ISR aircraft.

■ Expand munitions stockpiles. Long-range weapons like JASSM and the Long-Range Anti-Ship Missile (LRASM), are critical to sustaining combat operations.

■ Strengthen the industrial base. The United States must revitalize its defense industrial base, addressing supply chain bottlenecks and workforce shortages. Public-private partnerships and incentives for domestic production can accelerate aircraft and munitions manufacturing.

■ Leverage allies. While Indo-Pacific allies cannot match NATO's Cold War contributions, U.S. forces should enhance interoperability with Japan, Australia, and South Korea, including joint munitions stockpiling and base hardening to improve resilience.

THE COST OF INACTION

The Air Force of 1987 deterred the Soviet Union with the requisite capacity, overwhelming readiness, and capability of its systems. Today, failure to restore airpower dominance risks strategic loss in the Indo-Pacific, undermining U.S. credibility and the rules-based international order. The cost of rebuilding the Air Force—estimated at $30 to 40 billion annually above current budgets—is significant, but pales in comparison to the economic and strategic consequences of defeat. A U.S.-China conflict could disrupt $5 trillion in annual trade throughout the Indo-Pacific, destabilize global markets, and embolden authoritarian regimes worldwide.

The U.S. Air Force's capacity, capability, and readiness crisis is a clarion call for action. Congress and the Trump administration must act decisively to rebuild America's airpower backbone. The Cold War model of sustained investment, robust procurement, and strategic foresight stands as a useful model. By halting divestitures, accelerating acquisitions, and strengthening readiness, the Air Force can restore its ability to deter China and protect U.S. interests. For details see https://www.mitchellaerospacepower.org/air-force-and-space-force-vectors-for-the-incoming-trump-defense-team/.

***Col. John "JV" Venable, USAF, (Ret.)**, is a Senior Resident Fellow at the Mitchell Institute for Aerospace Studies. He is a graduate of the U.S. Air Force Fighter Weapons Instructor Course and a veteran of three combat operations with more than 3,300 hours in the F-16C.*

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ALMANAC 2025

*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 includes the Air Force & Space Force.

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SECRETARY OF THE AIR FORCE

Troy E. Meink

SECRETARIAT

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- ★★★ 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

Edwin H. Oshiba
(Acting)

- 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
Lt. Gen. Scott L. Pleus (acting)

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

AIR STAFF

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

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SECRETARY OF THE AIR FORCE

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Chief of Space Operations
Gen. B. Chance Saltzman

Vice Chief of Space Operations
Gen. Michael A. Guetlein

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

SPACE STAFF

- SES Deputy Chief of Space Operations for Personnel (S1)
- ★★★ Chief Operations Officer (S3/4/6/7/10)
- ★★ Deputy Chief of Space Operations for Intelligence (S2)
- ★★★ Chief Strategy & Resourcing Officer (S5/8)
- ★★★ Assistant CSO for Future Concepts and Partnerships
- ★★ Director of Staff

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- ★★★ Space Forces Space Command (SPACEFOR-SPACE) (S4S)

KEY INDICATES POSITION AND RANK

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

Future Commands announced February 2024

[1]For a list of NAF-equivalent centers, see AFMC listing on p. 71
[2]AFCENT is officially a "Named Air Force"
[3]Also supports Unified Combatant Commands

DAF TOTAL FORCE END STRENGTH

End strength is as of Sept. 30, 2024, except where noted by an *, in which case the number is an estimate drawn from DOD's fiscal 2025 budget request.

FISCAL YEAR	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025*
USAF ACTIVE DUTY										Estimate
Officers	60,961	61,597	62,640	63,902	64,245	64,873	64,941	60,744	60,508	61,396
Enlisted	252,762	256,983	258,978	263,976	265,369	265,658	263,480	253,904	251,412	254,110
Cadets	4,160	4,207	4,262	4,223	4,176	4,103	4,003	4,050	4,038	4,000
Total USAF Active Duty	317,883	322,787	325,880	332,101	333,790	334,634	332,424	318,698	315,958	319,506
USSF ACTIVE DUTY										
Officers					84	3,656	4,220	4,424	4,574	4,576
Enlisted					1	2,907	3,841	4,455	4,872	4,924
Total USSF Active Duty					85	6,563	8,061	8,879	9,446	9,500
CIVILIAN PERSONNEL										
Direct hire (excluding technicians)	131,965	140,116	135,879	139,536	140,848	147,434	142,293	161,448	169,325*	169,325
ANG technicians	23,044	22,542	21,705	17,502	14,970	10,994	14,143	10,179	10,864*	10,864
AFRC technicians	8,384	7,872	7,648	7,714	9,027	7,224	5,793	5,342	6,882*	6,882
Total direct hire	163,393	170,530	165,232	164,752	164,845	165,652	162,229	176,969	187,071*	187,071
Indirect hire	3,704	4,570	4,202	4,190	3,694	3,728	3,973	3,549	3,909*	3,909
Total Civilian Personnel	167,097	175,100	169,434	168,942	168,539	169,380	166,202	180,518	190,980*	190,980
AIR NATIONAL GUARD										
Selected Reserve Officers	14,593	15,257	15,401	15,495	15,990	16,377	16,253	16,238	16,124	15,705
Selected Reserve Enlisted	90,907	90,413	92,068	91,702	91,424	92,106	88,731	88,736	87,481	90,595
Total ANG	105,500	105,670	107,469	107,197	107,414	108,483	104,984	104,974	103,605	106,300
AIR FORCE RESERVE COMMAND										
Selected Reserve Officers	14,896	13,672	13,716	14,042	14,458	14,947	14,988	14,838	14,926	14,579
Selected Reserve Enlisted	54,304	55,126	54,987	55,347	54,598	55,623	53,060	51,378	50,753	52,121
Total AFRC Selected Reserve	69,200	68,798	68,703	69,389	69,056	70,570	68,048	66,216	65,679	66,700
Individual Ready Reserve Officers	7,492	7,492	6,593	7,631	7,631	7,631	7,340	7,379	7,419*	7,419
IRR Enlisted	29,359	29,359	21,801	20,683	20,683	20,683	21,196	23,099	23,056*	23,056
Total IRR	36,851	36,851	28,394	28,314	28,314	28,314	28,536	30,478	30,475*	30,475
Total AFRC	**106,051**	**105,649**	**97,097**	**97,370**	**97,370**	**98,884**	**96,584**	**96,694**	**97,175***	**97,175**
Total Ready Reserve	**211,551**	**211,319**	**204,566**	**204,567**	**204,784**	**207,367**	**201,568**	**201,668**	**203,475***	**204,854**

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

DAF ACTIVE DUTY MALE/FEMALE, 1980-2024

(As of Sept. 30, 2024)

	1980	1990	2000	2010	2019	2020	2021	2022	2023	2024
CADETS										
Female	504	553	658	966	1,176	1,194	1,182	1,196	1,203	1,197
%	11.4	12.7	15.4	21.2	27.9	28.6	28.8	29.9	29.7	29.6
Male	3,907	3,817	3,617	3,592	3,047	2,982	2,921	2,807	2,847	2,841
%	88.6	87.3	84.6	78.8	72.2	71.4	71.2	70.1	70.3	70.4
Total	**4,411**	**4,370**	**4,275**	**4,558**	**4,223**	**4,176**	**4,103**	**4,003**	**4,050**	**4,038**
ENLISTED										
Female	60,803	60,803	55,011	50,946	54,205	55,239	55,644	55,297	53,973	53,393
%	13.2	14	19.2	19.3	20.5	20.8	20.9	21	20.9	20.8
Male	399,517	374,385	231,620	212,491	209,771	210,130	210,014	208,183	204,386	202,891
%	86.8	86	80.8	80.7	79.4	79.2	79.1	79	79.1	79.2
Total	**460,320**	**435,188**	**286,631**	**263,437**	**263,976**	**265,369**	**265,658**	**263,480**	**258,359**	**256,284**
OFFICER										
Female	8,493	13,331	11,819	12,363	13,932	14,325	14,671	15,040	15,468	15,973
%	8.7	13.3	17.1	18.7	21.8	22.3	22.6	23.2	23.7	24.5
Male	89,156	86,714	57,204	53,838	49,970	49,920	50,202	49,901	49,700	49,109
%	91.3	86.7	82.9	81.3	78.2	77.7	77.4	76.8	76.3	75.5
Total	**97,649**	**100,045**	**69,023**	**66,201**	**63,902**	**64,245**	**64,873**	**64,941**	**65,168**	**65,082**
Grand Total	**562,380**	**539,603**	**359,929**	**334,196**	**332,101**	**333,790**	**334,634**	**332,424**	**327,577**	**325,404**

Totals combine Air Force and Space Force

Sources: Defense Manpower Data Center: Table of Active Duty Females by Rank/Grade and Service, September 2024, and Active Duty Military Personnel by Rank/Grade, September 2024

ACTIVE DUTY AIR & SPACE END STRENGTH: 1907-TODAY

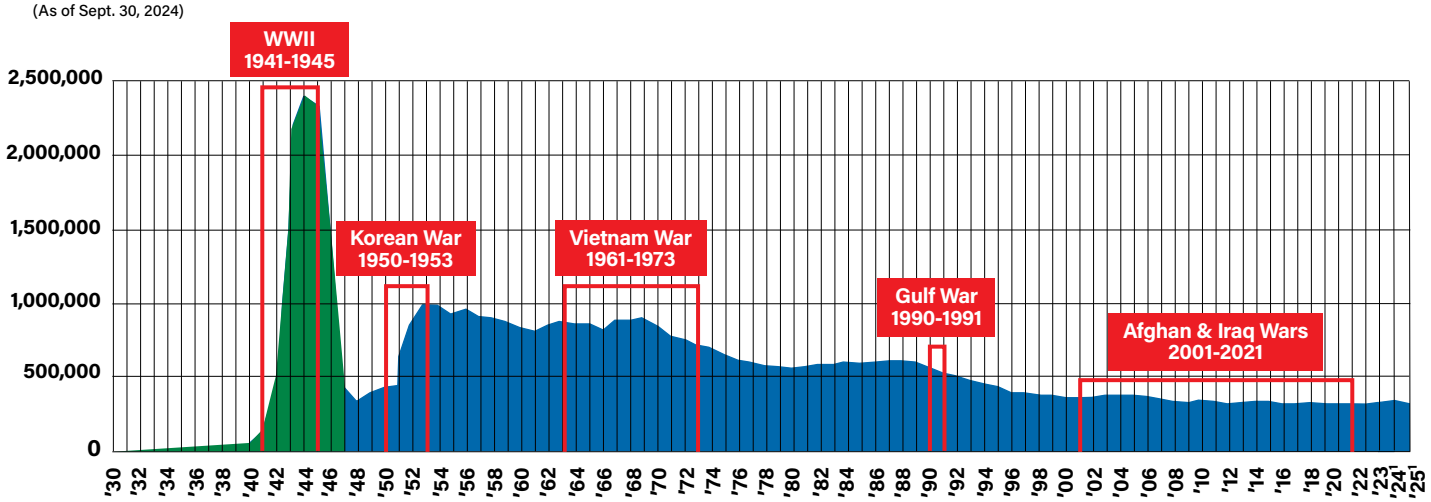
(As of Sept. 30, 2024)

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	325,404
1935	16,247	1965	824,662	1995	400,409	2025*	329,400
1936	17,233	1966	887,353	1996	389,001		

From 1907-1946, these Airmen were part of the U.S. Army. See p. 87 on organizational history.
*Estimate based on fiscal 2024 authorized end strength. Congress approved a full-year continuing resolution to fund the government for fiscal 2025 at the same levels as fiscal 2024. The White House had not announced a fiscal 2026 budget request by press time.

ACTIVE DUTY AIR & SPACE END STRENGTH: 1930-TODAY

(As of Sept. 30, 2024)



1—Requested

ACTIVE DUTY BY REGION, 1970-2024

(As of Sept. 30, 2024)

REGIONS	1980	1990	2000	2010	2019	2020	2021	2022	2023	2024
U.S. and Territories	445,886	418,027	291,260	277,123	276,090	277,818	303,007	277,184	279,004	268,535
Europe	76,788	69,296	32,901	30,963	27,649	27,762	29,896	28,548	28,954	28,699
East Asia, Pacific	32,263	33,558	22,030	12,649	20,698	20,644	22,053	21,105	20,966	20,760
Africa, Mideast, S. Asia	674	376	8,972	891	2,076	2,032	2,162	2,093	2,087	1,887
Western Hemisphere	2,211	2,356	345	339	440	436	454	389	459	408
Other	147	11,620	146	12,231	1,096	1,105	1,183	1,097	1,109	1,185
TOTAL*	**557,969**	**535,233**	**355,654**	**334,196**	**328,049**	**329,797**	**358,755**	**330,416**	**332,579**	**321,474**

*Not including cadets.

USAF ACTIVE DUTY DEMOGRAPHICS: SEX, ETHNICITY, RACE, EDUCATION

As of Sept. 30, 2024, except where noted with (*).

*The Air Force Personnel Center did not provide demographic information for the ranks of O-7 to O-10 for 2024. The figures shown here for those ranks are as of Sept. 30, 2023. Any total with an asterisk (*) is an estimate based on the 2023 demographics of these officers and the 2024 demographics of others.

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	**8,944**		**8,981**		**44,001**		**68,596**		**52,544**		**38,560**		**22,665**		**4,789**		**2,444**		**251,524**		**312,053***	
SEX																						
Female	1,819	20.3	1,902	21.2	9,634	21.9	15,369	22.4	10,859	20.7	6,693	17.4	4,636	20.5	1,127	23.5	509	20.8	52,737	21.0	67,597*	21.7
Male	7,125	79.7	7,079	78.8	34,367	78.1	53,227	77.6	41,685	79.3	31,867	82.6	18,029	79.5	3,662	76.5	1,935	79.2	199,687	79.4	244,456*	78.3
ETHNICITY*																						
Declined to Respond	12	0.1	7	0.1	71	0.2	282	0.4	613	1.2	835	2.2	654	2.9	181	3.8	98	4.0	2,768	1.1	13,361*	4.3
Hispanic or Latino	2,309	25.8	2,648	29.5	11,083	25.2	15,380	22.4	9,962	19.0	6,106	15.8	3,248	14.3	631	13.2	302	12.4	51,847	20.6	57,085*	18.3
Not Hispanic or Latino	6,623	74	6,326	70.4	32,847	74.7	52,934	77.2	41,969	79.9	31,619	82.0	18,763	82.8	3,977	83.0	2,044	83.6	197,810	78.6	241,607*	77.4
RACE																						
American Indian or Alaska Native	141	1.6	167	1.9	575	1.3	708	1.0	418	0.8	277	0.7	164	0.7	41	0.9	19	0.8	2,520	1.0	2,823*	0.9
Asian	435	4.9	461	5.1	3,023	6.9	3,786	5.5	2,507	4.8	1,494	3.9	810	3.6	145	3.0	51	2.1	12,752	5.1	16,389*	5.3
Black or African American	1,883	21.1	1,940	21.6	9,614	21.8	12,911	18.8	8,814	16.8	5,607	14.5	3,273	14.4	780	16.3	478	19.6	45,465	18.1	49,245*	15.8
Declined to Respond	13	0.1	33	0.4	201	0.5	803	1.2	1,296	2.5	1,561	4.0	1,261	5.6	380	7.9	245	10.0	5,825	2.3	9,697*	3.1
Identified More Than One Race	660	7.4	623	6.9	2,988	6.8	4,201	6.1	2,910	5.5	1,997	5.2	1,032	4.6	180	3.8	91	3.7	14,732	5.9	17,171*	5.5
Native Hawaiian or Other Pacific Islander	159	1.8	144	1.6	758	1.7	955	1.4	728	1.4	519	1.3	427	1.9	85	1.8	30	1.2	3,819	1.5	4,165*	1.3
White	5,653	63.2	5,613	62.5	26,842	61	45,232	66	35,871	68.3	27,105	70.3	15,698	69.2	3,178	66.4	1,530	62.6	167,312	66.5	21,2563*	68.1
HIGHEST EDUCATIONAL ACHIEVEMENT																						
No High School Diploma or GED	59	0.7	16	0.2	58	0.1	34	0.0	4	0.0	0	0.0	0	0.0	0	0.0	0	0.0	172	0.1	238*	0.1
High School Diploma/GED	7,629	85.3	7,004	78	25,150	57.2	2,518	3.7	191	0.4	12	0.0	1	0.0	0	0.0	0	0.0	42,730	17.0	77,381*	24.8
Some College	335	3.7	1,120	12.5	11,216	25.5	58,747	85.6	34,086	64.9	12,053	31.3	1,902	8.4	0	0.0	0	0.0	119,691	47.6	23,8583*	76.5
Associate Degree	15	0.2	9	0.1	438	1.0	3,395	4.9	12,489	23.8	16,700	43.3	9,957	43.9	1,317	27.5	370	15.1	44,850	17.8	89,365*	28.6
Bachelor's Degree	5	0.1	7	0.1	829	1.9	2,997	4.4	5,088	9.7	8,220	21.3	8,074	35.6	2,143	44.7	1,039	42.5	28,562	11.4	54,145*	17.4
Master's Degree	1	0.0	0	0.0	78	0.2	264	0.4	615	1.2	1,500	3.9	2,703	11.9	1,313	27.4	1,016	41.6	7,577	3.0	30,892*	9.9
Ph.D. or Professional Degree	0	0.0	0	0.0	4	0.0	12	0.0	11	0.0	13	0.0	24	0.1	16	0.3	19	0.8	100	0.0	7,731*	2.5
Unknown	900	10.1	825	9.2	6,228	14.2	629	0.9	60	0.1	62	0.2	4	0.0	0	0.0	0	0.0	8,743	3.5	12,460*	4.0

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	**6,906**		**7,028**		**20,957**		**13,114**		**9,133**		**3,150**		**123**		**68**		**39**		**11**		**60,529***	
SEX																						
Female	1,991	28.8	1,950	27.7	5,426	25.9	3,301	25.2	1,802	19.7	552	17.5	13	10.6	8	11.8	5	12.8	1	9.1	15,049*	24.9
Male	4,915	71.2	5,078	72.3	15,531	74.1	9,813	74.8	7,331	80.3	2,598	82.5	110	89.4	60	88.2	34	87.2	10	90.9	45,480*	75.1
ETHNICITY																						
Declined to Respond	1,549	22.4	1,509	21.5	3,918	18.7	1,419	10.8	1,976	21.6	235	7.5	1	0.8	1	1.5	0	0.0	0	0.0	10,608*	17.5
Hispanic or Latino	776	11.2	782	11.1	2,068	9.9	1,054	8.0	575	6.3	159	5.0	1	0.8	1	1.5	0	0.0	0	0.0	5,416*	8.9
Not Hispanic or Latino	4,581	66.3	4,737	67.4	14,971	71.4	10,641	81.1	6,582	72.1	2,756	87.5	121	98.4	66	97.1	39	100	11	100	44,505*	73.5
RACE*																						
American Indian or Alaska Native	32	0.5	31	0.4	107	0.5	82	0.6	47	0.5	13	0.4	1	0.8	0	0.0	0	0.0	0	0.0	313*	0.5
Asian	511	7.4	486	6.9	1,314	6.3	806	6.1	461	5.0	99	3.1	0	0.0	0	0.0	0	0.0	0	0.0	3,677	6.1
Black or African American	438	6.3	485	6.9	1,433	6.8	920	7.0	452	4.9	200	6.3	9	7.3	2	2.9	4	10.3	2	18.2	3,945*	6.5
Declined to Respond	345	5.0	393	5.6	1,450	6.9	884	6.7	620	6.8	206	6.5	3	2.4	3	4.4	0	0.0	0	0.0	3,904*	6.4
Identified More Than One Race	465	6.7	386	5.5	943	4.5	407	3.1	218	2.4	67	2.1	3	2.4	0	0.0	0	0.0	0	0.0	2,489*	4.1
Native Hawaiian or Other Pacific Islander	40	0.6	56	0.8	129	0.6	74	0.6	50	0.5	10	0.3	1	0.8	0	0.0	0	0.0	0	0.0	360*	0.6
White	5,075	73.5	5,191	73.9	15,581	74.3	9,941	75.8	7,285	79.8	2,555	81.1	106	86.2	63	92.6	35	89.7	9	81.8	45,841*	75.7
HIGHEST EDUCATIONAL ACHIEVEMENT																						
Bachelor's Degree	4,797	69.5	5,237	74.5	11,775	56.2	3,568	27.2	365	4.0	0	0.0	0	0.0	1	1.5	0	0.0	0	0.0	25,743*	42.5
Master's Degree	347	5.0	927	13.2	5,719	27.3	6,889	52.5	6,917	75.7	2,386	75.7	110	89.4	59	86.8	37	94.9	11	100	23,402*	38.7
Ph.D. or Professional Degree	9	0.1	27	0.4	2,419	11.5	2,563	19.5	1,829	20.0	762	24.1	13	10.6	8	11.8	2	5.1	0	0.0	7,632*	12.6
Unknown	1,753	25.4	837	11.9	1,044	5.0	94	0.7	22	0.2	2	0.1	0	0.0	0	0.0	0	0.0	0	0.0	3,752	6.2

AIR FORCE RESERVE DEMOGRAPHICS: SEX, ETHNICITY, RACE, EDUCATION

(As of Sept. 30, 2024)

*Includes pending identifications.

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	**850**		**511**		**2,893**		**10,493**		**10,255**		**11,942**		**9,425**		**2,857**		**992**		**50,218**		**64,521**	
SEX																						
Female	297	35.0	188	36.8	1,042	36.0	3,389	32.3	3,030	29.5	2,901	24.3	2,527	26.8	810	28.3	240	24.2	14,424	28.7	18,310	28.4
Male	553	65.1	323	63.2	1,851	64.0	7,104	67.7	7,225	70.5	9,041	75.7	6,898	73.2	2,047	71.6	752	75.8	35,794	71.3	46,211	71.6
ETHNICITY																						
Declined to Respond or Blank Response	821	96.6	468	91.6	2,641	91.3	6,296	60.0	1,416	13.8	3,416	28.6	1,833	19.4	306	10.7	55	5.5	17,252	34.4	20,304	31.5
Hispanic or Latino	13	1.5	18	3.5	95	3.3	1,306	12.4	479	4.7	1,978	16.6	1,391	14.8	384	13.4	104	10.5	5,768	11.5	6,804	10.5
Not Hispanic or Latino	16	1.9	25	4.9	157	5.4	2,891	27.6	8,360	81.5	6,548	54.8	6,201	65.8	2,167	75.8	833	84.0	27,198	54.2	37,413	58.0
RACE																						
American Indian or Alaska Native	14	1.6	4	0.8	31	1.1	104	1.0	88	0.9	98	0.8	74	0.8	16	0.6	6	0.6	435	0.9	494	0.8
Asian	54	6.4	33	6.5	286	9.9	828	7.9	618	6.0	541	4.5	321	3.4	62	2.2	29	2.9	2,772	5.5	3,492	5.4
Black or African American	290	34.1	163	31.9	1,052	36.4	2,880	27.4	2,302	22.4	2,145	18.0	1,411	15.0	357	12.5	113	11.4	10,713	21.3	11,674	18.1
Declined to Respond, Identification Pending, or Blank	1	0.1	2	0.4	9	0.3	123	1.2	273*	2.7	464	3.9	432	4.6	190	6.7	58	5.8	1,305	2.6	2,329	3.6
Identified More Than One Race	28	3.3	30	5.9	127	4.4	497	4.7	503	4.9	518	4.3	316	3.4	78	2.7	21	2.1	2,118	4.2	2,523	3.9
Native Hawaiian or Other Pacific Islander	21	2.5	10	2.0	32	1.1	157	1.5	172	1.7	159	1.3	153	1.6	31	1.1	12	1.2	747	1.5	837	1.3
White	442	52.0	269	52.6	1,356	46.9	5,904	56.3	6,299	61.4	8,017	67.1	6,718	71.3	2,123	74.3	753	75.9	31,881	63.5	43,167	66.9
HIGHEST EDUCATIONAL ACHIEVEMENT																						
No High School Diploma or GED	2	0.2	0	0.0	0	0.0	19	0.2	33	0.3	35	0.3	26	0.3	0	0.0	0	0.0	115	0.2	118	0.2
High School Diploma/GED	840	98.8	471	92.2	2,554	88.3	2,580	24.6	497	4.8	156	1.3	11	0.1	0	0.0	0	0.0	7,109	14.2	7146	11.1
Some College	8	0.9	39	7.6	268	9.3	6,586	62.8	6,740	65.7	6,095	51.0	2,975	31.6	45	1.6	7	0.7	22,763	45.3	22,842	35.4
Associate Degree	0	0.0	0	0.0	17	0.6	382	3.6	1,340	13.1	2,976	24.9	3,226	34.2	1,314	46.0	351	35.4	9,606	19.1	9,686	15.0
Bachelor's Degree	0	0.0	1	0.2	40	1.4	796	7.6	1,382	13.5	2,122	17.8	2,321	24.6	969	33.9	349	35.2	7,980	15.9	12,774	19.8
Master's Degree	0	0.0	0	0.0	13	0.4	127	1.2	256	2.5	548	4.6	844	9.0	505	17.7	276	27.8	2,569	5.1	9,868	15.3
Ph.D. or Professional Degree	0	0.0	0	0.0	1	0.0	3	0.0	7	0.1	10	0.1	22	0.2	24	0.8	9	0.9	76	0.2	2,084	3.2
Unknown	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	3	0.0
OFFICER RANKS	**O-1**	**%**	**O-2**	**%**	**O-3**	**%**	**O-4**	**%**	**O-5**	**%**	**O-6**	**%**	**O-7**	**%**	**O-8**	**%**	**O-9**	**%**	**Officer Total**	**%**		
TOTAL	**526**		**646**		**2,763**		**4,892**		**4,298**		**1,097**		**54**		**26**		**1**		**14,303**			
SEX																						
Female	131	25.0	227	35.1	869	31.5	1,204	24.6	1,105	25.7	327	29.8	14	25.9	9	34.6	0	0.0	3,886	27.2		
Male	395	75.0	419	64.9	1,894	68.5	3,688	75.4	3,193	74.3	770	70.2	40	74.1	17	65.4	1	100.0	10,417	72.8		
ETHNICITY																						
Declined to Respond	206	39.2	265	41.0	849	30.7	966	19.7	701	16.3	65	5.9	0	0.0	0	0.0	0	0.0	3,052	21.3		
Hispanic or Latino	45	8.6	71	11.0	239	8.7	354	7.2	255	5.9	68	6.2	3	5.6	1	3.8	0	0.0	1,036	7.2		
Not Hispanic or Latino	275	52.3	310	48.0	1,675	60.6	3,572	73.0	3,342	77.8	964	87.9	51	94.4	25	96.2	1	100.0	10,215	71.4		
RACE																						
American Indian or Alaska Native	2	0.4	5	0.8	9	0.3	23	0.5	19	0.4	6	0.5	0	0.0	0	0.0	0	0.0	64	0.4		
Asian	38	7.2	41	6.3	154	5.6	252	5.2	192	4.5	41	3.7	2	3.7	0	0.0	0	0.0	720	5.0		
Black or African American	66	12.5	69	10.7	266	9.6	281	5.7	221	5.1	52	4.7	4	7.4	2	7.7	0	0.0	961	6.7		
Declined to Respond, Identification Pending or Blank	13	2.5	21	3.3	106*	3.8	295*	6.0	277	6.4	62	5.6	1	1.9	1	3.8	1	100.0	777	5.4		
Identified More Than One Race*	19	3.6	18	2.8	118	4.3	139	2.8	88	2.0	23	2.1	0	0.0	0	0.0	0	0.0	405	2.8		
Native Hawaiian or Other Pacific Islander	7	1.3	11	1.7	16	0.6	31	0.6	22	0.5	3	0.3	0	0.0	0	0.0	0	0.0	90	0.6		
White	381	72.4	481	74.5	2,094	75.8	3,871	79.1	3,479	80.9	910	82.9	47	87.0	23	88.5	0	0.0	11,286	78.9		
HIGHEST EDUCATIONAL ACHIEVEMENT																						
No High School Diploma or GED	1	0.2	0	0.0	1	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.0		
High School Diploma/GED	7	1.3	18	2.8	6	0.2	6	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	37	0.3		
Some College	14	2.7	32	5.0	25	0.9	8	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	79	0.6		
Associate Degree	16	3.4	30	4.6	30	1.1	2	0.0	2	0.0	0	0.0	0	0.0	0	0.0	0	0.0	80	0.6		
Bachelor's Degree0	376	71.5	393	60.8	1,602	58.0	1,765	36.1	649	15.1	9	0.8	0	0.0	0	0.0	0	0.0	4,794	33.5		
Master's Degree	99	18.8	127	19.7	833	30.1	2,457	50.2	2,871	66.8	841	76.7	47	87.0	23	88.5	1	100.0	7,299	51.0		
Ph.D. or Professional Degree	13	2.5	46	7.1	265	9.6	654	13.4	773	18.0	247	22.5	7	13.0	3	11.5	0	0.0	2,008	14.0		
Unknown	0	0.0	0	0.0	1	0.0	0	0.0	2	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.0		

USAF TOTAL FORCE ENLISTED PERSONNEL BY AF SPECIALTY CODE (AFSC)

(As of Sept. 30, 2024)

AFSC		MALE/FEMALE %	TOTAL
1A1	Career Enlisted Aviator Manager	87/13	4,747
1A2	Aircraft Ldm	0/100	1
1A3	Airborne Mission Sys Operator	89/11	1,014
1A8	Airborne ISR	80/20	1,825
1B0	Cyber Warfare Operations Supt	70/30	10
1B4	CW Ops	96/4	898
1C0	Aviation Rsc Mgmt	52/48	1,851
1C1	Air Traffic Control	81/19	2,527
1C3	C2 Ops	66/34	1,577
1C5	C2 Battle Mgmt Ops	71/29	1,429
1C7	Airfield Mgmt	68/32	859
1C8	Radar, Airfield, and Weather Sys	90/10	1,027
1D7	Defensive Cyber Ops	87/13	19,495
1H0	Aerospace Physiology	61/39	254
1N0	Intelligence	68/32	3,953
1N1	Imagery Analysis	72/28	2,128
1N2	SIGINT	73/27	1,805
1N3	Cryptologic Linguist Apprentice	66/34	32
1N4	Network Intel Analysis	76/24	3,188
1N7	HUMINT Spc	78/22	138
1N8	Targeting Analyst	76/24	471
1P0	Aircrew Flight Equip	78/22	2,454
1S0	Safety	75/25	361
1T0	SERE Specialist	99/1	685
1U0	RPA Sensor Operator Manager	84/16	1,445
1U1	RPA Pilot Manager	100/0	14
1W0	Weather	77/23	2,612
1Z1	Pararescue	100/0	629
1Z2	Combat Control	100/0	558
1Z3	TACP	100/0	1,288*
1Z4	Special Recon	99/1	124
2A0	Avionics	90/10	1,165
2A2	SOF/PR Integrated Comm/Nav/Mission Sys	88/12	88
2A3	Fighter/RPA Maint	94/6	14,263
2A5	Airlift/Special Mission Aircraft Maint	95/5	12,533
2A6	Aircraft Sys	92/8	17,254
2A7	Aircraft Metals Technology	91/9	5,711
2A9	Bomber/Spc Integrated Comms/Nav/Mission Sys	92/8	5,489
2F0	Fuels	91/9	3,147
2G0	Logistics Plans	58/42	746
2M0	Missile and Space Sys Maint	94/6	1,613
2P0	Precision Measurement Equipment Lab	88/12	766
2R2	Maint Mgmt	66/34	1,456
2S0	Materiel Mgmt	62/38	6,117
2T0	Traffic Mgmt	63/37	1,709
2T1	Ground Trans	85/15	2,139
2T2	Air Trans	81/19	4,325
2T3	Vehicle Mgmt	87/13	3,069
2W0	Munitions Maint	85/15	7,100
2W1	Aircraft Armament Sys	84/16	6,877
2W2	Nuclear Weapons	91/9	678
3D0	Cyberspace Ops	100/0	1
3E0	Civil Engineer	97/3	2,690
3E1	Heating	98/2	1,350
3E2	Pavements and Construction Equip	98/2	1,537
3E3	Structural	93/7	1,545
3E4	Water and Fuel Systems	70/30	1,618
3E5	Engineering	78/22	766
3E6	Ops Mgmt	66/34	486
3E7	Fire Protection	96/4	2,889
3E8	Explosive Ordnance Disposal	97/3	1,512
3E9	Emergency Mgmt	67/23	683
3F0	Personnel	46/64	4,525
3F1	Services	45/55	3,604
3F2	Education and Training	59/41	1,383
3F3	Manpower	70/30	424
3F4	Equal Opportunity	46/54	191
3F5	Administration Manager	53/47	3,690
3N0	Public Affairs	58/42	1,105
3N1	Regional Band	76/24	325
3N2	Premier Band - The USAF Band	77/23	171
3N3	USAF Academy Band	88/12	57
3P0	Security Forces	78/22	24,909
4A0	Health Services Mgmt	46/54	2,289

* 1 Female

AFSC		MALE/FEMALE %	TOTAL
4A1	Medical Materiel	54/46	895
4A2	Biomedical Equip	84/16	498
4B0	Bioenvironmental Eng	67/33	891
4C0	Mental Health Svc	38/62	894
4D0	Diet Therapy	55/45	153
4E0	Public Health	38/62	874
4H0	Cardiopulmonary Lab	39/61	316
4J0	Physical Medicine	52/48	275
4N0	Aerospace Medical Svc	49/51	5,896
4N1	Surgical Technologist	46/54	581
4P0	Pharmacy	44/56	581
4R0	Diagnostic Imaging	48/52	713
4T0	Medical Lab	51/49	830
4V0	Optometry	55/45	211
4Y0	Dental	43/57	1,968
5J0	Paralegal	44/56	884
5R0	Religious Affairs	55/45	559
5S0	Space Sys Ops (USSF)	67/33	3
6C0	Contracting	77/33	1,558
6F0	Financial Mgmt and Comptroller	63/37	2,129
7S0	Special Investigations	80/20	929
8A2	Enlisted Aide	40/60	62
8A3	Protocol	52/48	52
8B0	Military Training Instructor	77/23	661
8B1	Military Training Leader	67/33	509
8B2	Academy Military Training NCO	66/34	128
8B3	AFROTC Training Instructor	74/36	130
8C0	Amn and Family Readiness Center NCO	68/32	97
8F0	First Sergeant	74/26	1,294
8G0	Premier Honor Guard	82/18	239
8G1	USAF Installation Honor Guard Prgm Mgr	85/15	67
8H0	Amn Dorm Leader	73/27	298
8I0	Superintendent	76/24	115
8I1	Inspections Coordinator	78/22	100
8I2	Complaints Resolution Coordinator	75/25	8
8K0	Software Development Specialist	100/0	2
8P0	Courier	91/9	65
8P1	Defense Attache	77/23	119
8R0	Enlisted Accessions Recruiter	78/22	1,478
8R2	Second-Tier Recruiter	85/15	507
8R3	Third-Tier Recruiter	82/18	367
8S0	Missile Facility Mgr	97/3	177
8T0	PME Instructor	58/42	562
8T1	Enl PME Instructional Sys Designer	55/45	29
8T2	Airman Development Advisor	51/49	96
8U0	Unit Deployment Mgr	67/33	87
9A0	Enl Amn, Disqualified for Reasons Beyond Ctrl	63/37	115
9A1	Enl Amn, Disqualified for Reasons Within Ctrl	68/32	56
9A2	Enl Airman Awaiting Discharge, Separation, or Ret for Reasons Within Ctrl	80/20	56
9A3	Enl Awaiting Dis, Sep, or Ret for Reasons Beyond Ctrl	65/35	48
9A5	Enl Amn Temp Ineligible for Retraining, Disqualified for Reasons Beyond Ctrl	67/33	73
9C0	Chief Master Sergeant of the Air Force	100/0	1
9D1	AF Developmental Senior Enlisted Positions	75/25	4
9D2	Key Developmental Senior Enlisted Positions	75/25	20
9E0	Command Chief Master Sergeant	80/20	206
9E1	Command Chief Executive Assistant	27/73	11
9G1	Group Senior Enl Leader	77/23	345
9H0	Academic Faculty Inst	100/0	1
9I0	Futures Airman	100/0	1
9J0	Prisoner	100/0	4
9L0	Interpreter/Translator	69/31	72
9L1	Intl Affairs Spc	50/50	2
9M0	MEPCOM Sr Enl Advisor	100/0	1
9M2	Intl Health Spc	100/0	3
9M4	Chief, Medical Enl Force	67/33	15
9S1	Scientific Applications Spc	96/4	458
9T0	Basic Enl Amn	77/23	4,522
9T1	Officer Trainee	63/27	152
9T2	Pre-Cadet Assignee	75/25	301
9T4	AF Institute of Tech or Ed With Industry Enl Students	100/0	1
9T5	Basic Special Warfare Enlisted Airman	99/1	137
9V0	Key Developmental Joint Enlisted Position	83/17	6
9Z0	Special Warfare Mission Support on HAF Staff	100/0	1
9Z2	Special Warfare Mission Support Supt	75/25	8

USAF TOTAL FORCE OFFICER PERSONNEL BY AF SPECIALTY CODE (AFSC)

(As of Sept. 30, 2024)

AFSC		MALE/FEMALE%	TOTAL
10C	Ops Cmdr	81/11	327
11B	Bomber Pilot	59/41	808
11E	Experimental Test Pilot	97/3	155
11F	Fighter Pilot	95/5	2,387
11G	Generalist Pilot	91/9	246
11H	Helicopter Pilot	88/12	719
11K	Trainer Pilot	90/10	1,186
11M	Mobility Pilot	88/12	3,711
11R	Recon/Surveillance/EW Pilot	93/7	561
11S	Spc Ops Pilot	91/9	1,184
11T	Student Pilot	95/5	38
11U	RPA Pilot	100/0	4
12B	Bomber Combat Systems Officer (CSO)	87/13	523
12E	Experimental Test CSO	94/6	33
12F	Fighter CSO	86/14	369
12G	Generalist CSO	90/10	109
12H	Rescue CSO	77/23	53
12K	Trainer CSO	86/14	167
12M	Mobility CSO	79/21	56
12R	Recon/Surveillance/EW CSO	83/17	718
12S	Spc Ops CSO	82/18	573
12U	RPA	83/17	142
13A	Astronaut	50/50	2
13B	Air Battle Mgr	78/22	1,253
13H	Aerospace Physiologist	50/50	96
13M	Airfield Ops	72/28	272
13N	Nuclear and Missile Ops	77/23	1,276
13O	Multi-Domain Warfare Officer	100/0	6
13S	Space Ops	88/12	8
14F	Info Ops	52/48	145
14N	Intelligence	66/34	3,012
15A	Operations Research Analyst	74/26	473
15W	Weather and Environmental Svcs	70/30	415
16F	Regional Affairs Strategist	85/15	397
16G	AF Ops Staff Officer	84/16	406
16K	Software Development Officer	100/0	2
16P	Political-Military Affairs Strategist	80/20	225
16R	Planning and Programming	80/20	271
17C	Cyberspace Warfare Ops Cmdr	82/18	11
17D	Warfighter Comms Ops	80/20	1,874
17S	Cyberspace Effects Ops	90/10	678
18A	Attack RPA Pilot	94/6	1,440
18E	Experimental Test RPA Pilot	100/0	14
18G	Generalist RPA Pilot	94/6	95
18R	Recon RPA Pilot	92/8	303
18S	Special Ops RPA Pilot	91/9	415
19Z	Special Warfare	99/1	540
20C	Logistics Cmdr	87/13	167
21A	Aircraft Maint	73/27	1,186
21M	Munitions and Missile Maint	84/16	305
21R	Logistics Readiness	65/35	1,163
30C	Support Cmdr	84/16	210
31P	Security Forces	85/15	581
32E	Civil Eng	82/18	980
35B	Band	82/18	17
35P	Public Affairs	43/57	286
38F	Force Support Officer	48/52	1,277
40C	Medical Cmdr	54/46	83
41A	Health Services Admin	57/43	962
42B	Physical Therapist	59/41	206
42E	Optometrist	55/45	92
42F	Podiatric Surgeon	57/43	14
42G	Physician Asst	55/45	501
42N	Audiology/Speech Pathologist	28/72	32
42P	Clinical Psychologist	51/49	259
42S	Clinical Social Worker	34/66	256
42T	Occupational Therapist	55/45	22
43B	Biomedical Scientist	57/43	111
43D	Dietitian	3/97	29
43E	Bioenvironmental Eng	70/30	232
43H	Public Health Officer	38/62	148
43P	Pharmacist	63/37	215
43T	Biomedical Lab	49/51	124
44A	Chief, Hospital/Clinic Svcs	55/45	75
44B	Preventive Medicine	57/43	30
44D	Pathologist	56/44	66
44E	ER Services Physician	67/33	328
44F	Family Physician	62/38	487
44G	General Practice Physician	69/31	81
44J	Clinical Geneticist	100/0	2
44K	Pediatrician	42/58	287
44M	Internist	70/30	444
44N	Neurologist	67/33	46
44O	Physician	52/48	64
44P	Psychiatrist	66/34	175
44R	Diagnostic Radiologist	82/18	163
44S	Dermatologist	53/47	38
44T	Radiotherapist	33/66	3
44U	Occupational Medicine	83/17	18
44Y	Critical Care Medicine	77/23	30
44Z	Allergist	64/36	22
45A	Anesthesiologist	76/24	197
45B	Orthopedic Surgeon	81/19	101
45E	Ophthalmologist	73/27	51
45G	Obstetrician and Gynecologist	23/77	148
45N	Otorhinolaryngologist	65/35	51
45S	Surgeon	65/35	298
45U	Urologist	57/43	28
46A	Nursing Admin	20/80	148
46F	Flight Nurse	43/57	259
46N	Clinical Nurse	29/71	1,932
46P	Mental Health Nurse	48/52	42
46S	Operating Room Nurse	45/55	186
46Y	Adv Practice RN	35/65	463
47B	Orthodontist	59/41	27
47D	Oral and Maxillofacial Pathologist	33/67	3
47E	Endodontist	63/37	30
47G	Dentist	62/38	633
47H	Periodontist	51/48	39
47K	Pediatric Dentist	57/43	14
47P	Prosthodontist	63/37	48
47S	Oral and Maxillofacial Surgeon	87/13	53
48A	Aerospace Medicine Physician Spc	80/20	106
48G	General Med Officer, Flight Surgeon	65/35	66
48R	Residency Trained Flight Surgeon	75/25	250
51J	Judge Advocate	59/41	1,232
52R	Chaplain	91/9	588
60C	Sr Materiel Leader-Upper Echelon	80/20	15
61C	Chemist/Nuclear Chemist	62/38	58
61D	Physicist/Nuclear Eng	81/19	166
62E	Development Eng	89/11	1,536
62S	Materiel Leader	89/11	9
63A	Acquisition Mgr	81/19	1,757
63G	Sr Materiel Leader-Lower Echelon	90/10	62
63S	Materiel Leader	85/15	131
64P	Contracting	71/29	771
65F	Financial Mgmt	72/28	511
65W	Cost Analysis	79/21	48
71S	Spc Investigations	60/40	364
80C	Cmdr, Cadet Squadron, USAF Academy	63/37	40
81C	Instructor, Officer Training School	80/20	64
81D	ROTC Detachment Commander and Professor of Aerospace Studies	86/14	153
81L	Education and Training Leader	78/22	37
81T	Instructor	74/26	844
82A	Academic Program Mgr	67/33	57
83R	Recruiting Svc	78/22	166
85G	USAF Honor Guard	100/0	1
86M	Ops Mgmt	56/44	18
86P	C2	80/20	25
87G	Wing IG	95/5	86
87I	Director, Wing Inspections	85/15	33
87Q	Director, Complaints Resolution	70/30	10
88A	Aide-de-camp	51/49	35
88B	Protocol Officer	53/47	15
88C	Sexual Assault Response Coordinator	36/64	28
88I	Innovation Officer	100/0	2
90G	General Officer	86/14	234
91C	Cmdr	88/12	24
91E	Wing Cmdr Equiv	69/31	13
91W	Wing Cmdr	91/9	246
92F	Foreign Area Officer Trainee	79/21	58
92J	Non-Designated Lawyer	80/20	5
92M	Health Prof Scholarship Prgm Med Student	50/50	227
92P	Physician Assistant Student	29/71	7
92S	Student Officer Authorization	77/33	1,894
92T	Pilot Trainee	84/16	2,363
93P	Patient	56/44	9
96A	Disq. Officer, Reasons Beyond Control	100/0	1
96B	Disq Officer, Reasons Within Control	50/50	2
96D	Officer N/A for Use in Awarded AFSC for Cause	100/0	8
97E	Executive Officer	63/37	415
99G	Gold Bar Diversity Recruiter	100/0	1

DAF ACTIVE DUTY BY COMMAND

(As of Sept. 30, 2024)

USAF MAJOR COMMANDS	USAF	USSF	Civilian	Total
Air Combat Command	75,170	40	12,208	87,418
Air Education and Training Command	56,471	398	14,954	71,823
Air Force Global Strike Command	27,003	1	4,006	31,010
Air Force Materiel Command	17,194	22	71,804	89,020
Air Force Special Operations Command	14,737	3	1,622	16,362
Air Mobility Command	39,902	3	7,485	47,390
Pacific Air Forces	30,102	1	3,693	33,796
U.S. Air Forces Europe-Air Forces Africa	23,796	3	1,657	25,456
TOTAL	**284,375**	**471**	**117,429**	**402,275**
USSF FIELD COMMANDS	**USAF**	**USSF**	**Civilian**	**Total**
Space Operations Command*	24	4,290	1,837	6,151
Space Systems Command	7	1,102	2,743	3,852
Space Training and Readiness Command	13	1,466	251	1,730
TOTAL	**44**	**6,858**	**4,831**	**11,733**
FIELD OPERATING AGENCIES	**USAF**	**USSF**	**Civilian**	**Total**
Air Force Agency for Modeling and Simulation	7	0	23	30
Air Force Audit Agency	0	0	496	496
Air Force Cost Analysis Agency	10	0	85	95
Air Force Flight Standards Agency	113	0	59	172
Air Force Historical Research Agency	0	0	46	46
Air Force Inspection Agency	82	0	30	112
Air Force Legal Operations Agency	516	0	183	699
Air Force Manpower Analysis Agency	154	0	158	312
Air Force Medical Readiness Agency	212	0	167	379
Air Force Mortuary Affairs Operations	26	0	33	59
Air Force Office of Special Investigations	1,645	0	1,148	2,793
Air Force Operations Group	36	0	22	58
Air Force Personnel Center	607	0	1,590	2,197
Air Force Public Affairs Agency	189	0	46	235
Air Force Review Boards Agency	22	0	85	107
Air Force Safety Center	43	0	81	124
Air National Guard Readiness Center	35	0	698	733
DOD Cyber Crime Center	7	0	n/a	7
National Air and Space Intelligence Center	439	0	1,320	1,759
TOTAL	**4,143**	**0**	**6,270**	**10,413**
DIRECT REPORTING UNITS	**USAF**	**USSF**	**Civilian**	**Total**
Air Force District of Washington	3,955	25	2,805	6,785
Air Force Operational Test and Evaluation Center	298	0	242	540
Air Force Reserve Command	116	0	9,863	9,979
U.S. Air Force Academy	1,994	33	1,361	3,388
TOTAL	**6,363**	**58**	**14,271**	**20,692**
OTHER	17,134	2,028	583,141	602,303
TOTAL ACTIVE DUTY AND CIVILIAN	**312,059**	**9,415**	**725,942**	**1,047,416**

*The Air Force Personnel Center did not confirm by press time whether the entity it reported as "U.S. Space Force Forces," is the same as Space Operations Command, or only partly made up by SpOC, for which it didn't report separate figures.
Source: Office of the Secretary of the Air Force; U.S. Office of Personnel Management; Defense Manpower Data Center

ACTIVE DUTY BY BASE, 2014 vs. 2024

(As of Sept. 30, 2024)

BASE	2014 Total	2024 Total	USAF 2024	USSF 2024	% Change
JB San Antonio-Lackland, Texas	15,372	12,158	12,131	27	-20.9
Ramstein AB, Germany	9,502	9,601	9,441	160	1.0
JB Langley-Eustis, Va.	7,988	8,055	8,038	17	0.8
Hurlburt Field, Fla.	8,744	8,000	7,976	24	-8.5
Nellis AFB, Nev.	9,735*	7,257	7,225	32	-25.5
Shaw AFB, S.C.	6,061	6,660	6,659	1	9.9
Travis AFB, Calif.	6,241	6,577	6,571	6	5.4
Kadena AB, Japan	6,371	5,966	5,932	64	-5.9
Offutt AFB, Neb.	5,343	5,827	5,817	10	9.1
Davis-Monthan AFB, Ariz.	6,189	5,763	5,728	8	-7.3
Osan AB, South Korea	5,479	5,760	5,681	79	5.1
Eglin AFB, Fla.	5,146	5,759	5,686	73	11.9
Wright-Patterson AFB, Ohio	5,664	5,758	5,476	282	1.7
Sheppard AFB, Texas	4,681	5,676	5,674	2	21.3
JB Pearl Harbor-Hickam, Hawaii	5,340	5,628	5,461	167	5.4
JB Andrews, Md.	5,993	5,522	5,391	131	-7.9
Minot AFB, N.D.	5,262	5,464	5,464	0	3.8
JB Elmendorf-Richardson, Alaska	5,484	5,344	5,344	0	-2.6
RAF Lakenheath, U.K.	4,456	5,167	5,137	30	16.0
JB McGuire-Dix-Lakehurst, N.J.	4,794	5,028	5,027	1	4.9
Cannon AFB, N.M.	4,649	4,980	4,979	1	7.1
Barksdale AFB, La.	5,441	4,929	4,929	0	9.4
Holloman AFB, N.M.	3,707	4,881	4,877	4	31.7
Aviano AB, Italy	3,645	4,659	4,658	1	27.8
Keesler AFB, Miss.	4,394	4,644	4,483	161	5.7
Scott AFB, Ill.	4,749	4,624	4,621	3	-2.6
Moody AFB, Ga.	4,477	4,471	4,470	1	-0.1
Seymour Johnson AFB, N.C.	4,302	4,348	4,347	1	1.1
Dyess AFB, Texas	4,586	4,334	4,334	0	-5.5
RAF Mildenhall, U.K.	4,168	4,292	4,288	4	3.0
Luke AFB, Ariz.	3,321	4,134	4,133	1	24.5
Hill AFB, Utah	3,535	4,111	4,109	2	16.3
Spangdahlem AB, Germany	4,017	3,920	3,911	9	-2.4
Peterson SFB, Colo.**	3,748	3,748	2,424	1,622	8.0
Pentagon, Va.	4,025	3,748	3,226	522	-6.9
Tinker AFB, Okla.	4,517	3,666	3,663	3	-18.8
MacDill AFB, Fla.	3,524	3,549	3,516	33	0.7
Goodfellow AFB, Texas	3,598	3,440	3,311	129	-4.4
Kirtland AFB, N.M.	3,102	3,424	3,258	166	10.4
JB Charleston, S.C.	3,639	3,420	3,419	1	-6.0
Little Rock AFB, Ark.	4,687	3,406	3,405	1	-27.3
JB Anacostia-Bolling, D.C.	2,239	3,406	3,195	211	52.1
Yokota AB, Japan	2,858	3,395	3,382	13	18.8
Fairchild AFB, Wash.	2,804	3,352	3,352	0	19.5
Fort Meade, Md.	2,721	3,348	3,183	165	23.0
Beale AFB, Calif.	4,638	3,289	3,248	41	-29.1
Malmstrom AFB, Mont.	3,152	3,280	3,263	17	4.1
Dover AFB, Del.	3,316	3,255	3,255	0	-1.8
Mountain Home AFB, Idaho	3,233	3,216	3,216	0	-0.5
Eielson AFB, Alaska	1,856	3,138	3,125	13	69.1
Creech AFB	***	3,118	3,116	2	n/a
F.E. Warren AFB, Wyo.	2,897	3,083	3,082	1	6.4
JB Lewis-McChord, Wash.	3,551	3,078	3,077	1	-13.3
Ellsworth AFB, S.D.	3,148	3,051	3,048	3	-3.1
Pope Field, N.C.	2,576	2,934	2,931	3	13.9
Maxwell AFB, Ala.	2,825	2,915	2,847	68	3.2
Misawa AB, Japan	2,666	2,810	2,790	20	5.4
Whiteman AFB, Mo.	3,790	2,809	3,803	6	0.5
JB San Antonio-Randolph, Texas	2,430	2,783	2,733	50	14.5
Tyndall AFB, Fla.	3,637	2,770	2,769	1	-23.8
McConnell AFB, Kan.	2,986	2,754	2,754	0	-7.8
Edwards AFB, Calif.	2,744	2,728	2,704	24	-0.6
Robins AFB, Ga.	3,570	2,579	2,565	14	-27.8
Kunsan AB, South Korea	2,454	2,415	2,415	0	-1.6
Vandenberg SFB, Calif.	2,678	2,393	1,652	741	-10.6
Andersen AFB, Guam	2,005	2,322	2,321	1	15.8
U.S. Air Force Academy, Colo.	2,050	2,212	2,146	66	7.9
Schriever SFB, Colo.	1,488	2,172	463	1,709	46.0
Buckley SFB, Colo.	1,513	1,806	1,103	703	19.4
Patrick SFB, Fla.**	1,695	1,791	1,615	176	5.7
MCB Quantico, Va.	1,509	1,652	1,652	0	9.5
Grand Forks AFB, N.D.	1,610	1,633	1,599	34	1.4
JB San Antonio-Fort Sam Houston, Texas	1,282	1,583	1,582	1	23.5
Hanscom AFB, Mass.	1,448	1,560	1,487	73	7.7
Columbus AFB, Miss.	1,470	1,503	1,492	11	2.2
Incirlik AB, Turkey	1,368	1,502	1,502	0	9.8
Laughlin AFB, Texas	1,383	1,351	1,350	1	-2.3
Altus AFB, Okla.	1,264	1,268	1,268	0	0.3
Vance AFB, Okla.	1,220	1,204	1,203	1	1.3
Los Angeles AFB, Calif.	1,037	1,153	535	618	11.2
USAG Stuttgart, Germany	1,074	774	757	17	-28.0

*Included Creech AFB.
**USSF personnel assigned to Cape Canaveral SFS are included with Patrick SFB; and those assigned to Cheyenne Mountain SFS are included with Peterson SFB.
***Part of Nellis AFB

DOD TOTAL FORCE END STRENGTH

Fiscal 2024 end strength is as of Sept. 30, 2024, except where noted by a single *. Congress approved a full-year continuing resolution to fund the government for fiscal 2025 at the same levels as fiscal 2024. The fiscal 2025 estimate shown here is the fiscal 2024 authorized end strength.
The White House had not proposed a fiscal 2026 federal budget by press time.

(In thousands)

FISCAL YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025 Estimated
Active-Duty Military											
USAF	311	317	323	326	328	330	328	324	315	319	325
Army	491	475	476	476	484	481	487	465	449	453	452
Marine Corps	184	184	185	186	186	181	180	174	173	173	175
Navy	328	325	324	330	337	342	348	344	328	332	347
USSF							7	8	9	9	9
Full-time Guard and Reserve	76	76	75	79	83	87	90	90	91	92*	92
Total	**1,390**	**1,378**	**1,382**	**1,397**	**1,422**	**1,421**	**1,439**	**1,405**	**1,377**	**1,372****	**1,397**
Selected Reserve											
Air National Guard	106	106	106	107	107	107	109	108	105	104	105
AFRC	68	69	69	69	69	69	71	68	66	66	70
Army National Guard	350	342	344	335	336	336	338	329	325	324	325
Army Reserve	199	198	194	189	191	189	184	176	177	173	174
Marine Corps Reserve	39	38	39	38	38	36	35	33	33	33	32
Navy Reserve	57	58	58	59	60	59	58	55	55	56	57
Total	**819**	**812**	**810**	**797**	**801**	**796**	**794**	**769**	**768**	**756**	**764**
Appropriated-Fund Civilian Full-time Equivalents											
DAF	166	167	167	170	172	170	173	177	177	181	180
Army	206	195	191	189	190	251	250	218	228	229	195
Navy/Marine Corps	199	204	206	209	218	220	205	217	217	223	221
Defense Agencies	187	189	191	193	216	114	114	156	156	93	221
Total	**758**	**755**	**756**	**761**	**796**	**755**	**762**	**779**	**779**	**726**	**817**

*Estimate based on the fiscal 2024 authorized end strength. **Total includes one estimate.
Source: National Defense Budget Estimates for Fiscal Year 2025, Financial Summary Tables; Number of Military and DoD Appropriated Fund (APF) Civilian Personnel

DOD ACTIVE DUTY BY ENLISTED/OFFICER AND SEX

(As of Sept. 30, 2024)

	DOD		DAF		ARMY		MARINE CORPS		NAVY		SPACE FORCE	
		%		%		%		%		%		%
CADET/MIDSHIPMAN												
Female	3,513	27.2	1,197	29.6	1,003	22.4	n/a	n/a	1,313	29.8	n/a	n/a
Male	9,401	72.8	2,841	70.4	3,473	77.6	n/a	n/a	3,087	70.2	n/a	n/a
ENLISTED												
Female	178,974	17.3	52,526	20.9	53,510	15.1	15,023	9.9	57,048	20.9	867	17.8
Male	855,183	82.7	198,886	26.4	299,816	84.9	136,732	90.1	215,744	79.1	4,005	82.2
OFFICER												
Female	48,140	20.6	15,039	24.9	17,907	19.5	2,251	10.5	12,009	21.8	934	20.4
Male	185,441	79.4	45,469	75.1	74,107	80.5	19,090	89.5	43,135	78.2	3,640	79.6
TOTAL ACTIVE DUTY	**1,280,652**		**315,958**		**449,816**		**173,096**		**332,336**		**9,446**	

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 Zeeshan Naeem

An F-35A Lightning II assigned to the 95th Fighter Squadron soars through the skies during exercise Checkered Flag 25-2 at Tyndall Air Force Base, Fla., May 14, 2025. This large-scale aerial exercise brings together advanced fighter and support aircraft to sharpen the tactical skills of pilots and maintainers alike, reinforcing their ability to deliver rapid, lethal combat airpower in support of global operations.

DOD ACTIVE DUTY MILITARY DEMOGRAPHICS BY SERVICE

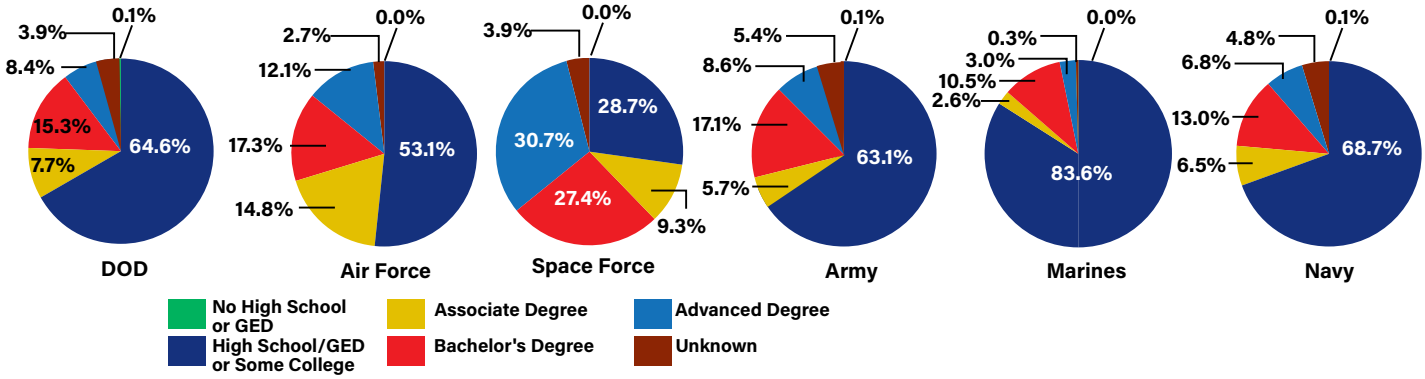
(As of Sept. 2024)

	DOD		AIR FORCE		SPACE FORCE		ARMY		MARINE CORPS		NAVY	
TOTAL	**1,273,382**	**100.0**	**314,648**	**24.7**	**8,879**	**0.7**	**449,344**	**35.3**	**172,577**	**13.6**	**327,934**	**25.8**
HIGHEST EDUCATIONAL ACHIEVEMENT		%		%		%		%		%		%
No High School Diploma or GED	1,089	0.1	99	0.0	0	0.0	453	0.1	63	0.0	474	0.1
High School Diploma/GED or Some College	822,729	64.6	167,002	53.1	2,547	28.7	283,603	63.1	144,226	83.6	225,351	68.7
Associate Degree	98,653	7.7	46,528	14.8	824	9.3	25,409	5.7	4,514	2.6	21,378	6.5
Bachelor's Degree	194,415	15.3	54,281	17.3	2,432	27.4	76,814	17.1	18,206	10.5	42,682	13.0
Advanced Degree	106,916	8.4	38,149	12.1	2,727	30.7	38,581	8.6	5,117	3.0	22,342	6.8
Unknown	49,580	3.9	8,589	2.7	349	3.9	24,484	5.4	451	0.3	15,707	4.8
ETHNICITY												
Hispanic or Latino	248,480	19.5	54,877	17.4	1,287	14.5	84,380	18.8	47,755	27.7	60,181	18.4
Not Hispanic or Latino	1,024,902	80.5	259,771	82.6	7,592	85.5	364,964	81.2	124,822	72.3	267,753	81.6
MARITAL STATUS												
Divorced	61,523	4.8	19,153	6.1	408	4.6	22,806	45.0	5,176	3.0	13,980	4.3
Married	620,854	48.8	166,918	53.0	5,203	58.6	223,111	49.7	67,043	38.8	158,579	48.4
Never Married	588,384	46.2	128,328	40.8	3,252	36.6	202,172	5.1	100,275	58.1	154,357	47.1
Other*	2,621	0.2	249	0.1	16	0.2	1,255	0.3	83	0.0	1,018	0.3
RACE												
American Indian or Alaska Native	13,923	1.1	2,672	0.8	60	0.7	3,519	0.8	2,216	1.3	5,456	1.7
Asian	46,442	3.6	15,621	5.00	620	7.0	2,866	0.6	6,244	3.6	21,091	6.4
Black or African American	224,212	17.6	48,461	15.4	754	8.5	95,149	21.2	19,671	11.4	60,177	18.4
Native Hawaiian or Other Pacific Islander	11,036	0.9	4,076	1.3	82	0.9	871	0.2	1,971	1.1	4,036	1.2
Multi-racial**	85,139	6.7	16,431	5.2	563	6.3	44,352	9.9	2,755	1.6	21,038	6.4
White	866,315	68.0	217,310	69.1	6,433	72.5	299,287	66.6	137,841	79.9	205,444	62.6
Other/Unknown	26,315	2.1	10,077	3.2	367	4.1	3,300	0.7	1,879	1.1	10,692	3.3
SEX* **												
Female	225,119	17.7	67,754	78.5	1,687	19.0	70,539	15.7	16,763	9.7	68,376	20.9
Male	1,048,250	82.3	246,894	21.5	7,192	81.0	378,792	84.3	155,814	90.3	259,558	79.1

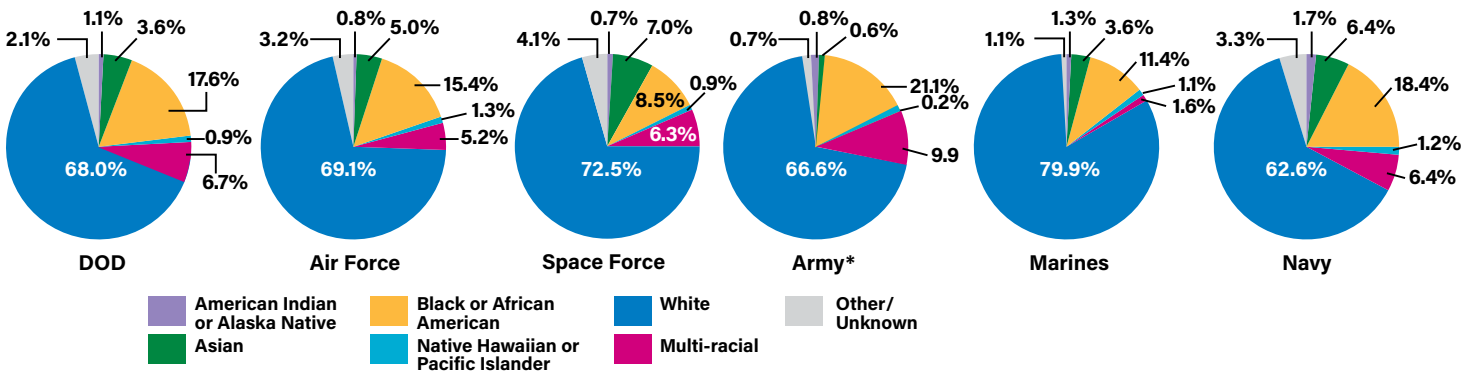
*Includes annulled, widowed, and unknown.
**The Army does not report "Multi-racial."
***13 members of the Army were categorized as "unknown."
Source: 2023 Demographics Profile of the Military Community

DOD ACTIVE DUTY MILITARY DEMOGRAPHICS BY SERVICE

Education



Race



ANNUAL MILITARY BASIC PAY

(Effective April. 1, 2025)

GRADE	2	3	4	6	8	10	12	14	16	18	20	22	24	26	28	30
COMMISSIONED OFFICERS																
O-10	—	—	—	—	—	—	—	—	—	—	225,698	225,698	225,698	225,698	225,698	225,698
O-9	—	—	—	—	—	—	—	—	—	—	225,698	225,698	225,698	225,698	225,698	225,698
O-8	165,826	169,311	170,283	174,643	181,911	183,607	190,515	192,506	198,457	207,072	215,006	220,309	220,309	220,309	220,309	225,698
O-7	139,608	142,477	144,763	148,885	152,967	157,680	162,378	167,101	181,911	194,425	194,425	194,425	194,425	195,426	195,426	199,332
O-6	111,142	118,440	118,440	118,893	123,987	124,664	124,664	131,749	144,273	151,624	158,972	163,155	167,389	175,593	175,593	179,100
O-5	95,007	101,584	102,823	106,930	109,378	114,778	118,749	123,872	131,691	135,421	139,107	143,290	143,290	143,290	143,290	143,290
O-4	84,236	89,866	91,108	96,325	101,923	108,900	114,314	118,087	120,250	121,500	121,500	121,500	121,500	121,500	121,500	121,500
O-3	72,529	78,271	85,348	89,445	93,934	96,829	101,599	104,094	104,094	104,094	104,094	104,094	104,094	104,094	104,094	104,094
O-2	55,281	62,960	72,514	74,966	76,503	76,503	76,503	76,503	76,503	76,503	76,503	76,503	76,503	76,503	76,503	76,503
O-1	49,942	60,375	60,375	60,375	60,375	60,375	60,375	60,375	60,375	60,375	60,375	60,375	60,375	60,375	60,375	60,375
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	—	—	85,348	89,445	93,934	96,829	101,599	105,631	107,942	111,092	111,092	111,092	111,092	111,092	111,092	111,092
O-2E	—	—	74,966	76,504	78,937	83,048	86,231	88,596	88,596	88,596	88,596	88,596	88,596	88,596	88,596	88,596
O-1E	—	—	60,375	64,468	66,855	69,292	71,683	74,966	74,966	74,966	74,966	74,966	74,966	74,966	74,966	74,966
WARRANT OFFICERS																
W-5	—	—	—	—	—	—	—	—	—	—	117,568	123,534	127,980	132,890	132,890	139,546
W-4	71,121	73,162	75,171	78,634	82,058	85,525	90,730	95,302	99,651	103,219	106,693	111,787	115,977	120,754	120,754	123,163
W-3	62,895	65,484	66,322	69,026	74,347	79,891	82,501	85,522	88,624	94,222	97,995	100,252	102,654	105,926	105,926	105,926
W-2	58,485	60,037	61,110	64,569	69,955	72,630	75,254	78,469	80,982	83,253	85,975	87,764	89,182	89,182	89,182	89,182
W-1	51,951	53,305	56,174	59,562	64,558	66,891	70,164	73,371	75,895	78,220	81,043	81,043	81,043	81,043	81,043	81,043
ENLISTED MEMBERS																
E-9	—	—	—	—	—	79,887	81,694	83,973	86,659	89,373	93,700	97,376	101,232	107,143	107,143	112,489
E-8	—	—	—	—	65,394	68,288	70,077	72,223	74,545	78,742	80,870	84,488	86,493	91,432	91,432	93,265
E-7	49,611	51,516	54,025	55,998	59,371	61,275	64,645	67,456	69,375	71,413	72,205	74,858	76,280	81,705	81,705	81,705
E-6	43,272	45,180	47,037	48,967	53,326	55,022	58,305	59,310	60,040	60,897	60,897	60,897	60,897	60,897	60,897	60,897
E-5	41,598	43,650	45,626	47,512	49,708	50,814	51,116	51,116	51,116	51,116	51,116	51,116	51,116	51,116	51,116	51,116
E-4	38,185	40,258	42,296	44,107	44,107	44,107	44,107	44,107	44,107	44,107	44,107	44,107	44,107	44,107	44,107	44,107
E-3	34,855	36,972	36,972	36,972	36,972	36,972	36,972	36,972	36,972	36,972	36,972	36,972	36,972	36,972	36,972	36,972
E-2	31,190	31,190	31,190	31,190	31,190	31,190	31,190	31,190	31,190	31,190	31,190	31,190	31,190	31,190	31,190	31,190
E-1 >4 mos	27,828	27,828	27,828	27,828	27,828	27,828	27,828	27,828	27,828	27,828	27,828	27,828	27,828	27,828	27,828	27,828

NOTE: Basic pay for an O-7 to O-10 is limited by Level II of the Executive Schedule in effect during Calendar Year 2025, which is $225,698 per year.
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 $183,099 per year.
Source: Modified from the Defense Finance and Accounting Service's Monthly Military Basic Pay

ANNUAL PAY FOR FEDERAL CIVILIANS

(Effective Jan. 1, 2025)

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	$22,360	$23,110	$23,853	$24,594	$25,336	$25,770	$26,506	$27,247	$27,277	$27,970	varies
GS-2	25,142	25,740	26,573	27,277	28,394	29,205	29,205	30,016	30,827	31,638	varies
GS-3	27,434	28,348	29,262	30,176	31,090	32,004	32,918	33,832	34,746	35,660	914
GS-4	30,795	31,822	32,849	33,876	34,903	35,930	36,957	37,984	39,011	40,038	1,027
GS-5	34,454	35,602	36,750	37,898	39,046	40,194	41,342	42,490	43,638	44,786	1,148
GS-6	38,407	39,687	40,967	42,247	43,527	44,807	46,087	47,367	48,647	49,927	1,280
GS-7	42,679	44,102	45,525	46,948	48,371	49,794	51,217	52,640	54,063	55,486	1,423
GS-8	47,265	48,841	50,417	51,993	53,569	55,145	56,721	58,297	59,873	61,449	1,576
GS-9	52,205	53,945	55,685	57,425	59,165	60,905	62,645	64,385	66,125	67,865	1,740
GS-10	57,489	59,405	61,321	63,237	65,153	67,069	68,985	70,901	72,817	74,733	1,916
GS-11	63,163	65,268	67,373	69,478	71,583	73,688	75,793	77,898	80,003	82,108	2,105
GS-12	75,706	78,230	80,754	83,278	85,802	88,326	90,850	93,374	95,898	98,422	2,524
GS-13	90,025	93,026	96,027	99,028	102,029	105,030	108,031	111,032	114,033	117,034	3,001
GS-14	106,382	109,928	113,474	117,020	120,566	124,112	127,658	131,204	134,750	138,296	3,546
GS-15	125,133	129,304	133,475	137,646	141,817	145,988	150,159	154,330	158,501	162,672	4,171

Does not include locality pay assigned by geographic area, such as 21.42% for Dayton, Ohio, and 33.94% for Washington, D.C.
Source: Office of Personnel Management

SENIOR EXECUTIVE SERVICE PAY

(Effective Jan. 1, 2025)

SES Pay System Structure	Minimum	Maximum
Certified SES performance appraisal system	$150,160	$225,700
Noncertified SES performance appraisal system	$150,160	$207,500

The American Relief Act, 2025, continued the freeze on the payable pay rates for the Vice President and certain senior political appointees.

What Goes Into Military Pay

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

Courtesy photo

O-4 (Major)	PAY GRADE	E-6 (Tech. Sgt.)
63A Acquisition Manager	Military occupational specialty (MOS)	5I1A (Imagery Analyst)
Over 14	Years in service	Over 8
Joint Base Andrews, Md.	Duty Station	Peterson Space Force Base, Colo.
Yes	Dependents	No
$9,840.60	Basic Pay	$4,443.90
0	Aviation Incentive Pay (maximum assuming sufficient flight hours)	N/A
$4,122	Basic Allowance for Housing	$1,995
$320.78	Basic Allowance for Subsistence	$465.77
$14,283.38	Monthly total	$6,541.37
$171,400.56	Annualized total	$78,496.44

Kemberly Groue/USAF

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

Senior Airman Devlin Bishop

U.S. Airmen training with the 68th Rescue Squadron perform static-line jumps over Theodore Roosevelt Lake during the Combat Leader Course near Roosevelt, Ariz., April 8, 2025. The CLC students used static line parachutes which deployed immediately after exiting the aircraft.

RANK INSIGNIA OF THE USAF & USSF

Air Force

Officer

O-1	 Second Lieutenant	W-1	 Warrant Officer W-1
O-2	 First Lieutenant	CW-2	 Chief Warrant Officer W-2
O-3	 Captain	CW-3	 Chief Warrant Officer W-3
O-4	 Major	CW-4	 Chief Warrant Officer W-4
O-5	 Lieutenant Colonel	CW-5	 Chief Warrant Officer W-5
O-6	 Colonel		
O-7	 Brigadier General		
O-8	 Major General		
O-9	 Lieutenant General		
O-10	 General		

Enlisted

E-1	Airman Basic No insignia		
E-2	 Airman		
E-3	 Airman First Class		
E-4	 Senior Airman		
E-5	 Staff Sergeant		
E-6	 Technical Sergeant		
E-7	 Master Sergeant	 First Sergeant	
E-8	 Senior Master Sergeant	 First Sergeant	
E-9	 Chief Master Sergeant	 First Sergeant	 Command Chief Master Sergeant
CMSAF	 Chief Master Sergeant of the Air Force		

Space Force

Officer

O-1	 Second Lieutenant
O-2	 First Lieutenant
O-3	 Captain
O-4	 Major
O-5	 Lieutenant Colonel
O-6	 Colonel
O-7	 Brigadier General
O-8	 Major General
O-9	 Lieutenant General
O-10	 General

Enlisted

E-1	 Specialist 1
E-2	 Specialist 2
E-3	 Specialist 3
E-4	 Specialist 4
E-5	 Sergeant
E-6	 Technical Sergeant
E-7	 Master Sergeant
E-8	 Senior Master Sergeant
E-9	 Chief Master Sergeant
CMSSF	 Chief Master Sergeant of the Space Force

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-Short


Air and Space Overseas Ribbon-Long


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

SPENDING

Senior Airman Nicholas Rupiper

The annual defense budget is prepared by the Department of Defense, reviewed by the White House Office of Management and Budget, and then submitted to Congress. Yet it is Congress that has the final say. The House and Senate must pass annual policy (National Defense Authorization) and spending (Defense Appropriations) bills, then reconcile the differences. In fiscal 2025, Congress failed to pass a new budget measure, passing instead a full-year continuing resolution that held most spending at 2024 levels.

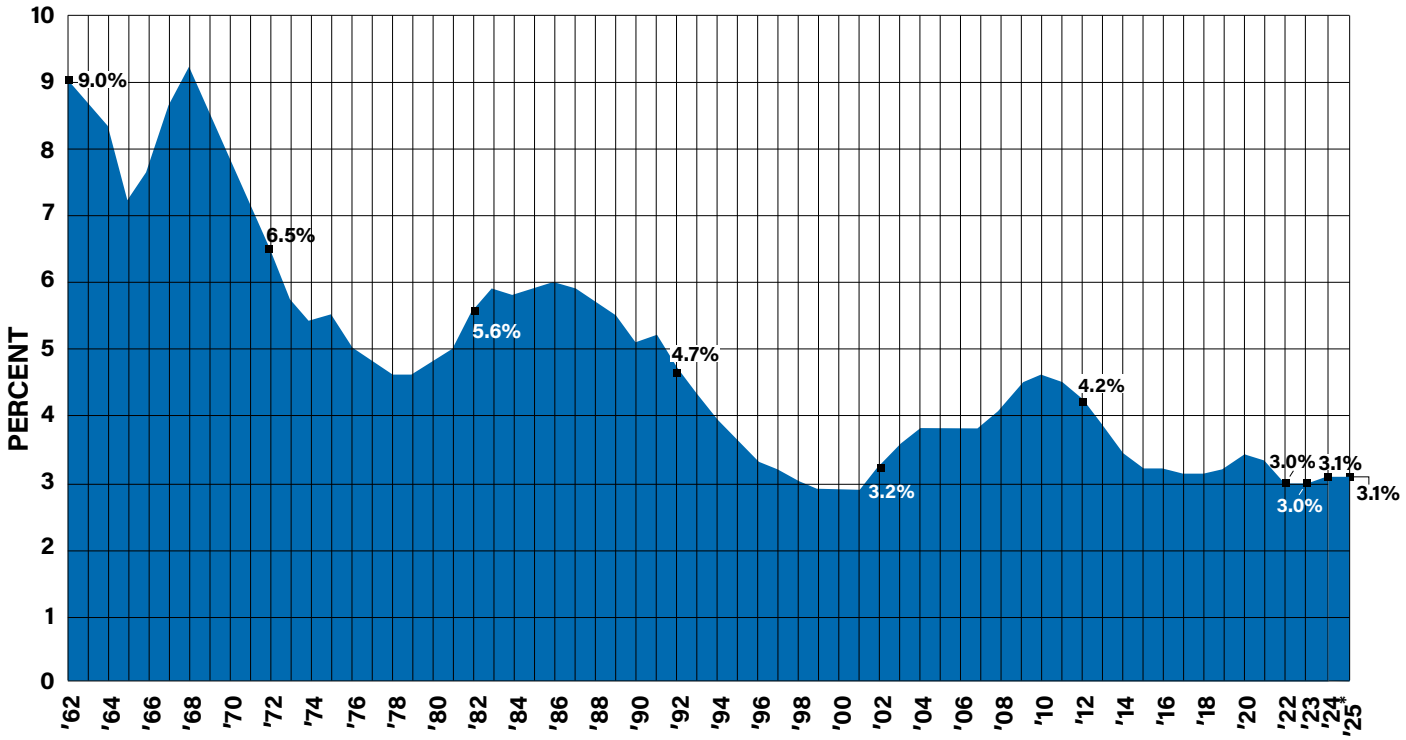
DOD BUDGET AUTHORITY ($ in billions)

	2018	2019	2020	2021	2022	2023	Enacted 2024	Estimated* 2025
Base Budget	$600.0	$616.0	$633.0	$703.7	$742.2	$815.9	$842.3	$842.3
With Supplementals	671.0	688.0	723.0	704.7	776.6	851.7	n/a	n/a

*In April 2025, members of both houses jointly proposed adding another $150 billion in defense spending for fiscal 2025.
*Estimated
Source: Defense Budget materials and Office of the Secretary of Defense.

DOD SPENDING AS SHARE OF GROSS DOMESTIC PRODUCT (GDP)

Percent by Fiscal Year



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

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Long-Term Care Insurance. Protect your assets against the cost of long-term care with customized protection through the variety of individual plans available to AFA members. Members have access to special discounts, multiple carriers, multiple products, wider underwriting, and service for life.

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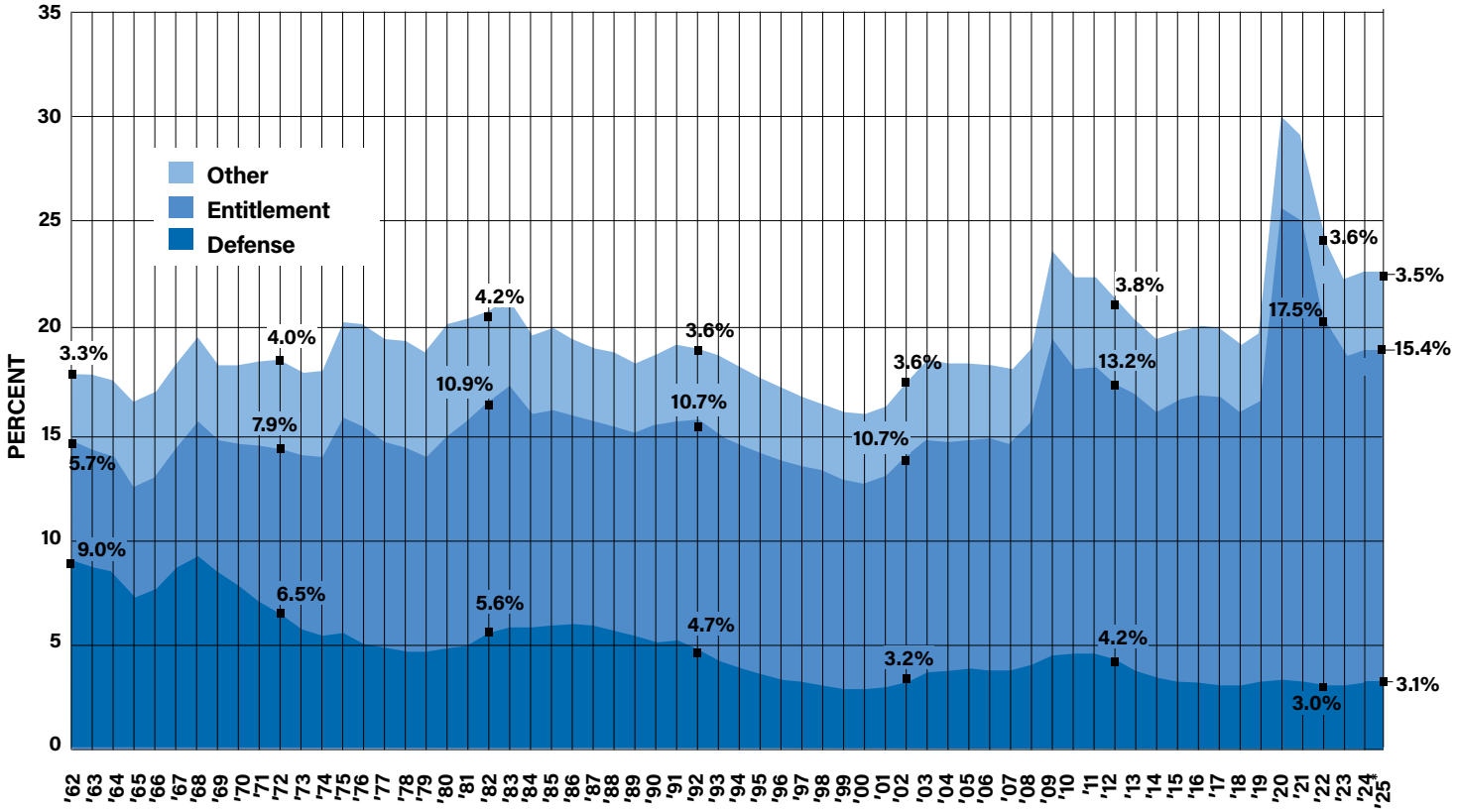
You can find complete details about these AFA member insurance benefits, as well as application and enrollment information, at **www.AFAInsure.com**

TOTAL U.S. GOVERNMENT SPENDING AS A SHARE OF GDP



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

TOTAL U.S. GOVERNMENT SPENDING AS A SHARE OF 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
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

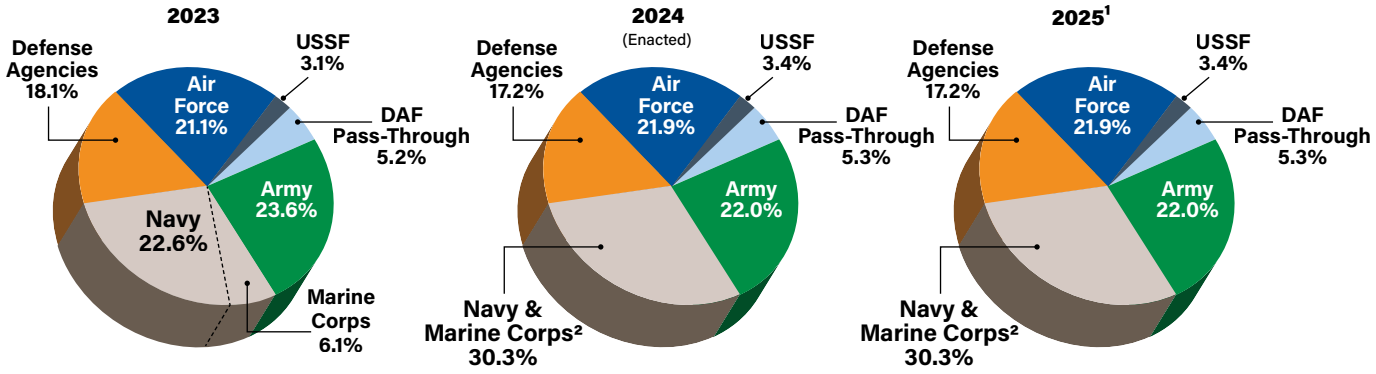
DOD BUDGET BY SERVICE, INCLUDING PASS-THROUGH

($ in millions)

	Enacted 2023	%	Enacted 2024	%	Estimated 2025*	%
Department of the Air Force	$249,897	29.30%	$256,953	30.5%	$256,953	30.5%
USAF	179.7	21.1	184,371	21.9	184,371	21.9
USSF	26.1	3.1	28,696	3.4	28,696	3.4
Pass-Through**	43.9	5.2	44,579	5.3	44,579	5.3
Army	201,366	23.6	185,643	22.0	185,643	22.0
Department of the Navy	246,584	29.0	254,905	30.3	254,905	30.3
Navy	192,845	22.6	202,553***	n/a	202,553***	n/a
Marine Corps	51,860	6.1	53,219***	n/a	53,219***	n/a
Defense Agencies	153,858	18.1	144,824	17.2	144,824	17.2
Total	**$851,706**		**842,326**		**842,326**	

May not add due to rounding.
*Congress approved a full-year continuing resolution to fund the government for fiscal 2025 at roughly the same levels as fiscal 2024.
**Pass-through funds appear in the Department of the Air Force budget but pass directly to other agencies, and are not used by or for the DAF.
***Requested amounts. The Department of the Navy did not provide fiscal 2024 enacted amounts for the Marine Corps and Navy by press time.

DOD BUDGET SHARES: 2023 vs. 2024 vs. 2025



1—Estimate. Congress passed a full-year continuing resolution for 2025 at roughly equal numbers to fiscal 2024.
2—The Department of the Navy breakdown between the Navy and Marine Corps was not specified by press time.

DOD BUDGET SHARES BY MILITARY DEPARTMENT

($ millions)

	2016	2017	2018	2019	2020	2021	2022	2023	Enacted 2024	Estimated** 2025
DAF*	$164,009	$171,457	$190,359	$196,066	$206,691	$204,574	$223,553	$249,897	$256,953	$256,953
%	27.9	28.1	28.3	28.3	29	29	28.8	29.3	30.5	30.5
Army	$151,296	$159,018	$178,260	$181,166	$184,195	$174,040	$183,512	$201,366	$185,643	$185,643
%	25.7	26.1	26.5	26.1	26.2	24.7	23.6	23.6	22	22
Navy/Marine Corps	$170,325	$174,058	$190,489	$197,778	$209,383	$206,936	$223,231	$246,584	$254,905	$254,905
%	28.97	28.57	28.31	28.54	29.8	29.4	28.7	29	30.3	30.3
Defense Agencies	$102,348	$104,754	$113,853	$117,991	$122,955	$119,184	$146,336	$153,858	$144,824	$144,824
%	17.4	17.2	16.9	17	17.5	16.9	18.8	18.1	17.2	17.2
Total	**$587,978**	**$609,287**	**$672,960**	**$693,001**	**$723,224**	**$704,734**	**$776,632**	**$851,706**	**$842,326**	**$842,326**

*Includes Pass-Through funds that pass directly to other agencies, and are not used by or for the DAF.
**Congress approved a full-year continuing resolution to fund the government for fiscal 2025 at roughly the same levels as fiscal 2024. In April 2025, members of both houses jointly proposed adding another $150 billion in defense spending for fiscal 2025, but no additional appropriation had passed by press time.
Source: Office of the Secretary of Defense (2024 enacted figures)

DOD BUDGET BY SPENDING CATEGORY

	2016	2017	2018	2019	2020	2021	2022	2023	Enacted 2024	Estimated* 2025
Military Personnel	$138.3	$139.0	$136.0	$144.7	$149.9	$162.8	$166.8	$174.0	$175.9	$175.9
O&M	247.8	258.1	199.7	231.4	237.2	283.6	294.5	318.5	326.8	326.8
Procurement	119.9	126.0	107.1	133.8	129.1	140.7	145.1	162.8	171.4	171.4
RDT&E	70.6	74.8	71.8	94.1	103.6	105.9	118.5	139.4	147.7	147.7
Military Construction	7.6	7.6	6.4	8.8	9.9	7.1	13.4	16.7	16.7	16.7
Family Housing	1.5	1.4	1.2	1.6	1.5	1.4	1.5	2.3	2	2
Revolving Funds & Other	2.3	2.3	1.5	1.9	2.3	2.1	2.3	2.2	1.8	1.8
Total	**$588.0**	**$609.20**	**$523.70**	**$687.8**	**$633.3**	**$703.7**	**$742.2**	**$815.9**	**$842.3**	**$842.3**

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

**Congress approved a full-year continuing resolution to fund the government for fiscal 2025 at the same levels as fiscal 2024. In April 2025, members of both houses jointly proposed adding another $150 billion in defense spending for fiscal 2025, but no additional appropriation had passed by press time.

DAF BUDGET BY SPENDING CATEGORY

	2017	2018	2019	2020	2021	2022	2023	Enacted 2024	Estimated* 2025
Military Personnel	$34.6	$34.7	$37.4	$39.4	$42.8	$44.4	$46.5	$47.7	$47.7
O&M	45.9	50.2	51.2	53.4	65.5	69.9	76.0	77.8	77.8
Procurement	38.1	41.7	43.2	43.3	47.8	49.5	58.1	61.0	61.0
RDT&E	27.3	28.9	40.6	45.3	46.2	52.8	61.4	65.8	65.8
Military Construction	2	2	2	2.4	1.3	3.5	4.6	4.0	4.0
Family Housing	0.3	0.3	0.4	0.4	0.4	0.4	0.6	0.6	0.6
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**	**$257.0**

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

Source: Office of the Secretary of Defense (2024 enacted figures)
Base budget in $ billions; includes war funding in 2021 and later; does not include Ukraine or emergency funding

*Congress approved a full-year continuing resolution to fund the government for fiscal 2025 at the same levels as fiscal 2024. In April 2025, members of both houses jointly proposed adding

TOTAL OBLIGATIONAL AUTHORITY VS. PASS-THROUGH

($ in billions)

	2017	2018	2019	2020	2021	2022	2023	Enacted 2024	Estimated 2025*
DAF	$136.6	$151.5	$156.8	$168.1	$168.2	$180.8	$205.8	$213.1	$213.1
Pass-Through	34.3	37.2	37.8	39.0	37.3	41.4	43.9	44.6	44.6
Total	**170.9**	**188.7**	**194.6**	**207.1**	**205.5**	**222.3**	**249.7**	**257.7**	**257.7**
Pass-Through %	**20.1%**	**19.7%**	**19.4%**	**18.8%**	**18.2%**	**18.6%**	**17.6%**	**17.30%**	**17.3%**

Sources: Department of the Air Force (2024 enacted figures)

*Congress approved a full-year continuing resolution to fund the government for fiscal 2025 at the same levels as fiscal 2024. In April 2025, members of both houses jointly proposed adding another $150 billion in defense spending for fiscal 2025, but no additional appropriation had passed by press time.

AIRCRAFT TOTAL ACTIVE INVENTORY (TAI)

(As of Sept. 30, 2024)

	ACTIVE	ANG	AFRC	TOTAL	AVG. AGE*
BOMBER					
B-1B Lancer	46	0	0	46	37.40
B-2A Spirit	20	0	0	20	28.75
B-52H Stratofortress	58	0	18	76	62.80
Total	**124**	**0**	**18**	**142**	**42.98**
FIGHTER/ATTACK					
A-10C Thunderbolt II	141	31	47	219	43.37
F-15C Eagle	0	108	0	108	30.09
F-15D Eagle	0	8	0	8	37.51
F-15E Strike Eagle	218	0	0	218	32.42
F-15X	8	0	0	8	2.50
F-16C Fighting Falcon	400	257	47	704	33.85
F-16D Fighting Falcon	98	36	0	134	33.53
F-22A Raptor	165	20	0	185	19.01
F-35A Lightning II	400	43	0	443	4.92
Total	**1,430**	**503**	**94**	**2,027**	**26.36**
SPECIAL OPERATIONS FORCES					
AC-130J Ghostrider	30	0	0	30	6.23
CV-22B Osprey	52	0	0	52	11.84
MC-130J Commando II	60	2	0	62	7.91
Total	**142**	**2**	**0**	**144**	**8.66**
ISR/BM/C3					
E-3G Sentry (AWACS)	16	0	0	16	44.91
E-4B NAOC	4	0	0	4	50.38
EC-130H Compass Call	4	0	0	4	50.02
EC-130J Commando Solo	0	5	0	5	24.46
MQ-9A Reaper	206	24	0	230	7.20
RC-135S Cobra Ball	3	0	0	3	62.47
RC-135U Combat Sent	2	0	0	2	59.65
RC-135V Rivet Joint	8	0	0	8	59.94
RC-135W Rivet Joint	12	0	0	12	61.17
RQ-4B Global Hawk	9	0	0	9	13.40
TC-135W (trainer)	3	0	0	3	62.3
TU-2S Dragon Lady (trainer)	4	0	0	4	39.92
U-2S Dragon Lady	27	0	0	27	41.58
WC-130J Hercules	10	0	0	10	23.45
WC-135R	3	0	0	3	61.55
Total	**311**	**29**	**0**	**340**	**44.16**

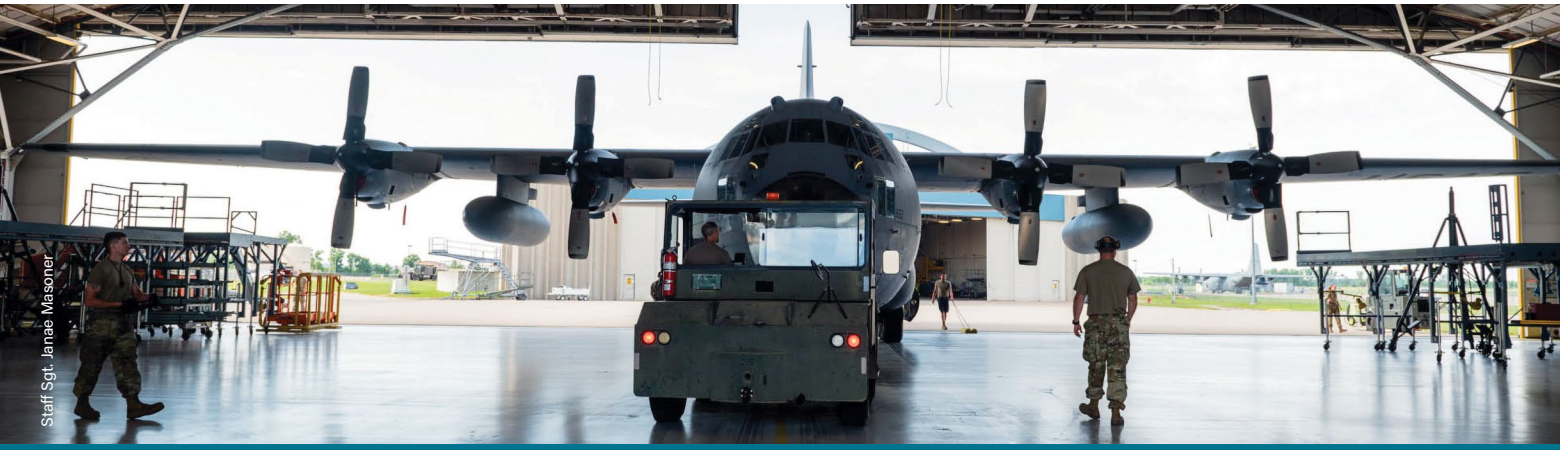
	ACTIVE	ANG	AFRC	TOTAL	AVG. AGE*
TANKER					
HC-130J Combat King II	21	12	6	39	8.00
KC-46A	58	19	12	89	4.27
KC-135R Stratotanker	123	140	62	325	62.71
KC-135T Stratotanker	28	23	0	51	64.73
Total	**230**	**194**	**80**	**504**	**34.93**
TRANSPORT					
C-5M Super Galaxy	36	0	16	52	37.40
C-12C Huron	16	0	0	16	48.17
C-12D Huron	6	0	0	6	40.43
C-12F Huron	3	0	0	3	39.25
C-12J Huron	5	0	0	5	36.72
C-17A Globemaster III	146	50	26	222	22.16
C-21A Learjet	19	0	0	19	39.50
C-32A Air Force Two	4	0	0	4	26
C-37A Gulfstream V	9	0	0	9	23.47
C-37B Gulfstream V	7	0	0	7	8.57
C-40B	4	0	0	4	20.65
C-40C Clipper	0	3	4	7	18.76
C-130H Hercules	0	91	31	122	31.23
C-130J Super Hercules	102	40	12	154	14.20
LC-130H Hercules	0	10	0	10	39.05
Total	**357**	**194**	**89**	**640**	**29.70**
HELICOPTER					
HH-60G Pave Hawk	8	16	3	27	29.93
HH-60W Jolly Green	32	15	7	54	2.82
MH-139 Grey Wolf	8	0	0	8	1.87
TH-1H Iroquois (trainer)	28	0	0	28	43.53
UH-1N Iroquois	63	0	0	63	52.59
Total	**139**	**31**	**10**	**180**	**26.15**
TRAINER					
T-1A Jayhawk	86	0	0	86	30.38
T-6A Texan II	442	0	0	442	18.98
T-38A Talon	52	0	0	52	57.84
(A)T-38B Talon	6	0	0	6	61.12
T-38C Talon	437	0	0	437	58.29
UV-18B Twin Otter	3	0	0	3	50.96
Total	**1,026**	**0**	**0**	**1,026**	**46.26**
GRAND TOTAL	**3,759**	**953**	**291**	**5,003**	**32.40**

*Estimated

ICBMs IN SERVICE OVER TIME

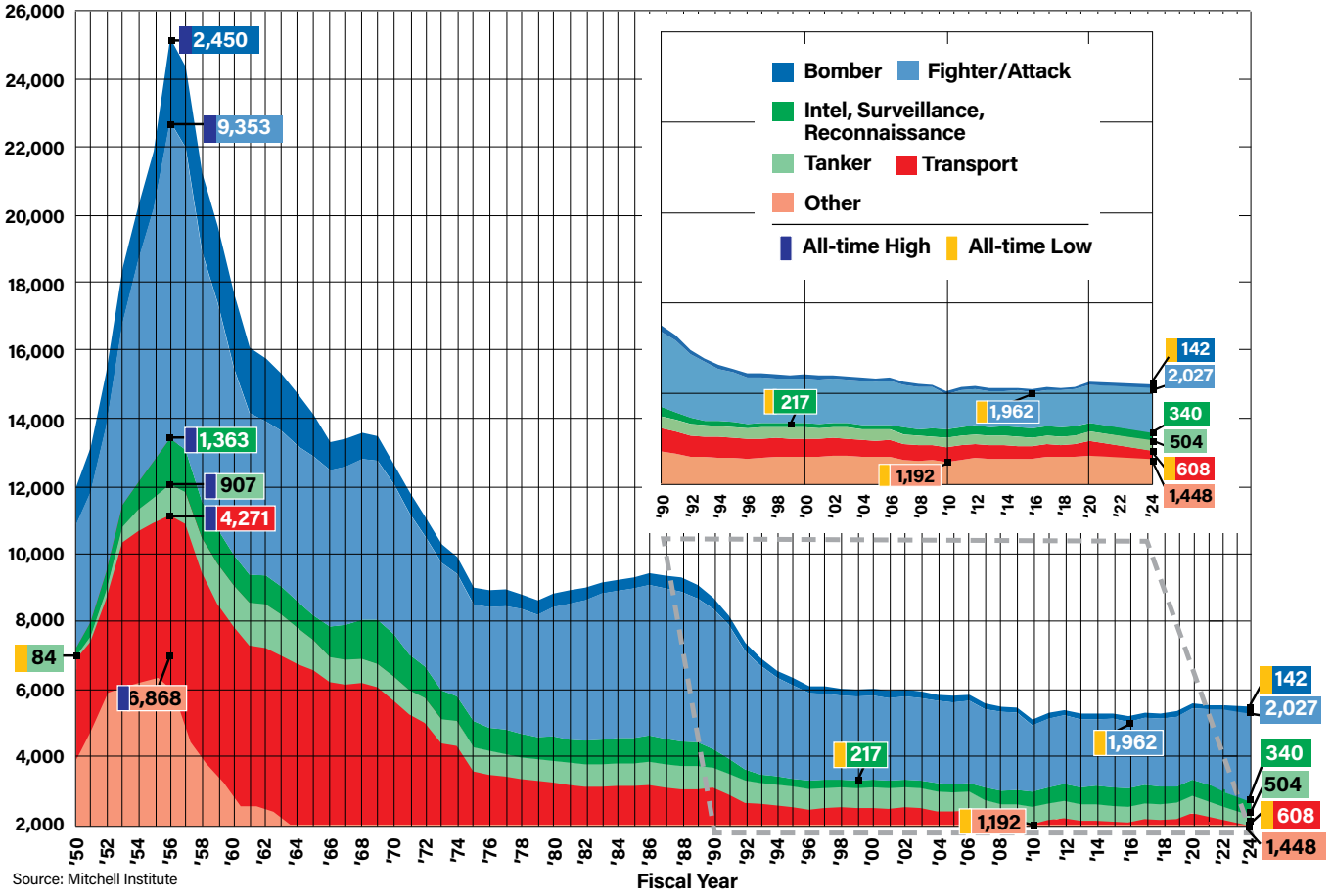
(As of Sept. 30, 2024)

TYPE OF SYSTEM	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Minuteman III	450	450	450	450	450	406	400	400	400	400	400	400	400
Total ICBMs	**450**	**450**	**450**	**450**	**450**	**406**	**400**	**400**	**400**	**400**	**400**	**400**	**400**



Staff Sgt. Janae Masoner

USAF AIRCRAFT INVENTORY, FY50-24 TOTAL ACTIVE AIRCRAFT



Source: Mitchell Institute

TOTAL NUMBER OF ACTIVE DUTY AIRCRAFT IN SERVICE OVER TIME

(As of Sept. 30, 2024)

ACTIVE	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bomber	144	141	141	140	140	139	139	140	140	123	123	123	124
Fighter/Attack	1,289	1,287	1,273	1,252	1,257	1,280	1,309	1,338	1,352	1,476	1,456	1,452	1,430
Aerial Targets*	**	**	**	60	25	17	23	32	39	43	66	73	N/A
Special Ops Forces	117	122	124	144	132	138	135	144	154	139	143	139	142
ISR/BM/C3	413	394	444	437	434	441	432	428	422	471	439	338	311
Tanker	246	243	244	239	236	234	215	238	289	264	235	241	230
Transport	425	413	410	381	384	363	356	361	366	366	358	357	357
Helicopter	170	138	137	157	160	131	154	159	159	155	158	158	139
Trainer	1,182	1,118	1,171	1,157	1,170	1,177	1,157	1,156	1,155	1,153	1,180	1,077	1,026
Gliders	31	47	24	30	24	34	24	24	24	23	N/A	25	N/A
Total Active Duty	**4,017**	**3,927**	**3,968**	**3,997**	**3,962**	**3,954**	**3,944**	**4,015**	**4,100**	**4,213**	**4,158**	**4,008**	**3,759**
* QF-16 Aerial Targets replaced QF-4 Phantoms from FY15. **Previous years' QF-4 data not available.													
ANG													
Bomber	0	0	0	0	0	0	0	0	0	0	0	0	0
Fighter/Attack	635	630	585	611	577	575	575	577	594	593	583	536	503
Special Ops Forces	4	4	4	4	4	4	1	0	0	0	0	2	2
ISR/BM/C3	87	86	88	91	89	93	78	59	59	35	55	29	29
Tanker	189	187	185	184	181	181	185	181	164	188	188	187	194
Transport	232	223	207	207	212	210	208	208	319	191	191	191	194
Helicopter	17	17	17	17	17	17	17	23	23	18	18	18	31
Total ANG	**1,164**	**1,147**	**1,086**	**1,114**	**1,080**	**1.080**	**1,064**	**1,048**	**1,159**	**1,025**	**1,035**	**963**	**953**
AFRC													
Bomber	18	18	18	18	18	18	18	18	18	18	18	18	18
Fighter/Attack	101	95	104	111	111	109	109	109	109	109	109	105	94
Special Ops Forces	5	4	0	0	0	0	0	00	0	0	0	0	0
ISR/BM/C3	11	11	10	10	10	10	10	10	10	10	10	0	0
Tanker	72	71	68	68	72	72	72	74	73	75	75	80	80
Transport	148	147	145	139	101	91	96	98	140	98	98	96	89
Helicopter	15	15	15	15	15	15	15	15	16	16	16	16	10
Total AFRC	**370**	**361**	**360**	**361**	**327**	**315**	**320**	**324**	**366**	**326**	**326**	**315**	**291**
TOTAL FORCE	**5,551**	**5,435**	**5,414**	**5,472**	**5,369**	**5,349**	**5,328**	**5,387**	**5,625**	**5,564**	**5,519**	**5,286**	**5,003**

2022-2024 AIRCRAFT MISSION CAPABLE RATES

	2022 MC%	2023 MC%	2024 MC%	
BOMBER				
B-1B Lancer	55	47	43	▼ down
B-2A Spirit	53	56	55	▼ down
B-52H Stratofortress	59	54	54	stable
Average MC%	**56**	**52**	**51**	
FIGHTER/ATTACK				
A-10C Thunderbolt II	70	67	67	stable
F-15C Eagle	46	33	53	▲ up
F-15D Eagle	59	55	64	▲ up
F-15E Strike Eagle	52	55	55	stable
F-15X	85	85	83	▼ down
F-16C Fighting Falcon	71	63	64	▲ up
F-16D Fighting Falcon	69	65	59	stable
F-22A Raptor	57	52	40	▼ down
F-35A Lightning II	56	52	52	stable
Average MC%	**63**	**59**	**60**	
SPECIAL OPERATIONS FORCES				
AC-130J Ghostrider	81	76	74	▼ down
CV-22B Osprey	52	46	30	▼ down
MC-130J Commando II	79	76	73	▼ down
Average MC%	**71**	**66**	**59**	
ISR/BM/C3				
E-3G Sentry (AWACS)	64	60	56	▼ down
E-4B NAOC	55	61	61	stable
EC-130H Compass Call	69	33	42	▲ up
EC-130J Commando Solo	67	63	70	▲ up
MQ-9A Reaper	90	86	86	stable
RC-135S Cobra Ball	81	73	81	▲ up
RC-135U Combat Sent	80	85	88	▲ up
RC-135V Rivet Joint	70	71	73	▲ up
RC-135W Rivet Joint	68	77	77	stable
RQ-4B Global Hawk	71	50	65	▲ up
TC-135W (trainer)	76	82	87	▲ up
TU-2S Dragon Lady (trainer)	70	81	59	▼ down
U-2S Dragon Lady	74	76	62	▼ down
WC-130J Hercules	64	68	68	stable
WC-135R	73	87	74	▼ down
Average MC%	**71**	**70**	**70**	

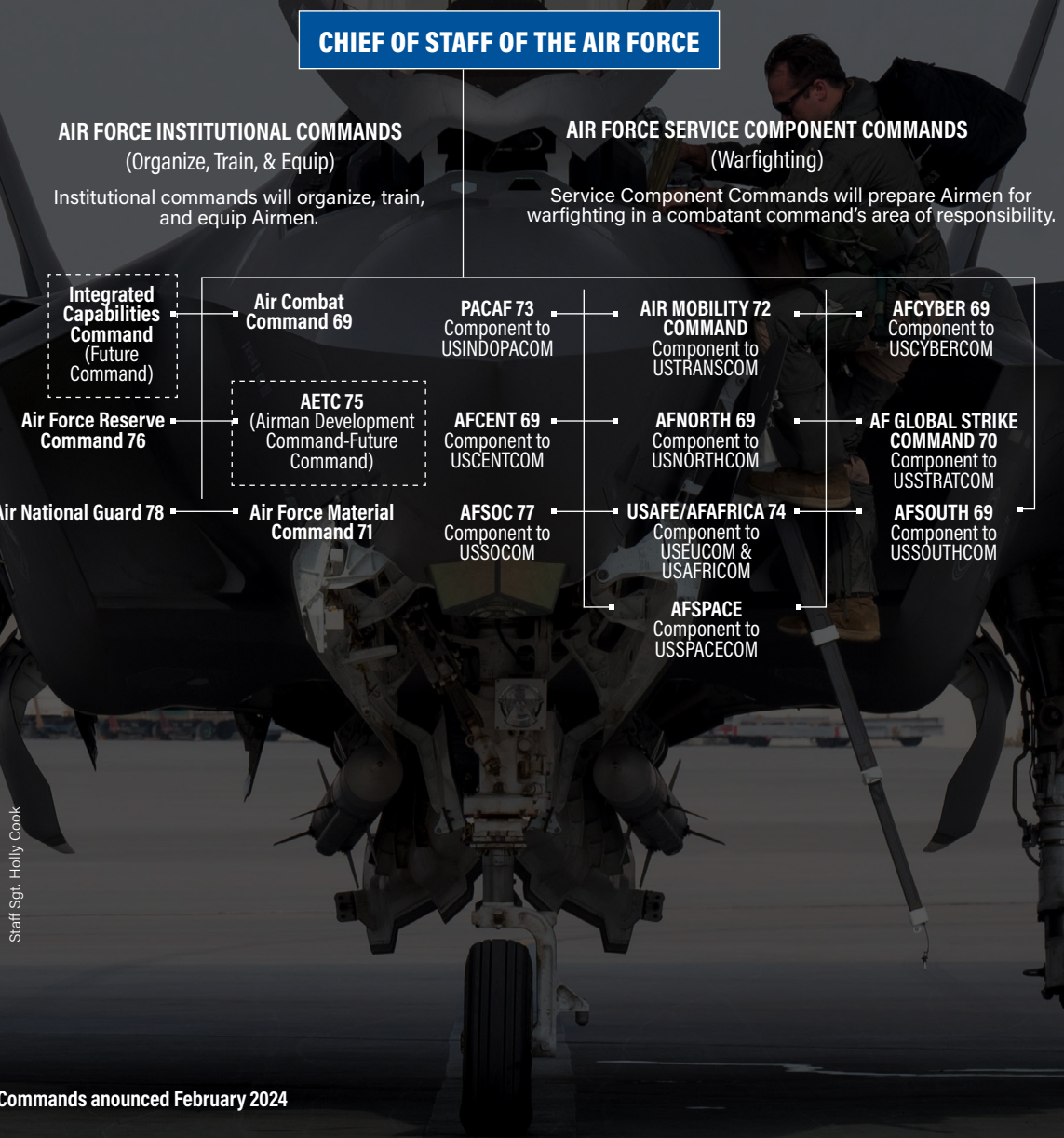
	2022 MC%	2023 MC%	2024 MC%	
TANKER				
HC-130J Combat King II	76	72	69	▼ down
KC-46A	70	65	62	▼ down
KC-135R Stratotanker	72	69	68	▼ down
KC-135T Stratotanker	70	67	63	▼ down
Average MC%	**72**	**68**	**66**	
TRANSPORT				
C-5M Super Galaxy	53	46	49	▲ up
C-12C Huron	99	99	98	▼ down
C-12D Huron	100	100	100	stable
C-12F Huron	96	99	99	stable
C-12J Huron	100	100	100	stable
C-17A Globemaster III	78	76	76	stable
C-21A Learjet	100	100	100	stable
C-32A Air Force Two	88	88	91	▲ up
C-37A Gulfstream V	95	93	91	▼ down
C-37B Gulfstream V	91	91	89	▼ down
C-40B	90	88	91	▲ up
C-40C Clipper	90	91	92	▲ up
C-130H Hercules	68	44	68	▲ up
C-130J Super Hercules	75	72	72	stable
LC-130H Hercules	55	48	55	▲ up
Average MC%	**85**	**82**	**85**	
HELICOPTER				
HH-60G Pave Hawk	69	67	66	▼ down
HH-60W	61	67	46	▼ down
MH-139	N/A	77	41	▼ down
TH-1H Iroquois (trainer)	72	60	60	stable
UH-1N Iroquois	82	78	75	▼ down
Average MC%	**71**	**70**	**58**	
TRAINER				
T-1A Jayhawk	76	78	79	▲ up
T-6A Texan II	71	62	53	▼ down
T-38A Talon	70	63	64	▲ up
(A)T-38B Talon	74	70	53	▼ down
T-38C Talon	57	58	55	▼ down
UV-18B Twin Otter	N/A	100	100	stable
Average MC%	**70**	**72**	**67**	
Total Average MC%	**70**	**67**	**64**	

Master Sgt. Chris Hibben

A U.S. Air Force B-52H Stratofortress assigned to the 69th Expeditionary Bomb Squadron flies over Europe during Bomber Task Force 25-2 at RAF Fairford, United Kingdom, Feb. 27, 2025. BTF 25-2 demonstrated the ability to rapidly deploy strategic assets in support of global stability.

USAF MAJOR 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

Future Commands anounced February 2024

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
- ★★ **USAF Warfare Center** Nellis AFB, Nev.
- **Air Force Spectrum Managment Office** Fort Meade, Md.
- **Cyberspace Capabilities Center** Scott AFB, Ill.

PERSONNEL	
Active-duty USAF	75,170
Active-duty USSF	40
Civilians	12,208

EQUIPMENT (TOTAL AIRCRAFT INVENTORY)	
Fighter/Attack	654
Helicopter	29
C3/BM/ISR	222
Trainer	44
TOTAL	**949**

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-16CJ
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, 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
332nd Air Expeditionary Wing (AEW)	Undisclosed location in southwest Asia	Precision strike, aerial refueling, ISR, space, CSAR
350th Spectrum Warfare Wing	Eglin AFB, Fla	Electromagnetic spectrum capabilities
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
378th AEW	Prince Sultan Air Base, Saudi Arabia	Maintenance, operations, medical, mission support
379th AEW	Al Udeid Air Base, Qatar	C-17, C-21, C-130H/J, E-8, KC-135, RC-135,
380th AEW	Al Dhafra Air Base, UAE	F-16, F-22, KC-135, U-2
386th AEW	Ali Al Salem Air Base, Kuwait	C-130, MQ-9, airlift support
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
495th Fighter Group	Shaw AFB, S.C.	A-10, F-16, F-35 active associates
505th Command and Control Wing	Hurlburt Field, Fla.	Command and control operational-level tactics, testing, training
552nd Air Control Wing	Tinker AFB, Okla.	E-3
557th Weather Wing	Offutt AFB, Neb.	Weather information
601st Air Operations Center	Tyndall AFB, Fla.	Plan and direct air operations
612th Air and Space Operations Center	Davis-Monthan AFB, Ariz.	Plan and direct air, space, and information operations
616th Operations Center	JBSA-Lackland, Texas	Plan and direct cyber, electronic warfare, and ISR operations
633rd ABW	JB Langley-Eustis, Va.	Base 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	67	F-22A	107	TU-2S	4
AT-38	6	F-35A	161	U-2S	31
E-3	12	HC-130J	18	WC-135R	3
E-9A	2	HH-60G	6	**TOTAL**	**949**
E-11A	7	HH-60W	29		
EA-37B	2	MQ-9	103		
EC-130	4	P-9A	4		
F-15C	4	RC-135S	135		
F-15E	157	RQ-4B	9		
F-15X	4	T-38A	38		
F-16C	154	TC-135W	2		

Source: U.S. Air Force Total Aircraft Inventory (TAI) as of Sept. 30, 2024

Airman 1st Class Zeeshan Naeem

A U.S. Air Force F-22 Raptor assigned to the 71st Fighter Squadron, Joint Base Langley-Eustis, Va., takes off during Checkered Flag 25-2 at Tyndall Air Force Base, Fla., in May.

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	27,003
Active-duty USSF	1
Civilians	4,006

EQUIPMENT (TAI)	
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
95th Wing	Offutt AFB, Neb.	Command and control, E-4B
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

AFGSC AIRCRAFT BY TYPE

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

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	17,194
Active-duty USSF	22
Civilians	71,804

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 Airpower	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

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. John D. Lamontagne
(as of Sept. 9, 2024)

- ★★ **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	39,902
Active-duty USSF	3
Civilians	7,485

EQUIPMENT (TAI)	
Tanker	165
Airlift	250
TOTAL	**415**

MAJOR UNITS	LOCATION	AIRCRAFT/MISSION/WEAPON
6th Air Refueling Wing (ARW)	MacDill AFB, Fla.	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-46A
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-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 AW	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-135R	83
KC-135T	26
KC-46A	56
VC-25A	2
TOTAL	**415**

Source: U.S. Air Force Total Aircraft Inventory (TAI) as of Sept. 30, 2024

Senior Airman Amanda Jet

U.S. Air Force Senior Airman Thomas Neiswander, 436th Aircraft Maintenance Squadron crew chief, prepares to marshal a departing C-5M Super Galaxy at Dover Air Force Base, Del., in February. The 436th AMXS is responsible for the inspection, repair, launch and recovery of the 18 assigned C-5 along with all civilian aircraft transiting Dover AFB.

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	30,102
Active-duty USSF	1
Civilians	3,693

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-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 (coming in 2026)
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, F-35A
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

Tech. Sgt. Christopher Ruano

Maj. Dylan Flynn and Capt. Jeff Weingast, F-16 Fighting Falcon pilots assigned to the 18th Fighter Interceptor Squadron from Eielson Air Force Base, Alaska, taxi their aircraft on the flight line during Operation NOBLE DEFENDER at Pittufik Space Base, Greenland, in January.

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)
(Retirement planned for the summer of 2025.)

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

PERSONNEL	
Active-duty USAF	23,796
Active-duty USSF	3
Civilians	1,657

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, F-35A
52nd FW	Spangdahlem AB, Germany	F-16CM
86th Airlift Wing	Ramstein AB, Germany	C-21A, C-37A, C-130J
100th Air Refueling Wing	RAF Mildenhall, U.K.	KC-135R/T
406th Air Expeditionary Wing	Ramstein AB, Germany	C-130H, MQ-9
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

An HH-60W Jolly Green II helicopter flies during an air demonstration as part of the 31st Fighter Wing's 31st Anniversary celebration at Aviano Air Base, in May. The anniversary festivities included various aerial demonstrations, visits from prior 31st FW commanders, and an artwork unveiling.

Staff Sgt. Douglas Lorance

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 Airman 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	56,471
Active-duty USSF	398
Civilians	14,954

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
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.	AC-130J, CV-22, HC-130J, HH-60G, HH-60W, MC-130J, 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
Special Warfare Training Wing	JBSA-Lackland, Texas	Special warfare training

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

AFRC

AIR FORCE RESERVE COMMAND

Robins AFB, Ga.
EST. Feb. 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	
Active-duty USAF	116
Active-duty USSF	0
Civilians	9,863

EQUIPMENT (TAI)	
Bomber	18
Fighter/Attack	104
Helicopter	10
C3/BM/ISR	10
Tanker	74
Airlift	95
TOTAL	**311**

Source: U.S. Air Force Total Aircraft Inventory TAI as of Sept. 30, 2024

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
340th Flying Training Group	JBSA-Randolph, Texas	T-1A, T-38, T-41A, T-51A, T-52A, T-6A, TG-15/16, UV-18B
349th Air Mobility Wing (classic associate)	Travis AFB, Calif.	C-5, C-17, KC-46
403rd Wing	Keesler AFB, Miss.	C-130J, WC-130J
413th Flight Test Group	Robins AFB, Ga.	Flight testing
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
477th Fighter Group	JB Elmendorf-Richardson, Alaska	F-22
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
624th Regional Support Group	JB Pearl Harbor-Hickam, Hawaii	Support
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
913th Airlift Group	Little Rock AFB, Ark.	C-130J
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	47	C-40	4	HH-60G	3
B-52H	18	C-5M	16	HH-60W	7
C-130H	31	F-16C	47	KC-135R	62
C-130J	12	F-35A	10	KC-46	12
C-17A	26	HC-130J	6	WC-130J	10
				TOTAL	**311**

Classic associate: Active-duty unit owns aircraft.
Source: U.S. Air Force Total Aircraft Inventory TAI as of Sept. 30, 2024

Chase Kohler

A C-17 Globemaster III from the 452nd Air Mobility Wing departs during the first day of the Southern California Air Show at March Air Reserve Base, Calif., in April. The Southern California Air Show was projected to draw an audience of nearly 400,000 over the weekend from across Southern California.

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. Michael E. Conley
(as of July 2, 2024)

- **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	14,737
Active-duty USSF	3
Civilians	1,622

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

MAJOR UNITS	LOCATION	AIRCRAFT/MISSION/WEAPON
1st Special Operations Wing (SOW)	Hurlburt Field, Fla.	AC-130J, CV-22, MC-130H, MQ-9, U-28A
27th Special Operations Group (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**

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	103,605
Civilians (ANG Support Center)	698
Civilians (ANG Units)	14,521

EQUIPMENT (TAI)	
Fighter/Attack	503
Helicopter	31
C3/BM/ISR	29
Tanker	194
Airlift	194
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-130J, HH-60G, GA
107th Attack Wing (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 ATKW (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, F-35A, 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.)	F-16C/D
123rd AW (Ky.)	C-130J, CRG, special tactics, WXF, intel
124th FW (Idaho)	A-10C, TACP, cyber
125th FW (Fla.)	F-15C/D, F-35A, 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, KC-46A, CC, RC-26B, intel
142nd Wing (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 ATKW (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 ATKW (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

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. **Civilian Personnel:** 496
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: 10 **Civilian Personnel:** 85
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: 3,955 **USSF Personnel:** 25 **Civilian Personnel:** 2,805
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: 113 **Civilian Personnel:** 59 **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. **Civilian Personnel:** 46
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: 82 **Civilian Personnel:** 30 **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:** 516 **Civilian Personnel:** 183
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 **Civilian Personnel:** 158
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: 212 **Civilian Personnel:** 167
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: 26 **Civilian Personnel:** 33
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:** 1,665 **Civilian Personnel:** 1,148
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: 298 **Civilian Personnel:** 242
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:** 36 **Civilian Personnel:** 22
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: 607 **Civilian Personnel:** 1,590
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: 189 **Civilian 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: 22 **Civilian Personnel:** 85
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: 43 **Civilian Personnel:** 81
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: 35 **Civilian Personnel:** 698
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: 7
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: 439 **Civilian Personnel:** 1,320
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: 1,994 **USSF Personnel:** 33 **Civilian Personnel:** 1,361
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: ~60,000
www.gocivilairpatrol.com

AIR FORCE WINGS

There are 147 Active-duty wings in the U.S. Air Force. There are 37 wings in the Air Reserve (see list on p. 76) and 90 wings in the Air National Guard (see list on p. 78). 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.

Capt. Josephine Rios

U.S. Air Force F-16 Fighting Falcons assigned to the 706th Aggressor Squadron, Nellis Air Force Base, Nev., are staged on the flight line during Red Flag-Nellis 25-1. The aggressors provide realistic, threat-representative, near-peer adversary air for high-end U.S. and coalition training.

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

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

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

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

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

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

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

95th Wing
Offutt AFB, Neb.
AFGSC
Base support, Nuclear Command and Control, and organize, train, and equip. E-4C

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

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

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

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), 95th Wing (AFGSC), 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

AIR FORCE LEADERS THROUGH THE YEARS

Air Force Chief of Staff Gen. David Allvin, Secretary of the Air Force Troy Meink, and Chief of Space Operations Gen. B. Chance Saltzman testify during a Senate Armed Services Committee hearing on Capitol Hill, in Washington, D.C., in May.

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. 102.

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	Jan. 20, 2025
Gary A. Ashworth (acting)	Jan. 20, 2025	May 13, 2025
Troy E. Meink	May 13, 2025	

*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	Feb. 21, 2025
Lt. Gen. Scott L. Pleus (acting)	Feb. 21, 2025	

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	July 2, 2024
Lt. Gen. Michael E. Conley	July 2, 2024	

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	Sept. 9, 2024
Gen. Jacqueline D. Van Ovost	Sept. 9, 2024	

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

MAJOR COMMAND AND ANG LEADERS (cont.)

Maj. Gen. Brian G. Neal (acting)	Dec. 18, 2015	May 10, 2016
Lt. Gen. L. Scott Rice	May 10, 2016	July 28, 2020
Lt. Gen. Michael A. Loh	July 28, 2020	June 7, 2024
Maj. Gen. Duke A. Pirak (acting)	June 7, 2024	

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

Armáda ČR

Commander of the Allied Air Command (AIRCOM) Gen. James Hecker visited the Czech Republic in April. The Czech Air Force Commander Maj. Gen. Petr Čepelka accompanied him during his visit of the 21st Tactical Air Force Base Čáslav.

Tech. Sgt. Chelsea Smith

Maj. Gen. Duke Pirak, deputy director, Air National Guard, visited the Florida National Guard's 125th Fighter Wing for a firsthand look at the progress made on their F-35 Lightning II conversion.

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.

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	Jan. 20, 2025*
Pete Hegseth	Jan. 25, 2025	

*Robert G. Salesses served as acting SECDEF from Jan. 20 to Jan. 25, 2025.

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	Feb. 21, 2025
Adm Christopher W. Grady, USN (acting)	Feb. 21, 2025	April 11, 2025
Lt. Gen. John D. Caine, USAF	April 11, 2025	

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.

IDF Spokesperson's Unit

IDF Chief of Staff Lt. Gen. Herzi Halevi (left) with U.S. CENTCOM Commander Gen. Michael Erik Kurilla during the "Juniper Oak" joint exercise in Israel in 2023.

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	May 3, 2024
Adm. Samuel Paparo, USN	May 3, 2024	

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

EJ Hersom

Gen. Gregory Guillot (right), commander of U.S. Northern Command and North American Aerospace Defense Command, testifies before the House Armed Services Committee in Washington, D.C.

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	NOv. 7, 2024
Adm. Alvin Holsey, USN	Nov. 7, 2024	

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.

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	Oct. 4, 2024
Gen. Randell Reed, USAF	Oct. 4, 2024	

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	Aug. 2, 2024
Gen. Steven S. Nordhaus, USAF	Oct. 15, 2024	

*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	Feb. 5, 2024
Gen. Gregory Guillot, USAF	Feb. 5, 2024	

DOD

TRANSCOM Commander Gen. Randall Reed (center) visits the Defense Logistics Agency, which is TRANSCOM's largest customer.

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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

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:
CMSSF John F. Bentivegna


USSF

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


USSF

CMSSF John F. Bentivegna, Chief Master Sergeant of the Space Force

Space Staff

- **Deputy Chief of Space Operations for Personnel** — Katharine Kelley, CIV
- **Deputy Chief of Space Operations for Intelligence** — Maj. Gen. Gregory J. Gagnon, ★★
- **Deputy Chief of Space Operations for Operations, Cyber, and Nuclear** — Lt. Gen. DeAnna M. Burt, ★★★
- **Deputy Chief of Space Operations for Strategy, Plans, Programs, and Requirements** — Lt. Gen. Shawn N. Bratton, ★★★
- **Assistant Chief of Space Operations for Future Concepts & Partnerships** — Air Marshal Paul Godfrey, ★★★
- **Director of Staff** — Maj. Gen. Steven P. Whitney, ★★

FIELD COMMANDS

- ★★★ **Space Operations Command (SpOC)** p. 96
- ★★★ **Space Systems Command (SSC)** p. 96
- ★★ **Space Training & Readiness Command (STARCOM)** p. 97
- ★★★ **Space Futures Command** (Proposed Command)

SERVICE COMPONENT FIELD COMMANDS

- ★ **Space Forces Indo-Pacific Command (SPACEFOR-INDOPAC)**
- **Space Forces Central Command (SPACEFOR-CENT)**
- ★ **Space Forces European and Africa Commands (SPAFOREUR-AF)**
- ★★★ **Space Forces Space Command (SPACEFOR-SPACE) (S4S)***

*Space Delta 5, Vandenberg SFB, Calif., Combined Space Operations Center
*Space Delta 15, Schriever SFB, Colo., National Space Defense Center

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/

FIELD OPERATING AGENCY

National Space Intelligence Center

Headquarters: Wright-Patterson AFB, Ohio
Date of Current Designation: June 28, 2024 (formerly Space Delta 18)
Reports to: Chief of Space Operations
Mission: Deliver intelligence and technical expertise to leaders, joint force warfighters, and acquisition professionals to ensure freedom of access and maneuver in and throughout the space domain.
Personnel: ~500
www.spaceforce.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/3820323/national-space-intelligence-center/

SpOC

SPACE OPERATIONS COMMAND

Peterson SFB, Colo.
EST. 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.
- **Mission Delta 2** Peterson SFB, Colo.
- **Mission Delta 3** Peterson SFB, Colo.
- **Mission 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.
- **Mission Delta 31** Peterson SFB, Colo.

Headquarters: Peterson SFB, Colo.
Date of activation: Oct. 21, 2020
Commander: Lt. Gen. David N. Miller Jr.
*__Personnel:__ Active-duty USSF: 4,290; Active-duty USAF: 24; Civilians: 1,837

*The Air Force Personnel Center did not confirm by press time whether the entity it reported as "U.S. Space Force Forces," the biggest of any organization in the Space Force, is the same as Space Operations Command or only partly made up by SpOC, for which it didn't report separate figures.

Space Base Delta 1
Peterson SFB, Colo.
Mission Support

Space Base Delta 2
Buckley SFB, Colo.
Mission Support

Mission Delta 2
Peterson SFB, Colo.
Space Domain Awareness

Mission Delta 3
Peterson SFB, Colo.
Electromagnetic Warfare

Mission Delta 4
Buckley SFB, Colo.
Missile Warning

Space Delta 6
Schriever SFB, Colo.
Cyberspace Warfare

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

Mission Delta 31
Peterson SFB, Colo.
Position, Navigation, and Timing/ Satellite Control Network (PNT & SCN) Integrated Mission Delta

SSC

SPACE SYSTEMS COMMAND

Los Angeles AFB, Calif.
EST. 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.

Headquarters: Los Angeles AFB, Calif.
Date of activation: Aug. 13, 2021
Commander: Lt. Gen. Philip A. Garrant
Personnel: Active-duty USSF: 1,102; Active-duty USAF: 7; Civilians: 2,743

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

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

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

STARCOM

SPACE TRAINING & READINESS COMMAND

Peterson SFB, Colo.
EST. 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

Commander
Maj. Gen. Timothy A. Sejba

- **Space Delta 1** Vandenberg SFB, Calif.
- **Space Delta 10** Patrick Space Force Base, Fla.
- **Space Delta 11** Schriever SFB, Colo.
- **Space Delta 12** Schriever SFB, Colo.
- **Space Delta 13** Maxwell AFB, Ala.

Headquarters: Peterson SFB, Colo.*
Date of activation: Aug. 23, 2021
Commander: Maj. Gen. Timothy A. Sejba
Personnel: Active-duty USSF: 1,466; Active-duty USAF: 13; Civilians: 251

Space Delta 1
Vandenberg SFB, Calif.
Training

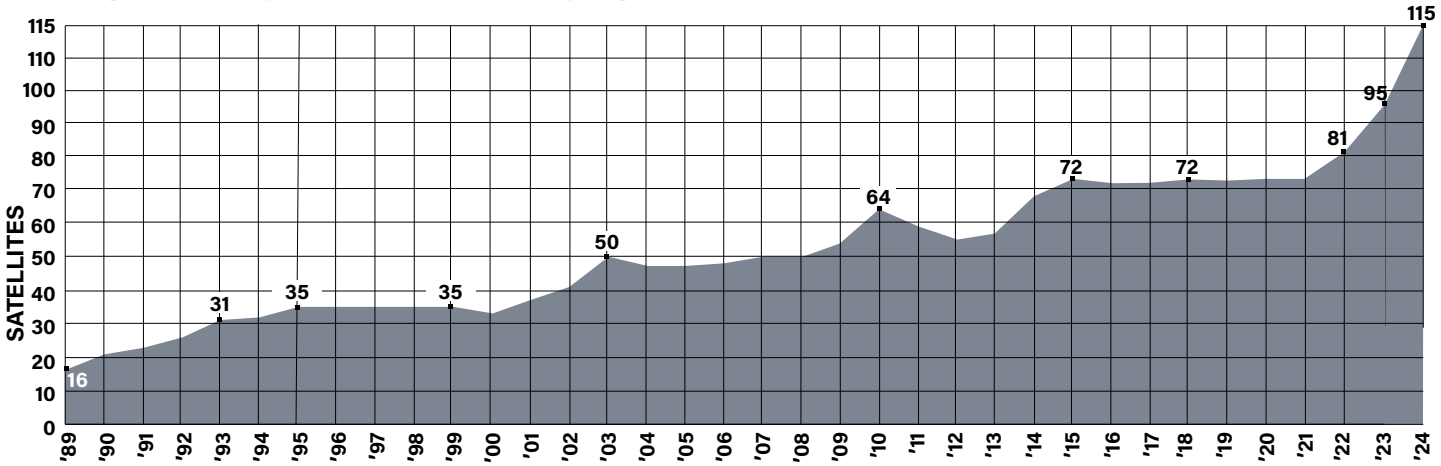
Space Delta 10
Patrick SFB, Fla.
Doctrine and Wargaming

Space Delta 11
Schriever SFB, Colo.
Range and Aggressor

Space Delta 12
Schriever SFB, Colo.
Test and Evaluation

Space Delta 13
Maxwell AFB, Ala.
Education

TOTAL SATELLITES OVER TIME



SATELLITES IN SERVICE OVER TIME

(As of June 30, 2024)

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	0
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	5
EPS													2
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
LDPE										1	2	3	3
Milstar	5	5	5	5	5	5	5	5	4	4	5	4	5
ORS-5								1	1	1	1	1	1
SBIRS GEO*	1	2	2	2	2	3	4	4	4	5	6	6	6
SBSS	1	1	1	1	1	1	2	1	1	1	1	1	0
SDA Transport												19	19
SDA Tracking												4	8
WGS	3	3	4	6	7	7	9	10	10	10	10	10	10
MUOS												5	5
UFO												4	4
WSF-M						1	1	1	1	1	1	1	1
TOTAL SATELLITES*	**55+**	**57+**	**68+**	**72+**	**71+**	**71+**	**72+**	**71+**	**72+**	**73+**	**81+**	**95+**	**115+**

*Two additional SBIRS payloads are on host satellites in highly elliptical orbits.
**Classified systems not listed.

U.S. SPACE FORCE DEMOGRAPHICS

(As of Sept. 30, 2024, except where noted with *)

*The Air Force Personnel Center did not provide demographic information for the ranks of O-7 to O-10 for 2024. The figures shown here for those ranks are as of Sept. 30, 2023. Any total with an asterisk (*) is an estimate based on the 2023 demographics of these officers and the 2024 demographics of others.

ENLISTED RANKS	E-1	%	E-2	%	E-3	%	E-4	%	E-5	%	E-6	%	E-7	%	E-8	%	E-9	%	Enlisted Total	%	Active Duty Total*	%
TOTAL	171		198		985		785		1,059		856		625		134		51		4,864		9,411*	
SEX																						
Female	20	11.7	38	19.2	194	19.7	157	20.0	159	15.0	139	16.2	109	17.4	35	26.1	12	23.5	863	17.7	1,781*	18.4
Male	151	88.3	160	80.8	791	80.3	628	80.0	900	85.0	717	83.8	516	82.6	99	73.9	39	76.5	4,001	82.3	7,630*	81.6
ETHNICITY																					9,348*	
Declined to Respond	0	0.0	0	0.0	2	0.2	5	0.6	17	1.6	14	1.6	21	3.4	7	5.2	4	7.8	70	1.4	987*	10.5
Hispanic or Latino	27	15.8	35	17.7	227	23.0	191	24.3	199	18.8	153	17.9	106	17.0	15	11.2	6	11.8	959	19.7	1,409*	15.0
Not Hispanic or Latino	144	84.2	163	82.3	756	76.8	589	75.0	843	79.6	689	80.5	498	79.7	112	83.6	41	80.4	3,835	78.8	7,015*	74.5
RACE																					9,411*	
American Indian or Alaska Native	1	0.6	1	0.5	16	1.6	9	1.1	10	0.9	3	0.4	2	0.3	1	0.7	0	0.0	43	0.9	63*	0.7
Asian	9	5.3	13	6.6	80	8.1	52	6.6	57	5.4	36	4.2	24	3.8	3	2.2	5	9.8	279	5.7	683*	7.3
Black or African American	33	19.3	23	11.6	113	11.5	87	11.1	113	10.7	79	9.2	59	9.4	16	11.9	3	5.9	526	10.8	824*	8.7
Declined to Respond	1	0.6	0	0.0	4	0.4	3	0.4	26	2.5	35	4.1	29	4.6	11	8.2	5	9.8	114	2.3	378*	4.0
Identified More Than One Race	17	9.9	32	16.2	102	10.4	75	9.6	64	6.0	54	6.3	43	6.9	10	7.5	0	0.0	397	8.2	627*	6.7
Native Hawaiian or Other Pacific Islander	0	0.0	2	1	12	1.2	16	2	2	0.2	11	1.3	8	1.3	2	1.5	1	2.0	54	1.1	82*	0.9
White	110	64.3	127	64.1	658	66.8	543	69.2	787	74.3	638	74.5	460	73.6	91	67.9	37	72.5	3,451	70.9	6,754*	71.8
HIGHEST EDUCATIONAL ACHIEVEMENT																					9,408*	
No High School Diploma or GED	3	1.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1	3*	0.0
High School Diploma/GED	157	91.8	161	81.3	459	46.6	82	10.4	152	14.4	110	12.9	35	5.6	4	3.0	2	3.9	1,162	23.9	1,162*	12.3
Some College	7	4.1	26	13.1	265	26.9	527	67.1	516	48.8	209	24.4	53	3.9	0	0.0	0	0.0	1,603	33.0	1,603*	17.0
Associate Degree	0	0.0	0	0.0	17	1.7	58	7.9	224	21.2	285	33.3	198	31.7	34	25.4	5	9.8	821	16.9	821*	8.7
Bachelor's Degree	1	0.6	0	0.0	48	4.9	92	11.7	143	13.5	198	23.1	247	39.5	59	44.0	20	39.2	808	16.6	2,548*	27.1
Master's Degree	0	0.0	0	0.0	3	0.3	6	0.8	23	2.2	54	6.3	92	14.7	34	25.4	24	47.1	236	4.9	2,737*	29.1
Ph.D. or Professional Degree	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	2.2	0	0.0	3	0.1	129*	1.4
Unknown, None, or Not Applicable	3	1.8	11	5.6	193	19.6	20	2.5	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	228	4.7	408*	4.3
																					9,411*	
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	556		584		1,252		1,140		755		236		11		6		5		2		4,547*	
SEX																						
Female	150	27.0	167	28.6	242	19.3	199	17.5	126	16.7	33	14.0	0	0.0	0	0.0	1	20	0	0.0	918*	20.2
Male	406	73.0	417	71.4	1,010	80.7	941	82.5	629	83.3	203	86.0	11	100	6	100	4	80	2	100	3,629*	79.8
ETHNICITY																						
Declined to Respond	175	31.5	173	29.6	247	19.7	129	11.3	185	24.5	8	3.4	0	0.0	0	0.0	0	0.0	0	0.0	917*	20.2
Hispanic or Latino	69	12.4	59	10.1	151	12.1	101	8.9	60	7.9	10	4.2	0	0.0	0	0.0	0	0.0	0	0.0	450*	9.9
Not Hispanic or Latino	312	56.1	352	60.3	854	68.2	910	79.8	510	67.5	218	92.4	11	100	6	100	5	100	2	100	3,180*	69.9
RACE																						
American Indian or Alaska Native	2	0.4	1	0.2	7	0.6	7	0.6	2	0.3	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	20*	0.4
Asian	61	11.0	51	8.7	128	10.2	102	8.9	54	7.2	8	3.4	0	0.0	0	0.0	0	0.0	0	0.0	404*	8.9
Black or African American	36	6.5	43	7.4	92	7.3	70	6.1	41	5.4	13	5.5	2	18.2	1	16.7	0	0.0	0	0.0	298*	6.6
Declined to Respond	32	5.8	35	6.0	68	5.4	64	5.6	53	7.0	12	5.1	0	0.0	0	0.0	0	0.0	0	0.0	264*	5.8
Identified More Than One Race	36	6.5	30	5.1	77	6.2	56	4.9	23	3.4	8	3.4	0	0.0	0	0.0	0	0.0	0	0.0	230*	5.1
Native Hawaiian or Other Pacific Islander	4	0.7	3	0.5	10	0.8	9	0.8	2	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	28*	0.6
White	385	69.2	421	72.1	870	69.5	832	73.0	580	76.8	194	82.2	9	81.8	5	83.3	5	100	2	100	3,303*	72.6
HIGHEST EDUCATIONAL ACHIEVEMENT																						
Bachelor's Degree	429	77.2	444	76.0	662	52.9	192	16.8	12	1.6	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	1,740*	38.3
Master's Degree	29	5.2	107	18.3	559	44.6	904	79.3	672	89.0	206	87.3	11	100	6	100	5	100	2	100	2,501*	55.0
Ph.D. or Professional Degree	2	0.4	4	0.7	8	0.6	28	2.5	58	7.7	26	11	0	0.0	0	0.0	0	0.0	0	0.0	126*	2.8
Unknown, None, or Not Applicable	96	17.3	29	5.0	23	1.8	16	1.4	13	1.7	3	1.3	0	0.0	0	0.0	0	0.0	0	0.0	180*	4.0

Active Duty as of Sept. 30, 2024: 9,415

SPACE FORCE PERSONNEL BY SFSC

As of Sept. 30, 2024

ENLISTED		Male/Female %	Total	% of Active Duty
1A1	Career Enlisted Aviator Manager	100/0	2	0.02
1A3	Airborne Mission Sys Operator	75/25	4	0.04
1A8	Airborne ISR	100/0	4	0.04
1C1	Air Traffic Control	100/0	1	0.01
1C6	Space Sys Ops	100/0	1	0.01
1D7	Defensive Cyber Ops	100/0	11	0.12
1N1	Imagery Analysis	60/40	10	0.11
1N2	SIGINT	50/50	4	0.04
1N3	Cryptologic Language Analyst	50/50	2	0.02
1N4	Network Intel Analysis	100/0	1	0.01
1N8	Targeting Analyst	100/0	1	0.01
1U0	RPA Sensor Operator Manager	100/0	6	0.06
2A0	Avionics	100/0	1	0.01
2A6	Aircraft Sys	90/10	10	0.11
2A9	Bomber/Spc Integrated Comms/Nav/Mission Sys	50/50	2	0.02
2W1	Aircraft Armament Sys	100/0	1	0.01
3E2	Pavements and Construction Eqpmt	100/0	1	0.01
3E7	Fire Protection	100/0	1	0.01
3F0	Personnel	100/0	1	0.01
3F2	Education and Training	100/0	1	0.01
5C0	Cyper Ops (USSF)	85/15	1,704	18.10
5I0	ISR Supt	73/27	613	6.51
5I2	Signals Intel Analyst (USSF)	77/23	512	5.44
5S0	Space Sys Ops (USSF)	85/15	1,625	17.26
5Z7	Space Ops Sr Enl Leader	75/25	4	0.04
5Z8	Space Ops Supt	74/26	135	1.43
5Z9	Space Ops	78/22	45	0.48
8A3	Protocol	0/100	1	0.01
8B2	Academy Military Training NCO	100/0	1	0.01
8F0	First Sergeant	100/0	5	0.48
8G0	Premier Honor Guard	85/15	26	0.28
8I0	Superintendent	0/100	1	0.01
8P1	Defense Attache	100/0	1	0.01
8T0	PME Instructor	80/20	5	0.05
9A2	Enl Airman Awaiting Discharge, Separation, or Ret for Reasons Within Ctrl	100/0	1	0.01
9E0	Command Chief Master Sergeant	100/0	1	0.01
9S0	Chief Master Sergeant of the Space Force	100/0	1	0.01
9S1	Scientific Applications Spc	100/0	3	0.03
9T0	Basic Enl Amn	85/15	131	1.39
9T2	Pre-Cadet Assignee	56/44	9	0.10
	TOTAL SPACE FORCE ENLISTED		**4,889**	

Source: Data provided by the Department of the Air Force.

OFFICERS		Male/Female %	Total	% of Active Duty
10C	Ops Cmdr	88/12	8	0.08
12R	Recon/Surveillance/EW CSO	100/0	1	0.01
13A	Astronaut	100/0	1	0.01
13S	Space Ops	78/22	1,783	18.94
14N	Intelligence	63/37	244	2.59
16F	Regional Affairs Strategist	0/100	1	0.01
16G	AF Ops Staff Officer	78/22	23	0.24
16K	Software Development Officer	100/0	1	0.01
16P	Political-Military Affairs Strategist	50/50	8	0.08
16R	Planning and Programming	73/27	15	0.16
17D	Warfighter Comms Ops	82/100	100	1.06
17S	Cyberspace Effects Ops	86/14	145	1.54
30C	Support Cmdr	67/33	3	0.03
38F	Force Support Officer	100/0	1	0.01
60C	Sr Materiel Leader-Upper Echelon	83/17	6	0.06
61D	Physicist/Nuclear Eng	100/0	2	0.02
62E	Development Eng	86/14	692	7.35
62S	Materiel Leader	50/50	2	0.02
63A	Acquisition Mgr	84/16	885	9.4
63G	Sr Materiel Leader-Lower Echelon	84/16	34	0.36
65F	Financial Mgmt	100/0	1	0.01
63S	Materiel Leader	84/16	76	0.81
80C	Cmdr, Cadet Squadron, USAF Academy	25/75	4	0.04
81C	Instructor	100/0	2	0.02
81D	ROTC Detachment Commander and Professor of Aerospace Studies	67/33	6	0.06
81T	Instructor	74/26	46	0.49
82A	Academic Program Mgr	100/0	1	0.01
83R	Recruiting Svc	75/25	8	0.08
87G	Wing IG	100/0	3	0.03
87I	Director	100/0	2	0.02
88A	Aide-de-camp	44/56	9	0.1
88B	Protocol Officer	0/100	1	0.01
88C	Sexual Assault Response Coord	0/100	1	0.01
90G	General Officer	96/4	25	0.27
91C	Cmdr	100/0	6	0.06
91W	Wing Cmdr	81/19	31	0.33
92P	Physician Asst. Student	0/100	1	0.01
92S	Student Officer Authorization	77/23	201	2.13
92T	Pilot Trainee	100/0	1	0.01
97E	Executive Officer	82/18	45	0.48
99A	Unspecified AFSC	75/25	8	0.08
	TOTAL SPACE FORCE OFFICERS		**4,433**	

UNKNOWN/OTHER		Male/Female %	Total	% of Active Duty
	Unknown/Other	75/25	93	0.99
TOTAL SPACE FORCE ACTIVE DUTY		**Male/Female**	**Total**	**% of Active Duty**
	TOTAL SPACE FORCE		**9,415**	**100.00**

Senior Airman Joshua Hollis

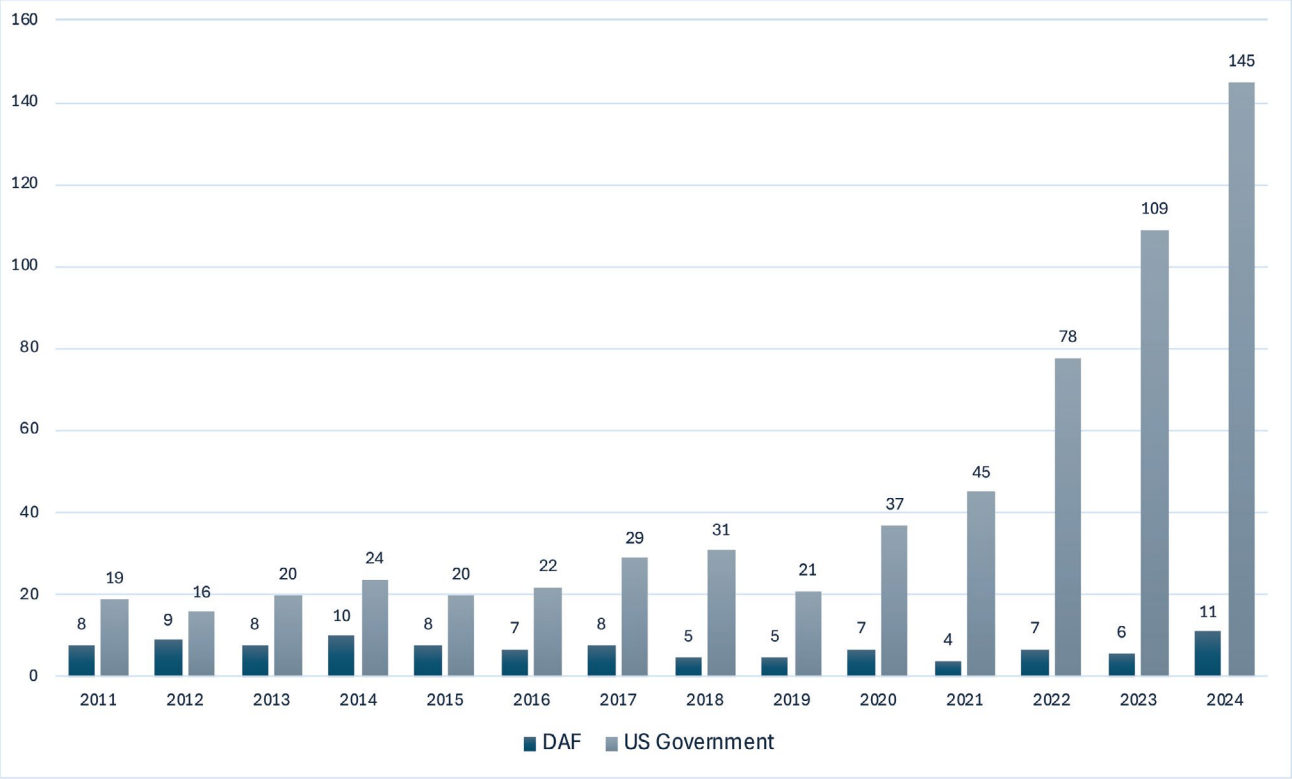
Reserve Officers' Training Corps Cadets from Colorado University Boulder Detachment 105 talk with Airmen and Guardian Leadership School students at Buckley Space Force Base, Colo., in 2024. During the visit, cadets and future noncommissioned officers engaged in open discussions where they shared perspectives and insights into their journeys and aspirations.

U.S. SPACE FORCE BUDGET SUMMARY

Funding ($ billions)	2024	2025 CR (Estimated)
Operations & Maintenance	$4.9	$4.9
Research, Development, Test & Evaluation	18.7	18.7
Military Personnel	1.3	1.3
Procurement	4.1	4.1
TOTAL	**29**	**29**
Authorized Manpower	**2024**	**2025 CR (Estimated)**
Military	9,400	9,400
Civilian	5,068	5,068
TOTAL FORCE PERSONNEL	**14,468**	**14,468**

Source: Further Consolidated Appropriations Act, 2024

DAF LAUNCHES VS U.S. GOVERNMENT LAUNCHES 2011-2024



DAF LAUNCH ATTEMPTS 2011-2024

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
EELV_HEAVY	1	1	1			1			1	1	1	1	1	1	10
EELV_INTERMEDIATE	3	5	4	5	4	5	3	4	3	2	2	3	1	1	45
EELV_MEDIUM	2	3	3	5	4	1	2			1					21
INTERMEDIATE									1			1	2		4
LIGHT	2						1						1		4
MEDIUM							2	1		3	1	2	1	9	19
TOTAL	**8**	**9**	**8**	**10**	**8**	**7**	**8**	**5**	**5**	**7**	**4**	**7**	**6**	**11**	**103**

U.S. LAUNCH ATTEMPTS 2011-2024

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total U.S. Launch Attempts	19	16	20	24	20	22	29	31	21	37	45	78	109	145

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

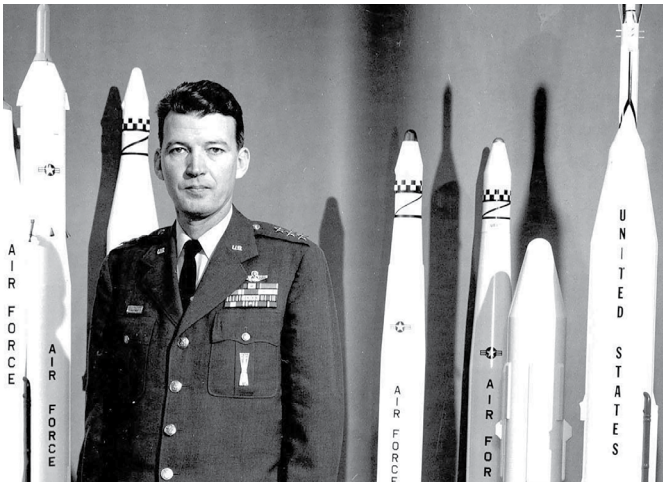
BALLISTIC MISSILE OFFICE		
Maj. Gen. John W. Hepfer	Oct. 1, 1979	Oct. 31, 1980
Maj. Gen. Forrest S. McCartney	Oct. 31, 1980	May 19, 1982
Maj. Gen. Aloysius G. Casey	May 19, 1982	Sept. 30, 1986
Maj. Gen. Edward P. Berry Jr.	Sept. 30, 1986	March 14, 1989

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

Staff Sgt. Shelby Thurman

A defender belonging to the 117th Security Forces Squadron guards the 117th Air Refueling Wing's KC-135R Stratotanker fleet in March, at Sumpter Smith Joint National Guard Base, Ala. The mission of the 117th ARW is to provide worldwide air refueling, airlift, support, logistics, intelligence, and medical services in support of its community, state, and the nation.

Domestic

Listings include installations owned, operated by, or hosting substantial Department of the Air Force activities. For a map, see p. 106. For sources and definitions see p. 117.

Active Reserve Guard Range USSF

ALABAMA

Dannelly Field, Montgomery Regional Airport, Ala. 36108. ***Nearest city:*** Montgomery. ***Phone:*** 334-394-7200. ***Acres***: 187. ***Total Force:*** civilian, 0; military, 1,155. ***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, 254. ***Component:*** ANG. ***Unit/mission:*** 280th Special Operations Communications Squadron, strategic air defense.

Maxwell AFB, Ala. 36112. ***Nearest city:*** Montgomery. ***Phone:*** 334-953-1110. ***Acres:*** 3,542 (Maxwell), 355 (Gunter annex). ***Total Force:*** civilian, 2,415; military, 3,741. ***Active-duty USAF:*** enlisted, 1,392; officer, 1,455; ***Active-duty USSF:*** enlisted, 11; officer, 57. ***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:*** Range 42 Driving Range.

Sumpter Smith JNGB, Birmingham-Shuttlesworth Intl. Airport, Ala. 35217. ***Nearest city:*** Birmingham. ***Phone:*** 205-714-2855. ***Acres:*** 134. ***Total Force:*** civilian, 0; military, 1,820. ***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, 112. ***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, 677; military, 3,639. ***Active-duty USAF:*** enlisted, 2,818; officer, 307. ***Active-duty USSF:*** enlisted, 8; officer, 5. ***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.

JB Elmendorf-Richardson, Alaska 99506. ***Nearest city:*** Anchorage. ***Phone:*** 907-552-1110. ***Acres:*** 13,375 (Elmendorf), 59,790 (Richardson). ***Total Force:*** civilian, 282; military, 13,470. ***Active-duty USAF:*** enlisted, 4,513; officer, 831. ***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:*** 1,153,007 (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, 1,593; military, 6,760. ***Active-duty USAF:*** enlisted, 4,951; officer, 777. ***Active-duty USSF:*** enlisted, 3; 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. ***Acres:*** 60. ***Total Force:*** civilian, 0; military, 824. ***Component:*** ANG. ***Unit/mission:*** 161st ARW, air mobility operations.

■ **Luke AFB,** Ariz. 85309. ***Nearest city:*** Glendale. ***Phone:*** 623-856-1110. ***Acres:*** 5,942. ***Total Force:*** civilian, 982; military, 6,126. ***Active-duty USAF:*** enlisted, 3,708; officer, 425. ***Active-duty USSF:*** enlisted, 0; officer, 1. ***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. ***Acres:*** 98. ***Total Force:*** civilian, 0; military, 1,362. ***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, 963. ***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, 646; military, 4,893. ***Active-duty USAF:*** enlisted, 2,966; officer, 439. ***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, 821; military, 4,435. ***Active-duty USAF:*** enlisted, 2,778; officer, 470. ***Active-duty USSF:*** enlisted, 23; officer, 18. ***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, 1,691. ***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, 4,204; military, 2,137. ***Active-duty USAF:*** enlisted, 2,083; officer, 621. ***Active-duty USSF:*** enlisted, 0; officer, 24. ***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:*** 14. ***Total Force:*** civilian, 769; military, 784. ***Active-duty USAF:*** enlisted, 299; officer, 236. ***Active-duty USSF:*** enlisted, 48; officer, 570. ***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:*** 2,386. ***Total Force:*** civilian, 0; military, 6,142. ***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, 457; military, 961. ***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 SFS,** Calif. 94019. ***Nearest city:*** Half Moon Bay. ***Phone:*** 650-728-3246. ***Acres:*** 55. ***Total Force:*** civilian, 1; military, 1. ***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, 279. ***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, 1,411; military, 9,068. ***Active-duty USAF:*** enlisted, 5,334; officer, 1,237. ***Active-duty USSF:*** enlisted, 0; officer, 6. ***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:*** 101,454. ***Total Force:*** civilian, 1,159; military, 1,816. ***Active-duty USAF:*** enlisted, 1,356; officer, 296. ***Active-duty USSF:*** enlisted, 465; officer, 276. ***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:*** 4,145. ***Total Force:*** civilian: 1,125; military, 5,660. ***Active-duty USAF:*** enlisted, 890; officer, 213. ***Active-duty USSF:*** enlisted, 501; officer, 202. ***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, 64; military, 302. ***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, 3,614; military, 4,702. ***Active-duty USAF:*** enlisted, 1,955; officer, 469. ***Active-duty USSF:*** enlisted, 815; officer, 807. ***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, 1,306. ***Active-duty USAF:*** enlisted, 356; officer, 107. ***Active-duty USSF:*** enlisted, 1,064; officer, 645. ***Owning command:*** USSF. ***Unit/mission:*** Space Base Delta 1, base operations (USSF); 310th SW (AFRC), space operations; Det. 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:*** 18,686. ***Total Force:*** civilian, 1,607; military, 2,058. ***Active-duty USAF***: enlisted, 1,162; officer, 925. ***Active-duty USSF***: enlisted, 5; officer, 61. ***Cadet wing:*** 59. ***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:*** 152. ***Total Force:*** civilian, 181; 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, 4,767. ***Active-duty USAF:*** enlisted, 2,901; officer, 354. ***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:*** 85. ***Total Force:*** civilian, 402; military, 1,952. ***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, 1,336; military, 3,267. ***Active-duty USAF:*** enlisted, 1,944; officer, 1,251. ***Active-duty USSF:*** enlisted, 92; officer, 119. ***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, 34; military, 184. ***Owning command:*** ACC. ***Unit/mission:*** 598th Range Squadron, training.

Cape Canaveral SFS, Fla. 32920. ***Nearest city:*** Cocoa Beach. ***Phone:*** 321-494-5933. ***Acres:*** 15,948. ***Total Force:*** civilian, 506; military, 402. ***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:*** civilian, 506; military, 402. ***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:*** 455,407. ***Total Force:*** civilian, 5,892; military, 10,198. ***Active-duty USAF:*** enlisted, 4,311; officer, 1,375 ***Active-duty USSF:*** enlisted, 49; officer, 24. ***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.

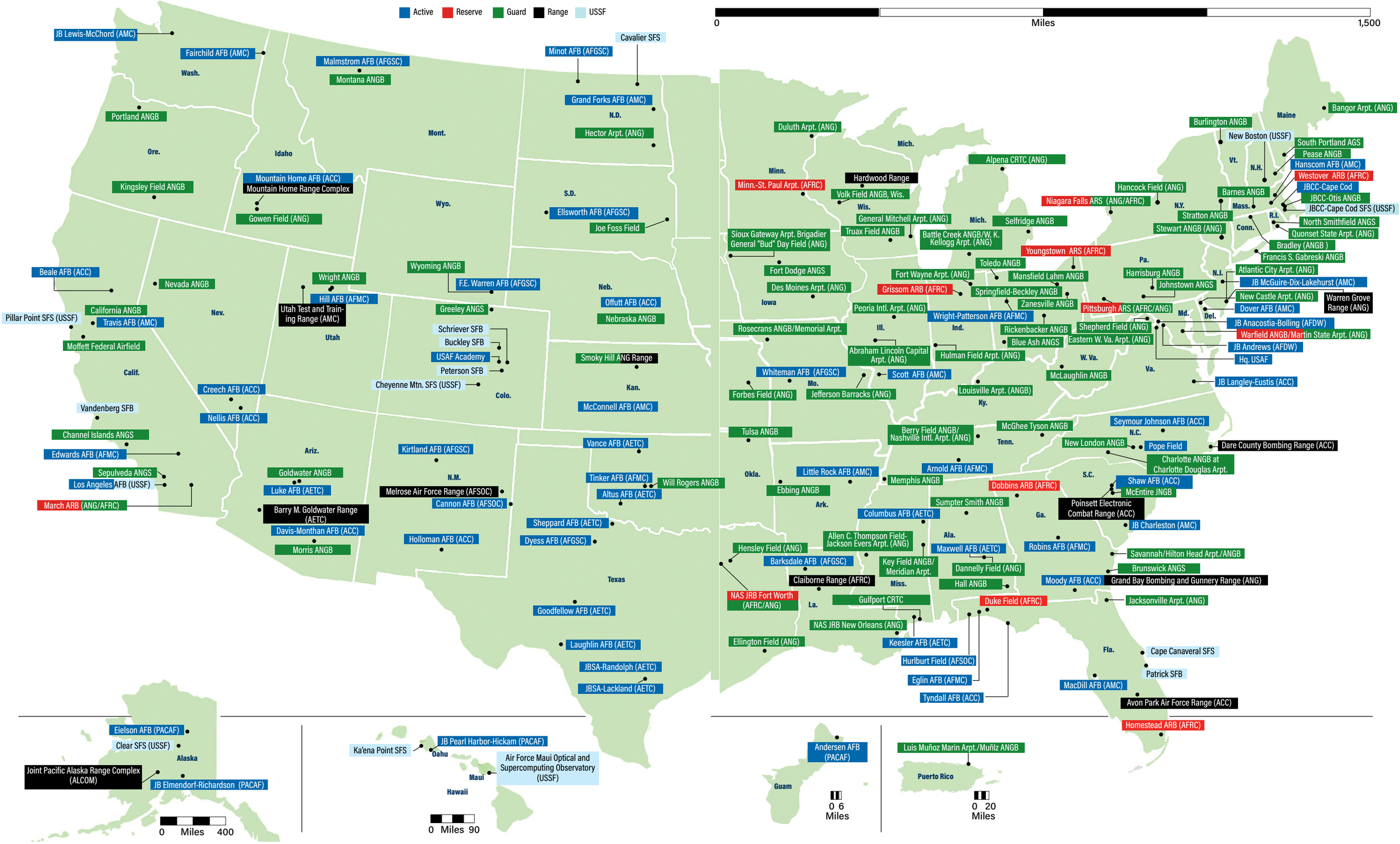
Hurlburt Field, Fla. 32544. ***Nearest city:*** Fort Walton Beach. ***Phone:*** 850-884-1110. ***Acres:*** 6,341. ***Total Force:*** civilian, 1,645; military, 7,791. ***Active-duty USAF:*** enlisted, 5,822; officer, 2,154. ***Active-duty USSF:*** enlisted, 18; officer, 6. ***Owning command:*** AFSOC. ***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, 1,024. ***Component***: ANG. ***Unit/mission:*** 125th FW, fighter, ISR operations.

MacDill AFB, Fla. 33621. ***Nearest city:*** Tampa. ***Phone:*** 813-828-1110. ***Acres:*** 5,834. ***Total Force:*** civilian, 0; military, 7,240. ***Active-duty USAF:*** enlisted, 2,835; officer, 681. ***Active-duty USSF:*** enlisted, 10; officer, 23. ***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, 1,648; military, 2,764. ***Active-duty USAF:*** enlisted, 1,222; officer, 393. ***Active-duty USSF:*** enlisted, 67; officer, 109. **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

USAF & USSF BASES IN THE U.S.



Courtesy photo

Airmen assigned to the 515th Air Mobility Operations Wing participate in events during the Air Mobility Team Rodeo at Joint Base Pearl Harbor-Hickam, Hawaii, Feb. 27, 2025. The AMT Rodeo exercises the mission-ready mindset and hones newly acquired skills.

Maj. Gen. Mason M. Patrick, Chief of American Expeditionary Forces' Air Service in WWI and 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:*** 28,806. ***Total Force:*** civilian, 2,730; military, 3,609. ***Active-duty USAF:*** enlisted, 2,361; officer, 408. ***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:*** 11. ***Total Force:*** civilian, 0; military, 192. ***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, 1,866. ***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, 4,453. ***Active-duty USAF:*** enlisted, 4,009; officer, 461. ***Active-duty USSF:*** enlisted, 0; officer, 1. ***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, 14,239; military, 4,893. ***Active-duty USAF:*** enlisted, 1,905; officer, 660. ***Active-duty USSF:*** enlisted, 1; officer, 13. ***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, 2; military, 950. ***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, 3,400. ***Active-duty USAF:*** enlisted, 2,130; officer, 191. ***Active-duty USSF:*** enlisted, 0; officer, 1. ***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, Det. 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, 6,471; military, 12,179. ***Active-duty USAF:*** enlisted, 4,294; officer, 1,167. ***Active-duty USSF:*** enlisted, 100; officer, 67. ***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, Det. 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:*** 354. ***Total Force:*** civilian, 0; military, 1,942. ***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, 464; military, 3,311. ***Active-duty USAF***: enlisted, 2,845; officer, 371. ***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, 830. ***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:*** 334. ***Phone:*** 800-942-3771. ***Total Force:*** civilian, 19; military, 1,822. ***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:*** 3,756. ***Total Force:*** civilian, 3,461; military, 6,831. ***Active-duty USAF:*** enlisted, 3,487; officer, 1,134. ***Active-duty USSF:*** enlisted, 0; officer, 3. ***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:*** 202. ***Total Force:*** civilian, 0; military, 1,288. ***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, 483; military, 1,513. ***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.

Staff Sgt. Tryphena Mayhugh

An Airman assigned to the 22nd Civil Engineer Squadron drives a snowplow on the flight line after a winter storm at McConnell Air Force Base, Kan., Jan. 10, 2025.

Hulman Field ANGB, Ind. 47803. ***Nearest city:*** Terre Haute. ***Phone:*** 812-877-5210. ***Acres:*** 121. ***Total Force:*** civilian, 0; military, 981. ***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, 939. ***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, 32; military, 169. ***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:*** 283. ***Total Force:*** civilian, 0; military, 1,122. ***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, 283; military, 1,757. 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, 4,485. ***Active-duty USAF:*** enlisted, 2,385; officer, 369. ***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 ANG 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, 1,126. ***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, 1,426; military, 6,183. ***Active-duty USAF:*** enlisted, 3,964; officer, 965. ***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, 2,906. ***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:*** 122. ***Total Force***: civilian, 209; military, 1,371. ***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, 28; military, 471. ***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***: 4,949. ***Total Force:*** civilian, 0; military, 10,127. ***Active-duty USAF:*** enlisted, 3,820; officer, 1,571. ***Active-duty USSF:*** enlisted, 96; officer, 35. ***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, 2,775; military, 1,444. ***Active-duty USAF:*** enlisted, 727; officer, 760. ***Active-duty USSF:*** enlisted, 18; officer, 55. ***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, 268; military, 2,204. ***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, 1; military, 42. ***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, 268; military, 2,204. ***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:*** 2,147. ***Total Force:*** civilian, 606; military, 3,020. ***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, 11; military, 121. ***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:*** 188. ***Total Force:*** civilian, 0; military, 1,218. ***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, 967; military, 2,331. ***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:*** 546. ***Total Force:*** civilian, 0; military, 1,197. ***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:*** 65. ***Total Force:*** civilian, 0; military, 852. ***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, 286; military, 1,146. ***Component:*** ANG. ***Unit/mission:*** 172nd AW, 183rd AS, 183rd Aeromedical Evacuation Squadron, air mobility operations.

Columbus AFB, Miss. 39710. ***Nearest city:*** Columbus. ***Phone:*** 662-434-1110. ***Acres:*** 4,919. ***Total Force:*** civilian, 592; military, 1,437. ***Active-duty USAF:*** enlisted, 984; officer, 508. ***Active-duty USSF:*** enlisted, 0; officer, 11. ***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:*** 103. ***Total Force:*** civilian, 742; military, 3,427. ***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:*** 1,042. ***Total Force:*** civilian, 1,478; military, 6,474. ***Active-duty USAF:*** enlisted, 3,772, officer, 711. ***Active-duty USSF:*** enlisted, 147, officer, 14. ***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, 1,258. ***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:*** 134. ***Total Force:*** civilian, 120; military, 1,184. ***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, 1,014. ***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, 941; military, 5,576. ***Active-duty USAF:*** enlisted, 3,273; officer, 530. ***Active-duty USSF:*** enlisted, 0; officer, 6. ***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***

Senior Airman Joshua Hastings

Royal Air Force Wing Cmdr. Paul Butler (right) tours a B-2 Spirit stealth bomber with RAF Flight Lt. Alain Branson, 393rd Bomb Squadron foreign exchange pilot, at Whiteman Air Force Base, Mo., Feb. 28, 2025. Base tours strengthen relationships with key leaders and help build an better understanding for operations with local and international audiences.

William Lewis

An A-10 Thunderbolt II assigned to the 175th Wing, Maryland Air National Guard (ANG), takes off for a mission in support of the U.S. Air Force Weapons School at Nellis Air Force Base, Neb., Feb. 19, 2025.

city: Great Falls. ***Phone:*** 406-731-1110. ***Acres:*** 2,598. ***Total Force:*** civilian, 616; military, 3,425. ***Active-duty USAF:*** enlisted, 2,761; officer, 502. ***Active-duty USSF:*** enlisted, 16; officer, 1. ***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, 821. ***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:*** 172. ***Total Force:*** civilian, 0; military, 1,697. ***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, 2,502; military, 6,881. ***Active-duty USAF:*** enlisted, 4,523; officer, 1,294. ***Active-duty USSF:*** enlisted, 6; officer, 4. ***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, 149; military, 3,412. ***Active-duty USAF:*** enlisted, 2,117; officer, 999. ***Active-duty USSF:*** enlisted, 2; officer, 0. ***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:*** 15,945. ***Total Force:*** civilian, 1,682; military, 8,224. ***Active-duty USAF:*** enlisted, 4,856; officer, 934. ***Active-duty USAF:*** enlisted, 5,879; officer, 1,346. ***Active-duty USSF:*** enlisted, 10; officer, 22. ***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, 1,077. ***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, 0. ***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, 1,191. ***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:*** 306. ***Total Force:*** civilian, 0; military, 1,398. ***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, 2,536; military, 12,843. ***Active-duty USAF:*** enlisted, 4,346; officer, 681. ***Active-duty USSF:*** enlisted, 1; officer, 0. ***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:*** 9,599. ***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.

Airman 1st Class Megan Delaine

A B-52 Stratofortress assigned to the 23rd Bomb Squadron at Minot Air Force Base, N.D., receives fuel from a KC-135 Stratotanker assigned to the 92nd Air Refueling Wing over the northern United States, March 31, 2025.

NEW MEXICO

Cannon AFB, N.M. 88103. ***Nearest city:*** Clovis. ***Phone:*** 575-784-1110. ***Acres:*** 2,960. ***Total Force:*** civilian, 0; military, 5,046. ***Active-duty USAF:*** enlisted, 4,058; officer, 921. ***Active-duty USSF:*** enlisted, 1; 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:*** 575-572-1110. ***Acres:*** 46,889. ***Total Force:*** civilian, 809; military, 4,517. ***Active-duty USAF:*** enlisted, 4,277; officer, 600. ***Active-duty USSF:*** enlisted, 1; officer, 3. ***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, 2,557; military, 4,926. ***Active-duty USAF:*** enlisted, 2,538; officer, 720. ***Active-duty USSF:*** enlisted, 24; officer, 142. ***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, 156; military, 1,135. ***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, 17; military, 2,008. ***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:*** 1,005. ***Total Force:*** civilian, 0; military, 1,990. ***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, 264; military, 1,836. ***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, 165; military, 1,542. ***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:*** 704-391-4100 (145th AW public affairs). ***Acres:*** 114. ***Total Force:*** civilian, 37; military, 297. ***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, 248; military, 1,036. ***Active-duty USAF:*** enlisted, 1,897; officer, 494. ***Active-duty USSF:*** enlisted, 0; officer, 3. ***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:*** 4,130. ***Total Force:*** civilian, 0; military, 5,796. ***Active-duty USAF:*** enlisted, 3,804; officer, 543. ***Active-duty USSF:*** enlisted, 0; officer, 1. ***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, 5; military, 11. ***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, 234; military, 1,554. ***Active-duty USAF:*** enlisted, 1,369; officer, 230. ***Active-duty USSF:*** enlisted, 16; officer, 18. ***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, 294; military, 1,743. ***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, 5,605. ***Active-duty USAF:*** enlisted, 4,758; officer, 706. ***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, 2; military, 0. ***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, 363; military, 2,543. ***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-

Senior Airman Christopher Ornelas Jr.

T-38C Talons from Vance Air Force Base, Okla., fly in formation over the skies of Oklahoma on Feb. 26, 2025. The T-38 trainer is going through extensive upgrades, while waiting for its replacement, the T-7A.

ley Intl. Airport, Ohio 45502. ***Nearest city:*** Springfield. ***Phone:*** 800-851-4503. ***Acres:*** 47. ***Total Force:*** civilian, 0; military, 570. ***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:*** 135. ***Total Force:*** civilian, 0; military, 1,041. ***Component:*** ANG. ***Unit/mission:*** 180th FW, fighter operations.

Wright-Patterson AFB, Ohio 45433. ***Nearest city:*** Dayton. ***Phone:*** 937-257-1110. ***Acres:*** 6,686. ***Total Force:*** civilian, 15,642; military, 7,139. ***Active-duty USAF:*** enlisted, 2,712; officer, 2,755. ***Active-duty USSF:*** enlisted, 169; officer, 113. ***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:*** 701. ***Total Force:*** civilian, 0; military, 1,357. ***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, 23; military, 106. ***Component:*** ANG. ***Unit/mission:*** 220th Engineering Installation Squadron.

OKLAHOMA

Altus AFB, Okla. 73523. ***Nearest city:*** Altus. ***Phone:*** 580-482-8100. ***Acres:*** 6,689. ***Total Force:*** civilian, 1,236; military, 1,373. ***Active-duty USAF:*** enlisted, 1,004; officer, 264. ***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:*** 5,787. ***Total Force:*** civilian, 0; military, 6,561. ***Active-duty USAF:*** enlisted, 2,808; officer, 855. ***Active-duty USSF:*** enlisted, 3; officer, 0. ***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:*** 100. ***Total Force:*** civilian, 0; military, 1,046. ***Component:*** ANG. ***Unit/mission:*** 138th FW, fighter, cyber operations, TACP training.

Vance AFB, Okla. 73705. ***Nearest city:*** Enid. ***Phone:*** 580-213-5000. ***Acres:*** 3,397. ***Total Force:*** civilian, 0; military, 1,381. ***Active-duty USAF:*** enlisted, 326; officer, 877. ***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, 1,172. ***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, 851. ***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, 1,401. ***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:*** 50. ***Total Force:*** civilian, 182; military, 1,010. ***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, 300. ***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, 135; military, 882. ***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, 752. ***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, 104. ***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, 284; military, 1,157. ***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, 1,389; military, 15,174. ***Active-duty USAF:*** enlisted, 2,946; officer, 473. ***Active-duty USSF:*** enlisted, 0; officer, 1. ***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, 688; military, 3,201. ***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:*** 12,520. ***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:*** 3,462. ***Total Force:*** civilian, 870; military, 5,631. ***Active-duty USAF:*** enlisted, 5,759; officer, 900. ***Active-duty USSF:*** enlisted, 0; officer, 1. ***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:*** 4,136. ***Total Force:*** civilian, 600; military, 3,133. ***Active-duty USAF:*** enlisted, 2,715; officer, 333. ***Active-duty USSF:*** enlisted, 3; officer, 0. ***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***: 240. ***Total Force:*** civilian, 0; military, 510. ***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, 455; military, 60. ***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 cofounder of the Air Force Association (now Air & Space Forces Association). ***Inn:*** 931-454-3051. ***Golf:*** Arnold.

Berry Field ANGB, Nashville Intl. Airport, Tenn. 37217. ***Nearest city:*** Nashville. ***Phone:*** 615-660-8062. ***Acres:*** 88. ***Total Force:*** civilian, 0; military, 1,379. ***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, 119; military, 1,598. ***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, 1,251. ***Component:*** ANG. ***Unit/mission:*** 164th AW, air mobility operations.

TEXAS

Dyess AFB, Texas 79607. ***Nearest city:*** Abilene. ***Phone:*** 325-696-1921. ***Acres:*** 6,359. ***Total Force:*** civilian, 480; military, 4,654. ***Active-duty USAF:*** enlisted, 3,833; officer, 501. ***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, 3,881. ***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:*** 1,199. ***Total Force:*** civilian, 640; military, 3,434. ***Active-duty USAF:*** enlisted, 2,847; officer, 464. ***Active-duty USSF:*** enlisted, 113; officer, 16. ***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, 10. ***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, 8,534; military, 14,699 (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, 6,374; military, 19,883. ***Active-duty USAF:*** enlisted, 9,490; officer, 2,641. ***Active-duty USSF:*** enlisted, 19; officer, 8. ***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, 0; military, 3,142. ***Active-duty USAF:*** enlisted, 1,507; officer, 1,226. ***Active-duty USSF:*** enlisted, 20; officer, 30. ***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:*** 5,712. ***Total Force:*** civilian, 0; military, 1,363. ***Active-duty USAF:*** enlisted, 447; officer, 903. ***Active-duty USSF:*** enlisted, 1; officer, 0. ***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, 133; military, 7,303. ***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, 235; military, 1,078. ***Active-duty USAF:*** enlisted, 5,081; officer, 593. ***Active-duty USSF:*** enlisted, 0; officer, 2. ***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:*** Clearfield. ***Phone:*** 801-777-1110. ***Acres:*** 6,669. ***Total Force:*** civilian, 13,026; military, 5,281. ***Active-duty USAF:***

enlisted, 3,425; officer, 684. ***Active-duty USSF:*** enlisted, 1; officer, 1. ***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, 1,540. ***Component:*** ANG. ***Unit/mission:*** 151st Wing, 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, 1,096. ***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, 5,343; military, 14,697. ***Active-duty USAF***: enlisted, 6,604; officer, 1,434. ***Active-duty USSF:*** enlisted, 4; officer, 13. ***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, 792; military, 4,750. ***Active-duty USAF:*** enlisted, 2,905; officer, 447. ***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, 525; military, 4,719 (McChord only. ***Active-duty USAF:*** enlisted, 2,585; officer, 492. ***Active-duty USSF:*** enlisted, 0; 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, 1,292. ***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:*** 85. ***Total Force:*** civilian, 0; military, 1,233. ***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, 2,903. ***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, 2,903. ***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:*** 126. ***Total Force:*** civilian, 1,026; military, 1,046. ***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:*** civilian, 0; military, 153 (includes Buechel AB). ***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:*** (part of Ramstein AB). ***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:*** 3,095. ***Total Force:*** civilian, 0; military, 8,120. ***Active-duty USAF:*** enlisted, 7,992; officer, 1,449. ***Active-duty USSF:*** enlisted, 121; officer, 39. ***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:*** civilian, 0; military, 2,623. ***Active-duty USAF:*** enlisted, 3,389; officer, 522. ***Active-duty USSF:*** enlisted, 2; officer, 7. ***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:*** civilian, 0; military, 118. ***Owning command:*** USSF. ***Unit/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:*** 1,237. ***Total Force:*** civilian, 0; military, 4,189. ***Active-duty USAF:*** enlisted, 4,189; officer, 469. ***Active-duty USSF:*** enlisted, 0; 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. ***Acres:*** 10,983. ***Total Force:*** civilian, 0; military, 5,987. ***Active-duty USAF:*** enlisted, 5,225; officer, 707. ***Active-duty USSF:*** enlisted, 62; 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:*** civilian, 0; military, 3,145. ***Active-duty USAF:*** enlisted, 2,492, officer, 298. ***Active-duty USSF:*** enlisted, 18; 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.

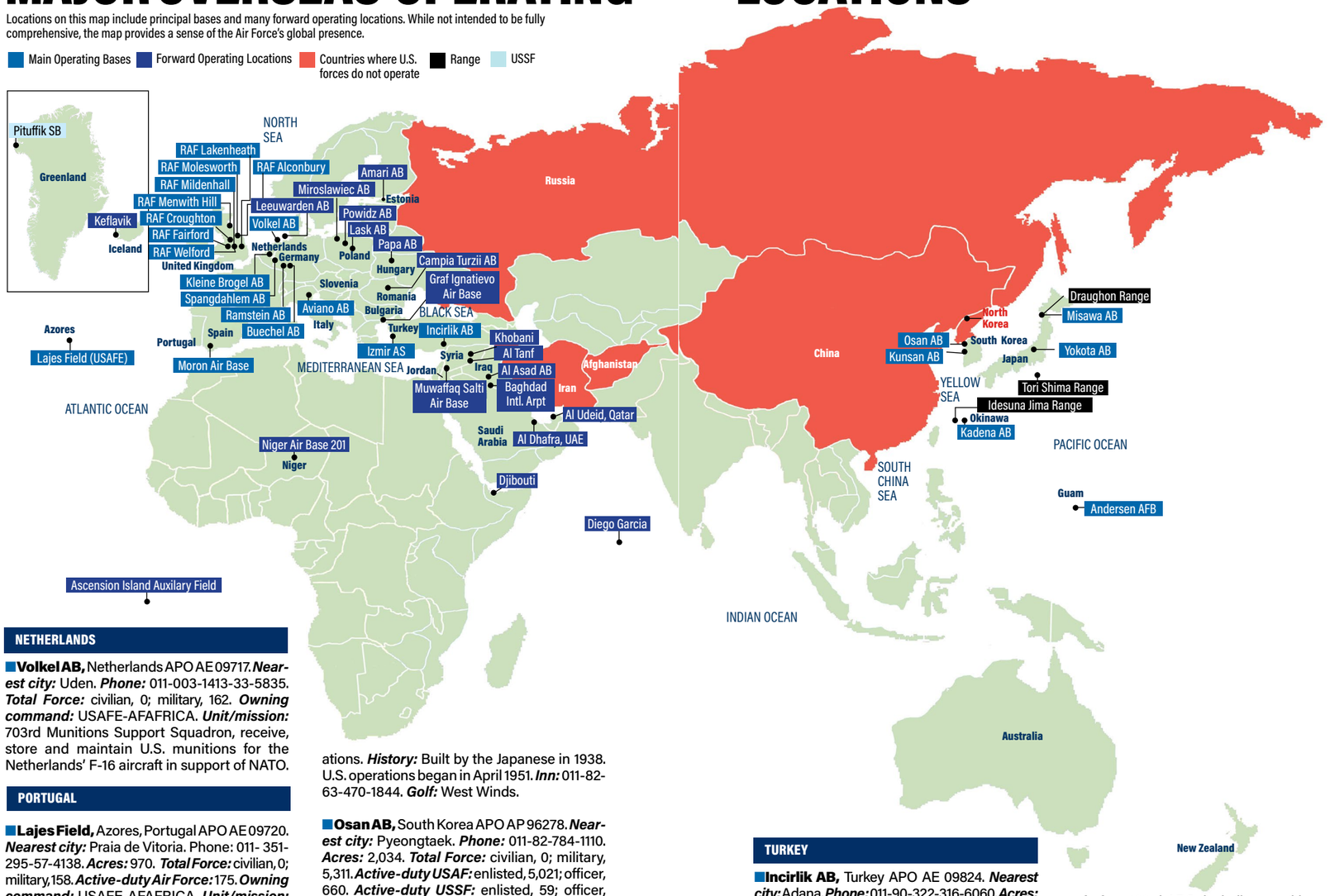
■**Tori Shima Range,** Japan (uninhabited island). ***Acres:*** 10. ***Owning command:*** PACAF. ***Unit/mission:*** managed by 18th Wing.

■**Yokota AB,** Japan APO AP 96328. ***Nearest city:*** Tokyo. ***Phone:*** 011-81-425-52-2510-5-1110. ***Acres:*** 1,750. ***Total Force:*** civilian, 0; military, 3,462. ***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.

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



NETHERLANDS

■**Volkel AB,** Netherlands APO AE 09717. ***Nearest city:*** Uden. ***Phone:*** 011-003-1413-33-5835. ***Total Force:*** civilian, 0; military, 162. ***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. ***Total Force:*** civilian, 0; military, 158. ***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:*** civilian, 0; military, 2,330. ***Active-duty USAF:*** enlisted, 2,231; officer, 184. ***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:*** 2,034. ***Total Force:*** civilian, 0; military, 5,311. ***Active-duty USAF:*** enlisted, 5,021; officer, 660. ***Active-duty USSF:*** enlisted, 59; officer, 20. ***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:*** civilian, 0; military 163. ***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:*** 3,352. ***Total Force:*** civilian, 0; military, 1,463. ***Active-duty USAF:*** enlisted, 1,363; officer, 139. ***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:*** civilain, 0; military, 46. ***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:*** civilian, 0; military, 312 (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:*** civilian, 0; military, 424. ***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:*** civilian, 0; military, 125. ***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:*** 011-44-1638-52-4800. ***Acres:*** 1,881. ***Total Force:*** civilian, 0; military, 5,162. ***Active-duty USAF:*** enlisted, 4,569; officer, 568. ***Active-duty USSF:*** enlisted, 28; 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:*** 011-44-01423-777895. ***Acres:*** 545. ***Total Force:*** civilian, 0; military, 3,243. ***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:*** civilian, 0; military, 424. ***Active-duty USAF:*** enlisted, 3,773; officer, 515. ***Active-duty USSF:*** enlisted, 2; officer, 2. ***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:*** civilian, 0; military, 312 (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 websites, 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.

WEAPONS & PLATFORMS

By Aaron M.U. Church

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Almanac Weapons & Platforms is a researched publication derived from publicly available sources, with significant contributions from Air & Space Forces Magazine's independent reporting, as well as data and materials provided through collaboration with the Secretary of the Air Force Public Affairs.

BOMBER AIRCRAFT

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 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. The fleet completed its most comprehensive upgrade in 2020 by adding an all-digital glass cockpit, Fully Integrated Data Link (FIDL) to enhance targeting/LOS/BLOS C2, and an internal test system to simplify troubleshooting. FY25 launches Load Adaptable Modular (LAM) pylon installations to enable externally mounted long-range standoff, outsized hypersonic, or 5,000 lb-class guided weapons. LAM will expand the bomber capacity to 36 JASSM, LRASM, or developmental Hypersonic Attack Cruise Missiles (HACM). Current development includes radio crypto modernization to enable transition to next-gen MUOS secure, jam-resistant BLOS SATCOM, and upgrades to replace the B-52 in the hypersonic weapons test role. AFGSC retired the 17 least serviceable airframes to boost fleet readiness but is now regenerating two of the aircraft to replace damaged airframes. A third B-1B was severely damaged in a landing accident at Ellsworth in 2023, but AFGSC does not plan to replace it. Ellsworth B-1s relocated to Grand Forks in December 2024 to allow facility construction supporting transition to the B-21. B-1Bs will continue providing bomber capacity until 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: 46.
Operator: AFGSC, AFMC.
Aircraft Location: Dyess AFB, Texas; Edwards AFB, Calif.; Eglin AFB, Fla.; Ellsworth AFB, S.D.; Grand Forks AFB, N.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 feeding coordinates to weapons pre-release to thwart jamming. A B-2A successfully employed the longer-range JASSM-ER cruise 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. The B-2 is also receiving new primary cockpit displays, advanced IFF, and advanced 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 2023 following

Airman 1st Class Ivy Thomas/ANG

a six-month fleetwide stand-down after a pair of landing accidents that severely damaged two aircraft. AFGSC is retiring the aircraft damaged in the 2022 landing accident at Whiteman in FY25. The cut reduces the fleet to 19 aircraft, and USAF plans to fully retire the remainder of 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.

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 a more advanced low-observable design. 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 since the B-2 Spirit 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 which would be delivered starting in the mid-2020s. USSTRACOM has recently advocated for up to 145 aircraft to deter simultaneous threats from China and Russia. Concurrent development and low-rate initial production (LRIP) aim to accelerate fielding, starting with the first LRIP contract awarded in 2023. USAF awarded the second of five LRIP contracts in late 2024, which collectively include 21 aircraft prior to full-rate production. At least six airframes are in production at Northrop Grumman's Palmdale, Calif., facility where the initial bomber was unveiled in December 2022. The aircraft completed ground testing and taxi trials there prior to moving to Edwards. Aircraft T-1, dubbed "Cerberus," launched flight-testing at Edwards on Jan. 17, 2024, and is flying approximately two developmental sorties a week with the objective of flying daily. The bomber has thus far outperformed projections and T-1 continues to expand the B-21's flight envelope. Two additional airframes are undergoing ground-based structural testing to assess airframe durability. Modernization includes integrating the LRSO missile and other advanced weapons, nuclear certification, and adaptation for future sensors and capabilities. Flyable test aircraft will eventually be converted to operational specification once testing is complete. The bomber program remains on time and within budget, and 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.

Giancarlo Casem/USAF

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).

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 current 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

Senior Airman Celeste Zuniga

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 reengine 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. Reengined aircraft will be redesignated B-52J and fleetwide retrofits are expected to be completed by 2038. AESA radar low-rate production slipped slightly to mid-2025 or later, and future upgrades include VLF/LF receiver modernization, color targeting pod displays to enhance performance 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, potentially through the 2050s. Flight-testing of the B-52's next-generation LRSO cruise missile is on-schedule and within budget, though IOC for the upgraded B-52J has slipped three years to 2033 due to the cost and complexity of integrating new engines and radar.

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 (farther 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).

F-35

Ralph Branson/ANG

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 has not requested modernization funding since FY23 but continues to install high-resolution digital glass primary cockpit instruments, add directional audio threat cueing, modernize UHF/VHF comms, add Ethernet, integrate Small Diameter Bomb I, and transition to Onboard Oxygen Generation Systems (OBOGS). USAF began divesting the fleet in 2023 and plans to cut an additional 56 aircraft in FY25. A rewinging completed in 2024 extends the remaining airframes to 10,000 hours. PACAF plans to remove A-10s from Osan, ending overseas basing, while Davis-Monthan and Moody continue to retire their fleets. Both the Indiana ANG's 122nd Fighter Wing and Maryland's 175th Fighter Wing plan to end A-10 operations in FY25 , changing to F-16 and cyber operations respectively. USAF plans to continue operating a dwindling fleet through 2028.

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Contractors: Fairchild Republic (Lockheed Martin); Boeing/Korean Aerospace Industries (rewing).
First Flight: Jan. 20, 2005 (A-10C).
Delivered: 2006-2012 (A-10C).
IOC: September 2007 (A-10C).
Production: 713.
Inventory: 219.
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.

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. F-15s accounted for 34 of USAF's 37 air-to-air kills during Desert Storm. The C/D added EW countermeasures and 2,000 lb of internal fuel and the final 43 production aircraft received the F-15E's APG-70 radar and Multi-Stage Improvement Program (MSIP). 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 canceled with the decision to replace the fleet with the new-build F-15EX. USAF also reduced the number of MIDS/JTRS secure high-capacity

Tyler Greenlees/USAF

comm and networking upgrades and limited SLEP to 63 airframes. The majority of F-15C/D's suffer performance-limiting structural issues and USAF requested to retire 65 aircraft in FY25. Congress limited reduction to 36 aircraft but added funds to accelerate replacement with F-15EX in response to ANG requests. Kadena completed its F-15C/D drawdown in December 2024, and USAF is backfilling with rotational fighters until the planned permanent basing of 36 F-15EXs as soon as 2026.

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: 108 (F-15C); 8 (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.

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 2025. 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 fielding the first two jets at Lakenheath in January 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 2029, retaining and upgrading only 99 late-model PW-229-engined aircraft to fund other priorities. Congress limited cuts to 68 aircraft and will likely restrict the FY25 request to cut 26 aircraft—funding additional F-15EXs to boost fighter fleets instead.

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.

Senior Airman Ivy Thomas

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.

F-15EX EAGLE II

Multirole fighter

Brief: F-15EX is the most advanced Eagle variant based on the two-seat 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. USAF awarded Boeing a $1.2 billion contract for the first eight jets in July 2020 and approved the jet for full-rate production in June 2024 , accelerating funds to speed phase-out of the F-15C/D. USAF requested funding for 18 aircraft in FY25 and Congress provided for an additional six requested by the ANG. The first-of-six test aircraft was delivered to Eglin on March 11, 2021,

Staff Sgt. Blake Wiles

and the F-15EX completed combined developmental and operational testing in August 2023. The aircraft proved operationally effective in all intended roles of air superiority and offensive and defensive counter-air, including against simulated fifth-generation threats. F-15EX was also deemed effective in a limited air-to-ground role, but test limitations inhibited full evaluation of EW capabilities. Development is focused on fielding full capabilities on early Lot aircraft including Mobile User Objective System (MUOS) secure, jam-resistant BLOS and NATO-interoperable LOS SATURN and GPS, as well as adding Automatic Ground Collision Avoidance System (AGCAS). The service originally planned to purchase 144 aircraft before reducing its buy to 104 and again to 98 in its FY25 request. The F-15EX achieved IOC a year later than initially planned following delivery of the second operational jet to the Oregon ANG at Portland on July 5, 2024. Similar aircraft requirements permit existing F-15 units to transition to the F-15EX in a matter of months and USAF plans to field the 44-jet fleet required for full operational capability (FOC) by 2027. Follow-On Operational Testing and Evaluation (FOT&E) will evaluate the aircraft against emerging and more capable fifth-generation threats in complex scenarios. The F-15EX will replace legacy F-15s at Fresno and New Orleans as well as backfilling Kadena. Barnes will receive either F-15EX or F-35 pending the results of an environmental review.

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: Eight.
Operator: ACC, AFMC, ANG.
Aircraft Location: Eglin AFB, Fla.; Portland Arpt., Ore. Planned: Fresno ANGB, Calif.; Kadena AB, Japan; Klamath Falls (Kingsley Field), Ore.; and NAS JRB New Orleans, La.
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 including SDB I, GBU-38 JDAM, and JASSM.
Accommodation: Pilot and (optional) second aircrew member on ACES 5 zero/zero ejection seats.

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 approximately 40 percent of 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 AMRAAM. USAF is reducing the older Block 30-32 fleet to 100 aircraft through FY25 while 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 which was initially fielded to counter cruise missile threats to the homeland. The rapidly developed Integrated Viper Electronic Warfare Suite (IVEWS) leverages AESA to give the F-16 self-defensive capabilities on par with fifth-generation aircraft and entered flight-testing in late 2024. IVEWS is designed to be rapidly upgradable against emerging threats combining EW/active jamming as well as digital RWR and self-defenses into a fully integrated internal suite. Comm upgrades will add Mobile User Objective

Nicolas Cholula/USAF

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, upgrading to Mode 5 IFF and jam-resistant GPS, and modifying early block aircraft with automatic air/ground collision avoidance. Structural life extension will extend 350 airframes beyond 8,000 hours and USAF plans to continue upgrading the F-16 to keep pace with threats through 2040 or beyond. Two aircraft were lost in accidents last year at Holloman due to undetected engine damage, and at Kunsan involving an electrical malfunction in poor weather. Luke flew its final USAF F-16 training sortie on Feb. 26, 2025, and the service plans to cut a total of 11 F-16s this year. Edwards and the ACC Viper Demonstration Team saluted the 50th anniversary of first flight with YF-16-inspired schemes for the 2024 air show season.

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 for USAF (nearly 5,000 for global users).
Inventory: 704 (F-16C); 134 (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; 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.

F-22 RAPTOR

Air superiority/multirole fighter

Brief: The F-22 is a stealthy, penetrating, air dominance 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. The Raptor features 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 or augmented by the F-47 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 a distributed IRST system to stealthily track and target airborne threats, stealthy external fuel tanks/pylons to extend unrefueled range, and AIM-260 Joint Advanced Tactical Missile testing, radar electronic hardening, and jam-resistant navigation. 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 two years to FY27. The F-22 mission capable rate dropped to 40 percent in 2024 and USAF proposed retiring noncombat-coded Block 20 aircraft to fund NGAD development, retaining only modernized Block 30/35s. Congress blocked the move pending analysis of the costs to upgrade Block 20s to full combat capability through at least FY27. An F-22 was damaged in an unspecified mishap during exercise Sentry Savannah at Hilton Head International Airport, Ga., on May 6, 2024.

Airman 1st Class Michael Sanders

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.

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 and USMC. 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 and is scheduled to begin deliveries in mid-2025, three years behind schedule. The Lot 15 through 17 production deal reached in December 2022 will include the first Tech Refresh 3 (TR-3) aircraft specifically equipped to support Block 4 retrofit. The program office and Lockheed Martin tentatively agreed on pricing for Lot 18 production through FY27 in late 2024. 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, unlocking future cost-saving multiyear block buys. The Joint Program Office lifted a yearlong pause accepting delivery of "truncated" TR-3 software configured jets in July 2024. The service had accumulated a backlog of more than 30 jets due to incomplete software testing. USAF additionally requested six fewer jets in FY25, opting for 42, despite Lockheed Martin projecting delivery of a record 190 F-35s this year. The fleet continues to struggle with low-availability rates due to maintenance and supply system delays, particularly with engines. Lockheed Martin delivered the 1,000th F-35 to the Wisconsin ANG's 115th FW at Truax Field in July 2024, and maintainers successfully regenerated an F-35 from two damaged aircraft in January 2025. The 301st FW at NAS JRB Fort Worth received its first F-35s on Nov. 5, 2024, becoming the first stand-alone AFRC Lightning II unit.

Senior Airman Nicholas Rupiper

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: 443 (USAF).

Operator: ACC, AETC, AFMC, AFRC, 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.; NAS JRB Fort Worth, Texas , 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.
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.

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, 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

Sheila deVera/USAF

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.

SPECIAL OPERATIONS AIRCRAFT

Staff Sgt. Kevin Williams

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 urban combat support. The advanced gunship provides 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 to operational requirements. The aircraft's PSP weapons system 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. AFSOC is now considering removing the 105 mm gun to reduce aircrew while adding AESA radar to improve range, accuracy, and all-weather targeting as well as automating mission and comm/nav systems. Block 30 upgrades are slated for completion in mid-FY25, bringing all AC-130Js to a common configuration. Ongoing upgrades include radio frequency countermeasures (RFCM) to detect, locate, and respond to threats, LAIRCM defensive systems upgrades, and HF/VHF/UHF/SATCOM suite modernization. AC-130J formal training was moved from AFSOC at Hurlburt to AETC at Kirtland in August 2024 after a year's delay to colocate special mission C-130 training pipelines.

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: AETC , AFSOC.
Aircraft Location: Cannon AFB, N.M., Hurlburt Field, Fla.; Kirtland AFB, N.M.
Active Variants:
▪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/

Tech. Sgt. Victor Caputo

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. AFSOC recently stood up a permanent European-based C-146 contingent at Mildenhall on Dec. 4, 2024. The aircraft will provide organic intratheater airlift and quicker response to contingencies within USAFE-AFAFRICA.

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.; RAF Mildenhall, U.K.
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.

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

Senior Airman Wyatt Stabler

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 manages special operations specific mods. Primary efforts include upgrading the fleet to Block 20 standards, replacing the legacy TF/TA radar with the Silent Knight (in common with the MC-130J), as well as critical safety and maintainability improvements. Block 20 brings the baseline airframe in line with USMC's MV-22 configuration including new cabin lighting, Color Helmet Mounted Displays, IR searchlight, lightweight ballistic armor, EW upgrades, modernized avionics and mission computers, self-defensive improvements, weapons integration, and ISR and situational awareness enhancements. AFSOC began flight-testing the stealthier, low-altitude, night/all-weather navigation radar in 2020 and FY25 funds retrofit of 12 airframes to begin fielding. Development includes improving the Osprey's rapid, long-distance self-deployment capabilities, modifying its nacelles to improve safety and 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), while TacNet will add lightweight Link-16. The CV-22 fleet was grounded in 2022 and again in 2023 following a fatal accident attributed to an engine-gearbox failure. The fleet commenced restricted flight operation on March 8, 2024, and approximately 60 percent of Ospreys were flying by the end of FY24. AFSOC placed 15 aircraft in flyable storage as it works to complete nacelle, gearbox, clutch, and prop-rotor safety improvements on the remaining half of the fleet. AFSOC aimed to reach full operational capability (FOC) with the CV-22 in late FY24 and anticipates returning to unrestricted flight in 2025.

Contractors: Boeing; Bell Helicopter Textron.
First Flight: February 2000 (CV-22).
Delivered: Sept. 19, 2005-May 22, 2021.
IOC: 2009.
Production: 56.
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.

EC-130J COMMANDO SOLO/SUPER J

Psychological warfare/special operations airlift

Brief: The EC-130J was the Air Force's primary psychological warfare platform, providing Military Information Support Operations (MISO) and civil affairs broadcast. Roles included 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 served as standard broadcasting stations for psychological warfare operations while the four "Super J's" performed 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 included a roll-on internal payload as well as the external podded Communication EA Surveillance and Reconnaissance (CEASAR) and Long-Range

Tech. Sgt. Tony Harp/ANG

Broadcast System (LRBS), giving both variants full MISO/EA capabilities. The software-defined digital system was 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. Commando Solo and Super-J airframes were de-converted to quasi-standard C-130J conversion as part of AFSOC's multimission fleet consolidation. Commando Solo flew its final broadcast sortie in 2022, with two former EC-130Js transferring to Hurlburt for use as systems integration test beds and two transferring to the Arkansas ANG's 189th AW which is converting from C-130Hs to C-130Js. A converted EC-130J was transferred to Eglin on July 17, 2024 , giving the C-130J program a dedicated test airframe. Deconfigured aircraft initially retained nonstandard aerial refuellable capabilities as well as AFSOC-style paint schemes, but are tentatively slated for full reconfiguration by late FY27.

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: AFSOC, ANG.
Aircraft Location: Hurlburt Field, Fla.; Little Rock AFB, Ark.
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.

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

Airman Erika Chapa/ANG

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 which was eventually achieved in 2022. SOCOM is replacing both the MC-12W and U-28 with a fleet of 75 OA-1K Skyraider II light attack/armed reconnaissance aircraft. The MC-12 fleet will be reduced to seven aircraft in FY25 as the 137th SOW transitions to the OA-1K through 2027.

Contractors: Beechcraft; L3Harris (EO/IR sensors).
First Flight: April 28, 2009.
Delivered: April 2009-2012.
IOC: June 2009.
Production: 42.
Inventory: Nine.
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.

MC-130J COMMANDO II/ COMBAT TALON III

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 to operate in future high-end-threat environments under Capability Release 2. This update includes Terrain-Following/Terrain Avoidance

Senior Airman Natalie Fiorilli

(TF/TA) radar, Radio Frequency Countermeasure (RFCM), and Airborne Mission Networking (AbMN). Silent Knight TF/TA is housed in a second radome below the cockpit and enables the MC-130J to conduct low-level nighttime/adverse weather penetration. 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. Upgraded aircraft are redesignated Combat Talon III and will pave the way toward future open-architecture, highly integrated, and automated mission and defensive systems. AFSOC shelved plans to equip MC-130J with floats for runway independent operations in the Indo-Asia Pacific theater last year, and Lockheed Martin delivered the final production MC-130J to Kirtland Jan. 14, 2025.

Contractors: Lockheed Martin (airframe); Boeing; Sierra Nevada Corp. (RFCM); Raytheon (TF/TA radar).
First Flight: April 20, 2011.
Delivered: Sept. 29, 2011-Jan. 14, 2025.
IOC: Dec. 7, 2012.
Production: 64 (planned).
Inventory: 62.
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 (farther 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).

OA-1K SKYRAIDER II

Tactical ISR/Armed Overwatch

Brief: The OA-1K is a tactical ISR and armed-overwatch platform based on the Air Tractor 802A agricultural aircraft with mission systems integrated by L3Harris. The short takeoff and landing (STOL) aircraft is capable of operating from unimproved airstrips less than 1,400 ft long while carrying a weapons load of up to 6,000 lb. The OA-1K's cockpit and engine compartment are

Staff Sgt. Natalie Fiorilli/USAF

fully armored and the fuel tanks are self-sealing to enhance survivability against small-arms fire. Mission equipment includes LOS/BLOS comms, LINK-16, two pylon-mounted EO-IR full-motion video ISR sensors, and air-to-ground networking that permits tablet-control of sensors by ground troops. Planned weapons include GBU-12 500 lb bombs, AGM-114 Hellfire missiles, and Advanced Precision Kill Weapons System. SOCOM picked the AT-802U as the winner of its light attack/armed reconnaissance competition to replace the U-28A as well as the MC-12W in 2022, redesignating the aircraft OA-1K. The command maintains its original requirement for a fleet of 75 AFSOC-operated aircraft but cut the purchase to 62 in FY25 due to budget constraints. Initial test pilots and instructors began training on a pair of AT-802Us at Hurlburt in July 2024, while the 137th Special Operations Wing at Will Rogers received its first aircraft on July 29, 2024. The unit is standing up formal training for the type, and AFSOC is targeting IOC for 2026, followed by FOC in 2029. Air Tractor and L3Harris are currently on contract to delivery 40 OA-1Ks through mid-2026 and FY25 requested funds for Lot 6 production of 12 aircraft. AFSOC officially named the type "Skyraider II," in a salute to the Vietnam-era Douglas A-1 Skyraider close-air support aircraft. The first operationally configured Skyraider II arrived at Hurlburt on April 3, 2025.

Contractors: Air Tractor Inc. (airframe); L3Harris (mission systems and conversion).
First Flight: Circa 2025.
Delivered: April 3, 2025-present.
IOC: 2026 (planned).
Production: 62 (planned).
Inventory: One.
Operator: AFSOC, AFRC.
Aircraft Location: Hurlburt Field, Fla.; Will Rogers ANGB, Okla.
Active Variant:
▪OA-1K. Special operations tactical ISR aircraft based on the Air Tractor 802A.
Dimensions: Span 59.2 ft, length 37.5 ft, height 11.2 ft.
Weight: Max T-O 16,000 lb.
Power Plant: Single Pratt & Whitney PT6A-67F, 1,600 shp.
Performance: Speed 245 mph, range 1,500 miles (with auxiliary fuselage fuel).
Ceiling: 30,000 ft.
Accommodation: One pilot, one CSO; up to 6,000 lbs of weapons and/or external sensor payloads on 11 wing and fuselage-mounted hardpoints.

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. SOCOM began procuring a truncated fleet of 62 OA-1K Skyraider II light attack/armed reconnaissance aircraft to supersede the U-28A and MC-12W fleets. AFSOC plans to complete transition from the U-28 by 2029 and FY25 funds are limited to completing low-cost upgrades. AFSOC retired the first PC-12 trainer, serial 08-0581, dedicating the airframe for display at Cannon May 16, 2024.

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.

Senior Airman Ty Pilgrim

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).

C3/BM/ISR AIRCRAFT

William Lewis/USAF

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 and current Block 40/45 aircraft are redesignated E-3G. Block 40/45 was the most comprehensive enhancement to date and improved tracking/identification, system reliability, and life-cycle cost. Mods included 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 and retired roughly half the fleet, opting instead to award a $1.2 billion contract to adapt the Boeing E-7A Wedgetail operated by several allies to meet USAF requirements. The service plans to buy 26 E-7As with two "production representative" prototypes already on order to begin testing, which has already slipped a year to 2028. Future E-3 upgrades will be limited to sensors, comms, networking, and computing improvements to maintain capability until retirement. Upgrades are focused on the 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, reducing the fleet to 16 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: 16 (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 to 19 mission specialists.

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 and modernized presidential voice-conferencing, replacing the VLF/LF transmitter and legacy SHF with Survivable Super High Frequency (SSHF) for uninterrupted, jam-resistant nuclear C2 fleet-wide. FY25 launches replacement of legacy UHF comms with Mobile User Objective System (MUOS) secure, jam-resistant BLOS. E-4B airframes are viable to approximately 2033, but phaseout of commercial 747-200s hampers continued sustainment. USAF awarded Sierra Nevada Corp. the $13 billion Survivable Airborne Operations Center (SAOC) contract to replace the fleet on April 26, 2024. The company bought five new-generation 747-8 Intercontinental airframes from Korean Airlines, the first of which arrived in Dayton, Ohio, to begin conversion in June 2024. The replacement fleet will be designated E-4C and is scheduled for delivery through 2036.

Justin Oakes/USAF

Contractors: Boeing; Raytheon (FAB-T); L3Harris (SSHF); Boeing/Collins Aerospace (Low-Frequency Transmit System); Sierra Nevada Corp. (E-4C SAOC).
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.
▪E-4C. Modified Boeing 747-8i SAOC, planned to replace the E-4B.
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-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

Staff Sgt. Bennie Davis III

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.

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 an E-11 crashed near Kandahar Airfield on Jan. 27, 2020, killing the aircrew. The fleet was designated E-11A after USAF purchased the first (previously leased) aircraft in 2011. The Battlefield Airborne Communica-

Senior Airman Ashley Richards

tions Node (BACN) payload was initially integrated on a mixed fleet of manned E-11As and unmanned EQ-4B Global Hawks prior to the type's phase out in 2021 which prompted expansion of the E-11 fleet to nine aircraft. Northrop Grumman was awarded a five-year support contract in 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 high-threat environments, advanced navigation, as well as flight safety, reliability, performance, and self-defensive improvements. ACC accepted its eighth aircraft in early FY25 and plans to divest the nonstandard prototype airframe in FY25, potentially canceling delivery of the ninth aircraft later this year. ACC and the Georgia ANG plan to reach

full operational capability at Robins by 2027. The E-11A notably aided in facilitating humanitarian airdrop missions into Gaza in early 2024.

Contractors: Bombardier; Northrop Grumman (integration and support).
First Flight: August 2007.
Delivered: December 2008-present.
IOC: Circa 2011.
Production: Five (nine planned).
Inventory: Seven.
Operator: ACC, ANG (associate).
Aircraft Location: 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.

EA-37B COMPASS CALL

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

L3Harris

targets. The first aircraft was purchased in FY17, and Congress accelerated the program in FY19, completing procurement of the 10-aircraft fleet this year. The first five aircraft are receiving 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 debuts on the sixth airframe. Baseline 4 will add System-Wide Open Reconfigurable Dynamic Architecture (SWORD-A) to enable rapid future upgrades. 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. FY25 efforts focus on completing developmental and operational testing and continued development of SWORD-A. The fleet will begin upgrade to Baseline 4 starting in 2026, coinciding with planned IOC. ACC took delivery of the first operational aircraft at Davis-Monthan on Aug. 23, 2024.

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.
Aircraft Location: Davis-Monthan AFB, Ariz.; Edwards AFB, Calif.
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 629 mph, range 4,410 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.

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

Master Sgt. Wolfram Stumpf

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. The most recent Baseline 3 configuration includes the Advanced Radar Countermeasure System (ARCS) and other significant capability enhancements, while Baseline 4 will be fielded on the next-generation EA-37B in 2026. Some 70 percent of the EC-130H's mission equipment will be directly cross-decked to the EA-37B successor platform. 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 divested two airframes in FY24, reducing the fleet to four and freeing mission equipment for use on the EA-37B. The 43rd Electronic Combat Squadron at Davis-Monthan flew its final EC-130 sortie on Feb. 15, 2024, leaving its sister squadron, the 41st ECS, as the type's final operator.

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: Four (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 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. Congress allocated additional funding in FY23 to expand the fleet by two aircraft, though FY25 requests no additional procurement.

Tomas Acevedos/V1images

Contractors: Bombardier (formerly De Havilland Canada); Sierra Nevada Corp. (operator).
First Flight: N/A.
Delivered: Circa 2018-present.
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.

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 were slated to complete integration of Baseline 7 mods (similar to Rivet Joint Baseline 12) in late 2024 , including integrating Rivet Joint's COMINT suite, digital electromagnetic signature direction finding, digital search, and SATCOM-aided target discrimination. Baseline 14 is entering testing

Senior Airman Jacob Skovo

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.

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

SuneKuma

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 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. FY25 focuses on sustaining and upgrading 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. Development of the future Baseline 7 began in FY23 and continues through FY25 followed by initial integration and testing in 2026.

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.

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

Josh Plueger/USAF

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 beginning 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 data link 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 Joints notably supported border surveillance efforts along the U.S.-Mexico border in early 2025 operating in conjunction with a Navy P-8 Poseidon conducting maritime surveillance of the Gulf of Mexico.

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); 12 (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).

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 reengined 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


Nicholas Harnack/USAF

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 continued flight-testing through expected IOC 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, marking the two-seat TU-2S's first operational use. ACC retired the first TU-2S and three U-2S aircraft in early 2024 with 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: 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.

WC-130J HERCULES

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

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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, MUOS jam-resistant BLOS and wide-band SATCOMS. AFRC is returning the fleet to the more weather-resistant gloss-gray paint scheme worn by WC-130s prior to 2007 and aims to add a dedicated weather radar as well as modular sensor pods for specific missions. The small, hard-used WC-130J fleet suffers a 65 percent mission capable rate and has struggled to meet the demands of a longer and busier storm season. WC-130Js flew 1,130.6 hours over 107 missions, collecting data on 12 of the 18 named storms in the Atlantic and two of the 13 in the Pacific during the 2024 storm season. Hurricane Hunters then shifted to collecting data on Pacific atmospheric rivers that bring heavy localized precipitation to the West Coast, flying missions from Mather Airfield, Calif., and Yokota AB, Japan, in early 2025.

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.

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 supports 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 weapons tests in North Korea, as

Tech. Sgt. Anthony Hetlage

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 improve 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. WC-135Rs conducted rare air sampling missions over the CENTCOM area of operations in late 2024 in addition to more routine operations worldwide.

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 succeeding the 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

Airman 1st Class Jonah Bliss

A KC-46 Pegasus aircraft from Altus Air Force Base, Okla., executes a fly-over at The Wings and Warriors Fly-In at San Marcos, Texas, in 2024.

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 replaced the HC-130N/P 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. It is also equipped with 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

Tech. Sgt. Dhruv Gopinath

operations in contested environments. USAF plans to standardize HC/AC/MC-130J block upgrades, and past efforts aimed to bring all HC-130Js to a more common configuration. 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. The fleet is receiving the Airborne Mission Networking (AbMN) battlefield situational awareness system as well as aft paratrooper door search window, ballistic armor, and safety improvements in FY25. Comm Modernization Phase I including Mobile User Objective System (MUOS) and crypto updates were pushed to FY27 to FY-28, and future Comm Modernization Phase II will add NATO-interoperable LOS SATURN and updated UHF/VHF radios. Required upgrades include a Star mission computer refresh as well as an EO/IR sensor life extension. USAF conducted a series of tests and exercises utilizing the HC-130J as an airborne command post to control Pacific theater air operations in 2024.

Contractor: Lockheed Martin; Sierra Nevada (AbMN).
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.

KC-10 EXTENDER

Aerial refueling/airlift

Brief: The KC-10 was a multirole tanker/transport capable of aeromedical evacuation, based on the McDonnell Douglas DC-10-30CF, making it USAF's largest air-refueling aircraft. It could simultaneously operate as a tanker and airlifter, optimizing it to support worldwide fighter deployments. The KC-10 employed 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 had three large fuel tanks under the cargo floor and an air-refueling operator's station recessed into the aft fuselage. It was also refuelable by boom-equipped tankers. The fleet amassed more than 2.3 million flying hours before the first airframes 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 steadily retired KC-10s as KC-46s were delivered, maintaining a minimum of 446 overall tankers. McGuire ended KC-10 operations on June 22, 2023, leaving Travis as the type's final main operating base. USAF cut 15 aircraft in FY23 and retired the final aircraft, serial number 79-1948, at Travis on Sept. 26, 2024. Three KC-10s retired on display at the Air Mobility Command Museum at Dover, the National Museum of the U.S. Air Force at Wright-Patterson, and March Field Air Museum.

Contractors: McDonnell Douglas (now Boeing); Collins Aerospace (CNS/ATM).
First Flight: April 1980.

Senior Airman Sergio Avalos

Delivered: March 1981-April 1990.
IOC: August 1982.
Production: 60.
Inventory: Zero.
Operator: AMC, AFRC (associate).
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; Aeromedical Evacuation (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.

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,

Bryce Bennett/USAF

tactical situational awareness, comms relay hosting, and nuclear/chem/bio hardening. In 2011 Boeing was contracted for 179 KC-46A tankers, the first increment (KC-X), was to replace approximately 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 2017 prior to the first production aircraft's delivery in 2019. USAF awarded the first LRIP contract for 19 aircraft in 2016, and most recently awarded Lot 11 in November 2024, raising the quantity on contract to 158 airframes. Full-rate production was initially planned for Lot 3 but IOC and full-rate production slipped due to remaining deficiencies with the boom, remote vision system (RVS), and fuel drain lines. USAF accepted Boeing's revised 3D-RVS design for six color/IR cameras and boom modifications and plans to begin retrofits and initial flight testing in 2026. KC-46s suffered two refueling-boom related mishaps refueling an F-16 and F-15E in 2024, and the fleet continues to fall significantly short of its target 90 percent mission capable rate. The Wing Aerial Refueling Pods (WARPs) have also faced certification delays due to icing and weight and balance issues. The KC-46 is cleared to refuel receivers in combat (except for the A-10) while awaiting resolution of the final three critical deficiencies. The KC-46 completed developmental testing and entered operational testing in 2019, which USAF now plans to complete in FY26. The KC-46 is 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 and FY25 aims to launch LOS/BLOS secure C2 and situational awareness. The service is considering an upgraded KC-46 as one option for a 75-aircraft "bridge" fleet to a next-generation, possibly stealthy, tanker and announced it will increase the planned fleet from 179 aircraft to 183. A KC-46 completed a 45-hour maximum endurance mission circumnavigating the Earth from McConnell, as well as its first operational deployment to USCENTCOM in 2024.

Contractor: Boeing.
First Flight: Sept. 25, 2015 (KC-46A).
Delivered: Jan. 10, 2019-present.
IOC: FY24 (planned).
Production: 183 (planned).
Inventory: 89 (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. It first flew on Aug. 31, 1956, and the KC-135A fleet was delivered between June 1957 and January 1965, reaching IOC at Castle AFB, Calif., in 1957. KC-135s were reengined 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. The fleet completed Block 45 cockpit upgrades that updated its glass flight deck with additional digital engine displays, a radar altimeter, advanced autopilot, and modern flight director in FY24. Ongoing upgrades include replacing Aero-I long-distance oceanic satellite tracking/C2 with the Iridium system, Real Time in the Cockpit (RTIC) to network active-duty aircraft with Link-16/SADL, and a rudder position indicator to increase crew safety awareness. USAF plans to begin Mobile User Objective System (MUOS) secure, jam-resistant BLOS, NATO-interoperable LOS SATURN mods and crypto modernization in FY25, as well as launch HF radio replacement. Air Force Research Laboratory recently tested prototype winglets to potentially increase the KC-135's fuel efficiency. USAF plans to keep the KC-135 in service until at least 2050 but is considering replacing some KC-135s with an interim aircraft until arrival of the notional Next-Generation Air-refueling System (NGAS). 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).

Staff Sgt. Ryan Gomez

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, and 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 galley/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 the single C-5A were converted. Major modifications include CNS/ATM upgrades, new mission computers and off-the-shelf color weather radar which are planned for fleetwide completion in FY25. Additional ongoing efforts include a lavatory redesign to address corrosion slated for completion in FY27 and select external skin replacements to increase structural life launching in FY25. Development includes flight deck display replacement as well as studies to replace legacy SATCOMS with modern Mobile User Objective System (MUOS). AFMC is working to improve the C-5 fleet's mission capable rate, which dipped below 46 percent, by reengaging with industry suppliers.

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.
Cargo 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.

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 based on the elongated 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.

Adam Bowles/USAF

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): five (C-12J).
Inventory: 16 (C-12C); six (C-12D); three (C-12F); five (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).

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. 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. Early production aircraft have been upgraded to a common fleetwide configuration, and the most recent Block 21 including Mode 5 IFF and airspace compliance were completed in 2020. FY25 continues HUD replacement through FY28, ramps-up install of enhanced high-bandwidth BLOS voice/data SATCOMS as well as fire-protection, safety and sustainment mods. The fleet completed Large Aircraft Infrared Counter-measures (LAIRCM) upgrades to combat man-portable air defenses last year . Current development focuses on Flight Deck Replacement with an easily upgradable modular infrastructure, and enhancing LOS/BLOS C2 capabilities. The C-17

USAF

is USAF's largest consumer of jet fuel and Pratt & Whitney is under contract to improve the F117 engine's efficiency and increase maintenance intervals by 2027. C-17s notably airdropped humanitarian supplies to civilians in Gaza and evacuated personnel from U.S. bases in Niger following a coup and the breakdown of security cooperation in 2024.

Contractor: Boeing (previously McDonnell Douglas).
First Flight: Sept. 15, 1991.
Delivered: June 1993-Sept. 12, 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

Airman 1st Class De'Quan Simmons

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. USAF plans to sustain the fleet through the 2030s.

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).

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

Tech. Sgt. Benjamin Mota

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 and is equipped to receive in-flight refueling. 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. Two C-32A will undergo installation in FY25 with modification fleetwide planned by 2027. Two aircraft received PNVC and the FY25 request included funds for a third install as well as launching MUOS-compatible crypto modernization through FY26. DOD scrapped plans to replace the C-32A, opting to retain the fleet through 2038 or beyond. USAF requested to expand the C-40 fleet by two aircraft and has been assessing options to augment its C-32s 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 (C-32B is capable of farther with aerial refueling).
Ceiling: 42,000 ft.
Accommodation: Two pilots, up to 14 cabin and maintenance crew (varies with mission).
Load: Up to 45 passengers.

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. FY25 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 two in FY25 , 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 aircraft to backfill the retired C-20. Four aircraft were delivered between 2019 and 2022. FY25 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.
Inventory: Nine (C-37A); seven (C-37B).


Senior Airman Shelimar Rivera-Rosado

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).

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

Airman 1st Class Luis Rios Calderon

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. Senior Leader Communication Modernization across the executive fleets includes 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 FY25 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. Congress trimmed USAF's request for two additional aircraft to augment the heavily tasked C-32 and C-40 fleets. FY25 instead funds a single C-40D that will be similarly configured to the C-40B but with increased passenger capacity.

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.
▪C-40D. Future VIP military-configured Boeing 737 with advanced comms and increased passenger capacity.
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).

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 is replacing the fleet with the C-130J while modernizing the remaining C-130Hs. Primary upgrades consist of the Avionics Modernization Program and NP2000 propeller retrofits, center wing box replacement, and low-cost mods. AMP Increment 1 added new CNS/ATM and brought legacy C-130s into compliance with international airspace rules. The first Increment 2 upgrade was completed in 2022, adding terrain awareness and warning, new flight management, and modern glass cockpit displays. UHF SATCOM modernization was added in FY23, rolling in Mobile User Objective System (MUOS) secure, jam-resistant BLOS, and NATO-interoperable LOS SATURN. A total of 77 aircraft are planned for upgrade through 2029. Legacy four-bladed propellers will be replaced fleetwide by the eight-bladed NP2000 propellers in 2025 , enhancing performance up to 20 percent and eliminating cracking problems. AFRC's 910th AW at Youngstown began transitioning to the C-130J in 2024, and ANG units in Connecticut, Illinois, Minnesota, and Montana will also upgrade to the C-130J in the coming years. USAF plans to cut six C-130Hs this year, replacing them with C-130Js on a one-for-one basis to maintain the congressionally mandated 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: 122.
Operator: ANG, AFRC.
Aircraft Location: Dobbins ARB, Ga.; Little Rock AFB, Ark.; Minneapolis- St. Paul Arpt./ARS, Minn.; Peterson SFB, Colo. (MAFFS); Youngstown ARS, Ohio (Electronic Modular Aerial Spray System (EMASS), and ANG in Arkansas, Connecticut, Delaware, Illinois, Minnesota, Missouri, Montana, Nevada (MAFFS), Texas, and Wyoming (MAFFS).

Staff Sgt. Janae Masoner

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.

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

Yasuo Osakabe/USAF

8.1's Mode 5 IFF and air traffic management upgrades were fielded ahead of cycle to meet airspace requirements and the first full 7/8.1 aircraft was redelivered in late 2020 with 12 slated for upgrade in FY25. C-130Js continue to receive Large Aircraft IR Countermeasures (LAIRCM) upgrades and enhanced service-life center wings to bring pre-2009 aircraft in line with current standards. Major development is focused on Comm Modernization to provide jam-resistant HF/UHF/SATCOM voice and data (MUOS and NATO Saturn) as well as crypto and data links to keep pace with newer satellites and networking starting in FY27. Two former EC-130J Super-Js are undergoing deconversion to standard C-130Js and will be redelivered to Little Rock by late 2027. AFRC successfully tested the Electronic Modular Aerial Spray System (EMASS) on a C-130J in March 2024, paving the way for the J-model to take over the aerial spray mission from the C-130H. The Georgia ANG took delivery of its first C-130J on Jan. 22, 2024, which was the first production aircraft delivered with Block 8.1 software. Eglin's 96th Test Wing received a single deconverted EC-130J July 17, 2024 , now giving the C-130J program a dedicated test airframe. ANG units in Connecticut, Montana, Minnesota, and Illinois also plan to upgrade to the Super Hercules.

Contractor: Lockheed Martin.
First Flight: April 5, 1996.
Delivered: February 1999-present.
IOC: October 2006.
Production: 545 + worldwide (J), 202 (USAF).
Inventory: 154.
Operator: AETC, AFMC , 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 (EMASS), Georgia, Kentucky, Rhode Island, Texas, and West Virginia. Planned: Youngstown ARS, Ohio; ANG in Arkansas, Connecticut, Montana, Minnesota, and Illinois.
Active Variants:
▪C-130J Super Hercules. Short-fuselage 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).

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 using 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 onward 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 Avionics Modernization Program Increment 2 launched in 2022 and center wing box replacement. 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

Jaclyn Lyons/USAF

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. A total of five LC-130s flew 79 Operation Deep Freeze missions supporting NSF research during the 2024-2025 season. Aircraft carried a total of 1,076 passengers, 900 tons of cargo, and 120,000 gallons of fuel. LC-130s also completed nine medical evacuations from Antarctica and cooperated with Canadian Forces landing on an ice runway during Operation Nanook-Nunalivut. Congress is continuing to push USAF to recapitalize the LC-130 with C-130Js, citing increased Russian and Chinese activity in the Arctic and a current mission capable rate below 50 percent.

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.

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 nonpresidential 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. FY20

Adam Schultz/White House

funded the fleet's final block upgrade, which included MUOS and protected SATCOM, weather radar, digital voice/data comms, and networking. FY25 funds integration of the Multi-Role Tactical Common Data Link to add low-latency satellite teleconferencing and higher-capacity tactical data links on a second aircraft. USAF also plans to upgrade the fleet with the Senior Leader Communication Modernization effort in common with its executive fleets. These aim to keep the VC-25A fleet viable until the next generation VC-25B enters service. Boeing began converting two undelivered commercial 747-8 Intercontinental airframes to VC-25B standards under a $3.9 billion contract in 2020. VC-25B modification includes adding mission comms, DV interior, self-defensive systems, integral airstairs/ground-level boarding, as well as autonomous baggage handling, a second auxiliary power unit, and uprated electrical systems. Unlike the current fleet, the VC-25B will not be capable of refueling in-flight as a cost saving measure. Production challenges have delayed the aircraft by three years jeopardizing the VC-25A's congressionally mandated 2025 out-of-service date. Boeing now plans to deliver the first aircraft in 2027, and the second in 2028.

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).

HELICOPTERS

Senior Airman Zachary Rufus

HH-60 Jolly Green

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 replaced 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. FY25 launches Degraded Visual Environment (DVE) mods to prevent accidents due to pilot disorientation on landing. USAF plans to fully replace the Pave Hawk fleet with new-build HH-60W by 2026 and began retirements in 2022 cutting 37 airframes in FY24 with plans for 12 more in FY25. Aviano, Kadena, and Kirtland transitioned to the HH-60W ending Active-duty operations. The New York ANG's 106th Rescue Wing likewise converted to the new platform in 2024.

Contractor: Lockheed Martin Sikorsky.
First Flight: October 1974.
Delivered: 1982-1998 (HH-60G).
IOC: 1982.
Production: 112 (HH-60G); three (HH-60U).
Inventory: 27 (HH-60G); three (HH-60U).

Airman 1st Class Catherine Daniel

Operator: AFMC (HH-60U), ANG, AFRC.
Aircraft Location: Eglin AFB, Fla.; JB Elmendorf-Richardson, Alaska; 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 defeating higher-end threats, increased usable cabin space, 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, 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 plan to buy a total of 75 HH-60Ws over five lots (decreased from a planned 113 aircraft) which Congress amended to a total of 85 airframes in FY24, adding a possible two aircraft in FY25. USAF accepted the first production aircraft from Sikorsky on May 18, 2021, FY25 launches the Degraded Visual Environment (DVE) system to prevent disorientation during takeoff and landing as part of the HH-60W's first major capability upgrades. Development includes jam-resistant GPS, MUOS next-generation SATCOMS integration, and software and airspace compliance updates. Distributed Aperture IR Countermeasures (DAIRCM) to counter modern missile threats has suffered delays and is now projected for FY29 or beyond. Future capability enhancements include Video Data Link (VDL), improved Blue Force Tracker, and integrated system diagnostics. The service is also exploring options to merge the platform's various sensor-

Senior Airman Sarah McKernan

related interface to save airframe weight. USAF approved full-rate production and shifted to full operational testing at Nellis. Current tests are validating corrections to identified deficiencies, integrating the .50-cal weapon, and verifying low-visibility hover instrumentation. Aviano, Davis-Monthan, Francis S. Gabreski Arpt., Moffett, and Kadena received their first HH-60Ws in the last year, continuing the phase out of the HH-60G.

Contractor: Lockheed Martin Sikorsky.
First Flight: May 17, 2019.
Delivered: 2019-present.
IOC: Sept. 7, 2022.
Production: 85 (planned).
Inventory: 54 (HH-60W).
Operator: ANG, ACC, AETC, PACAF, USAFE.
Planned: USAFE, ANG, AFRC.
Aircraft Location: Aviano AB, Italy; Davis-Monthan AFB, Ariz.; Duke Field, Fla.; Francis S. Gabreski Arpt., N.Y.; Kadena AB, Japan; Kirtland AFB, N.M.; Moody AFB, Ga. Planned: 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

Senior Airman Breanna Christopher Volkmar

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, 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 that delayed FAA and subsequent military certification to August 2022. Six helicopters conducted USAF-led developmental testing expanding the flight envelope, validating mission suitability, and developing tactics prior to starting operational testing on Jan. 28, 2025. 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 heavyweight, 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 FY25 request included funds for eight aircraft with a total of 13 slated for delivery this FY. The first production aircraft was delivered to Malmstrom on Aug. 5, 2024, and a decision to ramp up to full-rate production of 15 helicopters annually is expected this year. The service reduced its 84-helicopter buy to 42 due to budget constraints in FY24 before raising the number to 56 to avoid triggering a Pentagon program review . AFGSC's three missile bases and the schoolhouse at Maxwell are unaffected by the change, though Andrews, Fairchild, Kirtland, Duke Field, and Yokota will continue to operate the UH-1N. Malmstrom took delivery of the first operational MH-139 on March 9, 2024, while Maxwell received its first MH-139 on April 3, 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: 56 (planned).
Inventory: Eight.
Operator: AFGSC, AFRC, AETC.
Aircraft Location: Duke Field, Fla.; Malmstrom AFB, Mont.; Maxwell AFB,

Ala. Planned: F.E. Warren AFB, Wyo.; 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 is fully upgraded with NVG-compatible cockpits, 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. USAF planned to begin retiring the fleet in 2022 with full retirement by 2032, though no airframes have yet been divested. Budget cuts to the MH-139 as well as the UH-1 fleet's significant remaining service life reversed plans to replace Hueys at Andrews, Fairchild, and Yokota, which will continue flying the UH-1N for the foreseeable future. A single UH-1N was lost in a crash during a training sortie at Cheyenne Regional Airport on Aug. 30, 2023.

Contractors: Bell Helicopter; Lockheed Martin (TH-1H prime).

2nd Lt. Rebecca Abordo

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

Richard Gonzales/USAF

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. The A-29 was a contender for the Air Force's Light Attack/Armed Reconnaissance (LAAR) as well as the 2017 Light Attack Experiment (OA-X) that evaluated off-the-shelf CAS/ISR platforms for low-cost counterinsurgency operations. The A-29 ultimately lost out to the OA-1K Skyraider II, which will replace the AFSOC-operated U-28A fleet. AETC also operated the A-29 to train Afghan and Nigerian Air Force pilots through 2021. Three aircraft were delivered to AFSOC at Hurlburt in early 2021. The aircraft were then transferred to the Air Force Test Pilot School (AFTPS) at Edwards on Aug. 18, 2024, due to changing mission

requirements. The Super Tucanos will provide avionics, weapons, sensors, and external stores capability to the AFTPS curriculum and also provide students with a novel, modern airframe for evaluation training.

Contractor: Sierra Nevada Corp.
First Flight: June 2, 1999.
Delivered: Feb. 23, 2021-March 31, 2021.
IOC: N/A.
Production: Three.
Inventory: Three.
Operator: AFMC.
Aircraft Location: Edwards AFB, Calif.
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.

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. The Avionics Modernization Program (AMP), completed in 2023, replaced the flight deck with a commercial glass cockpit.

Sean Worrel/USAF

A total of 73 aircraft, including all CSO-training airframes, were completed prior to USAF beginning fleet drawdown in FY23. Congress barred AETC from retiring an additional 52 aircraft in FY24 until it fully implemented a revamped Undergraduate Pilot Training road map completed in April 2024. AETC reversed plans to retain the 22 CSO-configured trainers at Pensacola and will instead rely on simulators to conduct future CSO and mobility pilot qualifications. The final T-1A departed JBSA Randolph on July 15, 2024, followed by Laughlin on Dec. 17. Pensacola began shedding aircraft in February 2025. AETC plans to divest 22 airframes this year prior to completing retirement in FY26.

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: 86.
Aircraft Location: Columbus AFB, Miss.; 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).

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,

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including single-pilot operation from either seat. The T-6 is fully aerobatic and features an anti-G system. Ongoing mods include a crash-survivable flight data recorder, and updated training aids. The fleet completed Next-Generation Onboard Oxygen Generation System (OBOGS) upgrades in 2024. Improved maintenance and inspections resulted in an 82 percent reduction in hypoxia-type incidents in the interim and upgrades aim to eliminate aircrew oxygen problems from the fleet. FY25 will launch the delayed 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. A single T-6A made a gear-up landing at JBSA Randolph on April 3, 2024, following an inflight emergency. The Vietnam Air Defense Air Force received its first three T-6Cs on Nov. 20, 2024, as part of a landmark Foreign Military Sale of 12 aircraft. The delivery marked the first U.S. aircraft delivery since the end of the Vietnam conflict, buttressing regional partnership capacity to confront growing regional threats.

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.

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 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 completed extreme weather-testing at Eglin in 2024 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

Joshua McClanahan/USAF

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 and simulators slated for delivery to Randolph in 2025.

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: Six (contractor-owned test airframes).
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 to train test pilots and flight-test engineers and by ACC and AFGSC as a

Jet Fabara/USAF

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, replacing major longerons, bulkheads/formers, intakes, internal skins, and structural floors on 180 high-risk T-38Cs. The concurrent Talon Repair Inspection and Maintenance (TRIM) program addresses similar issues across the T-38A and T-38B fleets as well as T-38Cs lacking Pacer Classic III mods through 2029. The first Pacer Classic III airframe was redelivered in 2015 and a total of 18 aircraft will undergo rework in FY25, while TRIM (Talon repair, inspection, and maintenance), launched in 2023 will redeliver 19 aircraft this year. Future upgrades focus on cockpit modernization, including the Terminal Avionics Replacement Program (TARP) and Low-cost Avionics Modification Program (LAMP). TARP replaces obsolete HUD components and cockpit displays, while LAMP modernizes inertial navigation and instrument landing systems to prevent spatial disorientation. Delays to the T-7A program have strained the fleet which suffers a shortage of overhauled engines due to parts obsolescence, dragging mission capable rates as low as 58 percent and continuing to delay pilot training.

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; 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

USAF

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 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 Falcon SAT-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." OTV-7 demonstrated a fuel-efficient "aerobraking" maneuver to change orbits prior to landing at Vandenberg on March 7, 2025.

Contractor: Boeing.
Operator: USSF SPoC, Space 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.

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

Kyle Brasier/USAF

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 more 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 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 completing a series of 21 flights before advancing to dogfight scenarios that built from defensive to offensive, eventually countering conventional, manned fighters. The 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

Senior Airman Dylan McCrink/ANG

An MQ-9 Reaper assigned to the 174th Attack Wing flies over Syracuse, N.Y., during a routine training flight in 2024. The 108th Field Training Unit conducts these flights to instruct pilots and sensor operators on proper flight operations of the aircraft.

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. FY25 funds support production of 20 subscale targets.

Sara Vidoni/USAF

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.

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

Airman 1st Class Victoria Nuzzi

SAR, and/or Gorgon Stare wide-area surveillance. 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. Extended Range (ER) mods added external fuel tanks, a four-bladed propeller, engine alcohol/water injection, heavyweight landing gear, longer wings and tail surfaces, and other enhancements in 2023. The latest Multi-Domain Operations (M2DO) configuration transitions the MQ-9 from counterinsurgency to future roles in or near contested airspace. The M2DO flew for the first time in 2022, and retrofits are slated for fleetwide completion by FY26. M2DO adds enhanced data link and control robustness, plug-and-play system integration, and double the power to integrate future advanced sensors, systems, and algorithms. Other enhancements include antijam GPS, Link 16, internet-protocol and modular mission system architecture, enhanced C2 resiliency, and greater flight autonomy/automation. The System Lifecycle Agile Modernization (SLAM) program will continuously upgrade the MQ-9 for emerging threats. Reapers have recently demonstrated maritime support, C2, and ISR roles flying from forward operating locations in the Pacific. Efforts including the Automatic Takeoff and Land Capability (ATLC) and single operator control of up to three MQ-9s now allow it to operate from airfields worldwide without a line-of-sight ground station, vastly increasing its utility for Agile Combat Employment. USAF retired all Block 1s and is divesting the highest-time Block 5 airframes through 2027, including six passed to the USMC. Plans call for retaining 140 Reapers through 2035, and USAF expects delivery of its final MQ-9 in 2025. At least three MQ-9s were lost in combat against Houthi rebels attacking shipping in the Red Sea in 2024, and a fourth was mistakenly shot down by U.S.-backed Kurdish fighters in Syria.

Contractors: General Atomics Aeronautical Systems; L3Harris; Raytheon (sensors).
First Flight: February 2001.
Delivered: November 2003-present.
IOC: October 2007; 2015 (ER).
Production: 338.
Inventory: 230.
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.; Whiteman AFB, Mo., and deployed locations worldwide.
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.; Niagara Falls Arpt., N.Y.; Shaw AFB, S.C.; Springfield-Beckley Arpt., Ohio.; Whiteman AFB, Mo.
Active Variants:
▪MQ-9B Reaper Block 5. Improved, current production Reaper, incorporating extended-range fuel tanks, longer wings, and other enhancements.
Dimensions: Span 79 ft, 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.
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).

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 replaced the QF-4 Full-Scale Aerial Target (FSAT) from 2015 through the type's final retirement in 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, and 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. 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 transitioned the QF-16 program from procurement to fleet sustainment this year and is soliciting industry to extend operations for up to 90 QF-16s through at least 2035 due to the lack of a suitable replacement.

Airman 1st Class Emily Kenney

Contractors: Lockheed Martin; Boeing (drone conversion).
First Flight: May 4, 2012.
Delivered: February 2015-present.
IOC: Sept. 23, 2016.
Production: 134 (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.

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. The follow-on Block 20 was initially equipped with the Enhanced Integrated Sensor Suite (EISS) for imagery intelligence (IMINT) and five were eventually converted as EQ-4B Battlefield Airborne Communications Node (BACN) relays, retired in 2021. The most numerous Block 30 was a multi-intelligence fleet equipped with EO/IR, SAR, and SIGINT sensors retired in 2022 and subsequently converted to telemetry platforms to support hypersonic weapons testing. Block 40 is the sole remaining variant and is equipped with the Multiplatform Radar Technology Insertion Program

Bryce Bennett/USAF

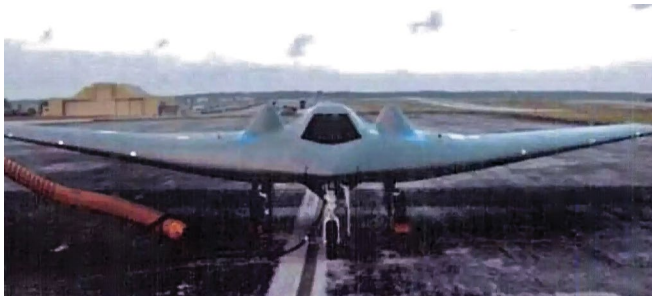
(MP-RTIP) sensor for ground-moving target surveillance. Its AESA and SAR simultaneously conduct moving target and cruise missile tracking, as well as stationary imagery collection. NATO also operates a pooled fleet of RQ-4Ds based on the Block 40, which declared initial operating capability with the Allied Ground Surveillance fleet in 2021. FY25 funds support Block 40 and Ground Station sustainment through planned retirement in 2027. RQ-4s deployed to Fairford for the first time on Aug. 22, 2024, operating alongside U-2s supporting operations in the EUCOM area of operations, in addition to testing concepts for Arctic surveillance.

Contractors: Northrop Grumman; Raytheon; L3Harris.
First Flight: Feb. 28, 1998.
Delivered: August 2003-circa April 2017 .
IOC: August 2011 (Block 30); August 2016 (Block 40).
Production: 45 (USAF).
Inventory: Nine (Block 40).
Operator: ACC.
Aircraft Location: Grand Forks AFB, N.D. (Block 40); forward operating locations: Andersen AFB, Guam; NAS Sigonella, Italy; RAF Fairford, U.K; Yokota AB, Japan.
Active Variants:
▪RQ-4B Block 40. AESA and SAR equipped ground-moving target indication (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 workstations (in GSMP-upgraded ground segments).

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.



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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 Kyle Wilson

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: 5-150 kilotons (preselectable).
Integration: B-52H.

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

Giancarlo Casem/USAF

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 test in which the shroud failed to separate from the glide vehicle, invalidating terminal performance data. An additional shot achieved proper release, boost, and ascent as well as "nominal" glide vehicle and warhead detonation, followed by a similarly successful over-water shot. 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. No additional tests are planned after the March 17, 2024, all-up round launch proving the weapon's land-target engagement capability at Kwajalein Atoll. USAF is transitioning hypersonic test funding to the Hypersonic Attack Cruise Missile (HACM) planned for flight-testing this year as well as future reusable hypersonic technology. Integration was originally planned for the B-1, B-52, and possibly F-15E/EX pending test results.

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.

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 in 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. The F-35A dropped an inert B61-12 for the first time in 2020 and full integration is planned as part of ongoing Block 4 development. The first production B61-12 was produced in 2021 prior to full-rate production ramp-up the following year. The entire inventory is slated for upgrade through FY26. Congress additionally approved DOD plans to develop a B61-13 variant using -12 enhancement to modernize the higher yield -7 in August 2024. B61-13 will modernize the existing weapons for use against "harder and large area military targets," replacing the 1.2 megaton B83-1 and the approximately 360 kiloton-yield B61-7 without increasing the existing stockpile.

Airman 1st Class Devan Halstead

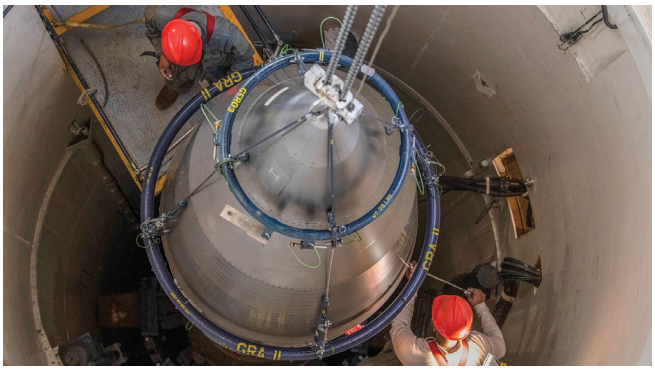
Contractors: Los Alamos National Laboratory, Sandia National Laboratory (weapon); Boeing (B61-12 tail kit).
Delivered: 1979-1998 (legacy stockpile); 2022-present (B61-12 mod).
IOC: 1968.
Production: Approx. 1,840 (current active variants).
Inventory: Approx. 725 (including stockpiled and deployed).

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.

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 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 fall below readiness standards as early as 2026. USAF awarded Northrop Grumman the Ground Based Strategic Deterrent (GBSD) development contract in 2019, resulting in the future LGM-35A Sentinel. AFGSC planned to begin replacing Minuteman III in 2027, with Sentinel fully replacing legacy ICBMs by 2036 but announced program delays of three or more years in 2024. Current efforts are focused on sustaining Minuteman III's critical deterrent capability through the full fielding of Sentinel. Guidance and propulsion upgrades must now extend systems through the late 2030s, while modernized reentry vehicles and fuzes will serve both Minuteman and Sentinel. USAF and Lockheed Martin completed the fourth and final test of the replacement fuse clearing the way for production, as well as a successful test of the future Mk 21A reentry vehicle in 2024. FY25 additionally requested funds for Minuteman Essential Emergency Communication Network (MEECN) mods, generator reliability improvement, and access denial system life extension. USAF is assessing sustainment requirements to keep Minuteman in service longer than expected due to delays fielding Sentinel but has ruled out another full Service Life Extension Program.



Senior Airman Abbigayle Williams

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.

LGM-35 SENTINEL

Strategic surface-to-surface ballistic missile

Brief: The LGM-35A Sentinel is a developmental three-stage, solid-propellant, silo-based ICBM designed to replace the Minuteman III land-based element of the nuclear deterrent "triad." Nuclear 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, officially designated LGM-35A Sentinel in 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, targeted for IOC with nine alert missiles by 2029. Sentinel will replace 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. The ICBM will incorporate modular design and open system architecture to ease both maintenance and future modernization. The service plans to initially deploy it with a single thermonuclear warhead aligning it to New START limits, though the ICBM's increased performance could permit a multiple-warhead configuration. Sentinel will utilize both the Mk21 reentry vehicle and ICBM fuse already undergoing modernization for Minuteman III. AFGSC projects the LGM-35A will reach full operational capability by 2036, providing land-based strategic deterrence capability through at least 2075. Northrop Grumman completed a full-scale qualification static fire test of the LGM-35A's first stage solid rocket motor at its static-test facility at Promontory, Utah, on March 6, 2025 , following a test of the second stage in a vacuum chamber at Arnold Engineering Development Complex, Tenn., in 2024. Required design changes to the command and launch infrastructure drove an 81 percent cost increase, triggering a DOD program review in early 2024. USAF rescinded its approval of the preliminary design and is undertaking an approximately two-year restructuring of the program. The service also paused work on ground infrastructure and is reviewing revised options, including mobile or hybrid fixed-mobile facilities. Planned IOC will be delayed by at least two years to 2031 or beyond, though development of the LGM-35A itself is continuing. The first test launch was likewise postponed at least two years due to delays sourcing guidance components and is now targeted for 2026.

USAF illustration

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: AFGSC (planned).
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

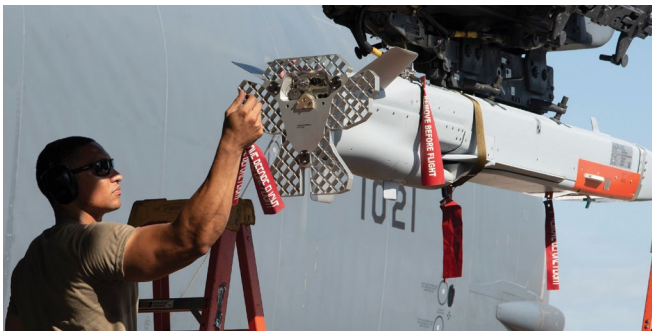
Senior Airman Jonathan Ramos

AGM-158 Joint Air-To-Air Surface Missile

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



Airman 1st Class Celeste Zuniga

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. The systems have also been noted equipping Ukrainian aircraft in combat since 2023.

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.

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 2016. Further development has resulted in the extended range AGM-158B and "extreme range" AGM-158D, which is retargetable 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 stand-off 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 FY25 funds continue maximum-rate procurement of 550 JASSM-ER as well as continuing LRASM purchases of 115 weapons. The manufacturer is opening a second production facility to double JASSM/LRASM production, and USAF plans to increase purchases to 810 missiles 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. Both the F-35B and C variants began flight testing this past year to carry JASSM/LRASM externally as part of Block 4 upgrades.

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).

Airman 1st Class Joel Pfiester/Released

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 MISSLES

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 a reduced-smoke rocket motor. AIM-9X is the newest joint-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. FY25 funds decreased from FY24, procuring a combined 147 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. Block II+ will begin operational testing of software and hardware upgrades to enhance performance and add two new, classified capabilities in early FY25, though live testing is hampered by a lack of advanced threat-representative targets.

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.

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, reprogrammable 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. System Improvement Program (SIP II) upgrades debuted in 2020, and the latest AIM-120D3 with SIP IIIF software was fielded in March 2024. The new configuration incorporates Form, Fit, and Function (F3R) upgrades and nearly doubles the missile's range while increasing its kinetic energy against advanced long-distance threats. The next SIP-4 software upgrade will maximize the F3R hardware's nearly four-times-faster computing power to maximize weapon performance, while SIP-5 will expand its engagement envelope. USAF plans to potentially utilize AIM-120D3 as an affordable "capacity" weapon in tandem with the next-generation AIM-260 Joint Air Tactical Missile (JATM) which is currently in testing. FY25 continues a multi-year/large lot procurement started last year that boosts USAF production from a previous base of 320 to 462 AIM-120Ds.

USAF

Contractors: Raytheon; Northrop Grumman; Nammo Group (propulsion).
First Flight: December 1984; Jan. 25, 2022 (AIM-120D F3R).
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 (AIM-120C).
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

Staff Sgt. Laura Weaver

AGM-65 Maverick

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 strikes 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 being used by the three other services and initial weapons were procured from Navy stocks. The rockets are launched from multiround reusable pods. BAE introduced a block upgrade capable of increasing APKWS' range by as much as 30 percent in 2021. The weapons have proved adaptable to new missions and an A-10 tested it against advanced reactive armor in 2022. An F-16 successfully destroyed an airborne target using APKWS during an anti-cruise missile demo and further counter-UAS development led to the AGR-20 FALCO (Fixed Wing, Air-Launched, Counter-Unmanned Aircraft Systems Ordnance). Addition of an IR seeker permits fire-and-forget capability against airborne targets, easing pilot workload in the anti-missile/counter-UAS role. The enhanced weapons have been extensively used downing Houthi missiles and drones targeting shipping in the Red Sea and Iranian weapons fired against Israel in October 2023. USAF fulfilled its inventory requirement last year and requested no FY25 funds.

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.
▪AGM -20. Fixed Wing, Air Launched, Counter-Unmanned Aircraft Systems Ordnance (FALCO) adapted for use against small airborne targets.
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.

Courtesy illustration

Guidance: Semi-active laser.
Warhead: HE, armor-penetrating, white phosphorous, or illuminating round.
Integration: A-10, A-29, F-16. Planned: OA-1K.

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 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 most recent 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 is not currently procuring additional weapons.

Tom Demerly/ANG

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).

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 184 missiles from FY23 to FY25 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 in 2021, but the sea service's plan to reach IOC in 2023 slipped due to testing and certification delays to late FY25.

Jim Haseltine/courtesy photo via PACAF

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).

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 any weather. The AC-130J demonstrated new wing-pylon-mounted Hellfires in a live-fire exercise with South Korea in June 2024.

Staff Sgt. Brian Ferguson

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 attacks 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. 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 OA-1K armed overwatch platform's arsenal.

Raytheon

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: OA-1K.

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-one-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 gradually replacing its legacy area weapons with the 500-lb class and 2,000-lb class Next-Generation Area Attack Weapon (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 predispersal) 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).

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.

Tech. Sgt. Marvin Lynchard

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: Nonexplosive projectiles.
Integration: B-52, F-15E, F-16C/D.
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: Nonexplosive 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 is primarily 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 has a 500-lb bomb body and is primarily used against stationary armored targets. GBU-49 also has 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 6 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.

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

Master Sgt. Carl Clegg

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 finishing 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).

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

Ilka Cole/USAF

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 acquiring Strategic Anti-Jam Beamforming Receiver Y-Code (SABR-Y) tail kits and developing an advanced Military Code anti-jam GPS guidance for use in signal-degraded environments. The service is also working to field a lighter-weight successor class of weapons incorporating IR/GPS guidance, maneuver wings, stealth, and EW capabilities. The U.S. supplied winged JDAM-ER as part of weapons shipments to Ukraine which extend the weapons stand-off delivery to beyond 40 miles. USAF drastically reduced combat stockpile replenishment in FY22 before slightly increasing procurement to 4,200 tail kits in FY23. The FY25 request would procure 1,500 guidance kits. B-2s conducted a "QUICKSINK" demonstration using modified 2,000-lb JDAMs to supplement more expensive weapons in an anti-shipping role during Exercise RIMPAC in 2024.

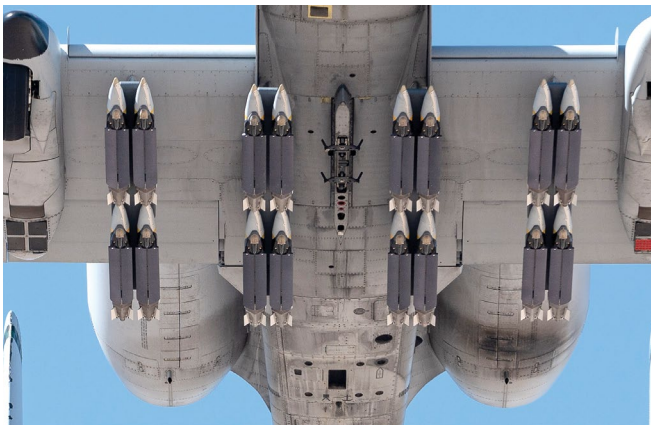
Contractors: Boeing; Textron; Honeywell.
First Flight: Oct. 22, 1996.
IOC: 1998.
Active Variants:
- GBU-31. GPS/INS-guided 2,000-lb GP, or BLU-109 penetrating weapon.
- GBU-32. GPS/INS-guided 1,000-lb GP, or BLU-110 penetrating weapon.
- GBU-38. GPS/INS-guided 500-lb GP, or BLU-140 (prev. BLU-111) penetrating 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 a total of 604 weapons in FY25 , reflecting a shift to advanced standoff weapons to confront more advanced threats. Both air-launched GBU-39 and Ground-Launched SDB propelled by a 227 mm rocket are a significant part of U.S. military aid currently supplied to Ukraine.



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.

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-

Raytheon Missile and Defense

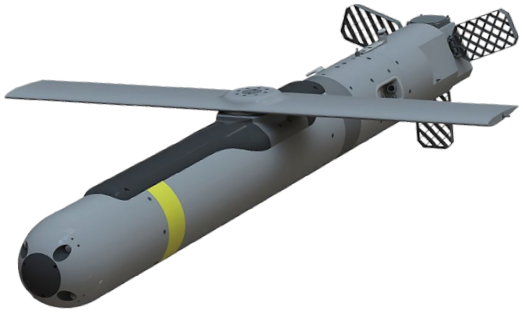
ing on the F-15E on Sept. 23, 2020, followed by IOC in September 2022. Navy testing is underway with the F-35B/C and the service declared early operational capability on the F-18E/F in October 2023 with IOC targeted for 2024. FY25 requested funding for up to 868 SDB IIs.

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.

GBU-69 SMALL GLIDE MUNITION

Guided air-to-surface glide bomb

Brief: Small Glide Munition is a standoff precision guided munition 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 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



Dynetics

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. AFSOC is testing the Leidos "Black Arrow" small cruise missile on the AC-130J as a potential capability to meet future threats .

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 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. GBU-72 completed captive-carry flights on the B-1B on Oct. 31, 2023, as part of the aircraft's external pylon testing and USAF has discussed integration on the B-2A. The weapon is undergoing integration test flights that were planned for completion by the end of FY24.

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: B-1B , B-2A , F-15E.

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 was designed for deployment from the ramp of the now-retired 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.

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

Tech. Sgt. Alex Fox Echols III

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. A Navy F-35C conducted the first simultaneous release of two externally carried GBU-54s as part of ongoing integration on all three variants of the Lightning II in early 2024.

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).
Integration: Planned: F-35.

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

509th Bomb Wing

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 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. USAF conducted two full-scale tests in 2024 to validate B-2 integration fixes and Smart Fuse functionality, in addition to small-scale lethality tests.

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).

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SPACE SYSTEMS

SPACE DOMAIN AWARENESS

U.S. Space Force courtesy photo

Space Delta 2 operates the 20th Space Control Squadron's AN/FPS-85 phased array radar, located at Eglin Air Force Base, Fla. The giant radar has made thousands of space observations daily, all contributing to the space domain awareness mission.

By Aidan Poling

AN/FPS-85 (EGLIN PHASED ARRAY RADAR)

Space Domain Awareness

Brief: The AN/FPS-85 is a very large-fixed array radar located at Eglin AFB. Initially designed to track satellites, a software update installed in 1975 enabled the unit to track submarine-launched ballistic missiles, or SLBMs. This became the 20th Space Surveillance Squadron's primary mission, while space surveillance became secondary. From 1971 to 1984 the 20th Surveillance Squadron served as the Alternate Space Surveillance Center, providing computational support to the Space Surveillance Center at Cheyenne Mountain AS, Colo. If the need arose, the squadron could assume command and control of worldwide SSN. During the 1980s, the AN/FPS-85 was the proving ground for development of phased array radars designed specifically for early warning of SLBM attacks. The AN/FPS-85 can detect, track, and identify up to 200 satellites simultaneously and provides 120-degree azimuth of coverage. Generating a combined output of 32 megawatts, the radar can track an object the size of a basketball at a range of more than 35,000 km.

Contractors: AlliedSignal Inc. (prime contractor for the radar); Bendix Communications Division; IBM Computers; L3Harris (sustainment).
Operator/Location: 20th Space Surveillance Squadron, Eglin AFB, Fla.
IOC: 1968.
Active Systems: One radar.

AN/FSY-3 (SPACE FENCE)

Space Domain Awareness

Brief: The AN/FSY-3 (Space Fence) S-band radar is the dedicated southern hemisphere space surveillance asset, capable of low-inclination tracking. Operated by the 20th Space Surveillance Squadron, it can detect, track and identify up to 500 satellites simultaneously. The unique structural design allows for 360-degrees of azimuth coverage. The antenna covers +20° to +90° elevation. The radar can track an object the size of a beach ball at a range of more than 36,000 km.

Contractor: Lockheed Martin.
Operator/Location: 20th Space Surveillance Squadron, Kwajalein Atoll, Marshall Islands.
IOC: 2020.
Active Systems: One S-band radar.

GEODSS (GROUND-BASED ELECTRO-OPTICAL DEEP SPACE SURVEILLANCE) SITES

Space Domain Awareness

Brief: Since the early 1980s, the Ground-Based Electro-Optical Deep Space Surveillance (GEODSS) System has played a central role in tracking deep space objects. It is a nine passive sensor array of visible wavelength reflecting telescopes. These are globally distributed across the following three sites (with three telescopes per site):

- **White Sands Missile Test Range, Socorro, N.M.**
  Operated by Det. 1, 15th Space Surveillance Squadron
- **Diego Garcia, British Indian Ocean Territories**
  Operated by Det. 2, 15th Space Surveillance Squadron
- **Mount Haleakala, Maui Island, Hawaii**
  Operated by Det. 3, 15th Space Surveillance Squadron.

These telescopes play a central role in tracking deep space objects and are each able to "see" objects 10,000 times dimmer than the human eye. Over the years, the GEODSS systems have undergone several refurbishments and upgrades, the most significant being the addition of digital cameras. These highly sensitive digital camera technologies—developed under a program known as Deep STARE—can detect multiple satellites in the telescope's field of view. The telescopes take rapid electronic snapshots of satellites in the night sky, showing up on the operator's console as tiny streaks. Star images, which remain fixed, are used as reference or calibration points for each of the three telescopes. The resulting observation data is then sent instantaneously to Delta 2 for the management of the satellite catalog data.

Contractors: MIT Lincoln Labs (initial RDTE); TRW (prime contractor for design and development radar, acquired by Northrop Grumman); Sarnoff Corp. (Deep STARE upgrade).
Operator/Location: 15th Space Surveillance Squadron, Diego Garcio; White Sands Missile Range, N.M.; Maui.
IOC: 1982.
Active Systems: Nine passive sensor array telescopes.

MAUI SPACE SURVEILLANCE SYSTEM (MSSS)

Space Domain Awareness

Brief: The Maui Space Surveillance Complex (MSSC) is national space surveillance and research asset. Located at the 10,023-foot summit of Haleakala on the island of Maui, Hawaii, the MSSC hosts small-, medium-, and large-aperture tracking optics, including the DOD's largest optical telescope designed for tracking and imaging satellites, with visible and infrared sensors to collect data on near-Earth and deep-space objects. The MSSS is operated by the 15th Space Surveillance Squadron. The AEOS 3.6 m and other smaller contributing telescope systems validate and develop advanced technology for transition to the dedicated sensor baseline while also executing a contributing SDA mission on behalf of the USSF. These contributing sensors support experiments and leverage R&D capabilities by like AFRL. DOD began conducting research and development and operational missions on Mount Haleakala in the early 1960s at the Advanced Research Projects Agency Midcourse Observation Station, which is known today as the Maui Space Surveillance Complex. Originally built as an electro-optical observation platform for missile tests, the site has evolved into a world-class observatory supporting missions in space control, laser propagation, and other related fields.

Contractors: University of Michigan (initial telescope RDT&E); Lockheed Martin (O&M); Rockwell (O&M); Raytheon (optical upgrade).
Operator/Location: 15th Space Surveillance Squadron, Air Force Maui Optical and Supercomputing Site, Hawaii.
IOC: 1977 (SAC takes operational control).

SILENT BARKER

Space Domain Awareness

Brief: Silent Barker is a classified space-based Space Situational Awareness (SSA) system jointly developed by the U.S. Space Force (USSF) and the National Reconnaissance Office (NRO). It was launched in September 2023. The system consists of three satellites designated USA 346, USA 347, and USA 348, which were placed into orbit above geosynchronous Earth orbit (GEO) at a 12-degree inclination. After approximately a year of on-orbit testing, the first series of Silent Barker satellites became operational in early 2025. The system is expected to reach full operational capacity following a planned launch in FY2026. Silent Barkers mission differs from the Geosynchronous Space Situational Awareness Program (GSSAP). Silent Barker is focused on wide area surveillance while GSSAP is responsible for doing characterization to detect anomalies or provide intricate characterization of satellites in geosynchronous orbit. Data collected by Silent Barker is transmitted to classified military users including the USSF's National Space Defense Center and the Combined Space Operations Center, while the NRO operates the satellites.

Contractors: Not specified in the available information.
Operator/Location: USSF and NRO.
First Launch: Sept. 10, 2023.
IOC: Early 2025.
Launch Vehicle: Atlas V.
Constellation: Three satellites in first series, with more planned.
Active Satellites:
- USA 346. Launched in September 2023; active.
- USA 347, Launched in September 2023; active.
- USA 348. Launched in September 2023; active.

Orbit Altitude: Above geosynchronous Earth orbit (GEO) at 12-degree inclination
- GSSAP 5. Launched in 2022, on orbit, active.
- GSSAP 6. Launched in 2022, on orbit, active.

Orbit Altitude: Near-geosynchronous at 22,300 miles.

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. SBSS primarily uses a trainable, ground-controlled Space-Based Visible Sensor to track satellites to cover a four-year gap in coverage until the newly established Space Force can launch a follow-on spacecraft. 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.

Contractors: Boeing (system integration, ground segment, operations and sustainment); Ball Aerospace (satellite).
Operator/Location: USSF SpOC, Space Delta 9 (DEL 9), 1st Space Operations Squadron (1 SOPS), Schriever SFB, Colo.
First Launch: Sept. 25, 2010.
IOC: Aug. 17, 2012 (SBSS).
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.

UPGRADED EARLY WARNING RADAR (UEWR)

Missile Warning/Tracking

Brief: The Upgraded Early Warning Radar (UEWR) system provides advanced ballistic missile detection, tracking, and space surveillance capabilities for the United States Space Force. The UEWR network consists of powerful phased-array radar systems strategically positioned in the United States and abroad. These radars are capable of detecting and tracking intercontinental ballistic missiles (ICBMs), sea-launched ballistic missiles (SLBMs), and conducting space domain awareness operations, including satellite tracking. The system operates 24/7 to provide critical early warning of potential missile threats and contribute to space surveillance networks. UEWR represents a significant modernization and upgrade of the previous generation Ballistic Missile Early Warning System (BMEWS) and PAVE PAWS radars with enhanced detection capabilities and improved integration with missile defense systems. The radar systems utilize advanced phased-array technology that allows for rapid electronic beam steering without the need for mechanical movement of the antenna. This enables simultaneous tracking of multiple targets while maintaining broad surveillance coverage across a 240- to 360-degree field of view. Operating in the Ultra High Band Frequency, these radars boast wide area coverage but are not able to perform midcourse discrimination. The modernized systems feature upgrades to approximately 80 percent of radar and computer subsystems, along with completely rewritten software to enhance midcourse ballistic missile defense system coverage through improved early warning, tracking, object classification, and cueing data.

Contractors: Raytheon (prime); SAIC (sustainment).
Operator/Location:
- 6th Space Warning Squadron, Space Delta 4, SpOC, Cape Cod AFS, Mass.
- 7th Space Warning Squadron, Space Delta 4, SpOC, Beale AFB, Calif.
- 12th Space Warning Squadron, Space Delta 4, SpOC Pituffik SFB, Thule, Greenland.
- 13th Space Warning Squadron, Space Delta 4, SpOC, Clear AFS, Alaska.
- RAF Fylingdales (operated by RAF with USSF liaison), U.K.

IOC: 2005, Beale AFB location.
Active Systems: five radar, globally distributed.

Northrop Grumman

ADVANCED EXTREMELY HIGH FREQUENCY (AEHF) SATELLITE SYSTEM

Communications

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. SV-4 launched on Oct. 17, 2018; full operational capability was 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 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 expected this year. 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 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, Space 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 approx. 8 Mbps, from 65 north to 65 south latitude worldwide.
Orbit Altitude: Geosynchronous at 22,500 miles.
Power: Solar arrays generating 20,000 watts.

CONTINUOUS BROADCAST AUGMENTING SATCOM

Satellite Communications

Brief: The Continuous Broadcast Augmenting SATCOM is a set of geostationary satellites designed to provide communications relay capabilities to support senior leaders and combatant commanders. The CBAS system includes two satellites in geostationary orbit designed to broadcast military data continuously through space-based satellite communications relay links. The satellites enhance existing military satellite communications capabilities by providing additional relay capacity for time-sensitive information. The system supports the communication needs of senior leadership and combat commanders with secure, reliable data transmission. The first CBAS satellite (CBAS-1) was successfully launched on April 14, 2018, from Cape Canaveral as the primary payload on the AFSPC-11 mission aboard an Atlas V rocket directly into geostationary orbit. CBAS-2 was subsequently launched on Jan. 15, 2023, on a Falcon Heavy rocket as part of the USSF-67 mission. A third satellite (CBAS-3) is planned for future deployment to further enhance the constellation's capabilities. The system transitioned from U.S. Air Force to U.S. Space Force operations following the creation of the Space Force in December 2019. CBAS is managed by Space Systems Command, formerly the Military Satellite Communication Director of USAF's Space and Missile Defense Center.

Contractor: Boeing
Operator/Location: USSF SpOC; Schriever SFB, Colo.
Acquisition Organization: Military Satellite Communication Director of USAF's Space and Missile Defense Center (now Space Systems Command.)
First Launch: CBAS 1, March 14, 2018.
IOC: 2018
Launch Vehicle: Atlas V (GEO). Falcon Heavy.
Constellation: Two GEO satellites.
Active Satellites:
▪CBAS 1. Launched in 2018; active.
▪CBAS 2. Launched in 2023; active.
Dimensions: Not publicly available.
Weight: 4,400-6,600 lb. (GEO on orbit).
Orbit Altitude: Geostationary.
Power: Deployable solar array, (GEO). Batteries.

DEFENSE SATELLITE COMMUNICATIONS SYSTEM III (DSCS III)

Satellite Communications

Brief: The Defense Satellite Communications System III (DSCS III) is the third generation of the U.S. military's premier geostationary communications constellation, succeeding the earlier DSCS II satellites. Beginning in 2007, it began to be phased out in favor of the Wideband Global SATCOM (WGS) Originally comprised of 14 satellites launched between October 1982 and August 2003, the constellation now consists of four satellites. These final four satellites received Service Life Enhancement Program (SLEP) modifications that provide substantial capacity improvements through higher-power amplifiers, more sensitive receivers, and additional antenna connectivity options. The DSCS communications payload includes six independent Super High Frequency (SHF) transponder channels that cover a 500 MHz bandwidth. The DSCS III satellites carry six independent Super High Frequency (SHF) transponders and one special purpose single channel transponder operating on both SHF and Ultra High Frequency (UHF). The satellites feature three receive antennas (two Earth coverage horns, one steerable 61-beam nulling lens) and five transmit antennas (two Earth coverage horns, two steerable 19-beam wave guide lenses, one high gain parabolic gimbaled dish). Two solar wings produce 1700 Watts of onboard power at the beginning of life and 1230 watts at the end of life.

Contractor: Lockheed Martin
Operator/Location: 53rd Space Operations Squadron, USSF, Schriever SFB, Colo.
Acquiring Agency: MILSATCOM Systems Directorate, Space and Missile Systems Center (SMC), now Space Systems Command.
First Launch: DSCS-3 A1, Oct. 30, 1982.
IOC: GEO 1, Dec. 5, 2008. (Increment 1, Dec. 8, 2001)
Launch Vehicle: Titan-34, Delta-4, Space Shuttle, Atlas-2.
Constellation: Four GEOs.
Active Satellites:
▪ DSCS-3 B13 (#10) (USA 134); Launched October 25, 1997; Active.
▪ DSCS-3 B8 (#11) (USA 148); Launched January 21, 2000; Active.
▪ DSCS-3 A3 (#13) (USA 167); Launched March 11, 2003; Active.
▪ DSCS-3 B6 (#14) (USA 170); Launched August 29, 2003; Active.
Dimensions: Not available
Weight: 2,722 lb.
Orbit Altitude: Geostationary.
Power: 2 deployable solar arrays, 1700 watts, batteries

FLTSATCOM (BLOCK 2)

Satellite Communications

Brief: Fleet Satellite Communications System (FLTSATCOM) currently consists of two operational satellites used by the Air Force, Navy, and presidential command network. The system is designed to provide secure communications links among the three users. Each FLTSATCOM satellite includes 22 communications channels in the ultra-high and super-high frequency bands that support nuclear command and control. FLTSATCOM Block 2 (consisting of FLTSATCOM 6-8) is an upgrade from the FLTSATCOM Block 1 design and includes an Extremely High Frequency (EHF) communications package that served as a test bed for Milstar system terminals. Today only FLTSATCOM 7 and 8 remain operational today. Both were transferred to the USSF in 2021 following the stand up of the Space Force.

Contractor: TRW (prime contractor), acquired by Northrop Grumman.
Acquiring Agency: Space and Naval Warfare Systems Command.
Operator/Location: 10th Operations Squadron, USSF. Point Mugu, Calif.
First Launch: FLTSATCOM 7, May 1986.
IOC: FLSATCOM 7, May 1986.
Launch Vehicle: Atlas Centaur (GEO)
Constellation: Two GEO sats.
Active Satellites:
▪FLSATCOM 7. Launched in 1987; active.
▪FLSATCOM 8. Launched in 1989; active.
Dimensions: 8.2 ft diameter, 4.3 ft height.
Weight: 5,094 lb.

Performance: Geostationary orbit.
Orbit Altitude: Geostationary.
Power: Solar array, 1,400 watts (GEO), batteries.

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, Space 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 tenfold 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 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 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. FY25 funds focus on modernizing software and correcting cyber vulnerabilities to the six Ground Segment sites. Canada reached IOC becoming the first allied MUOS user in June 2024, with full operational capability 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: 2012.
Design Life: 14 yrs.
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.
Power: Two deployable solar arrays.

ULTRA-HIGH FREQUENCY FOLLOW-ON (UFO)

Satellite Communications

Brief: The UHF Follow On (UFO) satellite series provides critical ultra-high frequency communications for the U.S. Navy's global network, serving ships at sea and various military terminals. These satellites replaced the Fleet Satellite Communications (FLTSATCOM) and Hughes-built Leasat spacecraft, establishing a more capable and flexible communications infrastructure. While a total of 11 were launched, beginning in 1993, only four remain operational today. The UFO satellites utilize a modular payload architecture operating in geosynchronous orbit. Earlier satellites (UFO-4 through UFO-7) were built by Hughes and incorporated an EHF payload alongside UHF and SHF capabilities, providing protected communications with anti-jam features. Block 3 satellites (UHF-8 to -10) replaced the SHF payload with the Global Broadcast Service (GBS) package and included four 130-watt, 24 Mbps military Ka-band (30/20 GHz) transponders with three steerable downlink spot beam antennas and dedicated uplink antennas. This technical configuration delivered a 96 Mbps data transmission capability per satellite—a significant increase over previous generations. Block 4 of the UFO was designed by Boeing and consists of a single satellite (UFO-11) launched on Dec. 18, 2003. It was intended to serve as a gap filler between the UFO and MUOS constellations. UFO-11 satellite incorporates the enhanced 20-channel EHF package first introduced on UFO-7, while adding an upgraded UHF payload with a new digital receiver that provides two additional UHF channels and greater flexibility in configuring communication services. UFO-11 maintains the same physical dimensions as earlier non-GBS Block 2 satellites.

Contractors: Hughes (Block 1-3); Boeing (Block 4).
Operator/Location: 10th Operations Squadron, USSF. Point Mugu, Calif.
Acquisition Organization: Space and Naval Warfare Systems Command's Communications Satellite Program Office, USN.
First Launch: UFO-1, March 1993.
IOC: UFO-2, Sep. 3, 1993.
Launch Vehicle: Atlas 3-B, Atlas-2A, Atlas-2, Atlas-1.
Constellation: Four GEO sats.
Active Satellites:
▪UFO 8 (Block 3). Launched in 1998; active.
▪UFO 9 (Block 3). Launched in 1998; active.
▪UFO 10 (Block 3). Launched in 1998; active.
▪UFO 11 (Block 4). Launched in 2003; active.
Dimensions: 75 ft x 11 ft x 11 ft (Block 3), 60 ft x 11 ft x 11 ft (Block 4).
Weight: 7,068 lb. (Block 3), 6,704 lb. (Block 4).
Orbit Altitude: Geostationary.
Power: Solar arrays: 3,800 watts (Block 3), 2,800 watts (Block 4), batteries.

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 to procure the 11th and 12th satellites, but USSF opted for the single, modernized WGS-11+ platform. Congress added FY23 funds to again 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 demonstrated PTS and is working to field an IOC capability using a WGS satellite for the Indo-Asia Pacific theater. The capability could be extended to the full constellation, permitting an advanced anti-jam/low probability of interception bridge to PTS, augmenting the future constellation. The Boeing-designed WGS-11+ will offer roughly twice the capability, in addition to stronger, more reliable coverage and is tentatively slated for launch in 2025. It will host a dedicated PTS payload in addition to being the first WGS satellite carried into orbit by a ULA Vulcan Centaur. Poland and Japan signed agreements to join WGS in 2024 primarily utilizing the two latest satellites.

Boeing

Contractor: Boeing.
Operator/Location: USSF SpOC, Space 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.
Power: Solar arrays generating 9,934 watts.

USAF

GEOSYNCHRONOUS SPACE SITUATIONAL AWARENESS PROGRAM (GSSAP)

Situational Awareness/Orbital Tracking

Brief: GSSAP supplies space-based tracking and characterization of man-made objects in geosynchronous orbit, aiding safety, and enabling avoidance. They are the "neighborhood watch" satellites. The satellites 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 beyond 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 2020. The upgrades also pave the way for future expansion of the constellation. The fifth and sixth sensors 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 on Aug. 2, 2023. The space service planned to launch two additional GSSAP satellites into orbit in 2024 and 2027 but did not disclose if the 2024 launch went ahead as planned.

Contractor: Northrop Grumman Space Systems.
Operator/Location: USSF SpOC, Space 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, nonoperational 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.

Tech. Sgt. J.T. Armstrong/USAF

SATELLITE CONTROL NETWORK (SCN)

Satellite Control

Brief: The Satellite Control Network provides satellite command and control capabilities for U.S. military and other government satellites. The system includes a network of 19 globally distributed parabolic antennas spread across seven locations around the world. The SCN supports tracking, telemetry, and commanding functions, ensuring that satellites remain in the proper orbit and are performing as designed. These functions are accomplished through the network of ground stations, ground antennas, and communication links between the control centers, antennas, and satellites, strategically located around the world. The SCN is currently operating at high utilization rates while facing increasing demand. To address this, the Space Force is pursuing a range of modernization and augmentation efforts. In 2022, the Space RCO awarded BlueHalo a $1.4 billion contract to replace as many as 12 SCN parabolic satellite dishes with electronic phased array antennas that will be able to talk to up to 20 satellites at a time rather than one. Delivery of all 12 dishes is expected between late

2026-2030. In July 2024, the Space Force awarded Akima's subsidiary Five Rivers Analytics a $480 million 10-year contract to support the Satellite Control Network and help integrate new technologies into the system as they emerge. The Space Force is also exploring working with other federal agencies through Federal Augmentation Services (FAS) program to upgrade and utilize existing civil ground system infrastructure to support the SCN. The Satellite Control Network is operated by Space Delta 6's 21st, 22nd, and 23rd Space Operations Squadrons (SOPS). The 22nd SOPS functions as the primary interface with SCN users, including scheduling satellite contacts. The 21st and 23rd SOPS execute operations and maintenance of SCN antenna systems and tracking stations in the western and eastern hemispheres, respectively.

Contractors: Lockheed Aircraft Corp. (developed as part of the WS-117L program); Philco Corp. (subcontractor to Lockheed and then prime for the development of the remote tracking stations, Akima; (Five Rivers Analytics) (sustainment and modernization); BlueHalo (SCAR development).
Operator/Location: Delta 6, SpOC Schriever SFB, Colo.
- Vandenberg Tracking Station (VTS) - Vandenberg SFB, Calif. (alternate control center), 21nd SOP.
- Hawaii Tracking Station (HTS), Kaena Pt., Hawaii, 21st SOP.
- Guam Tracking Station (GTS), Andersen AFB, Guam, 21st SOP.
- Diego Garcia Station (DGS), Diego Garcia Island, 21st SOP.
- Colorado Tracking Station (CTS), Schriever SFB, Colo. (primary control center), 22nd SOP.
- Pituffik Tracking Station (PTS), Thule AB, Greenland, 23rd SOP
- Telemetry & Command Squadron (TCS), Oakhanger, U.K., 23st SOP
- New Hampshire Tracking Station (NHS), New Boston SFS, N.H., 23rd SOP

IOC: 1959.
Active Systems: 19 parabolic antennas and two command posts at eight worldwide locations.

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 technology 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 SV-17 in November 2021, and SV-18 through SV-20 in November 2022. Block IIIF will add a hosted search and rescue payload, and a 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 enable use of modernized civil, aviation, military signals, and advanced cyber defenses have been further delayed and are now not expected until mid-2025 or beyond. OCX is one of the last key elements to GPS Block III reaching IOC. USSF launched GPS III SV-7 on Dec. 16, 2024, and SV- 8 is planned for an undetermined launch date in 2025. 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, Space 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).

DOD

COBRA DANE

Missile Warning/Tracking

Brief: The Cobra Dane Radar Upgrade serves as an advanced L-band radar installation at Eareckson Air Station on Shemya Island, Alaska. Originally engineered to monitor Soviet missile tests, the system underwent significant enhancements in 2004 to incorporate missile defense capabilities. Cobra Dane's primary function involves gathering radar metric and signature data from foreign ballistic missile activities during their flight paths, as well as monitoring space launches to support treaty verification, force modernization, and missile defense initiatives. The system also conducts space surveillance, tracking both cataloged and uncatalogued satellites in low-Earth orbit to enhance Space Domain Awareness operations. The sys-

tem's impressive detection range extends to 2,000 miles, delivering missile tracking and classification data with sufficient precision to authorize interceptor launches from the Ground Midcourse Defense system and provide target updates during interceptor flight. With its phased-array technology, Cobra Dane can simultaneously track multiple objects and automatically switches to Missile Defense mode when detecting threatening missiles or receiving alert notifications. During standard operations, it focuses on space surveillance activities. Initially developed for intelligence collection supporting SALT II arms limitation treaty verification, Cobra Dane transitioned from the Missile Defense Agency to Air Force control in February 2009. By 2015, operational oversight shifted to the Air Force Life Cycle Management Center Battle Management Directorate, with Raytheon securing a maintenance contract in 2016. Currently, the 13th Space Warning Squadron provides operational support for the radar's missile defense and space domain awareness missions.

Contractor: Raytheon.
Operator/Location: 13th Space Warning Squadron, Space Delta 4 (Delta 4), SpOC, Eareckson Air Station, Alaska.
IOC: 1976 operational for missile tracking; upgraded for missile defense in 2004.
Active Systems: One radar site.

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. 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.

Contractors: Northrop Grumman (formerly TRW); Aerojet.
Operator/Location: USSF SpOC, Space Delta 4 (DEL 4), 2nd Space Warning Squadron; Buckley SFB, Colo.; Joint Tactical Ground Stations (JTAGS) located in Japan, Italy, South Korea, and Qatar.
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.

LONG RANGE DISCRIMINATION RADAR (LRDR)

Missile Warning/Tracking

Brief: The Long Range Discrimination Radar (LRDR) is an advanced S-band radar system designed to distinguish between enemy intercontinental ballistic missiles (ICBMs) and decoys, serving as a crucial component in the defense of the American homeland. The system is based at Clear Space Force Station in Alaska and will be operated by the U.S., Space Force upon full operational acceptance, which is scheduled for the second quarter of fiscal 2025. The LRDR serves as a critical piece of a layered defense system for the United States. It supports the ballistic missile interceptors belonging to the Ground-Based Midcourse Defense system, which are primarily designed to counter missile threats from nations such as Iran and North Korea. In addition to its primary mission of missile defense, the LRDR will also track objects in space, providing space domain awareness capabilities. The S-band radar system is specifically designed to distinguish between enemy ICBMs and decoys. Built by Lockheed Martin, the LRDR was initially fielded at Clear Space Force Station near central Alaska in late 2021. However, the system has some delays in its operational timeline. A critical assessment test, Flight Test Other-26 (FTX-26), was rescheduled to 2025 after a "target anomaly" canceled the previous year's planned test. Currently, the radar is in transition to full operational status with the U.S. Space Force. Final acceptance by the Space Force is contingent on successful testing of its missile track capability. The radar has already completed a Space Domain Awareness data collection event in January 2024, proving its SDA capability.

Contractor: Lockheed Martin.
Operator/Location: U.S. Space Force; Clear Space Force Station, Alaska.
- 7th Space Warning Squadron, space Delta 4 (Delta 4), SpOC, Beale AFB, Calif. (remotely operate).
- 13th Space Warning Squadron, Space Delta 4 (Delta 4), SpOC, Clear SFS, Alaska.

First Deployment: Late 2021.
IOC: Planned for mid-2025.
Active Systems: One radar.

PERIMETER ACQUISITION RADAR ATTACK CHARACTERIZATION (PARCS)

Missile Warning/Tracking

Brief: PARCS is a sophisticated UHF-phased-array radar system designed for missile defense and space surveillance, operated by the 10th Space Warning Squadron at Cavalier Space Force Station in North Dakota. The system serves as a critical early warning installation, monitoring for potential sea-launched and ICBM ballistic missile threats while providing crucial surveillance data to military command centers. Its capabilities enable comprehensive threat assessment and timely information sharing with defense authorities. The PARCS installation employs advanced radar technology to track a significant portion of Earth-orbiting objects, with its specialized array oriented toward Hudson Bay to maximize coverage of potential threat vectors. Beyond missile defense, PARCS contributes valuable data about space activities as part of the broader space surveillance network. The system processes tens of thousands of tracking operations daily, detecting everything from large satellites to space debris. PARCS originated as a component of the Army's Safeguard missile defense program, but found continued utility in Air Force operations after the original system was decommissioned, transitioning to focus on missile warning and space surveillance. The Space Force maintains PARCS through contracted support services, with a substantial investment in its continued operation and maintenance.

Contractors: Western Electric Co. (prime contractor); InDyne (current maintenance contract).
Operator/Location: USSF 10th Space Warning Squadron; Cavalier Space Force Station, N.D.
IOC: 1976.
Active Systems: One radar site.

PROLIFERATED WARFIGHTER SPACE ARCHITECTURE (TRANCHE 0)

Missile Warning/Tracking

Brief: Tranche 0 of the Proliferated Warfighter Space Architecture (PWSA) demonstrates the feasibility of a proliferated satellite architecture in cost, schedule, and scalability for beyond line of sight targeting and advanced missile detection and tracking The system includes a total of 28 optically connected space vehicles divided into two main components: Transport Layer (20) and Tracking Layer (8). The Transport Layer serves as the data backbone, connecting various satellites to each other and to warfighters, while the Tracking Layer provides missile warning and tracking capabilities. The Transport Layer consists of two configurations: 13 Group A mesh nodes equipped with two optical communications terminals each and

radio frequency receive/transmit capability, and 7 Group B vehicles that also include a tactical data link receive/transmit capability able to connect to Link-16 transmitters. The Tracking Layer includes 8 SVs equipped with wide field of view sensor payloads and two OCTs each. Together, these satellites demonstrate low-latency data connectivity, beyond line of sight targeting, missile warning/tracking, hypersonic glide vehicle detection, and alternate position, navigation & timing (PNT) capabilities.

Contractors: York Space Systems (prime); Lockheed Martin (prime); SpaceX (prime); L3Harris (prime); Leidos (payload subcontractor for SpaceX); Tyvak (bus subcontractor for LMCO); Moog (bus subcontractor for L3Harris).
Operator/Location: Grand Forks AFB, N.D.; Redstone Arsenal, Ala.
Acquiring Organization: Space Development Agency.
First Launch: April 2, 2023.
IOC: Sep 4, 2024 (SpaceX).
Launch Vehicle: Falcon 9.
Constellation: 20 LEO transport layer sats, 8 LEO tracking layer sats.
Active Satellites:
- 13 Group A transport layer satellites, active.
- 7 Group B transport layer satellites, active.
- 8 tracking layer satellites, active.

Weight: ~500 lbs.
Orbit Altitude: LEO.
Power: Solar array and batteries.

SPACE-BASED INFRARED SYSTEM (SBIRS)

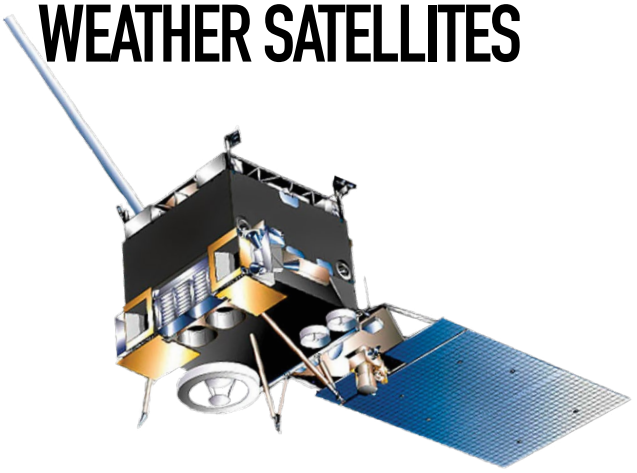
Space-based Surveillance/Missile Warning

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 originally planned for launch in FY25 is facing delays due to payload issues. The first HEO sensors are scheduled for delivery in FY28. The final SBIRS GEO satellite (GEO-6) successfully blasted off from Cape Canaveral in 2022 and was operationally accepted March 24, 2023. GEO-5 and GEO-6 will replace the oldest satellites on orbit. SBIRS and DSP provided warning to U.S. and Israeli forces of Iranian strikes in April and October 2024, enabling defense against the largest missile attacks in history.

Contractors: Lockheed Martin (prime contractor); Northrop Grumman (payload); Raytheon (data processing modernization).
Operator/Location: USSF SpOC, Space Delta 4 (DEL 4); Buckley SFB, Colo; (JTAGS) located in Japan, Italy, South Korea, and Qatar.
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.

WEATHER SATELLITES



Space Operations Command

ELECTRO-OPTICAL/INFRARED WEATHER SYSTEM-GEOSTATIONARY (EWS-G)

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. An Orion Space Systems cubesat launched as a technology demonstrator on March 4, 2024, and General Atomics Electromagnetic Systems is developing a full-scale purpose-built EWS platform planned for launch in 2025. The company is on contract to deliver an initial two satellites to begin replacing DMSP alongside the WSF-M satellites. USSF estimates the DMSP constellation will reach the end of its useful life by 2026.

Contractors: Boeing; Orion Space Solutions (cubesat demonstrator); General Atomics Electromagnetic Systems (future EWS satellite).
Operator/Location: USSF SpOC, Space 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.
- EWS-Cubesat. Sensor technology demonstrator, launched in 2024; 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.

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. DMSP uses an operational line-scan sensor to image cloud cover in the visible and IR spectrum to analyze cloud patterns. It is equipped with microwave imagers and

USAF

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. 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. USSF is replacing DMSP with a combination of the Weather System Follow-On-Microwave (WSF-M) which launched its first satellite in April 2024, and the future Electro-Optical/Infrared Weather System (EWS).

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 hrs; primary sensor scans 1,800-mile-wide area.
Orbit Altitude: Approx. 527 miles.
Power: Solar arrays generating 1,200-1,300 watts.

WEATHER SYSTEM FOLLOW-ON-MICROWAVE (WSF-M)

Space and Environmental Data Collection

Brief: WSF-M is the Defense Department's next-generation space-based meteorological satellite specifically designed to fill key gaps in ocean surface winds, tropical cyclone intensity, and electromagnetic "space weather" monitoring in LEO. WSF-M's payload includes two main sensors. The passive microwave radiometer utilizes a 6-foot antenna array to monitor winds, cloud cover, snow depth, sea ice, and soil moisture, augmenting the Electro-Optical/Infrared Weather System (EWS) satellite system. The Energetic Charged Particle sensor, meanwhile, monitors electromagnetic "space weather in LEO" which can disrupt communications and electronic systems. WFS-M data is utilized by the Joint Typhoon Warning Center to improve the tracking of potentially damaging tropical storms as well as provide data for forecasting and mission planning to military users in real-time. USAF awarded Ball Aerospace a development contract in 2017, and most recently ordered a second satellite (SV-2) in January 2023. The first satellite launched from Vandenberg on April 11, 2024. WSF-M along with EWS-G are replacing DMSP which will reach its planned end-of-service date next year.

Contractors: Ball Aerospace (satellite); BAE Systems (systems and sensor integration).
Operator/Location: USSF SpOC, Space Delta 2 (DEL 2), 19th Space Defense Squadron (19 SDS), NAF Dahlgren, Va.
First Launch: April 11, 2024.
IOC: N/A.
Design Life: Unk.
Launch Vehicle: Falcon 9.
Constellation: One low-Earth orbit (LEO).
Active Satellites:
▪WSF-M SV-1. First satellite, launched in 2024; active.
Dimensions: 7.2 x 5.6 ft x 4.6 ft, not including deployed solar array.
Weight: 2,645 lb at launch.
Performance: Sun-synchronous orbit.
Altitude: Approx 517 miles.
Power: Solar array and batteries.

ELECTRONIC WARFARE

Airman 1st Class Andrew Bertain

COUNTER COMMUNICATIONS SYSTEM (CCS)

Electronic Warfare

Brief: The Counter Communications System is a transportable space electronic warfare system that reversibly denies adversary satellite communications. It is the first space control platform acknowledged by the Space Force and provides quick reaction capability with direct operational support to the warfighter. First introduced in 2004, the CCS has undergone several upgrades, with Block 10.2 achieving Initial Operating Capability (IOC) in March 2020. Currently, the CCS is undergoing a "step-change" capability upgrade as it transitions to the "Meadowland" variant.

Contractor: L3Harris.
Operator/Location:
▪ 4th Electromagnetic Warfare Squadron, Space Delta 3 (DEL 3), Space Operations Command. Peterson Space Force Base, Colo.
▪ 216 Electromagnetic Warfare Squadron, California National Guard, Beale AFB, Calif.
▪ 138 Electromagnetic Warfare Squadron, Colorado National Guard, Peterson SFB, Colo.
▪ 114th Electromagnetic Warfare Squadron , Florida National Guard, Cape Canaveral SFS, Fla.
IOC: 2004.
Active Systems: 16 total (2 already transitioned to Meadowlands configuration).
Dimensions: Mobile, transportable system.
Weight: Unknown.

MEADOWLANDS

Electronic Warfare

Brief: Meadowlands is a ground-based satellite jamming system that provides advanced electronic warfare capabilities to disrupt enemy communications satellites. It is a major "step change" level upgrade to the Space Force's first acknowledged offensive counterspace system, the Counter Communication System (CCS), which has been operational since 2004. The system is a mobile electronic warfare platform designed for interfering with enemy satellite communications through radio signal jamming. Meadowlands features expanded frequency range capabilities including multifrequency jamming in S-band and X-band, increased mobility with a significantly smaller footprint than its predecessor and incorporates remote command and control functionality to reduce the number of personnel required at the antenna site. The system uses radio signals to jam enemy communications, and the modernized version has an expanded frequency range, which improves its ability to interfere. The system is also lighter weight than its predecessor and has an open architecture that will allow for more regular software updates in the future. Space Force formally accepted delivery of the first mobile Meadowlands satellite jammer from prime contractor L3Harris in April 2025, with the delivery occurring approximately six months earlier than previously planned. L3Harris won a contract in January 2019 for conversion of five CCS to Meadowlands standard. A production contract was signed in October 2021 and runs through January 2028 for over 20 units and associated training systems. This will likely include the upgrading its entire inventory of 11 CCS to the Meadowlands standard.

Contractor: L3Harris.
Operator/Location: Space Domain Awareness and Combat Power, SSC, Los Angeles AFB, Calif.
First Delivery: Delivered for testing, April 2025.
IOC: N/A.
Active Systems: First two units delivered April 2025.
Dimensions: Significantly smaller than CCS.
Weight: Lighter than predecessor (specific weight not provided).

SpaceX

FALCON 9

Launch

Brief: Falcon 9 is SpaceX's workhorse partially reusable two-stage orbital rocket that has revolutionized the launch industry with its reusability and high launch cadence. Since its debut in 2010, Falcon 9 has become the most frequently launched U.S. orbital rocket, dramatically lowering launch costs while maintaining high reliability. In 2020, it became the first commercial rocket to launch humans to orbit and continues to dominate the commercial launch market.

First Launch: June 4, 2010.
Total Launches (through FY 2024): 474.
Launches in FY 24: 119.
Class: Medium-lift partially reusable launch vehicle.
Company: SpaceX.
Payload to LEO: Up to 22,800 kg (50,265 lb).
Payload to GEO: Up to 8,300 kg (18,300 lb) to GTO.
Engine Type: Nine Merlin 1D engines (first stage), one Merlin Vacuum engine (second stage).
NSSL Lane 2 Certified: Yes.

FALCON HEAVY

Launch

Brief: Falcon Heavy is currently one of the world's most powerful operational rockets, composed of three Falcon 9 first stages working together as a heavy-lift launch vehicle. With 27 Merlin engines generating more than 5 million pounds of thrust at liftoff, Falcon Heavy can deliver large payloads to Earth orbit and beyond, including direct insertion into geosynchronous orbit and interplanetary trajectories.

First Launch: Feb. 6, 2018.
Total Launches (through FY 2024): 11.
Launches in FY 24: Three.
Class: Heavy-lift partially reusable launch vehicle.
Company: SpaceX.
Payload to LEO: Up to 63,800 kg (140,660 lb).
Payload to GEO: Up to 26,700 kg (58,860 lb) to GTO.
Engine Type: 27 Merlin engines (three Falcon 9 cores), one Merlin Vacuum engine (second stage).
NSSL Lane 2 Certified: Yes.

VULCAN

Launch

Brief: Vulcan Centaur is ULA's next-generation heavy-lift launch vehicle, designed to replace Atlas V and Delta IV rockets. Utilizing advanced technology from both legacy platforms along with innovations like Blue Origin's BE-4 engines, Vulcan offers increased capabilities at competitive prices. Primarily developed to meet the requirements of the National Security Space Launch program, Vulcan completed its maiden flight in January 2024.

First Launch: Jan. 8, 2024.
Total Launches (through FY 2024): 0, (subsequently 2 flights have occurred till May 2025).
Launches in FY 24: 0.
Class: Heavy-lift expendable launch vehicle.
Company: United Launch Alliance (ULA).
Payload to LEO: Up to 27,200 kg (60,000 lb).
Payload to GEO: Up to 14,400 kg (32,000 lb) to GTO.
Engine Type: Two Blue Origin BE-4 engines (first stage), two Aerojet Rocketdyne RL10C engines (upper stage).
NSSL Lane 2 Certified: March 2025, after two test flights.

NEW GLENN

Launch

Brief: New Glenn is Blue Origin's orbital heavy-lift launch vehicle, representing the company's entry into the orbital launch market. Named after astronaut John Glenn, this partially reusable rocket features a reusable first stage powered by seven BE-4 engines designed to land on an ocean platform and operate for a minimum of 25 flights. With its 7-meter diameter fairing and impressive payload capacity, New Glenn aims to serve commercial, civil, and national security missions.

First Launch: Jan. 16, 2025 (successful first orbital flight).
Total Launches (through FY 2024): 0, (first flight in mission in January 2025).
Launches in FY 24: 0, (first flight in mission in January 2025).
Class: Heavy-lift partially reusable launch vehicle.
Company: Blue Origin.
Payload to LEO: Up to 45,000 kg (99,000 lb).
Payload to GEO: Up to 13,000 kg (28,600 lb) to GTO.
Engine Type: Seven BE-4 engines (first stage), two BE-3U engines (second stage).
NSSL Lane 2 Certified: In certification process, undergoing demonstration flights.

EXPERIMENTAL SYSTEMS

X-37B Orbital test Vehicle on P. 143

GLOSSARY OF ACRONYMS & ABBREVIATIONS

A NONEXHAUSTIVE LIST OF ACRONYMS AND ABBREVIATIONS FOUND IN THE 2025 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
AFTPS	Air Force Test Pilot School
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
CCA	Collaborative Combat Aircraft
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
FOC	full operational capability
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 Officers' 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 Juanita Henry

Deptula, Chilton Earn AFHF Lifetime Honors

The Air Force Historical Foundation honored a pair of storied Airmen with lifetime achievement awards at the Smithsonian National Air and Space Museum's Udvar-Hazy Center May 22.

Retired Air Force Lt. Gen. David A. Deptula, dean of AFA's Mitchell Institute for Aerospace Studies, was awarded the Gen. Carl "Tooey" Spaatz Award for his lifetime contributions to Air Force history, including authoring the seminal Air Force White Paper, "Global Reach—Global Power," and his instrumental role in planning the air campaign in Operation Desert Storm and the concept of "effects-based operations."

Retired Air Force Gen. Kevin P. "Chili" Chilton, the Explorer Chair for the Mitchell Institute's Spacepower Advantage Center of Excellence, received the first-ever Lifetime Achievement Award for Space, for a career that included being a NASA astronaut, commander of Air Force Space Command, and commander of U.S. Strategic Command. Chilton's career also included a historic return to Air Force service after 11 years at NASA, which amounted to a policy shift when he made that move.

Jud McCrehin/staff

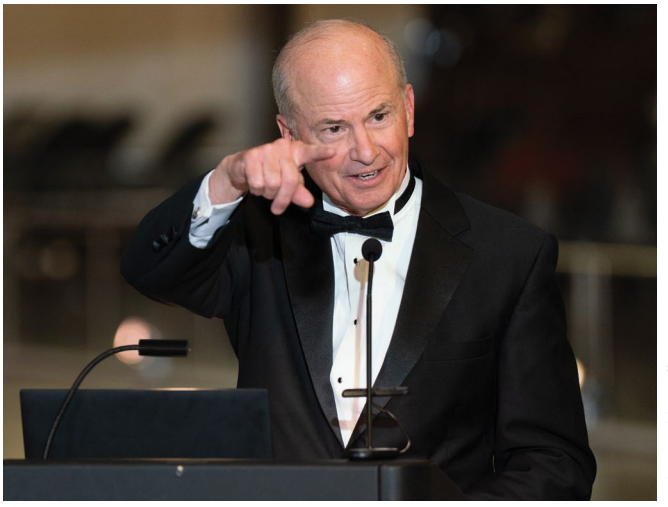
Retired Lt. Gen. David Deptula (right) received the Gen. Carl A. "Tooey" Spaatz Award at the 2025 Air Force Historical Foundation Awards Banquet held at the Steven F. Udvar-Hazy Center in Chantilly Va., from Jonna Doolittle Hoppes (granddaughter of Jimmy Doolittle) and Robert Arnold (grandson of Hap Arnold).

"Airpower has always been more than just a strategic tool," Deptula said. "It embodies innovation, agility, and the ability to shape outcomes at the speed of relevance."

Capturing and studying airpower history, he added, is essential in order to ensure future generations learn from it. "The voices captured in oral histories and the hard-earned lessons of those who came before us are not just artifacts of a bygone era," Deptula said. "They are fuel for the future."

Chilton reflected on his return to active duty after 11 years at NASA and the leaders who supported him, including then-Chief of Staff Gen. Ronald Fogleman.

"I'm deeply grateful for their willingness to literally take a chance on a guy they knew nothing about," Chilton said. "I like to say I was kind of like 'Encino Man.' I'd been freeze-dried in NASA for 11 years and then came back to the United States Air Force. Quite frankly, I was a little concerned that I wouldn't be able to catch back up."



Jud McCrehin/staff

Retired Gen. Kevin Chilton received the AFHF Lifetime Achievement Award for Space at the banquet and was surprised, humbled, and honored to be its first recipient.

The nonprofit Air Force Historical Foundation was founded in 1953 by Spaatz and other airpower pioneers to preserve and promote Air Force heritage, and since the Space Force's founding in 2019, has also been dedicated to preserving Space Force history through publications, events, and other activities. Learn more about the Air Force Historical Foundation's award winners here: https://www.airandspaceforces.com/air-force-historical-foundation-reveals-winners-of-prestigious-awards/?.

By Sara Ballard

AFA McChord Makes 7-Year-Old Benny a C-17 'Pilot for a Day'

Airman 1st Class Benjamin Riddle

Benny Blankenship, the 2025 Team McChord "Pilot for a Day," sits in a loadmaster seat aboard a C-17 Globemaster III at Joint Base Lewis-McChord, Wash., in April. During the tour, Benny was able to complete several missions, including saving a famous blue hedgehog in the C-17 Globemaster III simulator.

At Joint Base Lewis-McChord (JBLM), a little boy with a huge heart became a hero among heroes. On April 16 and 17, AFA's McChord Field Chapter in Tacoma, Wash., in partnership with McChord's 4th Airlift Squadron, brought back a beloved tradition: the "Pilot for a Day" program. The program—launched by AFA McChord in the early 2000s—provides a child with a chronic disease or illness the opportunity to experience life as a real pilot while meeting the heroes of JBLM.

This year's pilot was 7-year-old Benny Blankenship—a spirited young boy who loves to read, swim, build with LEGOs, and cheer on the Seattle Mariners. Despite having endured eight surgeries in his short life, Benny's smile lit up the room from the moment he arrived. A frequent patient at the Pediatric Cardiology Clinic at Madigan Army Medical Center, Benny was nominated by the clinic to experience this unforgettable event. His story and spirit inspired the planning team, which included AFA Washington State President Dave Stookey, McChord Chapter President George Cargill, Tommy Carson of America's Credit Union, and Capt. Anna Nicholson from the 4th Airlift Squadron.

Festivities kicked off the night before the main event with a welcome dinner at Farrelli's Pizzeria in DuPont. Benny and his family—his mom and two sisters—met the AFA team and his escort pilot from the 4th AS. Benny wasted no time charming everyone, excitedly showing off his favorite shoes (his Army Adidas and cowboy boots), and sharing his love for "Sonic the Hedgehog" and Florida, where he had undergone surgery in the past.

The next morning, Benny arrived at Fort Lewis and met four Airmen ready to show him what a day in the life of a military member is all about. Outfitted in proper gear, Benny got to ride in one of the newest rigs on base. His first stop was the Lewis Military Police, where he witnessed the working dogs in action and even rode in a police cruiser.

The adventure continued with visits to the JBLM Fire Department, the McChord Air Traffic Control Tower, and a live Explosive Ordnance Disposal (EOD) demonstration. When the squadron discovered Benny loved Arby's, they made sure lunch came straight from his favorite place—just another way the team made the day all about him.

But the mission wasn't over yet. Benny's big moment came in the C-17 flight simulator, where Capt. Nicholson guided him through a high-stakes operation to "save" Sonic the Hedgehog. With steady hands and a big imagination, Benny successfully completed the mission.

Benny celebrated a job well done in the 4th AS Heritage Room with an ice cream social. There, he was awarded a 4th AS challenge coin and officially given his call sign: "Knuckles," after his hero Sonic's best friend.

Events like AFA McChord's "Pilot for a Day" program exemplify the core mission of AFA—advocating for our Airmen, Guardians, and their Families, educating the public about the Air and Space Forces, and supporting those who serve and the communities around them.

In celebrating Benny, AFA McChord and the 4th AS didn't just make one boy's dream come true—they reminded us all what community, service, and heart truly mean.

By Col. Phillip S. Meilinger, USAF (Ret.)

George E. Day

Name, rank, serial number ... and the aftermath.

Medal of Honor recipient George "Bud" Day was born in Sioux City, Iowa, in 1925. He grew up during the Depression and after dropping out of high school and joining the Marines at age 17, he served 30 months in the South Pacific as an NCO.

After the war, Day went to college and earned a law degree. He had enjoyed the military life, so in 1950 he joined the Iowa Air National Guard and was sent to pilot training. Upon earning his wings he flew two combat tours in Korea. In April 1967, then-Major Day was sent to Vietnam to fly F-100 "Misty FACs." As a forward air controller (FAC), he performed one of the most challenging and dangerous air missions in Vietnam, a mission often described as "flying low and slow to draw enemy fire and then hoping they miss."

On Aug. 26, 1967, he was shot down and captured by the North Vietnamese. Upon ejection his right arm was broken in three places, he smashed his face and couldn't see out of one eye, and his left knee was badly sprained. He was captured and taken to a prison camp where he was interrogated and tortured. After five days and when the guards relaxed their vigilance, he crawled into the jungle and began moving south. Despite his injuries, he continued his trek, surviving on berries and uncooked frogs. After successfully evading enemy patrols, he reached the Ben Hai River, and with the aid of a bamboo log, Day floated across the river and entered the demilitarized zone. There he was injured further by a stray bomb. Due to delirium, he lost his sense of direction and wandered aimlessly for several days. After unsuccessful attempts to signal U.S. aircraft, he was sighted and recaptured by the Viet Cong, sustaining gunshot wounds to his left hand and thigh. He had enjoyed 14 days of freedom—his last for some time to come. He had made it to within 2 miles of a Marine base camp.

Courtesy

A veteran of three wars, Bud Day was an enlisted Marine in World War II and a fighter pilot in the Korean and Vietnam Wars. He earned more than 50 decorations for actions in combat.

He was returned to the prison from which he had escaped and beaten severely for his insolence. Later, Day was moved to Hanoi. It was an arduous period. Like the other POWs, he endured the vicious strap torture—his arms were bound tightly and pulled behind him, then tied to his ankles and pulled taut so that he was shaped like a bow. He was then hung from a hook on the ceiling. This further worsened his already severe injuries, and he was unable to perform even the simplest task for himself: His weight dropped to 100 pounds. Still, Day remained defiant, claiming amnesia, "I remember nothing before my ejection," he told his interrogators. That didn't work.

In the spring of 1968, he was taken to the "Plantation" and eventually the "Zoo," a punishment camp for "hard resisters." There, he was beaten so badly his vision became blurred. Flogging was routine. After Ho Chi Minh died in the fall of 1969, the POW situation improved somewhat—for the first time he was able to write and receive letters—but Day was still singled out for special treatment because of his "negative attitude" and the fact that by then the enemy knew he had been promoted to full colonel. Such rank did not count among the POWs: They all retained the rank they had at shootdown, and it was an individual's date of rank that determined seniority. His captors delighted in beating him for it anyway. Day was moved to another camp, even more restrictive, dubbed "Skid Row," where he was largely isolated from other Americans. There were occasional medical consultations with "doctors," but Day later commented that they were mere corpsmen "who couldn't diagnose daylight."

In 1973, after 67 grueling months in captivity, he was released and came home. Despite the damage done by the enemy, Day recovered, and a year later he was back on flying status and checked out in F-4s. He became vice commander of the 33rd Tactical Fighter Wing and then retired in 1976.

Colonel Day received the Medal of Honor from President Gerald Ford that year, and he is recognized as one of the most decorated officers in American history, receiving nearly 70 awards for the three wars in which he fought, including the Air Force Cross, Distinguished Service Medal, Silver Star, Legion of Merit, Distinguished Flying Cross, Air Medal, and Bronze Star.

Upon retirement, Day taught at St Louis University, Troy State University, and Parks College of Aeronautical Technology. Still a lawyer, he practiced in Fort Walton Beach, Fla., and often took on the cases of military personnel fighting for their medical benefits. He wrote of his experiences in two books, ***Return with Honor*** and ***Duty, Honor, Country.*** Both are excellent and sobering accounts. Day died in July 2013 and was posthumously promoted to brigadier general.

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