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MAGAZINE



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**CAPABILITY FOR
A NEW GENERATION.**



KC-46

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By Adam J. Hebert
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Publisher: Larry O. Spencer

Editor in Chief: Adam J. Hebert

Managing Editor: Juliette Kelsey Chagnon

Editorial Director: John A. Tirpak

News Editor: Amy McCullough

Senior Designer: Heather Lewis

Deputy Managing Editor: Frances McKenney

Senior Editors: Aaron M. U. Church,

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Photo Editor: Mike Tsukamoto

Media Research Editor: Chequita Wood

Contributors: Lyndsey Akers, Walter J. Boyne, Ugo Crisponi, Bridget Dongu, Robert S. Dudney, Rick Linares, Brendan McGarry, Emily Rauer, Megan Scully

Advertising: Scott Hill, James G. Elliott Co., Inc.

(312) 348-1206

airforcemagsales@afa.org

1501 Lee Highway

Arlington, VA 22209-1198

Tel: (703) 247-5800

Telefax: (703) 247-5855

afmag@afa.org

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To those who were vigilant so we could rest,
Who gave everything that we might thrive,
Who are silent that we may breathe free,

We honor you.



MEMORIAL DAY, MAY 30

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Degrade, Dismantle, and Defeat

THE slow-but-steady pace of the US-led air war against ISIS terrorists in Iraq and Syria has finally begun to turn the tide. The first phase of the war ended this April, after 20 months of effort to (in President Obama's words) "degrade and ultimately destroy" ISIS' brutal Islamic terrorists.

Slowly, almost imperceptibly to outside observers, officials say the war has made real progress. In mid-April, Army Col. Steve Warren, chief Operation Inherent Resolve spokesman, announced the first phase of the war was therefore over.

"A year-and-a-half ago, we saw images of [ISIS] convoys moving freely into Mosul and throughout Iraq," Warren said April 13. "Those days are gone."

Phase One was designed to "degrade the enemy," Warren said. "We focused on stopping [ISIS] from advancing and degrading their military capabilities [in] an effort to eliminate [ISIS]' ability to operate as a conventional force."

At long last, the US-led coalition is on to Phase Two of this war, which is to "dismantle the enemy," Warren said. "A fractured enemy, an enemy that's shattered and scattered, has significantly reduced ability to mass combat power. They're not able to ... create decisive effects on the battlefield," a state of being that may not matter to a traditional terror group, but would mean the death of ISIS.

This group is not attempting to simply hew fear and destruction, it actually intends to oversee territory as an Islamic state and caliphate. This is impossible if ISIS leaders are continuously killed off, money and resources are not accessible, governmental functions are nonexistent, and forces have to disperse and hide merely to survive.

Two years ago, ISIS thugs marauded across north-central Iraq and Syria essentially unopposed. The US began air strikes and relief operations in August 2014.

The relief efforts were enormously successful and quickly helped avert a major humanitarian disaster on Iraq's Mount Sinjar. And air strikes soon helped bring ISIS' advance to a halt, buying time for the beleaguered and overwhelmed Iraqi forces to regroup, lick their wounds, and stand their ground.

What followed was seemingly months of US ambivalence toward Inherent Resolve.

But ISIS has now quietly lost more than 40 percent of the territory it once controlled in Iraq and Syria, and coalition forces continue to target its leadership, forces, facilities, and financial capabilities. During Phase Two against ISIS, Warren said, "we will enable our partners to dismantle the enemy, fragment his forces, isolate his centers of gravity, and liberate the territory he holds."

The level of effort is still tepid when measured against historical precedents.

In some ways, the war against ISIS has borne more similarity to 1999's Operation Allied Force, fought to halt Serbian murder and genocide in Kosovo, than to 1991's Desert Storm or 2003's Iraqi Freedom.

The 1991 and 2003 wars were high-intensity battles from the outset, wars in which US and allied resolve were never in doubt because of the sheer scale and force of the attacks against Saddam Hussein's forces.

The wars against ISIS and Operation Allied Force against Serb forces targeting Kosovo in 1999 began slowly and ramped up gradually. Official statements about the campaigns' progress seemed defensive and failed to inspire confidence. Observers without security clearances had little evidence of progress and lacked clear indications of success. Numbers of sorties flown and weapons released became proxies for progress—spiritual successors to the body counts touted in the Vietnam War.

Allied Force was criticized because it took 12 days to hit the same number of targets that had been hit in the first 12 hours of Desert Storm eight years prior.

The war against ISIS has been painfully slow, but is finally showing progress.

The war against ISIS demonstrates a wholly new level of restraint. To wit: In 1999, coalition forces dropped 28,000 bombs

in 11 weeks of war. In the first three months of 2016, coalition forces released fewer than 7,000 weapons against ISIS targets.

The ramp-up in air effort has been gradual, to put it charitably: The coalition delivered 6,000 weapons against ISIS in the first three months of 2015.

Still, what goes on behind the scenes is important. "Every weapon employed and every sortie executed does not result in a direct correlation to the pressure placed on our adversaries or the pace of the operation," Air Forces Central Command officials recently stated in an airpower summary. "As indigenous ground forces continue to make progress ... intelligence and information gathered enables the coalition to become increasingly effective."


"We know it's a brutal enemy," Warren noted. ISIS "takes great pleasure in executions, beheadings, ... and other assorted acts of barbarism and terror."

The people of Iraq and Syria are now being freed from this horror. "You can't argue with 6,000 square kilometers liberated in the last month," said Warren. It is an area roughly the size of Delaware. "You can't argue with that as progress."

Imagine what's possible with a large-scale boost in intelligence flights and a commensurate increase in air strikes against ISIS targets, with closer coordination with indigenous forces. The results could improve geometrically, splintering and eradicating the remnants of a deadly and nefarious enemy.

The sooner ISIS is eliminated as a functioning entity, the better. Beyond the obvious humanitarian benefits, victory means USAF will be able to return large numbers of airmen and equipment home, allowing the force to recover, retrain, and rebuild its strength.

Said Obama in April, ISIS' "barbarism only stiffens our unity and determination to wipe this vile terrorist organization off the face of the Earth."

With the Administration now committed to defeating ISIS, it is time to put significantly more metal into this fight and bring it to an end once and for all. 



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To Coin a Phrase

The article "Horner's Gulf War" [March, p. 22] was a great recap of the air war in Desert Storm and it brought back a lot of memories. Just one faux pas—the term "tank plinking" came from me! I was one of the F-111 fraggers there at Riyadh and I had to come up with a name for this type of mission. "Tank plinking" seemed to fit, as it was akin to plinking turtles in a pond with a .22 rifle. F-111s and F-15Es had practiced this tactic just before the air war began by overflying the border region and seeing if they could pick out the tank positions in their concealed "hides." To tell the truth, the thought of doing this for real and dropping 500-pound laser guided bombs (LGBs) seemed unrealistic, but when the mission became to attrit the Republican Guard tank strength before the ground war, "tank plinking" became the tactic.

General Schwarzkopf was not happy about the name as he considered it an affront to armor and we had to change the name for a couple of days, but then we went back to "tank plinking." This is probably what General Horner meant

when he said the name was his—he fought the three-star vs. four-star battle and won!

Lt. Col. Clifford R. Smith,
USAF (Ret.)
Olive Branch, Miss.

The Invisible Pilot

Thank you for a great F-22 article in the March 2016 issue [*"Critical Ingredient in Short Supply,"* p. 16].

Having been a fighter pilot and fighter test pilot for over 20 years, when I retired from USAF I was employed by Lockheed Martin (then Lockheed) to work on the development of the F-22. This was during the '90s and early 2000s, and I eventually worked my way up to the director level as the chief of systems engineering. This was one of the most arduous and stressful periods of my life with no shortage of problems, all related to the big three: cost, schedule, or performance. After solving one problem, others always loomed, with no light at the end of the tunnel. There was very little reward other than another problem to solve, which was typical of all large development projects. Hundreds of people sacrificed through

those years and the price was high, with the priorities and oversight sometimes overwhelming. Burnout was frequent and morale was always an issue. But we always kept our sights on the product with the fighter pilot in focus. And what a remarkable machine it is.

Thus the reward is in the product, and your article verified the truly magnificent F-22. After all the hardships, I am gratified knowing that the airplane is living up to the user's expectations, and its performance is validated in combat. We truly developed a fighter aircraft with the fighter pilot in mind: He is largely invisible and his situation awareness is comparable to a God's eye view of everything around him.

Thank you for your fine article which was a great reward for the hundreds who persevered during the difficult developmental years.

Lt. Col. Johnny Johnson,
USAF (Ret.)
Marietta, Ga.

Bad Battle

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however heroic, should never have been fought [*"All Eyes on Khe Sanh," March, p. 60*]. A single death for a useless piece of ground is never warranted.

Ronald Weinger
Berkeley Heights, N.J.

Conventional B-2

I appreciated the "Airpower Classics" article on the B-2 in the March 2016 issue of *Air Force Magazine* [p. 76]. There were many of the people mentioned in the article with whom I was familiar. I was curious about Robert Dudley and Walter Boyne stating, "The B-2 was redesigned for conventional war." I was very familiar with the B-2 prior to my retirement after its first flight in 1989. The SAC program office worked diligently to assure that the basic capability for the integration of GPS into the B-2 bombing-navigation system was maintained so that a future GPS guided bomb could be employed. The SAC B-2 program office was the operational USAF sponsor for 1989's successful Eglin AFRL effort to demonstrate the feasibility of a GPS guided bomb, which was the forerunner of the JDAM's first combat employment mentioned in 1999 on Serb targets. The basic B-2 design was robust and had a conventional capability that facilitated the integration of the JDAM.

Col. Jack Hauser,
USAF (Ret.)
Chesterfield, Mo.

Red Tails

I want to commend the *Air Force Magazine* editors for commemorating the achievements of the Tuskegee Airmen in its March 2016 issue with a large number of captioned photos, which included some very important facts and valuable statistics [*"Red Tails," p. 34*]. I especially appreciate its addressing the persistent myth that on their bomber

escort missions, the Tuskegee Airmen "never lost a bomber," when in fact at least 27 Tuskegee Airmen-escorted bombers were shot down by enemy aircraft. The feature also brought out the fact that there were no Tuskegee Airmen aces, which refutes another common myth.

There were a few mistakes, however, that I wanted to mention.

On p. 37, photo 7 shows a photo of Roscoe Brown with Marcellus Smith working on a P-51 Merlin engine, which implies that Brown was an aircraft mechanic. In fact, he was a pilot, one of only three Tuskegee Airmen to have shot down a German jet.

On p. 38, photo 6 caption states, "Tuskegee Airmen were among the first to engage with and shoot down German Me 262 fighters" but that is false. Tuskegee Airmen aerial victories over German Me-262 jets took place on 24 March 1945. The first US aerial victories over such jets took place as early as August 1944, and by 24 March 1945, US pilots in other units had already shot down 60 Me-262s.

Finally, on p. 40, the caption to photo 7 states, "No Tuskegee Airman deployed to the Pacific Theater" is not strictly true. Some black liaison pilots who trained at Tuskegee, who were also considered Tuskegee Airmen, did deploy to the Pacific during World War II. Please see the book *Two Steps From Glory* by Maj. Welton I. Taylor, which mentions some of the Tuskegee liaison pilots.

Daniel L. Haulman,
Air Force Historical Research
Agency
Maxwell AFB, Ala.

I was struck by the impressive Tuskegee Airmen photo that introduced the "Red Tails" photo collage in your March 2016 magazine. I noted to my surprise that the aviators pictured were wearing "low quarters" in lieu of flight boots.

I enlisted the aid of the Air Force Historical Foundation in hopes of getting more information on their footwear.

The executive director provided two possible explanations. Either the photo was staged and flight suits were just donned impromptu for the picture or flight boots were not available since they weren't issued until pilots were in-theater.

He added that USAAF standard issue A6 flight boots, which came with an A7 felt liner shoe insert, were worn during combat operations. The A6/A7 combo



Air Force Association

1501 Lee Highway • Arlington, VA 22209-1198

Telephone: (703) 247-5800

Toll-free: (800) 727-3337

Fax: (703) 247-5853

Website: www.afa.org

Email Addresses

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Advocate for aerospace power and STEM education.

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was preferred by bomber and fighter aircrew due to the warmth the boots provided at high altitude. Unfortunately during parachute bailouts the boots had a tendency to fall off due to their loose fit and the high-speed shock of the parachute opening.

Col. Bill Malec,
USAF (Ret.)
O'Fallon, Ill.

Really appreciated and enjoyed [the] article on the "Red Tails." As a member of the 376th Bomb Group in '44 and '45, the sight of those red-tailed P-51s is etched in my memory banks. To those "Red Tails" still living, thanks, guys!

Lindy Dragone
Ludlow, Mass.

Hypersonic History

"Hypersonic Weapons Come of Age" (March, p. 47) gave credit to Antonio Ferri for his "pioneering work" in scramjet testing. In 2012 I was asked by a former NATO Headquarters colleague, Brig. Gen. Arnaldo Ceccato (Italian Air Force, retired), to represent USAF at a centenary ceremony honoring Dr. Antonio Ferri. The event took place in the medieval city hall of Norcia, Italy.

For all jet engine aviation enthusiasts it may be interesting to know a little more of Ferri's life. There are several sources for his story which together make interesting reading. From 1937 Ferri had been doing research on high-speed aerodynamics at Guidonia, near Rome. His work in the area of supersonic wind tunnels was well-noted at the time. When the Germans occupied Rome in September 1943 he was able to destroy vital equipment at the Guidonia facility, taking some important research documents with him. He and his brother

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Giuseppe then organized partisans. In 1944 Antonio was sought out by the OSS as a significant scientist. He was subsequently brought to the United States where he continued his work at the Langley Research Center, Hampton, Va., making valuable contributions to resolving supersonic combustion prob-

lems for USAF fighter aircraft engines. Ferri was the author of "Elements of Supersonic Aerodynamics," published in 1949. His later contributions centered on hypersonic flight.

Lt. Col. Richard E. Buys,
USAF (Ret.)
Erie, Pa.

Has the Navy Nailed Nuclear Funding?

As the Air Force's B-21 bomber program gets underway, service leaders are making it clear they want the same treatment the Navy is receiving for its effort to replace its Ohio-class ballistic missile submarines.

In recent remarks to the media and on Capitol Hill, Air Force Secretary Deborah Lee James has suggested a separate Defense Department-wide deterrence account set up to pay for the Ohio-class replacement should be available for the B-21 and efforts to modernize USAF's intercontinental ballistic missiles.

"Well, certainly, if there is to be a fund for nuclear modernization, it seems to me appropriate that it be for all three legs of the triad and not just for one leg of the triad," James told reporters at the Pentagon on March 7. "So if indeed that is the approach that is selected, it seems to me that ought to be a joint fund."

The Navy has long argued that the cost of its next ballistic missile submarine would devastate other shipbuilding efforts, if the service was forced to pay for the national strategic program out of hide. The submarine program comes with a \$139 billion price tag, with annual costs expected to spike when construction begins in 2021.

In response to the Navy's concerns, Congress created the National Sea-Based Deterrence Fund in the Fiscal 2015 defense authorization law and expanded that account's authorities in last year's authorization measure. But appropriators, who actually dole out the cash, have resisted the special funding stream, declining in the Fiscal 2016 omnibus spending package to shift money into the fund.

Senate Appropriations Chairman Thad Cochran, (R-Miss.), has already signaled he is happy the Navy's Fiscal 2017 request for the program, which totals \$1.9 billion, keeps the funding within the service's own accounts. "We welcome the inclusion of full funding for the Ohio-class replacement program within the Navy's regular budget request from Fiscal Year 2017 through Fiscal Year 2021," he said.

But the fund continues to enjoy wide support, particularly on the House Armed Services Committee.

The Air Force, which manages two of the three legs of the triad, wants to make sure lawmakers don't forget about USAF's

strategic nuclear programs, which also come with steep price tags.

Critics of the fund, like Cochran, have worried about just that. To validate the need for the account, the Navy has billed its Ohio-class replacement effort as a "national asset," not a service priority—and there's nothing stopping the Air Force from doing the same for its strategic bomber.

Senate Armed Services Chairman John McCain, who signed off on last year's defense bill expanding the account's authorities, sees the slippery slope this extra-service fund creates.

"We want the discussion [about the Ohio-class replacement] to be at a national level, but I'm not sure every new weapons system then wouldn't warrant the same kind of special treatment and that's the dilemma here," the Arizona Republican said March 15.


The next day, across the Capitol, James reiterated her March 7 comments during testimony before House lawmakers, attempting to stake a service claim to the deterrence account.

"I am not fully familiar with the strategic deterrence fund that you all have referenced here," she said. "But if that is a strategic deterrence fund, which would help or benefit one leg of the triad, I would ask for consideration that all the legs of the triad be included in such an approach."

But while the fund gives the services a larger pool of money—the entirety of the Defense Department budget—to draw money from, it does not completely solve the funding program for nuclear modernization efforts, which will collectively consume a growing share of the Pentagon's capped budget.

While the account may protect individual programs, or at least allow the department to spread the pain across the military, the Pentagon still must ultimately adhere to those spending caps. So, the question is: How much pain is the Pentagon willing to inflict on its other accounts and priorities to maintain and modernize the triad?

"This is a much larger discussion than any particular service. It has to be the Department of Defense. It's a congressional, it's a White House discussion," Air Force Chief of Staff Gen. Mark A. Welsh III said March 16. "Because we need an answer pretty quickly or we're going to spend money toward a lot of programs that we ... can't complete if we don't fund them down the road."

For the time being, however, the Air Force must continue to plan for the B-21, an eventual Minuteman III ICBM replacement, and the next generation Long-Range Standoff (LRSO) cruise missile within traditional spending accounts. 

Megan Scully is a reporter for CQ Roll Call.

Will the Ohio-class nuclear sub replacement slip through a funding loophole?

Bypassing the sixth generation fighter for now; Unmanned escorts; Home airspace secure, but ... ; Back to the Baltics

UNLOADING THE SILVER BULLET

The Air Force is steering away from a specific "sixth generation fighter" program to ensure air superiority in the coming decades, moving instead toward a system-of-systems approach that won't depend for success on any one central element. While there probably will be a successor to the fifth generation F-22 eventually, the new aircraft, whenever it appears, won't be an all-in-one guarantor of USAF's control of the skies.

The revelations came at an AFA-sponsored Air Force breakfast in April headlined by Lt. Gen. James M. Holmes, the service's top long-range planner, and Col. Alex Grynkeiwich, who oversaw the yearlong Air Superiority 2030 study.

"Sixth generation" is "terminology that I'd get away from," Grynkeiwich said. He admitted "that's an uphill battle" as Air Force and industry leaders have tended to define future air superiority as being embodied in a fighter that's a "generational leap" beyond the F-22, much as the F-22 was a revolutionary advance over the Air Force's previous top dogfighter, the F-15.

Pursuing a specific fighter—notionally called the F-X—would have driven the Air Force toward a "20 to 30 year program" that would have been too expensive and far "too late to need," said Holmes. There isn't time for a generational leap, because adversaries are fielding increasingly lethal, layered air defenses today that will challenge even the stealthiest aircraft in the near future. The Air Force needs a system able to defeat those air defenses on a much tighter timeline.

"There is no particular 'silver bullet' and no single platform or concept that will solve the problem, Grynkeiwich said. "You have to think holistically about the kill chain."

Protecting American airspace is not at issue, Holmes said. Existing aircraft and planned upgrades can handle the domestic defense mission handily. The new scheme regards being able to operate near and in highly contested enemy airspace.

"What we're trying to do is solve this problem faster ... instead of waiting for that generational leap," Holmes explained. The next step will be to "identify attributes" of the various systems involved and finding "the right balance between those."

The new approach will combine air defense "rollback" techniques the Air Force already does well with some carefully selected new enablers that take advantage, for the most part, of existing or maturing technology. The new scheme will rely on standoff weapons launched from outside enemy areas of control, coupled with penetrating systems like the F-22 and next generation B-21 bomber.

The notional system will make use of large numbers of reusable drones that are cheap to make and built with an intentionally short lifetime, so "if we lose some we won't mind too much," Holmes said. The drones would serve a variety of purposes ranging from intelligence, surveillance, and reconnaissance to electronic attack to serving as decoys.

Such drones could also be of a common configuration with modular payloads.

There will need to be frequent, "prioritized technology insertion" of new capabilities in existing systems, meaning there will likely be a place in the new scheme for fourth generation, or "legacy," fighters. There will be heavy dependence on space assets for communications, target identification, and a self-healing network or "combat cloud" that will link sensors and shooters throughout the battlespace.

This latter dependence drives greater emphasis on space situational awareness and the ability to defend and fight, at need, in space.

GIMME SOME SPACE

"Air superiority depends on space superiority," Grynkeiwich said. "We'll rely on that space force for a long time to come, because if that space force can be responsive enough, maybe we don't have to contest through the air for some of the pieces of the kill chain."

In assessing the problem, Grynkeiwich said USAF looked at an all-standoff approach versus penetrating systems and found that neither did the whole job. Using an all-standoff scheme from the periphery of enemy air defenses would be cheaper, but "only in a 10-day to two-week air campaign," he said. After that, penetrating systems offer the most cost-effective way to attack targets.

Holmes noted that an all-standoff approach means backing away from USAF's core competency of being able to directly attack any target on the globe. The "sweet spot" wound up being a "hybrid" approach of both standoff and stand-in capabilities, Grynkeiwich said, so that if scenarios dictate not putting airmen over enemy territory, a robust standoff capability exists.

For the penetrating elements, though, USAF must overcome the classic shortcomings of fighters: short range and small payload being chief among them. New systems will have to "be able to operate from range," carry a lot of weapons (or be able to target munitions from offboard platforms), and be survivable, Grynkeiwich said. They will be battle network sensor nodes, building the overall picture of the fight from behind enemy lines.

For the future air superiority role, Grynkeiwich said "speed and agility" will "still have value" in the battlespace.

"Arsenal planes" will be part of the trade studies as to what makes it into the new air superiority complex, Grynkeiwich said. Large arsenal airplanes, able to dispense a wide variety of munitions, would most likely "not be very survivable" and would have to operate at the periphery of defended airspace, launching at standoff range. However, stand-in arsenal airplanes in the form of stealthy escorts for F-22s and F-35s would probably be needed for the offensive counterair mission, he explained. An F-22 pilot, for example, would be able to designate targets

for all the munitions carried by an unmanned escort aircraft before using his own jet's weapons, increasing the effectiveness of each sortie behind enemy lines.

HOLISTIC LEAP

The future air superiority construct will embrace "third offset" technologies such as autonomous unmanned systems and technology to help the humans involved make the right decisions faster. Holmes noted that while the Air Superiority 2030 study focused on concepts, the Air Force Research Laboratory has been working on technologies that would be part of the scheme, and he noted hypersonics, directed energy, and autonomy as among the leading candidates to help deliver the speed and firepower necessary for the plan to work.

The "wildly aspirational" goal of getting the new air superiority construct in place is 2025, Holmes said. Achieving that rather aggressive objective would require a lot of things to go right.

First, the "experimentation and prototyping campaign" of the next few years, which will try out both new technologies and operational concepts, will have to yield some advances.

Next, there would have to be approval both from the senior Air Force leadership as well as that of the Pentagon.

And if all that goes well, there would have to be some success in streamlining and accelerating the Pentagon's sluggish acquisition system to get systems developed and fielded. Grynkewich said a formal plan will be jelled by "the end of May" and make its way later this year into "Planning Choices," USAF's preliminary draft of the 2019 Program Objective Memoranda.

The date 2025 falls right in the window of the Air Force's so-called "bow wave" of buying and developing new systems. Between 2023 and 2025, the service wants to begin operating the new T-X trainer, a new platform for the JSTARS system, and the first examples of the B-21 bomber, all of which coincide with peak production on the F-35 fighter and KC-46 tanker.

Holmes said money was set aside from the Fiscal 2016 budget "in anticipation" of Air Superiority 2030's findings, so "we have money for experimentation laid in" to begin prototyping and experimentation efforts "right away."

The Air Superiority 2030 study laid the foundation for a number of analyses of alternatives that will be done in the next few years. "It had to go first," Holmes said in response to a question. Now that the scheme is set, other enterprises—notably how the Air Force will prosecute the electronic warfare battle and other aspects of combat power—will get their own yearlong examinations.

THE VIEW FROM RAMSTEIN

Russia has built a robust, "layered" air defense system "from the Baltics to the Black Sea, and now the Mediterranean," and this in part drives the need to deploy F-22 Raptors to the European theater more frequently. So said US Air Forces in Europe and Air Forces Africa chief Gen. Frank Gorenc during a recent visit to Washington.

Last year's "Rapid Raptor" deployment of four F-22s to a number of USAF-AFAFRICA bases, including a stop in Poland, might be construed as a "logical first step" in basing fifth



USAF photo by A1C Erin R. Babbs

"Rapid Raptor" scenarios in Europe are purely defensive.

generation fighters on the continent, he said. The deployment was "the beginning of the process" of such a move, shaking out how F-22s, which need "extensive" low observable maintenance, could deploy in small numbers to a number of relatively austere airfields.

The exercise was the start of introducing fifth generation fighter capabilities to NATO, some members of which—non-US—will soon have F-35s. It is necessary for the Alliance to begin exercising with this new capability. The F-35's stealth and sensor attributes, along with the fact that many partners will field almost identical jets, will provide an almost "exponential" increase in NATO airpower and interoperability, Gorenc asserted.

Gorenc doesn't see the deployment of F-22s as provocative or destabilizing. The F-15Cs based at Lakenheath, UK—and which have been extended there, thanks to European Reassurance Initiative money in the Fiscal 2017 budget—are "purely" defensive, and a more frequent presence of F-22s should be construed in the same way.

"Wanting to defend your sovereign airspace couldn't be more de-escalatory," Gorenc said, adding that he has no way of measuring whether either the ERI or the deployment of F-22s had succeeded in "detering" Russia from more aggressive action.

To "complicate" an adversary's problems in the event of war, Gorenc said he's moving to "explore" more deployments of small groups of aircraft to bases around Europe. He described a scenario in which a flight of aircraft could land at an austere location, refuel and rearm, take off, fly a combat mission, and recover in yet a third location.

The concept is called "Rapid X" and involves positioning support equipment and maintainers at such fields before the aircraft land, then whisking them off to other locations. These airfields don't have "the full infrastructure" of a NATO base, but the agility of being able to operate from many unexpected locations would be a force multiplier, he said. It makes "the adversary's problem that much harder."

While he's "satisfied" with USAF-AFAFRICA's formal basing structure—even though it was set before Russia's adventurism in the Crimea—Gorenc is hoping to frequent more bases "to the south and east," naming Poland, Romania, and Bulgaria as prospective hosts. He also forecast that NATO will have to look more to airfields in the "High North" of Europe.

Climate change is making the Arctic Ocean increasingly navigable, and the increased naval traffic is becoming a "concern" to NATO members and allies in that region, Gorenc reported. ★

Defense Budget at a Glance

President Barack Obama on Feb. 9 presented Congress with his Fiscal 2017 federal budget request. The Defense Department's spending plan seeks \$523.9 billion in budget authority, excluding war costs (funding for overseas contingency

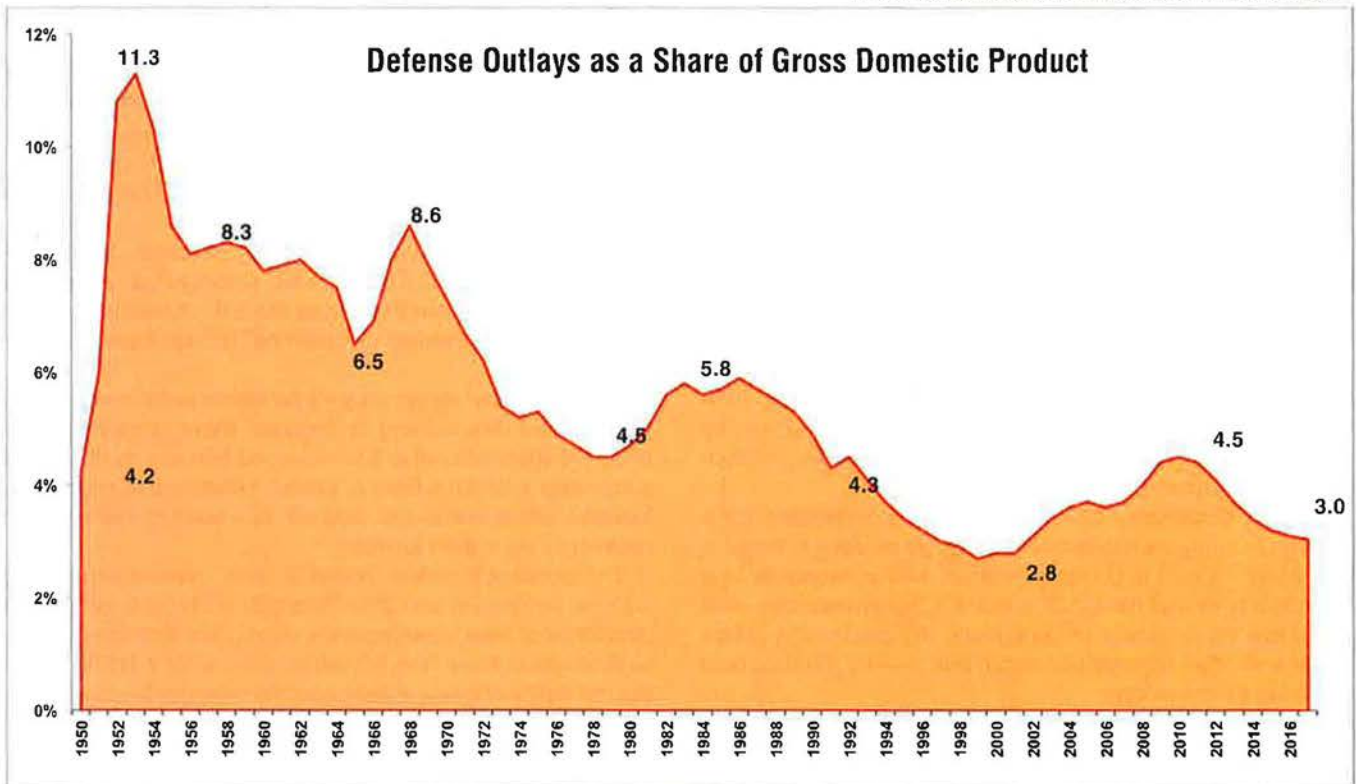
operations, or OCO) and \$582.7 billion including war costs. Funding most often is stated in budget authority, or BA, which is the value of new obligations the Pentagon can incur. (Some are paid in future years.) Figures can also be expressed in outlays—

actual checks written in a given year. "Current dollars" include inflation. With "constant dollars," the effects of inflation have been removed. Charts address only the Defense Department program.

Defense Budget Authority

	Actual		Planned				
	2015	2016	2017	2018	2019	2020	2021
No War Costs, Current Dollars	\$497.3	\$521.7	\$523.9	\$556.7	\$564.8	\$570.4	\$585.2
No War Costs, Constant FY 2017 Dollars	\$517.9	\$534.2	\$523.9	\$543.3	\$538.0	\$530.3	\$531.0
With War Costs, Current Dollars	\$560.4	\$580.3	\$582.7	\$615.5*	\$623.6*	\$629.2*	\$644.0*
With War Costs, Constant FY 2017 Dollars	\$583.6	\$594.2	\$582.7	\$600.7*	\$594.0*	\$585.0*	\$584.4*

*Includes placeholder value of \$58.8 billion in war funding.



Defense Outlays

	Actual		Planned				
	2015	2016	2017	2018	2019	2020	2021
Current Dollars	\$562.5	\$576.3	\$586.8	\$568.6	\$569.9	\$575.3	\$582.0
Constant FY 2017 Dollars	\$585.8	\$590.2	\$586.8	\$555.0	\$542.9	\$534.8	\$528.1

Service Shares

(Budget authority in billions of constant FY17 dollars)

	2015	2016	2017	2018	2019	2020	2021
Dollars							
Air Force	\$142.8	\$149.2	\$151.1	\$156.7	\$155.1	\$152.9	\$153.1
Army	125.0	126.2	123.0	127.6	126.3	124.5	124.7
Navy/Marine Corps	155.6	163.2	155.4	161.1	159.6	157.3	157.5
Defense Agencies	94.5	95.6	94.5	98.0	97.0	95.6	95.7
Total	\$517.9	\$534.2	\$523.9	\$543.3	\$538.0	\$530.3	\$531
Percentages							
Air Force	27.6%	27.9%	28.8%	28.8%	28.8%	28.8%	28.8%
Army	24.1%	23.6%	23.5%	23.5%	23.5%	23.5%	23.5%
Navy/Marine Corps	30.0%	30.5%	29.7%	29.7%	29.7%	29.7%	29.7%
Defense Agencies	18.2%	17.9%	18.0%	18.0%	18.0%	18.0%	18.0%

Note: USAF shares above include non-Blue funding. Outyears estimates based on FY17 shares.

USAF's Blue-only share

Dollars	\$113.2	\$121.9	\$120.4
Percentages	21.9%	22.8%	23%

Note: USAF budget includes Blue dollars, money for programs actually managed by USAF, and non-Blue dollars, money (such as some intelligence and space-related funding) USAF does not manage but that passes through USAF accounts.

Cutting the Pie: Who Gets What

(Budget authority in billions of constant FY17 dollars)

	2015	2016	2017	2018	2019	2020	2021
Military personnel	\$140.5	\$138.6	\$135.3	\$134.6	\$133.5	\$133.3	\$133.1
O&M	204.5	202.2	205.9	213.8	214.2	213.2	211.9
Procurement	97.8	113.4	102.6	112.5	110.5	110.3	112.7
RDT&E	66.1	70.4	71.4	73.4	71.5	66.3	65.3
Military construction	5.7	7.1	6.1	7.7	6.7	5.8	6.4
Family housing	1.2	1.3	1.3	1.3	1.5	1.3	1.4
Other	2.3	1.2	1.4	0.1	0.1	0.1	0.1
Total	\$517.9	\$534.2	\$523.9	\$543.4	\$538.0	\$530.3	\$531.0

Manpower

(End strength in thousands)

	1990	2000	2015	Est. 2016	Est. 2017	Change 1990-2015
Total Active Duty	2,065	1,384	1,314	1,301	1,282	-751
Air Force	535	356	311	317	317	-224
Army	751	482	491	475	460	-260
Navy	582	373	328	327	323	-254
Marine Corps	197	173	184	182	182	-13
Selected reserves	1,128	865	819	811	801	-309
Civilians (FTE)	997	660	725	738	733	-272

Operational Training Rates

	1990	2000	2010	2015	Est. 2016	Est. 2017
Air Force						
Flying hours per crew per month, fighter/attack aircraft	19.5	17.2	19.4	13.2	12.9	14.1
Army						
Flying hours per tactical crew per month	14.2	12.7	12.0	9.3	11.5	9.5
FSTM*	800.0	669.0	427.0	1,070.0	625.0	839.0
Navy						
Flying hours per tactical crew per month	23.9	20.9	16.6	14.2	15.4	15.8
Ship steaming days per quarter						
Deployed fleet	54.2	50.5	58.0	64.0	45.0	45.0
Nondeployed fleet	28.1	28.0	24.0	25.0	20.0	20.0

*Note: Data prior to 2012 is annual tank miles.

Acronyms and Abbreviations

AEHF	Advanced Extremely High Frequency
AFRC	Air Force Reserve Command
AGS	Alliance Ground Surveillance
AMRAAM	Advanced Medium-Range Air-to-Air Missile
ANG	Air National Guard
AWACS	Airborne Warning and Control System
BCT	Brigade Combat Team
BM	battle management
BUR	Bottom-Up Review
C3	command, control, and communications
CCS	combat coded squadrons
DCGS	Distributed Common Ground System
DMSP	Defense Meteorological Satellite Program
DSRP	Defense Space Reconnaissance Program
EELV	Evolved Expendable Launch Vehicle
FSTM	Full Spectrum Training Mile
FTE	Full-time Equivalent
FWE	Fighter Wing Equivalent
GPS	Global Positioning System
Helo	helicopter
ICBM	intercontinental ballistic missile
ISR	intelligence, surveillance, and reconnaissance
JASSM	Joint Air-to-Surface Standoff Missile
JDAM	Joint Direct Attack Munition
JSTARS	Joint Surveillance Target Attack Radar System
MEF	Marine Expeditionary Force
NAOC	National Airborne Operations Center
O&M	operation and maintenance
PAR	Presidential Aircraft Replacement
QDR	Quadrennial Defense Review
RDT&E	research, development, test, and evaluation
SATCOM	satellite communications
SBIRS	Space Based Infrared System
SDB	Small Diameter Bomb
Sigint	signals intelligence
SOF	Special Operations Forces
UAV	unmanned aerial vehicle

Major USAF Programs RDT&E

(Current million dollars)

Program		2015	2016	2017
Bomber	B-1B Lancer	4.2	2.2	5.8
	B-2A Spirit	208.1	380.1	468.1
	B-52H Stratofortress	41.1	74.5	78.3
	B-21 (Long-range strike)	883.4	736.2	1,358.3
Fighter/Attack	A-10C Thunderbolt II	0.0	16.2	14.9
	F-15C/D/E Eagle/Strike Eagle	271.6	386.7	613.4
	F-16C/D Fighting Falcon	130.4	166.3	132.8
	F-22A Raptor	310.2	372.2	457.9
	F-35A Lightning II	606.2	640.9	603.5
Helo	HH-60G/U Pave Hawk	100.0	156.1	319.3
	UH-1N Iroquois	0.0	0.0	14.1
ICBM	Minuteman III	204.6	349.0	481.4
ISR/BI/CS	Airborne Recon Systems	37.6	60.1	3.8
	Airborne Sigint Enterprise	72.9	112.8	90.8
	Air & Space Ops Center	108.9	68.7	66.5
	DCGS	44.1	51.0	42.0
	E-3B/C/G Sentry (AWACS)	172.8	131.8	86.6
	E-4B NAOC	25.0	76.8	30.9
	E-8C JSTARS	70.9	44.3	128.0
	EC-130H/J Compass Call/Commando Solo	16.5	14.2	13.7
	Endurance UAV	20.0	5.0	0.0
	MQ-1B Predator	0.0	0.0	0.0
	MQ-9A Reaper	141.5	122.7	151.4
	NATO AGS	232.9	138.4	38.9
	RC-135S/U/V/W	0.0	0.0	0.0
	RQ-4B Global Hawk	241.8	188.1	256.3
	U-2S Dragon Lady	5.5	34.5	37.2
Mobility	C-5A/B/C/M Galaxy	31.8	22.9	66.1
	C-17A Globemaster III	72.6	48.8	12.4
	C-130H Hercules	0.0	34.0	15.6
	C-130J Super Hercules	26.7	25.0	16.8
	KC-10A Extender	2.7	1.8	0.0
	KC-46A Pegasus	763.2	592.4	261.7
Munition	PAR	11.0	82.4	351.2
	AGM-158A JASSM	12.4	9.8	30.0
	AIM-9X Sidewinder	28.8	43.4	52.9
	AIM-120 AMRAAM	79.8	46.2	62.5
	GBU-31/32/38 JDAM	2.4	0.0	9.9
	GBU-39 SDB	66.4	29.1	54.8
Space	AGM-114 Hellfire	0.0	0.0	0.0
	AEHF	294.5	228.1	259.1
	Counterspace systems	22.7	24.1	34.8
	Cyberspace	94.8	117.4	232.6
	DMSP	0.0	0.0	0.0
	DSRP	0.0	0.0	0.0
	EELV	225.6	227.8	296.6
	GPS	691.6	671.4	813.3
	Joint Space Ops Center	83.3	80.7	72.9
	MilSatCom	157.7	71.9	50.8
	SBIRS	308.8	291.5	182.0
	Space control technology	5.8	4.1	7.5
	Space Fence	191.7	240.7	168.4
	Space situation awareness	30.7	61.6	82.7
	Spacelift range system	32.9	25.8	30.4
SOF	Wideband Global SATCOM	28.3	52.2	41.6
	AC-130H/J/U/W	0.0	0.0	0.0
	CV-22B Osprey	37.7	27.8	16.7
MC-130H/J/P	4.5	10.8	14.0	

Major USAF Programs Procurement

(Current million dollars)

Program		2015	2016	2017
Bomber	B-1B Lancer	219.9	114.1	116.3
	B-2A Spirit	44.8	38.8	43.5
	B-52H Stratofortress	163.4	150.8	137.1
	B-21 (Long-range strike)	0.0	0.0	0.0
Fighter/Attack	A-10C Thunderbolt II	0.0	0.0	25.1
	F-15C/D/E Eagle/Strike Eagle	499.4	602.2	108.7
	F-16C/D Fighting Falcon	19.0	19.1	112.5
	F-22A Raptor	186.1	117.0	211.5
	F-35A Lightning II	4,651.2	6,250.5	5,386.7
Helo	HH-60G/U Pave Hawk	60.1	67.1	91.4
	UH-1N Iroquois	0.0	2.5	18.3
ICBM	Minuteman III	28.4	50.3	85.8
ISR/BI/CS	Airborne Recon Systems	0.0	0.0	0.0
	Airborne Sigint Enterprise	0.0	0.0	0.0
	Air & Space Ops Center	25.7	24.8	46.1
	DCGS	206.7	177.0	170.0
	E-3B/C/G Sentry (AWACS)	207.8	191.1	312.8
	E-4B NAOC	17.1	19.9	53.3
	E-8C JSTARS	0.0	18.0	6.2
	EC-130H/J Compass Call/Commando Solo	82.6	97.0	130.3
	Endurance UAV	0.0	0.0	0.0
	MQ-1B Predator	4.8	3.2	0.0
	MQ-9A Reaper	573.7	816.5	829.5
	NATO AGS	0.0	0.0	0.0
	RC-135S/U/V/W	163.3	165.7	211.4
	RQ-4B Global Hawk	75.8	79.9	45.1
	U-2S Dragon Lady	0.0	22.1	36.1
Mobility	C-5A/B/C/M Galaxy	332.2	2.6	24.2
	C-17A Globemaster III	106.5	58.8	45.1
	C-130H Hercules	159.3	136.7	9.2
	C-130J Super Hercules	858.3	971.3	308.1
	KC-10A Extender	77.5	5.6	4.6
	KC-46A Pegasus	1,573.2	2,350.6	2,884.6
Munition	PAR	0.0	0.0	0.0
	AGM-158A JASSM	329.2	425.6	431.6
	AIM-9X Sidewinder	129.1	198.2	127.4
	AIM-120 AMRAAM	329.6	380.0	350.1
	GBU-31/32/38 JDAM	228.4	534.0	707.1
	GBU-39 SDB	58.2	135.1	275.5
Space	AGM-114 Hellfire	359.3	697.7	179.1
	AEHF	298.5	327.4	645.6
	Counterspace systems	59.4	43.1	27.0
	Cyberspace	90.5	98.5	146.9
	DMSP	77.8	0.0	0.0
	DSRP	84.0	128.7	0.0
	EELV	1,419.7	1,250.9	1,506.4
	GPS	853.7	178.4	49.4
	Joint Space Ops Center	0.0	0.0	0.0
	MilSatCom	65.0	35.5	41.8
	SBIRS	444.6	542.7	362.5
	Space control technology	0.0	0.0	0.0
	Space Fence	0.0	0.0	0.0
	Space situation awareness	0.0	0.0	0.0
	Spacelift range system	62.5	103.3	123.1
SOF	Wideband Global SATCOM	36.1	74.5	86.3
	AC-130H/J/U/W	0.0	0.0	0.0
	CV-22B Osprey	106.8	126.5	63.4
MC-130H/J/P	928.2	1,442.7	1,050.3	

Historical Force Structure

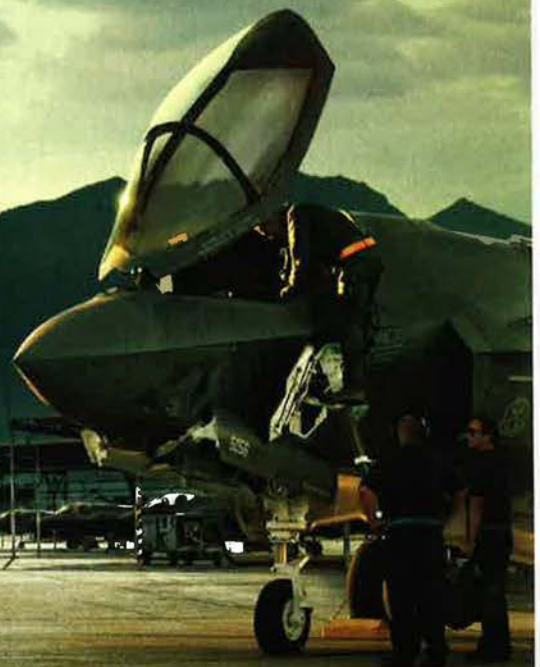
Current Force Structure

	Cold War Base 1990	1990 Base Force	1993 BUR Plan	1997 QDR Goal	2002 Defense Budget		2013	2014	2015	Est. 2016	Est. 2017
Air Force						Air Force					
Active FWEs	24	15	13	12+	12+	Active CCS*	41	40	40	40	41
ANG/AFRC FWEs	12	11	7	8	7+	ANG CCS	19	21	21	21	20
Army						AFRC CCS	3	3	3	3	3
Active divisions	18	12	10	10	10	Army					
Army National Guard	10	8	8	8	8	Active BCTs	45	38	32	30	30
Navy						ARNG BCTs	28	28	28	28	26
Active Aircraft Carriers	15	12	11	11	12	Navy					
Reserve Aircraft Carrier	1	1	1	1	0	Aircraft Carriers	10	10	10	11	11
Active Air Wings	13	11	10	10	10	Active Air Wings	10	10	10	10	9
Reserve Air Wings	2	2	1	1	1	Reserve Air Wing	1	1	1	1	1
Marine Corps						Marine Corps					
Active MEFs	3	3	3	3	3	Active MEFs	3	3	3	3	3
Marine Reserve Air Wing	1	1	1	1	1	Marine Reserve Air Wing	1	1	1	1	1

*Note: Active CCS includes fighter/attack and strategic bomber squadrons.



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Two Dead in Shooting at Lackland

Lt. Col. William A. Schroeder, commander of the 342nd Training Squadron, and TSgt. Steven D. Bellino, a 342nd Training Squadron student, died in an April 8 shooting at JBSA-Lackland, Texas.

Officials with the Bexar County Sheriff's Office said the shooting appears to have been a murder-suicide. The *San Antonio-Express News* reported that a senior noncommissioned officer was escorting Bellino to a disciplinary hearing when Bellino opened fire on his commander and then shot himself. The senior NCO was not injured, according to the paper.

"I worked closely with Lt. Col. Schroeder, and my wife, Vanessa, and I knew his family. He was an amazing airman, father, and husband," said Brig. Gen. Trent H. Edwards, commander of the 37th Training Wing, in a Facebook post. "Our focus at this time is to take care of Lt. Col. Schroeder's family, who is here in the local area. He leaves behind a wife and two small children.

We will care for and comfort them as best we can. We will also take care of the family members and friends who are grieving the loss of TSgt. Bellino."

The base was locked down after a 911 call about a possible active shooter at the Medina Training Annex at Lackland, and authorities were on the scene within three minutes of the initial call, Brig. Gen. Robert D. LaBrutta, commander of 502nd Air Base Wing and JB San Antonio, told reporters in a press conference at the base.

The bodies of the two airmen were found in an office on the first floor of Forbes Hall, a large building with classrooms, a theater, and office space, LaBrutta said. Two Glock handguns also were found at the scene, he said. Law enforcement swept the building until the scene was declared safe and the fire chief took over, said Lt. Col. Robert Ford, commander of the 802nd Security Forces Squadron.

04.03.2016

Thunderbird pilots perform a knife-edge pass over an F-35A Lightning at Luke AFB, Ariz.

USAF photo by TSgt. Christopher Boitz

FBI Assistant Special Agent in Charge Robert G. Saale said they do not believe the shooting was an act of terrorism. Air Force special investigators are leading the investigation with support from the FBI.

B-52s Join ISIS Fight

Several B-52s from Barksdale AFB, La., arrived April 9 at Al Udeid AB, Qatar, for operations in the anti-ISIS campaign.

The deployment marked the first time in 26 years the Stratofortress was to be based in the US Central Command area of responsibility, though the long-range heavy bombers took part in Operation Enduring Freedom in May 2006. B-52s operating out of Saudi Arabia during Operation Desert Storm were the last to be based in the AOR, according to an April 9 news release. "The first thing about the B-52 is the historical presence it brings with it. When an enemy sees a B-52 fly overhead it strikes fear

into their hearts, and that's something that we absolutely want to take advantage of," said one of the deployed pilots.

The B-52, which can carry about 70,000 pounds of mixed ordnance, can perform a variety of roles, including strategic attack and close air support.

"The B-52 will provide the coalition continued precision and deliver desired airpower effects," said Air Forces Central Command boss Lt. Gen. Charles Q. Brown Jr. "As a multirole platform, the B-52 offers diverse capabilities, including delivery of precision weapons and the flexibility and endurance needed to support the combatant commanders' priorities and strengthen the coalition team."

Eielson To House First Operational OCONUS F-35s

Eielson AFB, Alaska, was chosen as the home base for the Air Force's first operational F-35A strike fighters outside the contigu-



ous United States, the service announced April 4. The base will get two squadrons of the stealthy fighters.

"Alaska combines a strategically important location with a world-class training environment. Basing the F-35s at Eielson will allow the Air Force the capability of using the Joint Pacific Alaska Range Complex for large-force exercises using a multitude of ranges and maneuver areas in Alaska," Secretary of the Air Force Deborah Lee James said in a written press release.

The decision will "double our fifth generation fighter aircraft presence in the Pacific Theater," noted Air Force Chief of Staff Gen. Mark A. Welsh III. Construction on base is slated to begin in Fiscal 2017 and airplanes will begin arriving in 2020, states the release, a slight delay from previous plans.

The service will "slightly" accelerate the arrival of F-35As at Burlington Arpt., Vt., to the fall of 2019, allowing it to stick to its overall F-35 rollout schedule, said Lt. Gen. John B. Cooper, deputy chief of staff for logistics, engineering, and force protection.

Will Boeing Make the Tanker Deadline?

The Defense Contract Management Agency expects Boeing to miss its August 2017 deadline to deliver 18 KC-46A tankers by seven to 14 months, the agency said in a statement to *Air Force Magazine*.

A delay in delivery could mean penalties to Boeing, which is already absorbing more than \$1.5 billion in cost overruns in the program. Air Force Vice Chief of Staff Gen. David L. Goldfein said earlier in March that the KC-46 program was still on track to receive the required amount of aircraft, and the service expected to still reach initial operational capability in 2017.

However, boom trouble has delayed KC-46 tanker refueling trials, reported Flightglobal. A turbulent "bow wave effect" generated when connecting with a C-17 created "higher-than-expected boom axial loads" and prevented the system from passing fuel, according to the April 4 article.

Additional planned boom testing with the C-17 and the A-10 is on hold until a fix is found. "We are working to resolve the issue and will have a better understanding of any program impact shortly," Boeing spokesman Charles Ramey said April 5. "It's important to remember that this is a developmental program where issues are discovered and fixed. While we're working the issue, we continue to conduct other required flight testing."

He noted the program's first 767-2C aircraft just recently completed its 100th flight. The Pegasus tanker first successfully refueled an aircraft, the F-16C, using the boom delivery system in January and has successfully refueled a Marine Corps AV-8B Harrier II and a Navy F/A-18C using its hose and drogue system.

ULA Probe Launched

The Department of Defense's Inspector General is investigating United Launch Alliance's dealings with the Pentagon, the oversight body said in a March 22 letter. Defense Secretary Ashton B. Carter asked for an investigation after Brett Tobey, ULA's former vice president of engineering, asserted the company refrained from bidding on a request for GPS launch services—in what should have been the first competitive national security space launch—to avoid a cost shoot out.

ULA spokeswoman Jessica Rye told *Air Force Magazine*, the company "is committed to serving all our customers with excellence and transparency. As a part of this commitment we look forward to fully supporting any investigation into launch service procurement to address concerns." In the IG's letter—sent to Air Force Secretary Deborah Lee James and DOD acquisition chief

Frank Kendall—the IG said it also will probe whether contracts awarded to ULA were done so in accordance with regulations. The investigation will include site visits, interviews, and document review.

Robinson Tapped for NORTHCOM

President Barack Obama has nominated Gen. Lori J. Robinson to serve as the next commander of US Northern Command and NORAD. If confirmed, she will become the first woman to head a US combatant command.

Robinson, who serves as commander of Pacific Air Forces, would replace Adm. William E. Gortney, who has led the command since December 2014. Defense Secretary Ashton B. Carter said Robinson "has very deep operational experience" and is now "running air forces in the Pacific, which is a very challenging place for the Air Force and a very intense operational tempo."

USAF Assistant Vice Chief Fired for Misconduct

Lt. Gen. John W. Hesterman III, assistant vice chief of staff of the Air Force, was removed from office March 17 after an Air Force Inspector General investigation substantiated misconduct that took place five years ago before he pinned on a third star.

Most of the report's analysis has been redacted, but the investigation found that "a string of suggestive emails supports the conclusion" that between March 2010 and May 2011, Hesterman "wrongfully engaged in an unprofessional relationship" with an Air Force lieutenant colonel. The investigation also substantiated an allegation that the "inappropriate relationship ... seriously compromised his standing as an officer" and violated Article 133, conduct unbecoming of an officer and gentleman, of the Uniform Code of Military Justice.

By the Numbers

\$7.2 Billion

Amount of the Air Force's unfunded priorities for Fiscal 2017. About \$691 million would go toward buying the five F-35As deferred in its Fiscal 2017 budget request. In addition, \$88 million would pay for updates to F-16s, \$724 million would fund replacement of eight C-130Hs with C-130Js, and \$145 million would help grow the Active Duty force to 321,000. Another \$1.2 billion would go to facilities sustainment, restoration, modernization, and information technology projects.

The War on Terrorism

US Central Command Operations: Freedom's Sentinel and Inherent Resolve

Casualties

As of April 13, 22 Americans had died in Operation Freedom's Sentinel in Afghanistan and 15 Americans had died in Operation Inherent Resolve in Iraq and Syria.

The total includes 35 troops and two Department of Defense civilians. Of these deaths, 14 were killed in action with the enemy while 23 died in noncombat incidents.

There have been 100 troops wounded in action during OFS and 13 in OIR.

F-16 Crashes Near Bagram, Pilot Safe

An F-16 assigned to the 455th Air Expeditionary Wing crashed during takeoff March 29 near Bagram Airfield, Afghanistan, but the pilot was able to safely eject, according to an Air Force release.

The pilot was recovered and was medically evaluated at Craig Joint Theater Hospital while coalition forces secured the crash site. The cause of the crash has not yet been identified, but officials said enemy fire was not a factor.

F-16s from Bagram provide 24-hour overwatch and close air support for ground troops in Afghanistan. The 421st Fighter Squadron from Hill AFB, Utah, arrived at Bagram in late October for the unit's final F-16 deployment. (The unit is transitioning to the F-35.)

New Medal for OIR Troops

The Defense Department on March 30 announced the creation of the Inherent Resolve Campaign Medal for troops who have contributed in the fight against ISIS in Iraq and Syria; however, many airmen supporting the mission may not be eligible for the new medal and will instead receive the Global War on Terrorism service medal.

The Inherent Resolve Campaign Medal was created by executive order to highlight the service of those fighting ISIS. The medal's criteria only cover those who have served inside Iraq, Syria, or within contiguous airspace or waters extending out to 12 nautical miles. The criteria state that service members are eligible if they were permanently assigned, attached, or detailed for 30 consecutive days or 60 nonconsecutive days to a unit in the area of eligibility; or engaged in combat during an armed engagement; or were killed or wounded and medically evacuated from the area of eligibility.

Aircrew members accrue one day of eligibility for each day they fly into or out of the area. This means a pilot or aircrew deployed to a base such as Incirlik AB, Turkey, or Al Udeid AB, Qatar, flying into the airspace would be eligible for the medal. However, maintenance airmen de-

ployed to the same base and working on the same aircraft would not be eligible, because they did not enter Iraqi or Syrian airspace. These airmen would instead receive the Global War on Terrorism medal.

Return of Lend-Lease

Even though it's short of "preferred munitions" for the war on ISIS, the Air Force is also providing them to its coalition allies in Operation Inherent Resolve, because they're running dry, too, said Lt. Gen. John W. "Jay" Raymond, deputy chief of staff for operations.

Speaking with defense reporters in Washington, D.C., on March 27, Raymond said that "almost 100 percent" of the weapons being used in the anti-ISIS fight are precision guided types—either laser or GPS-guided—and they're being used "in great abundance."

He admitted USAF is "concerned" about its own stockpiles and is looking to "expand the procurement" of PGMs "for future needs," although he insisted USAF has what it needs to accomplish near-term efforts. The issue is one of usage rate versus contractor capacity, he observed.

USAF doubled its previous request for munitions spending in its Fiscal 2017 budget request, emphasizing Hellfire missiles fired from remotely piloted aircraft, JDAM, and laser-JDAM bombs.

Cost Conscious Warhorse

The OV-10G Broncos employed in Inherent Resolve were specifically being evaluated to improve air-to-ground coordination in low-intensity combat.

The six-month deployment tested the upgraded OV-10's ability to "find, fix, and finish" targets while improving "coordination between aircrew and ground commanders," US Central Command spokesman Capt. Bryant Davis told *Air Force Magazine*.

Aircraft such as the B-1B, F-15E, and the Navy's F/A-18 fly these types of missions over Iraq and Syria, but lower-cost aircraft like the Bronco could cut costs and cut wear and tear on "high-end special aviation resources," said Davis.

Two OV-10Gs armed with precision guided munitions completed several months of evaluation in the US before deploying to the Middle East in May 2015. The aircraft returned to Pope Field, N.C., last October and CENTCOM is drafting a report to the Office of the Secretary of Defense Joint Requirements Oversight Council to allow leaders to "determine if this is a valid concept that would be effective in the current battlespace," added Davis.

At the time, Hesterman was serving as the deputy director for politico-military affairs for Europe on the Joint Staff at the Pentagon. Air Force Vice Chief of Staff Gen. David L. Goldfein issued Hesterman a letter of reprimand and removed him from his position as assistant vice chief. Hesterman has requested retirement, but Goldfein "also initiated an officer grade determination process, which is still ongoing," according to a USAF news release.

Needed Nuclear Investment

Even though the Defense Department is looking to double the amount it spends on its nuclear arsenal, the funds must be protected, the head of US Strategic Command said.

The issue isn't if the US can afford keeping a nuclear triad; it's "can we afford not to," STRATCOM chief Adm. Cecil D. Haney said March 11 at a symposium sponsored by AFA, the National Defense Industry Association, and the Reserve Officer Association in Silverdale, Wash.

DOD spends about three percent of its total budget on its nuclear capability, but that number is expected to increase to six or seven percent through 2020 into the 2030s as the Pentagon invests in programs such as the Ground Based Strategic Deterrent and the Navy's Ohio-class nuclear submarine replacement. However, those numbers do not reflect the "conventional piece" on top of that, including human capital and support equipment, said Haney.



USAF photo by Alejandro Peña

The RPA Shortfall

The lack of capacity and undermanning issues in the remotely piloted aircraft enterprise did not develop because of cultural issues between manned and unmanned aircraft, but instead are the result of a dramatic increase in the operational demand without building up the infrastructure for RPAs, the head of Air Combat Command said.

Gen. Herbert J. "Hawk" Carlisle told the Senate Armed Services airland subcommittee the RPA pilot career field is only about 83 percent manned, and the RPA pilots the command does have are only flying operational missions. The Air Force needs to expand its remote pilot training pipeline, and increase the total number of RPA pilots so at least one-quarter of them can be in training as opposed to constantly in combat, Carlisle said.

"We have no dwell in the RPA enterprise," Carlisle said. "Every mission they fly ... is combat." The Air Force is in the process of doubling its RPA classes and expects to train 290 pilots by the end of the year. The long-standing issues came from an increase of RPA flights from seven combat air patrols in 2007 to 65 in 2015, Carlisle said.

The service's MQ-1 Predator and MQ-9 Reaper fleets have flown three million flight hours, 2.8 million of them combat missions, Carlisle said.

F. E. Warren Cops Investigated for Drug Activity

Fourteen enlisted members of the 90th Security Forces Group at F. E. Warren AFB, Wyo., are under investigation for alleged drug activity, the Air Force announced March 18.

The airmen, all security forces airmen ranging from E-2 through E-4, now are involved in an Air Force Office of Special Investigations probe after another airman assigned to the group heard about alleged drug activity and reported it

Only You Can Prevent Simulated Chemical Fires: SSgt. Joe Burns and his working dog, Ciko, participate in K-9 training at JB Elmendorf, Alaska, March 17. Airmen of the 673rd Security Forces Squadron and soldiers of the 549th Military Working Dog Detachment trained jointly on explosive detection of the sort that would be performed in a remote village. The training mimicked what dog handlers and the working dogs may experience while deployed.


to his leadership, Air Force Global Strike Commander Gen. Robin Rand said.

The claims are "credible," and the airmen have been removed from duty, Rand said. The alleged drug activity occurred while the airmen were off duty, though Rand would not say whether it was on or off the base. The airmen are part of the security forces group responsible for both law enforcement on F. E. Warren and security of the ICBMs at silos in Wyoming. Rand said he first heard of the allegations on March 15, and the Air Force decided to announce the investigation later that week.

Small-Scale Space Fence Opens

Lockheed Martin has opened a Space Fence test site in Moorestown, N.J., that will allow for testing of the system's hardware and software while the actual, six-acre site is being built on Kwajalein Atoll in the Pacific Ocean, the company announced.

The Space Fence will use S-band ground-based radar to detect and track objects and debris in space to prevent collisions and will replace the existing Air Force Space Surveillance System.

A scaled-down version of the Space Fence system first tracked a satellite at the end of January, according to an earlier Lockheed news release. Initial operational capability is scheduled for late 2018. 

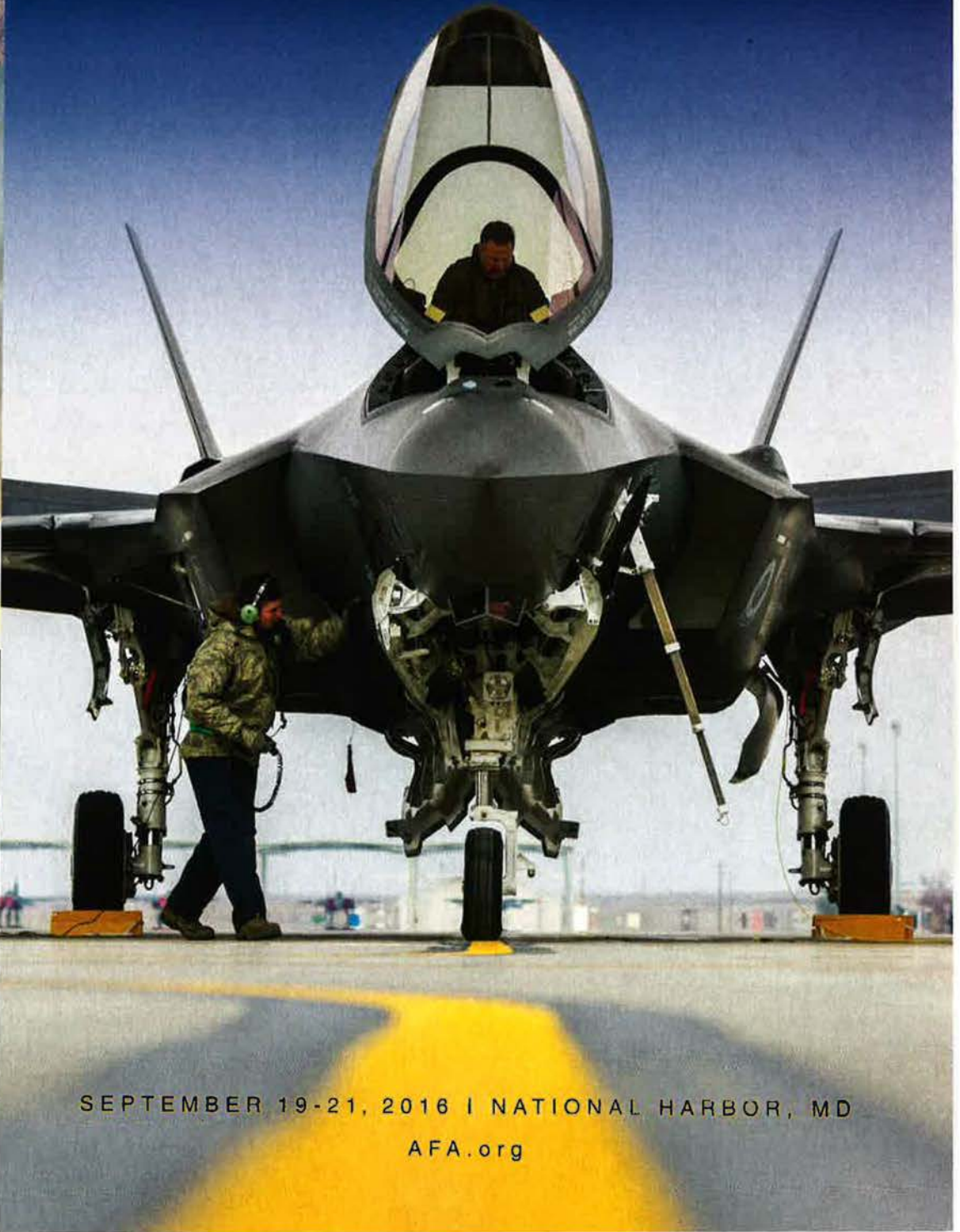
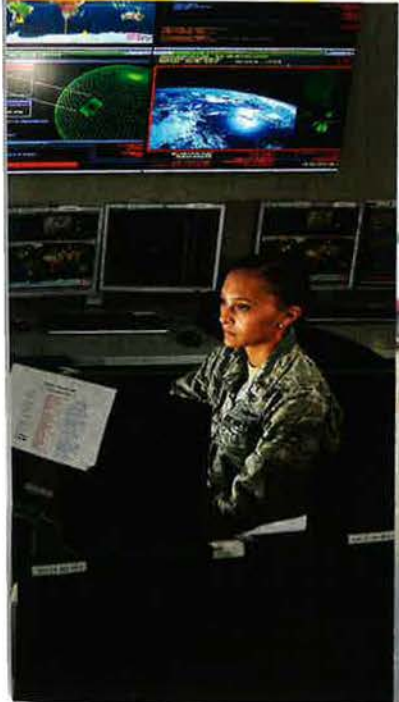
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Almanac 2016

About the Almanac

On the following pages appears a variety of information and statistical material about the US Air Force—its people, organization, equipment, funding, activities, bases, and heroes. This Almanac section was compiled by Brendan McGarry and the staff of *Air Force Magazine* under the direction of Gideon Grudo. We especially acknowledge the help of the Secretary of the Air Force Office of Public Affairs, Air Staff agencies, major commands, and reserve components in bringing up to date the comparable data from last year's Almanac.—THE EDITORS



The Air Force in Facts and Figures

■ 2016 USAF Almanac

Structure of the Force

How the Air Force Is Organized

This overview describes the Air Force's primary organizational structures and its Air and Space Expeditionary Force.

The **Department of Defense** is a Cabinet agency headed by the Secretary of Defense. It comprises three military departments—Air Force, Army, and Navy—each with a civilian Secretary.

The **Joint Chiefs of Staff (JCS)** constitute DOD's corporate military leadership. The Chairman and vice chairman serve full time in their positions, while the service chiefs also serve as the military heads of their respective services.

The Secretary of the Air Force (SECAF) heads the **Department of the Air Force**. Supporting the SECAF are the Secretariat staff and the Chief of Staff of the Air Force (CSAF), who oversees the Air Staff. The heads of the major commands report to the CSAF.

Most Air Force units fall under a **major command (majcom)**, which has broad functional responsibilities. Majcoms are

organized under a unit-oriented scheme, with one or more **numbered air forces**, or a major non-unit scheme, with one or more centers.

The predominant command entity within USAF is the **wing**. A standard wing contains four groups: **operations** (operates primary mission equipment and includes such functions as intelligence), **maintenance** (provides weapon system maintenance), **mission support** (provides base support and services, including civil engineer, logistics readiness, and security forces), and **medical**.

Squadrons form the basic organizational building blocks within a wing, generally working under one of the four groups to provide either mission or functional support. Squadrons may comprise several **flights**.

The Air Force organization also includes **field operating agencies (FOAs)** and **direct reporting units (DRUs)**.

To relieve chronic optempo problems stemming from back-to-back operations,

the Air Force developed an expeditionary concept called the **Air and Space Expeditionary Force (AEF)**. The term AEF also refers to a basic organizational unit.

USAF grouped its power projection and support forces into 10 AEF "buckets of capability" operating in five pairs.

In November 2011, USAF announced plans to change to a construct dubbed **AEF Next**. The Air Force deployed the first team of Agile Combat Support Airmen under this redesign in October 2014. Under the new construct, installations deploy larger numbers of airmen from the same unit in order to present a consistent Air Force capacity. The revised construct establishes an 18-month battle rhythm where an airman may deploy for six months followed by 12 months at home station. This allows wings to more effectively posture their forces to meet global mission requirements as well as continue home station training. ☐

Current Air Force Leaders

Date in Position

Secretary of the Air Force

Deborah Lee James

Dec. 20, 2013

Air Force Chief of Staff

Gen. Mark A. Welsh III

Aug. 10, 2012

Chief Master Sergeant of the Air Force

CMSAF James A. Cody

Jan. 24, 2013

USAF Total Force

(As of Sept. 30, 2015)

	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	Estimate FY16
Air Force Active Duty										
Officers	65,722	64,805	65,496	66,201	65,487	64,932	64,806	62,349	61,004	61,690
Enlisted	263,372	258,092	263,351	263,437	263,542	263,964	261,976	250,104	246,322	251,310
Cadets	4,401	4,482	4,561	4,558	4,341	4,022	3,912	3,879	4,031	4,000
Total Air Force Active Duty	333,495	327,379	333,408	334,196	333,370	332,918	330,694	316,332	311,357	317,000
Civilian personnel										
Direct hire (excluding technicians)	125,636	124,698	123,106	134,183	145,407	142,047	141,496	129,120	129,985	134,146
ANG technicians	22,409	22,353	22,391	22,657	22,139	22,859	22,568	22,225	23,448	22,290
AFRC technicians	9,127	8,857	9,147	10,068	9,397	10,366	9,277	10,429	8,501	9,904
Total direct hire	157,172	155,908	154,644	166,908	176,943	175,272	173,341	161,774	161,934	166,340
Indirect hire	6,212	6,515	6,346	6,564	6,776	6,714	6,501	4,823	4,090	4,679
Total civilian personnel	163,384	162,423	160,990	173,472	183,719	181,986	179,842	166,597	166,024	171,019
Air National Guard										
Selected Reserve Officers	13,992	14,115	14,326	14,389	14,418	14,598	14,731	15,024	15,084	14,593
Selected Reserve Enlisted	92,162	93,564	94,870	93,287	91,267	90,791	90,977	91,356	90,644	90,907
Total ANG	106,154	107,679	109,196	107,676	105,685	105,389	105,708	106,380	105,728	105,500
Air Force Reserve Command										
Selected Reserve Officers	16,199	15,169	14,753	14,560	14,535	14,303	14,060	13,817	13,937	14,896
Selected Reserve Enlisted	54,083	52,396	53,233	55,559	56,786	57,125	56,853	55,967	54,557	54,304
Total AFRC Selected Reserve	70,282	67,565	67,986	70,119	71,321	71,428	70,913	69,784	68,494	69,200
Individual Ready Reserve Officers	13,018	13,633	12,833	11,692	11,692	11,222	11,222	11,222	7,302	7,492
IRR Enlisted	36,831	35,668	30,349	28,863	28,863	24,271	24,271	24,271	29,449	29,359
Total AFRC IRR	49,849	49,301	43,182	40,555	40,555	35,493	35,493	35,493	36,751	36,851
Total AFRC	120,131	116,866	111,168	110,674	111,876	106,921	106,406	105,277	105,245	106,051
Total Ready Reserve	226,285	224,545	220,364	218,350	217,561	212,310	212,114	211,657	210,973	211,551

Armed Forces Manpower Trends, End Strength (in Thousands)

(As of Sept. 30, 2015)

	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	Estimate FY16
Active Duty military										
Air Force	334	327	333	334	333	333	331	316	311	317
Army	522	544	553	566	566	550	532	508	491	475
Marine Corps	187	199	203	202	201	198	196	188	184	182
Navy	338	332	329	328	325	318	324	326	328	327
Total	1,381	1,402	1,418	1,430	1,425	1,399	1,383	1,338	1,314	1,301
Guard and Reserve (selected reserve)										
Air National Guard	106	108	109	108	107	105	106	106	106	106
AFRC	71	68	68	70	71	71	71	70	68	69
Army National Guard	353	360	358	362	358	358	358	354	350	342
Army Reserve	190	197	205	205	205	201	198	195	199	198
Marine Corps Reserve	39	38	39	39	40	40	40	40	39	39
Naval Reserve	70	68	67	65	66	65	62	59	57	57
Total	829	839	846	849	847	840	835	824	819	811
Direct-hire civilian (full-time equivalents)										
Air Force	157	156	155	167	177	175	173	162	162	166
Army	221	230	247	260	269	250	242	195	194	190
Navy/Marine Corps	176	178	186	195	201	201	197	182	186	191
Defense agencies	105	108	115	120	125	133	127	185	183	191
Total	659	672	703	742	772	759	739	724	725	738

Active Duty Airmen by Rank

(As of Sept. 30, 2015)

Rank	Men	Women	Total
Officers			
General	11	2	13
Lieutenant General	39	2	41
Major General	87	10	97
Brigadier General	140	5	145
Colonel	2,779	440	3,219
Lieutenant Colonel	7,977	1,395	9,372
Major	10,321	2,395	12,716
Captain	16,711	4,737	21,448
First Lieutenant	5,607	1,822	7,429
Second Lieutenant	4,965	1,559	6,524
Total	48,637	12,367	61,004
Enlisted			
CMSAF	1	0	1
Chief Master Sergeant	2,107	331	2,438
Senior Master Sergeant	3,943	972	4,915
Master Sergeant	19,220	4,598	23,818
Technical Sergeant	31,206	7,648	38,854
Staff Sergeant	48,600	11,351	59,951
Senior Airman	51,370	11,089	62,459
Airman First Class	33,286	7,887	41,173
Airman	3,839	918	4,757
Airman Basic	6,461	1,495	7,956
Total	200,033	46,289	246,322
Academy Cadets	3,079	952	4,031
Total Personnel	251,749	59,608	311,357



ANG photo by SSGT Christopher S. Muncy

Number and Percentage of Active Duty Airmen by Gender

(As of Sept. 30, 2015)

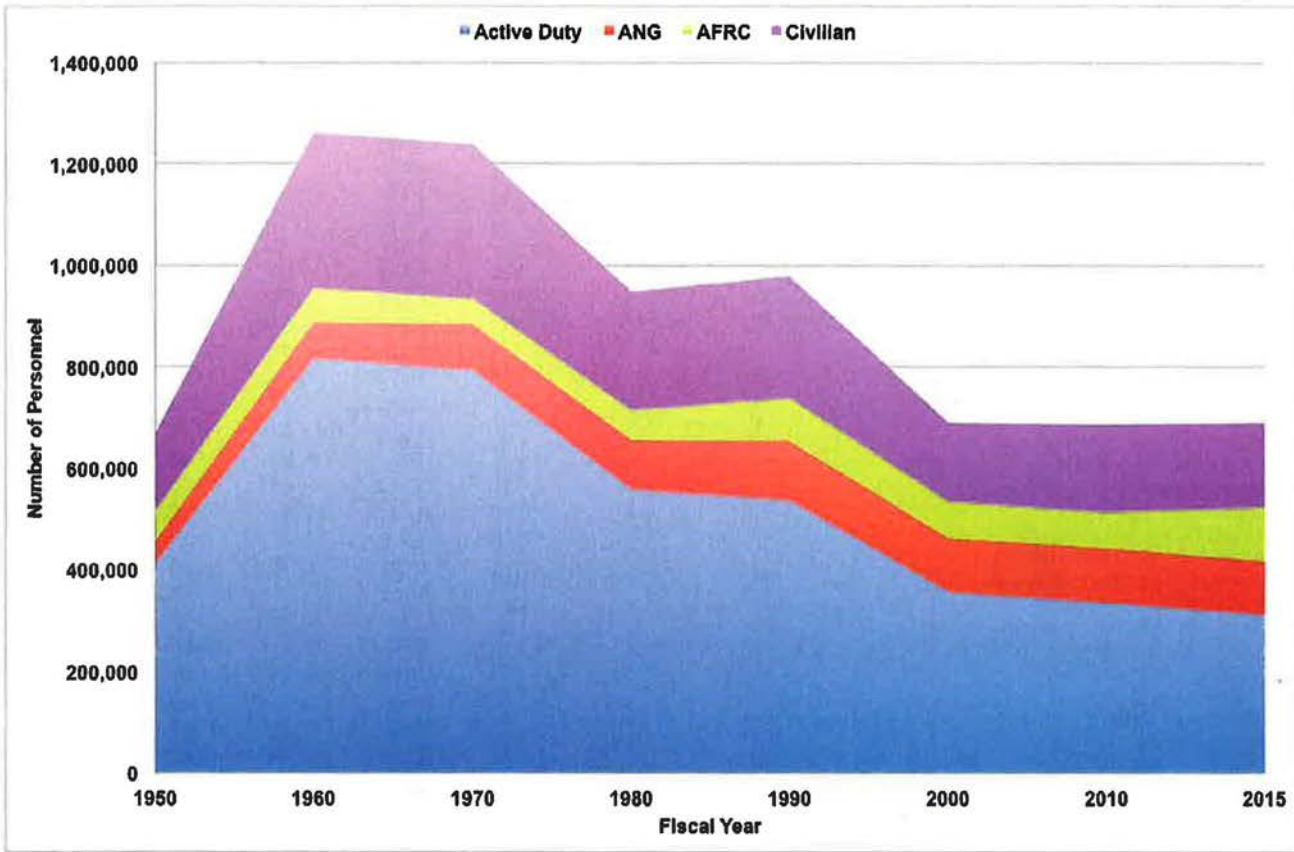
	1950	1960	1970	1980	1990	2000	2010	2015
Officers								
Male	55,474	126,014	125,136	89,156	86,714	57,204	53,838	48,637
Percentage	97.3%	97.2%	96.4%	91.3%	86.7%	82.9%	81.3%	79.7%
Female	1,532	3,675	4,667	8,493	13,331	11,819	12,363	12,367
Percentage	2.7%	2.8%	3.6%	8.7%	13.3%	17.1%	18.7%	20.3%
Total Officers	57,006	129,689	129,803	97,649	100,045	69,023	66,201	61,004
Enlisted								
Male	350,489	679,412	652,559	399,517	374,385	231,620	212,491	200,033
Percentage	98.9%	99.2%	98.6%	86.8%	86.0%	80.8%	80.7%	81.2%
Female	3,782	5,651	8,987	60,803	60,803	55,011	50,946	46,289
Percentage	1.1%	0.8%	1.4%	13.2%	14.0%	19.2%	19.3%	18.8%
Total Enlisted	354,271	685,063	661,546	460,320	435,188	286,631	263,437	246,322
Cadets								
Male	0	1,949	4,144	3,907	3,817	3,617	3,592	3,079
Percentage	0.0%	100.0%	100.0%	88.6%	87.3%	84.6%	78.8%	76.4%
Female	0	0	0	504	553	658	966	952
Percentage	0.0%	0.0%	0.0%	11.4%	12.7%	15.4%	21.2%	23.6%
Total Cadets	0	1,949	4,144	4,411	4,370	4,275	4,558	4,031

Active Duty Airmen by Region

Regions	1950	1960	1970	1980	1990	2000	2010	2015
US and its territories	342,437	633,327	565,098	445,886	418,027	291,260	277,123	260,729
Europe	24,531	104,899	72,937	76,788	69,296	32,901	30,963	28,591
East Asia, Pacific	36,412	50,679	139,666	32,263	33,558	22,030	12,649	19,973
Africa, Mideast, S. Asia	1,491	11,160	608	674	376	8,972	891	601
Western Hemisphere	6,266	14,106	5,348	2,211	2,356	345	339	302
Other	140	581	7,692	147	11,620	146	12,231	1,161
Total	411,277	814,752	791,349	557,969	535,233	355,654	334,196	311,357

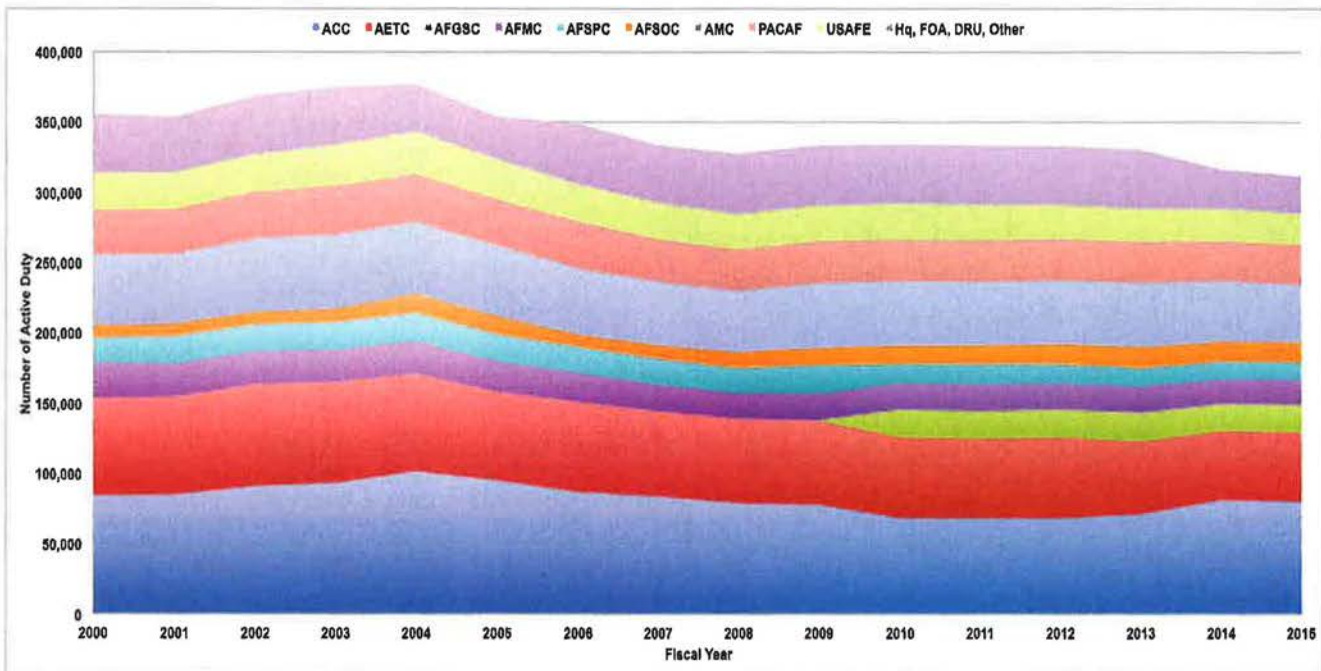
Note: These are permanently assigned airmen. Those deployed for operations in Afghanistan, Syria, and Iraq are included in US (transients) and Other totals.

Total Force Over Time



Note: Data for 1950 and 1960 as of June 30; data for other years as of Sept. 30. Sources: *Air Force Magazine's "USAF Almanac,"* various years; US Census Bureau, "Statistical Abstract of the United States"; "Department of Defense Selected Manpower Statistics," various years.

Active Duty Airmen by Active Duty Major Command



Note: Data for 1950 and 1960 as of June 30; data for other years as of Sept. 30.

Personnel Strength by Commands, FOAs, and DRUs

(As of Sept. 30, 2015)

	Military	Civilian	Total
Active Duty Major Commands			
Air Combat Command	80,004	11,658	91,662
Air Education and Training Command	49,591	14,079	63,670
Air Force Global Strike Command	19,642	2,439	22,081
Air Force Materiel Command	17,650	62,417	80,067
Air Force Space Command	12,581	7,243	19,824
Air Force Special Operations Command	14,118	1,619	15,737
Air Mobility Command	40,650	8,311	48,961
Pacific Air Forces	28,413	7,897	36,310
US Air Forces Europe-Air Forces Africa	22,293	4,918	27,211
Total Major Commands	284,942	120,581	405,523
Field Operating Agencies (FOAs)			
Air Force Agency for Modeling and Simulation	6	15	21
Air Force Audit Agency	0	570	570
Air Force Cost Analysis Agency	12	71	83
Air Force Flight Standards Agency	106	50	156
Air Force Historical Research Agency	0	38	38
Air Force Inspection Agency	87	22	109
Air Force Legal Operations Agency	524	241	765
Air Force Manpower Analysis Agency	144	143	287
Air Force Medical Operations Agency	186	177	363
Air Force Medical Support Agency	172	72	244
Air Force Mortuary Affairs Operations	19	32	51
Air Force Office of Special Investigations	1,519	859	2,378
Air Force Operations Group	41	2	43
Air Force Personnel Center	630	1,382	2,012
Air Force Petroleum Agency	26	63	89
Air Force Public Affairs Agency	234	34	268
Air Force Review Boards Agency	12	71	83
Air Force Safety Center	41	61	102
Air National Guard Readiness Center	57	763	820
Total FOAs	3,816	4,666	8,482
Direct Reporting Units (DRUs)			
Air Force District of Washington	3,537	958	4,495
Air Force Operational Test and Evaluation Center	327	233	560
US Air Force Academy	1,959	1,288	3,247
Total DRUs	5,823	2,479	8,302
Other			
HQ USAF	1,672	1,997	3,669
Other	11,073	32,211	43,284
Academy Cadets	4,031	0	4,031
Total Other	16,776	34,208	50,984
Total Strength	311,357	161,934*	473,291

Note: *Civilian total strength excludes 4,090 indirect hires.

USAF photo by Mike Kaplan



Air Force Academy graduation in 2010. In 2015, the academy had 4,031 cadets.

Active Duty Personnel Strength

(As of Sept. 30, 2015)

Year	Number	Year	Number
1907	3	1973	691,182
1908	13	1974	643,970
1909	27	1975	612,751
1910	11	1976	585,416
1911	23	1977	570,695
1912	51	1978	569,712
1913	114	1979	559,455
1914	122	1980	557,969
1915	208	1981	570,302
1916	311	1982	582,845
1917	1,218	1983	592,044
1918	195,023	1984	597,125
1919	25,603	1985	601,515
1920	9,050	1986	608,199
1921	11,649	1987	607,035
1922	9,642	1988	576,446
1923	9,441	1989	570,880
1924	10,547	1990	535,233
1925	9,670	1991	510,432
1926	9,674	1992	470,315
1927	10,078	1993	444,351
1928	10,549	1994	426,327
1929	12,131	1995	400,409
1930	13,531	1996	389,001
1931	14,780	1997	377,385
1932	15,028	1998	367,470
1933	15,099	1999	360,590
1934	15,861	2000	355,654
1935	16,247	2001	353,571
1936	17,233	2002	368,251
1937	19,147	2003	375,062
1938	21,089	2004	376,616
1939	23,455	2005	353,696
1940	51,165	2006	348,953
1941	152,125	2007	333,495
1942	764,415	2008	327,379
1943	2,197,114	2009	333,408
1944	2,372,292	2010	334,196
1945	2,282,259	2011	333,370
1946	455,515	2012	332,918
1947	305,827	2013	330,694
1948	387,730	2014	316,332
1949	419,347	2015	311,357
1950	411,277	2016	317,000
1951	788,381		
1952	983,261		
1953	977,593		
1954	947,918		
1955	959,946		
1956	909,958		
1957	919,835		
1958	871,156		
1959	840,435		
1960	814,752		
1961	821,151		
1962	884,025		
1963	869,431		
1964	856,798		
1965	824,662		
1966	887,353		
1967	897,494		
1968	904,850		
1969	862,353		
1970	791,349		
1971	755,300		
1972	725,838		

Note: 2015 number is an estimate.

Budgets 2016 USAF Almanac

Terms Explained

Funding levels can be expressed in several ways. **Budget authority** is the value of new obligations that the federal government is authorized to incur. These include some obligations to be met in later years. Figures can also be expressed in **outlays** (actual expenditures, some of which are covered by amounts that were authorized in previous years).

Another difference concerns the value of money. When funding is in **current** or **then-year** dollars, no adjustment for inflation has taken place. This is the actual amount of dollars that has been or is to be spent, budgeted, or forecast. When funding is expressed in **constant dollars**, or **real dollars**, the effect of inflation has been factored out to make direct comparisons between budget years possible. A specific

year, often the present one, is chosen as a baseline for constant dollars.

Normally, Congress first authorizes payment, then appropriates it. **Authorization** is an act of Congress that establishes or continues a federal program or agency and sets forth guidelines to which it must adhere. **Appropriation** is an act of Congress that enables federal agencies to spend money for specific purposes.

Air Force Budget—A 10-Year Perspective

(Budget authority in millions of current and constant FY17 dollars; excludes war funding.)

Current dollars	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Military personnel	\$30,163	\$30,677	\$31,847	\$33,614	\$34,235	\$35,131	\$34,704	\$35,103	\$33,617	\$33,892
O&M	38,584	40,957	44,353	42,267	45,820	47,007	42,550	43,196	44,596	44,111
Procurement	31,490	35,136	35,938	35,830	36,277	36,020	30,341	31,259	33,914	41,003
RDT&E	24,342	26,261	26,305	27,700	26,982	26,113	22,766	23,655	23,568	24,476
Milcon	2,285	2,507	2,591	2,317	1,416	1,468	482	1,291	1,045	1,649
Housing	1,900	1,001	990	569	591	490	520	465	328	492
Revolving Funds	44	60	61	64	67	65	45	150	67	63
Total	\$128,807	\$136,600	\$142,086	\$142,360	\$145,386	\$146,295	\$131,408	\$135,120	\$137,134	\$145,685

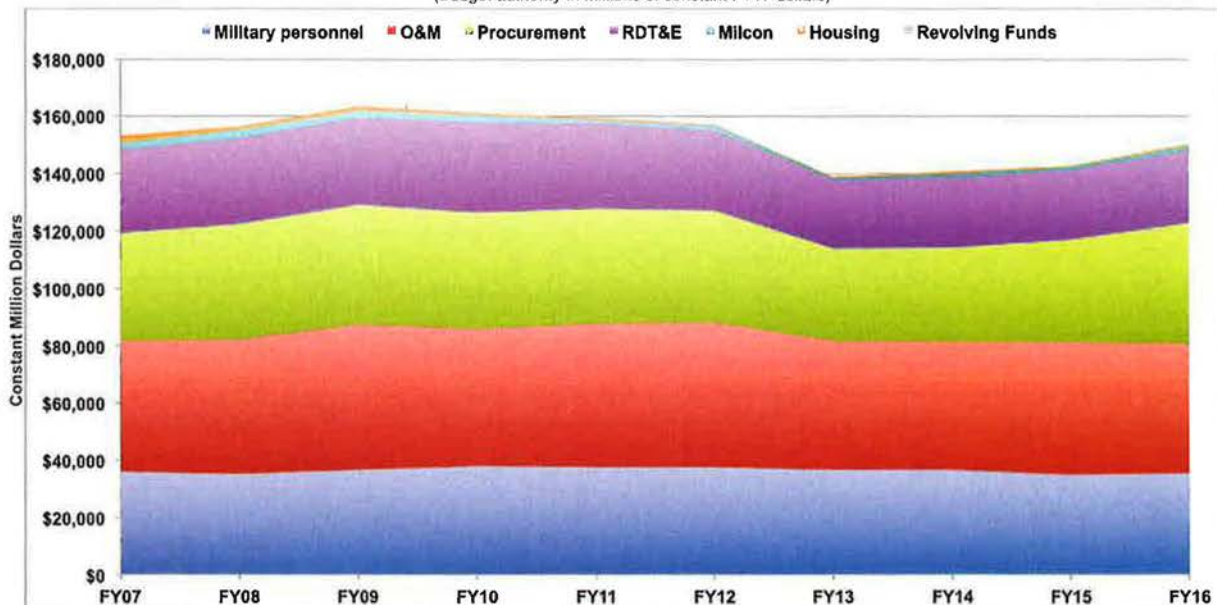
Constant Dollars	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Military personnel	\$35,888	\$35,163	\$36,651	\$38,075	\$37,576	\$37,766	\$36,756	\$36,593	\$35,009	\$34,705
O&M	45,907	46,946	51,043	47,876	50,292	50,533	45,066	45,030	46,443	45,170
Procurement	37,467	40,274	41,359	40,585	39,817	38,722	32,135	32,586	35,318	41,987
RDT&E	28,962	30,101	30,273	31,376	29,615	28,072	24,112	24,659	24,544	25,063
Milcon	2,719	2,874	2,982	2,624	1,554	1,578	510	1,346	1,088	1,688
Housing	2,261	1,147	1,139	645	649	527	551	485	342	504
Revolving Funds	52	69	70	72	74	70	48	156	70	65
Total	\$153,253	\$156,576	\$163,518	\$161,253	\$159,574	\$157,269	\$139,178	\$140,856	\$142,812	\$149,181

% Change	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Military personnel	-0.7%	-2.0%	4.2%	3.9%	-1.3%	0.5%	-2.7%	-0.4%	-4.3%	-0.9%
O&M	-1.3%	2.3%	8.7%	-6.2%	5.0%	0.5%	-10.8%	-0.1%	3.1%	-2.7%
Procurement	-8.8%	7.5%	2.7%	-1.9%	-1.9%	-2.8%	-17.0%	1.4%	8.4%	18.9%
RDT&E	8.6%	3.9%	0.6%	3.6%	-5.6%	-5.2%	-14.1%	2.3%	-0.5%	2.1%
Milcon	13.2%	5.7%	3.8%	-12%	-40.8%	1.5%	-67.7%	163.9%	-19.2%	55.1%
Housing	5.0%	-49.3%	-0.7%	-43.4%	0.6%	-18.8%	4.6%	-12.0%	-29.5%	47.4%
Revolving Funds	-79.9%	32.7%	1.4%	2.9%	2.8%	-5.4%	-31.4%	225.0%	-55.1%	-7.1%
Total	-1.3%	2.2%	4.4%	-1.4%	-1.0%	-1.4%	-11.5%	1.2%	1.4%	4.5%

Numbers do not add due to rounding.

10-Year Spending Trend by Category

(Budget authority in millions of constant FY17 dollars)



Defense Budget Authority

(\$ billions)

	Actual 2015	Enacted 2016	Planned 2017	2018	2019	2020	2021
No War Costs, Current Dollars							
	\$497.3	\$521.7	\$523.9	\$556.7	\$564.8	\$570.4	\$585.2
No War Costs, Constant FY 2017 Dollars							
	\$517.9	\$534.2	\$523.9	\$543.3	\$538.0	\$530.3	\$531.0
With War Costs, Current Dollars							
	\$560.4	\$580.3	\$582.7	\$615.5*	\$623.6*	\$629.2*	\$644.0*
With War Costs, Constant FY 2017 Dollars							
	\$583.6	\$594.2	\$582.7	\$600.7*	\$594.0*	\$585.0*	\$584.4*

*Includes placeholder value of \$58.8 billion in war funding.

Defense Outlays

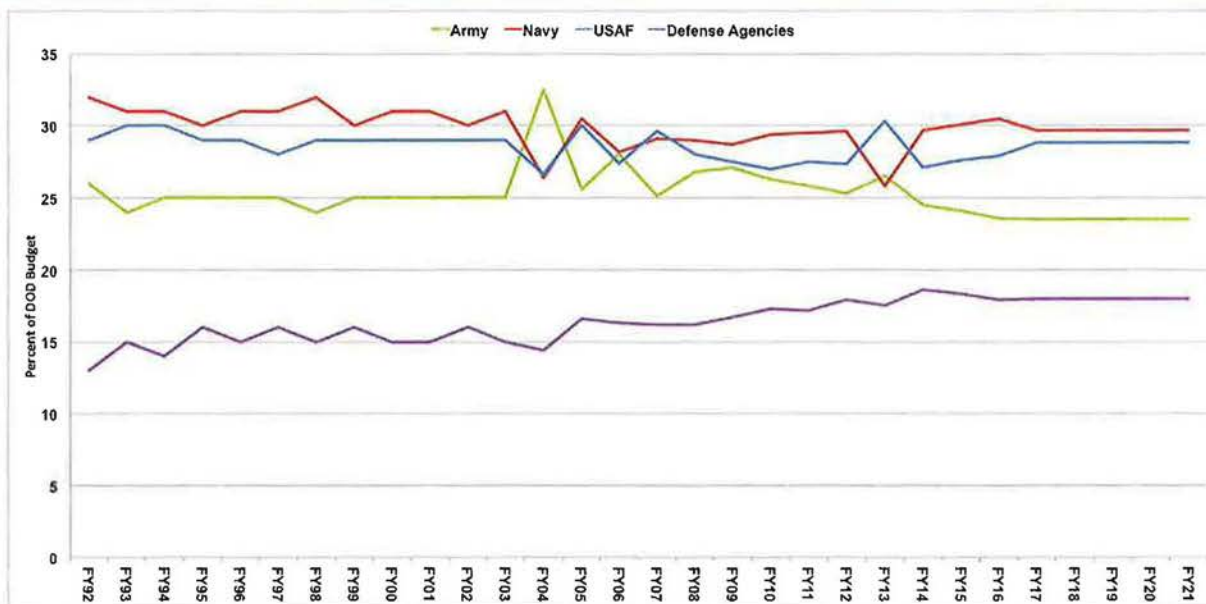
(\$ billions)

	2015	2016	Planned 2017	2018	2019	2020	2021
Current Dollars							
	\$562.5	\$576.3	\$586.8	\$568.6	\$569.9	\$575.3	\$582.0
Constant FY 2017 Dollars							
	\$585.8	\$590.2	\$586.8	\$555.0	\$542.9	\$534.8	\$528.1

Service and Agency Shares of Base DOD Budget

(Budget authority in billions of constant FY17 dollars)

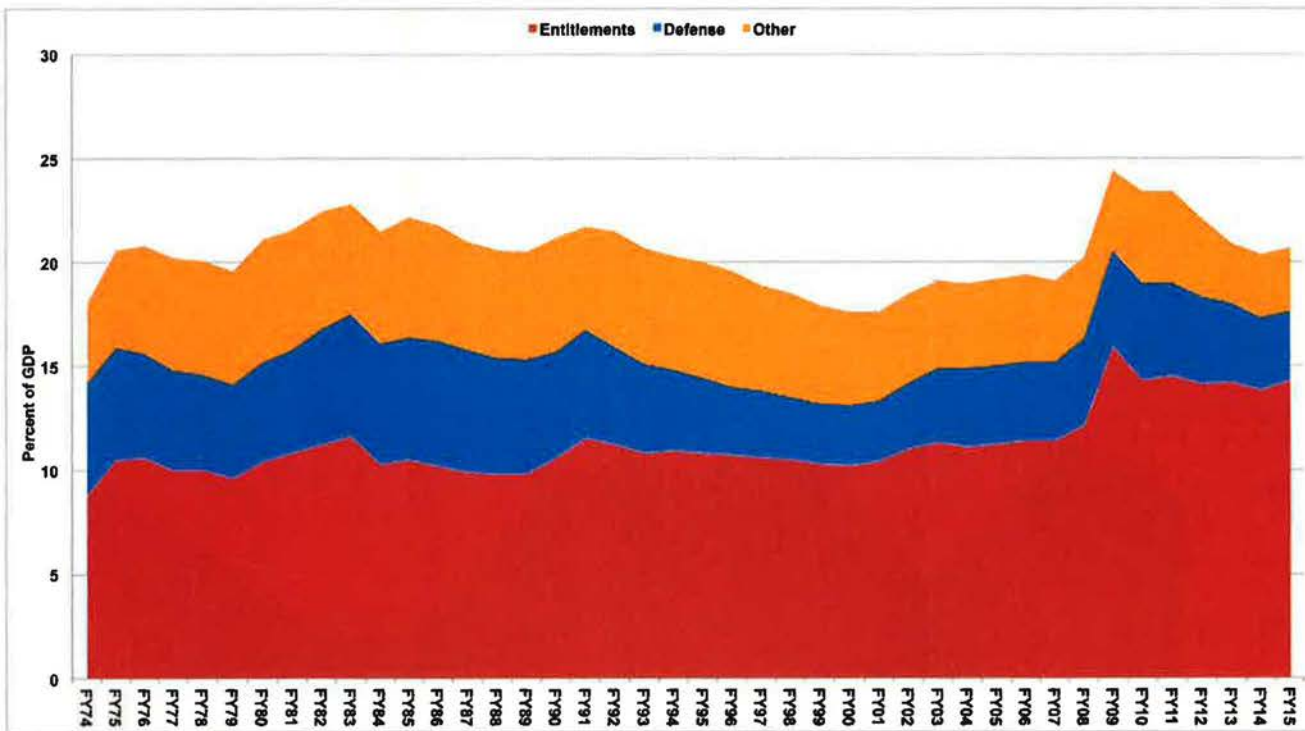
	2015	2016	Planned 2017	2018	2019	2020	2021
Dollars							
Air Force	\$142.8	\$149.2	\$151.1	\$156.7	\$155.1	\$152.9	\$153.1
Army	125.0	126.2	123.0	127.6	126.3	124.5	124.7
Navy/Marine Corps	155.6	163.2	155.4	161.1	159.6	157.3	157.5
Defense Agencies	94.5	95.6	94.5	98.0	97.0	95.6	95.7
Total	\$517.9	\$534.2	\$523.9	\$543.3	\$538.0	\$530.3	\$531.0
Percentages							
Air Force	27.6%	27.9%	28.8%	28.8%	28.8%	28.8%	28.8%
Army	24.1%	23.6%	23.5%	23.5%	23.5%	23.5%	23.5%
Navy/Marine Corps	30.0%	30.5%	29.7%	29.7%	29.7%	29.7%	29.7%
Defense Agencies	18.2%	17.9%	18.0%	18.0%	18.0%	18.0%	18.0%
Note: USAF shares above include non-Blue funding. Outyears estimates based on FY17 shares.							
USAF's Blue-only share							
Dollars	\$113.2	\$121.9	\$120.4				
Percentages	21.9%	22.8%	23%				
Note: USAF budget includes Blue dollars, money for programs actually managed by USAF, and non-Blue dollars, money (such as some intelligence and space-related funding) USAF does not manage but that passes through USAF accounts.							



Federal Budget Outlay Categories

Percentages of GDP

Year	Total Outlays	Deficit/Surplus	Entitlements	Defense	Year	Total Outlays	Deficit/Surplus	Entitlements	Defense
1974	18.1	0.5	8.8	5.4	1995	20.0	3.0	10.8	3.6
1975	20.6	3.4	10.5	5.4	1996	19.6	2.2	10.7	3.3
1976	20.8	3.9	10.6	5.0	1997	18.9	1.2	10.6	3.2
1977	20.2	2.5	10.0	4.8	1998	18.5	0.3	10.5	3.0
1978	20.1	2.4	10.0	4.6	1999	17.9	0.0	10.3	2.9
1979	19.6	1.5	9.6	4.5	2000	17.6	0.9	10.2	2.9
1980	21.1	2.6	10.4	4.8	2001	17.6	0.3	10.4	2.9
1981	21.6	2.4	10.8	5.0	2002	18.5	2.9	11.0	3.2
1982	22.5	3.6	11.2	5.6	2003	19.1	4.8	11.3	3.6
1983	22.8	5.9	11.6	5.9	2004	19.0	4.7	11.1	3.8
1984	21.5	4.7	10.3	5.8	2005	19.2	3.8	11.2	3.8
1985	22.2	5.2	10.5	5.9	2006	19.4	3.2	11.4	3.8
1986	21.8	5.2	10.2	6.0	2007	19.1	2.4	11.4	3.8
1987	21.0	3.5	9.9	5.9	2008	20.2	4.4	12.1	4.2
1988	20.6	3.7	9.8	5.6	2009	24.4	10.8	15.9	4.6
1989	20.5	3.7	9.8	5.5	2010	23.4	9.3	14.3	4.7
1990	21.2	4.7	10.6	5.1	2011	23.4	8.9	14.5	4.5
1991	21.7	5.3	11.5	5.2	2012	22.1	7.2	14.1	4.2
1992	21.5	5.3	11.2	4.7	2013	20.9	4.4	14.2	3.8
1993	20.7	4.4	10.8	4.3	2014	20.4	3.0	13.8	3.5
1994	20.3	3.6	10.9	3.9	2015	20.7	2.6	14.3	3.3



Source: *The Budget and Economic Outlook: 2016 to 2026*, Congressional Budget Office, January 2016.

Where To Find Budget Data

Congressional Budget Office

<http://www.cbo.gov>
 ■ Topics>>Budget

Defense Department Comptroller

<http://comptroller.defense.gov>
 ■ Budget materials by fiscal year
 ■ Links to budget pages for each service

Office of Management and Budget

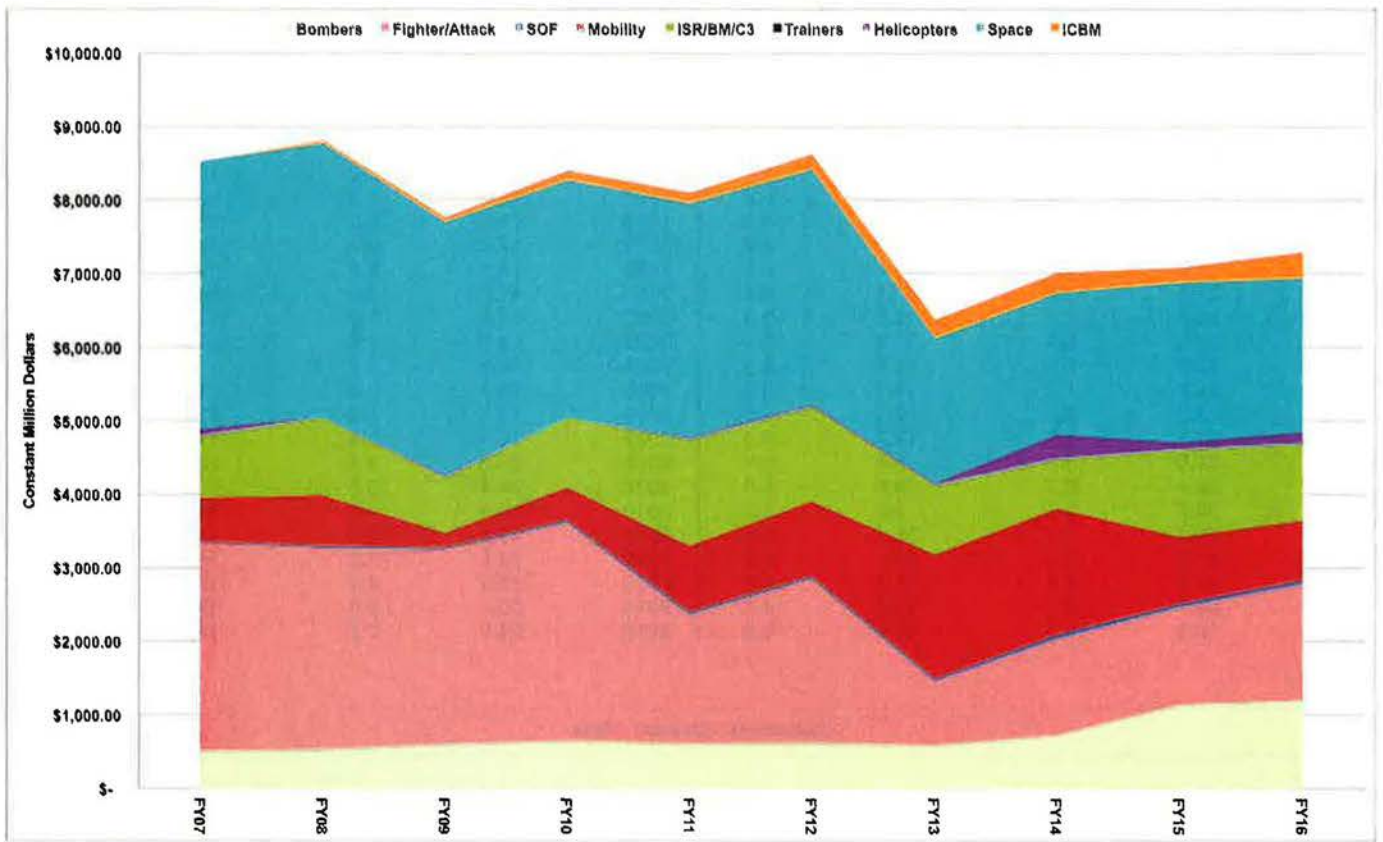
<http://www.whitehouse.gov/omb/>
 ■ The Budget (current fiscal year, including appendices and historical tables)
 ■ Links to past budgets (via GPO Access)

Government Printing Office (GPO) Access to Budget

<http://www.gpo.gov/fdsys/browse/collectionGPO.action?collectionCode=BUDGET>
 ■ Current and historical budget documents through Clinton Administration

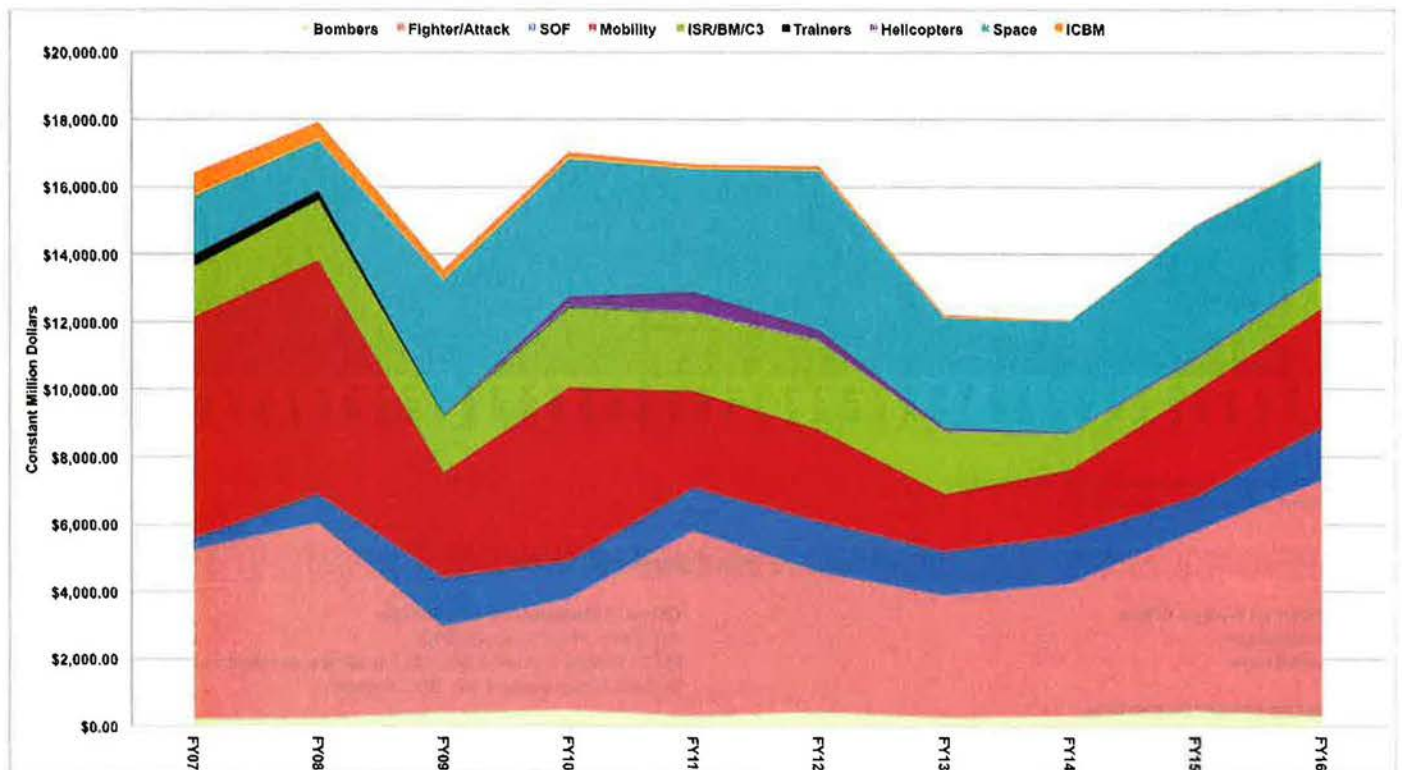
10 Years of RDT&E Funding for USAF Major Programs by Category

(Based on current million dollars)



10 Years of Procurement Funding for USAF Major Programs by Category

(Based on current million dollars)



Aircraft Total Active Inventory (TAI)

(As of Sept. 30, 2015)

	Active	ANG	AFRC	Total Force		Active	ANG	AFRC	Total Force
Bomber					Tanker				
B-1B	62	0	0	62	HC-130J	14	0	0	14
B-2A	20	0	0	20	HC-130N	2	6	1	9
B-52H	58	0	18	76	HC-130P	5	3	5	13
Total	140	0	18	158	KC-10A	59	0	0	59
Fighter/Attack					Transport				
A-10C	143	85	55	283	C-5A	0	0	7	7
F-15C	87	147	0	234	C-5B	3	0	14	17
F-15D	10	24	0	34	C-5C	1	0	0	1
F-15E	275	0	0	275	C-5M	30	0	0	30
F-16C	460	291	54	805	C-12C	16	0	0	16
F-16D	110	44	2	156	C-12D	6	0	0	6
F-22A	167	20	0	187	C-12F	2	0	0	2
F-35A	60	0	0	60	C-12J	4	0	0	4
Total	1,312	611	111	2,034	C-17A	170	34	18	222
Special Operations Forces					Helicopter				
AC-130H	2	0	0	2	C-20B	3	0	0	3
AC-130J	2	0	0	2	C-20H	2	0	0	2
AC-130U	17	0	0	17	C-21A	25	2	0	27
AC-130W	12	0	0	12	C-32A	4	0	0	4
CV-22B	43	0	0	43	C-32B	0	2	0	2
MC-130H	20	0	0	20	C-37A	9	0	0	9
MC-130J	33	0	0	33	C-37B	3	0	0	3
MC-130P	15	4	0	19	C-40B	4	0	0	4
Total	144	4	0	148	C-40C	0	3	4	7
ISR/BM/C3					Trainer				
E-3B	19	0	0	19	T-1A	178	0	0	178
E-3C	4	0	0	4	T-6A	445	0	0	445
E-3G	5	0	0	5	T-38A	54	0	0	54
E-4B	4	0	0	4	AT-38B	6	0	0	6
TE-8A	0	1	0	1	T-38C	446	0	0	446
E-8C	0	16	0	16	T-41D	4	0	0	4
E-9A	2	0	0	2	T-51A	3	0	0	3
E-11A	4	0	0	4	T-53A	24	0	0	24
EC-130H	14	0	0	14	UV-18B	3	0	0	3
EC-130J	0	7	0	7	Gliders	24	0	0	24
MC-12W	31	0	0	31	Total	1,187	0	0	1,187
MQ-1B	105	34	0	139	Grand Total				
MQ-9A	151	14	0	165	3,997	1,114	361	5,472	
NC-135W	1	0	0	1					
OC-135B	2	0	0	2					
RC-26B	0	11	0	11					
RC-135S	3	0	0	3					
RC-135U	2	0	0	2					
RC-135V	8	0	0	8					
RC-135W	11	0	0	11					
RQ-4B	33	0	0	33					
TC-130H	1	0	0	1					
TC-135W	3	0	0	3					
TU-2S	5	0	0	5					
U-2S	27	0	0	27					
WC-130H	0	8	0	8					
WC-130J	0	0	10	10					
WC-135C	1	0	0	1					
WC-135W	1	0	0	1					
Total	437	91	10	538					

Total active inventory (TAI): aircraft assigned to operating forces for mission, training, test, or maintenance. Includes primary, backup, and attrition reserve aircraft.

Total Number of Aircraft in Service Over Time

(As of Sept. 30, 2015)

Type of Aircraft—Active	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Bomber	172	173	153	154	150	144	144	141	141	140
Fighter/Attack	1,619	1,552	1,496	1,468	1,256	1,287	1,289	1,287	1,273	1,312
Special Ops Forces	103	100	94	89	98	105	117	122	124	144
ISR/BM/C3	137	266	292	320	362	381	413	394	444	437
Tanker	278	277	262	260	263	247	246	243	244	239
Transport	529	454	449	452	458	429	425	413	410	381
Helicopter	160	160	170	159	160	151	170	138	137	157
Trainer	1,284	1,111	1,074	1,114	1,000	1,190	1,213	1,189	1,195	1,187
Total Active Duty	4,282	4,093	3,990	4,016	3,747	3,934	4,017	3,927	3,968	3,997
Type of Aircraft—ANG										
Bomber	0	0	0	0	0	0	0	0	0	0
Fighter/Attack	765	746	687	664	614	639	635	630	585	611
Special Ops Forces	4	4	4	4	4	4	4	4	4	4
ISR/BM/C3	29	28	45	45	80	80	87	86	88	91
Tanker	260	235	215	182	179	189	189	187	185	184
Transport	245	258	244	241	240	242	232	223	207	207
Helicopter	18	18	18	17	17	17	17	17	17	17
Total ANG	1,321	1,289	1,213	1,153	1,134	1,171	1,164	1,147	1,086	1,114
Type of Aircraft—AFRC										
Bomber	9	9	9	9	9	18	18	18	18	18
Fighter/Attack	120	104	103	108	97	100	101	95	104	111
Special Ops Forces	14	14	14	14	10	10	5	4	0	0
ISR/BM/C3	17	17	11	11	14	12	11	11	10	10
Tanker	89	85	69	69	69	72	72	71	68	68
Transport	146	152	149	149	149	152	148	147	145	139
Helicopter	15	15	15	15	15	15	15	15	15	15
Total AFRC	410	396	370	375	363	379	370	361	360	361
Total Force	6,013	5,778	5,573	5,544	5,244	5,484	5,551	5,435	5,414	5,472

ICBMs and Spacecraft in Service Over Time

(As of Sept. 30, 2015)

Type of System	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Minuteman III	450	450	450	450	450	450	450	450	450	450
Peacekeeper	0	0	0	0	0	0	0	0	0	0
Total ICBMs	450	450	450	450	450	450	450	450	450	450
AEHF					1	1	2	2	3	3
ATRR							1	1	0	0
DMSP	4	6	6	6	6	6	4	4	6	6
DSCS	9	9	9	9	8	8	8	8	7	6
DSP (classified)										
GPS	30	30	30	30	36	34	30	31	38	41
Milstar	5	5	5	5	5	5	5	5	5	5
SBIRS (classified)				2	2	2	2	2	2	
SBSS				1	1	1	1	1	1	1
WGS				2	3	3	3	4	6	7
Total Satellites	48	50	50	54	62	60	56	58	68	69

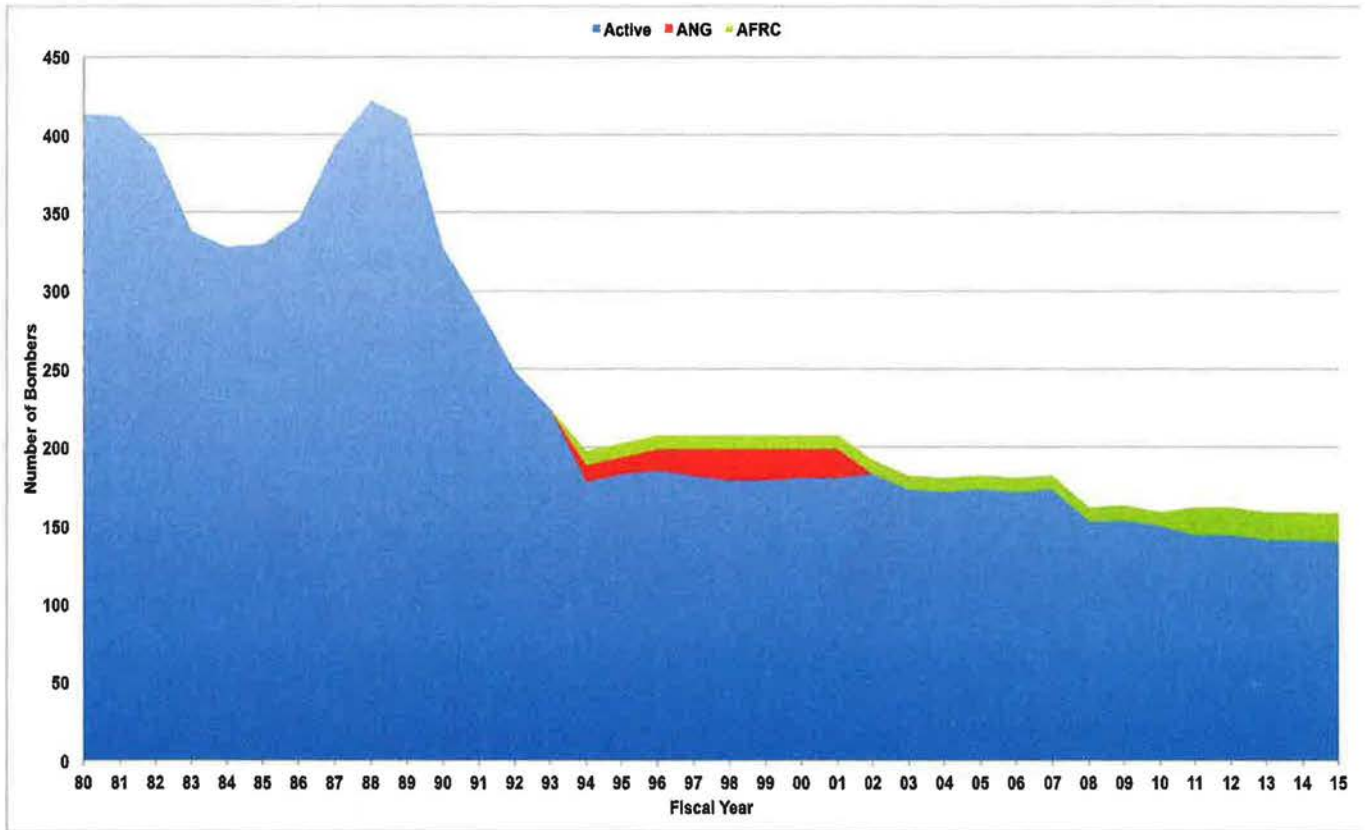
AEHF: Advanced Extremely High Frequency; ATRR: Advanced Technology Risk Reduction; DMSP: Defense Meteorological Satellite Program; DSCS: Defense Satellite Communications System; DSP: Defense Support Program; GPS: Global Positioning System; SBIRS: Space Based Infrared System; SBSS: Space Based Surveillance System; WGS: Wideband Global SATCOM.

Tactical Aircraft Flying Hours per Crew per Month

(As of Sept. 30, 2015)

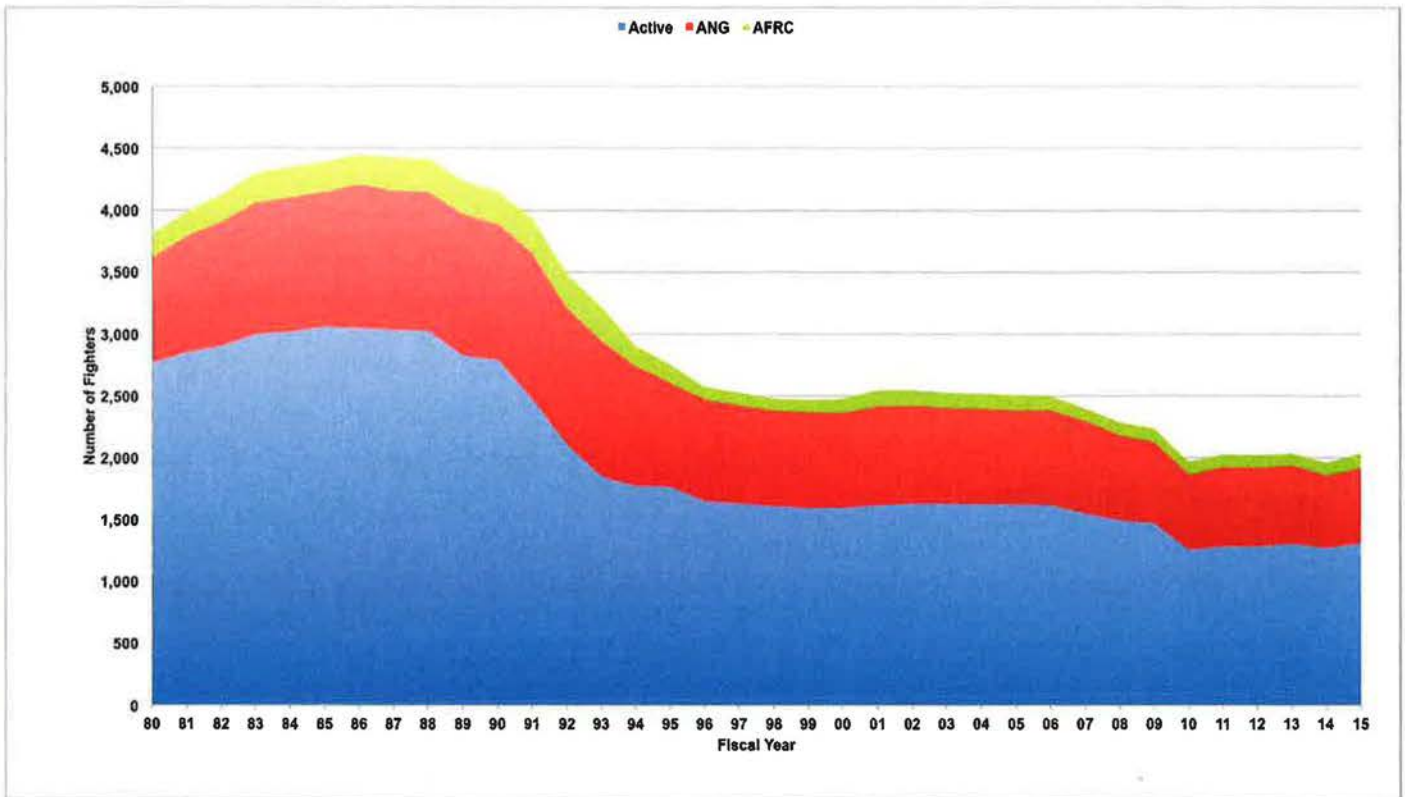
	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Active Duty	16.0	15.9	14.4	17.0	19.4	17.7	13.5	14.8	13.2	13.2
ANG	10.6	10.0	9.0	9.0	8.5	7.8	7.1	9.6	9.3	10.9
AFRC	17.5	12.5	14.4	14.1	14.9	16.5	15.8	12.3	12.0	12.6

Bombers Over Time



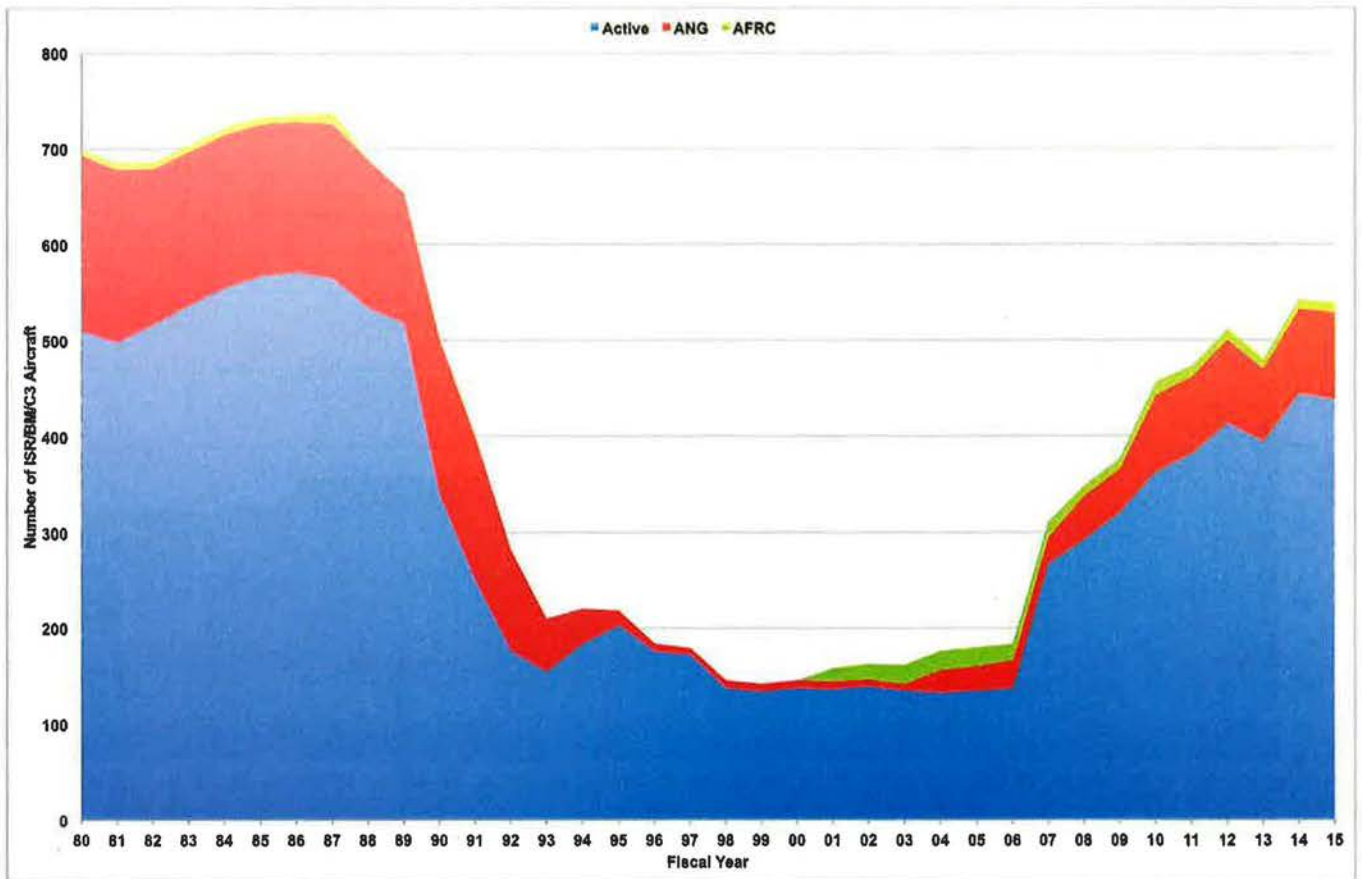
Source for historical data (1980-2000): "Arsenal of Airpower: USAF Aircraft Inventory, 1950-2009," Mitchell Institute Press, November 2010.

Fighters Over Time



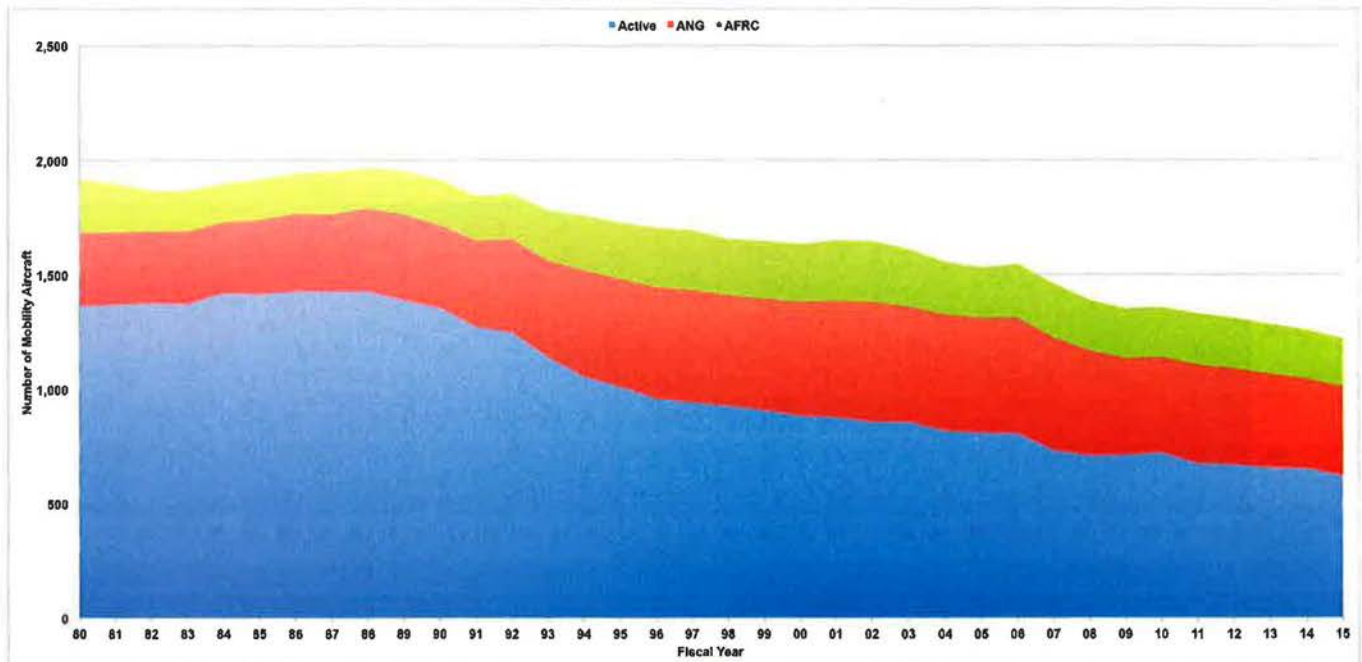
Source for historical data (1980-2000): "Arsenal of Airpower: USAF Aircraft Inventory, 1950-2009," Mitchell Institute Press, November 2010.

ISR/BM/C3 Aircraft Over Time



Source for historical data (1980-2000): "Arsenal of Airpower: USAF Aircraft Inventory, 1950-2009," Mitchell Institute Press, November 2010.

Mobility Aircraft Over Time



Source for historical data (1980-2000): "Arsenal of Airpower: USAF Aircraft Inventory, 1950-2009," Mitchell Institute Press, November 2010.

Total Force Aircraft Age

(As of Sept. 30, 2015)

	Total Force TAI	Average Age	Total Force TAI	Average Age
Bomber				
B-1B Lancer	62	27.7		
B-2A Spirit	20	20.7		
B-52H Stratofortress	76	53.4		
Total	158	39.1		
Fighter/Attack				
A-10C Thunderbolt II	283	34.0		
F-15C Eagle	234	31.0		
F-15D Eagle	34	31.5		
F-15E Strike Eagle	275	22.0		
F-16C Fighting Falcon	805	24.3		
F-16D Fighting Falcon	156	24.9		
F-22A Raptor	187	7.5		
F-35A Lightning II	60	1.6		
Total	2,034	24.0		
Special Operations Forces				
AC-130H Spectre	2	45.3		
AC-130J Ghosthunter	2	1.7		
AC-130U Spooky	17	24.2		
AC-130W Stinger II	12	25.9		
CV-22B Osprey	43	3.8		
MC-130H Combat Talon II	20	26.8		
MC-130J Commando II	33	2.0		
MC-130P Combat Shadow	19	46.9		
Total	148	16.7		
ISR/BM/C3				
E-3B Sentry (AWACS)	19	36.9		
E-3C Sentry (AWACS)	4	32.3		
E-3G Sentry (AWACS)	5	34.2		
E-4B National Airborne Operations Center	4	40.9		
TE-8A JSTARS	1	24.3		
E-8C JSTARS	16	14.3		
E-9A Widget	2	22.5		
E-11A Battlefield Airborne Comms Node	4	3.3		
EC-130H Compass Call	14	41.9		
EC-130J Commando Solo	7	14.8		
MC-12W Liberty	31	6.7		
MQ-1B Predator	139	7.9		
MQ-9A Reaper	165	3.3		
NC-135W (test bed)	1	53.1		
OC-135B Open Skies	2	53		
RC-26B Condor	11	20.9		
RC-135S Cobra Ball	3	53		
RC-135U Combat Sent	2	50.2		
RC-135V Rivet Joint	8	50.5		
RC-135W Rivet Joint	11	52.4		
RQ-4B Global Hawk	33	4.1		
TC-130H (trainer)	1	49.5		
TC-135W (trainer)	3	52.8		
TU-2S (trainer)	5	31.0		
U-2S Dragon Lady	27	32.2		
WC-130H Hercules	8	49.3		
WC-130J Hercules (Hurricane Hunter)	10	14.0		
WC-135C Constant Phoenix	1	50.9		
WC-135W Constant Phoenix	1	53.0		
Total	538	14.2		
Tanker				
HC-130J Combat King II	14	2.1		
HC-130N King	9	29.2		
HC-130P King	13	49.2		
KC-10A Extender	59	30.3		
KC-135R Stratotanker	340	53.5		
KC-135T Stratotanker	56	55.1		
Total	491	48.8		
Transport				
C-5A Galaxy	7	43.1		
C-5B Galaxy	17	27.1		
C-5C Galaxy	1	44.8		
C-5M Super Galaxy	30	28.5		
C-12C Huron	16	38.7		
C-12D Huron	6	31.0		
C-12F Huron	2	30.9		
C-12J Huron	4	27.3		
C-17A Globemaster III	222	11.6		
C-20B Gulfstream	3	27.9		
C-20H Gulfstream	2	20.1		
C-21A Learjet	27	30.0		
C-32A Air Force Two	4	16.6		
C-32B Air Force Two	2	11.8		
C-37A Gulfstream V	9	14.3		
C-37B Gulfstream V	3	5.2		
C-40B Clipper	4	11.2		
C-40C Clipper	7	8.9		
C-130H Hercules	244	27.2		
C-130J Hercules	105	6.9		
LC-130H Hercules	10	29.6		
VC-25A Air Force One	2	24.5		
Total	727	19.5		
Helicopter				
HH-60G Pave Hawk	96	24.8		
HH-60U Pave Hawk	3	3.9		
TH-1H Iroquois	28	34.1		
UH-1N Iroquois	62	42.3		
Total	189	31.6		
Trainer				
T-1A Jayhawk	178	20.5		
T-6A Texan II	445	9.5		
T-38A Talon	54	48.4		
AT-38B Talon	6	51.7		
T-38C Talon	446	47.7		
T-41D Mescalero	4	45.7		
T-51A	3	9.7		
T-53A	24	3.2		
UV-18B Twin Otter	3	31.1		
Gliders	24	4.9		
Total	1,187	27.5		
Grand Total	5,472	25.9		

Note: Average age for category totals and grand total are weighted by quantity of aircraft.



USAF photo by Osakabe Yasuo

A C-130 prepares for a low-altitude airdrop.



Tail code MA: A Massachusetts ANG F-15 of the 104th Fighter Wing. See "On Guard in New England," p. 126.

USAF Aircraft Tail Codes

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



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USAF Grades and Insignia

Officer



Second Lieutenant
(O-1)



Brigadier General
(O-7)



First Lieutenant
(O-2)



Major General
(O-8)



Captain
(O-3)



Lieutenant General
(O-9)



Major
(O-4)



General
(O-10)



Lieutenant Colonel
(O-5)



Colonel
(O-6)

Enlisted

Airman Basic
(E-1)
No insignia



Master Sergeant
(E-7)



Airman
(E-2)



Senior Master Sergeant
(E-8)



Airman First Class
(E-3)



Chief Master Sergeant
(E-9)



Senior Airman
(E-4)



Staff Sergeant
(E-5)



Chief Master Sergeant of
the Air Force



Technical Sergeant
(E-6)



First Sergeant
The diamond device, shown here on senior master sergeant stripes, denotes an E-7 through E-9 who advises and assists a squadron commander in managing unit activities.



Command Chief Master Sergeant
The star device shown here denotes an E-9 who serves in a 9E000 position, formerly known as a senior enlisted advisor.

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



Air Force Meritorious Unit Award



Air Force Outstanding Unit Award



Air Force Organizational Excellence Award



Prisoner of War Medal



Combat Readiness Medal



Air Force Good Conduct Medal



Good Conduct Medal



Air Reserve Forces Meritorious Service Medal



Outstanding Airman of the Year Ribbon



Air Force 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



Air & Space Campaign Medal



Nuclear Deterrence Operations Service Medal



Air Force Overseas Ribbon-Short



Air Force Overseas Ribbon-Long



Air Force Expeditionary Service Ribbon



Air Force Longevity Service Award Ribbon



USAF Basic Military Training Instructor Ribbon



Air Force Recruiter Ribbon



Armed Forces Reserve Medal



USAF NCO PME Graduate Ribbon



USAF Basic Military Training Honor Graduate Ribbon



Small Arms Expert Marksmanship Ribbon



Air Force Training Ribbon



Philippine Defense Ribbon

Awards and Decorations, Continued



Philippine Liberation Ribbon



Philippine Independence Ribbon



Philippine Presidential Unit Citation



ROK Presidential Unit Citation



RVN Gallantry Cross with Palm



United Nations Service Medal



United Nations Medal



NATO Meritorious Service Medal



NATO Medal for Yugoslavia



NATO Medal for Kosovo



Article 5 NATO Medal-Eagle Assist



Article 5 NATO Medal-Active Endeavor



Non-Article 5 NATO Medal-Balkans



Non-Article 5 NATO Medal-ISAF



Republic of Vietnam Campaign Medal



Kuwait Liberation Medal, Kingdom of Saudi Arabia



Kuwait Liberation Medal, Government of Kuwait



Republic of Korea Korean War Service Medal

Devices



Bronze Star

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



Silver and Bronze Stars

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



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.



A Device

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



Silver Star

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



Silver and Bronze OLCs

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



Hourglass Device

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



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.



Silver Oak Leaf Cluster For sixth, 11th, etc., entitlements or in lieu of five bronze OLCs.



Valor Device

For valor; not an additional award; only one per ribbon; worn to the wearer's right of OLCs on the same ribbon.



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.



"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.



Bronze Oak Leaf Cluster For second and subsequent awards.

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

Major Commands and Reserve Components

■ 2016 USAF Almanac

Note: Personnel data as of Sept. 30, 2015

Organization



U.S. AIR FORCE

The Air Force has 10 major commands and two Air Reserve Components. (Air Force Reserve Command is both a majcom and an ARC.) As major subdivisions of the Air Force, majcoms conduct a major part of the service's mission and are directly subordinate to Hq. USAF.

Major commands are organized on a functional basis in the US and on a geographic basis overseas. In addition to accomplishing designated portions of USAF's worldwide activities, they organize, administer, equip, and train their subordinate elements.

Major commands, in general, include the following organizational levels: numbered air force (NAF), wing, group, squadron, and flight. The majcom sits at the top of a skip-echelon staffing structure, which means every other organizational level (i.e., majcom, wing, and squadron) will have a full range of staff functions. The other organizations (NAF, group, and flight) are tactical echelons with minimal or no support staff. These tactical echelons are designed to increase operational effectiveness rather than to review and transmit paperwork.

There are two basic organizational schemes for Air Force major commands: unit-oriented organizations and major non-unit organizations. The more standard unit-oriented scheme comprises majcom, NAF, wing, group, squadron, and flight levels. The major non-unit organization scheme comprises majcom,

10 Major Commands

Air Combat Command	Air Force Space Command
Air Education & Training Command	Air Force Special Operations Command
Air Force Global Strike Command	Air Mobility Command
Air Force Materiel Command	Pacific Air Forces
Air Force Reserve Command	US Air Forces in Europe-Air Forces Africa

Two Air Reserve Components

Air Force Reserve Command
Air National Guard

center, directorate, division, branch, and section levels.

USAF has two types of major commands: lead majcom and component majcom (C-majcom). *(Some major commands are both lead majcoms and C-majcoms.)* A C-majcom is the USAF component to a unified combatant command. The commander of a C-majcom is the commander of air forces (COMAFFOR) and may function as a theater joint force air and space component commander (JFACC) when required. A C-majcom has one or more component NAFs (C-NAFs) through which it presents its forces to the combatant commander.

Numbered Air Force

A numbered air force, that level of command directly below a major command, provides operational leadership and supervision to its subordinate units (wings, groups, and squadrons). A C-NAF supports the commander of air forces at the operational and tactical level. USAF has designated some C-NAFs, rather than a majcom, as the Air Force component to a unified combatant command. In that role, the C-NAF functions at the strategic level as well as the operational and tactical levels and will have a broader staff. *(On the following pages, NAFs with "Air Forces" designations, such as Air Forces Southern, are C-NAFs.)*

ACC

Air Combat Command

Headquarters JB Langley-Eustis, Va.

Established June 1, 1992

Commander Gen. Herbert J. "Hawk" Carlisle



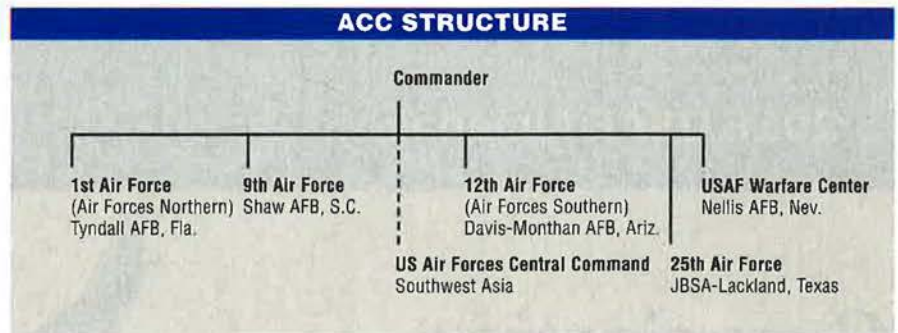
PRIMARY MISSION

Primary force provider of combat airpower—fighter, conventional bomber, reconnaissance, battle management, and electronic combat aircraft—to combatant commands; provide C3I systems and conduct global information operations.

PERSONNEL

Active Duty*	80,004
Civilian	11,658
Total	91,662

EQUIPMENT (Total active inventory)
Fighter/Attack 627



Helicopter	39	Trainer	45
ISR/BM/C3	364		
Tanker	14		

Abbreviations: CFACC: combined force air component commander; DCGS: Distributed Common Ground Station.

WINGS/CENTERS	LOCATION	AIRCRAFT/MISSION/WEAPON
1st Fighter Wing	JB Langley-Eustis, Va.	F-22, T-38
4th FW	Seymour Johnson AFB, N.C.	F-15E
9th Reconnaissance Wing	Beale AFB, Calif.	C-12, MC-12W, RQ-4, T-38A, U-2
20th FW	Shaw AFB, S.C.	F-16CJ
23rd Wing	Moody AFB, Ga.	A-10C, HC-130P, HH-60G
49th Wing	Holloman AFB, N.M.	F-16, MQ-1, MQ-9, T-38C
53rd Wing	Eglin AFB, Fla.	A-10C, B-1B, B-2, B-52H, F-15C/E, F-16, F-22, F-35A, HC-130J, HH-60G, MQ-1, MQ-9, RQ-4, U-2, space test
55th Wing	Offutt AFB, Neb.	E-4B, EC-130, OC-135B, RC-135S/U/V/W, TC-135S/W, WC-135
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
70th Intelligence, Surveillance, & Reconnaissance Wing	Fort Meade, Md.	Cryptologic operations
93rd Air Ground Operations Wing	Moody AFB, Ga.	Battlefield airmen operations & support
99th Air Base Wing	Nellis AFB, Nev.	Base support
325th FW	Tyndall AFB, Fla.	F-22
355th FW	Davis-Monthan AFB, Ariz.	A-10C, EC-130H (55th Wing), F-16, HC-130J, HH-60G (23rd Wing)
363rd ISRW	JB Langley-Eustis, Va.	Multi-intelligence analysis & targeting
366th FW	Mountain Home AFB, Idaho	F-15E
388th FW	Hill AFB, Utah	F-16C/D, F-35A
432nd Wing	Creech AFB, Nev.	MQ-1, MQ-9, RQ-170
480th ISRW	JB Langley-Eustis, Va.	DCGS, cyber ISR, CFACC support, Signals intelligence integration
461st Air Control Wing	Robins AFB, Ga.	E-8C (active associate)
505th Command & Control Wing	Hurlburt Field, Fla.	C2 operational-level tactics, testing, training
552nd ACW	Tinker AFB, Okla.	E-3B/C/G
557th Weather Wing	Offutt AFB, Neb.	Weather information
601st Air & Space Operations Center	Tyndall AFB, Fla.	Plan/direct air operations
633rd ABW	JB Langley-Eustis, Va.	Joint base facilities support
Air Force Rescue Coordination Center	Tyndall AFB, Fla.	National search/rescue coordination
Air Force Technical Applications Center	Patrick AFB, Fla.	Nuclear treaty monitoring, nuclear event detection

*7th Bomb Wing and 28th Bomb Wing transferred to Air Force Global Strike Command on Oct. 1, 2015. Personnel figures here are as of Sept. 30, 2015.

1st Fighter Wing F-22s.

USAF photo by MSGt. Jeremy Lock

AETC

Air Education and Training Command

Headquarters JBSA-Randolph, Texas

Established July 1, 1993

Commander Lt. Gen. Darryl Roberson



PRIMARY MISSION

Recruit, train, and educate airmen through basic military training, initial and advanced technical training, and professional military education.

PERSONNEL

Active Duty	49,591
Civilian	14,079
Total	63,670

EQUIPMENT (TAI)

Fighter/Attack	154
Helicopter	50
Special Operations Forces	14
Tanker	26
Trainer	1,112
Transport	29

AETC STRUCTURE



Abbreviations: CSO: combat systems officer; JBSA: Joint Base San Antonio; NAS: Naval Air Station; ROTC: Reserve Officer Training Corps; JROTC: Junior Reserve Officer Training Corps.

MAJOR UNITS

12th Flying Training Wing
14th FTW
17th Training Wing
33rd Fighter Wing
37th TRW
42nd Air Base Wing
47th FTW
56th FW
58th Special Operations Wing
59th Medical Wing
71st FTW
80th FTW
81st TRW
82nd TRW
97th Air Mobility Wing
314th Airlift Wing
502nd ABW
Air Force Institute of Technology
Air Force Research Institute
Carl A. Spaatz Center for Officer Education
Curtis E. LeMay Center for Doctrine Dev. & Education
Ira C. Eaker Center for Professional Dev.
Jeanne M. Holm Center for Officer Accessions & Citizen Dev.
Muir S. Fairchild Research Information Center
Thomas N. Barnes Center for Enlisted Education

LOCATION

JBSA-Randolph, Texas
Columbus AFB, Miss.
Goodfellow AFB, Texas
Eglin AFB, Fla.
JBSA-Lackland, Texas
Maxwell AFB, Ala.
Laughlin AFB, Texas
Luke AFB, Ariz.
Kirtland AFB, N.M.
JBSA-Lackland, Texas
Vance AFB, Okla.
Sheppard AFB, Texas
Keesler AFB, Miss.
Sheppard AFB, Texas
Altus AFB, Okla.
Little Rock AFB, Ark.
JBSA-Fort Sam Houston, Texas
Wright-Patterson AFB, Ohio
Maxwell AFB, Ala.
Maxwell AFB, Ala.
Maxwell AFB, Ala.
Maxwell AFB, Ala.
Maxwell AFB, Ala.
Maxwell AFB, Ala.
Maxwell AFB, Ala.

AIRCRAFT/MISSION/WEAPON

T-1A, T-6A, T-38C (CSO at NAS Pensacola, Fla.)
T-1A, T-6A, T-38C (A-29 at Moody AFB, Ga.)
Technical training
F-35
Basic military & technical training
Base support
T-1A, T-6A, T-38C
F-16, F-35
CV-22, HC-130J/P/N, HH-60G, MC-130H/J/P, UH-1N, TH-1H
Wilford Hall Ambulatory Surgical Center
T-1A, T-6A, T-38C
T-6A, T-38C
Technical training
Technical training
C-17, KC-135R
C-130J
JBSA facilities support
Postgraduate education
Historical research
Officer professional military education (PME)
Air Force doctrine development
Professional and technical continuing education
Officer training, ROTC & JROTC oversight
Information resources
Enlisted PME

T-1A Jayhawks of the 14th Flying Training Wing carry out a mass launch to demonstrate mass-sortie generation.

AFGSC

Air Force Global Strike Command

Headquarters Barksdale AFB, La.

Established Aug. 7, 2009

Commander Gen. Robin Rand



PRIMARY MISSION

Organize, train, equip, maintain, and provide ICBM forces and nuclear-capable bomber forces to combatant commanders.

PERSONNEL

Active Duty*	19,642
Civilian	2,439
Total	22,081

EQUIPMENT (TAI)

Bomber	135
Helicopter	25
ICBM	450
Trainer	14



Note: USAF redesignated Strategic Air Command, established Dec. 13, 1944, as Air Force Global Strike Command and activated AFGSC on Aug. 7, 2009.

WINGS/CENTERS	LOCATION	AIRCRAFT/MISSION/WEAPON
2nd Bomb Wing	Barksdale AFB, La.	B-52H
5th BW	Minot AFB, N.D.	B-52H
7th BW	Dyess AFB, Texas	B-1
28th BW	Ellsworth AFB, S.D.	B-1
90th Missile Wing	F. E. Warren AFB, Wyo.	Minuteman III, UH-1N
91st MW	Minot AFB, N.D.	Minuteman III, UH-1N
341st MW	Malmstrom AFB, Mont.	Minuteman III, UH-1N
377th Air Base Wing	Kirtland AFB, N.M.	Nuclear operations, expeditionary force training, base support
509th BW	Whiteman AFB, Mo.	B-2, T-38C

*7th Bomb Wing and 28th Bomb Wing transferred to Air Force Global Strike Command on Oct. 1, 2015. Personnel figures here are as of Sept. 30, 2015.

Now an Air Force Global Strike Command asset, a B-1 bomber takes off from Ellsworth AFB, S.D.



USAF photo by ATO James L. Miller

AFMC

Air Force Materiel Command

Headquarters Wright-Patterson AFB, Ohio

Established July 1, 1992

Commander Gen. Ellen M. Pawlikowski



PRIMARY MISSION

Research, develop, procure, test, and sustain USAF weapon systems.

PERSONNEL

Active Duty	17,650
Civilian	62,417
Total	80,067

EQUIPMENT (TAI)

Bomber	5
Fighter/Attack	56
Helicopter	5
ISR/BM/C3	22
Special Operations Forces	1
Tanker	2
Trainer	16
Transport	25

AFMC STRUCTURE

Commander	
— Air Force Installation & Mission Support Center (AFIMSC)	JB San Antonio-Lackland, Texas
— Air Force Life Cycle Management Center (AFLCMC)	Wright-Patterson AFB, Ohio
— Air Force Nuclear Weapons Center (AFNWC)	Kirtland AFB, N.M.
— Air Force Research Laboratory (AFRL)	Wright-Patterson AFB, Ohio
— Air Force Sustainment Center (AFSC)	Tinker AFB, Okla.
— Air Force Test Center (AFTC)	Edwards AFB, Calif.
— National Museum of the US Air Force	Wright-Patterson AFB, Ohio

MAJOR UNITS

LOCATION

AIRCRAFT/MISSION/WEAPON

AFIMSC		
Air Force Civil Engineer Center	JBSA-Lackland, Texas	Installation support (civil engineering)
Air Force Financial Management Center of Expertise	Buckley AFB, Colo.	Installation support (financial analysis)
Air Force Financial Services Center	Ellsworth AFB, S.D.	Installation support (payment processing)
Air Force Security Forces Center	JBSA-Lackland, Texas	Installation support (security forces programs)
AFLCMC		
Air Force Program Executive Officer—Agile Combat Support	Wright-Patterson AFB, Ohio	Systems acquisition
AFPEO—Armament	Eglin AFB, Fla.	Systems acquisition
AFPEO—Battle Management	Hanscom AFB, Mass.	Systems acquisition
AFPEO—Business & Enterprise Systems	Maxwell AFB-Gunter Annex, Ala.	Systems acquisition
AFPEO—C3I & Networks	Hanscom AFB, Mass.	Systems acquisition
AFPEO—Fighters & Bombers	Wright-Patterson AFB, Ohio	Systems acquisition
AFPEO—ISR & SOF	Wright-Patterson AFB, Ohio	Systems acquisition
AFPEO—Mobility	Wright-Patterson AFB, Ohio	Systems acquisition
AFPEO—Tanker	Wright-Patterson AFB, Ohio	Systems acquisition
88th Air Base Wing	Wright-Patterson AFB, Ohio	Base support
AFNWC		
AFPEO—Nuclear Command, Control, & Communications	Hanscom AFB, Mass.	Systems acquisition
AFPEO—Strategic Systems	Kirtland AFB, N.M.	Systems acquisition
AFRL		
Aerospace Systems	Wright-Patterson AFB, Ohio	Research & development
Air Force Office of Scientific Research	Arlington, Va.	Research
Directed Energy	Kirtland AFB, N.M.	R&D
Information	Rome, N.Y.	R&D
Materials & 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	Human performance evaluation & research
AFSC		
Ogden Air Logistics Complex	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 & Utah Test & Training Range support
78th ABW	Robins AFB, Ga.	Base support
448th Supply Chain Management Wing	Tinker AFB, Okla.	Planning & execution depot line repairable & 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	Eglin AFB, Fla.	Aircraft testing and base support
412th TW	Edwards AFB, Calif.	Aircraft testing and base support

AFRC

Air Force Reserve Command

Headquarters Robins AFB, Ga.

Established Feb. 17, 1997

Commander Lt. Gen. James F. Jackson



PRIMARY MISSION

Provide strike, air mobility, special operations forces, rescue, aeromedical evacuation, aerial firefighting and spraying, weather reconnaissance, cyberspace operations, ISR, space, flying training, and other capabilities to support the Active Duty force and assist with domestic and foreign disaster relief.

PERSONNEL

Total (selected reserve)	68,494
Active Duty	427
Civilian (includes technicians)	12,257
Total	81,178

EQUIPMENT (TAI)

Bomber	18
Fighter/Attack	111
Helicopter	15



ISR/BM/C3	10	Transport	139
Tanker	68		

Abbreviations: AOC: Air & Space Operations Center; ISR: intelligence, surveillance, and reconnaissance.

WINGS/CENTERS

LOCATION

AIRCRAFT/MISSION/WEAPON

94th Airlift Wing	Dobbins ARB, Ga.	C-130H
301st Fighter Wing	NAS JRB Fort Worth, Texas	F-16 and F-22, MQ-1, and MQ-9 (Tyndall AFB, Fla.)
302nd AW	Peterson AFB, Colo.	C-130H (including Modular Airborne Firefighting System)
307th Bomb Wing	Barksdale AFB, La.	B-52H
310th Space Wing	Schriever AFB, Colo.	Space control & operations & warning, information operations
315th AW*	JB Charleston, S.C.	C-17
349th Air Mobility Wing*	Travis AFB, Calif.	C-5, C-17, KC-10
403rd Wing	Keesler AFB, Miss.	C-130J, WC-130J (Hurricane Hunters)
419th FW*	Hill AFB, Utah	F-16, F-35A
433rd AW	JBSA-Lackland, Texas	C-5A/B, formal training unit
434th Air Refueling Wing	Grissom ARB, Ind.	KC-135R
439th AW	Westover ARB, Mass.	C-5B
440th AW	Pope Field, N.C.	C-130H
442nd FW	Whiteman AFB, Mo.	A-10C
445th AW	Wright-Patterson AFB, Ohio	C-17
446th AW*	JB Lewis-McChord, Wash.	C-17
452nd AMW	March ARB, Calif.	C-17, KC-135R
459th ARW	JB Andrews, Md.	KC-135R
482nd FW	Homestead ARB, Fla.	F-16C
507th ARW	Tinker AFB, Okla.	KC-135R
512th AW*	Dover AFB, Del.	C-5M, C-17
514th AMW*	JB McGuire-Dix-Lakehurst, N.J.	C-17, KC-10
908th AW	Maxwell AFB, Ala.	C-130H
910th AW	Youngstown ARS, Ohio	C-130H
911th AW	Pittsburgh Arpt., Pa.	C-130H
914th AW	Niagara Falls Arpt./ARS, N.Y.	KC-135 (planned)
916th ARW	Seymour Johnson AFB, N.C.	KC-135R
919th Special Operations Wing	Duke Field, Fla.	AC-130U, C-145A, C-146, MQ-9, PC-12, U-28*
920th Rescue Wing	Patrick AFB, Fla.	HC-130N/P, HH-60G
926th Wing*	Nellis AFB, Nev.	A-10, F-15C, F-15E, F-16, F-22A, F-35A, HH-60G, MQ-1 and MQ-9 (Creech AFB, Nev.)
927th ARW*	MacDill AFB, Fla.	KC-135R
932nd AW	Scott AFB, Ill.	C-40C
934th AW	Minneapolis-St. Paul Arpt., Minn.	C-130H
940th Wing*	Beale AFB, Calif.	AOC, DCGS, RQ-4
944th FW*	Luke AFB, Ariz.	F-15E (Seymour Johnson AFB, N.C.), F-16

*Classic associate: Active Duty unit owns aircraft.

A C-17 on the ramp in Havana, Cuba, in March. AFRC's 315th Airlift Wing and AMC's 437th Airlift Wing operate it from JB Charleston, S.C.



USAF photo by Maj. Wayne Cupps

AFSPC

Air Force Space Command

Headquarters Peterson AFB, Colo.

Established Sept. 1, 1982

Commander Gen. John E. Hyten



PRIMARY MISSION

Organize, train, equip, maintain, and provide space and cyberspace operations forces; develop, procure, and test space systems; sustain national space launch facilities.

PERSONNEL

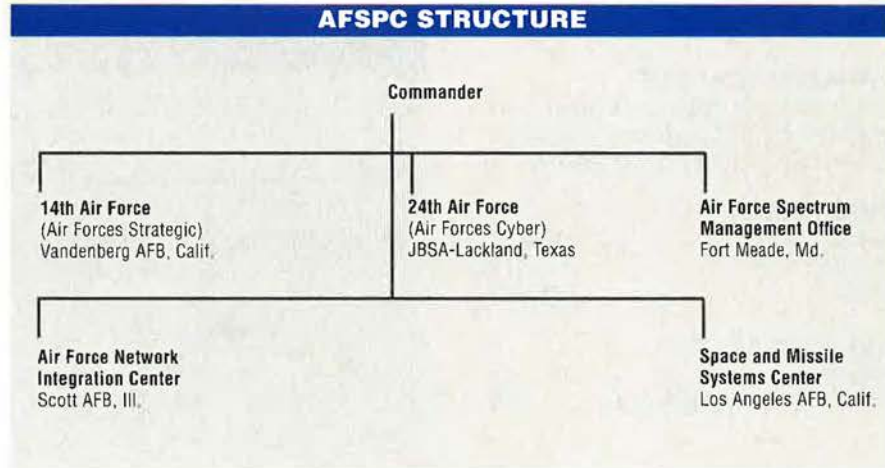
Active Duty	12,581
Civilian	7,243
Total	19,824

EQUIPMENT

Air Force Satellite Control Network
BMEWS
GEODSS
Launch/test ranges
Pave Phased Array Warning System
PARCS
Space surveillance radars

Satellite systems (on orbit):

AEHF	3	Milstar	5	SBSS	1
DMSP	6	SBIRS	Classified	WGS	7
DSCS	7				
DSP	Classified				
GPS	41				



Abbreviations: BMEWS: Ballistic Missile Early Warning System; GEODSS: Ground-based Electro-Optical Deep Space Surveillance System; PARCS: Perimeter Acquisition Radar Attack Characterization System; for satellites, see Gallery of Weapons.

WINGS/CENTERS

21st Space Wing
30th SW
45th SW
50th SW
67th Network Warfare Wing
460th SW
624th Operations Center
688th Informations Operations Wing

LOCATION

Peterson AFB, Colo.
Vandenberg AFB, Calif.
Patrick AFB, Fla.
Schriever AFB, Colo.
JBSA-Lackland, Texas
Buckley AFB, Colo.
JBSA-Lackland, Texas
JBSA-Lackland, Texas

AIRCRAFT/MISSION/WEAPON

Space control/warning
Space launch, ICBM test, launch range operations
Space launch, launch range operations
C2 space operations
Cyberspace operations
Space surveillance/warning
Plan/direct cyber operations
Information operations, engineering installation

An Atlas V launches for an Air Force Space Command mission at Cape Canaveral AFS, Fla.



Photo courtesy of United Launch Alliance

AFSOC

Air Force Special Operations Command

Headquarters Hurlburt Field, Fla.

Established May 22, 1990

Commander Lt. Gen. Bradley A. Heithold



PRIMARY MISSION

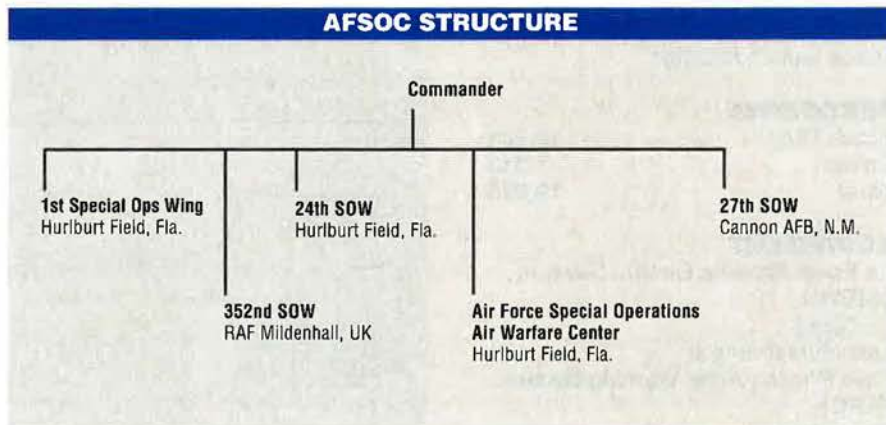
Organize, train, equip, maintain, and provide special operations airpower forces to combatant commanders.

PERSONNEL

Active Duty	14,118
Civilian	1,619
Total	15,737

EQUIPMENT (TAI)

ISR/BM/C3	45
Special Operations Forces	129



MAJOR UNITS

1st Special Operations Group
27th SOG
353rd SOG
551st SOS
720th Special Tactics Group
724th STG

LOCATION

Hurlburt Field, Fla.
Cannon AFB, N.M.
Kadena AB, Japan
Cannon AFB, N.M.
Hurlburt Field, Fla.
Pope Field, N.C.

AIRCRAFT/MISSION/WEAPON

AC-130U, CV-22, MC-130H/P, U-28A
AC-130W, C-146A, CV-22B, MC-130J, MQ-1, MQ-9, U-28A
MC-130H/P
AC-130H/W, CV-22, MC-130J, MQ-9
Special tactics operations
Special tactics operations

Flying a heritage formation: An MC-130P Combat Shadow, MC-130J Command II, and MC-130H Combat Talon II (top to bottom).



USAF photo by SrA. Maeson Ellerman

AMC

Air Mobility Command

Headquarters Scott AFB, Ill.

Established June 1, 1992

Commander Gen. Carlton D. Everhart II



PRIMARY MISSION

Organize, train, equip, maintain, and provide air mobility forces to sustain worldwide airpower operations.

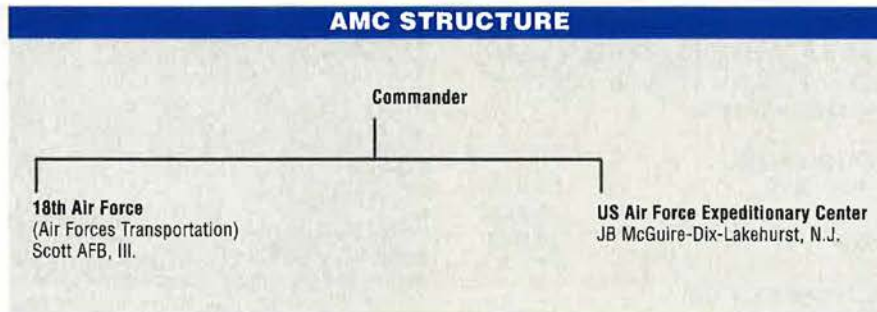
PERSONNEL

Active Duty	40,650
Civilian	8,311
Total	48,961

EQUIPMENT (TAI)

Tanker	163
Transport	262

AMC STRUCTURE



Abbreviations: AOC: Air & Space Operations Center; AA: active associate; ANG/AFRC own aircraft.

WINGS/CENTERS	LOCATION	AIRCRAFT/MISSION/WEAPON
6th Air Mobility Wing	MacDill AFB, Fla.	C-37, KC-135R
19th Airlift Wing	Little Rock AFB, Ark.	C-130H/J
22nd Air Refueling Wing	McConnell AFB, Kan.	KC-135R
60th AMW	Travis AFB, Calif.	C-5, C-17, KC-10
62nd AW	JB Lewis-McChord, Wash.	C-17
87th Air Base Wing	JB McGuire-Dix-Lakehurst, N.J.	Joint base facilities support
89th AW	JB Andrews, Md.	C-20B, C-32A, C-37A/B, C-40B, VC-25A
92nd ARW	Fairchild AFB, Wash.	KC-135R
305th AMW	JB McGuire-Dix-Lakehurst, N.J.	C-17, KC-10
319th ABW	Grand Forks AFB, N.D.	Base support
375th AMW	Scott AFB, Ill.	C-21, C-40 (AA), KC-135R (AA), NC-21
436th AW	Dover AFB, Del.	C-5, C-17
437th AW	JB Charleston, S.C.	C-17A
515th Air Mobility Operations Wing	JB Pearl Harbor-Hickam, Hawaii	Contingency airfield operations
521st AMOW	Ramstein AB, Germany	Contingency airfield operations
618th AOC (Tanker Airlift Control Center)	Scott AFB, Ill.	Tanker Airlift Control Center operations
621st Contingency Response Wing	JB McGuire-Dix-Lakehurst, N.J.	Rapidly deployable base operations
628th ABW	JB Charleston, S.C.	Joint base facilities support

An Air Mobility Command KC-135 receives a cargo load at MacDill AFB, Fla.



USAF photo by SSGT Brittany Liddon

PACAF

Pacific Air Forces

Headquarters JB Pearl Harbor-Hickam, Hawaii

Established July 1, 1957

Commander Gen. Lori J. Robinson



PRIMARY MISSION

Provide US Pacific Command integrated expeditionary Air Force capabilities, including strike, air mobility, and rescue forces.

PERSONNEL

Active Duty	28,413
Civilian	7,897
Total	36,310

EQUIPMENT (TAI)

Fighter/Attack	262
Helicopter	13
ISR/BM/C3	4
Tanker	15
Transport	39



WINGS/CENTERS

3rd Wing
8th Fighter Wing
15th Wing
18th Wing
35th FW
36th Wing
51st FW
354th FW
374th Airlift Wing
607th Air & Space Operations Center
611th AOC
613th AOC
673rd Air Base Wing
Regional Support Center

LOCATION

JB Elmendorf-Richardson, Alaska
Kunsan AB, South Korea
JB Pearl Harbor-Hickam, Hawaii
Kadena AB, Japan
Misawa AB, Japan
Andersen AFB, Guam
Osan AB, South Korea
Eielson AFB, Alaska
Yokota AB, Japan
Osan AB, South Korea
JB Elmendorf-Richardson, Alaska
JB Pearl Harbor-Hickam, Hawaii
JB Elmendorf-Richardson, Alaska
JB Elmendorf-Richardson, Alaska

AIRCRAFT/MISSION/WEAPON

C-12, C-17, E-3, F-22A
F-16C/D
C-17A, C-37A, C-40B, F-22A (active associate), KC-135R (AA)
E-3B/C, F-15C/D, HH-60G, KC-135R
F-16C/D
Operational platform for rotating combat forces
A-10C, F-16C/D
F-16C/D
C-12J, C-130H, UH-1N
Plan & direct air operations
Plan & direct air operations
Plan & direct air operations
Joint base facilities support
Remote facility operations, communications, engineering

At Eielson AFB, Alaska, an 18th Aggressor Squadron F-16 takes off during Red Flag-Alaska last August.



USAF photo by MSgt. Karen J. Tomasik

USAFE-AFAFRICA

US Air Forces in Europe-Air Forces Africa

Headquarters Ramstein AB, Germany

Established Aug. 7, 1945

Commander Gen. Frank Gorenc



PRIMARY MISSION

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

PERSONNEL

Active Duty	22,293
Civilian	4,918
Total	27,211

EQUIPMENT (TAI)

Fighter/Attack	213
Helicopter	4
Tanker	19
Transport	25

USAFE-AFAFRICA STRUCTURE



WINGS/CENTERS

31st Fighter Wing
 39th Air Base Wing
 48th FW
 52nd FW
 86th Airlift Wing
 100th Air Refueling Wing
 435th Air Ground Operations Wing
 501st Combat Support Wing
 603rd Air & Space Operations Center

LOCATION

Aviano AB, Italy
 Incirlik AB, Turkey
 RAF Lakenheath, UK
 Spangdahlem AB, Germany
 Ramstein AB, Germany
 RAF Mildenhall, UK
 Ramstein AB, Germany
 RAF Alconbury, UK
 Ramstein AB, Germany

AIRCRAFT/MISSION/WEAPON

F-16C/D
 Operational location for deployed US and NATO forces
 F-15C/D, F-15E, HH-60G
 F-16C/D
 C-20H, C-21, C-37, C-40B, C-130J
 KC-135R
 Battlefield airmen support & operations
 Facilities support for seven geographically separated units
 Plan & direct air operations

USAFE-AFAFRICA F-15Es taxi down the runway at RAF Lakenheath, UK.



USAF photo by S/A Trevor T. McBride

ANG

Air National Guard

Headquarters Washington, D.C.

Established Sept. 18, 1947

Director Maj. Gen. Brian G. Neal (acting)



PRIMARY MISSION

Provide combat capability to the Active Duty force and security for the homeland; support US domestic and foreign humanitarian and disaster relief.

PERSONNEL

Total (selected reserve)	105,728
Active Duty	57
Civilian (includes technicians)	23,501
Total	129,286

EQUIPMENT (TAI)

Fighter/Attack	611
Helicopter	17
ISR/BM/C3	91
Special Operations Forces	4
Tanker	184
Transport	207

Abbreviations: AATTC: Advanced Airlift Tactics Training Center; AOC/G/S: air & space operations center/group/squadron; CA: classic associate; CACS: command and control squadron (space); CC: combat communications; CIRF: centralized intermediate repair facility; CRG: contingency response group; CRTC: Combat Readiness Training Center; CSDC: Consolidated Storage and Deployment Center (medical); CW: combat weather; DTOC: Distributed Training Operations Center; EOD: explosive ordnance disposal; FTU: formal training unit; GA: Guardian Angel (pararescuemen, combat rescue officers, SERE specialists); MAFFS: Modular Airborne Firefighting System; MGS: mobile ground station (space); NOSS: network operations security squadron; RAOC: regional air operations center; RCC: rescue coordination center; TACP: Tactical Air Control Party.

Wing (State)	System/Mission	Wing (State)	System/Mission
101st Air Refueling Wing (ME)	KC-135R, CC, cyber	149th FW (TX)	F-16, cyber, intel training
102nd Intelligence Wing (MA)	AOG, CC, DCGS	150th Special Ops Wing (NM)	C-26, special ops training (CA)
103rd Airlift Wing (CT)	C-130H	151st ARW (UT)	KC-135R, cyber, intel
104th Fighter Wing (MA)	F-15C/D	152nd AW (NV)	C-130H, DCGS
105th AW (NY)	C-17, cyber	153rd AW (WY)	C-130H, MAFFS
106th Rescue Wing (NY)	HC-130, HH-60G, GA	154th Wing (HI)	C-17 (CA), F-22, KC-135R
107th AW (NY)	MQ-9	155th ARW (NE)	KC-135R
108th Wing (NJ)	KC-135R, C-40, intel	156th AW (PR)	C-130E
109th AW (NY)	C-130H, LC-130	157th ARW (NH)	KC-135R
110th Attack Wing (MI)	MQ-9, AOG, cyber	158th FW (VT)	F-16, cyber training
111th Attack Wing (PA)	MQ-9, AOG, CSDC, cyber	159th FW (LA)	F-15C/D, CC, cyber, intel, TACP
113th Wing (DC)	C-40, F-16	161st ARW (AZ)	KC-135R
114th FW (SD)	F-16C	162nd Wing (AZ)	F-16, MQ-1, RC-26B
115th FW (WI)	F-16	163rd RW (CA)	MQ-1, FTU
116th Air Control Wing (GA)	E-8C	164th AW (TN)	C-17A
117th ARW (AL)	KC-135R, intel	165th AW (GA)	C-130H, CRTC, TACP, tactical comm
118th Wing (TN)	MQ-9, cyber	166th AW (DE)	C-130H, aeromed, cyber
119th Wing (ND)	MQ-1, ISR	167th AW (WV)	C-17A, aeromed
120th AW (MT)	C-130H	168th ARW (AK)	KC-135R
121st ARW (OH)	KC-135R	169th FW (SC)	F-16
122nd FW (IN)	A-10C	171st ARW (PA)	KC-135R/T
123rd AW (KY)	C-130H, CRG, special tactics	172nd AW (MS)	C-17, aeromed
124th FW (ID)	A-10C, CACS, TACP	173rd FW (OR)	F-15C/D
125th FW (FL)	F-15C	174th Attack Wing (NY)	MQ-9, AOC, CACS, TACP, FTU
126th ARW (IL)	KC-135R	175th Wing (MD)	A-10C, cyber
127th Wing (MI)	A-10C, KC-135R, special ops weather	176th Wing (AK)	C-17 (CA), C-130H, HC-130, HH-60G, GA, RAOC, RCC
128th ARW (WI)	KC-135R	177th FW (NJ)	F-16C, TACP
129th RQW (CA)	MC-130P, HH-60G, GA	178th Wing (OH)	MQ-1, cyber, ISR, space
130th AW (WV)	C-130H	179th AW (OH)	C-130H
131st Bomb Wing (MO)	B-2 (CA), AOG, CC	180th FW (OH)	F-16C
132nd Wing (IA)	MQ-9, DTOC	181st IW (IN)	DCGS, TACP
133rd AW (MN)	C-130H	182nd AW (IL)	C-130H, CC, TACP
134th ARW (TN)	KC-135R	183rd FW (IL)	AOG, CIRF, cyber
136th AW (TX)	C-130H, CC	184th IW (KS)	CACS, cyber, DCGS, NOSS, TACP
137th ARW (OK)	MC-12, cyber, TACP (in transition)	185th ARW (IA)	KC-135R
138th FW (OK)	F-16, cyber, TACP training	186th ARW (MS)	KC-135R, RC-26, AOG, TACP
139th AW (MO)	C-130H, AATTC (ANG/AFRC)	187th FW (AL)	F-16, RC-26
140th Wing (CO)	C-21, F-16, MGS	188th Wing (AR)	MQ-9
141st ARW (WA)	KC-135R, CC	189th AW (AR)	C-130H
142nd FW (OR)	F-15C, CW, special tactics	190th ARW (KS)	KC-135R, CW
143rd AW (RI)	C-130J, CC, cyber	192nd FW (VA)	F-22 (CA), ISR
144th FW (CA)	F-15C	193rd SOW (PA)	EC-130J, AOS, CC, cyber, TACP
145th AW (NC)	C-130H, aeromed, CC, MAFFS, TACP	194th Regional Support Wing (WA)	CC, CW, cyber, ISR, TACP
146th AW (CA)	C-130J, MAFFS	195th Wing (CA)	cyber, intel, space
147th Reconnaissance Wing (TX)	MQ-1B, RC-26, TACP		
148th FW (MN)	F-16C, EOD		

Leaders of Inactive Unified Commands

Alaskan Command

Maj. Gen. Howard A. Craig, USAF	Jan. 1, 1947	Oct. 17, 1947
Lt. Gen. Nathan F. Twining, USAF	Oct. 17, 1947	July 1, 1950
Lt. Gen. William E. Kepner, USAF	July 1, 1950	March 1, 1953
Lt. Gen. Joseph A. Atkinson, USAF	March 1, 1953	Oct. 1, 1956
Lt. Gen. Frank A. Armstrong Jr., USAF	Oct. 1, 1956	Aug. 1, 1961
Lt. Gen. George W. Mundy, USAF	Aug. 1, 1961	Aug. 1, 1963
Lt. Gen. Raymond J. Reeves, USAF	Aug. 1, 1963	July 28, 1966
Lt. Gen. Glen R. Birchard, USAF	July 28, 1966	June 29, 1967
Lt. Gen. Robert A. Breitweiser, USAF	June 29, 1967	Aug. 1, 1969
Lt. Gen. Robert G. Ruegg, USAF	Aug. 1, 1969	Aug. 1, 1972
Lt. Gen. James C. Sherrill, USAF	Aug. 1, 1972	Sept. 1, 1974
Lt. Gen. James E. Hill, USAF	Sept. 1, 1974	July 1, 1975

Disestablished July 1, 1975.

Continental Air Defense Command

Gen. Benjamin W. Chidlaw, USAF	Sept. 1, 1954	July 1, 1955
Gen. Earle E. Partridge, USAF	July 1, 1955	Aug. 1, 1959
Gen. Laurence S. Kuter, USAF	Aug. 1, 1959	Aug. 1, 1960
Gen. John K. Gerhart, USAF	Aug. 1, 1960	April 1, 1965
Gen. Dean C. Strother, USAF	April 1, 1965	Aug. 1, 1966
Gen. Raymond J. Reeves, USAF	Aug. 1, 1966	Aug. 1, 1969
Gen. Seth J. McKee, USAF	Aug. 1, 1969	Oct. 1, 1973
Gen. Lucius D. Clay Jr., USAF	Oct. 1, 1973	June 30, 1975

Disestablished June 30, 1975. Established as specified command, Aerospace Defense Command, July 1, 1975. ADCOM disestablished Dec. 19, 1986.

European Command

Gen. Lucius D. Clay, USA	March 15, 1947	Aug. 23, 1949
Gen. Thomas T. Handy, USA	Aug. 23, 1949	Aug. 1, 1952

Redesignated US Army Europe as Army component of new US European Command Aug. 1, 1952.

Far East Command

Gen. of the Army Douglas MacArthur, USA	Jan. 1, 1947	April 11, 1951
Gen. Matthew B. Ridgway, USA	April 11, 1951	May 9, 1952
Gen. Mark W. Clark, USA	May 9, 1952	Oct. 5, 1953
Gen. John E. Hull, USA	Oct. 5, 1953	April 1, 1955
Gen. Maxwell D. Taylor, USA	April 1, 1955	June 5, 1955
Gen. Lyman L. Lemnitzer, USA	June 5, 1955	July 1, 1957

Disestablished July 1, 1957. Functions assumed by US Pacific Command.

Northeast Command

Maj. Gen. Lyman P. Whitten, USAF	Oct. 1, 1950	March 20, 1952
Lt. Gen. Charles T. Myers, USAF	March 20, 1952	July 26, 1954
Lt. Gen. Glenn O. Barcus, USAF	July 26, 1954	Sept. 1, 1956

Disestablished Sept. 1, 1956.

US Joint Forces Command

Adm. William H. P. Blandy, USN	Dec. 1, 1947	Feb. 1, 1950
Adm. William M. Fechteier, USN	Feb. 1, 1950	Aug. 15, 1951
Adm. Lynde D. McCormick, USN	Aug. 15, 1951	April 12, 1954
Adm. Jerauld Wright, USN	April 12, 1954	Feb. 28, 1960
Adm. Robert L. Dennison, USN	Feb. 28, 1960	April 30, 1963
Adm. Harold P. Smith, USN	April 30, 1963	April 30, 1965
Adm. Thomas H. Moorer, USN	April 30, 1965	June 17, 1967
Adm. Ephraim P. Holmes, USN	June 17, 1967	Sept. 30, 1970
Adm. Charles K. Duncan, USN	Sept. 30, 1970	Oct. 31, 1972
Adm. Ralph W. Cousins, USN	Oct. 31, 1972	May 30, 1975
Adm. Isaac C. Kidd Jr., USN	May 30, 1975	Sept. 30, 1978
Adm. Harry D. Train II, USN	Sept. 30, 1978	Sept. 30, 1982
Adm. Wesley D. McDonald, USN	Sept. 30, 1982	Nov. 27, 1985
Adm. Lee Baggett Jr., USN	Nov. 27, 1985	Nov. 22, 1988
Adm. Frank B. Kelso II, USN	Nov. 22, 1988	May 18, 1990
Adm. Leon A. Edney, USN	May 18, 1990	July 13, 1992
Adm. Paul D. Miller, USN	July 13, 1992	Oct. 31, 1994
Gen. John J. Sheehan, USMC	Oct. 31, 1994	Sept. 24, 1997
Adm. Harold W. Gehman Jr., USN	Sept. 24, 1997	Sept. 5, 2000
Gen. William F. Kernan, USA	Sept. 5, 2000	Oct. 2, 2002
Adm. Edmund P. Giambastiani Jr., USN	Oct. 2, 2002	Aug. 1, 2005
Lt. Gen. Robert W. Wagner, USA (acting)	Aug. 1, 2005	Nov. 10, 2005
Gen. Lance L. Smith, USAF	Nov. 10, 2005	Nov. 9, 2007
Gen. James N. Mattis, USMC	Nov. 9, 2007	Aug. 8, 2010
Lt. Gen. Keith L. Huber, USA (acting)	Aug. 8, 2010	Oct. 29, 2010
Gen. Raymond T. Odierno, USA	Oct. 29, 2010	Aug. 4, 2011

Formerly US Atlantic Command, established Dec. 1, 1947. Redesignated US Joint Forces Command Oct. 7, 1999. Disestablished Aug. 4, 2011.

US Readiness Command

Gen. John L. Throckmorton, USA	Jan. 1, 1972	Feb. 1, 1973
Gen. Bruce Palmer Jr., USA	Feb. 1, 1973	Dec. 9, 1974
Gen. John J. Hennessey, USA	Dec. 9, 1974	Aug. 1, 1979
Gen. Volney F. Warner, USA	Aug. 1, 1979	Aug. 1, 1981
Gen. Donn A. Starry, USA	Aug. 1, 1981	June 22, 1983
Gen. Wallace H. Nutting, USA	June 22, 1983	June 28, 1985
Gen. Fred K. Mahaffey, USA	June 28, 1985	Sept. 30, 1986
Lt. Gen. Harry A. Goodall, USAF (acting)	Sept. 30, 1986	Oct. 10, 1986
Gen. James J. Lindsay, USA	Oct. 10, 1986	Sept. 30, 1987

Assumed functions of US Strike Command. Disestablished Sept. 30, 1987.

US Space Command

Gen. Robert T. Herres, USAF	Sept. 23, 1985	Feb. 5, 1987
Gen. John L. Piotrowski, USAF	Feb. 5, 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	Oct. 1, 2002

Disestablished Oct. 1, 2002. Functions assumed by US Strategic Command.

US Strike Command

Gen. Paul D. Adams, USA	Oct. 9, 1961	Nov. 1, 1966
Gen. Theodore J. Conway, USA	Nov. 1, 1966	Aug. 1, 1969
Gen. John L. Throckmorton, USA	Aug. 1, 1969	Dec. 31, 1971

Established December 1961. Disestablished Dec. 31, 1971. Functions assumed by US Readiness Command.



Continental Air Defense Command's forces included assets like this F-101B.

Guide to Aces and Heroes

■ 2016 USAF Almanac

Major Decorations

USAF Recipients of the Medal of Honor

Name and Rank at Time of Action	Place of Birth	Date of Action	Place of Action
World War I			
Bleckley, 2nd Lt. Erwin R.	Wichita, Kan.	Oct. 6, 1918	Binarville, France
Goettler, 1st Lt. Harold E.	Chicago	Oct. 6, 1918	Binarville, France
Luke, 2nd Lt. Frank Jr.	Phoenix	Sept. 29, 1918	Murvaux, France
Rickenbacker, 1st Lt. Edward V.	Columbus, Ohio	Sept. 25, 1918	Billy, France
World War II			
Baker, Lt. Col. Addison E.	Chicago	Aug. 1, 1943	Ploesti, Romania
Bong, Maj. Richard I.	Superior, Wis.	Oct. 10-Nov. 15, 1944	Southwest Pacific
Carswell, Maj. Horace S. Jr.	Fort Worth, Texas	Oct. 26, 1944	South China Sea
Castle, Brig. Gen. Frederick W.	Manila, Philippines	Dec. 24, 1944	Liège, Belgium
Cheli, Maj. Ralph	San Francisco	Aug. 18, 1943	Wewak, New Guinea
Craw, Col. Demas T.	Traverse City, Mich.	Nov. 8, 1942	Port Lyautey, French Morocco
Doolittle, Lt. Col. James H.	Alameda, Calif.	April 18, 1942	Tokyo
Erwin, SSGT. Henry E.	Adamsville, Ala.	April 12, 1945	Koriyama, Japan
Femoyer, 2nd Lt. Robert E.	Huntington, W.Va.	Nov. 2, 1944	Merseburg, Germany
Gott, 1st Lt. Donald J.	Arnett, Okla.	Nov. 9, 1944	Saarbrücken, Germany
Hamilton, Maj. Pierpont M.	Tuxedo Park, N.Y.	Nov. 8, 1942	Port Lyautey, French Morocco
Howard, Lt. Col. James H.	Canton, China	Jan. 11, 1944	Oschersleben, Germany
Hughes, 2nd Lt. Lloyd H.	Alexandria, La.	Aug. 1, 1943	Ploesti, Romania



Harold Goettler



Frank Luke



Frederick Castle



Maynard Smith



George Davis



George Day

World War II (continued)

Jerstad, Maj. John L.	Racine, Wis.	Aug. 1, 1943	Ploesti, Romania
Johnson, Col. Leon W.	Columbia, Mo.	Aug. 1, 1943	Ploesti, Romania
Kane, Col. John R.	McGregor, Texas	Aug. 1, 1943	Ploesti, Romania
Kearby, Col. Neel E.	Wichita Falls, Texas	Oct. 11, 1943	Wewak, New Guinea
Kingsley, 2nd Lt. David R.	Portland, Ore.	June 23, 1944	Ploesti, Romania
Knight, 1st Lt. Raymond L.	Houston	April 25, 1945	Po Valley, Italy
Lawley, 1st Lt. William R. Jr.	Leeds, Ala.	Feb. 20, 1944	Leipzig, Germany
Lindsey, Capt. Darrell R.	Jefferson, Iowa	Aug. 9, 1944	Pontoise, France
Mathies, Sgt. Archibald	Scotland	Feb. 20, 1944	Leipzig, Germany
Mathis, 1st Lt. Jack W.	San Angelo, Texas	March 18, 1943	Veogesack, Germany
McGuire, Maj. Thomas B. Jr.	Ridgewood, N.J.	Dec. 25-26, 1944	Luzon, Philippines
Metzger, 2nd Lt. William E. Jr.	Lima, Ohio	Nov. 9, 1944	Saarbrücken, Germany
Michael, 1st Lt. Edward S.	Chicago	April 11, 1944	Brunswick, Germany
Morgan, 2nd Lt. John C.	Vernon, Texas	July 28, 1943	Kiel, Germany
Pease, Capt. Harl Jr.	Plymouth, N.H.	Aug. 7, 1942	Rabaul, New Britain
Pucket, 1st Lt. Donald D.	Longmont, Colo.	July 9, 1944	Ploesti, Romania
Sarnoski, 2nd Lt. Joseph R.	Simpson, Pa.	June 16, 1943	Buka, Solomon Islands
Shomo, Maj. William A.	Jeannette, Pa.	Jan. 11, 1945	Luzon, Philippines
Smith, Sgt. Maynard H.	Caro, Mich.	May 1, 1943	Saint-Nazaire, France
Truemper, 2nd Lt. Walter E.	Aurora, Ill.	Feb. 20, 1944	Leipzig, Germany
Vance, Lt. Col. Leon R. Jr.	Enid, Okla.	June 5, 1944	Wimereux, France
Vosler, TSgt. Forrest L.	Lyndonville, N.Y.	Dec. 20, 1943	Bremen, Germany
Walker, Brig. Gen. Kenneth N.	Cerrillos, N.M.	Jan. 5, 1943	Rabaul, New Britain
Wilkins, Maj. Raymond H.	Portsmouth, Va.	Nov. 2, 1943	Rabaul, New Britain
Zeamer, Capt. Jay Jr.	Carlisle, Pa.	June 16, 1943	Buka, Solomon Islands

Korea

Davis, Maj. George A. Jr.	Dublin, Texas	Feb. 10, 1952	Sinuiju, Yalu River, N. Korea
Loring, Maj. Charles J. Jr.	Portland, Maine	Nov. 22, 1952	Sniper Ridge, N. Korea
Sebille, Maj. Louis J.	Harbor Beach, Mich.	Aug. 5, 1950	Hamch'ang, S. Korea
Walmsley, Capt. John S. Jr.	Baltimore	Sept. 14, 1951	Yangdok, N. Korea

Vietnam

Bennett, Capt. Steven L.	Palestine, Texas	June 29, 1972	Quang Tri, S. Vietnam
Day, Maj. George E.	Sioux City, Iowa	Aug. 26, 1967-March 14, 1973	Conspicuous gallantry while POW
Dethlefsen, Capt. Marilyn H.	Greenville, Iowa	March 10, 1967	Thai Nguyen, N. Vietnam
Etchberger, CMSgt. Richard L.	Hamburg, Pa.	March 11, 1968	Phou Pha Thi, Laos
Fisher, Maj. Bernard F.	San Bernardino, Calif.	March 10, 1966	A Shau Valley, S. Vietnam
Fleming, 1st Lt. James P.*	Sedalia, Mo.	Nov. 26, 1968	Duc Co, S. Vietnam
Jackson, Lt. Col. Joe M.*	Newnan, Ga.	May 12, 1968	Kham Duc, S. Vietnam
Jones, Col. William A. III	Norfolk, Va.	Sept. 1, 1968	Dong Hoi, N. Vietnam
Levitow, A1C John L.	Hartford, Conn.	Feb. 24, 1969	Long Binh, S. Vietnam
Pitsenbarger, A1C William H.	Piqua, Ohio	April 11, 1966	Cam My, S. Vietnam
Sijan, Capt. Lance P.	Milwaukee	Nov. 9, 1967-Jan. 22, 1968	Conspicuous gallantry while POW
Thorsness, Maj. Leo K.*	Walnut Grove, Minn.	April 19, 1967	N. Vietnam
Wilbanks, Capt. Hilliard A.	Cornelia, Ga.	Feb. 24, 1967	Da Lat, S. Vietnam
Young, Capt. Gerald O.	Anacortes, Wash.	Nov. 9, 1967	Khe Sanh, S. Vietnam

*Living Medal of Honor recipient

USAF Recipients of the Distinguished Service Cross

World War I

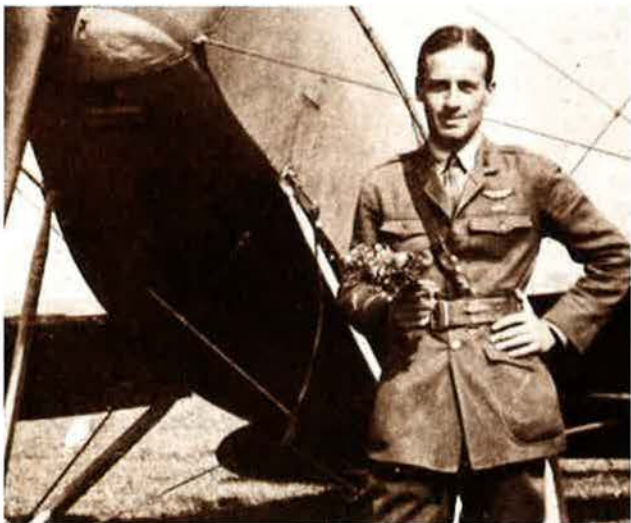
Abernathy, 2nd Lt. Thomas J.
 Aldrich, 1st Lt. Perry H.
 Alexander, 1st Lt. Arthur H.
 Alexander, 1st Lt. Stirling C.
 Allen, 1st Lt. Gardner P.
 Andrew, 1st Lt. Flynn L. A.
 Armstrong, 2nd Lt. Rodney M.
 Arthur, Capt. Dogan H. (2)
 Atwater, 1st Lt. Benjamin L.
 Avery, 1st Lt. Walter L.
 Babcock, 1st Lt. Philip R.
 Backus, 1st Lt. David H. (2)
 Badham, 1st Lt. William T.
 Baer, 1st Lt. Paul F. (2)
 Bagby, 1st Lt. Ralph B.
 Bartholf, 1st Lt. Herbert B.
 Baucom, Capt. Byrne V. (2)
 Beane, 1st Lt. James D.
 Beebe, 2nd Lt. David C.
 Bellows, 2nd Lt. Franklin B.
 Belzer, 2nd Lt. William E.
 Benell, 2nd Lt. Otto E.
 Bernheimer, 1st Lt. Louis G. (2)
 Biddle, Capt. Charles J.
 Bissell, 1st Lt. Clayton L.
 Blake, 1st Lt. Charles R.
 Bonnalie, 1st Lt. Allan F.
 Borden, 2nd Lt. Horace L.
 Bowers, 1st Lt. Lloyd G.
 Bowman, 2nd Lt. Samuel A.
 Boyd, 2nd Lt. Theodore E.
 Breese, 2nd Lt. Clinton S.
 Brereton, Maj. Lewis H.
 Brewster, 1st Lt. Hugh
 Brooks, 2nd Lt. Arthur R.
 Broomfield, 1st Lt. Hugh D. G.
 Brotherton, 2nd Lt. William E.
 Brown, 2nd Lt. Mitchell H.
 Buckley, 1st Lt. Harold R. (2)
 Buford, 1st Lt. Edward Jr.
 Burdick, 2nd Lt. Howard
 Burger, 2nd Lt. Valentine J. (2)
 Burns, 2nd Lt. James S. D.

Burt, 1st Lt. Byron T. Jr.
 Campbell, 1st Lt. Douglas (5)
 Carroll, 1st Lt. George C.
 Cassady, 1st Lt. Thomas G. (2)
 Castleman, 1st Lt. John R.
 Chambers, 1st Lt. Reed M. (4)
 Chapman, 2nd Lt. Charles W. Jr.
 Clapp, 2nd Lt. Kenneth S.
 Clarke, 1st Lt. Sheldon V.
 Clay, 1st Lt. Henry R.
 Coleman, 1st Lt. Wallace A.
 Conover, 1st Lt. Harvey
 Cook, Capt. Everett R.
 Cook, Capt. Harvey W. (2)
 Coolidge, Capt. Hamilton
 Cousins, 1st Lt. John W.
 Creech, 1st Lt. Jesse O.
 Curtis, 1st Lt. Edward P.
 Cutter, 1st Lt. Edward B.
 Dawson, 1st Lt. Leo H. (2)
 De Castro, 2nd Lt. Ralph E.
 Diekema, 1st Lt. Willis A.
 Dillon, 1st Lt. Raymond P.
 D'Olive, 1st Lt. Charles R.
 Donaldson, 2nd Lt. John O.
 Douglass, Capt. Kingman
 Dowd, 2nd Lt. Meredith L.
 Drew, 1st Lt. Charles W.
 Duckstein, 1st Lt. Arthur W.
 Easterbrook, 1st Lt. Arthur E. (2)
 Eaton, 1st Lt. Warren E.
 Elliott, 1st Lt. Robert P.
 Erwin, 1st Lt. William P. (2)
 Este, 1st Lt. J. Dickinson
 Farnsworth, 1st Lt. Thomas H.
 Ferrenbach, 1st Lt. Leo
 Fisher, Capt. George F.
 Fleeson, 2nd Lt. Howard T. (2)
 Follette, 1st Lt. Justin P.
 Fontaine, 1st Lt. Hugh L. (2)
 Ford, Capt. Christopher W.
 Frank, 1st Lt. William F.
 Frost, 1st Lt. John
 Furlow, 1st Lt. George W. (2)

Gaylord, 1st Lt. Bradley J.
 George, 1st Lt. Harold H.
 Giroux, 1st Lt. Ernest A.
 Goldthwaite, 1st Lt. George E.
 Grant, 1st Lt. Alfred A.
 Graveline, Sfc. Fred C.
 Greist, 1st Lt. Edwards H.
 Grey, Capt. Charles G.
 Gundelach, 1st Lt. Andre H.
 Guthrie, 1st Lt. Murray K. (3)
 Hall, Capt. James N.
 Hambleton, 1st Lt. John A. (2)
 Hamilton, 1st Lt. Lloyd A.
 Hammond, 1st Lt. Leonard C.
 Hart, 2nd Lt. Percival G.
 Hartney, Maj. Harold E.
 Harwood, 1st Lt. Benjamin P.
 Haslett, Capt. Elmer R.
 Hays, 2nd Lt. Frank K.
 Healy, 1st Lt. James A.
 Henderson, 1st Lt. Phil A.
 Herbert, 1st Lt. Thomas J.
 Higgs, 1st Lt. James A. Jr.
 Hill, Capt. Maury
 Hill, 1st Lt. Raymond C.
 Hitchcock, 2nd Lt. Roger W.
 Holden, 1st Lt. Kenneth H.
 Holden, 1st Lt. Lansing C. Jr. (2)
 Holland, 1st Lt. Spessard L.
 Hoover, 1st Lt. William J.
 Hopkins, 2nd Lt. Stephen T.
 Hudson, 1st Lt. Donald
 Hunter, 1st Lt. Frank O'D. (5)
 Irving, 1st Lt. Livingston G.
 Jeffers, 1st Lt. John N.
 Jervy, 1st Lt. Thomas M.
 Jones, 2nd Lt. Arthur H.
 Jones, 2nd Lt. Clinton (2)
 Jordan, 2nd Lt. John W.
 Kahle, 1st Lt. Clarence C.
 Kaye, 1st Lt. Samuel Jr. (2)
 Keating, 1st Lt. James A.
 Kelly, 1st Lt. Asher E.
 Kenney, 1st Lt. George C.
 Kindley, 1st Lt. Field E. (2)
 Kinney, 1st Lt. Clair A.
 Kinsley, 2nd Lt. Wilbert E.
 Knotts, 2nd Lt. Howard C.
 Knowles, 1st Lt. James Jr.
 Lake, 2nd Lt. Horace A.
 Lambert, 1st Lt. John H.
 Landis, Capt. Reed G.
 Larner, 1st Lt. Gorman D. (2)
 Lawson, Capt. Walter R.
 Lee, 2nd Lt. John B.
 Lindsay, 1st Lt. Robert O.
 Littauer, Maj. Kenneth P.
 Llewellyn, Capt. Frank A.
 Lowry, 2nd Lt. Francis B.
 Luke, 2nd Lt. Frank Jr. (2)
 MacArthur, 2nd Lt. John K.
 MacBrayne, 1st Lt. Winfred C.
 Manning, 1st Lt. James F. Jr.
 Maughan, 1st Lt. Russell L.
 McClendon, 1st Lt. Joel H.
 McDermott, 2nd Lt. Cleveland W.

McDevitt, 1st Lt. James A.
 McDougall, 1st Lt. Harry O.
 McKay, 2nd Lt. Elmore K.
 McKay, 1st Lt. James R.
 McMurry, 1st Lt. Ora R. (2)
 Meissner, 1st Lt. James A. (2)
 Mell, 1st Lt. Patrick H.
 Michener, 1st Lt. John H.
 Mitchell, Capt. John
 Mitchell, Brig. Gen. William
 Moore, 1st Lt. Edward R.
 Morris, 2nd Lt. Edward M.
 Morse, 2nd Lt. Guy E.
 Myers, 1st Lt. Oscar B.
 Neel, 2nd Lt. Roland H.
 Neibling, 1st Lt. Harlow P.
 Neidecker, 1st Lt. Bertrande C.
 Nichols, Sfc. Harold O.
 Nixon, 1st Lt. George R.
 Norris, 2nd Lt. Sigbert A. G.
 Norton, 1st Lt. Fred W.
 Noyes, Capt. Stephen H.
 Nutt, 1st Lt. Alan
 O'Donnell, 2nd Lt. Paul J.
 O'Neill, 1st Lt. Ralph A. (3)
 Orr, 1st Lt. Edward
 Page, Capt. Richard C. M.
 Palmer, 2nd Lt. Joseph A.
 Palmer, 1st Lt. William W.
 Paradise, 1st Lt. Robert C.
 Patterson, 1st Lt. Alfred B. Jr. (2)
 Payne, 1st Lt. Karl C.
 Pegues, 1st Lt. Josiah J.
 Pendell, 1st Lt. Elmer
 Peterson, Capt. David M. (2)
 Petree, 1st Lt. Harris E.
 Phelps, 1st Lt. Glenn
 Phillips, 1st Lt. George R.
 Plummer, 2nd Lt. Charles W.
 Plush, 1st Lt. Lewis C.
 Polley, 1st Lt. Britton
 Ponder, 1st Lt. William T.
 Porter, 2nd Lt. Charles P. (2)
 Porter, 2nd Lt. Earl W.
 Porter, 2nd Lt. Kenneth L.
 Potter, 1st Lt. William C.
 Preston, 2nd Lt. Glen A. (3)
 Putnam, 1st Lt. David E.
 Pyne, 1st Lt. Percy R.
 Quinn, 1st Lt. John J.
 Raible, 1st Lt. Joseph C. Jr.
 Ralston, 1st Lt. Orville A.
 Rancourt, 1st Lt. John I.
 Rath, 2nd Lt. Howard G.
 Raymond, 1st Lt. Robert F.
 Reeves, 1st Lt. Dache M.
 Reynolds, Capt. Clearton H.
 Reynolds, Maj. John N. (2)
 Richardson, 2nd Lt. James M.
 Rickenbacker, Capt. Edward V. (7)
 Rooney, 1st Lt. Paul N. A.
 Rorison, 1st Lt. Harmon C.
 Ross, 1st Lt. Cleo J.

Numbers in parentheses are total DSCs received by the individual.



Charles Biddle

Rucker, 1st Lt. Edward W.
 Rummell, 1st Lt. Leslie J.
 Saunders, Capt. William H.
 Schenck, 1st Lt. Alexander P.
 Schoen, 1st Lt. Karl J.
 Seaver, 1st Lt. Arthur F.
 Sellers, 1st Lt. Cecil G.
 Sewall, 1st Lt. Sumner (2)
 Shelby, 1st Lt. Richard D.
 Simon, 1st Lt. Louis C. Jr. (2)
 Snyder, 1st Lt. John H.
 Spaatz, Maj. Carl A.
 Springs, 1st Lt. Elliott W.
 Steele, 2nd Lt. Richard W.
 Stenseth, 1st Lt. Martinus
 Stevens, 2nd Lt. John H.
 Stokes, 1st Lt. John Y. Jr.
 Stout, 1st Lt. Penrose V.
 Stovall, 1st Lt. William H.
 Strahm, Maj. Victor H.
 Suiter, 1st Lt. Wilbur C.
 Swaab, 1st Lt. Jacques M.
 Taylor, 1st Lt. William H. Jr.
 Taylor, 1st Lt. W. J. R.
 Ten Eyck, 2nd Lt. Walton B. Jr.
 Thaw, Maj. William (2)
 Thomas, 2nd Lt. Gerald P.
 Thompson, 2nd Lt. Robert E.
 Tillman, 2nd Lt. Fred A.
 Tittman, 1st Lt. Harold H.
 Tobin, 1st Lt. Edgar G.
 Treadwell, 1st Lt. Alvin H.
 Vail, 1st Lt. William H.
 Vaughn, 1st Lt. George A.
 Vernam, 1st Lt. Remington D.
 Wallis, Capt. James E. Jr.
 Waring, 1st Lt. William W.
 Warner, 1st Lt. Donald D.
 Way, 2nd Lt. Pennington H.
 Wehner, 1st Lt. Joseph F. (2)
 White, 2nd Lt. Wilbert W. (2)
 Williams, 1st Lt. Bertram
 Winslow, 2nd Lt. Alan F.
 Wright, 1st Lt. Burdette S.
 Wright, 1st Lt. Chester E. (2)
 Wyly, 1st Lt. Lawrence T.

World War II

Able, Sgt. Johnnie J. Jr.
 Adams, 1st Lt. Jack
 Adams, Maj. Robert H.
 Adkins, 2nd Lt. Frank E.
 Alexander, 1st Lt. John A.
 Alison, Maj. John R.
 Allen, Lt. Col. Brooke E.
 Allen, Lt. Col. Keith N.
 Alsip, Cpl. Raymond H.
 Ambrose, 1st Lt. Talmadge L.
 Anderson, 2nd Lt. Bernard E.
 Anderson, Lt. Col. Bernard L.
 Anderson, 1st Lt. Marshall J.
 Anderson, 1st Lt. Richard H.
 Anderson, 2nd Lt. Sheldon K.
 Anderson, 1st Lt. Sherman E.
 Anderson, Maj. William N.
 Anderson, Cpl. William T.
 Andres, Capt. Arthur E.
 Appold, Maj. Norman C.
 Armsby, 2nd Lt. Sherman
 Armstrong, Brig. Gen. Frank A. Jr.
 Arnold, Pfc. Altus L.
 Arooth, SSgt. Michael
 Aschenbrener, Capt. Robert W.
 Ashley, Pfc. Earl D.
 Atkinson, Col. Gwen G.
 Atkinson, Capt. Paul G.
 Avery, 1st Lt. Lloyd
 Bade, 2nd Lt. Jack A.
 Bail, 1st Lt. Bernard W.
 Bakalar, 1st Lt. John E.
 Bankey, Capt. Ernest E. Jr.
 Banks, 2nd Lt. Arthur E.
 Barbiero, TSgt. Samuel S.
 Barbosa, Cpl. Vicente R.
 Barnicle, 2nd Lt. Gerald J.
 Barrall, 1st Lt. Robert W.
 Battaglia, SSgt. Salvatore
 Battalio, 1st Lt. Samuel T.
 Beam, Maj. James C.
 Beam, 1st Lt. Ralph E.
 Beck, 1st Lt. Joseph A. Jr.
 Beckham, Capt. Walter C.
 Beerbower, Maj. Don M.



Richard Bong

Beeson, Capt. Duane W.
 Beeson, 2nd Lt. Frank H.
 Bell, 1st Lt. Robert D.
 Bengel, TSgt. George H.
 Benn, Maj. William G.
 Benson, 1st Lt. Marion A.
 Berryman, 1st Lt. Richard C.
 Bevlock, 2nd Lt. James J.
 Billingsley, Capt. Leonard F.
 Blakeslee, Col. Donald J. M. (2)
 Bleyer, Lt. Col. Julian M.
 Blickenstaff, Lt. Col. Wayne K.
 Blissard, 2nd Lt. Grover C.
 Blumer, Capt. Laurence E.
 Boelens, 1st Lt. Leo A.
 Boggs, Capt. Hampton E.
 Bolefahr, Capt. Wayne N.
 Bong, 1st Lt. Richard I.
 Booth, Capt. Charles H. Jr.
 Bostrom, Capt. Frank P.
 Boudreaux, TSgt. Marcus A.
 Boyd, Maj. Charles K.
 Boyle, 1st Lt. Francis M.
 Bradley, Maj. Jack T.
 Brandon, Maj. William H.
 Breeding, 1st Lt. Paul R.
 Brereton, Lt. Gen. Lewis H.
 Bright, SSgt. James C. Jr.
 Brill, 1st Lt. Allen
 Britton, 2nd Lt. John T.
 Brooks, Lt. Col. John A. III
 Brown, Sgt. Albert C.
 Brown, Sgt. David W.
 Brown, Maj. George S.
 Brown, 2nd Lt. Henry W.
 Brown, Maj. Samuel J.
 Brown, SSgt. Walter I.
 Brueland, Capt. Lowell K.
 Bryan, Capt. Donald S.
 Buck, Lt. Col. William E. Jr.
 Burdue, SSgt. Clayton C.
 Burleson, 1st Lt. Robert B.
 Burney, 2nd Lt. Willis W.
 Burns, Sgt. Wilbert R.
 Caldwell, Capt. Kenneth M.

Caldwell, 2nd Lt. Wilma T. Jr.
 Cameron, Capt. William R.
 Campbell, 1st Lt. David A.
 Cannon, SSgt. James L.
 Carmichael, Col. Richard H. (2)
 Carpenter, 1st Lt. Reginald L.
 Carr, 1st Lt. Bruce W.
 Carrington, TSgt. John R.
 Carruth, 1st Lt. Thomas A.
 Carswell, Capt. Horace S. Jr.
 Catallo, SSgt. Albert L.
 Caton, SSgt. Edward H.
 Ceuleers, Maj. George F.
 Christensen, 1st Lt. Harold R.
 Christianson, 1st Lt. Franklin O.
 Christopher, 2nd Lt. Guyton M.
 Church, 1st Lt. Russell M.
 Clark, 2nd Lt. Phillip R.
 Clary, SSgt. Guy W.
 Classen, Capt. Thomas J.
 Clevin, Maj. Gale W.
 Cobb, Capt. James B.
 Cockriel, Sgt. James R.
 Coleman, Capt. Carlyle
 Coleman, Capt. William F.
 Collett, SSgt. Howard G.
 Collins, Capt. James F.
 Coltharp, Maj. Chester A.
 Compton, Col. Keith K.
 Conger, Capt. Paul A.
 Connick, 2nd Lt. Ardon D.
 Corl, TSgt. George P.
 Corsetti, 1st Lt. John
 Cox, 1st Lt. Leonard L.
 Cox, Capt. Ray L.
 Cragg, Maj. Edward
 Crandall, SSgt. Donald O.
 Crenshaw, Capt. Claude J.
 Crimmins, 1st Lt. Fred T. Jr.
 Crosbie, 1st Lt. Maurice G.
 Cullerton, 1st Lt. William J.
 Curtis, Capt. Robert C.
 Czechowski, Sgt. Chester M.
 Dadson, SSgt. Pat J.
 Dahlberg, Capt. Kenneth H.



Donald Blakeslee

Dale, 2nd Lt. Jack D.
 Dallas, Capt. Frederick W. Jr.
 Dalton, SSgt. Malcolm C.
 Daniell, 1st Lt. J. S.
 Danver, SSgt. Edison K.
 Davies, Lt. Col. James H.
 Davis, Capt. Clayton E.
 Davis, 1st Sgt. Robert R.
 Davis, 1st Lt. Robert T.
 Dawkins, 2nd Lt. Cecil H.
 Deal, 2nd Lt. James F.
 Decker, SSgt. Richard C.
 DeGenaro, 2nd Lt. August V.
 Dello-Buono, 2nd Lt. Thomas J.
 Dent, Capt. Elliott E. Jr.
 Diehl, Capt. John H. Jr. (2)
 Dillman, TSgt. Forrest E.
 Dinn, 1st Lt. Wallace S.
 Dixon, Capt. Robert J.
 Doherty, Maj. William K.
 Dolk, 1st Lt. Carl E.
 Donaldson, 2nd Lt. I. B. Jack
 Donegan, 1st Lt. John M.
 Dorwart, 1st Lt. Robert J.
 Douglas, Lt. Col. Paul P. Jr. (2)
 Dregne, Col. Irwin H.
 Drier, Capt. William C.
 Dubisher, Capt. Francis E.
 Dufrane, 1st Lt. John L. Jr.
 Dunagan, 1st Lt. Sidney W.
 Dunaway, 1st Lt. John S.
 Duncan, 2nd Lt. Daniel D.
 Duncan, Maj. Glen E.
 Dunham, Maj. William D.
 Dunn, 1st Lt. Edward B.
 Dunn, Sgt. Jack D.
 Dunn, Capt. John A.
 Durand, 2nd Lt. Edward D.
 Durand, SSgt. Frederick W.
 Duval, 1st Lt. Jessie B.
 Dyer, 1st Lt. Fred W.
 Dyess, Maj. William E. (2)
 Eagleston, Capt. Glen T.
 Eareckson, Col. William O.
 Eaton, Lt. Col. Frederick C. Jr.
 Eckrich, 2nd Lt. James F.
 Edeburn, F.O. Harry E.
 Elam, Maj. Daniel F.
 Ellis, 1st Lt. Lewis N.
 Ellis, Lt. Col. Richard H.
 Embree, SSgt. Hoy D.
 Emerson, 2nd Lt. Elwood R.
 Emmer, Capt. Wallace N.
 Endres, Pvt. Robert J.
 Engel, 2nd Lt. Russel W.
 England, 2nd Lt. George H.
 Ent, Brig. Gen. Uzal G.
 Erickson, 2nd Lt. Irving A.
 Evans, Capt. John G.
 Exon, Maj. Arthur E.
 Faires, SSgt. George D.
 Falletta, 2nd Lt. Charlie
 Fegan, SSgt. Robert W.
 Ferguson, 1st Lt. William H. Jr.
 Fields, Maj. Virgil C. Jr.
 Fletcher, 1st Lt. Leo C.
 Forrest, Brig. Gen. Nathan B. III

Forti, SSgt. Joseph J.
 Fowler, Lt. Col. Gordon W.
 Fox, TSgt. Edward K.
 Fox, 1st Lt. Joseph M.
 Frazier, SSgt. James L.
 French, TSgt. Clifford E.
 Fridge, Maj. Benjamin W.
 Fries, Cpl. Robert A.
 Fry, Capt. Robert M.
 Fulmer, 2nd Lt. Edward S.
 Gabreski, Maj. Francis S.
 Gallagher, 1st Lt. Robert J.
 Galloway, TSgt. Paul E.
 Gambonini, 2nd Lt. Paul B.
 Garris, 2nd Lt. Benjamin L.
 Garry, 1st Lt. William J.
 Gatterdam, Maj. Richard P.
 Gause, 1st Lt. Damon J.
 Gautier, Capt. George J.
 Gay, Capt. William M.
 Geiser, Capt. Anthony W.
 Gentile, Capt. Dominic S. (2)
 Gerrits, 2nd Lt. James F.
 Gettys, SSgt. Richard O.
 Gibbs, Maj. David R.
 Gibson, 1st Lt. Balfour C.
 Gies, 2nd Lt. Carl P.
 Gilliland, Capt. Leown A.
 Gilpin, 2nd Lt. John A.
 Glades, TSgt. Harry V.
 Glass, Capt. Walter L. Jr.
 Glober, Maj. George E.
 Glover, 2nd Lt. John G.
 Gogoj, SSgt. John J.
 Goldberg, 2nd Lt. Hyman M.
 Gooden, 1st Lt. Clarence W.
 Goodson, Maj. James A.
 Gowder, 2nd Lt. Charles F.
 Gozar, 3rd Lt. Jose P.*
 Grashio, 2nd Lt. Samuel C.
 Gray, Maj. Leon W.
 Green, Maj. Herschel H.
 Greene, 1st Lt. George B. Jr.
 Grundmann, 1st Lt. Hugh S.
 Guilfoil, SSgt. William K.
 Haberle, 2nd Lt. Frank J.
 Hageman, 1st Lt. Earl L. Jr.
 Hagerstrom, 1st Lt. James P.
 Hahn, Maj. Delbert H.
 Hall, Lt. Col. Donald P. (2)
 Hall, 2nd Lt. Jack W.
 Hambleton, Capt. Roscoe L.
 Haning, 1st Lt. William F. Jr.
 Hanson, 1st Lt. Robert T.
 Hantman, 1st Lt. Sidney
 Hardison, Maj. Felix M.
 Hargis, 2nd Lt. William D. Jr.
 Harriger, 1st Lt. Robert L.
 Harrington, 1st Lt. Archibald A.
 Harris, TSgt. Arizona T.
 Harrison, SSgt. Edgar E.
 Harrison, SSgt. James A.
 Hascall, TSgt. Alva S.
 Hasek, 1st Lt. Ivan S. Jr.
 Hass, 1st Lt. Floyd N.
 Hatch, 1st Lt. Herbert B. Jr.
 Hawke, 2nd Lt. Thomas C.
 Hawthorne, Maj. Harry J.
 Hedlund, Maj. Earl C.
 Heidger, Maj. Luther C.

Helder, 2nd Lt. Ronald L.
 Heller, 1st Lt. Edwin L.
 Helmick, 1st Lt. Frederick E.
 Helmick, Capt. George H.
 Henderson, Cpl. Ivan W.
 Hendricks, Maj. Randall W.
 Henebry, Maj. John P.
 Henry, TSgt. Maurice V.
 Herlevic, TSgt. Frank A.
 Herres, F.O. Francis E.
 Herriott, 2nd Lt. Harold T.
 Herron, 1st Lt. Christian I.
 Herron, 1st Lt. Edwin R.
 Hicks, F.O. Paul L.
 Hill, Maj. David L.
 Hill, Maj. James E.
 Hill, Capt. Robert J.
 Hillebrand, 1st Lt. Mahlon A.
 Hillsinger, Lt. Col. Loren B.
 Hinze, Capt. Frederick S. Jr.
 Hipps, Maj. William G.
 Hively, Capt. Howard D.
 Hoag, 2nd Lt. Carl L. Jr.
 Hodge, Maj. Dexter L.
 Hodges, 1st Lt. Charles W.
 Hoenshell, 1st Lt. Carl C.
 Hoebet, Maj. Dean C.
 Hoff, SSgt. Thomas A.
 Holbury, Capt. Robert J.
 Holliday, Cpl. Robert L.
 Holmes, Capt. Walter T.
 Holsberg, 2nd Lt. Wilfred G.
 Holub, TSgt. Anthony
 Homer, Capt. Cyril F.
 Hoover, Maj. John R.
 Horton, 1st Lt. Robert W.
 House, 2nd Lt. A. T.
 Hovde, Maj. William J.
 Howat, 2nd Lt. Kenneth W.
 Howell, 1st Lt. John J.
 Hubbard, Capt. Ronald D.
 Hudson, 2nd Lt. Charles S.
 Huffstickler, Sgt. Benjamin F.
 Hughes, 2nd Lt. Charles W.
 Hull, 2nd Lt. Charles T.
 Hull, 2nd Lt. Jack T.
 Hunt, Capt. Raymond C. Jr.
 Ingelido, Lt. Col. Michael J.
 Inman, SSgt. Harold R.
 Irons, MSgt. John P.
 Jackson, 1st Lt. Roland B.
 James, SSgt. Joseph H. Jr.
 Jamison, 1st Lt. Roger W.
 Jernigan, Capt. William D. J. Jr.
 Jewell, 1st Lt. Kenneth G.
 Johnson, Capt. Albert L.
 Johnson, Maj. Gerald R. (2)
 Johnson, Capt. Gerald W.
 Johnson, Capt. Robert S.
 Johnson, 2nd Lt. Russell H.
 Johnson, SSgt. Theron E.
 Johnson, SSgt. Thomas E.
 Johnson, 1st Lt. William H.
 Johnston, Maj. Robert D.
 Johnston, 1st Lt. Ruby E.
 Jolly, 1st Lt. Hoyt A. Jr.
 Jones, 1st Lt. Charles T.
 Jones, 1st Lt. Cyril W. Jr.
 Jones, 1st Lt. William Jr.
 Joyce, Cpl. John D.

Rank Abbreviations

Cpl.	Corporal
F.O.	Flight Officer
Pfc.	Private First Class
Pvt.	Private
Sfc.	Sergeant First Class
Sgt.	Sergeant

For other rank abbreviations, see "USAF Grades and Insignia."

Juchheim, 1st Lt. Alwin M.
 Judy, 2nd Lt. James D.
 Kase, TSgt. Louis N.
 Kaufman, Sgt. Robert P.
 Keator, 2nd Lt. Randall
 Keen, 2nd Lt. Robert J.
 Kegelman, Capt. Charles C.
 Kehoe, 1st Lt. John W.
 Kelly, TSgt. Arthur G.
 Kelly, Capt. Colin P. Jr.
 Kemp, 1st Lt. William T.
 Kendrick, TSgt. George E.
 Kenney, Lt. Gen. George C.
 Keogh, Maj. Bernard M.
 Kerr, 1st Lt. William M.
 Key, Maj. Algene E.
 Kimmey, SSgt. Doyle
 Kinnard, Lt. Col. Claiborne H. Jr.
 Kiser, 1st Lt. George E.
 Kjosness, 2nd Lt. Gustav D.
 Klepinger, 2nd Lt. Nolan W.
 Klette, Lt. Col. Immanuel
 Kricknerbocker, 2nd Lt. Malcolm M.
 Koenig, 1st Lt. Charles W.
 Koon, Col. Ralph E.
 Kosters, TSgt. Allen
 Kovacik, TSgt. Steve H.
 Kramer, 1st Lt. Vernon J.
 Krause, Maj. John E.
 Krug, 2nd Lt. Richard M.
 Kunkle, 2nd Lt. James K.
 Lackness, 1st Lt. Berdines
 Ladisic, SSgt. Peter
 Lael, 1st Lt. Francis V.
 LaFleur, 1st Lt. Joseph V.
 Lambert, SSgt. James V.
 Land, 2nd Lt. George R.
 Landry, 2nd Lt. Larry D. Jr.
 Lannon, TSgt. Louis A.
 Larson, 1st Lt. Harold B.
 Latham, Capt. John L. Jr.
 Lauraine, 1st Lt. Loye J.
 Laven, 1st Lt. George Jr.
 Ledford, Capt. Jack C.
 LeMay, Col. Curtis E.
 Leverette, Maj. William L.
 Levi, 1st Lt. Nelson
 Lilmatainen, Sgt. Alvar A.
 Lillis, Cpl. Joseph D.
 Lines, 1st Lt. Ted E.
 Lipscomb, 1st Lt. Paul M.
 Littge, Capt. Raymond H.
 Litton, Lt. Col. William P.
 Loegering, Sgt. Weston A.
 Lohmeyer, 2nd Lt. Marvin E.
 London, Capt. Charles P.

*Philippine Army Air Corps pilot, assigned to US Army Air Forces.

USAF Recipients of the Distinguished Service Cross (continued)

Lonsway, SSgt. Louis G.
 LoPresti, TSgt. Nicholas O.
 Lowery, Capt. Herman F.
 Lowry, 1st Lt. Allan W.
 Ludolph, 1st Lt. George L.
 Ludwig, 1st Lt. Vance P.
 Luksic, 1st Lt. Carl J.
 Lyle, Lt. Col. Lewis E.
 Lynch, Capt. Thomas J.
 MacDonald, Col. Charles H. (2)
 Magoffin, Col. Morton D.
 Mahoney, SSgt. John F.
 Mahony, 1st Lt. Grant M.
 Mahurin, Capt. Walker M.
 Manders, Capt. John H.
 Maret, 1st Lt. Samuel H.
 Marpe, 1st Lt. Frank C. Jr.
 Marshall, Capt. Lyndon O.
 Martin, SSgt. Ernest V.
 Martin, 1st Lt. John C.
 Martin, Col. Kenneth R.
 Martinson, SSgt. Meynard L.
 Mason, Col. Joe L.
 Matchitt, Pvt. Ray J.
 Matson, SSgt. Rex E.
 Matte, 1st Lt. Joseph Z.
 Matthews, Pfc. John E.
 Mayes, 1st Lt. Herbert C.
 McArthur, 1st Lt. Paul G.
 McCabe, 2nd Lt. Ernest J.
 McCall, 2nd Lt. Ben J.
 McCallister, 2nd Lt. Garrett H.
 McCallum, 1st Lt. Gerald
 McCormick, Capt. John B.
 McCullar, Maj. Kenneth D.
 McCurdy, TSgt. Jimmy E.
 McDaniel, 1st Lt. Gordon H.
 McElroy, Pfc. Joseph G.
 McFarland, 1st Lt. Kenton D.
 McGrath, SSgt. Thomas J.
 McGuire, Maj. Thomas B. Jr.
 McHenry, 2nd Lt. William S.
 McLaughlin, 1st Lt. Frank B.
 McLoughlin, 2nd Lt. John A.
 McLeod, Sgt. Stanley A.
 McMahan, 1st Lt. Darrell E.
 McMahan, 2nd Lt. Robert F.
 McNeese, Capt. Richard A.
 McNeese, 1st Lt. Harold G.
 Meals, Capt. Elbert O.
 Megura, 1st Lt. Nicholas
 Melo, Cpl. Frank L. Jr.
 Merkel, Capt. Howard W.
 Merrill, 1st Lt. John O.
 Meyer, Lt. Col. John C. (3)
 Middlebrook, Capt. Garrett E.
 Middleditch, 1st Lt. Lyman Jr.
 Miles, Capt. James E.
 Miller, 2nd Lt. Guy M.
 Miller, Capt. Robert E.
 Millikan, 1st Lt. Willard W.
 Milton, Lt. Col. Theodore R.
 Mitchell, Capt. John W.
 Mix, TSgt. Joseph E.
 Moats, 1st Lt. Sanford K.
 Mohler, TSgt. William A.
 Mohon, Sgt. Ernest M. Jr.

Molina, Capt. Pedro Q.
 Momyer, Col. William W.
 Monkton, Capt. Lyle
 Montgomery, Lt. Col. Robert P.
 Mooney, Capt. Robert C.
 Moore, Sgt. Carl W.
 Moore, 1st Lt. Clarence J.
 Moore, 1st Lt. Joseph H.
 Moore, 1st Lt. Pren L.
 Moore, 2nd Lt. William W.
 Moran, 1st Lt. Harold D.
 Morehead, 2nd Lt. James B.
 Morgan, Maj. Marion W.
 Morris, Capt. James M.
 Morrissey, Capt. Robert L.
 Moses, 2nd Lt. John H.
 Moullen, 2nd Lt. Roy F.
 Moye, 2nd Lt. Albert J.
 Muckley, 2nd Lt. Dwight S.
 Mueller, 1st Lt. Alvin J.
 Muir, 2nd Lt. Marvin F.
 Mulligan, Sgt. Charles D.
 Munsey, 1st Lt. James S.
 Muri, 1st Lt. James P.
 Murphy, Cpl. Philip J.
 Myers, Capt. Joseph
 Negley, 1st Lt. Richard V. W. Jr.
 Nepil, SSgt. Slavomir
 Nielsen, Capt. Leland C.
 Noell, 1st Lt. Robert E.
 Norton, 1st Lt. Charles E.
 Nuchols, 2nd Lt. William L.
 O'Brien, Maj. Kenneth J.
 O'Connor, Maj. Frank Q.
 Oestreicher, 2nd Lt. Robert G.
 Oettel, Sgt. Fred W.
 Old, Col. Archie J.
 Oldham, Capt. Richard G.
 O'Leary, SSgt. Eugene B.
 Olson, 1st Lt. Sidney B.
 O'Neal, TSgt. James A.
 O'Neill, Lt. Col. Brian
 O'Neill, 1st Lt. Lawrence F.
 O'Rourke, 1st Lt. Edward J.
 Orr, Capt. William F.
 Owen, Sgt. Albert E.
 Owens, 1st Lt. Marion P.
 Paisley, 2nd Lt. Melvyn R.
 Partridge, SSgt. Donald D.
 Patrick, SSgt. Augustus R. Jr.
 Pawloski, Capt. Edward J.
 Pear, 2nd Lt. Sidney A.
 Pearson, 1st Lt. John M.
 Pederson, 2nd Lt. Harold L.
 Pell, Maj. Floyd J.
 Perdomo, 1st Lt. Oscar F.
 Peres, 2nd Lt. Jack R.
 Perry, 2nd Lt. Elton S.
 Peters, 1st Lt. Robert O.
 Petersen, SSgt. Jacob
 Peterson, Lt. Col. Chesley G.
 Petty, 2nd Lt. Charles A.
 Phillips, TSgt. Claude B.
 Phillips, TSgt. Hubert E.
 Phillips, Capt. Reginald H.
 Pickard, Maj. John G.
 Pierce, 1st Lt. Sammy A.

Pittman, 1st Lt. Charles K.
 Ploetz, 1st Lt. Frederick F.
 Polifka, Lt. Col. Karl L.
 Poore, 1st Lt. Wesley A.
 Posey, Lt. Col. James T.
 Post, Capt. Arthur L.
 Potter, SSgt. A. J.
 Potts, Maj. Ramsey D. Jr.
 Preddy, Maj. George E.
 Price, 1st Lt. Herbert M.
 Price, 1st Lt. Raymond E.
 Priest, 2nd Lt. Royce W.
 Prince, 1st Lt. George A.
 Prince, TSgt. William H.
 Pugh, Sgt. Herbert W.
 Putnam, Capt. Walter B.
 Radtke, 1st Lt. Dean M.
 Rahner, 2nd Lt. Raymond M.
 Rairigh, 1st Lt. John E.
 Ramey, 1st Lt. Gordon A.
 Ramey, Brig. Gen. Howard K.
 Ramey, Col. Roger M.
 Randerson, Maj. Luther W.
 Rankin, 1st Lt. Robert J.
 Rau, 1st Lt. Oscar J.
 Rauschkolb, 1st Lt. Frank
 Ray, 2nd Lt. Charles P.
 Ray, 1st Lt. John W.
 Reams, 1st Lt. Luther S.
 Reeder, 1st Lt. Sumner H.
 Reeves, TSgt. Charles T.
 Rice, 2nd Lt. Burt H.
 Richards, 2nd Lt. Conrad B.
 Ridolfi, SSgt. Peter J.
 Righetti, Col. Elwyn G.
 Rist, 2nd Lt. Robert P.
 Ritchey, 1st Lt. Andrew J.
 Robbins, 1st Lt. Jay T. (2)
 Roberts, Capt. Daniel T.
 Roberts, Maj. Eugene P.
 Robinson, Lt. Col. Stanley K.
 Roche, Capt. John R.
 Rogers, Lt. Col. Arthur H.
 Rogers, 2nd Lt. Robert J.

Roller, SSgt. John R.
 Rorer, 1st Lt. George A. Jr.
 Rose, 1st Lt. Dudley E.
 Rose, 2nd Lt. Henry J.
 Rosenthal, Maj. Robert
 Royce, Brig. Gen. Ralph
 Ruegg, 1st Lt. Robert G.
 Sacks, 2nd Lt. Seymour
 Sanford, Sgt. James T.
 Sanford, Capt. William L.
 Sans, SSgt. Charles H.
 Saunders, SSgt. Lester W.
 Schellin, SSgt. Roy L.
 Schild, 1st Lt. William C.
 Schilling, Lt. Col. David C. (2)
 Schiltz, 1st Lt. Glenn D. Jr.
 Scholz, 1st Lt. Richard J.
 Schreiber, Capt. Leroy A.
 Schulman, 2nd Lt. Herbert E.
 Schuman, 2nd Lt. John P.
 Sconiers, 2nd Lt. Ewart T.
 Seaman, 1st Lt. Theodore L.
 Seith, Capt. Louis T.
 Seitz, Cpl. Bernard C.
 Sellers, 2nd Lt. Thomas D.
 Sewart, Maj. Allan J. Jr.
 Shaw, Capt. William S.
 Shelton, 2nd Lt. Stephen C.
 Shingler, Maj. Herbert I.
 Shirey, SSgt. Harry R.
 Shubin, 1st Lt. Murray J.
 Silva, MSgt. Louis T.
 Simeral, Maj. George A.
 Sims, 2nd Lt. Tommie J.
 Skinner, TSgt. William E.
 Slade, 1st Lt. Richard J.
 Slessor, 2nd Lt. Lee D.
 Smart, Col. Jacob E.
 Smith, 1st Lt. Donovan F.
 Smith, SSgt. Edmund H.
 Smith, Maj. George A.
 Smith, 2nd Lt. Harry W.
 Smith, Sgt. Jack E.
 Smith, 1st Lt. James R.



John Meyer

Smith, SSgt. Mack H.
 Smith, 1st Lt. Stephen M.
 Snyder, TSgt. Donald L.
 Spencer, 2nd Lt. Charles W.
 Spencer, 2nd Lt. Dale F.
 Sprague, Lt. Col. Charles A.
 Stach, Maj. Paul J.
 Starczweski, 1st Lt. Phillip R.
 Starks, 2nd Lt. Richard F.
 Steele, 1st Lt. Henry P.
 Steen, SSgt. Zerrill J.
 Steffy, 1st Lt. Robert F.
 Stewart, Maj. James C.
 Stewart, 1st Lt. Walter T.
 Stipe, Sgt. Leon D.
 Stireman, SSgt. John O.
 Storovich, SSgt. Robert D.
 Strand, 1st Lt. Robert E.
 Strasburger, 1st Lt. Alvin
 Stricker, 1st Lt. Thomas A.
 Strickland, 1st Lt. Robert F.
 Strother, Capt. Donald R.
 Sullivan, 2nd Lt. Leroy R.
 Sussky, 1st Lt. Ira M.
 Swain, Cpl. Andrew J.
 Sweeney, Lt. Col. Walter C. Jr.
 Talbott, Capt. Carlos M.
 Tapp, Maj. James B.
 Tarrant, Lt. Col. Yancey S.
 Taylor, 2nd Lt. Kenneth M.
 Taylor, 1st Lt. Robert L.
 Tennille, Maj. William G. Jr.
 Thomas, Capt. Jay P.
 Thornbrough, Capt. George W.
 Thornell, 1st Lt. John F. Jr.
 Tibbets, Col. Paul W. Jr.
 Tidwell, SSgt. Billy M.
 Tiedemann, 1st Lt. John R.
 Tompkins, 1st Lt. Frederick L.
 Toomey, SSgt. Winston M.
 Trauth, 2nd Lt. Leo J. Jr.
 Travis, Brig. Gen. Robert F.
 Trimmingham, 2nd Lt. Charles E.
 Trout, 1st Lt. Chester E.
 Troy, SSgt. Edward P.
 True, Lt. Col. Clinton U.
 Truluck, Capt. John H. Jr.
 Tubman, 1st Lt. Thomas J.
 Tufty, Capt. Iver O.

Turner, 2nd Lt. William L.
 Underwood, 1st Lt. Carol E.
 Urso, Maj. James D.
 Van Deventer, Capt. Cowell
 Van Ness, TSgt. James F.
 Vance, 1st Lt. Paul W.
 Vaughan, Sgt. William
 Via, 1st Lt. Charles A. Jr.
 Via, Sgt. James E.
 Villamor, Capt. Jesus A. (2)
 Villines, 2nd Lt. Colin O.
 Vitali, 1st Lt. Chester A.
 Vogt, Capt. John E.
 Voll, Capt. John J.
 Vondrachek, SSgt. Charles E.
 Voss, SSgt. Raymond J.
 Wagner, 1st Lt. Boyd D.
 Wagner, 2nd Lt. Donald F.
 Wainwright, 1st Lt. John H. Jr.
 Walker, 2nd Lt. Clyde B.
 Walker, 2nd Lt. Leland A.
 Walker, 2nd Lt. William R.
 Wallace, Capt. Robert D.
 Walter, 2nd Lt. Donald A.
 Walters, Pvt. Roy W.
 Walton, 1st Lt. Victor E.
 Ward, Capt. Emery M.
 Ward, 1st Lt. Ralph E. Jr.
 Warmer, SSgt. Benjamin F.
 Waskowitz, 1st Lt. Frank T.
 Watkins, Capt. James A.
 Watson, 2nd Lt. William S.
 Watt, Lt. Col. James R.
 Wayland, 1st Lt. William J.
 Weeks, 1st Lt. Elbert W.
 Weems, 2nd Lt. Thomas N. Jr.
 Welch, 2nd Lt. George S.
 Werner, SSgt. William T. L.
 Wesche, Capt. Frederick F. III
 West, 1st Lt. Richard L.
 Westbrook, Maj. Robert B.
 Westby, 1st Lt. Morton K.
 Westerbeke, 1st Lt. Donald G.
 Wetmore, Capt. Ray S. (2)
 Whalen, 2nd Lt. Norman M.
 Wheless, 1st Lt. Hewitt T.
 Wherry, TSgt. William B.
 Whisner, Capt. William T. Jr. (2)
 White, TSgt. Raymond S.

Whitehead, Brig. Gen. Ennis C.
 Whitson, Capt. William D.
 Whittington, 2nd Lt. Leonard H.
 Wiecks, 2nd Lt. Max R.
 Wiegand, 2nd Lt. Arthur H.
 Wilde, 2nd Lt. Robert M.
 Wilkinson, Capt. James W.
 Williams, Pfc. Greeley B.
 Williamson, Capt. Felix D.
 Wilson, SSgt. Avis K.
 Wilson, SSgt. Frederick M.
 Wilson, Lt. Col. James W.
 Wilson, Col. Russell A.
 Winters, TSgt. Elmer R.
 Witt, 1st Lt. Gerald S.
 Witt, Capt. Lynn E. Jr.
 Wolf, 2nd Lt. John K.
 Woliver, 2nd Lt. Robert M.
 Wood, 2nd Lt. Howard C.
 Wood, Col. Jack W.
 Wood, 2nd Lt. Richard M.
 Woods, 1st Lt. Francis
 Woods, Lt. Col. Sidney S.
 Woody, Capt. Robert E.
 Wright, 2nd Lt. Arthur M. Jr.
 Wright, Sgt. Clifton J.
 Wright, Capt. Ellis W. Jr.
 Wright, Capt. John B.
 Wylie, 2nd Lt. John W.
 Yearwood, Lt. Col. Roy W.
 Yevich, SSgt. Edward S.
 Zemke, Col. Hubert



Ray Wetmore

Ledford, TSgt. James H.
 MacArthur, 1st Lt. David W.
 McConnell, Capt. Joseph C. Jr.
 Moore, Capt. Lonnie R.
 Morse, 1st Lt. John Jr.
 Najarian, 1st Lt. John J.
 Nichols, Capt. Donald
 O'Donnell, Maj. Gen. Emmett Jr.
 Orr, Col. Robert H.
 Overton, 1st Lt. Dolphin D. III
 Parker, 1st Lt. Robert B.
 Parr, Capt. Ralph S. Jr.
 Partridge, Maj. Gen. Earle E.
 Rhoads, Capt. John K.
 Savage, 1st Lt. Richard L.
 Shields, 1st Lt. Everett L. Jr.
 Spath, 1st Lt. Charles R.
 Stratemeyer, Lt. Gen. George E.
 Tunner, Maj. Gen. William H.
 Vojvodich, Capt. Mele Jr.
 Whisner, Maj. William T. Jr.
 Wilkerson, Pfc. Desmond R.

Originally based on a compilation by C. Douglas Sterner.

Korean War

Baker, Col. Royal N.
 Blesse, Maj. Frederick C.
 Bryan, Maj. William E. Jr.
 Davis, Maj. George A. Jr.
 Dixon, Lt. Col. Jacob W.
 Fernandez, Capt. Manuel J. Jr.
 Fischer, Capt. Harold E.
 Freligh, Maj. Lawrence E.
 Garrison, Lt. Col. Vermont
 Gebaur, Lt. Col. Arthur W. Jr.
 Georgi, Lt. Col. William F.
 Halton, Col. William T.
 Hicks, 1st Lt. Forrest L.
 Jabara, Capt. James
 Johnson, Col. James K.

USAF Recipients of the Air Force Cross

World War II

Brown, 2nd Lt. Charles L.
 Drew, 1st Lt. Urban L.
 Sloan, Lt. Col. William J.

Cuba Crisis

Anderson, Maj. Rudolph Jr.

Vietnam War

Adams, TSgt. Victor R.
 Allee, Maj. Richard K.
 Allison, Lt. Col. John V.
 Armstrong, Maj. Larry D.
 Atterberry, Lt. Col. Edwin L.
 Baer, Lt. Col. Allan R.
 Baldwin, Maj. Robert L.
 Beale, Maj. Robert S.



Rudolph Anderson

Black, A3C Arthur N.
 Bode, Maj. John R.
 Boyd, Capt. Charles G.
 Boyd, Lt. Col. William Jr.
 Brickel, Lt. Col. James R.
 Britt, Maj. Aquilla F.
 Britton, Col. Warner A.
 Broughton, Col. Jacksel M.
 Brower, Capt. Ralph W.
 Bucher, Maj. Bernard L.
 Burroughs, Maj. William D.
 Caldwell, Capt. William R.
 Campbell, Maj. Jesse W.
 Campbell, Maj. Thomas A.
 Carroll, Maj. John L.
 Carter, 1st Lt. William R.
 Cherry, Col. Fred V.

Clarke, Maj. Colin A.
 Clay, SSgt. Eugene L.
 Cobell, Lt. Col. Earl G.
 Cody, Capt. Howard R.
 Collins, Capt. Willard M.
 Conley, Lt. Col. Eugene O.
 Conran, Maj. Philip J.
 Cooper, Lt. Col. William E.
 Corder, Capt. John A.
 Courtney, Capt. Terence F.
 Curtis, Capt. Thomas J.
 Dallman, Lt. Col. Howard M.
 Day, Col. George E.
 Dayton, Maj. Thomas E.
 DeBellevue, Capt. Charles B.
 DeTar, Maj. Dean E.
 Donelson, Capt. Nicholas J.



Duane Hackney

Donohue, Maj. Frederic M.
 Dorsett, Capt. Tracey K. Jr.
 Draeger, Capt. Walter F. Jr.
 Dramesi, Col. John A. (2)
 Engle, Capt. Charles E.
 Eppinger, Maj. Dale L.
 Etzel, Capt. Gregory A. M.
 Feinstein, Capt. Jeffrey S.
 Feuerriegel, Lt. Col. Karl T.
 Finck, Maj. George C.
 Firse, Capt. John A.
 Fish, Sgt. Michael E.
 Fleener, Capt. Delbert W.
 Flynn, Lt. Gen. John P.
 Francisco, Capt. Michael C.
 Funderburk, Capt. Leonard J.
 Gamlin, Sgt. Theodore R.
 Gibson, Maj. James K.
 Gilroy, Capt. Kevin A.
 Gonzales, Maj. Leonard A.
 Green, Maj. Joe B.
 Griggs, Maj. Jerry M.
 Gruver, Capt. John C.
 Guarino, Col. Lawrence N.
 Gustafson, Maj. Gerald C.
 Guy, Col. Theodore W.
 Hackney, A2C Duane D.
 Hackney, Maj. Hunter F.
 Hall, 1st Lt. James H.
 Hamilton, Col. John S.
 Harding, Maj. James C.
 Harp, Capt. Tilford W.
 Henning, Capt. Hal P.
 Hickman, Capt. Vincent J.

Hoblitt, Capt. Jerry N.
 Hoggatt, Lt. Col. Ralph S.
 Holland, Maj. Lawrence T.
 Hopkins, Lt. Col. James R.
 Horinek, Capt. Ramon A.
 Hudson, Capt. Jackson L.
 Hunt, Sgt. Russell M.
 Jeanotte, Lt. Col. Alfred J. Jr.
 Johnson, Capt. Harold E.
 Kalen, Maj. Herbert D.
 Kasler, Lt. Col. James H. (3)
 Kennedy, Capt. Leland T. (2)
 Kent, Sgt. Nacey Jr.
 Killian, Col. Melvin J.
 King, A1C Charles D.
 Kirk, Col. Thomas H. Jr.
 Knight, Col. Roy A. Jr.
 Koeltzow, Maj. Paul F.
 Lackey, Capt. John E.
 Leetun, Capt. Darel D.
 Lielmanis, 1st Lt. Atis K.
 Lukasik, Capt. Bernard F.
 Madden, Maj. Joseph B.
 Maisey, Capt. Reginald V. Jr.
 Martin, 1st Lt. Duane W.
 Martin, Capt. William R.
 Marx, Capt. Donald L.
 Mason, Capt. Larry B.
 Maysey, Sgt. Larry W.
 Maywald, Capt. Phillip V.
 McAllister, Maj. William W.
 McCarthy, Col. James R.
 McGrath, Sgt. Charles D.
 McInerney, Lt. Col. James E. Jr.
 McKnight, Lt. Col. George G.
 McTasney, Capt. John B.
 Mehr, Maj. Richard L.
 Mitchell, Maj. Carl B.
 Mize, Capt. John D.
 Mongillo, Maj. Paul J.
 Moorberg, Capt. Monte L.
 Nagel, Capt. Richard A. Jr.
 Newman, Sgt. Thomas A.
 Norris, Lt. Col. William C.
 O'Mara, Capt. Oliver E.
 Olds, Col. Robin
 Olsen, Maj. Don P.
 Orrell, Capt. Bennie D.
 Parr, Col. Ralph S. Jr.
 Personett, Capt. Joseph A.
 Peterson, Capt. Delbert R.
 Pogreba, Lt. Col. Dean A.

Poling, Capt. Richard L.
 Price, Capt. Donald S.
 Richardson, Sgt. Dennis M.
 Richter, 1st Lt. Karl W.
 Risner, Lt. Col. James R. (2)
 Ritchie, Capt. Richard S.
 Robinson, A1C William A.
 Robinson, Maj. William P.
 Ronca, Maj. Robert F.
 Rowan, Maj. John M.
 Schaneberg, Capt. Leroy C.
 Schmidt, Col. Norman
 Schurr, Lt. Col. Harry W.
 Scott, Capt. Travis H. Jr.
 Sellers, Maj. Jerry A.
 Sellers, Capt. Kenneth H.
 Shannon, Capt. Fred
 Shaub, SSgt. Charles L.
 Smith, TSgt. Donald G.
 Smith, Lt. Col. Robert W.
 Smith, Capt. Ronald E.
 Smith, Capt. Rowland F. Jr.
 Smith, Maj. Weston N.
 Stevens, Capt. Donald D.
 Stocks, Maj. Bruce D.
 Storz, Lt. Col. Ronald E.
 Stovall, Capt. Dale E.
 Talley, Amn. Joel E.
 Titus, Lt. Col. Robert F.
 Trautman, Maj. Konrad W.
 Traynor, Capt. Dennis W. III
 Tsouprake, Maj. Peter
 Turner, Maj. Robert E.
 Weatherby, Capt. Jack W.



Robert Gutierrez

Wells, Capt. Norman L.
 Whatley, Maj. Wayne N.
 White, Col. Robert M.
 Whitesides, Capt. Richard L.
 Wilke, Col. Robert F.
 Williams, Capt. David H.
 Wofford, Maj. Travis
 Wood, Maj. Patrick H.
 Worrell, 1st Lt. Rowland H. III
 Wright, Capt. Garth A.
 Wright, TSgt. LeRoy M.
 York, Maj. Glen P.

Mayaguez Incident

Backlund, 1st Lt. Donald R.
 Brims, 1st Lt. Richard C.
 Harston, SSgt. Jon D.
 Purser, Capt. Rowland W.

Operation Desert Storm

Andrews, Capt. William F.
 Johnson, Capt. Paul T.

Somalia

Wilkinson, TSgt. Timothy A.

Operation Enduring Freedom

Chapman, TSgt. John A.
 Crawford, Capt. Barry F. Jr.
 Cunningham, SrA. Jason D.
 Gutierrez, SSgt. Robert Jr.
 Rhyner, SSgt. Zachary J.
 Ruiz, MSgt. Ivan M.
 Temple, SrA. Dustin H.



Zachary Rhyner

USAF Recipients of Special Congressional Medals (highest noncombat award)

Name and Rank*	Type	Date Approved	Achievement
American Fighter Aces	Gold	May 19, 2014	Heroic military service and defense of freedom
Aldrin, Col. Buzz	Gold	Aug. 7, 2009	Second person to walk on the moon, Apollo 11 mission, July 21, 1969
Collins, Maj. Gen. Michael	Gold	Aug. 7, 2009	Command module pilot, Apollo 11 mission, July 21, 1969
Doolittle Tokyo Raiders	Gold	May 23, 2014	Bombing raid over Japan's capital, April 18, 1942
Eaker, Lt. Gen. Ira C.	Gold	Oct. 10, 1978	Distinguished aviation pioneer and Air Force leader
Lindbergh, Col. Charles A.	Gold	May 4, 1928	Achievements, specifically New York City-Paris flight, May 20-21, 1927
Mitchell, Brig. Gen. William	Gold	Aug. 8, 1946	Outstanding pioneer service and foresight in American military aviation
Tuskegee Airmen	Gold	April 11, 2006	Unique military record, inspiring revolutionary reform in US armed forces
Women's Airforce Service Pilots	Gold	July 2, 2009	Pioneering military service and exemplary record
World War II members of CAP	Gold	May 30, 2014	Wartime civilian volunteers for patrol and humanitarian missions
Yeager, Brig. Gen. Charles E.	Silver	Dec. 23, 1975	Risking life, piloting X-1 aircraft faster than speed of sound, Oct. 14, 1947

*Rank at time of award.

Air Force Aces

Some Famous Firsts

April 23, 1918	First Air Service ace in World War I: 1st Lt. Paul F. Baer
Dec. 7, 1941	First AAF victories of World War II (Pearl Harbor): Lt. Harry W. Brown, Lt. Philip M. Rasmussen, Lt. Lewis M. Sanders, Lt. Gordon H. Sterling Jr., Lt. Kenneth M. Taylor, Lt. George S. Welch
Dec. 16, 1941	First AAF ace of World War II: 1st Lt. Boyd D. Wagner
Nov. 8, 1950	First jet-to-jet victory (Korean War): 1st Lt. Russell J. Brown
May 20, 1951	First USAF ace of the Korean War: Capt. James Jabara
Nov. 30, 1951	First USAF ace of two wars (World War II and Korea): Maj. George A. Davis Jr. (seven in World War II and 14 in Korea)
Jan. 2, 1967	First (and only) USAF ace with victories in World War II and Vietnam: Col. Robin Olds (12 in World War II and four in Vietnam)
Aug. 28, 1972	First USAF ace of Vietnam: Capt. Richard S. Ritchie



Left: Robin Olds is the only USAF ace with aerial victories in both World War II and the Vietnam War.

Right: Manuel Fernandez earned 14.5 aerial victory credits in the Korean War.



By tradition, anyone with five official aerial victory credits is an ace. In compiling this list of aces who flew with the US Air Force and predecessor organizations (the Air Service, Air Corps, and Army Air Forces), *Air Force Magazine* relies on USAF's official accounting of air-to-air aerial victory credits, which is the responsibility of the Air Force Historical Research Agency, Maxwell AFB, Ala.

This record does not include some 300 pilots credited by Eighth Air Force in World War II with destroying aircraft on the ground. Eighth was the only numbered air force to count ground kills, and the Air Force subsequently limited its official recognition of World War II aces to air-to-air victories.

Air Force historians have kept the official records of aerial victories by USAF pilots and crew members since 1957. The Office of the Air Force Historian initially published four separate listings—for World War I, World War II, the Korean War, and the Vietnam War. The four volumes were corrected, updated, and combined into one comprehensive volume. AFHRA continues to correct records and updates its online listing.

The criteria that the Air Force established for awarding aerial victory credits varied from war to war.

In many cases during World War I, several aviators worked together to down a single aircraft. The Air Service awarded one whole credit to each aviator who contributed to the victory. A single victory could—and often did—result in three or four victory credits.

In World War II and Korea, the criteria were changed. The service divided one credit among all aviators who contributed to destruction of an enemy airplane. With the awarding of fractional credits, a single victory could result in no more than one credit.

The rules were changed again in the Vietnam War. When an F-4 downed an enemy aircraft, USAF would award two full aerial victory credits—one to the frontseater and one to the backseater. As in World War I, a single victory resulted in multiple victory credits.

Thus, the standards for World War II and Korea were more restrictive than those for World War I and Vietnam.

American Aces of World War I



Eddie Rickenbacker (26)

In World War I, pilots who shared victories were each given one credit. This list uses the World War I counting rule.

Rickenbacker, Capt. Edward V.	26
Luke, 2nd Lt. Frank Jr.	18
Vaughn, 1st Lt. George A.	13
Kindley, 1st Lt. Field E.	12
Springs, 1st Lt. Elliott W.	12
Landis, 1st Lt. Reed G.	10
Swaab, 1st Lt. Jacques M.	10
Baer, 1st Lt. Paul F.	9
Cassady, 1st Lt. Thomas G.	9
Hamilton, 1st Lt. Lloyd A.	9
Wright, 1st Lt. Chester E.	9
Clay, 1st Lt. Henry R. Jr.	8
Coolidge, Capt. Hamilton	8
Donaldson, 2nd Lt. John O.	8
Erwin, 1st Lt. William P.	8
Hunter, 1st Lt. Frank O'D.	8
Jones, 2nd Lt. Clinton	8
Meissner, Capt. James A.	8
Stenseth, 1st Lt. Martinus	8
White, 2nd Lt. Wilbert W.	8
Burdick, 2nd Lt. Howard	7

Chambers, 1st Lt. Reed M.	7	Keating, 1st Lt. James A.	5
Cook, 1st Lt. Harvey W.	7	Knowles, 1st Lt. James Jr.	5
Creech, 1st Lt. Jesse O.	7	Larner, 1st Lt. G. DeFreest	5
Holden, 1st Lt. Lansing C.	7	Luff, 1st Lt. Frederick E.	5
Robertson, 1st Lt. Wendel A.	7	O'Neill, 2nd Lt. Ralph A.	5
Rummell, 1st Lt. Leslie J.	7	Owens, 2nd Lt. John S.	5
Schoen, 1st Lt. Karl J.	7	Porter, 2nd Lt. Kenneth L.	5
Sewall, 1st Lt. Sumner	7	Ralston, 1st Lt. Orville A.	5
Beane, 1st Lt. James D.	6	Seerley, 1st Lt. John J.	5
Biddle, Capt. Charles J.	6	Strahm, Capt. Victor H.	5
Brooks, 2nd Lt. Arthur R.	6	Todd, 2nd Lt. Robert M.	5
Campbell, 1st Lt. Douglas	6	Vernam, 1st Lt. Remington D. B.	5
Curtis, 1st Lt. Edward P.	6	Wehner, 1st Lt. Joseph F.	5
Easterbrook, 1st Lt. Arthur E.	6		
Guthrie, 1st Lt. Murray K.	6		
Hammond, 1st Lt. Leonard C.	6		
Hays, 2nd Lt. Frank K.	6		
Hudson, 1st Lt. Donald	6		
Knotts, 2nd Lt. Howard C.	6		
Lindsay, 1st Lt. Robert O.	6		
MacArthur, 2nd Lt. John K.	6		
Ponder, 2nd Lt. William T.	6		
Putnam, 1st Lt. David E.	6		
Stovall, 1st Lt. William H.	6		
Tobin, 1st Lt. Edgar G.	6		
Vasconcells, 1st Lt. Jerry C.	6		
Badham, 2nd Lt. William T.	5		
Bair, 1st Lt. Hilbert L.	5		
Bissell, 1st Lt. Clayton L.	5		
Buckley, 1st Lt. Harold R.	5		
Cook, 1st Lt. Everett R.	5		
D'Olive, 1st Lt. Charles R.	5		
Furlow, 1st Lt. George W.	5		
George, 1st Lt. Harold H.	5		
Grey, 1st Lt. Charles G.	5		
Haight, 1st Lt. Edward M.	5		
Healy, 1st Lt. James A.	5		



Elliott Springs (12)

Army Air Forces Aces of World War II



Don Gentile (19.83)

Ranks are as of last victory in World War II.

Bong, Maj. Richard I.	40	Lynch, Lt. Col. Thomas J.	20
McGuire, Maj. Thomas B. Jr.	38	Westbrook, Lt. Col. Robert B.	20
Gabreski, Lt. Col. Francis S.	28	Gentile, Capt. Don S.	19.83
Johnson, Capt. Robert S.	27	Duncan, Col. Glenn E.	19.5
MacDonald, Col. Charles H.	27	Carson, Capt. Leonard K.	18.5
Preddy, Maj. George E.	26.83	Eagleston, Maj. Glenn T.	18.5
Meyer, Lt. Col. John C.	24	Reckham, Maj. Walter C.	18
Schilling, Col. David C.	22.5	Green, Maj. Herschel H.	18
Johnson, Lt. Col. Gerald R.	22	Herbst, Lt. Col. John C.	18
Kearby, Col. Neel E.	22	Zemke, Col. Hubert	17.75
Robbins, Maj. Jay T.	22	England, Maj. John B.	17.5
Christensen, Capt. Fred J.	21.5	Deeson, Capt. Duane W.	17.33
Wetmore, Capt. Ray S.	21.25	Thornell, 1st Lt. John F. Jr.	17.25
Voll, Capt. John J.	21	Varnell, Capt. James S. Jr.	17
Mahurin, Maj. Walker M.	20.75	Johnson, Maj. Gerald W.	16.5

Army Air Forces Aces of World War II

Godfrey, Capt. John T.	16.33
Anderson, Capt. Clarence E. Jr.	16.25
Dunham, Lt. Col. William D.	16
Harris, Lt. Col. Bill	16
Welch, Capt. George S.	16
Beerbower, Capt. Don M.	15.5
Brown, Maj. Samuel J.	15.5
Peterson, Capt. Richard A.	15.5
Whisner, Capt. William T. Jr.	15.5
Bradley, Lt. Col. Jack T.	15
Cragg, Maj. Edward	15
Dahlberg, Capt. Kenneth H.	15
Foy, Maj. Robert W.	15
Hofer, 2nd Lt. Ralph K.	15
Homer, Capt. Cyril F.	15
Landers, Lt. Col. John D.	14.5
Powers, Capt. Joe H.	14.5
Brown, Capt. Henry W.	14.2
Carr, 1st Lt. Bruce W.	14
Curtis, Maj. Robert C.	14
DeHaven, Capt. Robert M.	14
Emmer, Capt. Wallace N.	14
Goodson, Maj. James A.	14
Jeffrey, Lt. Col. Arthur F.	14
McComas, Lt. Col. Edward O.	14
Roberts, Capt. Daniel T. Jr.	14
West, Capt. Richard L.	14
Bochkay, Maj. Donald H.	13.83
Strait, Maj. Donald J.	13.5
Bryan, Capt. Donald S.	13.33
Carpenter, Maj. George	13.33
Brooks, 1st Lt. James L.	13
Hampshire, Capt. John F. Jr.	13
Head, Capt. Cotesworth B. Jr.	13
Holloway, Col. Bruce K.	13
Millikan, Capt. Willard W.	13
Moran, 1st Lt. Glennon T.	13
Parker, Capt. Harry A.	13
Stephens, Maj. Robert W.	13
Williamson, Capt. Felix D.	13
Brueland, Maj. Lowell K.	12.5
Brown, Maj. Quince L.	12.33
Brezas, 1st Lt. Michael	12



Left to right: Richard Peterson (15.5), Leonard Carson (18.5), John England (17.5), and Clarence Anderson (16.25).

Chase, Lt. Col. Levi R.	12	McDonald, Maj. Norman L.	11.5
East, Capt. Clyde B.	12	Stewart, Maj. James C.	11.5
Gleason, Capt. George W.	12	Yeager, Capt. Charles E.	11.5
Hively, Maj. Howard D.	12	Norley, Maj. Louis H.	11.33
Ladd, Capt. Kenneth G.	12	Frantz, 1st Lt. Carl M.	11
Moore, Maj. Robert W.	12	Goebel, Capt. Robert J.	11
Olds, Maj. Robin	12	Lawler, Capt. John B.	11
Schreiber, Capt. Leroy A.	12	Lent, 1st Lt. Francis J.	11
Skogstad, 1st Lt. Norman C.	12	Leverette, Lt. Col. William L.	11
Sloan, 1st Lt. William J.	12	Loisel, Maj. John S.	11
Watkins, Capt. James A.	12	Lowry, 1st Lt. Wayne L.	11
Megura, Capt. Nicholas	11.83	McCorkle, Col. Charles M.	11
Blakeslee, Col. Donald J. M.	11.5	McKennon, Maj. Pierce W.	11
Conger, Maj. Paul A.	11.5	Mitchell, Lt. Col. John W.	11
Kirla, 1st Lt. John A.	11.5	Molland, Capt. Leland P.	11
		Quirk, Capt. Michael J.	11
		Riddle, 1st Lt. Robert E.	11
		Shubin, 1st Lt. Murray J.	11
		Smith, Capt. Cornelius M. Jr.	11
		Sparks, 1st Lt. Kenneth C.	11
		Turner, Maj. Richard E.	11
		O'Connor, Capt. Frank Q.	10.75
		Ceuleers, Lt. Col. George F.	10.5
		Clark, Lt. Col. James A. Jr.	10.5
		Doersch, Capt. George A.	10.5
		Halton, Maj. William T.	10.5
		Hovde, Maj. William J.	10.5
		Littge, Capt. Raymond H.	10.5
		Storch, Lt. Col. John A.	10.5
		Glover, Maj. Fred W.	10.33
		Anderson, 1st Lt. Charles F.	10
		Aschenbrener, Capt. Robert W.	10
		Blickenstaff, Lt. Col. Wayne K.	10
		England, Maj. James J.	10
		Giroux, Capt. William K.	10



John Godfrey (16.33)



Hubert Zemke (17.75)

Army Air Forces Aces of World War II



Jack Ilfrey (8)

*Gladych, Squadron Leader Michael	10
Goehausen, Capt. Walter J. Jr.	10
Harris, Capt. Ernest A.	10
Lines, 1st Lt. Ted E.	10
Rankin, 1st Lt. Robert J.	10
Reynolds, 1st Lt. Andrew J.	10
Scott, Col. Robert L. Jr.	10
Stanch, Capt. Paul M.	10
Summer, Capt. Elliot	10
Bankey, Capt. Ernest E. Jr.	9.5
Spencer, 1st Lt. Dale F.	9.5
Adams, Capt. Fletcher E.	9
Andrew, Maj. Stephen W.	9
Banks, Maj. William M.	9
Beyer, Capt. William R.	9
Boggs, Capt. Hampton E.	9
Champlin, Capt. Frederic F.	9
Collins, Maj. Frank J.	9
Curdes, 1st Lt. Louis E.	9
Dahl, Capt. Perry J.	9
Dalglish, Maj. James B.	9
Dunkin, Capt. Richard W.	9
Emmons, 1st Lt. Eugene H.	9
Fanning, 1st Lt. Grover E.	9
Feld, 1st Lt. Sylvan	9
Fiebelkorn, 1st Lt. Ernest C.	9
Forster, 1st Lt. Joseph M.	9
Gallup, Lt. Col. Kenneth W.	9
Hill, Capt. Allen E.	9
Hurlbut, F.O. Frank D.	9
Juchheim, Capt. Alwin M.	9
Kiser, Capt. George E.	9
Lesicka, 1st Lt. Joseph J.	9
Meroney, Capt. Virgil K.	9
Morrill, 1st Lt. Stanley B.	9
Overfield, 1st Lt. Loyd J.	9
Paris, Capt. Joel B. III	9
Roberts, Lt. Col. Eugene P.	9
Smith, Lt. Col. Meryl M.	9
Stewart, Capt. John S.	9
White, Capt. Robert H.	9
Wolfe, Capt. Judge E.	9
Bennett, Capt. Joseph H.	8.5

*Squadron Leader Gladych was Polish and flew in service with American units, but because the Polish government in exile was headquartered in London, Polish pilots had British designations.

Cesky, Capt. Charles J.	8.5
Dorsch, Capt. Frederick J. Jr.	8.5
Hayes, Lt. Col. Thomas L. Jr.	8.5
Hoefker, Capt. John H.	8.5
Jenkins, 2nd Lt. Otto D.	8.5
Johnson, 1st Lt. Arthur G. Jr.	8.5
Luksic, 1st Lt. Carl J.	8.5
McDowell, 1st Lt. Don	8.5
McGrattan, Capt. Bernard L.	8.5
Moats, 1st Lt. Sanford K.	8.5
Schlegel, Capt. Albert L.	8.5
Ainlay, 1st Lt. John M.	8
Allen, 1st Lt. David W.	8
Benz, Maj. Walter G. Jr.	8
Booth, 1st Lt. Robert J.	8
Bostwick, Maj. George E.	8
Broadhead, Maj. Joseph E.	8
Carroll, 1st Lt. Walter J. Jr.	8
Cruikshank, Maj. Arthur W. Jr.	8
Damstrom, 1st Lt. Fernley H.	8
Douglas, Lt. Col. Paul P. Jr.	8
Elder, Maj. John L. Jr.	8
Fiedler, Capt. Arthur C. Jr.	8
Fowle, 1st Lt. James M.	8
Gardner, Capt. William A.	8
Gaunt, Capt. Frank L.	8
Gerard, Capt. Francis R.	8
Grosshuesch, Capt. Leroy V.	8
Harris, Capt. Frederick A.	8
Hart, 1st Lt. Kenneth F.	8
Ilfrey, Capt. Jack M.	8
Jackson, Maj. Michael J.	8
Jones, Capt. John L.	8
Kinnard, Lt. Col. Claiborne H. Jr.	8
Maloney, Capt. Thomas E.	8
Momyer, Col. William W.	8
Morehead, 1st Lt. James B.	8
Novotny, 1st Lt. George P.	8
O'Neill, 1st Lt. John G.	8
Paisley, 1st Lt. Melvyn R.	8
Richardson, Maj. Elmer W.	8
Roddy, Capt. Edward F.	8
Rowland, Col. Robert R.	8
Sangermano, 1st Lt. Philip	8
Schiltz, 1st Lt. Glen D. Jr.	8



Boyd Wagner (8)

Shaw, 1st Lt. Robert M.	8
Shomo, Capt. William A.	8
Smith, Maj. Carroll C.	8
Stanton, Maj. Arland	8
Sublett, Capt. John L.	8
Tapp, Maj. James B.	8
Tovrea, 1st Lt. Philip E. Jr.	8
Tyler, Maj. James O.	8
Vogt, Maj. John W. Jr.	8
Wagner, Lt. Col. Boyd D.	8
Warford, Maj. Victor E.	8
Weaver, Capt. Charles E.	8
Lang, Capt. Joseph L.	7.83
Stewart, Lt. Col. Everett W.	7.83
Bryan, Maj. William E. Jr.	7.5
Cutler, Capt. Frank A.	7.5
Davis, Capt. Glendon V.	7.5
Glenn, Maj. Maxwell H.	7.5
Karger, 1st Lt. Dale E.	7.5
Lamb, Maj. George M.	7.5
Lasko, Capt. Charles W.	7.5
Lowell, Lt. Col. John H.	7.5
Miklajczyk, Capt. Henry J.	7.5
Righetti, Lt. Col. Elwyn G.	7.5
Garrison, 1st Lt. Vermont	7.33



Robert Scott (10)

Morris, Capt. James M. 7.33
 Goodnight, 1st Lt. Robert E. 7.25
 Adams, Capt. Burnell W. 7
 Allen, 1st Lt. Calvin D. Jr. 7
 Anderson, 1st Lt. William Y. 7
 Becker, Capt. Robert H. 7
 Blair, Capt. Samuel V. 7
 Browning, Capt. James W. 7
 Carder, 1st Lt. John B. 7
 Chapman, Maj. Philip G. 7
 Cramer, Maj. Darrell S. 7
 Crenshaw, 1st Lt. Claude J. 7
 Davis, 1st Lt. George A. Jr. 7
 Dean, 1st Lt. Zach W. 7
 Duke, Capt. Walter F. 7
 Dunaway, 1st Lt. John S. 7
 Edens, 2nd Lt. Billy G. 7
 Elliott, 1st Lt. Vincent T. 7
 Fisher, Capt. Edwin O. 7
 Fisk, Capt. Jack A. 7
 Franklin, 1st Lt. Dwaine R. 7
 Graham, Lt. Col. Gordon M. 7
 Grant, 1st Lt. Marvin E. 7
 Gregg, 1st Lt. Lee O. 7
 Griffin, Maj. Joseph H. 7
 Hennon, Capt. William J. 7
 Hill, Maj. Frank A. 7
 Hockery, Capt. John J. 7
 Howard, Col. James H. 7
 Jackson, Lt. Col. Willie O. Jr. 7
 Jamison, Capt. Gilbert L. 7
 Jett, Capt. Verl E. 7
 Johnson, Capt. Clarence O. 7
 Keen, 1st Lt. Robert J. 7
 King, Capt. Benjamin H. 7
 Kinsey, 2nd Lt. Claude R. Jr. 7
 Klibbe, 2nd Lt. Frank W. 7
 Kuentzel, 2nd Lt. Ward A. 7
 Lamb, Capt. Robert A. 7
 Lewis, Maj. Warren R. 7
 Lewis, Lt. Col. William H. 7
 Liebers, 2nd Lt. Lawrence P. 7
 Little, 1st Lt. James W. 7
 Lombard, Maj. John D. 7
 Maguire, Capt. William J. 7
 Marshall, Maj. Bert W. Jr. 7
 McLaughlin, Capt. Murray D. 7
 Moore, Maj. John T. 7
 O'Brien, 1st Lt. Gilbert M. 7
 Older, Lt. Col. Charles H. 7
 Pierce, 1st Lt. Joseph F. 7
 Pierce, 1st Lt. Sammy A. 7
 Poindexter, Capt. James N. 7
 Popek, Maj. Edward S. 7
 Purdy, 1st Lt. John E. 7
 Reynolds, 1st Lt. Robert 7
 Rogers, Capt. Felix M. 7
 Ross, Maj. Herbert E. 7
 Sears, 1st Lt. Meldrum L. 7
 Shafer, Lt. Col. Dale E. Jr. 7
 Shipman, 1st Lt. Ernest 7
 Shuler, 1st Lt. Lucien B. 7
 Simmons, 1st Lt. John M. 7
 Smith, Maj. Leslie C. 7
 Smith, 1st Lt. Richard E. 7
 Stone, 2nd Lt. Robert J. 7
 Strand, Capt. William H. 7
 Truluck, 1st Lt. John H. 7
 Turner, Lt. Col. William L. 7
 Tyler, 1st Lt. Gerald E. 7

Vaughn, Maj. Harley C. 7
 Waters, 1st Lt. Edward T. 7
 Wheadon, Capt. Elmer M. 7
 Whittaker, Capt. Roy E. 7
 Wicker, Maj. Samuel J. 7
 Wilkinson, Capt. James W. 7
 Wire, 1st Lt. Calvin C. 7
 Woods, Lt. Col. Sidney S. 7
 Woody, Capt. Robert E. 7
 Zoerb, Capt. Daniel J. 7
 Murphy, Lt. Col. John B. 6.75
 Cummings, Capt. Donald M. 6.5
 Gray, Maj. Rockford V. 6.5
 Hoffman, 1st Lt. James E. Jr. 6.5
 Hubbard, Lt. Col. Mark E. 6.5
 Hunt, 1st Lt. Edward E. 6.5
 Koenig, 1st Lt. Charles W. 6.5
 Kruzel, Lt. Col. Joseph J. 6.5
 Moseley, Capt. Mark L. 6.5
 Rader, 1st Lt. Valentine S. 6.5
 Riley, 1st Lt. Paul S. 6.5
 Welden, 1st Lt. Robert D. 6.25
 Adams, 1st Lt. Charles E. Jr. 6
 Alison, Lt. Col. John R. 6
 Anderson, 1st Lt. Wyman D. 6
 Andrews, 1st Lt. Stanley O. 6
 Baker, 1st Lt. Ellis C. Jr. 6
 Baseler, Lt. Col. Robert L. 6
 Bille, Maj. Henry S. 6
 Blumer, Capt. Laurence E. 6
 Brown, 1st Lt. Harley L. 6
 Brown, Capt. Harry W. 6
 Brown, Capt. Meade M. 6
 Buck, Capt. George T. Jr. 6
 Callaway, Maj. Raymond H. 6
 Campbell, 1st Lt. Richard A. 6
 Candelaria, 1st Lt. Richard G. 6
 Care, Capt. Raymond C. 6
 Carlson, Capt. Kendall E. 6
 Carter, Capt. James R. 6
 Chick, Lt. Col. Lewis W. Jr. 6
 Coffey, Lt. Col. Robert L. Jr. 6
 Collinsworth, Capt. J. D. 6
 Cook, Capt. Walter V. 6
 Crawford, 2nd Lt. Ray 6
 Crim, Maj. Harry C. Jr. 6
 Cundy, 1st Lt. Arthur C. 6
 Czarnecki, 1st Lt. Edward J. 6
 Davis, 1st Lt. Barrie S. 6
 Dean, 2nd Lt. Cecil O. 6
 Degraffenreid, 2nd Lt. Edwin L. 6



Vermont Garrison (17.33, World War II and Korea)



Urban Drew (6)

Dent, Capt. Elliott E. Jr. 6
 Dillard, Capt. William J. 6
 Drew, 1st Lt. Urban L. 6
 Drier, Capt. William C. 6
 Eason, 1st Lt. Hoyt A. 6
 Emerson, Capt. Warren S. 6
 Emmert, 1st Lt. Benjamin H. Jr. 6
 Evans, Lt. Col. Andrew J. Jr. 6
 Evans, Maj. Roy W. 6
 Everhart, Capt. Lee R. 6
 Fleischer, Capt. Richard H. 6
 Foulis, Capt. William B. Jr. 6
 Froning, 1st Lt. Alfred C. 6
 Gallup, Capt. Charles S. 6
 Goss, Maj. Edmund R. 6
 Gresham, 1st Lt. Billy M. 6
 Gumm, 1st Lt. Charles F. Jr. 6
 Hagerstrom, 1st Lt. James P. 6
 Hall, 1st Lt. George F. 6
 Hanes, 1st Lt. William F. Jr. 6
 Harmeyer, 1st Lt. Raymond F. 6
 Hart, Capt. Cameron M. 6
 Haviland, Capt. Fred R. Jr. 6
 Hill, Col. David L. 6
 Hogg, Capt. Roy B. 6
 Holloway, 1st Lt. James D. 6
 Howard, 1st Lt. Robert L. 6
 Howes, 1st Lt. Bernard H. 6
 Hurd, 1st Lt. Richard F. 6
 Ince, 1st Lt. James C. 6
 Johnston, Lt. Col. Robert D. 6
 Jones, 1st Lt. Cyril W. Jr. 6
 Jordan, Maj. Wallace R. 6
 Karr, Capt. Robert A. 6
 Kemp, 2nd Lt. William T. 6
 Kienholz, 1st Lt. Donald D. 6
 Lane, 1st Lt. John H. 6
 Larson, Maj. Donald A. 6
 Larson, 2nd Lt. Leland A. 6
 Lubner, Capt. Martin W. 6
 Lucas, Capt. Paul W. 6
 Lusic, 1st Lt. Stanley J. 6
 McDaniel, 1st Lt. Gordon H. 6
 McGee, Capt. Donald C. 6
 McKeon, Capt. Joseph T. 6
 Meigs, 1st Lt. Henry II 6
 Meuten, 1st Lt. Donald W. 6
 Miller, Capt. Armour C. 6
 Mills, Maj. Henry L. 6
 Mugavero, 1st Lt. James D. 6
 Murphey, Capt. Paul C. Jr. 6

Army Air Forces Aces of World War II



John Alison (6), David Hill (6), and Albert Baumler (5)

Murphy, Capt. Alva C.	6
Ohr, Capt. Fred F.	6
Olson, Capt. Norman E.	6
Pietz, 1st Lt. John Jr.	6
Pissanos, 1st Lt. Spiros N.	6
Pugh, Capt. John F.	6
Reed, Capt. William N.	6
Reeves, 1st Lt. Horace B.	6
Reeves, 1st Lt. Leonard R.	6
Roberson, 1st Lt. Arval J.	6
Scheible, Capt. Wilbur R.	6
Schildt, 1st Lt. William J.	6
Schimanski, Capt. Robert G.	6
Simmons, 1st Lt. William J.	6
Smith, 1st Lt. John C.	6
Starck, Capt. Walter E.	6
Starnes, Capt. James R.	6
Taylor, Capt. Ralph G. Jr.	6
Thwaites, Capt. David F.	6
Turley, 2nd Lt. Grant M.	6
Vincent, Col. Clinton D.	6
Wainwright, 2nd Lt. John H. Jr.	6
Walker, 1st Lt. Thomas H.	6
Wandrey, Capt. Ralph H.	6
Welch, Capt. Robert E.	6
Wenige, 1st Lt. Arthur E.	6
Whalen, 1st Lt. William E.	6
White, 2nd Lt. Thomas A.	6
Williams, 1st Lt. James M.	6
Witt, Capt. Lynn E. Jr.	6
Wright, Capt. Ellis W. Jr.	6
Zubarik, 1st Lt. Charles J.	6
Fortier, Capt. Norman J.	5.83
Koraleski, Capt. Walter J. Jr.	5.53
Amoss, 1st Lt. Dudley M.	5.5
Bickel, 1st Lt. Carl G.	5.5
Burdick, 1st Lt. Clinton D.	5.5
Buttke, Capt. Robert L.	5.5
Compton, Capt. Gordon B.	5.5
Edwards, 1st Lt. Edward B. Jr.	5.5
Gailer, 1st Lt. Frank L.	5.5
Graham, Capt. Lindol F.	5.5
Hatala, Capt. Paul R.	5.5
Heller, Capt. Edwin L.	5.5
Holmes, 1st Lt. Besby F.	5.5
Horne, 1st Lt. Francis W.	5.5

King, 1st Lt. William B.	5.5
Lampe, 1st Lt. Richard C.	5.5
Lanphier, Capt. Thomas G. Jr.	5.5
Lenfest, Capt. Charles W.	5.5
Long, Capt. Maurice G.	5.5
McCauley, 1st Lt. Frank E.	5.5
Minchew, Capt. Leslie D.	5.5
O'Brien, Capt. William R.	5.5
Pascoe, 1st Lt. James J.	5.5
Pompetti, 1st Lt. Peter E.	5.5
Ruder, 1st Lt. Leroy A.	5.5
Shoup, 1st Lt. Robert L.	5.5
Smith, 1st Lt. Donovan F.	5.5
Tanner, Capt. William F.	5.5
Vanden Heuvel, 1st Lt. George R.	5.5
Waits, 1st Lt. Joe W.	5.5
Wang, 1st Lt. Kuang Fu	5.5
Winks, 1st Lt. Robert P.	5.5
Biel, 1st Lt. Hipolitus T.	5.33
Vinson, Capt. Arnold E.	5.33
Dorris, Maj. Harry W.	5.25
Miller, 2nd Lt. Thomas F.	5.25
Thompson, 1st Lt. Robert D.	5.25
Duffy, Capt. James E. Jr.	5.2
Abernathy, Capt. Robert W.	5



Clinton Vincent (6)

Adams, 1st Lt. Robert H.	5
Allen, 1st Lt. William H.	5
Ambort, 2nd Lt. Ernest J.	5
Ammon, 1st Lt. Robert H.	5
Andersen, 1st Lt. Leslie E.	5
Anderson, 1st Lt. Richard H.	5
Arasmith, 1st Lt. Lester L.	5
Archibald, 1st Lt. David B.	5
Aron, 1st Lt. William E.	5
Aust, Capt. Abner M. Jr.	5
Axtell, 1st Lt. Eugene D.	5
Baccus, Lt. Col. Donald A.	5
Bade, 1st Lt. Jack A.	5
Bank, 1st Lt. Raymond M.	5
Barber, 1st Lt. Rex T.	5
Barkey, 1st Lt. Robert M.	5
Barnes, 1st Lt. Truman S.	5
Baumler, Capt. Albert J.	5
Bearden, 2nd Lt. Aaron L.	5
Beavers, Capt. Edward H. Jr.	5
Benne, 1st Lt. Louis	5
Bolyard, Capt. John W.	5
Bonner, 1st Lt. Stephen J.	5
Bostrom, 1st Lt. Ernest O.	5
Bradley, Maj. John L.	5
Brown, Capt. Gerald	5
Byrne, 1st Lt. Robert J.	5
Byrnes, Capt. Robert C.	5
Castle, 2nd Lt. Nial K.	5
Chandler, Capt. George T.	5
Chandler, 1st Lt. Van E.	5
Cleaveland, 2nd Lt. Arthur B.	5
Clinger, Capt. Dallas A.	5
Cloud, Capt. Vivian A.	5
Cochran, 2nd Lt. Paul R.	5
Colman, 1st Lt. Philip E.	5
Comstock, Maj. Harold E.	5
Condon, Capt. Henry L. Jr.	5
Coons, Capt. Merle M.	5
Cox, Capt. Ralph L.	5
Cranfill, Maj. Niven K.	5
Cullerton, 1st Lt. William J.	5
Curton, 1st Lt. Warren D.	5
Daniel, Col. William A.	5
Daniell, 1st Lt. J. S.	5
Davis, Capt. Clayton E.	5
Day, 1st Lt. William C. Jr.	5
Deakins, 1st Lt. Richard S.	5
Della, 1st Lt. George	5
Dick, Capt. Frederick E.	5
Dikovitsky, 1st Lt. Michael	5
Donaldson, 2nd Lt. I. B. Jack	5
Dregne, Lt. Col. Irwin H.	5
Dubisher, Maj. Francis E.	5
Dubois, 1st Lt. Charles H.	5
Duffey, 2nd Lt. Richard E.	5
Egan, 1st Lt. Joseph L. Jr.	5
Elder, Maj. Robert A.	5
Empey, 1st Lt. James W.	5
Ernst, 1st Lt. Herman E.	5
Faxon, 1st Lt. Richard D.	5
Felts, 1st Lt. Marion C.	5
Fenex, Capt. James E. Jr.	5
Fiedler, 1st Lt. William F. Jr.	5
Fields, Capt. Virgil C. Jr.	5
Fischette, 1st Lt. Charles R.	5
Fisher, 1st Lt. Rodney W.	5
Fisk, Capt. Harry E.	5



Robert Ammon (5)

Flack, Capt. Nelson D. Jr. 5
 Ford, Maj. Claude E. 5
 Gardner, Maj. Warner F. 5
 Gerick, 2nd Lt. Steven 5
 Gholson, Capt. Grover D. 5
 Gibb, 1st Lt. Robert D. 5
 Gladen, 1st Lt. Cyrus R. 5
 Goodrich, 1st Lt. Burdett C. 5
 Gordon, Capt. Mathew M. Jr. 5
 Graham, 2nd Lt. Robert F. 5
 Griffith, 1st Lt. Robert C. 5
 Gross, Capt. Clayton K. 5
 Grosvenor, Capt. William Jr. 5
 Gupton, 1st Lt. Cheatham W. 5
 Hammer, 1st Lt. Samuel E. 5
 Hanna, 2nd Lt. Harry T. 5
 Hanseman, 1st Lt. Chris J. 5
 Harrington, 1st Lt. Archibald A. 5
 Harris, Capt. Thomas L. 5
 Hartley, Capt. Raymond E. Jr. 5
 Hatch, 2nd Lt. Herbert B. Jr. 5
 Hauver, 1st Lt. Charles D. 5
 Haworth, 1st Lt. Russell C. 5
 Hendricks, Maj. Randall W. 5
 Hill, Maj. James E. 5
 Hiro, Maj. Edwin W. 5
 Hnatio, 1st Lt. Myron M. 5
 Hodges, Capt. William R. 5
 Hoffman, 1st Lt. Cullen J. 5
 House, 1st Lt. A. T. Jr. 5
 Howe, 1st Lt. David W. 5
 Hoyt, Capt. Edward R. 5
 Hunter, Capt. Alvaro J. 5
 Icard, 2nd Lt. Joe W. 5
 Johnson, Capt. Evan M. V. 5
 Jones, Capt. Curran L. 5
 Jones, Capt. Frank C. 5
 Jones, Capt. Lynn F. 5
 Jones, 2nd Lt. Warren L. 5
 Julian, Maj. William H. 5
 Kennedy, 1st Lt. Daniel 5
 King, Maj. Charles W. 5
 King, 1st Lt. David L. 5
 Kirby, 1st Lt. Marion F. 5
 Kirkland, 1st Lt. Lenton F. Jr. 5
 Knapp, Capt. Robert H. 5
 Knott, 1st Lt. Carroll S. 5
 Kopsel, 1st Lt. Edward H. 5
 Lathrope, 2nd Lt. Franklin C. 5
 Lazear, 1st Lt. Earl R. Jr. 5
 Lee, 1st Lt. Richard J. 5
 Leikness, Capt. Marlow J. 5

Lenox, 2nd Lt. Jack Jr. 5
 Liles, Maj. Robert L. 5
 London, Capt. Charles P. 5
 Loving, Capt. George G. Jr. 5
 Lutton, 1st Lt. Lowell C. 5
 Mackay, 2nd Lt. John A. 5
 Magoffin, Col. Morton D. 5
 Mahon, Capt. Keith 5
 Mahony, Lt. Col. Grant 5
 Mankin, Capt. Jack C. 5
 Markham, Capt. Gene E. 5
 Marsh, 1st Lt. Lester C. 5
 Martin, Col. Kenneth R. 5
 Mason, Col. Joe L. 5
 Mathis, 1st Lt. William H. 5
 Mathre, 2nd Lt. Mildred E. 5
 Matte, 1st Lt. Joseph Z. 5
 Maxwell, Capt. Chester K. 5
 McArthur, 1st Lt. Paul G. 5
 McArthur, Capt. T. H. 5
 McDonough, Maj. William F. 5
 McElroy, Capt. James N. 5
 McGinn, Lt. Col. John L. 5
 McGuyrt, 1st Lt. John W. Jr. 5
 McMinn, F.O. Evan D. 5
 Merritt, Maj. George L. Jr. 5
 Miller, 1st Lt. Everett 5
 Miller, Capt. Joseph E. Jr. 5
 Milliken, 1st Lt. Robert C. 5
 Monk, 1st Lt. Franklin H. 5
 Mooney, 2nd Lt. Raymond P. 5
 Morriss, Capt. Paul V. 5
 Mulhollem, 1st Lt. Robert F. 5
 Myers, 1st Lt. Jennings L. 5
 Myers, Lt. Col. Raymond B. 5
 Nichols, Maj. Franklin A. 5
 Nollmeyer, Maj. Edward M. 5
 Oberhansly, Maj. Jack J. 5
 Olson, 1st Lt. Paul E. 5
 O'Neill, Capt. Eugene W. Jr. 5
 O'Neill, 1st Lt. Lawrence F. 5
 Osher, Capt. Ernest K. 5
 Overcash, 1st Lt. Robert J. 5
 Owens, Maj. Joel A. Jr. 5
 Parham, Capt. Forrest F. 5
 Paulk, 2nd Lt. Edsel 5
 Payne, Capt. Carl W. 5
 Perdomo, 1st Lt. Oscar F. 5
 Pool, 1st Lt. Kenneth R. 5
 Porter, 1st Lt. Philip B. 5
 Powers, 2nd Lt. Macarthur 5
 Price, Maj. Jack C. 5

Priest, 1st Lt. Royce W. 5
 Pryor, Capt. Roger C. 5
 Quigley, Maj. Donald L. 5
 Ray, 1st Lt. C. B. 5
 Reese, 1st Lt. William C. 5
 Ritchey, 1st Lt. Andrew J. 5
 Roberts, Capt. Newell O. 5
 Rose, 1st Lt. Franklin Jr. 5
 Rounds, 1st Lt. Gerald L. 5
 Rudolph, 1st Lt. Henry S. 5
 Rynne, Capt. William A. 5
 Schank, 1st Lt. Thomas D. 5
 Schriber, Capt. Louis 5
 Schuh, 1st Lt. Duerr H. 5
 Schultz (Shoals), Capt. Robert B. 5
 Sears, 1st Lt. Alexander F. 5
 Seidman, 1st Lt. Robert K. 5
 Smith, Capt. Jack R. 5
 Smith, Capt. Kenneth G. 5
 Smith, 1st Lt. Paul A. 5
 Smith, 1st Lt. Virgil H. 5
 Stangel, Capt. William J. 5
 Stanley, 1st Lt. Morris A. 5
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 Sullivan, Capt. Charles P. 5
 Sutcliffe, 1st Lt. Robert C. 5
 Sykes, 1st Lt. William J. 5
 Talbot, Maj. Gilbert F. 5
 Taylor, Col. Oliver B. 5
 Thyng, Lt. Col. Harrison R. 5
 Tierney, 1st Lt. Robert E. 5
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 Warren, Capt. Jack R. 5
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 Wilson, Capt. William F. 5
 Wire, Maj. Ralph L. 5
 Wiseman, Capt. Lee V. 5
 Wolford, 1st Lt. John L. 5
 Wright, Capt. Max J. 5
 Yaeger, Capt. Robert R. Jr. 5
 York, 1st Lt. Robert M. 5



Harrison Thyng (5)

students, and the other two, Clean_Up and DangerBots, are recommended for fourth- through sixth-graders.

One of Donnelly's students, Octavio, wrote in a class assignment that he enjoyed DangerBots in particular because it taught him to not download all programs and to be more cautious when a download option appears. "I also liked it because it was fun," he said.

IT'S FLEXIBLE

The Elementary School Cyber Education Initiative program has been designed so educators, parents, and guardians—not just classroom teachers—will be able to present the lessons.

Students using the modules do not need to be in the same educational institution. Modules can be used as independent activities, too.

The ESCEI program was a collaborative effort between AFA's CyberPatriot Program Office and its long-standing partner, the Center for Infrastructure Assurance and Security at the University of Texas at San Antonio. CIAS is headed by Greg White, a longtime AFA member of the Alamo Chapter. The Elementary School Cyber Education Initiative has been made possible by the generous support of its presenting sponsor, the

Emily: ESCEI's "Principal"

Emily Rauer is the cyber education manager at CyberPatriot, the National Youth Cyber Education Program.

In August 2015, she began managing CyberPatriot's Elementary School Cyber Education Initiative (ESCEI) and the AFA CyberCamps.

Rauer went to high school in Fairfax, Va. She went on to earn a bachelor's degree in history from George Mason University in Fairfax and a M.Ed at Marymount University in Arlington, Va. She taught fourth grade and first grade for two years, creating original curriculum content and specializing in learning assessments.

Teaching remains her life's passion. Today, she continues that focus through her work with CyberPatriot.



Northrop Grumman Foundation. Materials for the CyberPatriot Elementary School Cyber Education Initiative were funded through a special grant from Riverside Research, a Cyber Gold sponsor of CyberPatriot.

Rusty Baldwin, director of research for the company's Cyber Center of Excellence said: "Riverside Research is honored to support AFA's newest cyber education program. We are chartered to advance scientific research and are dedicated to supporting future generations of STEM professionals. Opportunities to introduce younger students to STEM

disciplines, including cybersecurity, benefit them and ultimately safeguard national security and ensure that the US will have a robust pool of technical talent for years to come."

DID WE MENTION FREE?

Parents, guardians, teachers, and volunteers can request copies of the free ESCEI materials. To request your free Elementary School Cyber Education Initiative, go to uscyberpatriot.org and search under Special Initiatives.

More than 2,950 ESCEI program kits have already been delivered. ★

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A PLACE ON TEAM AIR FORCE

By Lyndsey Akers



An airman prepares to throw a discus at the Air Force Trials held at Nellis AFB, Nev.

Adaptive sports events like the Air Force Trials promote the well-being of Wounded Airmen.

When the 2016 Air Force Trials concluded in early March, some 40 Wounded Airmen departed the competition venue at Nellis AFB, Nev., knowing they had made it to the next level: a slot on Team Air Force for this summer's Department of Defense Warrior Games at West Point in New York.

To get to that point, the athletes first had to demonstrate their skills during the 11-day trials, an adaptive sports event carried out by the Air Force Wounded Warrior program.

The Air Force Trials featured more than 100 Wounded Airmen—seriously wounded, ill, and injured military members and veterans. They tested their abilities in archery, basketball, cycling, track and field, swimming, shooting, and volleyball.

Next month, Team Air Force athletes will participate in the DOD Warrior Games at the US Military Academy. They will be among teams representing the Army, Marine Corps, Navy, and US Special Operations Command—roughly 200 competitors in all.

AFA SUPPORT

At the Air Force Trials, AFA's Wounded Airman Program—with support from Deloitte—helped fund the closing ceremonies. AFA representatives worked on-site with the Air Force Wounded Warrior staff and athletes who requested support from WAP.

AFA also co-hosted a CARE Fair where staff members from various organizations distributed information about careers, recovery support, and health and wellness.

AFA Vice President for Member and Field Relations Kari Lynn Hahn presented a donation from AFA's WAP to a financially strapped competitor. The money will help with bills and relocation expenses.

AFA's Wounded Airman Program partners with the Air Force Wounded Warrior program to provide this kind of financial aid, caregiver support, and on-site help at adaptive sports camps and the DOD Warrior Games. Because AFA covers the overhead and administrative costs of the program, 100 percent of WAP donations received go directly to Wounded Airmen. ✦

Lyndsey Akers is AFA's manager of public relations and social media.

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CHAPTER NEWS

By June L. Kim, Associate Editor

Updates on AFA's activities, outreach, awards, and advocacy.

CENTRAL FLORIDA CHAPTER/AFA GALA

The Central Florida Chapter hosted the 32nd annual Air Force gala in Orlando, Fla., in February. The gala followed AFA's Air Warfare Symposium, drawing a large group of USAF brass as the commanders of Air Combat Command, Air Force Global Strike Command, Air Force Materiel Command, Air Mobility Command, Air Force Space Command, Pacific Air Forces, and US Air Forces in Europe-Air Forces Africa were present.

Central Florida Chapter President Gary A. Lehmann served as master of ceremonies for the evening.

After dinner, Air Force Secretary Deborah Lee James, Chief of Staff Gen. Mark A. Welsh III, Lehmann, and gala chairman for the Central Florida Chapter Michael Liquori took to the stage to honor individuals and organizations for their contributions to airpower and the Air Force.

They recognized members of the 336th Fighter Squadron at Seymour Johnson AFB, N.C., "for their efforts in current operations supporting global precision attack," said Liquori. Capt. James Brantley of the 4th Fighter Wing accepted the award on the squadron's behalf.

Next, they recognized all deployed airmen "conducting global precision attack operations around the globe," Liquori said. Col. Rhude Cherry III of US Air Forces Central Command accepted the award on behalf of all deployed airmen.

Boeing Defense, Space, and Security, a subunit of the Boeing Company, was recognized for building more than 230,000 Joint Direct Attack Munition tail kits, which help turn dumb bombs into "near precision-guided weapons," said Liquori. Shelley Lavender, the president of Boeing Military Aircraft, accepted the award.

The last award of the evening went to Raytheon Mission Systems for its Small Diameter Bomb II. Thomas Copeman, the VP of business development for air warfare systems at Raytheon, accepted the award "for technology on the horizon supporting global precision attack," said Liquori.



Photos by Dan Higgins

At the Central Florida Gala, Col. Rhude Cherry accepts an award on behalf of all deployed airmen from Chief of Staff Gen. Mark Welsh. Secretary of the Air Force Deborah Lee James leads the applause.



Also at the gala, Capt. James Brantley accepts an award from James for the 336th Fighter Squadron. Looking on (l-r): Gala Chairman Michael Liquori, Welsh, and Chapter President Gary Lehmann.



Instructor pilot Julian LonDonovilla (left) and AFJROTC cadet Kody Eisenacher took part in an Eglin Chapter flight program. Chapter Communications VP Amy Gold said such incentive flights can inspire students to consider a career in aviation.

GEN. DAVID C. JONES CHAPTER

A member of the Gen. David C. Jones Chapter in North Dakota was recognized for her contributions in February. Sylvia Wages was recently named Air Force Global Strike Command Volunteer of the Year.

When Wages learned of the honor, her initial reaction was, "I don't deserve this," according to an Air Force press release. "You know when you do things out of love and affection? The last thing you would ever expect is to receive an award," she said.

Wages is the wife of William Wages, who is chapter president and a specialist section chief in the 5th Aircraft Maintenance Squadron at Minot AFB, N.D.

She and her husband are AFA members. She spends much of her time when not tending to their three boys volunteering at clothing drives, food drives, and community events.

EGLIN CHAPTER

More than two dozen AFJROTC students took to the skies in February, thanks to Florida's Eglin Chapter. The chapter made arrangements for students to fly with volunteer instructor pilots at the Eglin Aero Club at Eglin AFB, Fla., said Amy Gold, chapter VP for communications.

Students familiarized themselves with three Cessna 172s, four-seater single engine aircraft, and had 20 minutes of "hands-on flight time" over the Choctawhatchee Bay, said Gold. This "has become a great incentive for AFJROTC cadets as they consider aerospace careers."

Students were picked from local Florida high schools, based on academic and leadership criteria.

The chapter supports the program financially and has coordinated student flights since 2001 because it offers cadets "an incredible introduction to flight," said Gold.

Last year, the Eglin Chapter was even awarded AFA Florida's Exceptional Service Award for Best Single Program for the successful initiative, according to Gold. She said Gary L. Plumb, former 46th Test Wing commander at Eglin and chapter member, coordinates the program and was presented with the award by Chapter President Candace Lovell. Fellow chapter member Tom Randall runs the operations desk and assists with preparing the Cessnas.



Photo by Dan Murphy

Richard I. Bong Chapter Secretary Keith Bischoff (right) talks with guest speaker Coast Guard Lt. Luke Sanders after a chapter meeting in Superior, Wis. Sanders spoke about the Coast Guard's efforts on Lake Superior.

AFA Emerging Leader



Paul H. Weseloh

Home State: Ohio.

Chapter: Alamo Chapter.

Joined AFA: 2004.

AFA Offices: Chapter VP for Leadership Development. Previously Chapter President, Executive VP of Community Partners, and Executive VP.

Military Service: 1981-2010.

Occupation: Chief of Safety, 25th Air Force (civilian).

Education: B.A., M.A., American Military University, M.B.A., University of North Carolina-Chapel Hill.

How did you first hear of AFA?

As a majcom 12 OAY nominee in 1985, I was presented a one-year membership to AFA.

What compelled you to join?

I became a Life Member in 2004 after seeing the synergy AFA brought to the Air Force and community.

What do you enjoy most about AFA membership?

Helping promote a strong Air Force and taking care of our airmen and families. The people I meet and work with in AFA are the fabric of our Air Force story and future of our freedom.

What do you think AFA needs to improve most to increase exposure and draw in more members?

We need to remain relevant to our membership, the Air Force, and our nation. We need Air Force leaders at every level to promote the importance of professional organizations like AFA as part of the profession of arms.

How will you keep building awareness about AFA?

We all need to talk about AFA in our circles of influence. We grow one member at a time, one new Community Partner at a time, and that takes all of us sharing the AFA experience.

LANCE P. SIJAN CHAPTER

Approximately 700 people attended the Air Force Ball in February, sponsored by the Lance P. Sijan Chapter in Colorado Springs, Colo. Gen. John E. Hyten, commander of Air Force Space Command, was guest speaker. Hyten praised the contributions of young airmen and "their devotion to supporting and defending the Constitution," said Linda S. Aldrich, chapter VP.

During the ball, the chapter awarded Brig. Gen. John E. Shaw of US Strategic Command the 2015 General O'Malley Distinguished Space Leader Award.

Shaw is STRATCOM's deputy director of global operations at Offutt AFB, Neb. The award is named after Gen. Jerome F. O'Malley who was commander of Tactical Air Command when he died in an airplane crash in 1985.

Local news anchor Lauren Ferrara was master of ceremonies for the evening. Entertainment was provided by an in-state band, The Martini Shot, and the National Anthem was sung by Orbital Harmony from Schriever AFB, Colo. A local JROTC honor guard presented the colors.



Photo by Linda S. Aldrich

Most senior and most junior: Gen. John Hyten, head of Air Force Space Command, poses with Amn. Basic Shayla Bratton at the Air Force Ball sponsored by the Sijan Chapter in Colorado.

LONG ISLAND CHAPTER

New York's Long Island Chapter held a Vietnam 50th Anniversary Commemorative Medal ceremony last month. Thirty-nine Vietnam War veterans were recognized and received medals at the Cradle of Aviation Museum in Hempstead, N.Y.

This is the sixth ceremony the chapter has hosted, and it has so far awarded 160 medals to war veterans, said Chapter President William G. Stratemeier Jr.

Col. Thomas J. Owens II, commander of Air National Guard's 106th Rescue Wing, US Rep. Kathleen Rice (D-N.Y.), and New York state Sen. Jack Martins (D) were part of the crowd. Rice called each veteran up to receive a certificate and medal.

"These ceremonies have become very popular, with more vets applying for the medal all the time," said Stratemeier. "We are honored to conduct the ceremonies and to remind generations of Americans about the role our veterans have played in defending and protecting our values and way of life."

Local media covered the event and the ceremony was featured in a full-page article in a local newspaper. ★

Photo by Tim Hack



Rochester Institute of Technology AFROTC cadets march in a St. Patrick's Day parade in Rochester, N.Y. Genesee Valley Chapter President and parade committee member Alfred Smith invited them to lead the parade.

Photo by Ed Worley



For the Tennessee Valley Chapter (Ala.), the St. Patrick's Day parade in Huntsville, Ala., was a "great recruiting tool," said Chapter President Frederick Driesbach. The chapter displayed a model of an F-35.

Reunions

reunions@afa.org

504th BG, Tinian (1945). Sept. 28-Oct. 1 at Embassy Suites Kansas City Plaza, Kansas City, MO. **Contact:** Frank Cacich (612-396-7949) (frank.cacich@frontiernet.net).

526th Fighter-Interceptor Sq/Tactical Fighter Sq. Oct. 5-7 in Branson, MO. **Contact:** Bobby Gunter (479-650-7437) (bwgunter@cox.net).

F-100 Super Sabre pilots. May 19-22 in Fort Wayne, IN. **Contact:** Bob Hopkins (540-460-4718) (harmonyhse@yahoo.com).

USAF Bombing Radar and Navigation Maintenance, in Oct. 6-10 in Fairborn, OH. **Contact:** Harry Yarwick (937-864-2907) (xbuffxr@att.net).

Charter Member Pincus Harris

2016 is a yearlong celebration of AFA's birthday. Pincus Harris has been a part of the association for seven decades.

By Bridget Dongu



Harris was helping open an airport in Italy when World War II ended.

In 1946, AFA was just getting started—a grassroots organization with the goal of establishing the Air Force as a separate service branch.

Anyone who joined AFA in those early years received the designation of charter member.

The association tracks membership longevity, and 438 of our members have been with us for more than 60 years. Of that number, 253 are charter members.

Pincus Jay Harris of Somers, N.Y., joined AFA in 1948. Harris fought for three years in World War II in North Africa and Italy with Twelfth Air Force. He was released from active duty with the Air Corps on Jan. 6, 1946, and entered the reserve, where he served for nine years and rose to the rank of sergeant.

Harris is an AFA Life Member and belongs to the Gen. Carl A. Spaatz Chapter in New York.

I asked him some questions over the phone.

Why did you join AFA?

I felt an organization for former Air Force people was good, and good things could happen, so I joined, and I was a charter member. I felt it was a good thing to be a part of an organization that supports the military in the United States.

How has AFA had an impact on the Air Force over the last 70 years?

There were times when I felt the possibility of going to war again. I felt that I should be involved and support the Air Force [through AFA].

What advice would you give airmen today?

Learn all they can about what they are doing and they can really enjoy their work. ✪

Bridget Dongu is AFA's senior manager of communications.

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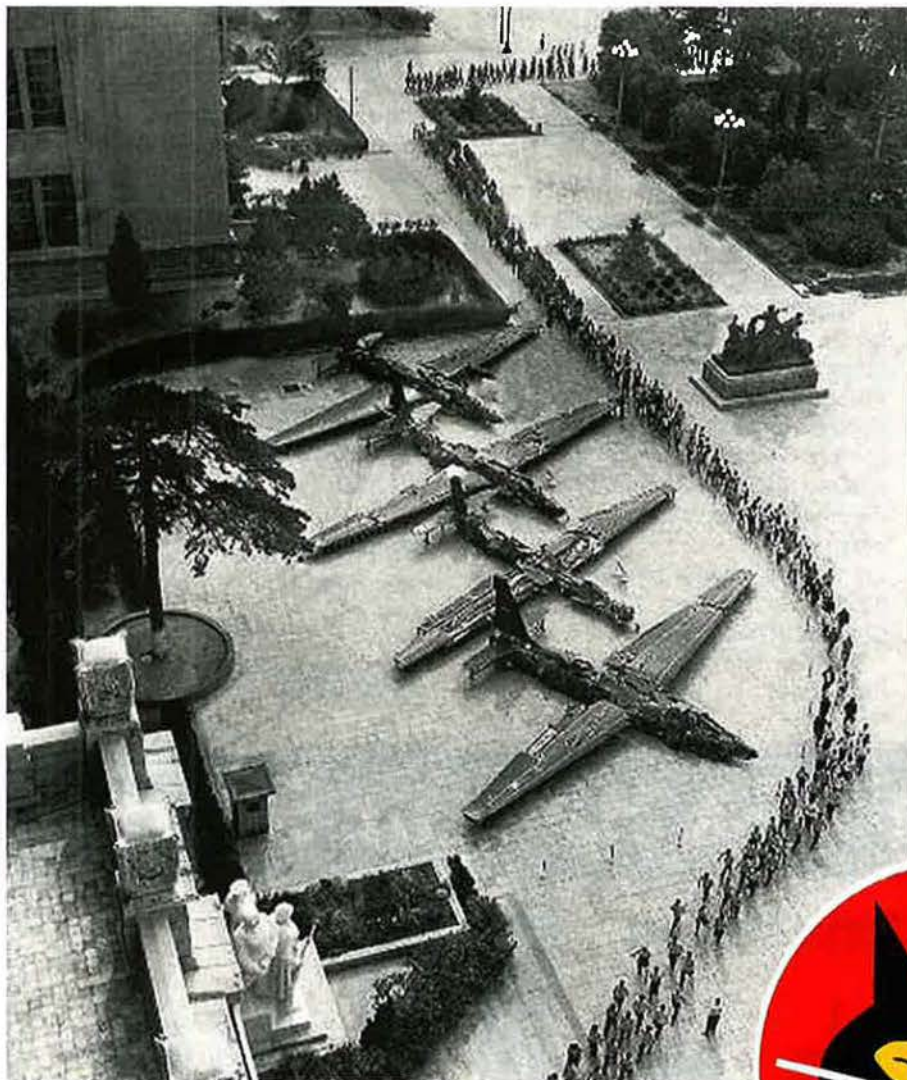


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Dragon Ladies Down



The United States started flying the U-2 spyplane in 1956. A few years later, Taiwan was sending Dragon Ladies on reconnaissance missions over Communist China. These flights were carried out by a CIA-sponsored Taiwanese unit called the Black Cat Squadron. Between September 1962 and January 1965, four of Taiwan's high-flying U-2s were downed by Chinese SAMs. Two pilots died and two were captured. The aircraft themselves survived relatively intact, and Chinese technicians meticulously reassembled the crash pieces. In October 1965, four of these aircraft went on display in a pavilion of the Military Museum of the Chinese People's Revolution in Beijing. One of these downed U-2s is still displayed at the museum. China shot down a fifth U-2, with the loss of its Taiwanese pilot, in 1967. The program officially ended in 1974.



Official emblem of Taiwan's Black Cat Squadron.

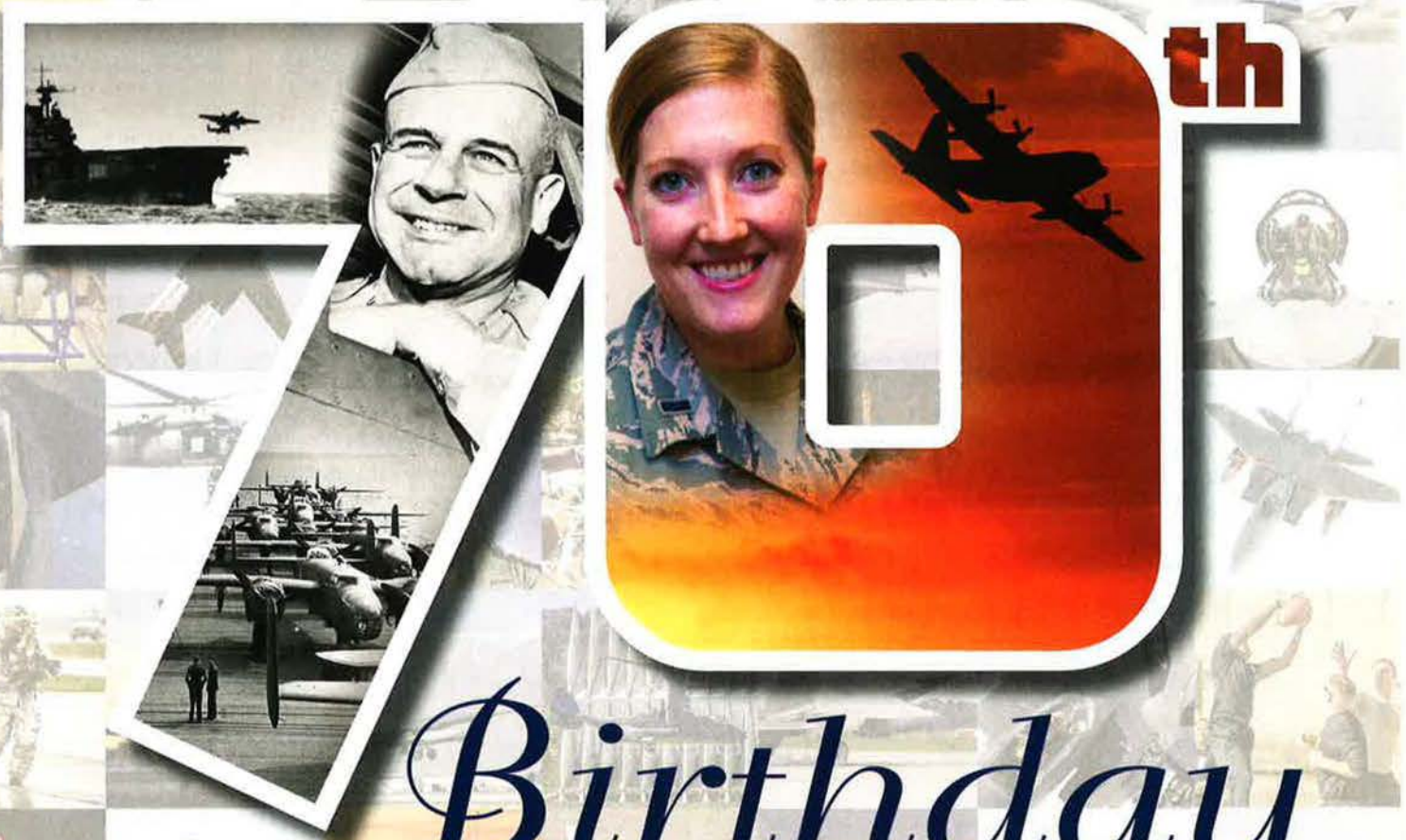


Top: The wrecks of four Taiwanese U-2s, pieced back together by Chinese technicians, on display in Beijing in 1965. Bottom: Current U-2 display in Beijing museum.

Photo by Alan J. Giddings



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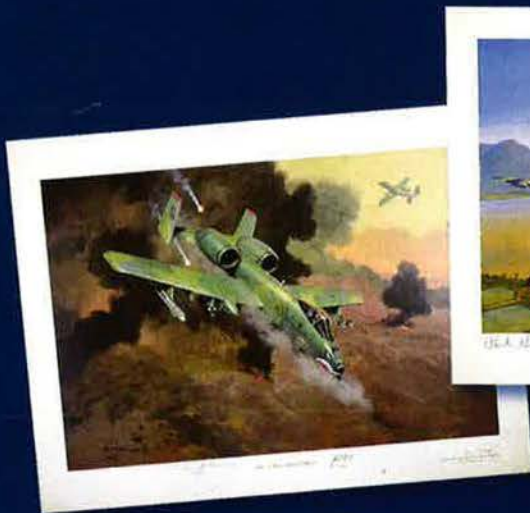


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C-17 Globemaster III



The C-17 Globemaster III, USAF's newest airlifter, joined the active fleet in 1993 and soon went into near-constant operational use. The flexible McDonnell Douglas (and then Boeing) airplane carries out strategic airlift, tactical airlift, combat airdrop, and aeromedical evacuation duties. In many cases, it delivers troops and cargo straight to forward bases in combat areas.

C-17 development was long and hard, filled with setbacks and threats of cancellation, but the lifter proved superb. This high-wing, four-engine, T-tailed transport could use small, austere airfields because its powerful engines allowed it to take off quickly and its thrust reversers permitted landing on runways as short as 3,500 feet.

The C-17 could back up and turn around using a three-point star turn. Airmen loaded cargo through an aft door and ramp large enough for military vehicles and palletized cargo.

The C-17 was first used in a major operation in 1995, when it carried NATO peacekeepers into Bosnia. It anchored USAF's airlift operations in Serbia, Afghanistan, and Iraq and was employed for humanitarian purposes. The C-17 was acquired by nine air arms of eight nations—US, Australia, Britain, Canada, India, Kuwait, Qatar, and United Arab Emirates—plus the multinational, Europe-based Heavy Airlift Wing. Production ended on Nov. 28, 2015.

—Robert S. Dudley with Walter J. Boyne

This aircraft: USAF C-17A Globemaster III—#05-5153, *Spirit of Kamehameha-Imua*—as it looked in 2015 when assigned to the 535th Airlift Squadron, 15th Airlift Wing, JB Pearl Harbor-Hickam, Hawaii.



A C-17 from Charleston AFB, S.C., banks to the right.

In Brief

Designed and built by McDonnell Douglas (now Boeing) ★ main purpose, strategic airlift ★ first flight Sept. 15, 1991 ★ number built 279 (224 USAF) ★ crew of three (two pilots, one loadmaster) ★ four Pratt & Whitney F117-PW-100 turbofan engines ★ armament, none ★ max payload, 170,900 lb ★ cargo capacity (notional), one M1 Abrams tank, three Strykers, or six M1117 armored vehicles ★ seating, 134 troops ★ max speed 570 mph ★ cruise speed 515 mph ★ max range (unrefueled) 2,785 mi ★ weight (max T/O) 585,000 lb ★ span 169 ft 10 in ★ length 174 ft ★ height 55 ft 1 in ★ service ceiling, 45,000 ft.

Famous Fliers

Mackay Trophy 2003: Shane Hershman, Bob Colvin, Matt Clausen, Shawn Brumfield, Chris Dockery (aircrew of Vijay 10, lead C-17 in 2003 combat airdrop). **Air Medal:** Paul Sonstein, Andrew Oiland, Anne Lueck, Jim Alexander, Eric Olsen (aircrew that safely landed C-17 hit by SAM over Baghdad). **Air Force Cross (UK):** RAF Flt Lt. Tim Eddy. **Other**

Notables: Andreas Ix (Kolligian Trophy); Michael Freyholtz, Aaron Malone, Jeffrey Hill, Thomas Cicardo (aircrew killed in 2010 crash); Tim Harris (pilot of C-17 that carried 10,000-lb killer whale to Iceland). **Generals:** Hawk Carlisle, Carlton Everhart II, John Handy, Raymond Johns Jr., John Jumper, Arthur Lichte, Darren McDew, Duncan McNabb, Charles Robertson Jr., Paul Selva. **Test Pilots:** First flight—William Casey (pilot) and George London (copilot); First tactical descent—John Millander (pilot) and Kyle Fields (copilot). Director, test force, Terry Tomeny.

Interesting Facts

Awarded Collier Trophy for 1994 ★ carried forward name of two airlifters—C-74 Globemaster, C-124 Globemaster II ★ broke 22 records for oversize-load flight ★ nicknamed "Moose," "Buddha," "Barney," "Mighty Mouse" ★ designed to airdrop 102 paratroopers and gear ★ suffered landing gear collapse delivering whale to Iceland ★ survived inadvertent "wheels up" landing in Afghanistan ★ has crashed only once—in 2010 in Alaska.



Illustration by Zaur Eytanbekov



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