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An artist's rendering of the X-37B, also known as the Orbital Test Vehicle (OTV), as it conducts an aerobraking maneuver using the drag of Earth's atmosphere. See, "The Case for More Money in Space," p. 48.

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Ssgt. Christopher Sommers/USAF

**U.S. Air Force F-15E Strike Eagles assigned to the 494th Expeditionary Fighter Squadron taxi toward the runway for their first mission, after arriving in the U.S. Central Command AOR on Oct. 13, 2023.**

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# Eyes on the Prize

**N**ews coming out of the White House since President Donald J. Trump's inauguration Jan. 20 is striking in its velocity. The subjects of his Executive Orders and policy memos were unsurprising, fulfilling off-repeated campaign promises, but the speed, volume, and details—or lack of them—caught everyone by surprise. The President executed a battle plan intended to overwhelm his adversaries with speed, force, and complexity.

It worked. Using the military to patrol the border and fly repatriation flights; removing portraits of former Chairman of the JCS, Army Gen. Mark Milley and former Defense Secretary Mark Esper from the Pentagon; shutting down every office and program tied to diversity, equity, and inclusion sucked the air out of the room. What it didn't do was make the military more ready, more lethal, and more capable to deter or defeat a peer foe in battle.

To achieve the President's stated objective of "peace through strength," the nation needs to change its investment priorities and methodology to reinvest and rebuild an atrophied force.

"America needs more Air Force," Air Force Chief of Staff Gen. David W. Allvin said in a January op-ed, a rare but gutsy acknowledgment that cuts over the past decades have left the Air Force undersized and under-resourced for its mission. The Chief acknowledged that the high-end combat training that once gave USAF pilots a defining edge over China and others "has closed dramatically."

He's right. Our Air Force is old, its air fleet averaging 30 years of age—the oldest in history. It is small, retiring more planes annually than it acquires. And it is unready for peer conflict—pilots aren't getting the flight hours they need and aircraft maintenance is in the tank. Mission capable rates for combat aircraft are under 60 percent. If it had to go to war today, the Air Force could launch fewer than 50 bombers against China—and only a few of them would be stealthy.

America likewise needs more Space Force. Outgoing Secretary Frank Kendall has said the budget should double or triple to meet its requirements. Chief of Space Operations Gen. B. Chance Saltzman has laid out a theory of competitive endurance that makes sense because warfighters in every domain depend on space for intelligence, communications, navigation and timing, missile warning and alerts, targeting, and more. America's entire way of war depends on having a robust, resilient space architecture. Likewise, the nation needs offensive counterspace weapons that can hold at risk those, like China and Russia, that already have fielded weapons that threaten U.S. space assets.

New Secretary of Defense Pete Hegseth and presumptive Air Force Secretary Troy Meink have a unique opportunity to deliver on the President's promise to "rebuild our military" and restore "peace through strength." Their window for action is now, and their path to success is in air and space.

The Air Force needs an immediate cash infusion to more rapidly acquire manned fighter aircraft while simultaneously developing and fielding new Collaborative Combat Aircraft (CCA). This is not an either-or proposition. The Air Force needs both.

New developments disclosed in January—and likely lost amid all the political news coverage—indicate pilots in F-35s can manage more CCAs than previously thought. Maj. Gen. Joseph D. Kunkel, working on the Air Force's future force design, said the ratio of unmanned to manned aircraft will be "bigger than we thought." How much bigger? Lockheed Martin CEO Jim Taiclet pegged the number at "up to eight autonomous drones."

That many CCA can radically change the complexity adversaries will face when trying to fend off a U.S. attack. But the key limiting factor is not solely the number of CCA, but rather the number of crewed F-35s. The Air Force should be buying 80 a year. For 2025, its order will be fewer than 40.


CCA are being developed as part of the Next-Generation Air Dominance (NGAD) family of systems, which is also supposed to include a manned platform, the Penetrating Counterair Aircraft (PCA). That aircraft, expected to cost in the hundreds of millions of dollars, or perhaps half of what a B-21 bomber costs, is also central to modernizing the Air Force and deterring China. The Air Force paused its PCA decision last summer, reviewed its options, and an expert panel of former Chiefs and top defense experts concluded it's needed. None of these systems operate in a vacuum. To maximize effectiveness—and therefore deterrence—the Air Force needs B-21, PCA, more F-35s, and CCA.

Don't believe those who tell you we can do it all autonomously. Fully autonomous aircraft operating in concert at the speed of sound are possible someday. But the Air Force needs these aircraft now and someday may still be decades away—if not longer.

Paying for that will take new money. The Air Force has already spent its proverbial pennies under the couch cushions, and you can't buy all that new kit, not to mention the weapons they will need to carry—and pay for—nuclear modernization, T-7 trainers, E-7 Wedgetail AWACS replacements, more tanker aircraft, and the needed flying hours for all those people and planes without increasing the budget. The requirement is over \$30 billion a year for the Air Force alone.

The Space Force needs are also clear (and detailed elsewhere in this issue). The good news is that the baseline numbers are small. The Space Force budget today is a scant \$29 billion a year—a bargain considering how essential it is for every other military service. Building a comprehensive missile defense system for the United States and military bases overseas, including space-based interceptors, could easily triple that number. Enhanced communications and jam-free global positioning and timing, space situational awareness enhancements, and monitoring cislunar space between the geostationary orbital region and the moon—necessary to ensure China doesn't achieve its aim of accessing and controlling that regime first—add to the requirement.

The Space Force will need something close to 10 percent annual budget growth for a decade to achieve all these objectives.

President Trump came to Washington committed to fixing our military. It can't all be done by Executive Order, though. The hard work starts now. 

**America needs  
more Air Force  
... America  
needs more  
Space Force.**



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## Gunning for Defense

I certainly agree with both of these articles ["Editorial: Relearning Old Lessons," September/October, p. 2 and "S&P: A National Defense Strategy Under the Gun," p. 10]. We are at greater risk of major wars than at any time in the past 30 years. The quickest and most effective way that the U.S. and its allies can respond to war breaking out in Europe (e.g., Baltics, Finland etc.) or Asia (e.g., Taiwan) is with airpower.

No military force can move as quickly or with as much force. One area that gives me hope is Rapid Dragon using standoff weapons. For example, if Taiwan is invaded with a force of 10,000 large ships, it is theoretically possible to sink nearly all 10,000 with one sortie of 220 C-17s carrying 45 AGM-158s each.

That would be  $220 \times 45 = 9,900$  missiles with a 1,000-pound warhead that would sink most ships. The problem is that we don't have 9,900 AGM-158s. Thus we need to load those C-17s with the weapons we do have including Tomahawks, Harpoons, Naval Strike Missile, SDBs, JSOWs, and JDAMs. Obviously to use JDAMS the C-17s would have to get close to their targets, which would mean air superiority would have to be established first. Furthermore, it is never good to have a strategy relying on just one delivery system. Thus we need to strengthen the Air Force across the board.

The task we face is much more acute than Persian Gulf War I.

The critical thing for people in Congress to realize is that the Communist Chinese will probably come with 25,000 ships on Day One.

We have to be able to knock out about 10,000 of the larger ships on Day One.

This will take more missiles, not more aircraft. But we also need to establish air superiority simultaneously. Not an easy task. Hopefully the CCAs will be ready in time. I'm pro Navy, but more Navy ships aren't going to stop an invasion by Communist China ... anti-ship missiles are.

William Thayer  
San Diego

John Tirpak's "Strategy & Policy: A National Defense Strategy Under the Gun," [p. 10] did an excellent job of presenting just how precarious our U.S. military situation is. Specifically citing the fact that USAF is "at the forefront of a host of missions," ranging from homeland defense, to rapidly projecting power worldwide, including intelligence support which "allows the rest of the force [USAF & USSF] to function."

Sadly, our nation is fractured and cannot seem to "get its act together." The only way to provide USAF/USSF with the necessary manpower, equipment and weapons systems to achieve "peace through strength" again in this 21st century is for the President and Congress to work together to allocate the necessary funds to make it happen, equipping our U.S. military to meet every contingency. But that has not happened for several years now.

Then, it's too late to do much about it. I'll end with this thought: Peace through strength can be achieved again. This nation needs strong, unwavering, and demonstrative leadership which has what it takes to allocate the necessary resources to plan, execute and follow through making hard decisions in the process to rebuild our nation's ability

## WRITE TO US

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## AFA's Mission

Our mission is to promote dominant U.S. Air and Space Forces as the foundation of a strong National Defense; to honor and support our Airmen, Guardians, and their Families; and to remember and respect our enduring Heritage.

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to defend itself ... through the creation of effective networks, alliances, and coalitions.

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

## Eye on the Sky

Given the advent of omnipresent FPV [first-person view] drones likely near all of our installations worldwide [referring to, "Fighting the Air Base," September/October, p. 37], I would suggest as an emergency measure the deployment of rapid-firing, semiautomatic shotguns with appropriate ammunition to all vulnerable locations.

As a starting point, imagine every Security Force vehicle/team possesses one shotgun, with concomitant training based on skeet shooting. In addition, perhaps every aircraft crew chief or maintenance team should also have such weaponry available.

If a bunch of maintainers are on the flight line preflighting say an F-15E, then there should be one trained and equipped member standing watch, facing the likely threat axis from outside the perimeter. Skeet shooting competitions and awards should be pushed to improve the anti-drone skills of as many deployable Airmen as possible.

It is true that these engagements would occur at "danger-close" distance, but of course, detonation of a drone's fragmentation charge at 30 meters is far better than it would be landing in the middle of 10 people, or on the top of a fueled aircraft. Shoot/no-shoot training would be critical, of course. This project could be started immediately if desired. And the skeet shooting competitions would be good for morale.

Another morale advantage would be gained because no one likes the idea of being killed by a drone without at least fighting back—you know what I mean! To start with, perhaps 200 shotguns and 100,000 rounds of ammunition, and coordination with some of this country's skeet-shooting experts and associations. I am sure they would be thrilled to help.

This program should immediately be coordinated and implemented in the Ukraine as well. All important places and vehicles should have at least one person with a shotgun ready and watching the sky at all times these days.

MSgt. Chris Dierkes,  
106th Rescue Wing, NYANG  
Westhampton Beach, N.Y.

Forty years ago, I was the base commander on one Strategic Air Command dual-wing base and three U.S. Air Forces in Europe bases, one ground-launched cruise missile base and two fighter bases. That was back when the base commander focused on base support, base defense, survivability and recovery, and the wing commander focused on the mission.

About the time I left USAFE, the fighter pilot leadership did away with the base commander title, retitled combat support to mission support, and wing commanders divided their focus between mission and all the other tasks, not trusting those in the support area to do their jobs without being micro-managed.

During the combat support group days, in wartime, the wing commander and his battle staff concentrated on generating aircraft and fighting the war. My job was to run the Survival Recovery Center (SRC), with a battle staff made up of all the key support functions. The security forces took care of base defense, the base engineer had rapid runway repair capabilities, and we were hardened, camouflaged, and survivable.

Simply said, my job was to give the wing commander a functioning and defended base so he could fight the air war. NATO Tactical Evaluations were a tough test of both the mission and the support. Nothing was more exciting than exiting a gas-filled SRC in full chem gear with M-16 in hand, carefully maneuvering my staff car out of its revetment around an unexploded 500-pound bomb and making my way to the backup SRC under simulated enemy small arms fire.

It sounds like in the 35 years since I retired, all that has gone away and we are trying to bring it back, but with today's technology. Let the wing commander do his job and focus on the air war, and bring back a combat support commander tasked to provide him a base to fight from.

Col. Charles G. Simpson,  
USAF (Ret.)  
Breckenridge, Colo.

## Oldie But Goodie

The U.S. Air Force is about to put all the A-10s away. They are making a mistake, but so be it. It's the only platform

that can take a hit from the most widely used weapon, an AK-47.

But don't fret, they did the same thing during the Vietnam War with the A-1. They put all the A-1s in the Boneyard and had to get them out for work when they finally figured out they really needed it.

Don't get me wrong, I love the stealth technology. But line up an F-22, F-35, F-16, F-15, and an A-10 on the flight line and rack a magazine of AK-47 rounds randomly at each platform and see which one can taxi out and take off!

Col. Clyde Romero,  
USAF (Ret.)  
Marietta, Ga.

## There's No 'R' in Commission

With regard to "World: Airmen Development Command Taking Shape" [November/December 2024, p. 34], in the evolution of Airmen education and training, and more than a name change, the new Airmen Development Command will provide the next generation a foundation for success.

As for officer development, another change is needed. Remove R (reserve) from ROTC. From what I understand, only officers commissioning to the Guard or Reserve received a reserve commission. Those going on Active duty receive regular commission.

This change will more accurately reflect the characteristics of officers commissioned through this source.

Col. Charles Unice,  
USAF (Ret.)  
Springville, Utah

## Define Deterrence

I wish to comment on two related articles that appeared in the November/December issue: "Weaponizing Space," [World, p. 24] and "Launch: The Fundamental Prerequisite for Space Superiority" [p. 40] by Col. Charles Galbreath.

I spent half my USAF career in the launch business, both space and ICBM test, with assignments at both our major launch bases, and four assignments and three tours with the Los Angeles Air Force Base, Calif., organization, including the F-15 program office, now part of Space Force's Space Systems Command, an organization established and led by then Brig. Gen. Bernard Schriever 70 years ago—the father of our launch business.

In the first article, I'm glad to see our



leaders speaking out for the need to include counterspace capabilities and strategies, although no other specifics were provided; "space fires" were not defined. Kind of theory without fury. Developing resilient satellite constellations and responsive launch to replace lost satellites is defensive in nature and does not constitute much of a deterrent. Deterrence requires a clear communication of a potential threat to the enemy's space capability should they attack our space assets.

Both Generals [B. Chance] Saltzman and [Kevin P.] Chilton endorsed that thought. Such a deterrent should not be limited to Space Force assets, but should include all necessary military capability to silence the threat should it be implemented. Unfortunately, the only joint force counterspace example mentioned was a Navy ASAT launch. Counterspace should not be confined to fighting a battle in space. You do not need Space Force assets to threaten or take out surface-based space assets of the enemy, like the GPS jammers currently operating effectively in the Ukraine battlefield.

Galbreath's article on space launch summarized his complete piece for the Mitchell Institute. Although there is no dispute with his title, his historical summary, and some of his main points, I think both he and our Space Force leaders in the first article fail to clearly put these space capabilities in context.

What level of conflict are we talking about? If it's a hot war, we won't be conducting surface-based space operations. All our surface-based space assets, like launch infrastructure, won't be there. We won't be conducting responsive space launch or counterspace operations. To paraphrase former Secretary of Defense Donald Rumsfeld, "You go to war with the [space capability] you have, not the [space capability] you might want or wish to have at a later time."

So, I submit that both articles and all other speeches and papers I have observed since Air Force Space Command was first stood up 40 years ago, and now Space Force, are addressing the ongoing "space cold war." This is a conflict characterized by each side testing and probing each other's capabilities and responses; evaluating, employing proxies, conducting sabotage, and destroying or degrading targets of opportunity, clandestinely or even openly if possible. Perhaps it may include "tit for tat:" You take out one of

my satellites, I take out one of yours (if I had the capability and will).

Galbreath emphasizes the need for deterrence and then, winning should deterrence fail. I have trouble defining a win in a space cold war. And in such a conflict, I don't see the homeland directly threatened.

My comments regarding some of Galbreath's details are admittedly more detailed. He cites four important trade-offs when planning for a launch infrastructure, but I'm not sure these provide much guidance to Space Force leaders. His "cadence" equates to launch rate, which does not seem to consider the multiple satellites per launch enabled by small satellites.

His "confidence" (which I equate to reliability) may very well relate to cost, but I can't see a launch system designer dialing back reliability to reduce cost. It doesn't work that way. A launch infrastructure planner has to start with the mission. What is the space capability that is wanted? Then, evaluate the options to achieve the mission, using Galbreath's trade-offs and many others.

I also don't share his concern for the current space launch infrastructure and any urgent need for the Space Force to generate new programs to enhance or expand it. We now have a host of launch providers and significant launch bases, some with multiple launch sites for some providers.

In an emergency situation, even in a Cold War scenario, I sure don't see us unilaterally constraining ourselves with safety rules.

I admit to my perspective of 40 years ago when all the expendable launch production programs were at an end, and we had put all our space launch eggs in the shuttle basket.

Lastly, I thank Colonel Galbreath for putting one more nail in the coffin of ideas for employing human spaceflight for Space Force operations. His reminder of the extensive recovery time after the two space shuttle disasters should be sufficient, but I can also attest to the time and resources it took to plan, design, integrate, test, and navigate the arduous readiness review process prior to a shuttle mission, even for unmanned nationally significant satellites.

Col. Dennis E. Beebe,  
USAF (Ret.)  
Solvang, Calif.

## One More to the List

Col. Phillip S. Meilinger's list of books

provides an outstanding guide for better understanding the lessons of World War II ["America's Air War in Europe" November/December, pp. 46-51], but I wish he had included one more book on lessons from that war, Air Marshal Arthur Tedder's war memoir "With Prejudice."

During World War II, Tedder not only transformed the Royal Air Force in the Middle East into an effective war-winning organization, he also was key to educating the other two services that airpower was key to waging joint warfare. When U.S. forces arrived in North Africa, Tedder soon earned the respect of key American Soldiers and Airmen, helping show them how operate in a coalition environment.

As U.S. Gen. Dwight Eisenhower's deputy, Tedder played a key role in integrating Allied airpower into Operation Overlord. Sadly, it appears that the lesson Tedder taught American Airmen and Soldiers about the importance of air bases to achieving air superiority and campaign success was soon forgotten.

This may explain the flawed decision to leave the Army with responsibility for air base air defense and air base construction when the U.S. Air Force became a separate service.

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

## Drink Up

"Is China Prepared to Uncork the Nuclear Option?" [November/December 2024, p. 11] is perhaps a rhetorical question, in my humble opinion.

The nuclear option provides a deterrence to other nuclear powers and provides an ability to threaten or bully nonnuclear countries that are indebted to China for industrial, economic, or infrastructural developments. Therefore, China's nuclear option is, in fact, already "uncorked."

As long as China may fear the potential destruction of its enormous and stupendous physical structures in its exquisite cities, I do not think China would offensively launch its nuclear weapons against the U.S. China's military facilities and capabilities are less endeared.

As a result, the U.S. should openly place all of China's major cities on its primary retaliatory nuclear target list as viable deterrence.

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



## Lost in Translation

“Deterrence” is often translated to a Mandarin word, *wēishè*, that implies coercion. So I want to be clear: we are not trying to coerce or compel the PRC. That is not our goal, nor our approach. And that’s not the only example of words DOD uses that we’ve learned the PRC can misinterpret.”

—Then-Deputy Defense Secretary **Kathleen H. Hicks**, Jan. 10, on lessons learned from strategic competition with China.



2nd Lt. Kate Anderson/USAF

## OLYMPIC AIRMAN

“My BMT experience is one I will carry with me for the rest of my life. ... The regimen, discipline, teamwork, and resilience needed to get through the past 7½ weeks felt similar to what was needed to make it to and through three Olympic Games and all the challenges I’ve faced along the way.”

—Airman **Anita Alvarez**, a three-time Olympic artistic swimmer, who graduated boot camp Jan. 9 and will join the Air Force’s World Class Athlete Program [Jan. 9].

## Danger Zone

“It’s a different world when China, Russia and the U.S. all have a thousand-plus nuclear weapons in the field. It gets more dangerous as there’s other countries that are proliferating weapons. It gets more dangerous as people think about and talk about using tactical nuclear weapons as part of their escalation control, or just for military objectives, which Russia is doing quite a bit of, and China is moving, more slowly, but potentially more in that direction. The lack of dialogue really bothers me. ... I think it is going to be a much more dangerous world going forward, and I think we need to start doing our best, despite the state of current relationships ... to get dialogue happening on as many levels and as many places as possible, to gain a greater understanding of each other and hopefully start to appreciate some of the risks, here. ... It’s going to be a dangerous time.”



Jud McCrehin/staff

—Former Air Force Secretary **Frank Kendall** on the perils of a world without multilateral arms control protocols, CSIS interview on the Air Force of 2050 [Jan. 13].

## REHIRED

“This week I will reinstate any service members who were unjustly expelled from the military for objecting to the COVID vaccine mandate with full back pay. And I will sign an order to stop our warriors from being subjected to radical political theories and social experiments while on duty. It’s going to end immediately. Our armed forces will be free to focus on their sole mission—defeating America’s enemies.”



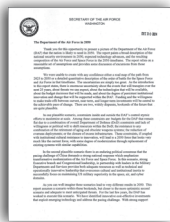
M Sgt. Christine Wood/ANG

—President **Donald J. Trump** in his inaugural address [Jan. 20].

## THE BOTS IN CONTROL

“Well before 2050, the use of advanced decision and decision support tools will be at the core of a variety of military functions and capabilities.

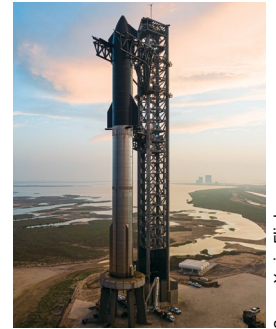
In both the air and space domains, decision dominance will depend on AI technologies. Battle management (BM), the control of forces in planning phases and in dynamic decision-making during execution of military operations, is an obvious application. Using AI to inform planning for the fight and its dynamic execution may be its area of greatest impact. Extraction of target identification and tracking from large multisensor databases is another. Areas of conflict that move at speeds vastly exceeding human decision time constants, such as cyber warfare and electronic warfare, are likely to be dominated by AI technologies that assess events happening at unimaginably fast speeds and unimaginably small dimensions. These technologies will be used to make crucial decisions with no possibility of human intervention.”



USAF

—Department of the Air Force Report to congressional committees, “The Department of the Air Force in 2050,” December 2024.

## Starship



SpaceX via Flickr

“There’s only one country in the world that can parallel park a 200-foot rocket booster. The Chinese can’t do it. The Russians can’t do it. We do it, and we do it in part because of the great collaboration we have and can have and need to deepen between the private sector where there’s so much innovation and ingenuity in the space of emerging technologies.”

—CIA Director **John Ratcliffe** at his confirmation hearing, referring to the technical prowess of SpaceX’s Starship rocket, which is undergoing flight tests [Jan. 17].

## Warrant For Speed

“This focus on great power competition has galvanized us as an Air Force to come together and get things done. I’ve been in the Air Force just about 18 years and I’ve never seen us move this fast on a program.”

—Lt. Col. **Justin Ellsworth**, career field manager for cyberspace operations officers, on the pace of standing up the return of the Air Force warrant officer program in just 296 days [Dec. 3, 2024].

By John A. Tirpak

# Kendall: His Legacies and Look Ahead

**F**rank Kendall, the most consequential Air Force Secretary in years, departed the Pentagon in January at the end of an eventful three-and-a-half-year tenure as the 26th Secretary of the Air Force.

His most important contribution, he thinks: Raising “a sense of urgency” about the need to modernize the Air Force and Space Force to ensure the United States stays ahead of China.

“I feel reasonably good that we’ve made that transition; that there is a growing awareness throughout the department that we have got to be ready for a peer competitor unlike any that we’ve probably ever seen before,” Kendall said. A threat, he added, “that has to be approached with a sense of commitment and urgency across the enterprise.”

In an early January interview with Air & Space Forces Magazine, Kendall’s goal on arrival was to put “meaningful operational capability” into the hands of operators as quickly as possible. He saw “no time to waste” as China’s advances accelerated.

Now, on departure, he reflected on his initiatives of the last few years, beginning with the most ambitious, the launch of a new generation of semi-autonomous uninhabited combat jets dubbed Collaborative Combat Aircraft (CCA).

## CONCEPT TO REALITY

Conceived of well before Kendall under various guises, the concept of unmanned “loyal wingman” aircraft accompanying conventionally crewed combat jets has been spoken of for more than a decade. But CCA are not just research projects; the CCA program started on Kendall’s watch and two contractors, Anduril and General Atomics, have contracts to produce aircraft, making this the “most transformative” of the programs launched during Kendall’s tenure, he said.

CCA will give the Air Force “affordable mass”—that is, increase combat capacity at a lower cost, enabling the Air Force to complicate defenses for adversaries and increase operational flexibility for itself. Kendall has projected the Air Force having as many as 500 CCAs by the end of the decade, and expects the program to serve as a template for how future programs could be run.

“We are no longer in an era where we can buy a platform, wait for it to wear out, and then replace it,” Kendall said at a Center for Strategic and International Studies (CSIS) event in January. “We’ve got to buy things to stay competitive over time, and that’s going to be a fundamental change in how we resource and plan for the future.”

The Air Force wants the CCA program to be structured so that upgrades can be fielded swiftly, and Kendall hopes future aircraft and weapons can be developed following the same model.

Increment 1 of the CCA program will multiply the number of weapons available to combat pilots, enhancing fifth-generation fighters like the F-22 and F-35 which are load-limited because they must carry weapons internally to maintain stealth. These CCAs will



Eric Dietrich/USAF

**Former Secretary of the Air Force Frank Kendall looks ahead to the continued modernization of the Air and Space Forces and the urgency needed to stay ahead of all rivals and threats. This challenge will take additional funding from Congress.**

operate as weapons trucks that pilots in the stealth jets can direct against adversaries. Kendall has said Increment 1 should cost a third of the price of a crewed F-35.

Kendall said CCA will be “fielded within the next few years,” delivering an “enormous operational payoff.”

The Air Force will fly Increment 1 aircraft “in operational units and ... exercises,” he said, and will also participate in experiments with surrogates, such as autonomously flown F-16s as the Air Force develops concepts of operations and tactics for using CCA.

“Increment 2” requirements are still being debated, Kendall said. It might have some additional capabilities, he said, and its cost could rise 20 to 30 percent over Increment 1, but it doesn’t need to be “exquisite.” It’s clear that “you don’t necessarily have to put” all the electronic warfare, targeting sensors, and related capabilities on “every aircraft you put in the sky.”

The beauty of these aircraft is that the adversary will struggle to tell the difference between a CCA and an F-35, so adversaries will have to combat them as if each is a fully loaded crewed fighter.



“I think figuring out Increment 2 and making a decision on that will be an important task for the new administration,” he added.

## SPACE TRANSFORMATION

Kendall sees enormous potential in space—as well as great risk—and has prioritized the need for offensive weapons.

Counterspace capabilities got “my highest priority for things that, strategically, we need to fund and accelerate,” Kendall said. “It’s number one on my list.” Kendall was short on details for reasons of security. “This is an area where you would prefer not to give your adversary the advantage,” he said. “I’m not giving the adversary any more time.”

The nation needs “an efficient [and] cost-effective way ... to deal with the very large numbers of [intelligence, surveillance and reconnaissance] and targeting satellites that our challengers are putting up,” Kendall said. “Individual interceptors launched from Earth or from aircraft is not an effective way to do it.”

Over time, Kendall has become increasingly convinced that the Space Force budget must grow and that the Air Force cannot be the bill-payer, but rather new funds must be directed to USSF. “There’s widespread understanding that the Air Force alone can’t pay for what the Space Force needs,” he said, indicating he is not alone in that view.

The objective he has said for the past year is a lot like what the nation did when it transitioned the U.S. Merchant Marine into a fighting Navy before World War II. “That’s not cheap. It’s a major deal,” he said. “It’s a strategic shift that we have to recognize.”

In a paper Kendall delivered in December to the Senate Armed Services Committee about the Department of the Air Force in 2050, he outlined a “much bigger, much more capable, much more powerful Space Force,” one which would absorb former Air Force missions like ground- and air-moving target indication; jamming; and counterspace. By then, he imagines a Space Force four times its current size, suggesting a force of nearly 40,000 Guardians.

“Trying to do that just out of the [budget of the DAF] ... doesn’t work,” he said in the interview. “I think the other services need to be part of it too. We’ve got to look at the total of the DOD budget and the priorities for that overall.”

## ROLES AND MISSIONS

The Army has the mission of defending air bases, but is not investing in that function at a rate to match the Air Force’s Agile Combat Employment initiative, which seeks to widely disperse its forces in wartime at many locations. By avoiding large centralized air bases, USAF wants to make it hard for an adversary to quickly wipe out large chunks of the combat force with many long-range, precision missiles.

“We’ve been working well with the Army on this, trying to figure out the best solutions,” Kendall said. “I think we’ve pretty well come to agreement there’s some technical issues we have to work our way through.” He acknowledged that the Army’s Patriot and THAAD systems are too costly and too few in number to tackle the threat as it is now evolving, and said it will require a “very joint approach” to solve the issue.

“If the Army can’t do a better job than we can, maybe we should do it,” he said.

But Kendall said he is “not worried” by the Army investing in long-range strike weapons, even though that’s an Air Force core competency. The Army’s hypersonics program is developing long-range, hypersonic missiles at a nominal cost of \$40 million each. That weapon would have the destructive power of a single 2,000-pound bomb, but cost roughly 1,800 times more.

The Key West Agreement of 1948 set the roles and missions of each of the branches to prevent them poaching on each other’s

functions. Kendall suggested revisiting that now, nearly 80 years later, would be wise.

“Does it make sense to go back and have another meeting...about roles and missions? I don’t think that’d be a bad thing,” Kendall said. “I think there are a number of issues like that. It’d be worthwhile.”

## THE NGAD DECISION

One program Kendall did not resolve is what to do about the Next-Generation Air Dominance (NGAD) program. Last summer he put a hold on the program and commissioned a high-level panel of experts to consider options ranging from proceeding with a down-select to rebaselining the requirements. The panel made recommendations, but at the end of the review, with a new administration coming to power in Washington, he punted the decision to his successor.

“Anything I did with a couple of months left in office was likely to be reconsidered, anyway,” Kendall reasoned. The next administration should “own” that decision, he said. “This is a tens of billions of dollars commitment, ... a multi-decade commitment, so you really want to be sure you’re pursuing the best operational capability with those resources,” he said. Leaving that to the next Secretary “was the right thing to do.”

What prompted the pause was the breathtaking price of NGAD, which Kendall had previously said would cost in the hundreds of millions of dollars per airplane. Other priorities—including “more aggressive counterspace capabilities” and air base protection—need to be weighed against it, he said.

Despite convictions voiced by Elon Musk, CEO of SpaceX, and others that the Air Force should only pursue uncrewed autonomous aircraft, Kendall said the technology is not there yet. There will be a “continuing need for crewed aircraft to have reliable communications and command and control over uncrewed aircraft,” he said at CSIS.

New strategic and tactical transports are another crucial area for modernization, Kendall said. Today’s airlifters and tankers are not survivable against China’s newest long-range air-to-air missiles and a recent analysis of alternatives found “there is definitely a need to improve the survivability of the current fleet,” he said. “That’s something the new team is going to have to take a hard look at.”


## FUNDING, FUNDING, FUNDING

Asked about his greatest disappointment during his tenure, Kendall broadly noted the seemingly endless delays in getting defense bills passed by Congress. Continuing resolutions are not a meaningful bandage, he said, because under them, most new starts cannot begin and other programs are held at previous levels of funding.

He praised Congress for some “additional authorities” that would allow some critical new work to proceed. But the time wasted waiting for authorizations can’t be gotten back, he said, and China has no analogous problems slowing down its innovation and advancement.

Does Kendall think his initiatives will survive? He pointed to the common adversary as providing the answer. “The focus on China as the pacing challenge” began under President Donald Trump’s first term, when the 2018 National Defense Strategy (NDS) emphasized an era of great power competition. That phrase was dropped from the Biden administration’s 2022 NDS, but Kendall employed it in driving his 2024 priority, which launched a plan to “reoptimize” the department for “great power competition.”

“I think it will [remain] the central part of the strategy during the second term, just as it was for us in the last four years,” he said.

One could almost hear him saying, as he did to open multiple speeches at AFA events over the course of his tenure, “China, China, China.” Some things are constant. 





An Air Force pararescueman from the 82nd Expeditionary Rescue Squadron emerges from the Gulf of Aden during exercise Bull Shark, a joint multinational exercise near Djibouti in November. The U.S. continues to defend international shipping transiting the Gulf of Aden and the Red Sea against attacks launched by Houthi rebels in southern Yemen. For an inside look at a long-distance rescue mission by Air Force PJs in the Pacific Ocean, see p. 28.





An F-35 breaks the sound barrier while practicing air show maneuvers at Hill Air Force Base, Utah, in December. Lockheed-Martin has built more than 1,000 F-35s, and the Air Force inventory will top 500 this year. USAF plans continue to call for a force of 1,763 F-35s, but getting to that goal remains elusive. The Air Force once envisioned buying up to 110 F-35s per year, but only requested 42 for 2025. At that rate, it will take into the 2040s to build all the jets still planned.

Senior Airman Nicholas  
Ruppert/USAF





U.S. Air Force Staff Sgt. Christopher Ramirez, a combat crew communications technician assigned to the 6th Operations Support Squadron with the 6th Air Refueling Wing, is welcomed home by his daughter, Misha, at MacDill Air Force Base, Fla., just after New Year's, following a deployment to the Middle East. Misha is among more than 400,000 dependent children of U.S. Airmen, a reminder that behind every Airman is a family..

Staff Sgt. Lauren Cobin/USAF



# FACES OF THE FORCE



**Senior Master Sgt. Anthony Colón** was one of seven Airmen to be named among AFCEA's 40 Under Forty for 2024. Colón, superintendent for the 43rd Aircraft Communications Maintenance Squadron at Creech Air Force Base, Nev., was chosen by the Armed Forces Communications and Electronics Association for his significant contributions to technical science, technology, engineering or mathematics. Colón, a satellite communications and maintenance specialist for MQ-9 Reaper aircraft, was the highest-ranking enlisted member recognized. Other Air Force awardees among the 40 are: **TSgt. Kadir Amat, MSgt. Jamal Barnes, MSgt. Dean Natividad, Maj. Eric Nevins, TSgt. Wynnie Rogers, and TSgt. Stephanie Tolver.** "This award encapsulates all my achievements during my Air Force career," said Colón.



Courtesy  
Senior Airman Victoria Nuzzi



Airman 1st Class Savannah Carpenter

**Staff Sgt. Farah Butler**, unit training manager with the 71st Rescue Generation Squadron, balances her military career and passion for basketball. Inspired after watching a friend play, Butler tried out and earned a spot on the 2024 U.S. Air Force Women's Basketball Team after not making the team in 2023. Her strong performance secured her place on the 12-member roster. The team finished the season undefeated, bringing home gold at the Armed Forces Tournament held in Georgia in October. "Basketball has taught me mental endurance so I can keep going even when I am tired. With what I learned along the way, I am able to push through anything," Butler said.



Andy Morataya

**Maj. Nick Atkins**, 31st Fighter Wing project lead, facilitated the win of the 2024 Spark Tank competition, along with his team, with their prototype collapsible F-16 ladder. The ladder, which fits inside the aircraft's map case, allows F-16s to deploy and redeploy quickly to austere locations, improving flexibility during operations. Atkins said the innovation helps solve logistical challenges by enhancing F-16 readiness. It solves "a logistical problem by enabling resilient basing requirements and equipping our F-16s with enhanced readiness to deploy and fight," Atkins said. His idea—chosen from 138 entries—beat out five other finalists to win the Spark Tank competition.



USAF

**Senior Airman Isaiah Demillo**, a country liaison with the 82nd Training Support Squadron at Sheppard Air Force Base, Texas, created the Demillo Rigger's Tourniquet Belt or DRT, an innovative lifesaving tool. Inspired by Tactical Combat Casualty Care training, he designed a belt with a built-in windlass tourniquet to address emergency needs. With help from Sheppard's Spark Cell and technical experts, Demillo brought his idea to life using sewing and 3D printing. The DRT belt, compatible with operational uniforms, ensures a tourniquet is always within reach, potentially saving lives in critical situations. "I love to ask people, 'Do you know where your nearest tourniquet in this building is?' Most answer, 'No, no clue,' or 'It's so far away,'" Demillo said.



Airman 1st Class Nelvis Sera

**Airman 1st Class James Long**, a vulnerability management technician with the 26th Network Operations Squadron, earned the 26th Cyberspace Operations Group commander's coin for his extraordinary leadership. Long stepped in for a deployed supervisor and led 18 personnel, managed 182 cyber tasking orders, resolved 79 trouble tickets, and certified Airmen in critical tasks. His efforts safeguarded \$166,000 in equipment. "I feel my team appreciated me during this time. I personally strive for perfection and put in as much effort as I can," said Long.



Senior Master Sgt. Jeffrey Schultze

**Staff Sgt. Iulia Lytvynova**, a personnel specialist with the 195th Wing, Force Support Flight, completed the Alcatraz Invitational swim race this past September in San Francisco. Braving 60-degree waters and rough seas, she finished the 1.3-mile swim after eight months of intense training focused on endurance, technique, and cold-water acclimation. Overcoming mental challenges, such as fear of open water and sea creatures, Lytvynova emerged with a sense of accomplishment and life lessons, inspiring others to embrace challenges and discover their full potential. "I learned no matter how scared you are, believe in yourself, be confident in your abilities because you trained for it," said Lytvynova.



2nd Lt. George Schroeder

**Airman 1st Class Elijah Youngblood**, a 19th Civil Engineer Squadron, Little Rock Air Force Base, Ark., explosive ordinance disposal (EOD) team member, received the Senior Master Sgt. Margaret Frances Barbour Military Award at the Tuskegee Airmen National Convention last August. The award, presented to only four military members annually, recognizes excellence in achievement, development, and community service. Youngblood, known for his leadership in squadron initiatives and dedication to mentoring foster youth through Immerse Arkansas, embodies the values of service and trust. "If I didn't have that trust, I would not have even been able to do anything that I've been able to complete," said Youngblood.

**Tell us who you think we should highlight here. Write to [afmag@afa.org](mailto:afmag@afa.org)**

# More Air Force, a Missile Shield, and the Pentagon's New Boss

**Allvin says today's Air Force is too small. Can he convince Hegseth?**



Jud McCrehim/staff

**Gen. David Allvin, Chief of Staff of the United States Air Force, plans to work with the new administration on increasing investments in airpower and manpower to protect the U.S. homeland and ensure a ready force for the future.**

By A&SF Magazine Staff

**A** year into his role as Air Force Chief of Staff, Gen. David W. Allvin is acknowledging something Air Force critics have been saying for years: “We need more Air Force.” The Chief first voiced that concern in November at the Mitchell Institute’s Airpower Futures Forum and followed up with a January essay on *BreakingDefense.com*: “America needs more Air Force and it needs it now,” he wrote. “Today, our aircraft fleet is smaller and older than any time in history, and the gap between our high-end combat training and that of our pacing competitors has closed dramatically. ... It is my assessment this risk is unacceptable and will continue to rise without substantially increased investment in airpower.”

Allvin’s plea comes as a new administration takes over in Washington, D.C., bringing with it new priorities and perspectives at the Pentagon. New Secretary of Defense Pete Hegseth and prospective Secretary of the Air Force Dr. Troy E. Meink, who was awaiting confirmation at press time, will have some chance to tinker with the fiscal 2026 budget before sending it to Congress in March or April—but the President seems intent on more than tinkering. The White House pumped dozens of executive orders out and policy memos following President Donald Trump’s inauguration Jan. 20, covering everything from the border crisis to diversity, equity, and inclusion (DEI) and a space-based missile defense system.

Even before Hegseth was confirmed, the Pentagon ordered a shutdown of DEI offices and programs. Then came aftershocks: Air Education and Training Command identified and suspend-

ed use of a three-hour block in the Basic Military Training curriculum that had “DEI material,” prompting news stories saying the Tuskegee Airmen and Women Air Force Service Pilots (WASPs) were no longer being remembered at BMT. That, in turn, led Trump supporters to claim the Air Force cut the videos intentionally to spark outrage, calling the action “malicious compliance.”

The truth was more benign, Allvin said in a statement. “No curriculum or content highlighting the honor and valor of the Tuskegee Airmen or Women Air Force Service Pilots has been removed from Basic Military Training.”

The episode highlighted the challenges Allvin and other military leaders face as they implement the new administration’s policies while at the same time executing existing plans and programs.

Allvin is at once making the case that his Air Force is too small and underfunded; that a new Force Design is needed to ensure a ready force in the future; and that readiness today demands a more disciplined force that adheres to a higher, stiffer set of standards than what became the norm in recent years.

## NEW BOSS

At the Pentagon, where Lloyd Austin III was Secretary for the past four years, Hegseth arrived Jan. 27 representing a new generation of leadership. Austin was a retired Army four-star general; Hegseth, a former Army major, is decades younger.

Met at his car by Chairman of the Joint Chiefs of Staff Gen. Charles Q. Brown Jr., Hegseth was all smiles as he and his Chairman entered the building that Monday morning. The meeting



had the potential for awkwardness; Hegseth has said in the past that Brown “should be fired,” but when reporters asked if that was in the cards, he waved the questions away.

“Talking to the Chairman, and so many other folks here, we’re in capable hands,” he said. “The warfighters are ready to go.”

What he thinks about their equipment is still to come. While Hegseth’s confirmation hearing focused largely on questions about his past personal behavior, he did indicate concerns about China and readiness, as well as an eagerness to “look under the hood” at Air Force programs. And while he declared his Day One priority to be securing the border, he also said a long-term priority would be China.

He and the White House touted plans for a missile shield to protect the U.S. homeland. Trump made the issue a part of his 2024 campaign platform, pledging to “invest in cutting-edge research and advanced technologies, including an Iron Dome Missile Defense Shield.”

A White House Executive Order called for a 60-day review of America’s missile defense capabilities with an “implementation plan for the next-generation missile defense shield.” That might be the system the Space Development Agency has under development, or a combination of systems operating in different orbital regimes. The President wants increased emphasis on space-based missile tracking capabilities operated by the Space Force, as well as next-generation missile interceptors and space-based weapons.

“The architecture shall include, at a minimum, plans ... against ballistic, hypersonic, advanced cruise missiles, and other next-generation aerial attacks from peer, near-peer, and rogue adversaries,” the order states.

Hegseth has said his long-term national security focus is China—the top threat identified by the Biden administration and the first Trump administration.

“We will reestablish deterrence by defending our homeland—on the ground and in the sky,” Hegseth said in his first message to the force Jan. 25. “We will work with allies and partners to



**New Secretary of Defense Pete Hegseth was greeted on his first day at the Pentagon by Gen. Charles Brown Jr., Chairman of the Joint Chiefs of Staff.**

Chris Gordon/staff

deter aggression in the Indo-Pacific by Communist China, as well as supporting the President’s priority to end wars responsibly and reorient to key threats.”

## GROWING USAF AIRPOWER

Allvin’s plea for more Air Force is driven by those same concerns about China coupled with “accumulating risk” taken by Air Force leaders over the past decades as the Air Force gave up investment in modernization, training, and readiness to cover short-term financial needs.

“The aggregate effect is the eroding advantage of American airpower,” Allvin said. “It’s past time to stop that erosion.”

What he intends to pursue is not “more expensive ‘stuff,’” he said, but rather a new “mix of exquisite and low-cost capabilities

to provide dilemmas for adversaries and stay on the right side of the cost curve.”

Among the decisions the new administration faces are:

- What to do about the Next-Generation Air Dominance penetrating aircraft, a manned fighter that would cost hundreds of millions of dollars each;

- How fast the Air Force can develop semi-autonomous Collaborative Combat Aircraft that would complement high-end fighters;

- How to deliver more Air Force and reverse the erosion it’s suffered while, at the same time, expanding the Space Force to meet its growing requirements.

“We cannot reduce personnel,” Allvin said. High operational tempo, demands for efficiency, the effects of sequestration and personnel costs that outpaced inflation “left us with a force already 20,000 to 30,000 Airmen short of our requirements,” he said, and mission readiness “has become the most ‘convenient’ [account to rob] ... because the cuts can be broken into smaller pieces, more digestible in the moment with fewer immediate political consequences.”

The risk is a hollow force, he said. “We’ve been there and should never go back ... We must be allowed to grow.” ★

# Trump Picks NRO’s Meink as SECAF

By Chris Gordon

President Donald Trump’s choice to become the next Secretary of the Air Force is Troy E. Meink, an Air Force veteran whose follow-on civilian career has taken him to the National Reconnaissance Office, where he’s been the principal deputy director for the past five years.

If confirmed, Meink would be the first Air Force Secretary to come to the job from the NRO in decades—Hans Mark served concurrently as undersecretary of the Air Force and head of the NRO before becoming Air Force Secretary in 1979 and John L. McLucas served as the fourth director of the NRO before becoming Air Force Secretary in 1973.

Since then, other Air Force secretaries have had some background in space—Barbara Barrett and Edward Aldridge were both trained for space flight, Michael Wynne and John J. Welch Jr. both oversaw space divisions within the defense industry, and Robert Seamans and Mark were both deputy NASA administrators.

But Meink would be unique given how deep his experience

is at the intersection of defense and space. While he served in the Air Force as a KC-135 tanker navigator from 1988 to 1993, he spent much of his career as a civilian working for the Air Force in various space roles, including as the deputy undersecretary of the Air Force for space. He has been at the NRO for years, having been appointed to his current role under the previous Trump administration.

Before becoming the NRO’s current No. 2 in 2020, Meink was the director of Geospatial Intelligence Systems Acquisition (GEOINT) at the agency and responsible for a \$15 billion budget overseeing acquiring satellite systems.

Meink’s selection may be a significant boost for the Space Force—USSF leaders have said their service needs more resources and manpower to keep up with a growing mission set, as they face their first-ever budget cut in 2025. Trump is seen as friendly to the Space Force, having championed its creation in his first term, and Meink would be perhaps the most space-knowledgeable senior leader in the Pentagon.

Meink would likely step on the other side of an ongoing debate

between the Space Force and the NRO and other Intelligence Community agencies over roles and responsibilities for intelligence, surveillance, and reconnaissance from space.

Beyond that, however, Meink will face major questions during the confirmation process and early in his tenure about how to handle the Air Force's Next-Generation Air Dominance program, Collaborative Combat Aircraft drones, and the over-budget and behind-schedule Sentinel intercontinental ballistic missile.

The Department of the Air Force pick had been a notable hole in Trump's planned national security team.

Pete Hegseth, a former Fox News host and Army National Guard officer, was confirmed as Trump's pick to be the 29th Secretary of Defense on Jan. 27, despite allegations of personal misconduct and intense criticism from



Jud McCrehin/staff

**Troy Meink, deputy director of the NRO, has been nominated to be SECAF.**

Democrats.

"Troy will work with our incredible Secretary of Defense ... Pete Hegseth, to ensure that our Nation's Air Force is the most effective and deadly force in the world, as we secure PEACE THROUGH STRENGTH," Trump wrote in a post on his social media network Truth Social.

Meink would round out Trump's picks for service secretaries. Trump named John Phelan, a businessman donor with an MBA from Harvard, to be Secretary of the Navy and Daniel P. Driscoll, an Army veteran and Yale Law School graduate, to lead the Army. Driscoll has been a senior adviser to fellow Yale Law grad Vice President J.D. Vance.

Stephen Feinberg, financier, is Trump's pick for deputy Secretary of Defense, and Elbridge "Bridge"

Colby has been named to lead the Pentagon's policy shop.

*News Editor Greg Hadley contributed to this report.*



## PERSONNEL

# Patches, Nail Polish, Shaving: Dress and Grooming Standards

By Chris Gordon and David Roza

Airmen were subject to new uniform, grooming, and appearance standards starting Feb. 1, senior Air Force leaders announced Jan. 29.

Among the changes: Duty Identifier Patches are no longer authorized, hair cannot touch a male Airman's ears, Airmen must shave every day if they do not have a medical or religious waiver, and female Airmen must comply with tighter restrictions on nail polish. Airmen with a shaving waiver will have to be reevaluated within 90 days of their next Periodic Health Assessment (PHA), starting March 1.

The updated appearance standards are outlined in a memorandum from Chief of Staff Gen. David W. Allvin, who sent a message to the force about the changes on Jan. 29. The Air Force also issued a separate memorandum on the updated shaving waiver process.

The new guidelines come about three weeks after Allvin announced a review of dress and appearance standards and said the Air Force would begin to more strictly enforce regulations.

"Earlier this month I released a video explaining why our service is reviewing certain policies and standards to ensure they are easy to understand, easy to comply with, and easy to enforce across our entire Air Force. Today, I am following through on my promise to swiftly distribute updates," Allvin wrote to Airmen in an email that was provided to Air & Space Forces Magazine. "As you review the memoranda and take action to ensure compliance, never forget that discipline and accountability are, and always will be, the backbone of an effective and lethal fighting force. Complying with and enforcing standards demonstrates shared commitment to our winning team, as well as an understanding of the gravity of our profession in today's volatile security environment."

Allvin also released a video explaining why he was getting rid



Senior Airman Jacob Derry

**Air Force leaders say new grooming and appearance policies now in effect are easier to understand and enforce and will foster a sense of discipline and accountability.**

of Duty Identifier Patches, which are also known as Career Field Identifier patches—such as "SF" for Security Forces, "MUNS" for munitions, "PA" for Public Affairs, and many more. The patches have become commonplace on the sleeves of many Airmen's fatigues, but they are no longer authorized as of Feb. 1.

According to Air Force Instruction 36-2903, more than 130 patches have been authorized.

"This is a lot of tabs," Allvin said. "Under the principle that we have of 'easy to understand, easy to comply with, easy to enforce,' this fails that test. But there's a bigger issue at play here: as we identify ourselves as one type of Airman or another, with one specialty or one skill set or another, we really diminish ourselves. While that is a contribution we make, our real value is our in-



tegral part of a winning, warfighting team. And that's what we want to emphasize: that we value the team over the individual."

Still allowed are arch-shaped tabs signifying a special, unique qualification or training, such as "Air Advisor" or "Arctic," as are graduate patches, such as ones from the Air Force Weapons School, and command patches.

## SHAVING WAIVERS

The new shaving waiver guidance covers both the Air Force and Space Force and comes about five years after the Air Force began issuing five-year medical shaving waivers for Airmen with pseudofolliculitis barbae (PFB), also known as razor bumps, a skin condition caused by ingrown hairs that makes shaving painful and can lead to scarring if skin is not given a chance to heal.

The problem with that policy is that it did not give clear guidance on differentiating PFB from shaving irritation, which can be avoided or treated with proper shaving technique and topical steroids, said Air Force Surgeon General Lt. Gen. John J. DeGoes in a Jan. 27 video statement.

"This lack of standardized guidance has led to inconsistencies in how shaving profiles are issued and managed across our force," he said.

A memo from DeGoes said extended duration shaving profiles are generally reserved for severe cases of PFB, "while mild-to-moderate cases may benefit from more frequent management, follow-ups, and temporary shaving profiles."

New guidance will arrive starting March 1 that should make it easier for providers to differentiate between PFB and irritation, DeGoes said. But that means all Airmen with a waiver must be reevaluated by a health care provider. Current shaving profiles are valid for now, but they will expire 90 calendar days after the profile holder's next PHA. The policy does not apply to religious accommodation shaving waivers.

An anonymous health care provider told Air & Space Forces Magazine that the goal is to use new tools, including a clinical algorithm, updated guidance, and a workflow in Military Health System Genesis to make PFB waiver decisions more consistent.

"We're going to take a second look at every waiver, and we're trying to provide health care providers with more tools to make more informed decisions, just to ensure that everyone who's on a waiver actually needs that waiver," the provider said.

The algorithm is not perfect, because even experienced dermatologists can have a tough time differentiating PFB from skin irritation. In the civilian world, it's not a problem to avoid shaving, so there is not as much research and guidance to find the discrepancies between PFB and irritation.

But if an Airman or Guardian is on the edge between irritation and PFB, the provider might recommend they try different

techniques and topical steroids to avoid irritation. If that doesn't work and they are not interested in laser hair removal, then there's still the five-year waiver option.

Reevaluating all shaving waivers is likely to create a massive administrative toll. Every Airman and Guardian takes a PHA, but those are often conducted virtually and exist more to refer patients to specialists.

"Airmen and Guardians are going to have to make a separate appointment with their provider to then have it looked at," the anonymous provider said. "It's a huge administrative burden that they're going to be putting on the providers to support this over the next 365 days."

Those providers may themselves refer patients to dermatologists, some of whom already have three-month waitlists.

"They're basically just going to be running shaving waiver clinics," said the provider, who anticipated that most providers would make the same waiver decision simply to get through the backlog of reevaluations.

## READINESS


The new policy for nail polish restricts female Airmen to "clear or French and American manicure," which typically consists of white tips and a clear or skin-colored base. The move seemingly slashes dozens of colors that were approved last year, and service officials could not immediately provide a guide for what shades are now permitted.

Chief Master Sergeant of the Air Force David A. Flosi issued a statement touting all new rules as necessary for readiness.

"Our unmatched war-winning capability is built on the strength and readiness of our Airmen. Clear and enforceable standards are the bedrock for our ready and lethal flying force," Flosi said. "Our Airmen live a life of service; we are in the Profession of Arms. We are committed to defending our nation, deterring our foes, and, if necessary, we will defeat them."

The Air Force said the changes were not made in response to recent Executive Orders by President Donald Trump that have sought to make cultural and policy changes to the military.

"General Allvin and service senior leadership—both officer and enlisted—have been collaborating on an approach to renew our force's commitment and adherence to standards for months now," Lt. Col. Karl Wiest, a spokesperson for Allvin, said in an email. He said the issue was discussed at senior leader meetings, including the high-level CORONA gathering last year, which occurred during the Biden administration.

"These updates were not directed by the new administration," Wiest said, "but they do effectively contribute to the Department of Defense's renewed focus on lethality, accountability, standards, and readiness." 

# Military Pay is Competitive—For Now

By David Roza

Service members are for the most part paid more than their civilian counterparts, but there are still ways the Pentagon can better compensate troops and their families, according to a new Department of Defense report—including changes to how it calculates allowances for housing and cost of living.

The 14th Quadrennial Review of Military Compensation (QRMC) is a sweeping look at the military compensation system, including basic pay, housing allowance, cost-of-living allowance, child care incentives, bonuses, and other benefits.

Those benefits have come under scrutiny in recent years, as

troops reported unaffordable housing near their station assignments, food insecurity, and difficulty for spouses trying to find work. Federal lawmakers flagged several of those challenges in a Quality of Life Panel Report released last April. Those concerns "lent a sense of urgency" to work on this QRMC, which started back in 2023, according to the report.

"We know through long-standing research and lived experience that when the department prioritizes the basic needs of its service members and families to include fundamental quality-of-life factors, our members are better able to focus on their mission to defend the nation," a senior defense official told

reporters Jan. 15. “This requires a competitive compensation package to incentivize both the next generation to serve, as well as recognizing and retaining military skill sets that we have today.”

Overall, the report made eight recommendations to improve the system, grouped under three findings:

**A. Military compensation is strongly competitive with the civilian labor market, but it needs to remain that way:**

1. Keep military compensation above that of most civilian counterparts.
2. Better inform troops about their compensation and benefits by improving communication.
3. Make military service more appealing to recruits with highly sought after skills and experiences.

**B. Reduce pay volatility by improving data collection and processing:**

4. Update Basic Allowance for Housing methodology.
5. Improve methodology for the cost-of-living allowance.
6. Regularly review deployment entitlements.

**C. Target noncash compensation to better retain service members and their families:**

7. Expand retirement savings options, child care support, and spouse employment initiatives.
8. Institute a regular quality-of-life review.

## PAY RAISE

The first of the QRMC’s three core findings is that the overall military compensation package is “strongly competitive” with the civilian labor market. On average, enlisted troops make more money than 82 percent of their civilian counterparts with similar education and experience, while officers make more than 75 percent, the report found.

But competition with the civilian market remains fierce, and recent recruiting challenges showed officials that the military has to keep its troops in the 75th to 80th percentile for enlisted troops and around the 75th percentile for officers. Maintaining that edge will require keeping a close eye on civilian pay, the report said.

The edge should grow this year as the 2025 National Defense Authorization Act will raise basic pay 14.5 percent for junior enlisted troops through the E-4 pay grade, in addition to a 4.5 percent pay raise for the rest of the military. The raise means enlisted troops will make more money than 87 percent of their equivalent civilian counterparts, while junior enlisted troops in particular will make more than 95 percent, the defense official said.

But the department needs to sweeten the pot for “lateral entrants,” the term for recruits who join up with prior skills and qualifications such as in medicine and cybersecurity. Today, lateral entrants can come in at a higher rank, but not with more years of service, which limits their pay compared to troops at the same level who rose up through the ranks. The 14th QRMC called for expanding “constructive credits” to include both higher rank and years of service.

The military pay and compensation structure is complex, particularly when service members have to move or when there are changes in allowances. The report recommended that the military improve communication with troops so that they better understand their pay and benefits.

“While the QRMC found overall strength in the total compensation package, this does not seem to translate to service member satisfaction with military pay,” said the report, which called for clarifying key concepts and comparing pay to civilian options in the communications campaign.

## REDUCE VOLATILITY

The other challenge with military pay and compensation,

the report found, is how quickly it can respond to changing circumstances, and whether the data for informing those changes is adequate.

A key example is the Basic Allowance for Housing (BAH). Overall, the review found that BAH for service members with dependents is between 17 and 60 percent higher than average civilian housing expenditures. But BAH varies based on military housing area (MHA), and accurately setting the BAH for each pay grade in each MHA has been hit or miss.

BAH rates are far more generous in some areas and for some pay grades than others, which can lead to confusion and frustration when troops change stations and find themselves with less spending power. Nationwide housing trends can also lead to discrepancies, such as when three-bedroom townhouses are more expensive on average than three-bedroom single-family homes.

To fix the issue, the report recommended replacing BAH calculations with a better model that will lead to more reliable, accurate, and stable BAH rates over time. It also called for ditching the current housing profile system—which categorizes housing as apartments, townhouses, and single-family homes with a set number of bedrooms each—in favor of one that focuses only on the number of bedrooms, which will better keep pace with housing trends.

“BAH profiles based on ‘number of bedrooms’ adds flexibility to more accurately estimate housing costs in remote or challenging markets with unique housing distributions,” the report said.

Former Chief Master Sergeant of the Air Force JoAnne S. Bass advocated for revamping how BAH is calculated back in 2022.

Service members receive combat zone tax exclusion and imminent danger pay for serving in regions that are hostile or dangerous, but these benefits can stay in place for decades. That means troops in some zones that are no longer hostile receive deployment entitlements while troops in more hostile areas do not. Entitlements need to be regularly reviewed every five years to ensure consistency, the report said.

## RETAIN THE FAMILY

The 14th QRMC was the first to focus on “the realities of dual-income military households.” Most military spouses want to work, the report found, but frequent moves and changes in child care access reduce their ability to do so, which can in turn affect retention decisions.

Noncash compensation could help, the report said. For example, Congress could pass laws that would remove vesting requirements from pension plans so that military spouses are less affected by the loss of income induced by frequent moves. Other noncash compensation options include continued support for child care and employment initiatives.

Some of those noncash initiatives can be grouped under what the report called “quality-of-life,” factors such as housing, dining, base facilities, health care access, spouse employment, child care, and recreation. The report called for the Defense Department to conduct a periodic quality-of-life review to inform decisions in those areas, similar to the report Congress released last year.

The senior defense official told reporters that there has been some discussion about cycling between QRMCs and quality-of-life reviews so that the two inform each other.

“Is there value in investing that dollar in additional, you know, cash compensation changes, RMC changes?” the official said. “Or will we get a better return on investment for both recruiting and retention purposes if we put that next dollar into, say, quality of service programs as was mentioned before, barracks, dining, child care, military spouse employment efforts, things like that.” ★



# Iranian Threats in the Middle East

By Chris Gordon

**W**hen Lt. Col. Dustin Johnson was ordered to deploy to the Middle East last year, he and his fellow F-22 Raptor pilots prepared for an unusual challenge.

As America's premier air superiority fighter, the F-22 was designed to take on advanced enemy aircraft, capable of maneuvering stealthily and cruising at supersonic speeds. But the dangers that most concerned Johnson and his Airmen included Iranian-designed drones and cruise missiles that Tehran and its proxies have employed during the most recent stretch of unrest in the Middle East.

"We were not necessarily worried about shooting down anybody else's airplanes," Johnson said in an interview with Air & Space Forces Magazine. "We were primarily there to defend our ground forces against the threats that were being posed by the UAVs in the AOR, as well as the cruise missiles that we've seen become more prevalent, both from the Houthis as well as militia groups in the region."

Given the changing character of war, the episode shows that even a high-end fighter needs to be prepared for low-end threats.

The challenge began when F-22s from the 90th Fighter Squadron, which Johnson commands, were rushed to the Middle East in early August from their home base at Joint Base Elmendorf-Richardson, Alaska, after Israel killed Hamas political leader Ismail Haniyeh in Tehran and Iran threatened to retaliate.

The F-22s reached the Middle East on short notice and were flying combat missions within a day of arriving at an air base in the region that U.S. military officials have declined to identify.

The drone threat they faced was not a hypothetical one. Iran had launched over 80 drones when it attacked Israel in April 2024, which were shot down by American F-15E Strike Eagles and F-16s, as well as some allied jets.

Drones and cruise missiles were also in the hands of Iran-backed groups in Iraq, Syria, and Yemen, which meant there were several geographically disparate air threats in the region.

"It was a very fluid situation," Johnson said. "Knowing exactly where threats were coming from and when is becoming exponentially more difficult to discern because the threat has just proliferated to the point that it can literally be one person from anywhere with a single UAV."

Though the drones posed less of a threat to the F-22s than a high-end Chinese fighter, downing them presented some challenges. Like the F-16s and F-15Es, the F-22s that have been deployed to the region in recent months have Active Electronically Scanned Array (AESA) radars, which make detecting drones easier, a senior U.S. defense official noted to Air & Space Forces Magazine. But it is still not an easy task. Not only were the drones very small, but their slow speed always made them hard to detect.

"It's air-to-air [combat], but it is a different type of air-to-air than we've ever really trained to before," Johnson said. "Even the difference between a cruise missile and a UAV is significant in terms of your tactics, how you find it, how you kill it. They pose very significant identification problems."

The F-22s had some lessons to draw on. Maj. Benjamin Cof-



USAF

**F-22 Raptors spent several months in 2024 deployed to the U.S. Central Command AOR as part of a rotation to address threats posed by Iran and Iranian-backed groups.**

fey of the 494th Fighter Squadron, who was awarded the Silver Star for downing some of the drones in his F-15E in April, had written a paper on the subject.

"He wrote a paper, essentially, reviewing everybody's tapes through those first couple shoot-downs ... like, 'Here's how you will execute if you find a drone out there,'" Capt. Brian Tesch of the 494th Fighter Squadron said. "This isn't something you can just go out there and randomly practice."

U.S. Air Forces in Europe boss Gen. James B. Hecker said in November that he had ensured that the paper was distributed to units deploying to the Middle East. Johnson said he and his pilots were able to draw on the previous lessons learned by the Air Force while refining the tactics to deal with potential drone threats.

"Even though this specific mission is not taught in any of our syllabi, part of what the Weapons School teaches is that community of connectivity and problem-solving that is flexible enough that it can apply to problem sets that we haven't even thought of yet," Johnson said.

Given the reputation of the F-22 and the success U.S. and allied Airmen enjoyed against the drones in April, Iran elected not to use UAVs when it attacked Israel in October. Instead, it relied exclusively on ballistic missiles, which Israeli and U.S. air defense systems countered. The F-22s returned home just before Thanksgiving.

The F-22 "is both a strategic and tactical asset," noted Johnson. "That gives anybody pause to think about how capable their defenses are when that platform is in theater."

Still, preparations the F-22 crews have made to deal with the Iranian drone threats could prove useful in the years ahead.

"That's 100 percent applicable" to other scenarios, Johnson said. "I think pretty much anybody can look at the current environment and know that if a global conflict breaks out between superpowers, that this is 100 percent going to be a part of the problem that we have." ★

*News Editor Greg Hadley contributed reporting.*

# Competition for F-16 Ejection Seat

By Greg Hadley

The Air Force is reopening the competition for its Next-Generation Ejection Seat (NGES) program, giving vendors the chance to offer their solutions for a new seat for the F-16 while sticking with its choice for the F-15.

The service announced the decision Dec. 20, four months after it first cracked the door with a “sources sought synopsis.” Now officials say they will continue work with Collins Aerospace on its new seat for the F-15 while seeking other options for the F-16. Those options could carry over to the F-22 and B-1.

In October 2019 the Air Force announced its intent to award a sole-source contract to Collins for its new ACES 5 ejection seat, declaring it was the “only company able to meet the government’s minimum requirements for the NGES program.”

In 2020, USAF and Collins agreed to a \$700 million deal covering the F-15 fleet, planning at the time to also put the ACES 5 in all Air Force fighters—except the F-35—as well as on the B-1.

But now, with “new data, updated market research, and evolving operational demands, the Air Force will issue a revised acquisition strategy for the F-16 and F-22,” the service said in its release. The F-16 will be first.

“The decision to reopen the competition underscores our commitment to continually assess our strategies to ensure we meet warfighter needs and timelines,” said Assistant Secretary of the Air Force for Acquisition, Technology, and



Bradley Hicks

A variation of the ACES 5 ejection seat is shown in one of the wind tunnels at Arnold Air Force Base, Tenn., in 2023. ACES 5 will go on U.S. Air Force F-15s but is facing competition for other fighters.

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Logistics Andrew Hunter in the statement. “By reassessing market conditions and fostering competition, we ensure industry delivers the best possible solutions for both current and future Air Force requirements.”

The main competitor for Collins is Martin-Baker, the only other manufacturer of ejection seats for Air Force planes. Its seats are on the F-35, the T-6, the T-38, and the A-29—and most prominently, its newest seat, the US18E, is being installed on new Block 70 F-16 fighters built by Lockheed Martin for foreign partners. As part of that process, the seat was qualified in coordination with the F-16 program office and the Air Force Life Cycle Management Center.

A company official confirmed to Air & Space Forces Magazine that Martin-Baker will pursue the new F-16 opportunity on NGES, offering the US18E.

Collins, meanwhile, has a long history on Air Force pro-

grams. Its ACES II ejection seat flies on the F-15, F-16, F-22, and B-1, and the ACES 5 was tapped for the new T-7 Red Hawk trainer.

ACES II was first developed in the 1970s. Kevin Coyne, a member of the SAFE Association, an organization focused on safety and life-support systems, previously told Air & Space Forces Magazine that while upgrades and modifications have been incorporated since then, new technology has developed that can reduce injuries and help pilots and aircrew survive the hazards of being hurled from their aircraft in flight—events that can cause all sorts of traumatic injuries. Coyne also said maintenance on ACES II seats can be difficult, requiring the removal of the aircraft canopy and extra equipment.

ACES 5 makes improvements in those areas, Coyne said. If selected, it would replace the ACES II seats. ★

## CHINA

# New Chinese Combat Aircraft

By John A. Tirpak

**I**magery of two new, tailless Chinese military aircraft disseminated on social media in December likely reveals a prototype stealth medium bomber and a new lambda-winged technology demonstrator, aerospace experts and former Air Force officials told Air & Space Forces Magazine.

The larger aircraft could be analogous to the FB-22 medium stealth bomber considered but not adopted by the U.S. Air Force in the early 2000s.

The larger aircraft, speculatively dubbed JH-36 by the aviation press for the “bort” number seen in some images, is likely the “medium bomber” referenced in the most recent edition of the Pentagon’s annual report on China’s military power, released in mid-December. Since 2019, the annual report has mentioned a “JH-XX” medium bomber under development.

“The [People’s Liberation Army Air Force] is developing new medium- and long-range bombers to strike regional and global targets,” the most recent report stated, adding only that these aircraft are likely to have extremely low-observable characteristics.

The PLAAF is known to be developing a flying-wing large bomber, called the H-20, similar to the American B-2, but the aircraft seen in December differs substantially from what that aircraft is expected to be.

“The Air Force has been closely monitoring China’s ongoing military modernization efforts,” a service official said on background. “This development is consistent with our understanding of China’s strategic objectives and long-term force planning. Their new weapons systems introduce additional complexity in the PLA, which requires highly skilled personnel to actually employ them to the max extent of their capability.”

The “JH-36” seen in the video and still imagery—which was not censored or commented on by the Chinese government—is a large aircraft, about 30 percent larger than the 70-foot J-20S two-seat “Mighty Dragon” apparently flying chase in the images. The new flying wing delta airplane has no vertical control surfaces but has five flaperons on each side of the trailing edge of the wing, heavily deflected to near-vertical in some of the images, and moving independently. A tailless



Internet image

**Moving and still images of a new Chinese medium bomber and another, fighter-sized airplane flooded the internet on Dec. 26. The bomber, speculatively labeled the JH-36 by Western experts, as well as other new Chinese combat aircraft, have already been accounted for in the Air Force’s deterrence plans.**

aircraft is inherently stealthier than one with vertical control surfaces, offering less of a target for radar, and would typically be lighter, allowing for extended range.

The quirky, many-element flaperon system may also mean “they haven’t mastered thrust vectoring and control,” an industry expert said, adding “they’re not 10 feet tall.”

The aircraft is likely a Chengdu product, as it was chased by Chengdu’s J-20S.

The aircraft has three inlets: one dorsal inlet at mid-fuselage, and two ventral inlets near the nose, in a parallelogram-shape reminiscent of the F-22, and three apparent above-wing exhausts, suggesting three engines. The exhausts are similar to those on the B-2 and Northrop Grumman’s YF-23 competitor in the Advanced Tactical Fighter program, which was won by

Lockheed with the F-22. The dorsal inlet is different from the other two, but seems shaped for stealth, as it is reminiscent of that in Northrop Grumman's unsuccessful bid for the U.S. Have Blue stealth demonstrator program won by Lockheed.

Three engines would make the aircraft very heavy—or at least reduce its range and payload—and experts speculated that the reason for three may have to do with generating power for intense electronic warfare applications or to mix bypass air with the exhaust air to cool it and reduce the aircraft's heat signature.

According to the Pentagon report, China's indigenous engine industry is unlikely to have matched the technology in the American Adaptive Engine Technology Program (AETP), which produced prototype engines using bypass technology that could be optimized for specific thrust or loitering, with additional stealthiness as a byproduct. An expected competition between those engines—one built by GE Aerospace and one by Pratt & Whitney—was meant to upgrade the F-35 but was abandoned because they could not fit all variants of that fighter.

One aerospace technologist said the third engine is “either a brilliant solution to have both power and stealthiness” or “dumb, flying around with the dead weight of unused propulsion mass.”


He speculated that the ventral engine inlets may be used for takeoff and landing, while the ventrally fed engine might be used for cruise, thus extending range.

Topside views of the JH-36 aircraft were more limited, grainy and indistinct, and it could not be ascertained if the cockpit is for one or two crew, in tandem or side by side. The

opaqueness of the canopy in the available images could even suggest it is an uncrewed airplane and that the canopy is merely painted on. The use of a two-seat J-20S as chase plane could lend support to this speculation, as the backseater might have been controlling the JH-36 or standing by to take control in an emergency.

It has a two-engine exhaust system similar to that of the F-22, potentially suggesting that China is exploring a number of ways to reduce the heat signature and possible thrust vectoring of combat aircraft engines. Apparently smaller than the JH-36, the second, fighter-size aircraft had tricycle landing gear. It was chased by a J-16, an Su-27 variant made by the Shenyang Aircraft Corp., so it may be a Shenyang product. It seems unlikely the two new aircraft are competitors, given the apparent difference in their size.

Imagery of the second aircraft did not offer a clear view of the upper nose area, so it's unclear if there is a cockpit or if it is potentially an uncrewed vehicle in the same class as the first increment of the Air Force's Collaborative Combat Aircraft program.

The date of the imagery's release, Dec. 26, is significant in that it is the birthday of Mao Zedong, the PRC's founder and longtime leader, and the date on which the J-20 was similarly unveiled on the internet in 2010. Uncoincidentally, U.S. Secretary of Defense Robert Gates was on a visit to China at the time, and Gates had previously predicted that China would not have a fifth-generation stealth fighter for another decade. In his memoir, Gates called that unveiling “about as big a [blank] you' as you can get.” 

## SPACE

# Space Force Testing AI Automation

By Greg Hadley

ORLANDO, FLA.

**T**he Space Force is flying new command and control software on experimental satellites that automates some functions for ops crews, said Kelly D. Hammett, head of the Space Rapid Capabilities Office.

Dubbed R2C2 for Rapid and Resilient Command and Control, the software is among a wave of new applications that employ artificial intelligence to automate space operations, leaders said here at the Spacepower Conference.

Automation is the No. 1 technology the U.S. needs to gain and maintain space superiority, said Hammett.

“My answer is going to be automation, and automation of the front end of kill chains,” he said in response to a question. “Having early knowledge of local and further-away threats that are tracking, targeting, getting ready to attack you, I think, is one of the key technology areas where we have some significant gaps.”

Hammett said automation is key for speed, and it will require a level of trust that may surprise some people. “We can't have men in the loop responding to those things, because of the speed and scale at which we'll have to respond,” he explained. “So we have to be able to automate some of those things and trust that they can respond on their own when they see that they're going to be destroyed, attacked, threatened, and not have to have Guardians in the loop on that.”

In a subsequent roundtable with reporters, Hammett said his office is investing in R2C2, a program that started in

earnest when 20 companies were picked earlier this year to work on it. He said it is already producing capability.

“This fall, we have already established live contacts with flying satellites down at Kirtland Air Force Base, N.M., through the experimental systems that are flying through the [Innovation and Prototyping Acquisition Delta],” Hammett said. “We have migrated R2C2 onto the ops floor there, and the intent is to fly some of the further experimental satellites ... and eventually all the flying systems for Delta 9, the orbital warfare delta.”

R2C2 is designed for dynamic space operations, in which satellites must move frequently to dodge threats, gather data, rendezvous to refuel, and more.

Yet as the number of satellites in orbit grows, the risk of collisions also rises—as do potential threats from adversaries. Hammett noted that SpaceX has had to perform thousands of automated maneuvers to protect its Starlink satellites.

R2C2 can help with that, especially as the ratio of satellites to operators keeps rising, challenging Guardians to maintain control.

“The core services of our R2C2 include automated mission planning. You can schedule out a contact or a conjunction maneuver, if you would like to,” Hammett said. “You can plan all that out in an automated sequence. You can run a variety of cases and situations, decide the one you want, and then press the button and it'll upload a mission profile that says, ‘Go, conduct a series of maneuvers to go conduct a mission’ versus ‘I'm going to talk to you. Turn this on. Turn left, turn right. Go 5 inches, report back to me.’ We'll automate





maneuvers and events.”

The National Reconnaissance Office is also looking at automation. In a separate panel discussion, T.J. Lincoln of the NRO’s Mission Operations Directorate said he has been pushing automation for years.

“Anything I can [automate] in a day of the life of operations, it absolutely is essential,” Lincoln said. “We’ve done that and already gone from, let’s say, 17 folks on a crew to three operating an entire constellation,” he added. “That’s pretty amazing. So automation is absolutely incredibly important today.”

It will only grow more so as the NRO launches dozens of new satellites in a proliferated low-Earth orbit constellation, Lincoln said.

The Space Development Agency is also building a proliferated set of constellations. SDA director Derek M. Tournear said in a speech that autonomous operations will be a key feature in “Tranche 4” of SDA’s Proliferated Space Architecture, scheduled to start launching in 2030.

## OTHER USES

While Hammett and Tournear look to develop and acquire autonomous ops technology, Space Force commanders today also see the need for artificial intelligence and automation in their work—and some early glimpses of the benefits.

“The simple truth is that in order to operate at the speed we need to, we’re going to need to leverage all of the ... machine-learning capability that we can, and then smartly integrate AI tools and applications when they are ready,” said Lt. Gen. David N. Miller, head of Space Operations Command.

Brig. Gen. Anthony J. Mastalir, head of Space Forces Indo-Pacific, said his team is also experimenting with artificial intelligence products and “indirectly” using them in operations.

“We are running a pilot that’s called TacSRT—tactical surveillance, reconnaissance and tracking—and some of the vendors that are contributing to that pilot are working on AI/machine learning applications to better understand what that commercial imagery is showing,” Mastalir said.

Chief of Space Operations Gen. B. Chance Saltzman said one job where AI and automation is critically needed is space



**A Guardian from the 18th Space Defense Squadron, a unit assigned to U.S. Space Forces - Space, observes orbital data at Vandenberg Space Force Base, Calif. The Space Force wants to use AI and automation to handle the growing volume of such data.**

David Dozoretz/USSF

domain awareness.

“We get enough data—but we [still] get so much data that our analysts are overwhelmed anyway,” Saltzman said. “The ability for a machine to collect all the data, process the data, and tell the analyst what’s most ... high priority, and structure that data in a way that they can make the decision they need—think that’s ripe for software engineering and artificial intelligence.”

The volume of data that needs to be processed and sorted automatically continues to grow—and as it does, operators run the risk of missing something and making a critical mistake, Miller warned.

“The only way to get this done is through automation and fusion,” Miller said. Failing that, “there’s so much data presented that the person who is processing picks their favorite rather than leveraging the suite.” But the Space Force doesn’t want individuals to pick and choose. “We want to leverage all of that and access and open up the enterprise to all of that data,” Miller said, then notify operators automatically when changes in orbit or other concerns arise. ★

# New GPS Satellite

By Greg Hadley

**T**he Space Force successfully launched its seventh GPS III satellite into orbit Dec. 16—shaving more than a year and a half off the typical timeline for launching the highest priority national security spacecraft and switching rocket providers to do it.

All told, it took less than five months to pull the satellite from storage, integrate it with the launch vehicle, and go through

readiness checks and processing, according to a joint release from the service’s Space Systems Command (SSC) and Space Operations Command (SpOC).

That stands in contrast to the two years it typically takes to prep for a launch as part of the National Security Space Launch program, reserved for the Pentagon and Intelligence Community’s most important missions.

Appropriately, the mission was dubbed RRT-1, for Rapid Response Trailblazer.

The launch, from Cape Canaveral Space Force Station, Fla., was atop a SpaceX Falcon 9 rocket. Back in May 2022, Space Systems Command awarded the launch task order for the GPS III-7 mission to United Launch Alliance, but ULA does not currently have a system certified for NSSL missions—its new Vulcan Centaur rocket is awaiting certification, and its Atlas V rocket had its last launch in July 2024.

As a result, new GPS III satellites that had been declared “ready for launch” were put into storage waiting for a ride to space. In November, SSC Commander Lt. Gen. Philip Garrant hinted that his team was “certainly looking at options to go faster,” specifically by “looking at some of the other GPS missions and the timing of those that have been manifested on SpaceX.”

The command awarded a task order for the next satellite in the series, GPS III-8, to ULA but had not announced plans for the last two editions, GPS III-9 and GPS III-10.

Garrant insisted at the time that the GPS constellation was healthy and the service did not need to rush new satellites into orbit. But on Dec. 17, Lt. Gen. Douglas A. Schiess—commander of Space Forces-Space, the service component to the combatant command—said he was eager to get the new birds up, hailing SSC for completing the process so quickly.

“We have been harping on getting more GPS III satellites on orbit to be able to give us more M-code,” Schiess said at the Center for Strategic and International Studies, referring to the jam-resistant GPS signal for military use.

While other GPS satellites can transmit M-code, the GPS III spacecraft can take advantage of the full capability, including the ability to beam the signal at target areas.

Besides adding more capability to the constellation, the launch also marked another opportunity for the Space Force to speed up its processes for getting satellites into space, as part of an effort called Tactically Responsive Space.

Preparing for a scenario in which it might have to rapidly launch new satellites to replenish constellations after an attack, the Space Force set a record in September 2023 when it launched its “Victus Nox” mission, taking a satellite from the warehouse to orbit in five days. Still more “Victus” missions aimed at going even faster are planned.

But those missions involve smaller payloads and are not part of NSSL, which requires lower risk and higher assurance that the mission will succeed. Meeting that standard for GPS III-7 while slashing months off the timeline required a “twofold” effort from SSC and Space Operations Command, a service release stated, especially after GPS III-7 switched to SpaceX to take advantage of its NSSL-capable rocket.

That the launch still happened so fast despite the turbulence “is a testament to our flexibility and responsiveness,” Col. Jim Horne, senior materiel leader of launch execution for the Assured Access to Space office, said in a statement.

SpOC worked with satellite-maker Lockheed Martin to pull the satellite from storage and finish prelaunch processing in about three months. The launch also marked a milestone for the newly stood-up Mission Delta 31, responsible for position, navigation, and timing, according to commander Col. Andrew Menschner.

“This launch showed our ability to respond quickly to an operational need, such as an on-orbit vehicle failure of the GPS constellation, as well as demonstrating our willingness to challenge traditional timelines associated with launches in response to a realistic scenario,” Menschner said in a statement.

It remains to be seen whether GPS III-8 will stick with Vulcan Centaur as its launch vehicle. ULA hopes for certification soon but has a backlog of government missions. The eighth GPS launch had been set for early 2025. ★



Lockheed Martin

**U.S. Space Force's Space Systems Command and Space Operations Command executed an accelerated timeline through a Rapid Response Trailblazer launch, Dec. 16, 2024. This allows for a speedier process in getting satellites to space.**

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# Inside a 1,000-Mile Open-Ocean Life-Saving Rescue

There are no options over water. And the farther out you go, the longer it takes to get back.



129th Rescue Wing/courtesy photo

An HH-60G Pave Hawk helicopter attached to the 129th Rescue Wing approached the bulk carrier Port Kyushu some 500 miles off the coast of San Francisco in October 2024 to rescue an unconscious crewmember having a medical emergency. The rescue required two helicopters and two HC-130J aircraft to keep them fueled on the 9 1/2 hour mission.

By David Roza

The bulk carrier Port Kyushu stretches the length of two football fields, but it looked like a toy against the vast, dark tablecloth of the Pacific Ocean. Peering down from the window of a C-130, Staff Sgt. Mike Scheglov offered up a simple prayer:

“I really hope that they speak Russian.”

About five hours earlier, Scheglov had been working at Moffett Field, home of the California Air National Guard’s 129th Rescue Wing. It was the morning of Oct. 9, and Airmen were preparing to pick up a patient from a ship 500 miles off the coast of San Francisco. As an aircrew flight equipment specialist, Scheglov was repositioning their gear when his supervisor asked an unusual question.

“Did you bring your lunch today?” Scheglov recalled.

The rescuers needed a Russian speaker to communicate with the ship captain. A native speaker, Scheglov was a perfect fit. He grabbed his lunch.

The 129th Rescue Wing is one of few organizations on Earth that can rescue patients hundreds of miles offshore, thanks to its fleet of HC-130J fixed-wing aircraft and HH-60G helicopters. The HC-130Js refuel the helicopters via long hoses that trail behind the wings midflight, where an HH-60G plugs in with a long probe sticking out the front of its fuselage.

Air refueling extends the range of the helicopters, letting them hoist patients out of anything from a fishing boat to a cruise ship hundreds of miles out at sea, then bring them back to hospitals ashore. But it’s a high-risk job, said Lt. Col. Christopher Nance, who commanded the Port Kyushu mission.

“There are a lot of moving parts in a helicopter,” said the HC-130J pilot. “If you’re flying over land, helicopters can find a field to put it down or C-130s can find an airfield, but there are no options over water. And the further out you go, the longer it takes to get back.”

Once the aircraft reach the target vessel, they lower a pararescue jumper (PJ) with a hoist, then reverse the procedure to pick up the patient. A blend of commando and expert

medic, PJs are trained to save lives under fire anywhere on Earth, but dangling from a helicopter over a moving vessel in the open ocean is dangerous for anyone.

“Anytime you put a human being out the back of your aircraft, that is immediately high risk,” Nance explained. “There’s just so many complexities to the mission.”

There’s also the fatigue of flying for hours at a time, often in darkness, sometimes low to the water, and usually while wearing airtight anti-exposure suits. The suits are designed to keep the Airmen alive if they bail into the frigid Pacific, but they can get pungent and uncomfortable after a 10- or 11-hour sortie, said Senior Airman Reese Williamse, a special missions aviator (SMA) who works in the back of the HH-60. That’s led to a colorful nickname: “Poopy suits.”

Such challenges are nothing new for the 129th RQW, which has been flying open ocean rescues since 1975. The halls of the Moffett squadron buildings are lined with orange life buoys given to them by the crews of the dozens of ships from which they’ve rescued patients. The Port Kyushu mission would mark the wing’s 1,165th life saved, a number that includes deployments and non-ocean rescues.

“We’ve done it so often here that, to be honest, we’re really

good at it,” Nance said. “So our comfort level is quite high compared to other units that may not have accepted a mission like this because it was too high-risk.”

## THE CREW

The call for a rescue came in from the U.S. Coast Guard on Tuesday, Oct. 8. A middle-aged man on the Port Kyushu was having what would later be diagnosed as an urgent neurological problem. The wing asked not to print exact details out of concern for his privacy, but at the time, the patient was generally unresponsive and not accepting food or water, so his crewmates worried he would not survive the voyage.

A rescue would risk four aircraft and more than 20 lives to save one, but medical experts and wing leadership deemed the gravity of the situation greater than the risk. There was no issue finding volunteers.

“Sometimes we get guys out of state that are like, ‘Hey, I’ll fly in,’” Nance said. “You get guys who will definitely take a day off of work to come out and support one of these.”

But there was a problem: The wing needed two HC-130Js to cut down on risk and haul all the gas necessary for the long flight, but due to maintenance issues only one was ready to



fly. The next closest HC-130J unit is the Active-duty 79th Rescue Squadron at Davis-Monthan Air Force Base, Ariz., which had just spent the past two weeks on the East Coast responding to Hurricanes Helene and Milton. Nevertheless they answered the call, sending two C-130s just in case, while the colocated 55th Rescue Squadron sent two HH-60Ws if needed.

“When you’re dealing with long range over water, you want to have spares,” Nance said. “It’s a testament to the joint force that, one, they were willing to respond after everything they’d just gotten back from, and two, how seamlessly they integrated with us.”

At around 11 a.m. Oct. 9, the aircraft took off for the Port Kyushu, which would be about 500 miles offshore by the time they rendezvoused. Both HH-60Gs and one of the HC-130Js came from Moffett, while the other HC-130J came from Davis-Monthan.

“I wasn’t nervous or stressed because I knew all the guys in the other planes, and they’re all professionals,” Nance said. “They know what they’re doing.”

## THE GEAR

A rescue package does not travel light. Besides the anti-exposure suits, the helicopter crews and PJs wore orange inflatable life preservers, sometimes called “water wings” or “Cheetos,” and carried tiny bottles of compressed air to breathe from in case, due to a crash, they had to escape a sinking helicopter.

On top of that, the PJs brought IV fluids, drugs, oxygen, blood pressure cuffs, monitors, a litter, and enough medical supplies to fill the bed of a pickup truck, all squeezed into a helicopter cabin not much bigger than a hot tub.

It gets even more cramped with a patient aboard. One of the PJs, Senior Airman Connor, whose full name was withheld for security reasons, said he had “probably like a 3-by-2 foot space I was in for five hours.”

But there’s still room for a keepsake or two, which for some Airmen play as vital a role as their helmets and exposure suits. Nance carried a medallion his uncle gave him when he first got his flight wings—and a pencil-shaped tire pressure gauge tucked into the sleeve of his flight suit.

“When I was a brand-new lieutenant, a bunch of guys talked me into buying a Harley, and they convinced me that I had to be checking the tire pressure all the time,” he said. “They were messing with me, but in 2009 I was deployed, and we almost had a midair [collision] with a Marine CH-53 [helicopter]. Our aircraft commander saved our lives, but my tire pressure gauge disappeared. After that I never flew without it.”

Flying the lead helicopter, Capt. Parker Imrie carried a challenge coin from the 3rd Battalion, 5th Marines, the unit his late brother served with in Afghanistan. In the back of the helicopter, Williamse, the SMA, carried a fish keychain his wife gave him years ago that he’s kept in his bag ever since.

## INTO THE BLUE

The rescue package flew over the Pacific at about 5,000 feet, with broken clouds ahead and the marine layer—a low expanse of cloud and fog—below.



129th Rescue Wing/courtesy photo

**Aerial refueling is standard practice for the 129th, along with weather, turbulence and fatigue, but even if getting gas is routine, it’s always a delicate maneuver.**

“The question is, does this marine layer go 10 miles out or 1,000 miles out,” Imrie said. “You don’t know until you fly out there.”

Eventually, the helicopters had to gas up: a delicate operation where the helicopter pilot has to match the C-130’s speed and altitude while the gas flows, then back out slowly without yanking off the hose.

“If all the conditions are right, it’s not that hard. It’s just kind of a little video game: line up and plug in,” Imrie said. “But as you add weather, turbulence, fatigue, poor visibility, or having to plug on the right side of the aircraft, where you get a lot more turbulence coming off the wing, that difficulty ticks up very quickly.”

Staying calm is also key: the pilot might wiggle his or her fingers to avoid white-knuckling the stick, while the crew keeps their voices steady, almost a monotone.

“If one person starts getting tense and has an elevated voice, then everybody hears it, pilots will start gripping it tighter,” Williamse said. “Even for me in the back when I’m doing a hoist, if my voice is super fast and loud, you can feel it in the hover.”

“There’s a psychology to flying a helicopter with four people,” Imrie added.

Indeed, much like how the pilots routinely check their instruments to see how the aircraft is doing, the crew keeps up a low level of conversation during the long hours over water.

“There definitely were periods where everyone was silent for a while, which is OK,” Imrie said. “But you don’t want to let that go on for too long, because you don’t know: Is this guy just silent because he doesn’t have anything to say, or did he fall asleep, or is he having a medical emergency?”

On the other helicopter, Connor the PJ enjoyed listening to the banter, but he and Tech. Sgt. Sean, the more experienced PJ on board, had to conserve their mental energy for later.

“We just tried to relax, knowing that the next six, seven hours were going to be pretty exhausting,” Connor said.

## CONTACT

Nance’s C-130 raced ahead to contact the Port Kyushu. The Airmen were not 100 percent certain if the ship captain spoke



Russian, and now it was time to find out.

“Initially it was just one of the crew members and I said, ‘Do you speak Russian?’ And this guy went into a full-blown conversation in Romanian,” said Scheglov. “I don’t speak Romanian, it’s a totally different language. I’m like, ‘Oh good Lord, I just made this whole flight for nothing.’”

But the crew member eventually got the captain on the radio and yes, he spoke Russian. Scheglov told the captain how to prepare for the rescue, which saved precious time when the HH-60s arrived 45 minutes later.

“The ship was positioned and ready to go, the patient was packaged and ready,” Nance said. “We went from what potentially could have been an hour on scene to, like, under 30 minutes.”

The seas were calm that day, but it would be a long hoist ride down to the Kyushu for the two PJs aboard the pickup helicopter. The HH-60 hovered about 100 feet above the ship to avoid the cranes on either side of its small helipad—too small for the HH-60s to land.

Hoist work is a delicate balance for SMAs, said Williamse, who was on the other HH-60 that day. SMAs have to keep an eye on the person being hoisted, on the steel cable connecting them to the helicopter, and on their surroundings.

Hoisting too fast might hurt the person being hoisted, but going too slow extends the vulnerability period. Too much slack can weaken the cable or get it wrapped around a body part or an obstacle; too little makes it tough for the person to unhook, and if the helicopter moves then it could throw them into the ship’s rail and over the side.

“You keep that fine line of cable slack while also scanning around the aircraft, staying calm, and talking to your pilots,”

he said. “I like to say you’re Bob Ross in the back, painting a picture.”

The crew of the Port Kyushu were fascinated; after all, two helicopters had just appeared over the middle of the Pacific and dropped two men in bright red anti-exposure suits on their deck.

“You could see them just kind of stunned at what was going on,” Connor said.

Once on the deck, Connor and Sean met the captain, assessed the unconscious patient, then packaged him onto a litter. With no easy way of carrying him onto the helipad, the Airmen pantomimed instructions for the crew to form a kind of train.

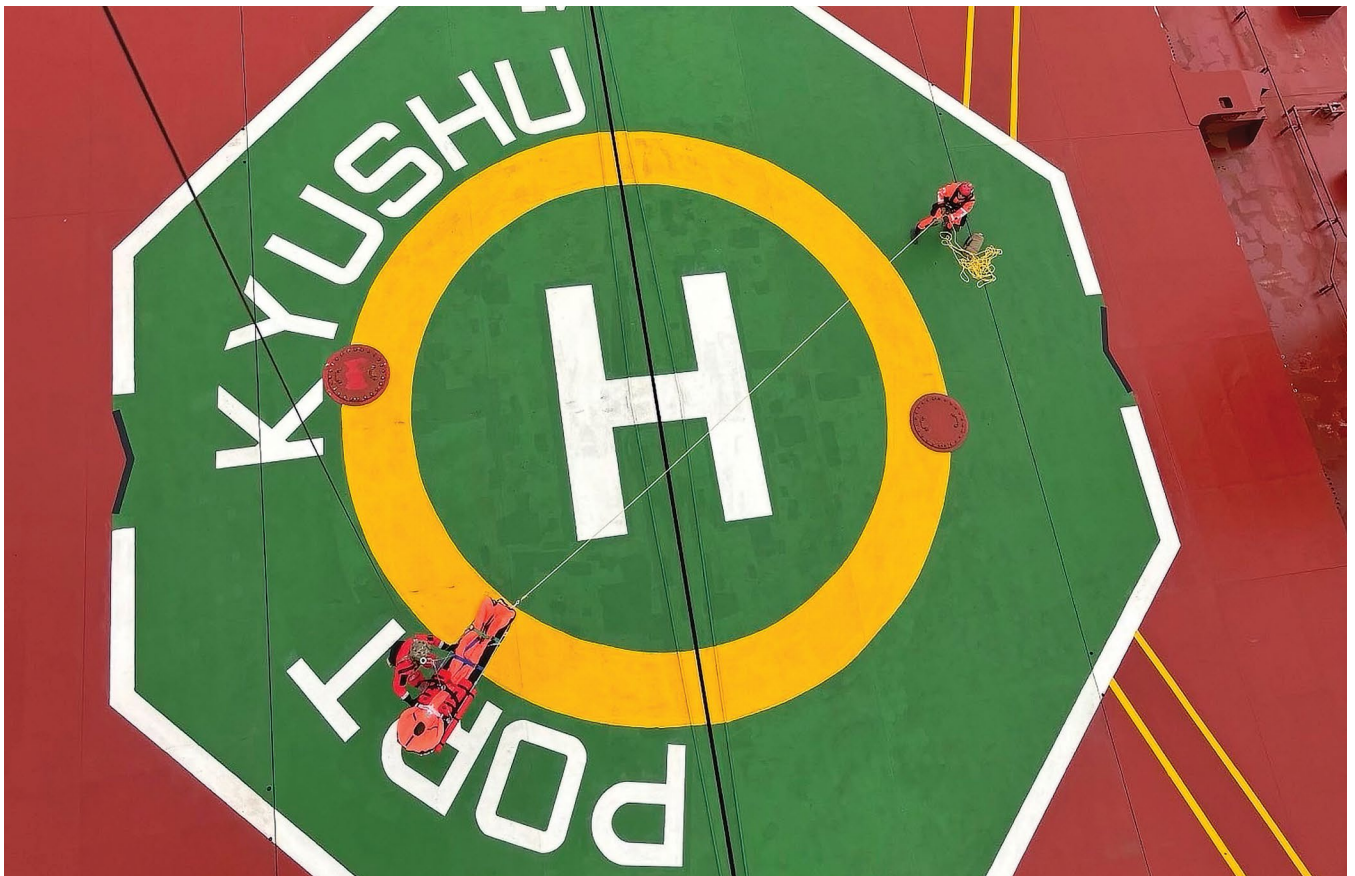
“That was one of the coolest moments, working with this crew that didn’t speak English to get their friend and crewmate where he needed to go,” Connor said. “There was no translation, but everybody understood.”

Once the patient was on the helipad, the PJs radioed the helicopters for a pickup.

“This is where you see the skill of the 129th, because everybody is working together here,” Connor said. “The pilots are dealing with a small area to get the hook in place: They are dealing with the ship cranes, so they can’t just come in from any angle. They are dealing with the movement of the ship. But they come in and drop the hook basically right in our hand. That just comes from practice.”

The PJs did forget one thing: a Port Kyushu life buoy to commemorate the rescue.

“We were so focused that that slipped our mind,” Connor said. “The PJs watching us from the other helicopter saw us coming up and they were like ‘they didn’t get the life ring.’”



The Port Kyushu flight deck as seen from the California Air National Guard 129th Rescue Wing's HH-60G helicopter. The two pararescue jumpers are on the deck prior to hoisting the patient up to the aircraft.

129th Rescue Wing/courtesy photo



129th Rescue Wing/courtesy photo

One of the many risky moving parts involved in a rescue mission is shown here as Tech. Sgt. Pablo Rios, an HH-60G special missions aviator with the 129th Rescue Wing, hoists down pararescuemen onto the bulk carrier Port Kyushu.

They realized it before we did.”

## THE WAY BACK

The first hour of the flight back was an intense one for the PJs, who had to reassess the patient, hook him up to their monitors, put him on oxygen, and get an IV in: a tough task with a cold, severely dehydrated patient on a loud, moving helicopter. The PJs kept an eye on his vitals, but he remained stable and unconscious throughout the flight. It just wasn't clear what had endangered his life in the first place.

“It could have been many different things, but there was no definitive sign telling us what exactly was wrong,” Connor said.

Throughout the flight, the medics were in close contact with doctors back home, but they too were stumped. Day turned to night as the helicopters flew about 300 feet off the water for much of the way back, staying low to ensure the patient breathed in as much oxygen as possible. It wasn't until about halfway through the return flight that Connor had a chance to think about anything else.

“That's a big moment, when you have five minutes to sit back and take care of yourself,” he said.

This was Connor's first rescue as a fully mission-qualified PJ after shadowing a few previous ones and graduating the

2.5-year training pipeline just five months earlier. But the Kyushu job felt like any other practice run.

“At no point did I feel like I was doing anything that I had never done before or that was out of the norm,” he said. “It all felt very calm.”

The anti-exposure suits grew pungent in the night air, especially when the PJs asked the pilots to turn up the heat to keep the patient warm. At least the PJs could move around a little, while the helicopter pilots were bound to their seats throughout the journey.

“The biggest surprise for me was that my [tail] didn't hurt,” said Imrie. “I've flown three-, four-, five-hour training sorties where I can barely walk afterward. And then this was the longest continuous flight I've ever done, nine and a half hours, and I was definitely ready to not be sitting any more, but it was fine.”

Back in the cabin, Williamse's knees and lower back grew sore from spending all day crouching and hunched over.

“I was doing all sorts of stretches,” he said. “That is one plus side of being in the back.”

Nance's C-130 landed at Moffett Field a little after 9 p.m., about 10 hours after it had first taken off, while the HH-60s followed about 15 minutes behind. The helicopters could have flown to Stanford Hospital, but the wing decided it would not be worth the additional risk after such a long flight. Instead, Connor and Sean hopped into an ambulance for the 25-minute drive.

“We wanted to be able to give a handoff at the hospital,” Connor said. “We walked into the ER in our dry suits with 30 people waiting for us.”

Back at base, the aircrews debriefed, then the helicopter crews reconvened at their squadron heritage room, a lounge adorned with thank-you notes from old rescues, photos of past deployments, and totemic depictions of the “Jolly Green Giant,” a symbol of Air Force search and rescue dating back to the Vietnam War.

“Even though you've been flying for hours, when you finally get back you can't just go home and go to sleep, because you still have a sense of adrenaline,” Williamse explained. “So we usually come in here, chill out, drink a beer or two, and relax until you start getting tired.”

About two weeks after he got picked up, the patient was on the mend.

“When I heard that the patient was talking again, was back to normal, it made everything that I'd gone through to get to that point feel very worth it,” Connor said. “I'm fully confident that any one of the new PJs that I just graduated with could have done that exact mission. But I'm grateful that I'm on this team and was given that opportunity.”

And Scheglov? He ended the day with a keepsake of his own, though it requires explanation. The shoulder patch for the 130th Rescue Squadron, the unit which flies the HC-130J, depicts a shark biting into an aerial refueling hose—a twist on the emblem of the San Jose Sharks, the nearby professional hockey team.

Airmen at the 130th wear a version of the patch with a baby shark on it until their first rescue mission or deployment, after which they wear the grown-up shark version. Thanks to his vital translation work, Scheglov got the grown-up shark, making him an honorary 130th member.

“I'll wear it with pride,” he said.

A month later, the wing was back at it, rescuing a 79-year-old fisherman with stroke-like symptoms about 400 miles off the coast of San Diego. This time they got the life buoy. ★



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# Silver Star Airpower

## Airmen and Guardians Take on Iran



Senior Airman Olivia Gibson/USAF

**U.S. Air Force Capt. Lacie Hester, 494th Fighter Squadron F-15E weapons systems operator, after receiving the Silver Star during a ceremony at RAF Lakenheath, U.K., Nov. 12, 2024. The Silver Star is the United States Armed Forces' third-highest military decoration for valor in combat and was presented based on the aircrew's gallantry in action repelling the Iranian attack .**

**By Greg Hadley**

RAF LAKENHEATH, U.K.

**O**n the night of April 13, 2024, U.S. Air Force crews took to the skies in the Middle East, having received word that Iran had launched one-way attack drones and missiles at Israel.

In one F-15E in particular, pilot Maj. Benjamin “Irish” Coffey and weapons systems officer Capt. Lacie “Sonic” Hester waited for the first signs of the attack, though they were unsure of exactly all that was coming.

Sure enough, “we get a radar hit, and another, and another, and another,” Coffey told *Air & Space Forces Magazine*. To be sure the blips were missiles and not cars on the ground, Hester cued the jet’s air-to-ground targeting pod to get visual confirmation.

“She recognizes there’s no roads in that area. It’s just open desert,” Coffey said. “So all these radar hits that we get, 20 to 30 of them at that initial [sweep], were real, and they were headed west.”

Those hits represented the leading edge of some 300 ballistic missiles, cruise missiles, and one-way attack drones in a barrage that was Iran’s first-ever direct attack on Israel and perhaps the

largest drone attack in history.

Coffey and Hester, along with other Airmen in F-15E and F-16 fighters, helped defeat the attack, downing 80 drones in one of the largest displays of combat airpower in decades. On Nov. 12, U.S. Air Forces in Europe Commander Gen. James B. Hecker decorated 30 Airmen at RAF Lakenheath for their contributions to that mission, awarding Coffey and Hester Silver Star Medals for their heroism.

The events of April 13, Hecker said at the ceremony, were a clear sign that “the nature of warfare has changed, especially when it comes to ... one-way UAVs.”

The 494th Fighter Squadron, nicknamed the Panthers, deployed to an undisclosed Middle East location in October 2023 after Hamas’ Oct. 7 attack on Israel, and over the course of the next five months downed several Iranian one-way attack drones, breaking new ground for the Air Force.

Iran’s drones have been a common feature in Russia’s war on Ukraine, but the U.S. did not have much experience countering those threats, a niche weapon that falls between a missile and air-to-air combat.

Coffey took that experience, “essentially reviewing everybody’s tapes ... and then everything he had known and studied,”



said Capt. Brian Tesch, a weapons systems officer with the unit. “He wrote a paper of like, ‘Here’s how you will execute if you find a drone out there.’”

Coffey’s tactics development soon proved crucial. Israel launched an attack that killed senior figures in the Islamic Revolutionary Guard Corps in Syria on April 1, and Iran vowed to retaliate. The 494th braced for the response.

“We were on kind of an alert status for about a week, week and a half, leading up to that point,” said Maj. Clayton “Rifle” Wicks. “We knew that there was going to be some sort of large-scale attack. How big we didn’t quite know, and when exactly we didn’t quite know.”

Anticipating that the attack would likely come at night, the squadron kept at least two jets in the air, plus extra crews on the ground ready to go within 30 minutes. The days dragged on. Then, on April 13, Coffey and Hester were one of the crews scheduled to fly the first six-hour shift, alongside squadron commander Lt. Col. Curtis Culver and Lt. Col. Timothy Causey. Wicks, having flown the night before, was the “operations supervisor,” acting as a liaison with the Combined Air Operations Center and other command and control elements.

“There were a couple nights leading up to that point where we’re like, ‘Tonight’s going to be the night, or we think tonight’s going to be the night,’ and then it wouldn’t happen,” Wicks said. “So then April 13 rolls around, it was kind of like that again. I didn’t show up for my shift that night being like, ‘Tonight’s the night.’”

Capt. Matthew “Pepper” Eddins and Capt. Garrett “Bull” Benner were one of the crews on alert status. They too “didn’t really think much was going to happen that night, to be honest,” said Benner.

Intelligence reports suggested otherwise. Wicks began giving crews whatever new information he got as they walked out the door.

“Things were just happening so fast out there that it was pretty much a sort of a pickup game. ... I remember feeling guilty that I couldn’t do more for them, before launching my friends out into the darkness to who knows what,” Wicks said. “So that part was tough.”

The alert crews—Eddins and Benner and Capt. Austin Leake and Capt. Stepan Volnychev—took off with the first scheduled formation, putting four aircraft in the air. F-15s from the 335th Fighter Squadron at Seymour Johnson Air Force Base, N.C., which had just deployed to the region, were also airborne, as were F-16s from the D.C. Air National Guard’s 113th Wing. Wicks was monitoring a command and control feed when the F-16s started to engage.

“A message comes across that just says ... like Viper 72 is ‘Winchester,’ which means they are out of missiles. They have no bullets left. They have nothing,” Wicks said. “And I remember, I got chills, and the hair on the back of my neck stood up, because that was the first time I was like, ‘Oh my gosh. Command and control can’t keep up with the amount of missiles that are being shot and things that are happening.’ And that’s the only message they got across.”

In the air, Coffey and Hester were tasked as mission commanders, responsible for multiple “lanes” of airspace that the formation had to defend. Now, they faced an attack on a scale they had never seen before—flying at low altitude into the night.

“I first get hit with dread, recognizing the numbers we were seeing,” Coffey said. “This wasn’t a small-scale or a chest-thumping show of force. This was an attack designed to cause significant damage, to kill, to destroy, and now we are on literally the leading edge of firepower, able to try to do something about that. And that lasted maybe for 10, 15 seconds, and then training kicked



Airman 1st Class Seleena Muhammad-Ali

**U.S. Air Force Maj. Benjamin Coffey, 494th Fighter Squadron pilot, suits up at RAF Lakenheath, U.K., for a deployment to an undisclosed location in Southwest Asia, Oct. 13, 2023.**

in, and it was time to get the job done.”

Confronted with more targets than they could possibly hope to take down by themselves, the aviators started prioritizing the one-way attack drones.

As Coffey and Hester directed aircraft where to go, the other aviators quickly fell back on their training and started executing.

“The first reaction, it was really exhilarating, a lot of adrenaline, especially to finally see the picture that we did see of the tons of radar contacts across the scope,” Benner said. “After that though, once we kind of realized that we were getting into a flow, then it was just fun.”

“As we’re turning away just so we can build some more space from the next wave, you look back and you see drones impacting the ground, like, ‘Oh, they got another one. They got another one,’” added Eddins. “Looking a few miles away, and you see another one’s impacts: ‘Oh, the Vipers got another one.’ And then you hear from your flight lead, Hey, turn hot, so pitch your aircraft back around and target again. ‘Here we go again,’ and it’s just almost repetitive at that point.”

It didn’t take long for every aircraft in the formation to exhaust their firepower. In the span of about 20 minutes, most of the fighters had fired off all eight of their air-to-air missiles. Coffey and Hester had “hung ordnance”—a missile that didn’t fire for one reason or another, and were forced to return to base, while Eddins and Benner waited another 10 or 15 minutes for more fighters.

Cpts. Trace Sheerin, Brian Tesch, Logan Cowan, and Gabriel Diamond were the ones set to fly those fighters, having been scheduled for the second scheduled patrol of the night from an undisclosed location in the Middle East.

Soon after they watched their fellow F-15E crews take off and head over the desert, the aviators started to appreciate the size and scale of Iran’s attack. On command and control feeds, they heard that jets were expending all their firepower within 30 minutes, “including air-to-ground munitions, which would be like the last thing you have on the jet to try to take out some of those drones,” Tesch said.

Yet when the crews asked if they would be taking off earlier





Tech. Sgt. Paul Duquette/ANG

**Weapons Systems Officer Capt. Lacie Hester in her chosen ride, an F-15E Strike Eagle, for a weapons check ride Feb. 16, 2021. Capt. Hester is assigned to the 332nd Air Expeditionary Wing, in an undisclosed location in Southwest Asia.**

than planned, the answer came back “no.” Finally, they climbed into their jets. “We had just started the first engine, the canopy had just closed, and then off in the distance, I see about two dozen maintenance folk and other people sprinting and running out of buildings toward the bunkers,” Tesch said.

Ballistic missiles were now either approaching the base, which was close to Israel, or being hit by the Iron Dome defense system.

The base declared “Alarm Red”—meaning it was facing an imminent threat; troops were directed to underground bunkers. A Patriot air defense battery on the base started firing interceptors.

“I look over my shoulder and it just looks like the Fourth of July,” Teach said. “I remember, usually I couldn’t see the paper on my knee because it’s just dark. It’s night. There’s no lighting out there. But I could see, like, clear as day. I could read everything on the paper just from the explosions lighting up the cockpit.”

The second shift of F-15Es weren’t the only Strike Eagles on the flight line. Coffey, Hester, Culver, and Causey, had landed at that point, and Culver and Causey’s jet got an integrated combat turn (ICT)—being reloaded and refueled with the engines running—in a breakneck time of 32 minutes.

But because of the hung ordnance on their jet, Coffey and Hester were planning on hopping over to a second plane when the Alarm Red sounded. With their jet not ready to take off yet, they headed to the bunkers.

Once there, however, Coffey and Hester came to grips with the situation. Their fellow aviators were still defending against the attack—and they had a jet still on the flight line, if they could just get it prepped for launch amid the Alarm Red.

“I remember looking at Sonic [and saying], ‘We got to go out. We haven’t done enough yet. We can do more. We can just do one more sortie, there’s one more jet. Let’s just take it and go,’” Coffey said. “And she’s like, ‘Yeah, we got to go.’”



## 494th Fighter Squadron Decorations

### Silver Star Medal

Maj. Benjamin Coffey  
Capt. Lacie Hester

### Bronze Star Medal

Maj. Clayton Wicks  
Master Sgt. Timothy Adams

### Distinguished Flying Cross

Lt. Col. Curtis Culver (V)  
Lt. Col. Timothy Causey (V)  
Capt. Logan Cowan (V)  
Capt. Gabriel Diamond (V)  
Capt. Trace Sheerin (V)  
Capt. Brian Tesch (V)  
Capt. Matthew Eddins (C)  
Capt. Garrett Benner (C)  
Capt. Austin Leake (C)  
Capt. Stepan Volnychev (C)  
Capt. Claire Eddins  
Capt. Carla Nava  
Capt. Kyle Abraham  
Capt. Eric Edelman

(V) indicates a Valor device  
(C) indicates a Combat device

### Air and Space

#### Commendation Medal

Capt. Alexander Thennes  
Master Sgt. Michael Bialaski  
Tech. Sgt. Brandon Brown  
Staff Sgt. Sarah Moir  
Staff Sgt. Kendra Wertsbaugh  
Staff Sgt. Daniel White

### Air and Space

#### Achievement Medal

Staff Sgt. Michael Wright  
Staff Sgt. Ethan Tarver  
Senior Airman Ardo Dia  
Senior Airman Sanders Joseph  
Senior Airman Rico Sanchez  
Airman First Class Treyvon Walker



To make that happen, though, they needed a crew chief and maintainers to volunteer to leave the bunker.

“One of them stood up, Senior Airman Freer, and said, ‘Yeah, I’m a crew chief,’” Coffey recalled. ‘You want to go out there right now and launch this ship?’ [He said] ‘Absolutely,’ so [the] three of us, left the bunker. A few other folks joined us, and Sonic and I got in, started cranking. He stayed plugged in with us. When we cleared him off, he’s like, ‘Nope, until you taxi, I’m going to be right here. My job’s to get you out.’ So he chose, over and over again, with all that stuff going on, to stay out there.”

There was a small gap in the air defense by the time Coffey and Hester were ready for takeoff, giving them an opening to go. Meanwhile, the second patrol got the order from the squadron commander: launch to survive. With missiles and debris raining down around the base, the sky was now the safest place for the fighters to be.

“The problem is, we can’t take off until we have an arming crew ... pull the arming handles, the pins and make it so that we can effectively use our aircraft and weapons systems,” said Cowan.

On the flight line, Staff Sgt. Kendra Wertsbaugh and her team were responsible for a final inspection and arming munitions just before takeoff. They had watched the maintenance crew pull off the speedy combat turn just as the Alarm Red had started. Now, they were in a van, preparing to head to the bunker.

“We had two more aircraft that were not ready to be launched, but they were at chocks, waiting to taxi to be launched. So I said, you know, we have to turn around,” Wertsbaugh said. “We have these last two aircraft, who knows how long this Alarm Red is going to last? So if we do this now, it’ll be done, and after that we can get inside.”

While the aircraft taking off would be safer in the air, the ground crews would have no such luck. But Wertsbaugh was not deterred.

“Nobody else is going to do this,” she said. “I was assigned to this part. I need to stick with it.”

Staff Sgt. Ethan Tarver had helped resolve issues on jets before the alarm sounded, then he and other maintainers directed others to go to the bunkers while they stayed on the flight line to get the final jets off.

“We know how to do it in that moment. There’s so much going on, there’s so much process. There’s no room for emotion,” he said.

In their cockpits, Cowan, Sheerin, Tesch, and Diamond watched as “a team of like 10 people swarm our jets,” Cowan said.

“I don’t even know if they were the arming crews. People would run up to the jet to arm us up and then continue running to the bunker,” Tesch said.

A dozen Airmen were decorated for their actions that night, including Master Sgt. Timothy Adams, who was awarded a Bronze Star Medal for overseeing the maintainers under fire and remaining on the flight line.

Ready to go, the jets taxied for takeoff—and then stared down a runway with active air defense going off on both sides.

“The takeoff corridor that we had was out of the way of the battery firing,” Cowan said. “We took off, and I wanted to become invisible, because we still had other base defenses, and we have the other bases in the area that have their own defense zones we needed to avoid.”

Behind Cowan and Diamond, Sheerin and Tesch saw the jet’s afterburner go out at around 3,000 feet. In the darkness, with lights and explosions all around, they couldn’t tell if their flight lead had made it.

“I was convinced they had been shot down from our own air defense or hit something on the way up,” Tesch said. “So that, for me, was probably the scariest moment of, ‘Hey, it’s our turn to go. They just got hit. Now we have to follow them through that cluster of debris and flaming chunks of metal.’”

Sheerin kept the jet low over the runway, knowing debris wasn’t falling directly on it and the air defense was positioned to fire parallel to the runway, rather than across it.

“It felt kind of like a drag race,” Sheerin said. “So you are racing the air defense basically. [Tesch] talked about the Fourth of July lights—you’re chasing these fireworks and racing them down the runway. And then once we had enough airspeed, and we were past the edge of the runway, just pitching the nose up pretty, pretty high, trying to get away from the ground as fast as possible.”

In the air, Eddins and Benner returned to base after handing things over to the second alert jets. As they drew near, they saw chaos.

“When you’re under night vision goggles, you can see probably the greatest firework show you’ve ever seen, and lots of stuff raining down from who knows where, but it’s hard to tell if that’s 100 miles away or 10 miles away or if that’s directly above



**U.S. Air Force aircrew assigned to the 494th Fighter Squadron walk to their F-15E Strike Eagle as they prepare to depart RAF Lakenheath, U.K., for a deployment to an undisclosed location in Southwest Asia, Oct. 16, 2023.**

Senior Airman Olivia Gibson

me,” Benner said.

At the operations desk, Wicks and others had decided to stay at their posts as the primary focal communications point for all the jets even as the alarm went off. Now, they needed to decide whether or not they should have Eddins and Benner land with the Alarm Red still in effect.

“We decided that having them divert and land somewhere else was not the best course of action,” Wicks said. “I mean, the base hadn’t actively been hit, so we’re like, if we determined that having them go somewhere else, that absolutely takes them out of the fight, whereas if we can get them down here, we might still be able to put them through the ICTs and get it back airborne. And in all likelihood, our base was still the safest place for them. So just stay airborne as long as you can, and land once you don’t have fuel to stay airborne anymore.”

With hung ordnance and low fuel, Eddins and Benner decided to land. After holding off for a moment to let the jets on the ground take off, they landed on the base’s backup runway.

“At that point, I was just focused on landing,” Eddins said. “I know that runway was not the best. About 1,000 feet down that runway is actually a little bump. So when you land and you hit that bump, it actually brings you up airborne again. You have to bring it back down with the crosswinds. It was definitely not my greatest landing.”

But they made it. On the ground, jets with hung ordnance had to be carefully positioned on the flight line so as to not be too close together. But the danger to the base was starting to fade.

At the ops desk, Wicks got the word from the Combined Air Operations Center: Stop launching jets. “Save it for tomorrow, because we don’t know what’s going to happen tomorrow,” they told him.

Yet high above, Coffey, Hester, Cowan, Diamond, Sheerin, and Tesch now confronted airspace that was still very much active. Iranian drones and missiles were still coming, and F-15 and F-16 fighters, tankers, and command and control aircraft were coordinating, as were aircraft from coalition partners and Israeli interceptors.

“The totality of the situation was, ‘Oh sh—,’” Cowan mouthed.

The swirl of missiles, interceptors, and debris flying lit up the night sky like the Northern Lights, another Airman recalled.

Like their first sortie, Coffey and Hester quickly got to work taking out threats and expended all their missiles; again, one failed to fire. As a last resort, they fired their F-15E’s 20 mm gun, but with limited effect.

As airborne mission commanders, however, they still had work to do.

“We need to coordinate the other fighters. We need to coordinate for our partners, so that they know where the threat is,” Coffey said. “And at that point, instead of trying to do subsequent gun attempts, we bring fighters back ... we reset where the fight is going on, and we start handing off threats.”

Meanwhile, Cowan, Diamond, Sheerin, and Tesch entered the fight for the first time.

“We’re just all over the place, hunting down the tracks that other jets picked up and where they saw the drones and cruise missiles,” Tesch said.

The attack started to peter out. But then the crews got word from Coffey and Hester that a few “straggler” drones were 300 or so miles away. Snapping in that direction, the F-15Es raced to intercept them as they approached a city.

“Obviously that makes the hairs on the back of your neck stand up,” said Sheerin. “If you’re out in the middle of the desert, that’s fine. If something misses, something goes wrong, the worst that happens is ... a random crater that could have been from an



Staff Sgt. Devin Rumbaugh

**A U.S. Air Force F-15E Strike Eagle from RAF Lakenheath’s 494th Fighter Squadron returns to formation after receiving fuel from a KC-135 Stratotanker from Fairchild Air Force Base in Washington’s 92nd Aerial Refueling Squadron.**

asteroid pops up somewhere in the desert.

“But as soon as you start throwing in completely innocent people who have nothing to do with this conflict, and now you have explosives flying over them, and heavily laden supersonic fighter jets flying very low altitude over them, that complicates the equation quite a bit,” Sheerin said.

Cowan and Diamond were the flight leads, but Sheerin and Tesch were in a better position to take the first shot.

“We’ve set up the intercept, and I’m waiting for him to shoot,” said Cowan. “I query him once, I query him twice, and then all of a sudden, I look up and this missile just flies off his jet and explodes in the center of my field of view.”

Despite their exhilaration, they decided against trying for a second intercept—the risk too great given the chance of civilian harm. Instead, they passed custody of the target off to coalition fighters further back.

USAFE commander Hecker praised that decision. Amid the excitement and adrenaline of aerial combat, the restraint the crews showed stood out in its own way.

After that, most U.S. fighters returned to base, while Cowan, Diamond, Sheerin, and Tesch still had to fly for several hours more. In the wake of adrenaline-infused takeoffs and dramatic shootdowns, quiet now descended as the sun rose in the east.

Looking out, the Airmen saw dozens, if not hundreds, of trails of smoke from missiles and interceptors winding through the sky.

“Like a ball of yarn,” Sheerin said.

“Like a bird’s nest,” Tesch said.

“It was one of the most incredible things I’ve ever seen,” Cowan said. “Because the sun is shining through all these missile smoke trails, it looks like a bowl of spaghetti in the sky.”

For the next several hours, the last two F-15Es patrolled the airspace as the impact of what had just happened sank in.

Coffey and Hester, returning to base, also took stock.

“We can see the Iron Dome [Israeli air defense system] going off in the distance. We can see base defense fires from all the bases around us going off. And there is a long period of about 20 minutes where we just talked about, ‘Did we do enough?’” Coffey said.

Aviators and maintainers turned on the news and got their answer: 99 percent of all drones and missiles had been intercepted, and the few that got through caused minimal damage and no fatalities. What some have called the biggest drone attack



in history had been thoroughly thwarted.

“After everything was down, and all the hung missiles were put up, and we had already rearmed and got ready to go for a second round, then we had time to breathe and start processing what actually happened,” said Staff Sgt. Ethan Tarver.

The entire squadron, Coffey said, breathed a collective sigh of relief. And in the days and weeks to follow, they were able to appreciate just how much they had done, said Wertsbaugh.

“What we did was very important, saved many lives, and also showed that times are changing, and with unmanned aerial devices [threatening allies], we are prepared to just defend against anything,” Wertsbaugh said.

At Lakenheath six months later, Airmen from the 494th received awards from the Air and Space Achievement Medal to the Distinguished Flying Cross and Bronze Star. Hester became the first woman in the Air Force to receive the Silver Star.

And if, as Hecker said during the ceremony and Air Force leaders have often repeated as of late, the nature of warfare is changing, then members of the 494th can look back on that night in the Middle East as a key moment.

“I’m too young, too inexperienced even now to be able to tell you where warfare will go in the future. That’s not my purview,” said Sheerin. “But with how things continue to change, I know from the lessons learned in this as a squadron ... as a fighter community specifically, I think we’re moving in a good direction, and I think we will be able to continue to assess and improve specifically with the lessons learned from the 13th of April.” ★

## KC-135 Crews Earn DFCs

Two dozen KC-135 crew members were awarded the Distinguished Flying Cross (DFC) for helping refuel the fighters that shot down 80 drones and missiles Iran fired at Israel on April 13:

- **11 Airmen from the Tennessee Air National Guard’s 134th Air Refueling Wing**
- **7 Airmen from McConnell Air Force Base, Kan.**
- **6 Airmen from MacDill Air Force Base, Fla.**

The DFC recognizes acts of heroism or extraordinary achievement in the air and is the military’s fourth-highest award for heroism, separate from distinguished service medals.

The tanker crews had to fly into that hectic airspace aboard aging KC-135s that lack the onboard defensive systems and advanced situational awareness tools of their fighter colleagues. They relied on each other and their partners across the airspace to “paint the battlefield picture” and deconflict, Tennessee pilot Maj. Cody Gaby explained.

Tanker crews rarely face the kind of challenges that merit such a high-level award. The criteria for the DFC states that “both heroism and achievement must be entirely distinctive, involving operations that are not routine. This award is not awarded for sustained operational activities and flights.”

—David Roza

# How Guardians Sparked Fight to Defeat Iran’s Missiles

By Greg Hadley

When the Space Force detects a missile launch across the globe, alarms sound and Guardians scramble to calculate trajectories, identify impact areas, and alert troops and allies who may be in harm’s way.

When Iran launched some 300 ballistic missiles, cruise missiles, and one-way attack drones toward Israel April 13, the alarms ringing through the operations center were unlike anything the Guardians of Space Delta 5 had heard before.

One missile is “ding, ding, ding, and then it tells you what’s going on,” said Delta’s division chief for current operations. “But it’s the kind of thing that once you’ve heard it 300 times, it’ll give you nightmares for the rest of your life. It just keeps playing.”

With each “ding” Guardians began calculations, validated the data, and passed information along. Crews of a half-dozen or so Guardians worked together on each track—and with so many, they had to work fast.

“It gets loud, but you know who you’re listening for,” said a sergeant with the 2nd Space Warning Squadron. “So we have two crew chiefs ... and then we have two junior enlisted who are like the data processors, and so they’re communicating to us what they’re seeing, and then the crew chiefs are shouting out ... ‘I agree with that, we’re good to go.’ And then we have one person bouncing around between the crew chiefs, making sure that everyone’s on the same page.”

Thousands of miles away, U.S., Israeli, and allied interceptors

and aircraft took their inputs and put them to use, intercepting most of the incoming missiles and drones with minimal casualties and damage.

While the military response was widely reported at the time, the Space Force’s role in that defense remained shrouded in secrecy—until now. Declassifying enough of the mission for this article took senior-level intervention. Air & Space Forces Magazine spoke exclusively with Guardians who took part in the response, gaining insight into their little-understood alert mission. Some Guardians’ names and details are withheld here for security and classification reasons.

“The scale of missile attacks we have been seeing over the past couple of years is rapidly changing,” Lt. Gen. Douglas A. Schiess, commander of Space Forces-Space, said in an October statement. “We are no longer experiencing missile defense as a singular engagement but need to be prepared to provide tracking and warning of multiple missiles being shot simultaneously, as was made evident during Iran’s recent missile strike. Our Guardians, joint and coalition operators have demonstrated their expertise in this, and are able to send missile warning notifications in a matter of minutes to help protect our allies and partners in times of crisis.”

Space-based missile warning dates back to the Defense Support Program (DSP) in the 1970s, but capabilities continue to advance as the Space Force expands its capability with new satellites in all orbits.

Space Operations Command’s Mission Delta 4 uses DSP and



Space-Based Infrared System satellites for missile warning, along with the ground-based Upgraded Early Warning Radar and the Long-Range Discrimination Radar. With crews scattered across the country and overseas, in the United Kingdom and Greenland, the Delta combines the feeds from those systems to identify and track threats.

Delta 4 operates 24/7/365 to ensure no missile launch ever catches the U.S. by surprise. Yet tedious as such a constant watch might seem, Guardians never relax, said a first lieutenant with the 11th Space Warning Squadron.

“You’d think that would be the case, where you’re worried about people losing their focus and what-not,” said the lieutenant, who was part of the crew that responded to the October attack. “But I think we realize as a unit how big of an impact we have and how important we are to the mission, that in a way, it’s hard to lose focus.”

Missile launches are most typically singular events. But since January 2020, when Iran launched more than a dozen ballistic missiles at U.S. forces at Al Asad Air Base in Iraq, the Space Force has faced increasing numbers of missile traces at once.

At the time of the April 13 attack, it was “unprecedented as far as the volume and scope and time constraints,” Schmitt said—some 30 cruise missiles and 120 ballistic missiles, in addition to 170 drones.

On the floor, operators knew something was coming. Iran had promised retaliation after an Israeli airstrike in Syria, but its timing was not clear.

“It kind of came on gradually,” said the sergeant from the 2nd SWS. “We saw what was happening from the first launch. It was just like, ‘All right, focus up everyone! Let’s get it done!’ And then, as it just kept growing and growing, we just had to really revert back to the basics of our training and just really focus in.”

The duty crew that day was newly formed for a new force-generation cycle, so they were still getting to know each other.

“There’s a lot more communication when you’re trying to find that chemistry, you’re pretty much saying every single thing you’re doing,” the sergeant said. “On a crew that I work with for a year, I already know, without them saying, what my counterpart is doing. Whereas now, with the new crew, it’s like, I’m going to voice what I would normally do, they’ll voice what they normally do, and then we can kind of get into the flow of things.”

Time raced by. The process for tracking missiles is the same no matter what the volume of incoming looks like, said Mission Delta 4’s senior enlisted leader, Chief Master Sgt. Kyle Mullen.

“They will be monitoring, and then they will get alerted with an audible [sound] that something is happening or that something looks like a missile,” Mullen said. “And so what they’ll do is, ... check its trajectory, check to see what profile it’s building out. We have a two-person verification [team] so you’ve got somebody right there beside them, another experienced operator who’s like, ‘Yes, I see it. It’s going to this area.’”

Then they notify the Combined Space Operations Center.

“The first thing we’re looking at is, which sites are in the risk



**Multinational space operators work together in the Combined Space Operations Center (CSPOC) at Vandenberg Air Force Base, Calif.**

Tech. Sgt. J.T. Armstrong/USSF

area,” said the Delta 5 division chief, a major. “Next thing is, do we have any personnel, naval vessels, anything else out there we need to do as a secondary, immediate communication. And then the third piece is looking at the overall status of data coming out.”

Because the CSPOC is responsible for notifying U.S. and allied assets if they are in harm’s way, phone calls and notifications flew—“sheer chaos,” the major recalled. While the missiles were meant for Israel, U.S. assets in the region were in their path, so troops were scrambling to safety.

The danger wasn’t a direct threat to the Guardians, but to air and ground crew half-way around the world. The Guardians just knew the quality and speed of their warnings were making a difference.

“As you’ve worked it more and more, the concern [is] for what’s happening for people in the region, right?” the Delta 5 major said. “Because every missile has the potential for a loss of life.”

But operators thousands of miles away were picking up their cues, heading into the fight, and in the end, 98 percent of the weapons hurled toward Israel were shot down, intercepted, or landed without effect.

Back in their operations centers, the crews came off their shifts and started to realize the enormity of what they’d just experienced. That night and in the days following, they saw news reports about the attacks, and took satisfaction in the fact that there were no U.S. casualties and minimal damage in Israel.

“Sometimes you don’t see the effect that you have when you’re sitting in the chair, but seeing the impact afterward is surreal,” said the 2nd SWS sergeant. “I had a friend that was deployed in the CENTCOM [area of responsibility] at the time, and just talking to him the next day, ‘You good? Everything good? How are you doing?’ Stuff like that.”

Meanwhile, Space Force leaders were already drawing lessons from the fight. Looking at Russia’s invasion of Ukraine, officials knew missile barrages were becoming more and more common. With their newfound firsthand experience, Guardians got to work training for what commander of Mission Delta 4., Col. Ernest “Bobby” Schmitt, called the “new normal.”



## 'EVEN BETTER': OCTOBER 2024

By October 2024, Space Force leaders had a better understanding of what future attacks could look like. Guardians had responded well in April, yet there was clearly room for improvement.

"Every second counts when you're trying to avoid getting hit by missiles," said Schmitt.

So when Iran attacked again on Oct. 1, sending a new barrage of 200 ballistic missiles hurtling toward Israel in the largest ballistic missile attack in history, USSF was ready.

"First time, we did well; second time, we did even better," said one major, the division chief for current operations at Space Delta 5. "We had a far better data fidelity rate. We had a lot better warning times. We just—we worked better."

"There are always things to improve," said a Space Force First lieutenant, a crew commander with the 11th Space Warning Squadron. "The whole point is to always become better as a unit, become better as a team. Some things that we did exceptionally well: communication, and everyone understanding the roles and responsibilities. I can't really point to anything that went poorly. ... I mean, we killed it. We killed it."

A comprehensive look at the April attack and a push to better prepare Guardians for more and more of these large-scale attacks got the Space Force to that point, Schmitt said. "Between April and October, in our internal discussions, as we went through the debrief process and internal things we can improve, I think it became very clear that [large-scale multimissile attacks] was what we could expect going forward—that kind of volume and timing."

Guardians needed to adjust to working through such scenarios—and the April attack had provided a blueprint, said a sergeant who was on the ops floor with the 2nd Space Warning Squadron during the first attack.

"What Iran showed in the aggression in April really showed how they operate," he said. "So we were able to take that data and build new training based around [those insights]."

The unit's mission planning cell defined tactics, techniques, and procedures to handle the mass of missiles and "to do it more efficiently."

Meanwhile, the Space Force was transitioning to a new force generation rotation schedule. Dubbed SPAFORGEN, the rotation model was developed to ensure Guardians could rotate through periods of dedicated day-to-day ops and other periods dedicated to training—specifically ensuring that units aren't doing both at the same time.

"The squadrons use the training tools they have to go build simulations ... and to be able to put the crews through it," Schmitt said. "The crews go in, they mission plan, they get the intelligence that is part of the scenario. They run through these types of scenarios. ... SPAFORGEN has given us an opportunity that we never had before."

The 11th Space Warning Squadron was also able to pick up tips from the 2nd Space Warning Squadron, Guardians said, which introduced new tactics and techniques that operators put to use on the floor in October.

"That feeling of preparedness is a result of hard work and training day in and day out," the first lieutenant said. "So when I looked around on Oct. 1 and I looked at my team as their crew commander—the leader of the team—I knew that we were ready. A lot of waiting, a little bit anxious. But it was good. It was good. It's not like we were nervous because something bad was going to happen."

At the Combined Space Operations Center, where Guardians receive data from missile warning and feed it to troops in danger, Delta 5 was likewise ready, said the major.

During training, both the missile warning and command and control elements identified areas for improvement. Schmitt

declined to elaborate, but he and senior enlisted leader Chief Master Sgt. Kyle Mullen noted that the team found ways to "surge" coverage without requiring additional personnel.

"The whole name of the game for us is readiness," said Mullen. "We have a laser focus on how ready should we be, need to be, and exercise that on a routine basis. So ... if it's a slow day, they are still practicing, refining, debriefing, talking about upcoming things, what could be happening. Intel-threat-informed, warfighting-type decisions need to be made in case that day comes again."

At the CSpOC, faster communication was the key: "Basically cutting out anything that wasn't necessary for that sort of situation," the major said. "Anyone who's worked these kinds of operations knows it's usually very script driven. You're trying to follow the procedure, make sure you don't miss anything. But when a barrage happens, you don't have time to process the script as it is. We came up with some truncated reporting that got just that critical information to exactly the right people."

Smoothing information flow was also crucial. At the CSpOC, "data is a choke point," the major said. "We essentially got rid of a couple of those choke points so that we could have far more events recorded, not only by our people, but also by our data systems that are reviewing everything."

Software updates to enhance data presentation also helped. Software updates can take years between refreshes, but Delta 4 and others have become "Integrated Mission Deltas," which combine sustainment and intelligence, shortening those cycles. Delta 4 had not made that switch by October, but Schmitt praised Space Systems Command for "bending over backward" to get software improvements fielded in the wake of the April events.

When the second barrage came in October, the new training, processes, and software were ready, fueling a quiet confidence on the ops floor for the 11th Space Warning Squadron.

"You could have heard a needle drop on the ops floor," the first lieutenant said. "Just the focus, a focus like you've never seen before."

Unlike the first attack, the October barrage consisted almost entirely of ballistic missiles, launched from multiple locations. The result, however, was mostly the same—limited damage and no U.S. casualties. And Schmitt noted that the Space Force's role went beyond just warning people to get out of the way.

"It's not just about duck and cover. It's about defenses as well, and the more time they have to respond, the more effective they're going to be," he said. The Space Force transmits its data to ops centers around the globe and in theater, and those centers can task forces to take out the threat.

In October, the U.S. Navy fired off a dozen interceptors from ships in the Mediterranean Sea, while Israel and Jordan intercepted others. According to media reports, only one person was killed by the strikes, and most of the missiles were intercepted.

"As soon as it ended, I just remember sitting there and just being proud," the first lieutenant said. "It's hard to describe, but I was proud, because you and a team of people that you've been working with and training with are putting in countless hours for something like this to happen. You hope it never does, but when it does, it feels like your hard work paid off."

A few weeks later, Delta 4 was recognized for their efforts by the Air Force Historical Foundation, which selected Delta 4 for the Gen. James H. "Jimmy" Doolittle Award, given to a unit for accomplishing its mission with aplomb while under difficult and hazardous conditions in multiple conflicts.

The Doolittle Award had gone exclusively to Air Force commands until then. Delta 4, whose response was so critical to fending off the October attack, is the first Space Force unit ever to win the award.



The first Joint Chiefs of Staff (l-r), Chief of Naval Operations Adm. Forrest Sherman, Chairman of the JCS Gen. Omar N. Bradley, Air Force Chief of Staff Gen. Hoyt S. Vandenberg, and Army Chief of Staff Gen. J. Lawton Collins, led the armed services when NSC-68 was drafted to guide the U.S. response to Soviet aggression.

U.S. Army Signal Corps



# A Call for a New NSC-68 and Goldwater-Nichols Reform

It's time to rethink the factors shaping U.S. defense policy.

By Richard B. Andres with Gen T. Michael Moseley, USAF (Ret.), and Maj. Gen. Larry Stutzriem, USAF (Ret.)

**T**he United States is presently confronted with the most significant national security challenge since its founding. In the past three years, the global deterrence networks that the United States developed to promote a world governed by laws rather than force have begun to falter.

The first sign of this was the fall of the Republic of Afghanistan, followed quickly by Russia's invasion of Ukraine. More recently, Iran and its proxy forces launched attacks on Israel and commercial shipping in the Red Sea, and they continue to conduct low-level military operations against U.S. forces across the Middle East.

As these events unfolded, the People's Republic of China dramatically increased its harrying actions against U.S. naval forces in the South China Sea and stepped up its preparations for a potential invasion of Taiwan. Whether by coordination or coincidence, these disparate military actions have worked synergistically to expose the fact that the United States no longer has the military wherewithal to support its deterrent posture globally.

As was the case when President Harry S. Truman commissioned the reassessment of America's national security in 1950 that led to NSC-68 (United States



Objectives and Programs for National Security), the country has entered a period in which its national objectives and military capabilities are severely misaligned. Our military can no longer fully maintain the rules-based international order that has long been the cornerstone of U.S. foreign policy. This has opened the way for our adversaries to seize upon opportunities to achieve their goals through violence. There is a significant chance that this cascading failure of deterrence will lead to a war between the United States and China.

## DETER POTENTIAL REGIONAL HEGEMONS

In the wake of World War II, the United States reduced its conventional power projection capabilities in the hope of returning to the peaceful isolation and small military budgets that characterized its foreign policy before and between the First and Second World Wars. However, as the United States drew down its forces, the Soviet Union became increasingly bellicose and began building and fielding its own nuclear capability. With war looming on the Korean Peninsula and the situation in Europe deteriorating rapidly, President Truman requested a strategic assessment of American national security. The result was NSC-68, a report of Truman's National Security Council that diagnosed the emerging crisis and set a course for U.S. national security policy that persists today.

NSC-68 represented a radical change in priorities. The document began by establishing that the problem the United States faced was a rapidly changing bal-

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ance of international power that threatened to pull the nation into a third world war or a nuclear conflict.

While the authors of NSC-68 argued that the world's shifting balance of power was central to the problem, they also believed that ideology played a critical role. Like modern-day communist China, the Soviet Union's autocratic system required absolute ideological control over its subjects. Thus, should Soviet expansionism succeed, the global system that would emerge would be inimical to America's most closely held values.

The fear of violent regional hegemony that led to NSC-68 laid the cornerstone of modern U.S. deterrence. The United States would pay the high costs of making itself militarily strong, supporting the peaceful political and economic functioning of the free world, and fostering democratic change in the world's leading autocracy. For the 40 years following its publication, NSC-68 provided the compass heading for U.S. foreign policy.

The authors' decision to advocate for a powerful military was based on the firm conviction that the cost of failing to deter an autocratic great power would be significantly higher than the cost of maintaining a powerful military. Throughout the Cold War, the United States maintained relatively high levels of defense spending, rising as high as 14 percent of GDP in 1953. But, as the authors predicted, U.S. actions allowed the world to avoid a third world war or a nuclear conflict. Likewise, the report correctly anticipated that if the Soviet Union was unable to expand through the use of force, it would eventually collapse.

This analysis has clear parallels with today's crisis. Importantly, American citizens of that era who lived through WWI and WWII understood that the cost of preventing war was preferable to the alternative—as the cost of lives, opportunities, and resources in a world war is catastrophic.

## A CHANGE IN PRIORITIES

When the Soviet Union ultimately began to disintegrate, the

United States confronted two challenging decisions regarding its military. The first was whether to continue to maintain the substantial burden of supporting a first-class force. The second was whether to maintain a force oriented toward deterring regional hegemony or one aimed more at counterinsurgency and promoting democracy abroad.

When the Soviet Union fell, the Bush administration almost immediately published a new National Security Strategy that rejected a return to isolationism. The United States proved its commitment to these goals when, in 1991, it led an international coalition to defeat Iraq's invasion of Kuwait.

Yet, over the next two decades, U.S. foreign policy underwent a series of profound changes. The United States began to use its military with increasing frequency for lesser contingencies to stabilize regions and, in some cases, support long-term nation-building activities. Throughout the period, DOD engaged in nearly constant small-scale contingencies in Somalia, Haiti, Bosnia, Serbia, Libya, Syria, Afghanistan, and Iraq, among other places. The Department of Defense increasingly paid the bill by postponing the recapitalization of its aging Cold War equipment. By the mid-2000s, much of the nation's mainline military capabilities, originally developed during the Cold War, were operating decades beyond their planned retirement dates. By the late 2000s, readiness rates had dropped precipitously, leaving an increasingly large portion of America's air and sea forces technologically or mechanically unable to operate in the likeliest major power contingencies.

In 2008, the debate over whether the United States should prioritize defense procurement for ongoing small wars or for deterring regional autocratic hegemony reached a tipping point. Driven by calls from U.S. Central Command, then-Secretary of Defense Robert Gates came down on the side of altering defense priorities to focus on the current conflict. In a strongly worded speech, he called out the Air Force Chief of Staff for



Courtesy Photo

The 1991 Gulf War demonstrated U.S. commitment to deterring and combating, when necessary, regional hegemony like Iraq's Saddam Hussein. Led by the Air Force, the U.S. crushed Iraq's army, expelling them from Kuwait.

preparing for future conventional conflict in nonpermissive environments, labeling it "Next-War-Itis." He called for an even more rapid shift in priorities toward supplying forces for nation-building and away from building forces capable of deterring Russia and China.

In the decade that followed, DOD institutionalized this shift in priorities, with resources systemically transferred from programs that supported the long-term goal of deterring potential regional hegemony to those that supported the combatant commands' immediate needs. Programs designed to fight peer competitors, often already years or decades behind schedule, were further delayed or canceled. Emblematic of this, but far from exceptional, was the Air Force's nonstealthy B-52 bomber, which officially entered service in 1955 and, despite bitter protests by the Air Force, was programmed to remain at the center of America's strategic bomber fleet until at least 2060—in service over 100 years.

The resources available to fight peers and, more generally, to prosecute conventional wars were harvested for use in expanding the day-to-day missions of combatant commands.

## GOLDWATER-NICHOLS

In recent years, a growing chorus of defense leaders, including current Chairman of the Joint Chiefs of Staff (CJCS) Gen. Charles Q. Brown, former Commandant of the Marine Corps Gen. David H. Berger, former Deputy Secretary of Defense Robert Work, former Undersecretary of Defense for Policy Michèle Flournoy, and elected officials in the House and Senate have argued that the move away from preparing for future wars has less to do with strategy and more to do with organizational incentives embedded in the structure of DOD by the 1986 Goldwater-Nichols Act.

At the core of the problem is the recurring need for DOD to make difficult decisions about how to allocate limited defense dollars between current operations and preparing for the future. Before Goldwater-Nichols, the individuals responsible for making these hard decisions were mainly the chiefs of staff of the individual services. Chiefs were well-suited to make them because they were personally accountable for both short- and long-term outcomes. They were charged with both commanding ongoing military operations and advocating in Congress

for the equipment their service would need in future wars.

But Goldwater-Nichols removed the service chiefs from this role. The National Security Act of 1947 had reorganized the military and delineated service missions, but DOD had evolved in the 40 years since and the services were increasingly partisan and had demonstrated significant problems collaborating in joint operations, undermining the military's warfighting capability.

Removing the service chiefs from the chain of command and inserting regional combatant commanders instead to serve as the bridge between the President and front-line fighters was the solution offered by Goldwater-Nichols. In theory, the combatant commanders would be primarily concerned with effective joint operations rather than loyalty to any service.

Unfortunately, the solution did not work. First, although the legislation removed the service chiefs from the chain of command, it did not place the Chairman of the Joint Chiefs of Staff in the new chain of command alongside or above the combatant commanders. In this system, influence over the combatant commands and services depends on the Chairman's ability to cajole and persuade them to prioritize long-term and global planning needs, often at the expense of their own priorities and resources. In practice, this means that the Chairman's ability to strategically shape defense procurement is far less effective than Goldwater-Nichols' authors anticipated.

The second variable that undermined the department's ability to make hard choices between current and future defense needs involved the use of joint task forces rather than the existing combatant command structures. This created a new construct in which regional combatant commanders were bypassed for combat missions. Practically speaking, this left combatant commanders mainly responsible for their command's peacetime rather than combat missions.

Yet combatant commanders became the most important voices in the defense procurement process. This dynamic endures even after their exclusion from commanding combat missions by the new joint task force construct. This resulted in a persistent draw on defense dollars to fund a growing number of noncombat operations that too often did not contribute to an overarching strategy of preventing the rise of regional hegemony or deterring great power adversaries.

(L-r) Sen. Barry Goldwater (R-Ariz.), shown here with Sen. Sam Nunn (D-Ga.), was among the architects of the modern Pentagon's division of labor, defined in the 1986 Goldwater-Nichols Act, which drew a sharp line between present needs and those of the future force.



Terry Ashe/The LIFE Picture Collection





Senior Airman Patrick Sullivan/USAF

Development of the F-117 Nighthawk, the world's first stealth aircraft, came about as a result of the U.S. military's Second Offset Strategy, which sought to counter the Soviet Union's greater numbers of troops and weapons with ground-breaking technology. The Nighthawk went from concept to operational in just five years.

By circumventing national defense strategy and giving precedence to requests from combatant commands, DOD risks prioritizing immediate exigencies over the planning of ostensibly higher authorities. This not only results in suboptimal strategic outcomes but also actively contravenes the constitutional mandate to subordinate the military to elected civilian leadership in the executive and legislative branches of government.

Over the past decade, both civilian and military leaders at the Department of Defense have consistently identified the deficiencies of the 1986 Goldwater-Nichols Reform Act as the root cause of under-resourcing critical warfighting forces.

### THE FAILURE OF THE THIRD OFFSET STRATEGY

Over the past decade, China and Russia grew more powerful and militarily aggressive. While DOD officials issued dire warnings about increasing threats and tried twice to respond, both attempts failed because Congress chose not to increase the defense budget to match the requirements of DOD's strategy. Likewise, Congress and DOD did not fix the perverse incentive system created by Goldwater-Nichols.

DOD's first attempt at reform began in 2015, with the pursuit of the Third Offset Strategy, a comprehensive effort to maintain and extend the military's competitive advantage against growing Chinese and Russian martial power through the innovative use of novel technologies to offset the numerical and geographical advantages of modernized and capable adversaries. In simple terms, the strategy sought to exploit the U.S. technological advantage to counter the growth in military capabilities of China, Russia, and others.

The strategy was based on the First and Second Offset Strategies, which the United States executed during the Cold War. These succeeded because, at the time, both DOD and industry responded quickly to meet the strategies' requirements.

At the dawn of the Cold War, there had been an urgent need to develop intercontinental ballistic missiles (ICBM) to counter the USSR's advantage in numbers and proximity to Western

Europe. By prioritizing the project as part of the First Offset Strategy, DOD was able to accomplish one of history's greatest technological achievements in a mere three years.

In the late 1970s, when U.S. forces suffered a vast numerical inferiority in conventional forces in Europe, it executed the Second Offset Strategy. This time, the goal was to use stealth, precision guidance, and networking to overcome the USSR's larger force inventory. Once again, DOD was able to execute the strategy quickly. For instance, the F-117 stealth fighter progressed from initial concept to operational readiness in less than five years.

Despite the great efforts of the services and several innovative programs, a decade on it is hard to identify any single technology or weapon system in operation with significant implications for major power war or deterrence stemming from the Third Offset. DOD's inability to replicate the success of previous offset strategies is unsurprising. Throughout the 1990s, Goldwater-Nichols systemically moved defense acquisition authority from military to civilian decision-makers—from the services to the secretariat—with concomitant changes in priorities and timelines. Where the military services prioritized combat in acquisition decisions, the centralized DOD culture post-Goldwater-Nichols reforms often prioritized bureaucratic processes, consensus, and an array of nonmilitary political priorities. This culture drastically increased timelines, costs, and overruns.

In short, the Third Offset Strategy likely failed due to a simple lack of funding and more serious organizational problems.

### THE 2018 PIVOT TO CHINA

In 2018, the United States published a new National Security Strategy and National Defense Strategy (NDS) that officially focused defense on China rather than across the wide scope of threats highlighted in past strategies. This new focus on great power competition was replicated in the 2022 NDS and continues to guide policy today.

The rationale behind the 2018 NDS's pivot to great power

**Air Force plans to buy 386 F-22 Raptors (pictured below) were cut by half in the 2000s, as the Pentagon slowed acquisition of high-end capabilities like stealthy jets needed to deter peer competitors in favor of lower-cost weapon systems like the uncrewed MQ-9 Predator (right), needed for counterinsurgency fights in the Middle East.**



Tech. Sgt. Joseph Pagani/ANG

competition and focus on China was the same one that visionaries like Deputy Secretary of Defense Robert Work described when they advocated for the Third Offset Strategy. If an increasingly belligerent China could dominate the region by force and fear, it would become the regional hegemon and eventually dominate and displace the rules-based world order with an autocratic system more congenial to its own system of government.

One of the core concepts behind the 2018 National Defense Strategy centered on forming regional defense partnerships to counter China's approach of singling out and targeting countries one at a time. Defense planners posited that if China were to invade Taiwan, for example, it would significantly weaken the confidence of regional allies and partners in the U.S. commitment to their safety and security, thereby diminishing their resolve to resist pressure from China. This concern mirrored those of NSC-68 from nearly 70 years earlier about the Soviet Union but emphasized the urgency of addressing China's assertive foreign policy to prevent the unchecked spread of its expansionist goals.

While there was a good deal of bipartisan agreement in the defense community about the growing threat and need for reform, the writers of the new NDS faced two significant hurdles. The first was that they would have to execute that massive new requirement without an increase in funding. The second was that, even in the face of demands from the White House, the Joint Staff, and the services, the perverse organizational structure of DOD created by Goldwater-Nichols continued to frustrate attempts to refocus procurement on the capabilities needed to fight great power opponents.

The Pentagon adopted two approaches to attempt the execution of the ambitious 2018 National Defense Strategy without increasing defense spending. The first was to call for a variety of reforms to the organization of the DOD. The second was to move from a two-war to a one-war force-sizing policy focused on China. This signaled a major departure from the two-war construct established by the 1993 Bottom-Up Review, which dominated post-Cold War military thinking. While the



Trevor Cokley/USAF

attempt to reorganize DOD quickly collapsed under the weight of the Pentagon's bureaucracy, the downgrade to a one-war construct was more successful.

The rationale for transitioning to a one-war planning framework was ostensibly to reallocate resources to Asia, thereby enhancing the credibility of U.S. deterrent forces within the region. This meant accepting greater risk because, as the Pentagon diverted resources from other regions, it diminished the credibility of U.S. deterrent promises to allies and partners in those theaters. The effectiveness of the revised strategy hinged on assumptions concerning the Pentagon's capacity and readiness to execute the strategy, as well as the presumed incapacity of foreign adversaries to coordinate their actions to capitalize on new strategic windows of opportunity. Both sets of assumptions ultimately proved to be overly optimistic.

The strategy was meant to compel the Pentagon to shift away from its decades-old policy of prioritizing the immediate demands of combatant commands over the requirement to create forces capable of providing for their future needs. Yet, the move did not result in the intended balance between current and



future missions. DOD's organizational structure continues to systemically prioritize today's combatant command requirements over the modernization and recapitalization needs of tomorrow's combatant commanders.

This organizational misallocation of priority is not limited to short- versus long-term planning needs, but also service equities. The Indo-Pacific theater that is the focus of the new strategy necessitates a force composition that leans heavily toward naval, air, and space capabilities. It follows that implementing a China-focused strategy would require the Department to transfer resources from the Army's budget to prioritize the Navy, Air Force, and Space Force budgets. The focus on counterinsurgency in the 2000s similarly increased the Army's budget at the expense of Air Force recapitalization and modernization investments. In fact, the Army received over \$1.3 trillion more than the Air Force between 2002 and 2021, an average of \$66 billion more per year. Yet, such a decision today would require hard choices that Flournoy and others have described as impossible, given DOD's consensus culture.

Instead, the service shares of the defense budget remain static, and DOD's leadership continues to approve Army investments in duplicative capabilities, such as investing in \$60 million to \$70 million-a-shot long-range surface-to-surface missiles, fires that the Air Force could conduct for a fraction of the cost.

While the 2018 pivot failed to garner sufficient funds and fell afoul of the same organizational problem that had undermined previous efforts at reform, its biggest failure had nothing to do with budgets or organization. The principal assumption underlying the strategy was that the United States could safely move to a one-war construct and avoid increasing the defense budget because its adversaries in Europe, the Middle East, and Asia were not capable of synchronizing their actions to exploit this change in U.S. force planning. As of 2025, this assumption has proven incorrect.

## A WAY FORWARD

The United States is now faced with an impossible choice. It can reduce its foreign policy goals and commitments to bring them in line with its diminished military capabilities, or it can increase its military capabilities and capacity to bring them in line with its long-held goal of supporting a rules-based international system—one in which violence is not an acceptable means of resolving international disputes.

If the United States instead continues to attempt to deter China and Russia without building the capability and capacity to make its threats credible, adversaries will eventually call its bluff. Such a scenario will almost certainly lead to a war between great powers.

If the United States chooses to retain its diplomatic commitments, it must grow its military capability to meet them. This not only means increasing defense spending but also, importantly, making significant changes in the way DOD is organized and how it prioritizes its long- and short-term spending goals. But there is no longer time to spare. After decades of neglect, the country's capability to fight conventional wars and deter major powers is anemic. While all the services reflect this neglect, the worst off is the U.S. Air Force, which today is the oldest, smallest, and least ready in its entire history.


The backbone of the nation's bomber fleet, the B-52, just celebrated the 72nd anniversary of its first flight. The bulk of its fighter aircraft—F-15s and F-16s—were originally designed in the 1960s and 1970s, and they were first built during the Nixon, Ford, and Carter years. The Navy's Ticonderoga-class

cruisers and Los Angeles-class submarines were first commissioned in the 1970s and 1980s, respectively. The Army's primary battle tank, the M1 Abrams, was initially deployed in the 1980s. Equally or more concerning, the programs Congress has initiated since the end of the Cold War to modernize the military with new high-tech capabilities are decades behind schedule and show no sign of accelerating.

Overcoming the organizational inertia that has allowed this to occur will require a comprehensive and assertive reevaluation of both procurement strategies and operational doctrines. This reevaluation must be accompanied by an increase in funding, targeted investments in emerging technologies, and streamlined decision-making processes to ensure rapid and effective modernization.

In short, the U.S. government and defense establishment must immediately take four actions:

1. Initiate a comprehensive reassessment of national security, objectively evaluating the prevailing threat landscape. This initiative, akin to the effort that led to NSC-68 in 1950, should focus on formulating a holistic U.S. strategy that safeguards national security goals and minimizes the risk of U.S. forces becoming engaged in a war with China or Russia—or both.
2. Take immediate action to restructure the Defense Department and correct the organizational deficiencies that hindered past reform efforts. This will entail, among other things, repositioning the service chiefs within the chain of command while taking steps to preserve the ability of U.S. forces to conduct joint operations. Congress must revise or supplant the Goldwater-Nichols Act with policies that better balance DOD's immediate and long-term priorities.
3. Increase the defense budget to bring it in line with the evolving security landscape. Constructing a military force capable of dissuading China and Russia from engaging in actions that may precipitate a major power conflict requires substantial funding increases. If the administration and Congress are unable or unwilling to increase defense spending enough to credibly deter China and Russia, it would have significant negative economic and security impacts on core U.S. interests in ways most American citizens would find unacceptable.
4. Start evaluating defense capabilities with an eye toward shifting investment among the services based on a cost-per-effect assessment. Investing defense dollars wisely does not mean cutting or adding to budgets where most convenient or politically easy. Investment options should instead be weighed against each other based on desired battlespace effects, rooted in a strategy that poses a credible deterrent force able to overcome adversary military capabilities. This would require a tough-minded and comprehensive review of the roles and missions of service contributions to the strategy.

While the reforms described above will be difficult, they can either be made proactively or will become necessary in the event U.S. deterrence fails. It would be difficult to overstate the severity of the current crisis. If the United States does not change course quickly, the risk of war with China and possibly Russia and Iran will continue to increase. It is still possible to prevent this outcome, but doing so demands immediate and decisive action. 

*The views expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the National War College, Department of Defense, or the U.S. government.*





Boeing Space Illustration

The X-37B Orbital Test Vehicle maneuvers through space in this artist's rendering. The X-37B will ultimately need to be replaced, one of many unique Space Force capabilities that will require substantial investment.

# The Case for More Money for Space

**Creating the Space Force to counter China and Russia answered a rising threat. Now investments are needed to ensure space superiority.**

By Maj. Gen. Thomas Taverney, USAF (Ret.)

**T**he first Space Race began in October 1957 with the Soviet Union's successful launch of Sputnik, the first man-made satellite to orbit the Earth. From its inception, funding that Space Race was never a problem. Despite numerous early failures, the urgency of the challenge fueled continued funding because the consequences of losing were so grave.

Now the United States is engaged in a new Space Race, part of a broader great power competition that pits the United States against China not only in space, but in every military, economic, and technological domain. Yet unlike the first Space Race against the Soviet Union, which came hard on the heels of a world war and then another bloody fight in Korea, most of the

**Most of the American public is barely aware of the current stakes in space.**

American public is barely aware of the current stakes in this Space Race.

To be sure, there are differences. From the 1950s through '80s, when the fear of catastrophic nuclear confrontation was at the forefront of American minds. Today, fear of nuclear Armageddon falls far behind economic and other potential calamities in the popular consciousness. With space becoming a truly open and international domain, enabled by U.S. dominance and American support for the free and open use of space by all nations, China entered this competition aggressively. While losing to China in this great power competition does not necessarily mean nuclear missiles will rain down upon us, the risk of war in space should alert us to other devastating threats: the potential loss of GPS navigation; compromised missile warning systems; disrupted communications and the



China unveiled the Dongfeng-17 conventional medium-range missiles at a military parade in 2019. The missile can carry the DF-ZF hypersonic glide weapon, threatening U.S. bases and ships in the region.



Xinhua on X

potential crash of the space-enabled economy; and more. True, this is not the same as a nuclear apocalypse, but that does not mean the effect would not be apocalyptic.

Today, five years after the Space Force was established, fiscal realities are getting in the way of mission. The Space Force's fiscal 2025 budget will be less than its fiscal 2024 plan, a retrenchment caused by the squeeze on overall Department of the Air Force spending. Former Secretary of the Air Force Frank Kendall suggested the National Defense Strategy requirements for the Space Force budget require unprecedented increases in spending: "The USSF budget is going to need to double or triple over time to be able to fund the things we're actually going to need to have," he said this fall. "Somebody's going to have to make some decisions about whether to give us a bigger budget overall for this or do some internal trades."

Absent a major increase in spending, the Space Force will have to constrain its support for some missions, including expansion of new and existing missions driven by today's rivalry with China and the new emerging threats.

## LESSONS FROM THE 1950s

The biggest difference between the first Space Race and today is that in the 1950s and '60s, Americans were genuinely frightened by the Soviet threat and the potential for nuclear war. Children practiced emergency procedures in schools in case of nuclear attack. Fallout shelters were located throughout American cities. The risk of nuclear apocalypse was regularly depicted in books and movies and the Iron Curtain ensured that with few exceptions Americans never saw Russian-made products anywhere. Today, by contrast, Chinese products are everywhere, mostly bearing U.S. and European brands, and the general public is unpersuaded about the risks China poses beyond occasional news headlines.

The most logical threats from China are not nuclear Armageddon. China has been accused of penetrating U.S. and allied phone networks, deploying intelligence tools in cranes at U.S. ports, and manipulating popular opinion through the Chinese-owned TikTok app. Militarily, China has demonstrated

capabilities to destroy satellites, and to threaten U.S. forces on land and at sea with hypersonic and hypersonic glide missiles launched from ships, submarines, and fixed and mobile launchers.

Today's Chinese threat is from space itself. In September 2006 China used a ground-based laser to dazzle or "temporarily blind" a U.S. classified optical reconnaissance satellite. China has at least five sites with directed-energy capability. In January 2007, China launched a ballistic missile from Xichang Space Launch Center carrying a kinetic kill vehicle, which later collided with Fengyun-1C (FY-1C), a nonoperational Chinese weather satellite, at an altitude of 863 kilometers, destroying the satellite and spreading 2,000 pieces of debris that still exist to this day. Then in January 2022 China demonstrated orbital rendezvous and capture capability, when its SJ-21 dragged a defunct BeiDou navigation satellite into a geosynchronous graveyard orbit. While this technology has a clear use in cleaning up space debris, it also has potential as an offensive counterspace/kidnapping capability.

Russia, meanwhile, remains a space power. It too has demonstrated significant counterspace capabilities, beginning in 1968 and most recently in November 2021. Additionally Russia still maintains perhaps the world's largest nuclear stockpile and operationally demonstrated the lethality of their own hypersonic missiles against Ukrainian targets. Combined with one of the world's most capable space capabilities, and in combination with other bad actors such as Iran and North Korea, Russia remains a potent and dangerous threat.

Since September 2001, U.S. military investment totaling some \$5.4 trillion has prioritized counterterrorism over existential strategic threats. While a pivot to Asia/China was announced by the Obama administration in November 2012, at most, a slow turn. Through it all, China has continued a single-minded focus on overcoming the U.S. as the world's leader in military might.

Yet in 2018, the United States highlighted "Great Power Competition" with China as our central strategic focus and in 2022, China as the nation's "pacing threat," with Russia, North Korea, and Iran as additional areas of concern. Russia's war in Ukraine,

however, has drawn all these players increasingly together. U.S. investment has shifted toward great power competition but we have not yet completed this pivot to a potential conflict that, moving at astounding speed, will require new military capabilities to deter and, if necessary, respond. The shift requires a very different military posture and capabilities than those needed for a focus on terrorism.

That makes today an optimal time to examine mission versus funding—especially in space, where America’s strategic competitors, China, and Russia, are developing space capabilities and doctrine expressly designed to challenge U.S. capabilities and advantages—and for which U.S. countermeasures are not yet fully developed and deployed.

The Space Force was established to define the responses to these threats therefore initial funding levels did not include responses to these threats, meaning funding was set within the constraints of those programs already in existence in 2019 within the Air Force and the other military services. As a result, the Space Force is insufficiently funded to accomplish its expanding mission in the face of growing and changing threats. The formation of the Space Force collected the preponderance of DOD’s space-enabled assets into a single service; it did not provide the resources or means to address the underlying threats that led Congress to press for the creation of a U.S. Space Force in the first place. To date, the Space Force’s budget has remained constrained, both by the competing needs of the U.S. Air Force (within the Department of the Air Force) and those of the other military services within the Department of Defense. The Pentagon’s funding outlook does not match the growing demand for space capabilities from the combatant commands. Soon, the service’s ability to respond to a crisis could be limited.

“The establishment of the USSF was a response to the demands of great power competition in the space domain,” wrote Chief of Space Operations Gen. B. Chance Saltzman in his “C-Note” #20. “Nevertheless, we still have organizational constructs, processes, and policies that are suboptimized for

the great power security environment. Therefore, we must implement enterprisewide changes that can better prepare the USSF for this type of challenge.”

“The United States risks falling behind China in the military Space Race unless they are funded to implement the strategies they have developed to fundamentally transform its space capabilities,” Kendall said in January, a week before his final acts as Secretary. “We are going to need a much bigger and more powerful Space Force ... that needs to evolve from the equivalent of the merchant marine to a navy.”

To effectively prepare for great power competition and ensure the nation’s asymmetric advantage in space will continue to enable U.S. joint combat capability, the Space Force will need substantial increases in manning and materiel funding. Without that injection of capital, it will fall short of its emerging strategies.

## THE THREATS

China has developed hypersonic missiles that can be launched from land, sea, undersea, air, and even space itself. Operating at many times the speed of sound, these projectiles can get lost in atmospheric clutter, making them hard to track, and because they can also maneuver aerodynamically without firing engines, they are much harder to find, fix, and track than conventional ballistic missiles, which follow a predictable trajectory. Both Russia and China have also demonstrated direct-ascent anti-satellite missiles, as well as satellites with proximity maneuver along with grappling capabilities to threaten our space systems. Russia has even announced its intent to put nuclear weapons in space.

At the time the Space Force was formed, counters to these threats did not exist. Solutions have since been developed, but to be fielded, they must be resourced.

The service’s budget has nearly doubled in the five years since it was established, but that increase reflects mission consolidation as many space-focused personnel and programs from the Army and Navy as well as the Space Development Agency moved under the purview of the new service. To date, the nation has

## Growing Mission Requirements

The Space Force was launched with six clear missions. That mission set has expanded over the past five years.

Existing Missions	Objective
Acquisition	Resilient constellations to counter emerging hypersonics threat.
Launch	Increase launch capacity in support of proliferating military and commercial constellations and reduce risk to—and stress on—existing infrastructure.
Satellite Operations	Automate where possible to manage expanded constellations and streamline battle management responsibilities.
Space Superiority	Continue evolution from space domain awareness to a more robust capability to execute the space order of battle.
Expanded COCOM Support	Support growth in capability and effectiveness of the component commands within each combatant command.
Training	Advance the sophistication, capability, and concepts of operations to conduct effective, real-world space operations training.

New Missions	Objective
Tactical Surveillance, Reconnaissance and Tracking (TacSRT)	Space-based TacSRT is a military (Title 10) responsibility, rather than a national intelligence (Title 50) function. Integrating commercial and purpose-built military satellites into a seamless gathering system poses new challenges.
Dynamic Space Operations	Will require more people and new capabilities to operate as fast or faster than adversaries in space.
Space Futures Command	Equipping this new field command with the resources needed to develop and deliver future capabilities at a speed and scale relative to the threat is crucial to making USSF a flexible and responsive institution.
Defending the Joint Force	USSF needs to develop means to protect the joint force from the space-enabled forces of strategic competitors. This includes both space-based and terrestrial means to deny use of space to adversaries where and when needed.
Data Analysis	Demand for data analytics power grows in direct proportion to the volume of data generated by a rapidly expanding national security space enterprise.



not fundamentally increased its investment in military space.

The fiscal 2025 budget, which has not yet been finalized, is set to dip, to under \$30 billion, as a result of budget pressure within the Department of the Air Force and the Fiscal Responsibility Act, which caps defense spending. But looking out further, Space Force budget documents indicate no plans for rapid growth over the next five years.

“We are maxing out our budget today and seeing a flat-line budget in the DOD,” noted Vice Chief of Space Operations Gen. Michael A. Guetlein in a Defense News interview last summer. “It’s got to change. We are seeing a threat that is intent on narrowing the capability gap between us and them. Today, we have margin in that capability gap. If we don’t start increasing our investment in space, we’re going to see that capability gap reverse.”

## EXPANDING AND NEW MISSIONS

In the nation’s first State of the Union Address, President George Washington said, “To be prepared for war is one of the most effectual means of preserving peace.” Preparing for great power competition means, in part, fortifying our employed-in-place infrastructure in the continental United States against surveillance, interference, and attack.

“Great power competition involves rival nations with global interests, reach, and influence vying to be the preeminent actor in international politics,” Saltzman wrote in his November 2023 C-Note #20. “Great power competition occurs on a global scale. As such, competition between rival great powers unfolds in every domain—most recently in space—and across every area of responsibility. At the same time, most competition between rival great powers occurs below the threshold of open hostilities. Day-to-day, great powers compete for influence and prestige. This is where commitment is tested, resolve is demonstrated, and credibility is established.”

The Space Force must therefore continue to invest in expanding existing missions while at the same time finding the funds to take on new and critical missions.

## GROWING MISSIONS

The USSF response to threats to U.S. space capabilities includes developing highly proliferated resilient constellations, increasing orbital diversity, and developing the ability to rapidly replace capabilities in event of a loss.

To grow required capability as effectively as possible, the Space Force exploits the capabilities it has, buys what it can, and builds only what it must. The manpower required to acquire, operate, and sustain these capabilities will be greater than what the Space Force can now afford. The developing persistent infrared Missile Warning (MW), Missile Tracking (MT), and Missile Defense (MD) systems to track and counter hypersonic threats require satellites operating at lower orbits in order to detect and track these dimmer threats and report on them at the speeds necessary to enable intercepts. This means large constellations in low- and medium-Earth orbit not just a few satellites, and while these can be smaller and lower cost, the necessary quantity will make this an expensive system. The missile warning/tracking portion would augment the current Space-Based Infrared System, but the greater challenge will be the new mission to provide missile defense support and its associated higher quality of service and global coverage.

A second area of intense growth is launch. Two major factors are driving an exponential increase in launch rates: First, the rapid increase in acquiring proliferated constellations, and second, the huge increase in the support of commercial launches. These increases affect both of the Space Force’s major launch bases:

- **Cape Canaveral Space Force Station (CCSFS), Fla.** The increase in launches for CCSFS exceeds an order of magnitude increase. The Cape projects a “Spaceport of the Future” to enable launching every day. The launch cadence will likely approach approximately 150 launches **next** year.

- **Vandenberg Space Force Base (VSFB), Calif.** The launch rate at Vandenberg, while lower than CCSFB, is still seeing an order of magnitude increase, anticipating 50 launches next year.

As the Space Force adds all these new satellites, its work to



Northrop Grumman illustration

The Space Development Agency is creating a mesh network of missile warning, tracking, and communications satellites in low-Earth orbit intended to track and target hypersonic and ballistic missiles and survive if threatened by attack.



Joshua Conti/USSF

A Falcon 9 rocket carrying Starlink satellites launches from Space Launch Complex 40 (SLC-40) at Cape Canaveral Space Force Station, Fla. The Space Force will need to expand launch facilities on both coasts, and potentially elsewhere, to keep up with growing demand for launch services.

maintain and control its satellite inventory will likewise grow by a factor of at least 10. The corresponding increase in complexity of operating satellite constellations will add to the increased workload, as Guardians manage the subtle differences between satellites in the constellations, bring on new satellite capabilities within each constellation, and allow satellites to interact between constellations (e.g. MW/MT to Transport layer). All of this will also increase the scope, complexity, and nuance of required training.

“From a technological perspective, great powers have the resources to field advanced military technologies that increase the tempo, range, precision, and destructive capacity of military operations,” Saltzman wrote in C-Note #20. “Once achieved, however, relative technological advantages are fleeting, since a great power has the resources to rapidly mimic or counter a rival’s advantage. This makes rapidly transitioning advanced technology to military applications a persistent element in great power competition.” As the commercial satellite ISR and communications markets have demonstrated in Ukraine, private sector innovation can be invaluable in military application. The Space Force needs to exploit the capabilities these systems can offer for Tactical Surveillance, Reconnaissance, and Tracking. The TacSRT environment is being shaped by a rapidly growing commercial space sector, and the Space Force is embracing these capabilities.

The USSF will integrate a mix of organic, allied, and commercial space solutions into hybrid architectures where the nation’s space capabilities promise to become greater than the sum of the parts. The USSF will leverage the commercial sector’s innovative capabilities, scalable production, and rapid technology refresh rates to enhance the resilience of national security space architectures, strengthen deterrence, and support combatant commander objectives in times of peace, competition, crisis, conflict, and post-conflict.

This strategy is in direct support of U.S. national policy and strategy, including the Department of Defense (DOD) Commercial Space Integration Strategy (2024), United States Novel Space Sector Authorization and Supervision Framework (2023), National Security Strategy (2022), National Defense Strategy (2022), National Military Strategy (2022), United States Space

Priorities Framework (2021), and the National Space Policy (2020).

USSF has growing mission areas where the responsibilities are increasing, though the authorizations are not keeping pace commensurate with the current force structure. The space area of responsibility (AOR) is expanding beyond geosynchronous to include cislunar space as the nation pursues the potential for a permanent presence on the lunar surface. With adversaries also pursuing lunar basing and capabilities, space situational awareness and dynamic space operations (DSO) capabilities will have to grow with the expanding AOR, demanding new satellites to support communications, navigation and timing, ISR, and new systems for space superiority.

## DYNAMIC SPACE OPERATIONS

The most critical mission going forward will be space superiority and the ability to defend our space systems and assure they remain available regardless of the attack. America’s adversaries recognize that U.S. combat effectiveness depends on space-based assets, which is why they target our space capabilities in pursuit of their own strategic advantage. Threats include cyber, kinetic, lasers to dazzle or damage, co-orbital spoofing and jamming, and potentially nuclear space detonations, as threatened by Russia.

“There is a lot implied when we start to unpack what we need to conduct dynamic space operations, whether it is on-orbit refueling, on-orbit maintenance, responsive launch, or other ways to achieve sustained maneuver and in-domain logistics on orbit,” Gen. Stephen N. Whiting, commander of U.S. Space Command, said in August at the Army Space and Missile Defense Symposium. “I also think it will become increasingly important to make our space-enabling infrastructure more resilient and survivable. Exploring ways to increase mobility and proliferation will become key facets of the way we envision fighting in 2040. Capabilities to operate in cislunar space, the vast swath of the heavens lying between the Earth and the moon, further will become a SPACECOM mission as NASA and commercial firms pursue lunar colonization and other related activities.”

In the face of such a future, the task of maintaining U.S. space advantages will only grow more complicated, requiring the



Space Force Guardians with Space Delta 2 at Vandenberg Space Force Base, Calif., monitor the space domain 24/7. The proliferation of satellites, potential threats, and the rapidly growing volume of data captured by the Space Force and its industrial partners is driving increased needs for data analytics to better understand the domain.



David Dozoretz/USSF

ability to both assure the availability of U.S. capabilities when needed and, when necessary, to deny adversary capabilities should they threaten U.S. interests. Among needed capabilities will be on-orbit refueling, on-orbit maintenance, responsive launch, and the means to achieve sustained maneuver, logistics on orbit, and ultimately fires. DSO envisions capabilities that complicate adversary targeting challenges by providing in-space capability to change easily predictable constant energy orbits of legacy constellations.

## DEFENDING THE JOINT FORCE

The space enterprise now needs capabilities to protect the rest of the joint force from the space-enabled terrestrial forces of our strategic competitors. For example, China has built a space-based system to find, fix, track, and target U.S. and allied navies, air forces, and ground forces trying to move through the Pacific and the first and second island chains. This C5ISR system enables over-the-horizon fires to hold at risk U.S. Navy ships trying to get from the West Coast into the western Pacific and U.S. air and ground forces trying to move within the island chains. Additionally, U.S. GPS signals are constantly under threat of jamming and the satellites that generate those signals are also under threat.

The Space Force must develop the means to defend its own satellites and to hold those of adversaries at risk to guard against the loss of space capabilities to the joint force.

Envisioning what those requirements will be and how to field those capabilities will be the responsibility of the Space Force's newest field command: Space Futures Command. "Space Futures Command will be responsible for ensuring our long-term technical advantage in space," CSO Saltzman said in announcing its formation last February at the AFA Warfare Symposium. "What we're talking about here is nothing less

than rebaselining the way we identify, mature, and develop concepts that will shape the service for years to come. This is critical because there are so many things that we need to get right. How do we take in new ideas? How do we test them? How do we align them with the art of the possible, then resource them according to the science of the practical?"

As a baseline, the new command will bring together three centers—the Space Warfighting Analysis Center, the Concepts and Technologies Center, and a new Wargaming Center—to forecast the future operating environment, define the service's operational concepts, and ultimately "document the objective force" needed for future success.

That force design will drive near- and longer-term funding needs and the mission-by-mission studies needed to craft the Space Force's force structure for the next 10 to 15 years.

## CONCLUSION

In the near-term, Space Force spending is actually moving in the wrong direction. Congress has not approved a fiscal 2025 defense appropriations, so the department is operating on a continuing resolution. But the House Appropriations Committee cut about \$900 million from the Space Force's request and Senate legislation cut around \$1 billion. At a point when even if funding were level, it would be inadequate, the Space Force instead is feeling a big squeeze.

Current mission demands suggest the U.S. Space Force is already a \$50 billion to \$60 billion military service, trying to make do on less than \$30 billion. Without sustained funding increases over and above inflation, USSF cannot achieve its objectives, let alone its potential. ★

*Thomas "Tav" Taverney is a retired Air Force major general and former vice commander of Air Force Space Command.*

# AFA Grant Tackles Child Care Needs at Eglin

**T**he Air & Space Forces Association’s partnership with Operation Child Care Project (OCCP) was on display during a bustling November weekend in the Florida Emerald Coast, marking the beginning of a long-term impact from which military families will benefit.

AFA’s United Forces & Families (F2) Program granted \$5,000 in funding support to OCCP’s HomeFront Helpers Pilot, which will directly address the unique child care challenges of military families stationed near Eglin Air Force Base and Hurlburt Field, Fla. The grant provided \$250 stipends to each of the 20 “Helpers” who attended the weekend cohort event and completed all online training, ensuring the Helpers meet and exceed DOD standards for in-home child care requirements.

During 2025, these fully trained and vetted Helpers will plug into the local community to fill the child care gaps as private caregivers for Hurlburt and Eglin families. These Helpers and the others that join the program as needs evolve will:

- Work one-on-one with requesting military families;
- Be connected to military families in need of child care through the OCCP Case Management system; and
- Fulfill staffing needs when local child care centers, both on base and off base, are faced with staffing shortages.

“We know that at the core of most, if not all, quality-of-life issues that military families face is a lack of access to affordable quality child care. With almost 75 percent of our Helper cohort being military spouses, prior service members, or retired military spouses they deeply understood the challenges today’s military families face,” said Kayla Corbitt, CEO of Operation Child Care Project and an Army spouse.

“Our partnership with AFA furthers our mission of bringing military family voices to the table to ensure that programing and solutions are designed by families for families,” remarked Corbitt.

Newly minted Helper Megan Cunningham shared that she “wished this program existed” when she was serving as an Active-duty Airman and raising two children as a single mother.

“I got out because I didn’t have reliable child care that supported my shift work as part of Security Forces,” Cunningham said as tears filled her eyes. “I truly wanted to continue serving.”

Cunningham said she relocated back to the Eglin area following her transition as it felt most like home to her. Her heart for service is now finding fulfillment in the HomeFront Helpers pilot to provide trusted child care options to local military families who face the very same challenges that she did many years ago.

The program’s effectiveness was also largely due to the leadership and collaboration from the Early Learning Co-



Courtesy photo

**AFA’s United Forces & Families (F2) Program granted \$5,000 to support OCCP’s HomeFront Helpers Pilot, which trained 20 “Helpers” to meet and exceed DOD standards for in-home child care.**

alition (ELC) of the Emerald Coast, which provided direct and expedient connection between OCCP and critical contacts within the State of Florida’s Department of Children and Families (DCF). Representatives from ELC and the Florida DCF provided critical online and in-person education for the Helpers and facilitated professional development trainings.

“Our mission is to support the success of every child and their family. This program is another step toward our vision of every child receiving quality early education and care,” said Dana Hodges, CEO of the Early Learning Coalition of the Emerald Coast.

AFA recognizes child care as one of the critical components of family readiness through its ENGAGE publications, legislative priorities, sessions at the Air, Space & Cyber Conference, and United Forces & Families grants to support programs like the HomeFront Help pilot.

“Operation Childcare Project’s HomeFront Help Program is an incredible example of the forward-thinking, collaborative solutions our United Forces & Families program seeks to amplify and grow,” said Kari Voliva, AFA’s Vice President of Member and Field Relations. “Access to safe and reliable child care is not a ‘nice to have’ benefit. It is a mission requirement for today’s Air and Space Forces.”

Corbitt added that this first-of-its-kind program was designed to be replicated across the forces, to provide an augmented level of care to Air Force and Space Force bases around the nation. OCCP is already scouting areas for the next rollout.

To find out more about the HomeFront Helpers program, visit [www.occproject.org](http://www.occproject.org).



# AFA “ENGAGES” in Military Family Readiness

**A**FA’s United Forces & Families (F2) program has officially launched ENGAGE, a new digital publication series that identifies key readiness opportunities, addresses challenges, and provides resources for military families. The publication, authored by military members and spouses, premiered at AFA’s 2024 Air, Space & Cyber Conference.

“We are all in this together,” said Jennifer Saltzman, spouse of Chief of Space Operations Gen. B. Chance Saltzman, in an interview featured in the inaugural edition of ENGAGE. “There are roles for all of us to play to find the best answers for our families.”

The ENGAGE initiative highlights lived experiences and challenges, provides in-depth analysis on family readiness challenges affecting mission readiness, and offers opportunities to strengthen connections.

There are currently three editions of ENGAGE available to read online, each one focusing on a unique challenge faced by military families, and each one providing solutions head-on. Here is a glimpse into each edition:

## 1. Empowering Guardians and Their Families

Shaping the Guardian experience means empowering the U.S. Space Force, our newest service branch, through external opportunities to strengthen connections and support overall family well-being. ENGAGE’s “Empowering Guardians and Their Families” edition, authored by Guardian spouse Nicole Murray, delves into these connection opportunities.

One key initiative inspiring Guardians and their families and creating a continuum of connection is a brand-new Space Force tradition at Basic Military Training (BMT) graduation: family pinning ceremonies.

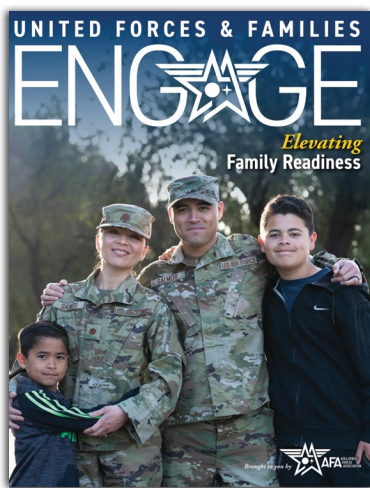
“We wanted to bring in the people who are important in the Guardians’ lives,” said Maj. Clinton Emry, the commander of the 1st Delta Operations Squadron. “That’s where the next space warfighter is going to come from—the influence of a fourth-grade science teacher,” he said.

The family pinning ceremonies are underwritten by an AFA F2 grant with two pins provided per graduate.

“We’ve witnessed the powerful impact these pins can have on bringing in family members and recognizing their sacrifices and contributions. These pins are small but mighty ... an inch of Guardian family pride with the unlimited power of connection,” said Kari Voliva, AFA’s Vice President of Member & Field Relations.

## 2. Child Care Matters

One of the most hot-button challenges for military families today is child care. In the child care edition of ENGAGE, Savannah Stephens, an Air Force Reserve Public Affairs Officer and DAF



Each issue of AFA’s new digital publication, ENGAGE, tackles a different problem by providing resources, tools, and support.



To learn more about ENGAGE and AFA’s F2 program, visit [www.afa.org/Engage](http://www.afa.org/Engage).

civilian, explores the significant challenges like inadequate staffing at child care centers and limited child care options for Air and Space Forces families.

The “Child Care Matters” edition focuses on retooling military families as it relates to access to reliable and safe child care options. DAF senior leaders are not turning a blind eye, Stephens writes, they are diving in to support these critical issues to fight for affordable solutions.

“I hope you all know that you’ve got someone at the very top in your corner ready to fight for the issues that you’re working on and take child care to the very top within the Pentagon,” said Grier Martin, assistant secretary of defense for manpower reserve affairs, at the first-ever Child Care Summit hosted in 2023.

## 3. Elevating Family Readiness

“Military families are the backbone of our all-volunteer force. Supporting the success of military families is not just a moral imperative; it’s a strategic necessity for the security and defense of our country,” said Heba Abdelaal, an Active-duty spouse and expert on military family readiness.

ENGAGE’s “Elevating Family Readiness” edition offers key strategies for resilience in family readiness; shares often-overlooked statistics and facts, including that 80 percent of surveyed military families are paying more for housing than they can comfortably afford; and that 50 percent of stateside military bases are in health care deserts.

In another section, Heather Campbell, a military family advocate and expert on food insecurity, provides insights on challenges military families face.

## WHAT MAKES ENGAGE UNIQUE

The unique challenges facing military families require unique solutions that evolve over time. The ENGAGE series includes authentic, first-person insights and in-depth expert insights that meet Air and Space Forces families

where they are, says Lyndsey Akers, AFA’s F2 Task Force Chair.

“What makes this digital publication series so special is that it was envisioned, curated, and designed by military spouses who were compensated for their work while also sharing stories that offer creative solutions to quality-of-life issues that many military families face,” Akers said.

“ENGAGE connects, empowers, and inspires, offering insights and fostering a strong sense of unity. As an Active-duty Air Force spouse for over 20 years, I’ve seen firsthand the resilience and strength of our families. I’m proud to be part of an initiative that highlights their vital role and ensures their voices are heard,” said Kristin Walker, 20th Fighter Wing deputy command spouse and ENGAGE’s creative director.



## William W. Momyer

### Mr. Tactical Airpower.

**W**illiam Momyer, known as “Spike,” was an outstanding tactician who was instrumental in developing and implementing air doctrine throughout his career. After graduating from the University of Washington in 1937, he became an aviation cadet and won his wings. In 1942, during World War II, he deployed as a group commander for the invasion of North Africa, where he proved himself an Ace fighter pilot, earning eight victories, the Distinguished Service Cross, and three Silver Stars for operations in North Africa, Sicily, and Italy.

He made a name for himself as both a pilot and staff officer who studied tactical air operations closely. He objected, for example, to the then-prevalent practice of tying aircraft to ground units or having them orbiting overhead to provide support. To Momyer, this was counterproductive. He pushed instead to aggressively gain air superiority by destroying the Luftwaffe, either in the air or on the ground. His ideas soon became accepted as basic air doctrine: Achieve air superiority first; then conduct air interdiction of enemy supply lines; and then fly close air support. To him, such a priority would best achieve the primary goal of saving the lives of Soldiers on the ground.

After World War II Momyer served as a fighter commander at all levels, including a group in Korea. He attended the Air War College, then remained on the faculty, following that up as a student at National War College. Momyer was also a planner at Tactical Air Command headquarters at Langley Air Force Base in Virginia. He was the expert on air/ground cooperation.

As a lieutenant general in 1966 he went to Vietnam as the 7th AF commander in Saigon—he would soon get a fourth star. Given the ubiquitous role played by airpower, he pushed the commander, Gen. William Westmoreland, to name Momyer as his deputy. Westmoreland refused, stating that this was a ground war and should be commanded by ground officers. Momyer was instead to remain a “Deputy for Air.” In this role, he was to provide “timely advice and recommendations” and seek to “synchronize” air operations. It was a meaningless title that possessed no staff and gave Momyer no added authority over air operations in South Vietnam, much less control over the course of the war. Essentially, Momyer was a high-ranking tactician.

Momyer was a brilliant thinker, a trait that tended to make him less tolerant of those who could not keep up with him. His memoirs, “Airpower in Three Wars” (Government Printing Office, 1978), look back on his career and draw a number of cogent lessons—some of which, unfortunately, were not learned.

He stressed continuously the importance of gaining air superiority, and in Vietnam he was particularly disgusted with the rules of engagement (ROE) that prohibited attacks on enemy airfields and surface-to-air missile sites unless they were “threatening”—i.e., they shot and missed—and the inability to strike most of the lucrative targets in the North that were inside prohibited zones around Hanoi and Haiphong, as well as the buffer zone along the Chinese border. These zones were established in Washington and generally only lifted by the approval of President Lyndon B. Johnson.

To Momyer, and indeed, most U.S. pilots, these ROE were ridic-



Air & Space Forces Association Library

**Then-Lt. Gen. William Momyer speaks at a press conference in 1967. He led that year’s Rolling Thunder airpower campaign against North Vietnam.**

ulous, as well as dangerous, because they made it impossible for the U.S. to achieve air superiority by taking down North Vietnamese air defenses, which could have been done in 1964. Instead, such limitations on airpower meant U.S. losses were heavy and the air war became a war of attrition, every bit as demoralizing and bloody as the ground war in the South.

In fact, Momyer argued that the entire air strategy formulated in Washington was fatally flawed. It was never made clear what exactly the President and his civilian advisers wanted airpower to accomplish. When pushed for goals, the results were vague: Disrupt the flow of supplies to South Vietnam; raise the morale of the South Vietnamese; and make North Vietnamese leaders more amenable to negotiation. Only the first objective had a military flavor; the others were psychological, and such psychological goals are notoriously difficult to achieve with measurable results.

Momyer left Vietnam in 1968 just as Rolling Thunder was grinding to a halt. He returned to the States and took over Tactical Air Command. From that position he worked for the next four years to provide ever more effective weapons and tactics to be used in Vietnam. He remained “Mr. Tactical Airpower,” and was instrumental in pushing for the A-10 ground support aircraft. ★

Momyer retired in 1973 and published the memoirs noted above in 1978. He died in 2014 at age 95. An outstanding biography is by then-Col. Case Cunningham, *William W. Momyer: A Biography of an Airpower Mind*, which was a 2013 Ph.D. dissertation at the School of Advanced Air and Space Studies and can be accessed on line.





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