

**THE**

# MOBILITY FORUM

THE MAGAZINE OF AIR MOBILITY COMMAND | SPRING 2020

Agile, Prepared,  
Responsive:  
**Readiness as  
an Asymmetric  
Advantage**



2019  
**SAFETY  
AWARD  
WINNERS**

Pages 20-29

**With Dedicated  
Airmen, Team  
McConnell Conquers  
Challenges**

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## AIR MOBILITY COMMAND

Gen Maryanne Miller



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A C-17 Globemaster from McChord AFB, WA, flies over the flight line during Air Mobility Command's Mobility Guardian 2019 at Fairchild AFB, WA, Sept 10, 2019.

USAF photo by  
Amn Kiaundra Miller



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## *Gen Maryanne Miller*

# Agile, Prepared, Responsive: Readiness as an Asymmetric Advantage

### Right Effects. Right Place. Right Time.

These three “rights” describe the characteristics that make the mobility mission a strategic advantage in the defense of our nation. Woven together, these “rights” create synergy as we project decisive strength across contested domains—our Vision. Yet, without a state of readiness this synergy is not possible. As Mobility Warriors, we must remain focused on guaranteeing these “rights” every day. As we continue to make progress in each of our command’s six priorities, I want to adjust our focus and examine a few aspects of readiness fundamental to a lethal force.

**Agile.** Readiness enables agility and makes us able to change faster than the changing environment around us. As we consider the challenges inherent to interstate competition, we recognize the need for our actions in the battlespace to occur more quickly than our enemy can anticipate. Gen David

Goldfein, Air Force Chief of Staff, refers to the 43 quintillion possible combinations of a Rubik’s cube as an analogy for the multiplicative operational combinations our Joint Force must present to our adversaries. Like a neural network able to anticipate and exploit the weaknesses of an opponent, an agile Joint Force shapes conflict through rapid adaptation and compounds the stressors levied on an enemy system.

Agile operations put our enemy “on the horns of multiple dilemmas.” Like putting money in the bank, agility is the currency with which we operate in the information age. This is what it means to move at the speed of war.

**Prepared.** Anyone familiar with team sports understands that practice is essential in order to work together. The results are devastating when the team is not prepared. During the 2004 Olympics, I remember watching the USA men’s basketball team bring home the bronze medal breaking our gold medal winning streak

in place since 1992’s Dream Team. Despite Team USA’s roster having the youngest and most athletic players to ever play the game, the team was not as prepared as those of Puerto Rico, Lithuania, and Argentina, who had all defeated us in the games.

Like a championship team, diligent preparation is required for our Air Mobility Command (AMC) team to achieve the right effects. If we want to reap the benefits of agility, we must sow the hard work of preparation now. Though we are not currently engaged in conventional state-on-state war, the geopolitical climate should prompt us to remain vigilant and carefully assess our weak areas. We must not delay—now is the time to mend the nets.

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Photo above: C-130Js, KC-135s, C-17s, and a KC-30 line up on the flight line during Mobility Guardian 2019 at Fairchild AFB, WA. The aircraft taxi in an “elephant walk” formation, in which multiple aircraft lined up on the flight line and flew in formation.

USAF photo by SrA Kristine M. Gruwell

Each of our functional communities enjoys the benefit of carefully developed training programs—and our training is truly world class! Readiness is the desired end state of all training efforts; however, functionally prescribed training is only one element of preparedness. Each Airman must be fit in mind, body, and soul to be ready to handle the costs of conflict. As wingmen, we need to help each other build this comprehensive fitness by sharing our weaknesses and working together to improve. This also means that we fight for excellence regardless of what the training tables indicate, never settling for the minimum standard. This ethos maximizes the strengths of the team and will set us on the course to superior lethality.

The headquarters staff is also working hard to ensure our support networks are prepared for the full spectrum of conflict. With the 2019 Warfighting Headquarters Transformation complete, the staff is poised for decision dominance with the Air Force Forces (AFFOR), the Organize, Train, and Equip (OT&E), and the 618th Air Operations Center processes streamlined into a comprehensive battle-rhythm, which aligns operational processes to the 2018 National Defense Strategy and our AMC Vision. Utilizing cross-functional experts and careful planning, we have crafted the first-ever Air Operations Plan, which aligns operational planning and mission execution with my commander's intent and that of the Commander, U.S. Transportation Command. A comprehensive overhaul of operational Special Instructions and new Annual Training Guidance complements these updates to connect policy to real-world effectiveness for our Airmen.

## Readiness is more than the color green on a stoplight chart; the Airman who is prepared in body, mind, and soul is truly ready to execute the mission in peace, in war, and everywhere in between.

We are making progress every day to set the conditions for future success. It is essential that we all understand our current environment and the parameters in which we operate. These tools set us on the right heading.

**Responsive.** Readiness has always been an asymmetric advantage. Not only does it have deterrent value, it also pays dividends in combat responsiveness. AMC provides Rapid Global Mobility not just for the Air Force, but for the Joint Force. In this role, we are busy supporting operations around the globe, 365 days a year. Every day, our Joint Force depends on support from AMC—America's Mobility Warriors—to achieve mission success. Success in the future fight requires us to always be ready. To be victorious, we must set our aim on mastering the skills needed for every environment we might face. Consider an example from our not-so-distant history.

In September of 1994, the U.S. responded to a coup of Haiti's first democratically elected president by launching an armada of C-130 aircraft carrying 4,000 paratroopers from the 82d Airborne Division as the lead element of a forced entry. The threat posed by this staggering invasion force caused General Cédras to abandon course—while the formation

was still enroute—and restore the legitimate president to power. The strategic end state of Operation Uphold Democracy was achieved without firing a shot, a reality made possible by the readiness of our Joint Force, empowered by Mobility Airmen who were ready for action.<sup>1</sup>

For the many ways we quantify unit readiness measurements, there is also a qualitative standard incumbent on each of us to measure individually. We must consider the high threshold of preparedness essential for an agile force and ask ourselves if we are as prepared as we could be for operations in every phase of war. Readiness is more than the color green on a stoplight chart; the Airman who is prepared in body, mind, and soul is truly ready to execute the mission in peace, in war, and everywhere in between. A mobility force comprised of such Airmen is rich in the elements of readiness—agility, preparedness, responsiveness—and will continue to be an asymmetric advantage for our nation.

So ... are you ready? 

<sup>1</sup> Robert deV. Brunkow and Kathryn A. Wilcoxson, *Poised for the New Millennium: The Global Reach of the Air Mobility Command: A Chronology* (Scott AFB, IL: AMC Office of History, 2001), 12-13.

# Brig Gen Charles Bolton, Vice Commander of the 18th Air Force, Talks Readiness Advocacy

BY MS. KIM KNIGHT, STAFF WRITER

“**R**eadiness at the 18th Air Force [AF] and Air Mobility Command [AMC] means investing in our Airmen mentally, physically, and spiritually. It means outfitting our aircraft and support equipment with the most modern, reliable technology and making sure we maintain the ability to deploy when necessary,” said Brig Gen Charles Bolton, Vice Commander of the 18th Air Force, Scott Air Force Base (AFB), IL.

Bolton reflected on a quote from the dynamic airpower strategist, veteran of both Great Wars, and first Chief of Staff of the Air Force, Gen Carl A. Spaatz, who said, “We better be prepared to dominate the skies above the surface of the earth or be prepared to be buried beneath it.”

The words from the extremely experienced aviator echo through the ages and serve as a reminder that there are dire consequences for those who do not remain ready to meet an adversary in battle. Today, the concept of readiness remains a high-priority military objective, as outlined in the National Defense

Strategy (NDS). “The NDS states the surest way to prevent war is to be prepared to win one. That requires a lethal, ready force,” said Bolton.

“Our adversaries seek to counter our advantage with mobility operations every day, so that requires AMC and 18 AF units to compete, deter, and win in contested environments,” he said. “The future of warfare is going to be more joint, coalition, transregional, and fast. It is going to cause us to have to react with greater speed and precision.”

To move at the speed of war, AMC and the 18 AF recently underwent a transformation: Mobility operations were transferred from 18 AF to the AMC Commander to provide a more agile and ready force in support of operations around the globe. This transformation allows 18 AF staff to focus the bulk of their efforts on the command’s most valued resources—the Airmen. Bolton said, “After the transformation, we deliberately engaged in all the key processes at headquarters and multiple other levels to represent those 36,000 Airmen across the 13 wings that we have. We do that by working



Brig Gen Charles Bolton, 18th Air Force  
Vice Commander

**Standing ready  
to respond at a  
moment’s notice  
is a necessary  
way of life for  
AMC Airmen.**

directly with the staff directorates to ensure transparency, and that we have adequate representation of the wing training, equipment, infrastructure, and mission assurance needs.”

The change in the direction of 18 AF also meant a significant reduction in staffing from nearly 200 personnel to a staff of approximately 35. Bolton said, “We advocate readiness for the forces daily. It allows Maj Gen Sam Barrett [18th Air Force Commander] and Chief Daniel Simpson [18th Air Force Command Chief Master Sergeant] to really focus on taking care of our Airmen because the AMC mission never stops. With the new advocacy role, we make sure the Airmen have

everything they need and are healthy to succeed at their mission.”

“We have to remain ready for the unpredictability that Mother Nature brings to air mobility,” Bolton continued. “We respond to natural disasters such as hurricanes, tsunamis, and earthquakes in order to protect and save lives. Recently, a crew out of McChord [AFB, WA] brought 83,000 pounds of rice to the people in need in Honduras. This [aid] is part of the Denton Cargo Program, which is the DoD [Department of Defense] initiative that allows us to carry humanitarian cargo on a space-available basis. It was Abundant Rain Ministries who provided nine pallets of sustenance for the people in Honduras.”

Readiness is essential for ensuring the safety of Airmen because the missions of AMC are worldwide and include flying over contested environments to provide much-needed fuel or to resupply the warfighters on the ground. “We land in areas that have been devastated by natural disasters or torn apart by war, and we extend airpower by transferring fuel from one aircraft to another while flying several hundred miles per hour while 10,000 feet above the surface of the earth,” Bolton stated. “For AMC’s global mission, our units do everything from air refueling to airlift to transporting essential cargo and personnel to aeromedical evacuation missions.”

AMC’s global reach would not be possible without the 36,000 Airmen who are vigilantly prepared to support any mission, no matter how complex. To succeed, readiness at all levels is essential to significantly reduce risks. Bolton said, “Whether it’s the maintainer on the flight line, making sure he’s fully trained and an expert in his craft, or making sure that he or she has enough downtime to mentally or physically recharge to reduce the risks



Maj Gen Sam C. Barrett, 18th Air Force Commander and U.S. Army Lt Col Marty Wohlgenuth, 5-3 Field Artillery Battalion Commander, listen while Capt Guy Evertson, 8th Airlift Squadron Pilot, shares the applicability of joint-basing to real-world skills development on Joint Base Lewis-McChord, WA, Feb. 21, 2019. As a joint base, both Air Force and Army personnel have more opportunities to learn from each other and practice effective joint-training.

USAF photo by Amn Mikayla Heineck

of errors on the flight line, readiness is important. Again, readiness and safety have a lot to do with making sure our Airmen always have the right equipment, so they are not using shortcuts to make the mission happen.”

“Readiness advocacy is also about taking care of families. When we have Airmen downrange we want them focused on the mission, knowing that

their families back home are being cared for. That sense of assuredness could not be accomplished without our Airmen feeling safe in their jobs and having the comfort to dedicate their full mind to their tasks at hand.”

As the voice for Airmen, 18 AF is there to advocate readiness and ensure AMC is prepared to dominate the skies above the surface of the earth. 🇺🇸



# Cybersecurity at the 375th Air Mobility Wing, Scott Air Force Base, IL

**BY MS. KATHY ALWARD,  
STAFF WRITER**

In a recent conversation concerning cybersecurity at Scott Air Force Base (AFB), IL, with Col Scot Heathman, Commander of the 375th Air Mobility Wing (AMW), Scott AFB, and Col Shay Warakomski, Commander of the 375th Communications Group, Heathman stated, “Depending on who you talk to, the term *cybersecurity* has many different definitions and is constantly evolving.” According to Heathman, they must make sure that anything connected to their communication network is not vulnerable or susceptible to outside attacks. “Cybersecurity fits into mobility operations in a contested environment; that’s one of General [Maryanne] Miller’s [Commander, Air Mobility Command] key priorities,” said Heathman.

According to Heathman, cybersecurity affects individuals at the 375 AMW directly or indirectly every day, and it also affects their 36 mission partners. When he thinks of cybersecurity, Heathman stated that he automatically thinks about their

command and control systems that reside at Scott AFB, which includes Air Mobility Command (AMC), the U.S. Transportation Command (USTRANSCOM), the Military Surface Deployment and Distribution Command, as well as the 618th Air Operations Center (AOC), which manages and controls all of the U.S.’s mobility aircraft and assets globally.

As the Communications Group Commander, Warakomski said they are ultimately responsible for everything that happens across the 375 AMW as well as their three dozen mission partners headquartered at Team Scott. According to Warakomski, the Group consists of two separate squadrons. One is the 375th Communications Support Squadron that develops, operates, and maintains the Mobility Air Force Command and Control systems and applications that enable rapid global mobility and provide direct support to USTRANSCOM and their Joint Deployment and Distribution Enterprise (JDDE). Their sister unit, Warakomski stated, is the 375th Communications Squadron, which provides classified and unclassified

networks, land mobile radios, and telephony services, as well as satellite communications for Scott AFB and its 36 mission partners.

When asked about the recent cybersecurity and technological changes implemented at Scott AFB, Warakomski mentioned that in 2018 the 375th Communications Squadron was designated as a pathfinder for the Cyber Mission Defense Team, whose primary mission is to defend the local installation and its critical mission sets from cyberattack and intrusion by using a toolkit referred to as the Cyber Vulnerability Assessment Hunt (CVAH). According to Warakomski, CVAH is a suite of laptops, servers, and sensors that Airmen utilize across the board. These systems are laid over the relevant cyber mission terrain and allow the team to take a closer look at the dependencies, the single points of failure and critical nodes on the network, the intel overlay, and the most critical aspects of the mission.

“Right seat, left seat” training on the cyber range that is owned by the 900 and 901 Cyber Protection Teams began in November 2019 when Mission

“Everything is becoming connected, and we need to understand the data coming in and going out, and how best to analyze and protect it.”

Defense Team members trained by sitting side-by-side with the 900 and 901 Cyber Protection Team members. “We can baseline exactly what they are looking for, and we can make sure that [the] CVAH toolkit looks the exact same across all three systems, that the sensors are aligned, and that everybody is on the same sheet of music moving forward,” said Warakomski.

Warakomski explained the difference between the Communications Group and the Cyberspace Capability Center (CCC). The CCC is one of the mission partners at Scott AFB, and the Communications Group provides them direct support, he stated. Warakomski pointed out that, while CCC falls under Air Combat Command (ACC), they are a tenant on Scott AFB, and employ comprehensive AF-level cyberspace initiatives across the board, from information technology asset management to cloud-hosted enterprise services. Warakomski said they are capitalizing on the fact that the CCC, as well as the 567th Cyberspace Operations Group and the 900 and 901 Cyber Protection Teams, resides alongside them at Team Scott, enabling rapid global mobility in support of JDDE.

According to Warakomski, the “Team of Teams” is being developed in 2020 to get onto the operations center and its mission-relevant terrain by combining the 375th Communications Squadron’s Mission Defense Team and the 618th Air Communications Squadron Mission Defense Team, which works hand in glove with the 618 AOC in defending their terrain

day-to-day. Warakomski said they are fortunate to have the 900 and the 901 Cyber Protection Teams as mission partners, given their alignment with USTRANSCOM.

“We are going to be able to work very closely with members from that team to basically all sit on the [618] AOC terrain in 2020,” said Warakomski. According to Warakomski, in addition to identifying spots to sensor and performing a functional mission analysis, the critical focus for the 375 AMW and higher headquarters, in terms of the 618 AOC team moving into 2020, is returning to the intel-driven, threat-specific aspect of the program. This emphasis will allow the teams to identify the optimal locations to apply those sensors in an effort to detect indications and warnings of potentially malign cyber actors.

According to Heathman, as Airmen, the AF needs to stay informed with the cybersecurity progress and how it is being perfected and developed through the Department of Defense (DoD) and private industry. “We are all after the same level of cybersecurity, and it is important to protect small business owners who may have the opportunity to secure significant contracts with the government or the military, and who are making critical components for the DoD,” said Heathman.

Innovation, modernization, and technology advances at Scott AFB have evolved AMC into that cutting-edge command. According to Warakomski, DoD selected them as a Dev Sec Ops (development, security and operations)

Pathfinder, which is a marriage of sorts between software code developers, security experts, and of course, the operator, the ultimate customer when it comes to the applications.

“Through this partnership, though, our Airmen are becoming even more skilled in terms of software automation technologies, and they use a concept that we call *test-driven software development*. As they’re developing the software, they’re also creating or ‘baking in’ these automated functionality checks to further enable rapid software building,” said Warakomski.

Regarding long-term plans for the software development career field, Warakomski is closely following Headquarters Air Force efforts to capitalize on the talents of existing Airmen—both within and outside the cyber community—to meet the growing demand for innovative, digital solutions. Meanwhile, Scott AFB’s software developers continue to work closely with their counterparts at development innovation hubs like Boston’s Kessel Run and LevelUP in Colorado Springs.

“Everything is becoming connected, and we need to understand the data coming in and going out, and how best to analyze and protect it.” This is the vision at Scott AFB according to Heathman, who sees the cyber division growing. The command has begun to engage with innovation hubs and spaces across the region so Airmen can learn from these experts—to include academia, and further innovative efforts at Scott AFB. The 375th Air Mobility Wing is a learning organization that is focused on how the Air Force and the private sector can assist each other to create the skills and opportunities to identify and overcome any cyber challenges that may arise. 

# Pitot Static Woes: Are You Prepared?

BY MR. BILL KROUSE, AMC/A3TO

It is a great day! You are out of the office, away from the phones, and flying the standard training profile from your home location with your unflappable copilot. Your mission is cleared to FL350 enroute to the air refueling track, and it is time to take a sip of your double espresso latte before things get busy. During the climb, the aircraft enters instrument meteorological conditions, and you notice the autopilot begins to increase the aircraft pitch in an attempt to mitigate the ever-increasing airspeed. The autopilot is unable to maintain the desired speed during the climb, so you take over manual control of the aircraft, pulling the throttles to idle and extending the speedbrakes to prevent overspeeding the jet. To your surprise, the aircraft begins to buffet and descend. Sound a little far-fetched? Read Air Force Safety Automated System (AFSAS) report #880739 for the single investigating officer's conclusions of this actual event, or better yet, Airman Safety Action Program (ASAP) submission #13257 for the pilot's overview. The questions here are, what happened to this crew, and why did the aircraft stall when the airspeed appeared to be approaching an airframe overspeed? This article will explain what happened, the warning signs the crew failed to recognize, and what pilots need to do to prevent this from happening. By the way, the crew lost 12,500 feet of altitude before—luckily—recovering the aircraft!

As the article title suggests, this mission was affected by a “pitot-static” system failure: to be exact, pitot-static icing. Although many think this is an

uncommon problem, the passengers on Air France 447 may have a different opinion. A search of the ASAP scoreboard found seven submissions related to inaccurate airspeed due to icing, and AFSAS had an additional seven reports related to ice-related flight-control issues. A study<sup>1</sup> of 334,190 commercial and general aviation events<sup>2</sup> during a 24-year period yielded 645 accidents and incidents caused by icing—nearly 27 events a year. The subject of pitot-static system failures, whether from icing or any other malfunction, is an area in which every pilot should be an expert.

In the simplest of terms, the airspeed indicator (ASI) compares static pressure from the static port with the ram air (dynamic + static) from the pitot tube. The static pressures cancel each other out, creating dynamic pressure. The ASI converts the difference between static and dynamic pressure into an indicated airspeed (IAS). Of importance to note, the ASI does not indicate how fast the aircraft is actually going through the air, just the relationship between the static and dynamic pressures. If any part of the pitot-static system is blocked, for any reason, the ASI will be affected.

Each weapon system has minor differences to its pitot-static system

but works in generally the same manner and can have three possible malfunctions:

- › The pitot tube blocked and the static ports clear and functional;
- › The static ports blocked and the pitot tube functional; or
- › Both the static port and the pitot tube blocked and inoperative.

Fortunately, each of these malfunctions provides clues to the aircrew and is based on air density and a variance in atmospheric pressure due to a change in the aircraft's altitude. For scientifically minded individuals, a more in-depth description of what happens to the pitot-static system during the three malfunctions follows the summary of this article; but, for the speed-readers, the cliff notes follow:<sup>3</sup>

- › If the pitot tube is blocked but the static port is free, then the IAS will increase during a climb and decrease during a descent.
- › If the pitot tube is clear but the static port is blocked, then the IAS will decrease during a climb and increase during a descent.
- › If the pitot inlet and the static ports are both blocked, then the IAS will remain constant despite changes in actual airspeed or altitude.

<sup>1</sup> Steven D. Green, “A Study of U.S. Inflight Icing Accidents and Incidents, 1978 to 2002,” Underhill, VT: Flight Operations Research, January 2006.

<sup>2</sup> Events were pulled from the National Transportation Safety Board (NTSB) Accident Database and the Federal Aviation Administration (FAA) Accidents/Incidents Data System (AIDS).

<sup>3</sup> [https://www.skybrary.aero/index.php/Unreliable\\_Airspeed\\_Indications](https://www.skybrary.aero/index.php/Unreliable_Airspeed_Indications) [9/20/2019 3:05:22 PM]

# The best defense to prevent the effects of pitot-static icing is a great offense.

In the previously mentioned stall scenario, the crew observed the ASI increasing as the aircraft climbed to FL350, and the autopilot increased the pitch to chase the rising airspeed. The pilot's decision to reduce the throttles to idle to prevent an airframe overspeed allowed the actual aircraft airspeed to slow and to develop into a full stall—a classic blocked pitot-tube scenario.

The best defense to prevent the effects of pitot-static icing is a great offense. Start with a thorough preflight inspection, checking all pitot tubes and static ports. Kudos for the submitters of ASAPs #12758, #12512, and #12369 for finding painted or taped-over static ports during their walk-around! Use pitot heat as the technical orders direct. Develop an in-depth understanding of the aircraft's pitot-static system and its relationship with other systems (for example, autopilot, flight director, and air data computer). Maintain knowledge of typical power/control parameters associated with a specific phase of flight (for example, speed, pitch, thrust settings, fuel flow, and descent/climb rates). Monitor these key power/control parameters whenever the aircraft is suspected of having entered icing conditions.

If all the defensive efforts have failed:<sup>4</sup>

- Reconfirm the pitot heat switch is on.
- Attempt to keep the aircraft away from the low-speed and high-speed ends of the flight envelope.
- Disconnect the autothrottles, autopilot, and flight director.
- Revert to safe default parameters for the pitch attitude and a thrust setting that is associated with the current phase of flight.
- Make every effort to remain or return to the visual meteorological conditions flight environment.

In summary, the crew in the noted stall event experienced a pitot-tube blockage due to icing. The failure to recognize the deteriorating situation led to a full aircraft stall. The clues were there. Will you be prepared for this challenge? Icing is not associated with just fall and winter. You can experience

<sup>4</sup> [https://www.skybrary.aero/index.php/Unreliable\\_Airspeed\\_Indications](https://www.skybrary.aero/index.php/Unreliable_Airspeed_Indications) [9/20/2019 3:05:22 PM]

icing any time of the year, with summer having the tendency to surprise crews due to the warm surface temperature. Equip yourself now with the skills needed to be a survivor and not a victim!

As for the scientific explanation of the pitot-static system, think of the ASI as a simple balance scale (Figure 1).<sup>5</sup> Static pressure is present on both sides of the scale, and dynamic pressure is present on just one side. As the aircraft climbs and descends, the static pressure remains the same.

## The Airspeed Indicator

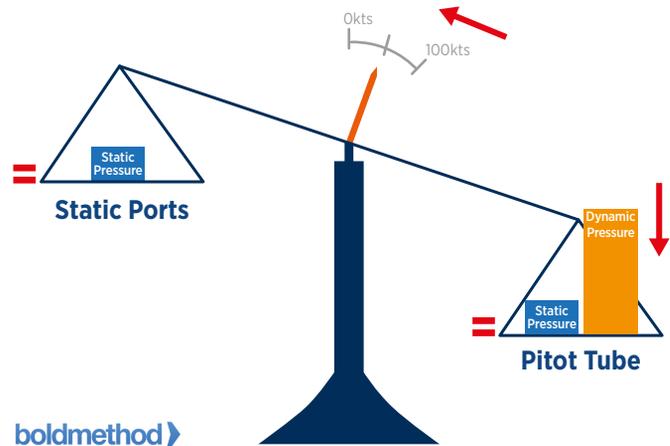


Figure 1. The Relationship of Static and Dynamic Air Pressures When the Aircraft Climbs

As the aircraft climbs:

- Air density decreases, causing a decrease in both static and dynamic pressures
- Results in decreasing IAS

With a fully functioning pitot-static system, when the aircraft climbs, air density decreases, which decreases the static and dynamic pressures on the scale; however, because static pressure is equal on both sides of the scale, static pressure has no impact on the IAS. During a climb, the net relationship between static and dynamic pressures is a decrease in IAS, assuming constant thrust and climb rate for the purpose of this discussion. The reverse is true during a descent.

<sup>5</sup> Aleks Idris, "What Happens When Your Pitot Tube Ices Over?" Boldmethod, December 26, 2017.



AIC Ryan Celestino, 909th Aircraft Maintenance Unit Instrument and Flight Control Systems Journeyman, turns on a TTU-205J test set to perform pitot-static tests for the KC-135R at Kadena AB, Japan.  
USAF photo by SrA Omari Bernard

So what happens when icing blocks the static port? The static pressure becomes trapped (Figure 2). If the altitude is not changed, the IAS is correct.

If the aircraft climbs, however, the dynamic pressure will decrease due to the decrease in air density, and the static pressure will remain constant due to the blocked static port. The difference between the static and dynamic pressures is now less because the static pressure is not reducing during

the climb; thus, as you climb, the aircraft will be going faster than the ASI shows. The reverse is true during a descent.

When the pitot tube is blocked and the static ports are clear (Figure 3), as the aircraft climbs, the dynamic pressure does not change; however, the static pressure decreases as expected. This issue causes the relationship between static and dynamic pressure to increase. Thus, the ASI shows the aircraft traveling faster than it actually is. 🇺🇸

### Airspeed: Climbing (Static Ports Blocked)

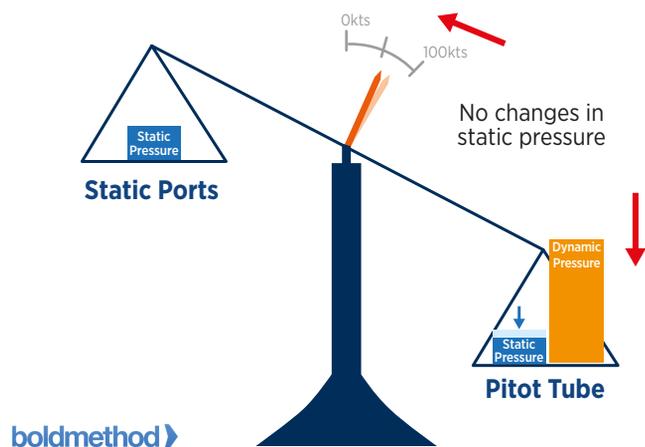


Figure 2. Aircraft Climbing with a Blocked Static Port

When the static port is blocked:

- Static pressure is trapped and does not change when the altitude is changed
- Dynamic pressure decreases during the climb
- Results: the ASI shows a lower speed than the aircraft is actually flying

### The Airspeed Indicator (Blocked Pitot Tube)

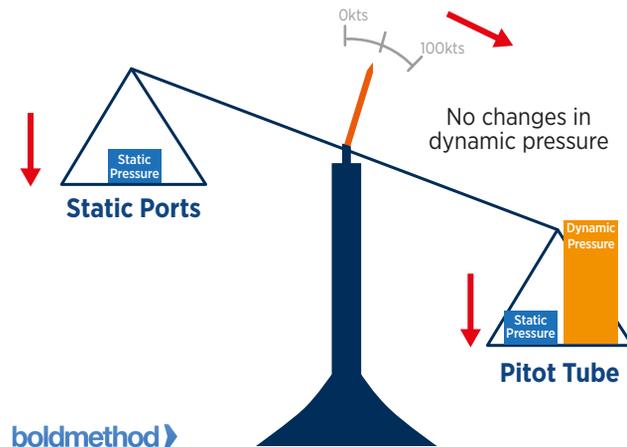


Figure 3. Aircraft Climbing with a Blocked Pitot Tube

When the pitot tube is blocked:

- Dynamic pressure is trapped and does not change when the altitude is changed
- Static pressure decreases during the climb
- Results: the ASI shows a higher speed than the aircraft is actually flying

# Pilot Monitoring During Flight

BY LT COL LANCE HOLLOWAY, HQ AMC FLIGHT SAFETY

In the aviation community, pilots are expected to effectively manage a multitude of threats and errors throughout every flight. How they choose to manage those threats internally as a flight crew directly affects flight safety and mission capability through the preservation of life and property. In today's environment, aviation operations harness the extensive data points provided by Line Operations Safety Audits (LOSAs), Flight Operational Quality Assurance, and Airman Safety Action Programs to identify, analyze, and scrutinize potential hazards. The collection and categorization of hazards provide insight into the development and creation of Threat and Error Management (TEM). TEM has become a proactive flight safety management strategy.

Within the framework of TEM, Enhanced Flight Path Monitoring and active pilot monitoring have become significant topics of concern in the flight operations community. The lack of proactive pilot monitoring has significantly contributed to undesirable aircraft states, aviation mishaps, and the overall reduction of inflight safety. Since 2013, the Federal Aviation Administration (FAA), in partnership with U.S.-based commercial airlines, aircraft manufacturers, university professors and psychologists, and other professional aviation organizations, have formed two separate working groups to evaluate how to manage monitoring errors on the flight deck. Specifically, the FAA Flight Path Management Working Group and the Active Pilot Monitoring Working

Group have provided relevant and measurable data to enhance flight safety and incorporate active monitoring as a fundamental tool to trap known errors made between the pilots on the flight deck.

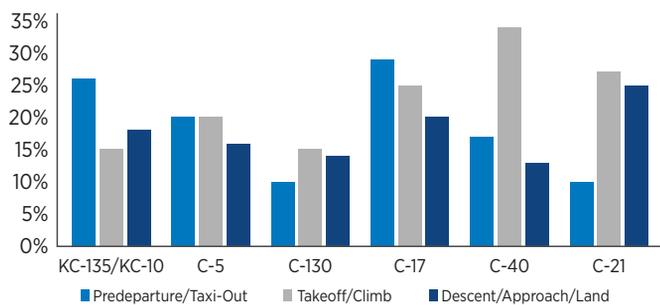
*Monitoring* can be defined in broad terms simply as keeping an eye on the aircraft's flight and taxi path. Stated more specifically, monitoring is adequately watching, observing, keeping track of, or cross-checking. Many of Air Mobility Command's (AMC) aircraft accidents and incidents, or near mishaps, can be attributed to inadequate pilot monitoring. All flying inherently involves some degree of risk at any given phase of flight, and everyone shares common vulnerabilities encountered in the civilian aviation sector. Therefore, it



A 128th Air Refueling Wing KC-135 Stratotanker approaches Honolulu Airport for a landing Jan. 17, 2020, during exercise Sentry Aloha 20-1.

USANG photo by SrA John Linzmeier

**Figure 1: Monitoring/Cross-Checking Errors by Phase of Flight**



Source: Air Mobility Command's Line Operations Safety Audit (LOSA)

is important to discuss and recognize some of the findings and recommendations the final report of the Active Pilot Monitoring Group identified and compare that data with the aviation community.

Following are six barriers considered to be most relevant in active pilot monitoring and effective flight path management:

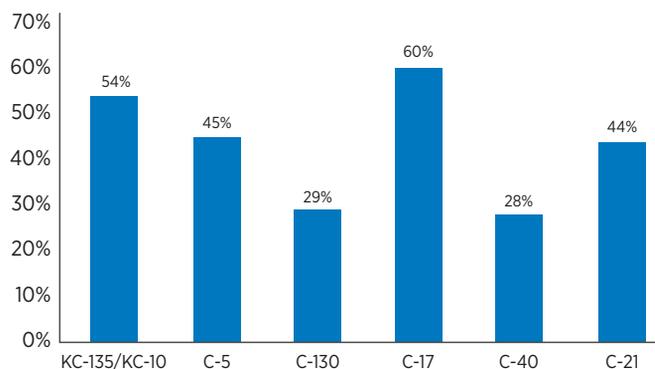
- Human factor limitations
- Time pressure
- Lack of feedback to pilots when monitoring lapses
- Design of flight deck systems and standard operating procedures
- Pilots' inadequate mental models of autoflight system modes
- A corporate climate that does not support an emphasis on monitoring

The FAA Flight Path Management Working Group noted that “while 99 percent of the pilots believe that monitoring and cross-verification are important skills, when asked if the topics of detecting and managing errors were included in their recurrent training, only 47 percent responded that it was explicitly discussed as a specific topic. In addition, 34 percent stated that monitoring and cross-verification were covered somehow, but not explicitly, while 19 percent said it was marginally covered or not covered at all.” This report directly correlates with the findings from the Active Pilot Monitoring Group’s assessment as one of the barriers. In addition, a 1996 FAA report identified insufficient autoflight mode awareness as a significant vulnerability area. Fast forward 24 years since that report, and autoflight operation is still a key barrier in flight path management and monitoring.

Take a minute to think about each one of these “barriers to active monitoring,” and determine whether or not they pose any risk to flight operations, and, if so, what could be changed to mitigate and better manage each one? Most paradigms are shaped by personal flight experiences and knowledge of the tools used in other aviation organizations to manage monitoring errors. Most experienced pilots acknowledge their vulnerabilities and limitations and have all experienced times on the flight deck when the lack of active pilot monitoring created an undesirable aircraft state and a reduction in safety margins.

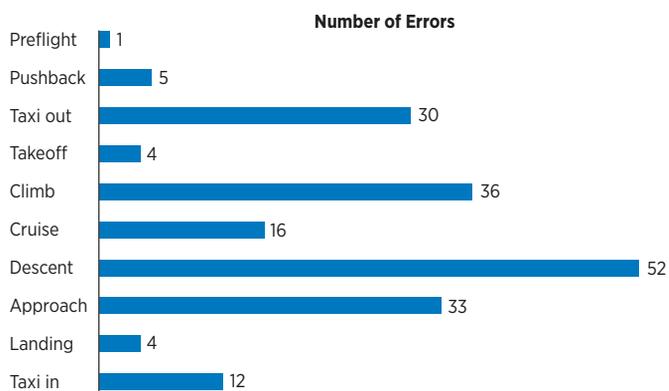
Since 2011, AMC has conducted multiple LOSAs across all flying fleets, and the graphs provided may add value by providing insight and statistical analysis to the active pilot monitoring discussion. Proper monitoring and cross-checking have now become universally accepted

**Figure 2: Monitoring Observations Rated Poor or Marginal Occurred During at Least One Phase of Flight**



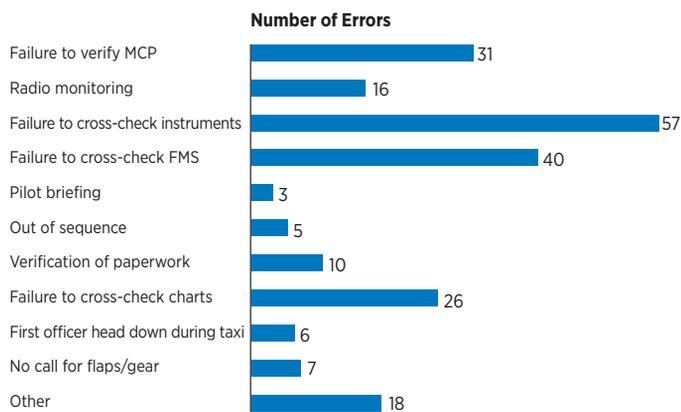
Source: Air Mobility Command's Line Operations Safety Audit (LOSA)

**Figure 3: Phases of Flight in Which a Monitoring Error Occurred\***



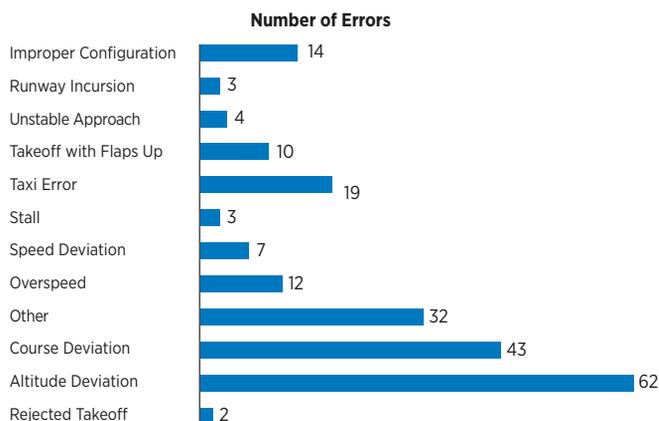
\*More than one error occurred in some of the 188 reports analyzed.  
Source: Active Pilot Monitoring Group

Figure 4: What Set the Stage for the Monitoring Error?



Source: Active Pilot Monitoring Group

Figure 5: Consequences of Improper Monitoring



Source: Active Pilot Monitoring Group

TEM countermeasures within the aviation community. Figures 1 and 2 display data captured from AMC LOSA observations concerning pilot monitoring errors. To provide an understanding of the observations within Figure 2, “Poor” is defined as “the observed performance had an impact on safety,” and “Marginal” is defined as “the observed performance was barely adequate.” Figures 3, 4, and 5 display the data collected from 188 observations of U.S.-based commercial airlines in 2014 related to pilot monitoring errors.

Therefore, with the knowledge these errors exist, this article will take a broad look at some of the recommendations put forth by the Active Pilot Monitoring Group.

Simply stated, 20 proposals were developed and organized into four main categories:

- Monitoring practices
- Procedures, policies, and monitoring
- Monitoring autoflight systems
- Training and evaluating monitoring skills

The websites listed below provide a more in-depth look at these examples and recommendations. The monitoring recommendations presented have been incorporated into many of the aviation policies and practices, especially in the United States and Europe,

and have contributed significantly to the advancement of aviation safety. They will continue to play a vital role in the future development of new aircraft, operational procedures, and training programs.

It is important to mention that worldwide flight operations and aviation organizations are unique in their flying operations, and these recommendations were developed to serve as a guide to compare against an organization’s current policies, procedures, and practices, with the intent to improve active pilot monitoring. The data provide a convincing baseline that each aviation organization can use to improve its aviation safety and potentially prevent future accidents and mishaps. 🇺🇸

More information on the Working Groups’ analysis can be found at

<https://flightsafety.org/files/flightpath/EPMG.pdf> and

[https://www.faa.gov/aircraft/air\\_cert/design\\_approvals/human\\_factors/media/oufpms\\_report.pdf](https://www.faa.gov/aircraft/air_cert/design_approvals/human_factors/media/oufpms_report.pdf)

# Gone in a Flash: Flash Floods Can Endanger You and Your Property at a Moment's Notice

BY MR. MATTHEW LIPTAK,  
STAFF WRITER

According to the federal government, one of the largest weather-related killers in the United States is flash floods. From 2009 through 2018, floods took the lives of nearly 100 people each year. This number is second only to the number of lives lost to heat-related incidents annually.

Specifically, flash floods can be defined as floods that occur during or a few hours after a rain event. They are considered to be the most dangerous kind of flood because they can be fast-moving and unpredictable in addition to having all the destructive power of a regular flood. They can form when dry streams or water beds, already flowing creeks or rivers, stormwater infrastructure, or land formations fill with excessive water and overflow, sometimes with a current.

As mentioned previously, flash floods are unpredictable. They can happen when a levee breaks, water washes out a road, rain inundates a dry canyon, and in myriad other ways. Flash floods often occur with no warning, which is one of the reasons they are so dangerous.

Although they can be unpredictable, implementing the following tips will help to mitigate the dangers of flash floods, and floods in general:

**1. Understand your geography.** Due to their location, some homes are prone to flooding, and some are not. Search for the history

of flooding in your area. Is your house or daily commuting route in a low-lying area? If so, know where the nearest high ground is and the fastest way to get to it.

**2. Be prepared for emergencies.**

If you find yourself in a flood situation, out of harm's way but isolated, it is essential to have enough supplies to last until rescue comes. Prepare beforehand. Store non-perishable food, water, medicines, a battery-powered radio with additional batteries, and other emergency equipment in a secure, dry section of your home where you will have quick access in case of an emergency. Prepare a similar emergency kit to keep in your vehicle.

**3. Be prepared to evacuate.**

If a flood or flash flood watch or warning scrolls across the bottom of your TV screen, an alert shows up on your cell phone, or you learn you are in danger in some other way, get ready to roll. If your home is in one of the danger areas, seriously consider traveling to higher ground; however, be sure to review the route before leaving your home. If your journey takes you into other flooded areas, it might be safer to stay on the second floor of your home until the threat passes or until first responders are able to reach you.

**4. Be fast.** If a flash flood is on its way or you are encountering flooding, retreat to higher ground. Property and possessions can

be replaced, but you cannot. Get out of the way of that moving water! According to a report in *USA Today*, water moving at 10 miles per hour can exert the same pressure as wind gusts of 270 miles per hour.

**5. Turn Around, Don't Drown.**

Avoid evacuating through flood water. Water that is only two feet deep can float most vehicles. Six inches of fast-flowing water can knock you off your feet if you are walking. Live power lines or toxic pollution in the water can also prove to be deadly or dangerous.

**6. Be patient.** Stay in a safe location until authorities have announced that the threat has passed. Flash floods can occur in multiple surges. Even after the water recedes, it may not be safe to return home. More flooding may be around the corner. Put the safety of you and your loved ones above any impulses to take risks.

Floods are destructive and dangerous. Flash floods are the worst type of flooding. You can increase your chances of avoiding trouble, however, if you take weather warnings seriously, prepare for natural disasters ahead of time, and move quickly and make intelligent decisions when you are facing a flood or flash flood. Poor choices can make for tragic endings, but carefully considered choices can keep you safe. Take the threat of floods and flash floods seriously, and you will most likely come out of the experience to tell the tale. 🌊



# The 618th Air Operations Center, Scott Air Force Base, IL, Works Through Obstacles to Make the Mission Happen

BY MS. BETTY NYLUND BARR,  
STAFF WRITER

Sometimes getting a VIP from Point A to Point B is not easy. In the fall of 2019, the 618th Air Operations Center (AOC) at Scott Air Force Base (AFB) in Illinois was tasked with providing a C-17 to shadow the plane of a distinguished visitor (DV) on an extensive trip. That was the original plan, but with factors such as weather, maintenance issues, and even airfield issues, plans can change quickly.

The DV was on the primary aircraft at Andrews AFB; he had meetings scheduled abroad within 12 hours of his departure, so the timing was critical. Col Jason Pavelschak, Senior Controller of the 618 AOC for the mission, explained his team's assignment. "When he [the DV] travels, we have what we call a shadow, so we always have an aircraft that shadows him in case there are issues with his plane or something happens."

Pavelschak recounted the preparations: "On that shift we had anywhere from 60 to 75 people—active duty, civilians, Guard, and Reserve—working the different pieces of checking the weather, making sure the airfield could accept us, making sure the crew had enough duty day to fly, making sure we could get the plane fixed if there was a maintenance issue, or making sure we could get fuel at a location."

When the 618 AOC had everything ready, engineers addressed some pressing maintenance issues, which took about 30 minutes. Next, they learned that their plane was delayed because of a ramp freeze at Andrews: The Vice President was there, and no pilots could taxi or even start engines until his aircraft departed.

Inflight, the maintenance issues persisted, making it necessary to divert the aircraft to Joint Base Lewis-McChord, WA. Typically, the shadow plane takes off shortly after the primary, but in this case, it did not, and the delay presented a dilemma. "Do we wait to get that plane out of Andrews, or do we try to grab an aircraft on the West Coast to keep him moving?" recalled Pavelschak. Whereas the plane at Andrews AFB had all the secure communication equipment and gear that the DV needed, another plane would not necessarily have that equipment. Pavelschak went on, "We tasked different folks on the floor to look at different options. We had our Director of Operations [DO], Deputy Director of Operations [DDO], and other people helping with airfield issues, maintenance issues, diplomatic clearances." They decided to wait.

The diversion to McChord, however, presented a new problem: the C-17 would not have enough fuel to get

“We had to get creative to come up with an air refueling to enable them to make it the distance.”

to its destination. Refueling is a 3- or 4-hour prospect, which would lead to even further delays and jeopardize the mission, which was to get the DV where he was going in time for his first meeting.

Lt Col Todd Matson, Deputy Director of Operations for the 618 AOC, said, "We had to get creative to come up with an air refueling [plan] to enable them to make it the distance." They coordinated with several agencies to find an available tanker to do the job, and finally located one at Eielson AFB in Alaska. "The plan was for them to fly down and link up with the C-17 as they departed McChord," Matson recalled, but "that refueling didn't happen." Severe turbulence at the refueling location caused a glitch in the matrix in the airspace.

Time to scramble again. Matson said, "They went through NORTHCOM [United States Northern Command]

to get approval to use one of the other tankers, which doesn't happen very often but did for the high-priority mission." They eventually received approval to use a tanker at Fairchild AFB in Spokane County, WA.

All the delays led to another quandary: the duty day. Because the process took so much longer than expected, the shadow air crew would be 16 to 17 hours into their duty day when the air refueling would occur. For safety reasons, technical events such as air refueling or combat landings are supposed to take place within the first 12 hours of a duty day.

"We had to request a waiver from our commander to assume that risk

because of the nature and priority of the mission," Pavelschak explained, "and the crew asked for it. That's important because we don't encourage our crews to make any high-risk decisions. We leave it up to the aircraft commander to request—on his crew's behalf—to go ahead and get a waiver to an Air Force instruction or deviation."

*Finally*, all the parts were in place, everything was fixed, and the tanker performed an air refueling that night. The C-17 was able to get to its destination. How late did the DV arrive at his destination? Only 2 or 3 hours!

"It's pretty incredible if you think about it," said Pavelschak. "If you fly commercial and have a maintenance

issue, it's usually several hours' delay or even totally canceled."

Thanks to the capable and efficient way the 618 AOC dealt with obstacles, from maintenance issues to delays to changes in flight plans, a DV made it halfway around the world safely with only minimal delay. Clearly, the 618 AOC demonstrated that it could navigate obstacle courses.

"It's what we do on a routine basis," said Pavelschak. 

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A C-17 Globemaster III from Joint Base Charleston, SC, lands at Scott AFB, IL, Sept. 11, 2018.

USAF photo by A1C Nathaniel Hudson





AMC NEWS

## Prince Sultan Air Base Reopened by the 621st Contingency Response Support Squadron

BY MS. BETTY NYLUND BARR,  
STAFF WRITER

**H**ow does one reopen a military air base that has been closed for 15 years? If anyone knows, it is Lt Col Shane Hughes, Commander of the 621st Contingency Response Support Squadron (CRSS).

With the assistance of the civil engineer and the airfield operations officer, Hughes took part in the initial site survey of the Prince Sultan Air Base (PSAB), south of Riyadh, Saudi Arabia, in preparation for the deployment of personnel, aircraft, and equipment. Establishing an expeditionary force at PSAB was a response to increased threats from Iran—and it was no small feat.

“You have to build the right team in a short amount of time and get them out the door,” Hughes explained. “We

are on a 12-hour response time. The most challenging piece is not once you get on the ground,” he stressed. “I would say the most challenging part is putting all of those pieces together in a short amount of time, which is what makes the CRSS a unique mission set.”

Once the 621 CRSS team arrived at the air base, they ascertained what steps were necessary to prepare the base and established a timetable for the arrival of additional aircraft. According to Hughes, some of the needs to be determined were, “How much cargo do we need to bring in; how fast do we need to bring it in; how many aircraft need to be on the ground at any given time; and is it going to be a 24-hour operation?”

Each air base is different, so the requirements for equipment and personnel are unique to that base’s circumstances and attributes. The deployment to PSAB included

approximately 500 personnel, Patriot long-range defense missiles, B-52 bombers, and a maritime strike force led by the aircraft carrier USS Abraham Lincoln.

Of the more than 30 different Air Force Specialty Codes (AFSCs) in the 621 CRSS, including aerial port and aircraft maintenance, vehicle maintenance, security forces, power production, civil engineering, and air traffic control, Hughes said, “We have to train them all to accomplish that [particular] mission, and we have to choose the right personnel to go out the door to fit that mission.”

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U.S. Airmen and Soldiers arrive at Prince Sultan Air Base, Kingdom of Saudi Arabia, in response to the White House authorization of approximately 1,000 additional troops in U.S. Central Command’s area of responsibility.

USAF photo by SrA Sean Campbell

After assembling the appropriate AFSCs and resources, Hughes said, “The next piece is actually getting out the door, the deployment piece—the logistics of getting the team and the equipment to anywhere we need to go in the world at the right time.” The PSAB mission required five aircraft to transport the entire team to the site. “We had about 120 personnel that went out the door. From the time the first boots on the ground arrived until the last boots on the ground left was 90 days.”

The 621 CRSS worked together with sister services and the Royal Saudi Air Force to make it happen. “There are a lot of moving pieces, and there’s no way we could do it without a lot of training and relationship building within the joint base,” Hughes said.

To prepare for opening ports and air bases, the CRSS trains with the Army and the Defense Logistics Agency. In the predeployment phase of PSAB, they worked with members of Task Force Spartan, which is made up of active Army and National Guard units and U.S. Army Reserve support units.

“The relationship between us and the Army was good because we helped each other out whenever we needed each other,” Hughes remarked. “Initially we did a lot of the base operating support and provided them with tents and some of the equipment they needed to get their operations up and running, and once they were up and going, they opened up a field kitchen that allowed us to transition off of MREs [Meals, Ready-to-Eat] and have hot food, which was a real morale booster for the Airmen—along with all the health benefits.”

Hughes believes that the 621 CRSS’s relationship with the Saudi base leadership team was also solid and beneficial. “We definitely developed some long-term friendships there,

and we’ve continued to develop that partnership with the Saudis,” he said. “I would say the best integration we had with the host nation was air traffic control. We had some of our air traffic controllers that integrated with theirs and got qualified on their tower, RAPCON [Radar Approach Control System], [and] we worked side-by-side for fighter operations and mobility operations. I felt like we and the Royal Saudi Air Force strengthened each other as a team. We integrated the weather team and aerial port team. Our security forces integrated with their air police on multiple occasions.”

An expeditionary base is staffed and equipped to operate for up to 60 days. “At that point, we’ll either transition to a larger follow-on force, close down the base if necessary—say, if it’s after a big disaster response—or we can transition back to the host nation,” Hughes says. “In some of those disaster responses, initially, the host nation cannot open and operate the airbase, so we will go in and do that, and once they get their feet back under them, we hand it back off to them and let them continue the operation.”

Whereas a typical air expeditionary wing can include more than 1,000 people, “We [the 621 CRSS] can do that with 80 to 115 personnel—as long as we have the right personnel and they are cross-functionally trained.” Hughes continued to point out the vital importance of the “hybrid Airman” to the opening of an air base—“Making sure we can do more with less equipment and fewer Airmen, and we do that with cross-functional training and making sure, for instance, that our contracting officer isn’t just a contracting officer but can also drive a 10-K forklift, help build up and tear down tents, and help with the generators.”

Although every base opening and disaster response effort is different, the “hybrid Airmen” of the 621 CRSS operate lighter and leaner to answer the call and get boots on the ground at any point on the globe, any time they are needed, with incredible speed. 🇺🇸

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Airmen with the 1st Expeditionary Civil Engineer Group secure the floor liner for a small shelter system at Prince Sultan Air Base, Saudi Arabia.

USAF photo by TSgt John Wilkes



# SAFETY AWARD WINNERS

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## **Safety Office of the Year**

22d Air Refueling Wing  
McConnell Air Force Base, KS

## **AMC Director of Safety Aircraft of Distinction Award**

437th Airlift Wing  
Joint Base Charleston, SC

## **Safety Officer of the Year**

Capt Hunter Shirey  
22d Air Refueling Wing  
McConnell Air Force Base, KS

## **Flight Safety NCO of the Year**

MSgt Bradley J. Warnock  
43d Air Mobility Operations Group  
Pope Field, NC

## **Outstanding Achievement Award for Weapons Safety**

628th Air Base Wing  
Joint Base Charleston, SC

## **Distinguished Motorcycle Safety Award**

436th Airlift Wing  
Dover Air Force Base, DE

## **AMC Safety Enlisted Professional of the Year**

TSgt Lance Hughson  
436th Airlift Wing  
Dover Air Force Base, DE

## **AMC Enlisted Professional of the Year – SNCO**

MSgt James Musgrave  
60th Air Mobility Wing  
Travis Air Force Base, CA

## **AMC Safety Civilian Professional of the Year**

Mr. Robert Clapp  
22d Air Refueling Wing  
McConnell Air Force Base, KS

## **Outstanding Achievement for Occupational Safety (Cat II)**

436th Airlift Wing  
Dover Air Force Base, DE

## **Outstanding Achievement for Occupational Safety (Cat III)**

628th Air Base Wing  
Joint Base Charleston, SC

## **Outstanding Achievement for Occupational Safety (Cat IV)**

728th Air Mobility Squadron  
Incirlik Air Base, Turkey

## **Director of Safety Aviation Maintenance Safety Award**

721st Aircraft Maintenance Squadron  
521st Air Mobility Operations Wing  
Ramstein Air Base, Germany

## **Koren Kolligian, Jr. Trophy**

SrA Devyn Freeze  
61st Airlift Squadron  
Little Rock Air Force Base, AR

## **Director of Safety Special Achievement Award**

60th Air Mobility Wing  
Travis Air Force Base, CA



Safety Office  
of the Year

## 22d Air Refueling Wing, McConnell Air Force Base, KS

“**M**cConnell AFB [Air Force Base] was officially established in 1951, so it’s seen a variety of changes throughout the decades. The KC-46 represents a new way for the Air Force and AMC [Air Mobility Command] to do business, and that requires buy-in from the entire leadership team here at McConnell. Col Richard Tanner [Commander of the 22d Air

Refueling Wing (ARW), McConnell AFB, KS] has very clearly articulated that safety is the responsibility of all front-line supervisors; my team is no different. This award is an excellent punctuation mark to a year of hard work and determination by our safety professionals,” said Lt Col Luke D. Spathes, Chief of Safety, 22 ARW.

In January 2019, when the KC-46 was delivered, all eyes were focused

on McConnell. SSgt Roberto R. Rodriguez, Occupational Safety Journeyman, said, “I dealt firsthand in the KC-46 delivery ceremony, which took a lot of different agencies from

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From left to right: SSgt Roberto R. Rodriguez, Capt Rich Duarte, TSgt Jonathan M. Murphy, Mr. Steven C. Hagler, Mr. Galen J. Truan (USDA), Capt Marshal O. Russell, Lt Col Lucas D. Spathes, Mr. Thomas A. Cable (USDA), TSgt Dany A. Barnett, and Capt Hunter Shirey.

around [the] base providing their own safety expertise. The day of the ceremony we walked through, making sure everything was taken care of, such as tripping hazards or stage guardrails to safeguard the attendees.”

## With the new aircraft, the office at the 22 ARW took on the enormous task of establishing an entirely new KC-46 safety program—from the ground up.

Capt Hunter Shirey, Chief of Flight Safety, said the team looked back at AMC’s last acquisition, the C-17, as a guideline for development. The crosstalk with the safety professionals who assisted in founding the C-17 safety program and working with various agencies on base, Boeing Aerospace Company, and the 344th Air Refueling Squadron at McConnell all contributed valuable information to build the new program. Shirey said, “It has been coming together to find creative and safe solutions to any of the problems that may have come up. It has been interesting. With the KC-135 that’s been around for 60 years, we know what all the main problems on it are, how to fix them, and what to look for, but with the KC-46 it has been all brand-new equipment, avionics, and electronics.” He added that Capt Marshal O. Russell, Deputy Chief of Safety, brought unique expertise to the program because he is one of the very few S-coded individuals who are instructor pilots on the KC-46. Russell is also credited with assisting in the writing of the Operational Risk Management Form, specifically risk mitigation, while flying during chemical defense training.

Since January, the fleet of KC-46s has multiplied, and with the KC-135 ops running concurrently, aircraft parking area is at a premium. SSgt Jareth L. Clinard, Weapons Safety, Noncommissioned Officer in Charge (NCOIC), said, “Our echo ramp has been there, however, due to its location next to what we use for secure holder safe haven, basically explosive storage for ground transportation vehicles, we had to develop a new \$800,000 project and design a place where we could install it on the installation and reduce the hazard away from echo ramp so we would have uninterrupted ops if we needed to have a secure hold. The project was approved by the DoD [Department of Defense] in just 4 days.”

In addition to having the newest aircraft in AMC’s fleet, McConnell also had two significant updates to the base over the past year. The first was the construction of an \$11.3 million control tower and the second, a new \$9.1 million combat arms training and maintenance (CATM) range. TSgt Jonathan M. Murphy, NCOIC, Occupational Safety, said, “Our control tower was not able to sustain winds, so anytime we were in a high wind advisory, everyone had to evacuate the control tower. We had been tracking and maintaining a RAC [risk assessment code] through our hazard abatement program, and we started construction last year and were able to complete the project this year. In addition to that, we broke ground on our new CATM range that will eliminate a RAC we had been tracking for 10-plus years.”

McConnell also architected a STAMP, or Standard Air Munitions Package, support plan in response to the runway closure at Hill AFB, UT. Clinard said, “It is a headquarters Air Force plan basically designed to rapidly air transport critically needed munitions downrange to support any type of contingency or warfighting

effort when other transportation routes, such as naval or ground, aren’t quick enough to get the mission accomplished. Since Hill AFB was having a runway closure, they needed to find a place to support in case that OPLAN was called upon. Working with us, our counterparts at AMC, and with Materiel Command, who are the owners of the STAMP program, figured out our capabilities and ways for us to support when needed.”

Mr. Galen J. Truan, a wildlife biologist with the United States Department of Agriculture (USDA) and lead for the Bird/Wildlife Aircraft Strike Hazard (BASH) program, said, “The main emphasis is reducing bird strikes with the aircraft, and strikes were reduced by 58 percent.”

Mr. Thomas A. Cable, Wildlife Specialist with the USDA, spoke of the first side-by-side comparison of bird strike rates between the KC-46 and KC-135 to see if the new aircraft has an increased strike potential. The specialists have teamed up with USDA scientists in Ohio at the National Wildlife Research Center because of a noticed trend the KC-46 was showing, but they will have to acquire a full year of data when available in mid-March for a complete analysis.

Both USDA safety professionals who joined the team at McConnell in 2018 have brought new ideas into the program by working with Sedgwick County commissioners to fix drainage issues on the airfield. Their primary focus has been habitat management to make the airfield less desirable for wildlife instead of trapping or depreddating.

**Congratulations to the 22 ARW Safety Office for an outstanding year!** 🇺🇸



## 437th Airlift Wing, Joint Base Charleston, SC

**IMPAC 98**, the lead C-17 of a two-ship Special Operations Low Level II night vision goggles (NVG) training sortie, smoothly lifted off from runway 15. The crew prepared to execute a standard departure when they smelled something out of place—an acrid, electrical odor creeping into the flight deck.

Following multiple confirmations of the odor and the report of a smoky haze, the aircraft commander called for the Smoke, Fire, or Fumes Emergency BOLDFACE procedure. The crew removed their helmets and NVGs and donned the new emergency V-5 (one-piece) oxygen masks while the aircraft commander announced the crew's intentions to their wingman and air traffic control. Within 2 minutes of odor detection, the aircraft was established on downwind, and all crew members were checked in on emergency oxygen.

As they prepared for the approach, the three pilots began to experience fogging across the lens. The condition of the aircraft commander's mask continued to degrade, and he reported visibility akin to flying an instrument approach in the weather. The actual conditions were clear of clouds and unlimited visibility.

After touching down and bringing the aircraft to a stop, the aircraft commander called for the Ground Evacuation checklist. Because the fog on their masks was so thick, the three pilots were unable to read from their checklists. Displaying a high degree of situational awareness, the primary loadmaster, who was downstairs and not experiencing any fogging, read the checklist over interphone and assisted the pilots in shutting down and disembarking from the aircraft.

Following the sortie, the crew submitted an Airman Safety Action Program report, highlighting the new V-5 oxygen masks and their defect. This report drove short-notice flight tests, prompted a command-wide Flight Crew Information File and equipment change, and was integral in preventing a more serious mishap.

The crew's flight discipline, crew resource management, and situational awareness allowed them to safely recover the aircraft despite the added complexity of an equipment defect. The actions of the crew of IMPAC 98 reflect great credit upon themselves, the 437th Airlift Wing, Air Mobility Command, and the United States Air Force. The crew that day included Maj Kevin Christian, Aircraft Commander; Capt Bradley Polender, Jump Seat Pilot; Capt Christopher Dolan, Right Seat Pilot; TSgt James Osteen, Loadmaster; MSgt Jeremy Owens, Loadmaster; SrA Andrew Buffin, Loadmaster; and TSgt Michael Eddy, Communications System Technician.



Safety Officer  
of the Year



## Capt Hunter Shirey

22d Air Refueling Wing, McConnell Air Force Base, KS

**Capt Hunter Shirey** is the Chief of Flight Safety for the 22d Air Refueling Wing (ARW), McConnell Air Force Base (AFB), KS. In this capacity, he oversees the KC-135 Stratotanker and KC-46 Pegasus Flight Safety programs and serves as an advisor to the 22 ARW Commander on safety matters concerning more than 2,900 Active Duty and Reserve Airmen. He also maintains his proficiency and readiness as a KC-135 Instructor Navigator, flying with the 22 ARW.

As Chief of Wing Flight Safety, Shirey led the delivery of and founded the safety program for the KC-46A, working with maintenance, operations, Public Information Officer, and Boeing Aerospace Company to instill safety policies and practices for Air Mobility Command's number one acquisition priority. In addition, he was selected to work with AMC Safety as a Flight Safety Officer for Mobility Guardian at Fairchild AFB, WA. While flying on multiple aircraft with Joint and International aircrew, he shared best practices for the safety of flight and ensured 388 mishap-free missions for more than 1,500 personnel from 26 international allies and partners.

Shirey also led the 22 ARW into federal compliance by partnering with the United States Department of Agriculture for wildlife management practices. Creating a Bird/Wildlife Aircraft Strike Hazard program that focused on habitat management and partnership with the local community, he worked with county commissioners to secure funding and support for an expansive airfield drainage solution. These efforts proved to be successful, resulting in a 28 percent reduction in bird strikes in 2019.

A native of Kentucky, Shirey attended East Carolina University and earned a bachelor's degree in history. Upon completion of Undergraduate Combat Systems Officer training at Pensacola Naval Air Station, FL, he was selected to fly the C-130H and assigned to the 50th Airman Leadership School, Little Rock AFB, AR. Next, he was chosen to fly the world's number one air refueling platform, the KC-135 Stratotanker, and assigned to the 349th Air Refueling Squadron, McConnell AFB, KS.



## MSgt Bradley J. Warnock

43d Air Mobility Operations Group, Pope Army Airfield, NC

**MSgt Bradley J. Warnock** is the Flight Safety Noncommissioned Officer for the 43d Air Mobility Operations Group (AMOG), Pope Army Airfield, NC. He is responsible for implementing and managing the AMOG's flight safety program in support of six Wideband Global Satellite Communication Systems and four major commands.

In addition, his efforts ensure that Pope Army Airfield is "Ready Now" when called upon to support the 82d Airborne Division, the U.S. Army's premier rapid deployment force, in support of short-notice presidential taskings, worldwide humanitarian relief efforts, and taskings to secure vital national objectives for follow-on interests. Warnock's work integrating mishap prevention techniques into mission planning cells, which eliminated and prevented injury or damage to aircraft, equipment, and personnel, is invaluable. His background includes 17 years of C-130 flightline, back shop, and isochronal inspection propulsion maintenance.

During 2019, Warnock's proactive approach to aviation safety went beyond normal flightline operations. He provided critical safety input during the planning and implementation phases of the C-130J Combat Cargo Offload Bravo training operations. This contribution allowed Pope Army Airfield to be one of only two certified airfields able to provide this critical pre-deployment training for aircrew. Warnock also bolstered Pope's Bird Aircraft Strike Hazard prevention program. With assistance from his U.S. Department of Agriculture's mission partner, he executed a barn swallow exclusion project. By utilizing freezer flaps, he was able to enclose five airfield culverts, eliminating the nesting grounds and preventing the annual migration of barn swallows onto the airfield.

Finally, Warnock's input was vital in developing a ramp-side paratrooper rigging operations plan. By synchronizing the efforts of the 82d Airborne Division and the 43d Air Mobility Squadron, a comprehensive plan was built that reduced paratrooper load times, thereby eliminating paratrooper fatigue. This strategy was accomplished by decreasing the distances paratroopers were required to carry their gear, which led to fewer injuries and allowed them to load the aircraft in one-half the usual time.



Left to right: Mr. Francisco Endaya, Mr. Lance Frasier, Mr. Justin Taylor, and TSgt Philip Medina.

## 628th Air Base Wing Joint Base Charleston, SC

The **628th Air Base Wing (ABW) Safety Office**, Joint Base Charleston, SC, received the Outstanding Achievement Award for Weapons Safety by exhibiting extraordinary accomplishments in risk management and safety awareness. The team consists of Mr. Francisco Endaya, Chief of Weapons Safety; Mr. Justin Taylor, Explosives Safety Specialist; TSgt Philip Medina, Explosives Safety Specialist; and Mr. Lance Frasier, Explosives Safety Specialist.

The 628 ABW Safety Office governed 239 Department of Defense Explosive Safety Board approved site plans, which empowered success for their multi-service air, water, road, and rail missions involving arms, ammunition, equipment, and explosive assets. They supported the President's Global Threat Reduction Initiative involving Department of Energy seaport operations and safely secured 200 thousand pounds of nuclear equipment and 62.9 kilograms of Low Enriched Uranium. Their efforts enabled Army, Navy, and Coast Guard maritime port operations, which buoyed safety involving 119 rail movements carrying 6.3 million pounds of ammunition and 35 ships hauling 460 thousand tons of cargo. They oversaw the United States Naval Ship Sacagawea download of 1 million pounds of explosives, which enabled international preposition ship missions, with zero mishaps reported during the operation. Furthermore, they wrote Joint Base Charleston explosive instruction 91-201 for Army, Navy, Marine, and Air Force units, which defines explosive processes and enables joint operation success.

The outstanding individuals in the 628 ABW Safety Office each brought unique skills and when combined, excelled in supporting 67 tenant organizations and 309 explosives locations, with assets valued at \$7.8 billion.



SSgt Kenneth Reid

## 436th Airlift Wing Dover Air Force Base, DE

During Fiscal Year 2019, the Dover Air Force Base (AFB), DE Safety Team continued to emphasize the Motorcycle Safety Program for the **436th Airlift Wing (AW)**, which supports more than 200 riders. **SSgt Kenneth Reid** managed the program with assistance from squadron motorcycle safety representatives under the leadership of **Ms. Lorie Bellamy**, 436 AW Occupational Safety Manager.

Dover AFB takes great pride in its motorcycle mentorship program, where senior riders mentor and spend time with less experienced riders, teaching them the safety aspects of riding. Reid and the safety team regularly work with four rider coaches, Green Knight Military Motorcycle Club Charter members, squadron motorcycle safety representatives, and motorcycle mentors to maintain an effective program. To coin a phrase: "teamwork makes the dream work." This past year, in conjunction with its Motorcycle Safety Day, the 436 AW Safety Office joined forces with Anheuser-Busch Companies, LLC, to promote "Street Smart," a program designed to inform the audience of the consequences of risky behavior. Following a safety briefing to more than 150 riders, a professional racing team presented numerous safe riding techniques. The day ended with a group ride and motorcycle safety displays by five vendors from the community. In addition, members from the Green Knights Military Motorcycle Club organized four mentorship rides throughout the year. The continued emphasis on motorcycle safety during the year contributed to the success of the 436 AW's Motorcycle Safety Program, and the efforts are essential to maintaining its remarkable record of having zero Class A or B motorcycle safety mishaps in the past 6 years.

Reid has managed Dover AFB's Motorcycle Safety Program since 2017. The exceptional team continually promotes awareness of Motorcycle Safety through teaching methods, promotional items, and rider participation tactics to encourage the members of Dover AFB to become engaged in the program. Identifying weaknesses in the program played a vital role in the success and development within the safety office. A challenge for Dover AFB is that inbound members and new riders slide under the radar as riders without essential credentials or acknowledgment in the Motorcycle Unit Safety Tracking Tool program. Proper distribution of information and unit engagement have helped solve this lack of awareness and similar issues, and ensure that new and inbound riders and non-riders are aware of Motorcycle Safety Program policies and requirements. The goal is continued excellence and keeping motorcycle riders safe.



## TSgt Lance Hughson

436th Airlift Wing, Dover Air Force Base, DE

**TSgt Lance T. Hughson** is the Noncommissioned Officer in Charge, Occupational Safety, 436th Airlift Wing, 436th Wing Safety, Dover Air Force Base, DE. In this position he developed policies and procedures for implementing and evaluating the installation safety program. He performed inspections, surveys, and program evaluations of areas and operations to identify mishap potentials and assess integration of risk management and safety equipment.

Hughson earned the prestigious Board-Certified Safety Professional credential and orchestrated the annual Motorcycle Safety Day with 250 riders and eight off-base vendors in attendance, resulting in zero Class A or B mishaps for 5 years running. He was hand-selected as the subject matter expert to lead the C-17 enterprise-level confined space nitrogen testing, ensuring that data was expeditiously delivered to Headquarters Air Force. Additionally, Hughson's efforts were critical to the positive results of the Air Mobility Command's Unit Effectiveness Inspection, resulting in zero Occupational Safety findings, with the highest inspection score in more than 10 years.

Hughson's background includes various duties in the aircraft armament systems and occupational safety career fields. He served as an A-10C Weapons Load Crew Team Chief, Squadron Lead Crew Member, and in other maintenance and safety positions at the squadron and groups levels. He has deployed in support of operations Enduring Freedom and Inherent Resolve and completed an overseas tour in the Republic of Korea.



## Mr. Robert Clapp

22d Air Refueling Wing, McConnell Air Force Base, KS

**Mr. Robert D. Clapp** is the Occupational Safety Manager, 22d Air Refueling Wing, McConnell Air Force Base (AFB), KS. As the host Occupational Safety Manager for three wings, he provides leadership guidance to 22 host squadrons, 12 tenant organizations, and over 6,000 personnel. Mr. Clapp's superior oversight resulted in zero on-duty Class A or B mishaps.

During this period, he lobbied for Air Mobility Command's number one construction project, the \$3 million dollar Air Traffic Control tower at McConnell AFB. Furthermore, Mr. Clapp demonstrated a proactive approach to new Occupational Safety and Health Administration guidelines and exercised prudent fiscal prowess while negotiating local training courses with Barton/Hutchinson Safety Academy, saving the Air Force over \$30,000 dollars in travel costs. Finally, he acted as the lead safety coordinator for all KC-46 operations, including the KC-46 Fuselage Trainer variance that ultimately earned Pentagon-level approval for an Interim Control Measure process preventing KC-46 mission impact. The safety expertise and excellence exhibited by these accomplishments reflect great credit on Mr. Clapp, Air Mobility Command, and the United States Air Force.

During more than 26 years of service in the safety career field, Mr. Clapp has earned professional accreditation by attending over 100 professional education courses and management seminars. These include industrial/construction safety standards and practices, risk management, supervisory techniques, weapons and explosive program safety, and environmental and hazardous materials safety. Mr. Clapp is also recognized nationally as a Senior Level Certified Hazard Control Manager, holding that accreditation since December of 2001. He has over 1,000 hours of OSHA training and holds several OSHA safety certifications. Finally, as a former 12-year Texas and Idaho Motorcycle Safety Foundation Chief Instructor he has trained more than 6,900 students.

# With Dedicated Airmen, Team McConnell Conquers Challenges

**BY MS. BETTY NYLUND BARR,  
STAFF WRITER**

**O**n January 25, 2019, the mighty KC-46 was delivered to McConnell Air Force Base (AFB), KS. The newest weapons system to the fleet was built in response to the U.S. Air Force’s procurement program to replace some of the oldest KC-135E Stratotankers. The Stratotanker had been in continuous operation for more than 50 years, so the KC-46 has a significant amount of new technology the KC-135 does not. “There are capabilities that this airplane has that have never been integrated into tankers before,” pointed out Col Richard Tanner, Commander of the 22d Air Refueling Wing (ARW), McConnell AFB.

Because the plane was new, no formalized procedure existed for checking it before accepting it from the manufacturer. Tanner explained that developing that procedure typically takes nearly one year, “but Team McConnell completed that lengthy task in only a month.”

The next issue encountered was the lack of weight and balance tables, which are necessary to operate the plane safely. TSgt Danielle Barnett, Quality Assurance Inspector, worked long hours for two weeks to build standard weight and balance tables, which became the benchmark for the entire KC-46 fleet. She also created a standard/minimum flight equipment list that is also used fleet wide.

Once the team began to fly local training missions, in late February, they discovered that the preflight

**TSGT DANIELLE A. BARNETT:  
QUALITY ASSURANCE INSPECTOR**

- Developed KC-46 Weight and Balance standard configurations. Created and synchronized the Pegasus fleet with a standard/minimum flight equipment list, Master Chart A, and Chart Cs, which were benchmarked Air Force-wide.
- Developed fleet-wide server standardization for the Automated Weight and Balance System. Recognized as the “subject matter expert” by Air Mobility Command (AMC), as her diligent work is now considered the baseline.
- Was requested by name by Pease AFB, NH, to roadmap their KC-46 Weight and Balance programs—a 2-week TDY that included in-depth program assessments and Question and Answer (QA) training, resulting in the necessary expertise for Pease AFB to become the first Air National Guard base to receive USAF’s newest weapon system!



procedure done by the booms had some problems. “It was failing and causing delays and cancellations,” said Tanner. SSgt Kyle Schultz, KC-46 Flying Crew Chief, tackled

the challenge. “He figured out where all of the errors were taking place and submitted his findings to the engineers,” Tanner explained, and they validated the procedure.

**SSGT KYLE J. SCHULTZ:  
KC-46 FLYING CREW CHIEF**

- Identified boom preflight malfunctions were causing repeated aircraft departure delays.
- Developed detailed troubleshooting procedures for each phase of the Boom Preflight Functional Test by outlining when failure of preflight was occurring and the subsystem operating at the time of the failure. Confirmed findings by analyzing all assigned aircraft.
- Provided findings to engineering for further analysis and use in developing approved troubleshooting technical guidance.



By March, the number of KC-46s being delivered was outpacing the number of aircrews who were trained and prepared for the aircraft. “We still had not identified how to make crews sufficient for the tails at the pace we were receiving them,” Tanner said. Because of the delays in qualified aircrew production, the team experienced extensive attrition of both active duty and reserve Airmen.

In March and April, the team had to address reduced sortie production resulting from foreign object damage oversight issues at the factory and

a lack of spare parts. They also encountered fuel body tank issues that required maintenance, and they did not yet have the correct tool to remedy those issues. “From discovery to fixing internally to eventually removing by special procedures was a 10,000-man-hour procedure,” Tanner explained.

One of the team’s biggest challenges, according to Tanner, was solving problems with the Remote Vision System (RVS). “We had some boom operators struggling with headaches and eye strain and

## Undeterred by all the challenges, Team McConnell has come through with flying colors.

other challenges,” he said. McConnell AFB brought in skilled analysts, who ran extensive tests on the equipment. It was TSgt David Smith, the KC-46 Instrumentation Flight Control Systems Craftsman, however, who figured out that the alignment of the equipment was off—and how it could be fixed. “He meticulously went through the process of this is what we’ve got, and this is what I think we need to do,” said Tanner. “He worked with Boeing and got the engineering up to speed and spec.”

In August, the team flew the KC-46 on a test flight over the Pacific to verify that previous issues had been resolved and that the team and the systems were capable of supporting the aircraft. During that mission, they discovered that the cargo locks were coming unblocked in flight, so the team refit the planes with new cargo locks. In addition, problems arose with the smoke barrier, and the team also worked to resolve that issue.

“I’m really proud of what the team at McConnell has accomplished over the last year.” Tanner described how Capt Colton “Hammy” Wetzel, 344th Air Refueling Squadron (ARS) Deputy Chief of Tactics and KC-46 pilot, expanded AMC tactical and technical capabilities and connected them to an Air Combat Command (ACC) warfighting perspective. “This is classic innovation by acquisition,” Tanner declared.

Undeterred by all the challenges, Team McConnell has come through with flying colors. Their level of competence and innovation serves as an inspiration to anyone who is met with adversity along the path to excellence. 

### TSGT DAVID O. SMITH: KC-46 INSTRUMENTATION FLIGHT CONTROL SYSTEMS CRAFTSMAN

- Lead technician assigned to resolve the Aerial Refueling Operator Station (AROS) 3D camera double vision discrepancy affecting six aircraft.
- Had no available repair procedures to correct camera issue.
- Identified close-tolerance adjustment points for misaligned cameras and developed adjustment and limitation procedures to repair malfunctions.
- Provided guidance that received Air Force Technical Order Form 22 approval and is slated for future TO publication.



### CAPT COLTON “HAMMY” WETZEL: 344 ARS DEPUTY CHIEF OF TACTICS AND KC-46 PILOT

- Possesses Link-16, Radar Warning Receiver (RWR), and Tactical Sensor Integration expertise from F-16CJ.
- Was vital in integrating new AMC tactical capabilities and connecting ACC warfighting perspective.
- Is driving tactical employment into training for a contested environment.
- Led a cultural shift away from offloading gas to being completely integrated into a warfighting web.



# Airlift's First Female Aircraft Maintenance Officer, C-141 Pilot, and Aerial Port Squadron Commander

BY MS. BETTY NYLUND BARR,  
STAFF WRITER

**K**athy La Sauce started pushing the envelope early. "I look back at myself," she says. "When I was in fourth grade, I wanted to play the trumpet, and they said, 'Girls don't do that.' I wanted to be the drum major of the marching band, and they said, 'That's for guys.'"

Kathy was born in Queens, NY, and grew up on Long Island. In the 1960s, when she was in high school and then at Ithaca College, in upstate New York, many of her male classmates were being drafted to fight in Vietnam. When Kathy graduated from college, she explored joining the Air Force.

She discovered that women who wanted to be officers in the Air Force had to attend a 12-week training course—or, as she calls it, "indoctrination"—in which they were taught poise and how to apply makeup. Although women Air Force Officers (WAFs) had to march as a separate squadron and were not allowed to do small arms training



Kathy La Sauce, pilot training on the steps of a T-38.

or run the obstacle course, La Sauce said, "You could see the Air Force was starting to realize that women were the answer to shortfalls throughout the noncombat field."

"I felt pretty lucky that I was selected into the Air Force," La Sauce said. She was in the first group of women trained as aircraft maintenance officers at Chanute Air Force Base (AFB) in Illinois.

At her first duty station at Travis AFB in California, she was a flightline maintenance officer in charge of 120 maintenance personnel (all male) and 40 C-141s. With no appropriate uniform for women on the flightline, she was authorized to wear men's fatigues and steel-toed combat boots. When her sister visited, she had asked La Sauce, "Aren't you uncomfortable? You're the

only woman in the entire building!" "I never noticed," La Sauce said. "I always tried to maintain my femininity. Just because you're doing what has been 'traditionally' [air quotes] a man's job does not mean you need to lose your femininity or your identity."

When she would jump onto a plane to sign the Exceptional Release, which verifies that the plane is safe and ready to fly, the men would question why a woman was on their plane. She would tell them, "Well, without my signature, you're not going to fly." Looking back, she said, "It was kind of a unique situation to be in."

She wanted to be more involved in the war effort, but women were not allowed in combat unless they were there as nurses, so she went to C-130 school and learned how to

run engines. She was subsequently stationed in Guam, where she oversaw the Typhoon Chasers, whose duty was to fly their planes through a storm, test its strength, and report their findings so that warnings could be sent ahead of the storm.

While La Sauce was in Guam, legislation was enacted to open Air Force Service Academies to women—“a test program to explore the possibilities of women flying airplanes,” she chuckled. “It was pretty amusing, I thought.” In July 1976, she was chosen to be in the first class of women to be trained as Air Force pilots.

Her first airplane, at Williams AFB in Arizona, was the Cessna T-37. Then she flew the T-38 supersonic aircraft—which could reach speeds of Mach 1.2—in formation, wingtip to wingtip. She was 27 years old and a Captain. “The men really didn’t want us [women] there, but once you fly wingtip to wingtip with another pilot who thinks he’s God’s gift to aviation, and he realizes that you outflew him, it didn’t take long for them to realize that we were pretty good pilots.”

At Norton AFB in California, La Sauce’s commander, Col Duane Cassidy, was very supportive, and she became the first female C-141 copilot. “It was considered a really big deal back then,” she said.

Her 10-day aircraft commander check ride was fraught with equipment malfunctions and bad weather. Upon her return, the loadmaster commented that the only emergency La Sauce didn’t experience during her check ride was ditching in the ocean. “It’s probably one of the best things that could have happened to me—having all these malfunctions,” La Sauce said, “because not only did it build my self-confidence but it built the confidence of the men that I flew with that ‘You have nothing to worry about, flying with La Sauce, because she’s a good pilot.’”



Photo upper left: La Sauce standing before a C-141 Starlifter. Photo above: Alpha 2 Maintenance truck at Travis. Photo left: Seated in a VC-135.

“So, it paved the way.”

She became an instructor pilot and was promoted to Major, but when she was going to be assigned to another desk job, La Sauce spoke up. “I explained to the Colonel, ‘You know, all the women after me are going to be watching to see what happens. I want to fly in the presidential support squad at Andrews [AFB, MD].’” She became the first woman in that very prestigious unit—the Special Air Mission, or SAM.

Then, La Sauce became ill and could no longer physically qualify to fly, which to her was “heartbreaking.” She took a staff job at the Pentagon, but then key decision-makers at Headquarters chose her to command the 93rd Aerial Port Squadron at Andrews AFB—again, the first woman to do so—where she led an elite, highly qualified group of Air Force personnel. The position is normally held by an individual for 1 year; however, she wrote to the relevant

board—twice—and was allowed to extend her command to 3 years.

By then the Air Force contained women and men, which, according to La Sauce, “added a whole new perspective to deployment and what women could and couldn’t do. Women were loading airplanes, we were fixing airplanes, we were flying airplanes, and we were commanding squadrons.”

La Sauce’s career proves that, according to her, “You really can do anything you set your mind to...with hard work, determination, motivation, personality. I basically feel very blessed that my career in aviation started breaking barriers, little by little.”

As airlift’s first female Aircraft Maintenance Officer, Pilot, and Aerial Port Squadron Commander, La Sauce is truly an inspiration who helped open many doors for women who turn wrenches, fly our aircraft, or command squadrons today. 

# 2d Phoenix Spark Tank and the U.S. Air Force Spark Tank Competitions



BY MS. KATHY ALWARD, STAFF WRITER

The tradition of expediting innovation initiatives that help improve operational efficiency, maintain Air Force readiness, and significantly reduce the time and money that is allocated to a task continues as the Air Mobility Command (AMC) 2d Phoenix Spark Tank Competition, held in October 2019, chose two finalists and three runners-up from the 64 submissions. The first and second place finalists have the opportunity to be one of the finalists for the U.S. Air Force Spark Tank Competition in February 2020. The three runners-up will be considered for implementation by AMC. The additional 59 submissions were forwarded to the Airmen Powered by Innovation (API) program to be considered for implementation at various command levels.

First place finalist, TSgt Sharif R. Abouomar, Headquarters AMC/A4, Scott Air Force Base (AFB), IL, submitted the idea of “Computed Tomography for Aircraft Maintenance and Beyond.” “Nondestructive Inspection, or NDI, of the future is about modernizing my career field with game-changing technology,” said Abouomar. The current inspection process involves five revolving steps requiring parts to be stripped of paint, dipped in chemical solutions, examined with ultraviolet light to

observe surface defects, and repainting parts. Another inspection method that Abouomar said is currently used is radiography or x-ray that incorporates a system that has been in service for decades and drives outdated inspection processes.

Abouomar suggested a more modern solution called Computed Tomography (CT) that uses three-dimensional (3D), high-resolution scanning and automated image engineering software to find the smallest internal defects, and expands manufacturing capabilities for metals technology that could decrease exposure to hazardous material and reduce the inspection to three steps, including part removal, CT inspection, and installation. Abouomar said that CT could save AMC more than \$2 million annually.

Second place finalist, TSgt Brett M. Kiser, 521st Air Mobility Operations Wing, Ramstein Air Base, Germany, presented the idea of the “C-17 Loading Aid.” Kiser said he has worked with the loading aid using palletized aircraft assets while in the Air Force. Currently, the logistics rail is exposed, and sometimes, when the 463L cargo pallet transfers from the 60K loader over onto the aircraft floor, it may hit omnidirectional rollers. When this mishap occurs, it can cost an estimated \$8,300 and approximately eight man-hours to

replace each rail, according to Kiser. He was selected as one of the finalists for the Air Force Spark Tank Competition that was held on February 28th, 2020 in Orlando, Florida.

With fabrication help from techs, after Kiser checked the design and took measurements, the K-Wedge System was designed. “The K-Wedge costs much less at about \$500 [in] parts and labor, and in as little as 1 minute you can install it on the aircraft floor using existing tie-down rings, and that’s what secures it to the floor,” said Kiser. According to Kiser, this system saves the Air Force money, prevents damage to the logistics rail, and safeguards and protects our Airmen.

SSgt Timothy M. Miller, 621st Contingency Response Wing, Joint Base McGuire-Dix-Lakehurst, NJ, submitted the idea of “3D Printed USB Adapter for Tactical Airfield Light.” Miller said the current service the Landing Zone Safety Officer (LZSO) team provides is to ensure there is always sufficient lighting for the aircraft to land by using Phantom brand tactical lights that run off of four AA batteries and requires the LZSO team to ensure that there is a constant supply and proper disposal of the AA batteries.

According to Miller, their team noticed deployed people were using cell phone



First place finalist, TSgt Sharif R. Abouomar, Headquarters AMC/A4, Scott AFB, IL

power banks that had a much greater capacity than AA batteries. They came up with a 3D printed adaptor so they could power their Phantom brand tactical lights off of these battery packs. Miller said, "Now it is a 'set it and forget it setup,'" and they have successfully field-tested it with C-130s and C-17s. According to Miller, if they should mass produce, it would take approximately \$50,000 to \$100,000 to start up, or they could rely on in-house expertise if the Air Force has the capability to 3D-print each team order.

MSgt Jacob B. Hamilton, 19th Airlift Wing, Little Rock AFB, AR, submitted the idea of the "3D Printing Initiative: Pushing Explosive Ordinance Disposal (EOD) 'Left of Boom.'" Hamilton said to understand what "left of boom" means we should think of a detonation that is the result of an enemy action, and there is a point on a timeline where there is an effort being made to get ahead of the detonation that equals getting "left of boom."

According to Hamilton, one of the newest threats are 3D-printed munitions created by our adversaries, and there is no way to train on these highly expensive sudden munitions. There is a potential to cut the cost of live training and replicate the latest



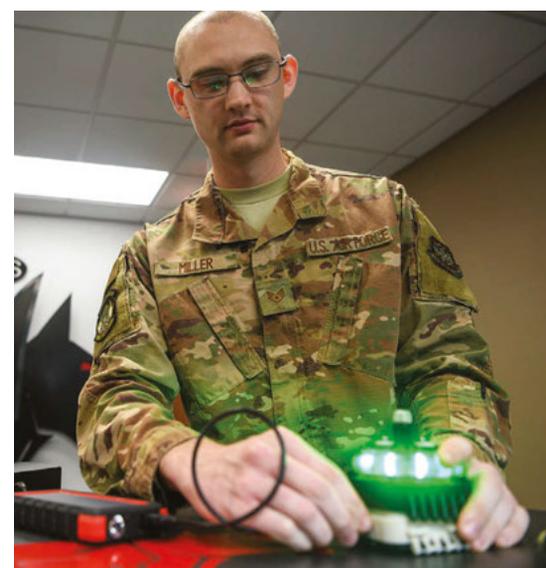
Second place finalist, TSgt Brett M. Kiser, 521st Air Mobility Operations Wing, Ramstein Air Base, Germany

threats in an extremely brief amount of time using proper 3D printing programs and reducing the cost of a \$135 item to \$1 to \$2. Hamilton proposes to outfit mobility equipment packages with resources to 3D-scan and print recovered munitions and calls for standardized and centralized support to analyze and exploit this new intelligence. "That agency would then prepare new intelligence in a format that not only educates EOD operators but also disseminates it in rapid fashion," said Hamilton.

SrA John T. Cuttito, 6th Air Mobility Wing, McDill AFB, FL, presented the idea of "Infrared Thermography." Cuttito and SSgt James Moore introduced the concept that uses thermal imaging technology to quickly and effectively troubleshoot problems and reliability issues on Air Force assets. Cuttito said there are currently no tools to allow immediate diagnosis for troubleshooting aircraft anomalies without first breaking into a system or a component, which can be a timely task for most maintainers. Cuttito showed a camera that can be used to diagnose multiple problems within aircraft, automotive, and civil engineering career fields, to include looking at an image on the camera to see excessive heat and even leaks

that are not visible to the naked eye, keeping them at a safe distance. Moore said that infrared cameras would enable faster repair times and increase aircraft availability.

AMC opened an innovation campaign that can be accessed at <https://usaf.ideascalegov.com/> and is available 365 days a year. 



Runner-up SSgt Timothy Miller, 821st Contingency Response Squadron, plugs in a power bank into a Phantom brand tactical airfield lights at the 821st CRS building Nov. 14, 2019, at Travis AFB, CA.

USAF photo by TSgt David W. Carbajal



AMC NEWS

Loadmasters from the 36th Airlift Squadron secure packages for Operation Christmas Drop at Andersen AFB, Guam, Dec. 10, 2019.

USAF photo by SrA Ryan Brooks

# 515th Air Mobility Operations Wing Operation Christmas Drop 2019

BY THE 515th AIR MOBILITY  
OPERATIONS WING PUBLIC AFFAIRS

For the 68th straight year, the Air Force conducted its longest-running training operation and the world's longest-running humanitarian airlift: Operation Christmas Drop (OCD). Since 1987, for all but 3 years the program has been led by the 734th Air Mobility Squadron (AMS), Andersen Air Force Base, Guam.

In 1952, the 54th Weather Reconnaissance Squadron, flying over the Micronesian island of Kapingamarangi, saw islanders waving to them, and the crew gathered supplies they had lying around the plane, tied them to a parachute, and circled around to drop the cargo. In 2019, a record-breaking 176 boxes carrying approximately 82,000 pounds of goods were delivered to 55 islands by air. Overall, an estimated 1.2 million pounds of goods have been delivered to the Micronesian islands, including non-perishable food, hand tools, fishing supplies, school supplies, clothes, hygiene products, coolers, toys, and first aid kits.

During the multi-week operation, volunteers came together from the 734 AMS, 515th Air Mobility Operations Wing, 374th Aircraft Maintenance Squadron, and the 44th Aerial Port Squadron, along with partner nations, including



Loadmasters of the 36th Airlift Squadron from Yokota AB, Japan, wave to people of the Federated States of Micronesia below after delivering humanitarian aid during Operation Christmas Drop, Dec. 10, 2019.

Australia, Japan, New Zealand, Bangladesh, Malaysia, Mongolia, the Philippines, Singapore, and Thailand. The volunteers participated in box buildups, in which they secured the donations to a pallet before parachutes were added in preparation for the drop. The operation also gives troops the chance to practice humanitarian relief operations, and it gives pilots of the C-130J Super Hercules, of both local

and foreign partner air crews, the avenue to practice low-altitude flight training and cargo drops.

This year's president, SMSgt Brandon Peterson, 734 AMS Aircraft Maintenance Unit superintendent, was tied to OCD well before he knew he would be the president. In the mid-1980s his grandparents were assigned to Andersen AFB, and his grandfather, retired SMSgt Gary Schersching, volunteered his time to the effort. When the opportunity arose for a president to volunteer this year, Peterson jumped at the chance.

"I am proud to have had the opportunity to follow in my family's legacy and carry the OCD torch, especially with such a record-breaking year," said Peterson. "I am excited to see what the 70th anniversary will bring."

Two years from now will be OCD's 70th anniversary, but that is not the only reason Peterson is excited to see what it will bring. This year, Netflix was on the island filming an Operation Christmas Drop movie that is scheduled to be released next fall to help with the fundraising efforts that coincide with the 2021 OCD 70th anniversary. One of the biggest roles as president is to ensure the success of the next year's operation, as all fundraising is done to support the following year's drop. Peterson says he hopes to see another record-breaking year in 2020 to continue helping some of the most remote people and places on the planet.

OCD became a private organization in 1982 that relies solely on volunteers for logistical support. It has its own constitution and by-laws that operate in accordance with Air Force instructions and is governed by Department of Defense joint ethics regulations.

Peterson had to continue his regular work duties as superintendent, leaving work for OCD to be done primarily in the evenings and on weekends. He said he spent many restless nights creating and going over checklists that needed to get done from one event to another.

"The team and I would put in many hours after work and on the weekends," said Peterson. "Whether it was for the movie, sorting the monthly donations, working a fundraiser, or coordinating something else ... it was a busy year!"

When asked if there was anything else he would like to add, Peterson did not hesitate for a second to mention the people around him.

"I really could not have done any of this without my team," exclaimed Peterson. "There are three specific individuals

that I would like to highlight: TSgt Michael Duncan, the Vice President; MSgt John Paul Diaz, Solicitations Lead; and TSgt Dean Atwa, the Facility Manager. Without the hard work and dedication of those three, I would have been up the creek. They did the work; I was just the face."

Operation Christmas Drop was a huge success, and with the release of a Netflix movie next fall, expectations are high for years to come that the event is going to continue to grow and break records. 🇺🇸



A festive and light-hearted moment is shared between 1st Lt Patrick French, Copilot, and Capt David Fox, Aircraft Commander, 36th Airlift Squadron, Yokota AB, Japan, in the cockpit of a C-130J Super Hercules during Operation Christmas Drop.



Parachuted packages descend from the back of a C-130J Super Hercules to the Federated States of Micronesia below during Operation Christmas Drop, Dec. 10, 2019.

USAF photos by SrA Ryan Brooks



# MISHAP-FREE FLYING HOUR MILESTONES

## 6,500 HOURS

### 6 AS, JB McGuire-Dix-Lakehurst, NJ

MSgt Mark R. Hafer

### 165 AW, Savannah ANGB, GA

Lt Col Bradley R. Moore

## 5,000 HOURS

### 6 AS, JB McGuire-Dix-Lakehurst, NJ

SMSgt Joshua D. Pogue

MSgt Kevin R. Blum-Schumacher

MSgt Christopher L. Worthy

TSgt Justin L. Triola

### 65 AS, JB Pearl Harbor-Hickam, HI

Lt Col Neil R. Senkowski

### 165 AW, Savannah ANGB, GA

Lt Col Michael M. Gesser

## 3,500 HOURS

### 6 AS, JB McGuire-Dix-Lakehurst, NJ

Lt Col Eric A. Kut

Maj Trevor N. Kauffeld

Maj Kyle E. McCurley

Maj Kevin B. Montes

Maj Allin Oberlin

Maj Michael S. Winters

CMSgt Saleem Muncey

MSgt Kyle J. Roen



### 165 AW, Savannah ANGB, GA

Col James P. Marren (Ret.)

Lt Col Brian S. Bowen

Lt Col Anthony M. Cianciolo

Lt Col James W. Edenfield

Lt Col Timothy D. John

Lt Col Stevie E. Rushing

## 2,500 HOURS

### 6 AS, JB McGuire-Dix-Lakehurst, NJ

Col Marc E. Greene

Lt Col Nathan D. Bump

Lt Col Matthew Cooper

Lt Col Shane D. Hughes

Lt Col Jonathan H. Magill

Lt Col Christopher R. Ott

Lt Col Andrew J. Stewart

Maj Mark R. Amos

Maj Nicholas J. Bente

Maj Kevin W. Brooks

Maj Justin J. Brozzetti

Maj Brad P. Holt

Maj Trevor N. Kauffeld

Maj Jeremy D. McNatt

Maj Jon A. Oswald

Maj Michael D. Peterson

Maj William J. Pringle

Maj James M. Salazar

Capt Chase B. Bradley

Capt Scott M. Bradley

Capt Joshua D. Rehder

Capt Christopher M. Stevens

MSgt Collin J. Cenci

MSgt Jose H. Cruz

MSgt Daniel L. Gagne

TSgt Vincent P. Fontana

TSgt Tyler M. Hertzog

TSgt Jamie D. Widrig

SSgt Michael G. Dunlap

SSgt Todd A. Hanggeli

### 165 AW, Savannah ANGB, GA

Maj Danny M. Barton

Maj Henry H. Brumby

MSgt Sandra L. Morrow Brown

MSgt Delton A. Johnson

SrA Aaron M. Hayes



## TO SUBMIT MISHAP-FREE FLYING HOUR MILESTONES:

Send your request to: [mobilityforum@us.af.mil](mailto:mobilityforum@us.af.mil)

HQ AMC/SEE, 618.229.0927 (DSN 779)

*Please submit as shown in the listings above (first name, last name, sorted alphabetically within rank).*

# QUICKSTOPPERS

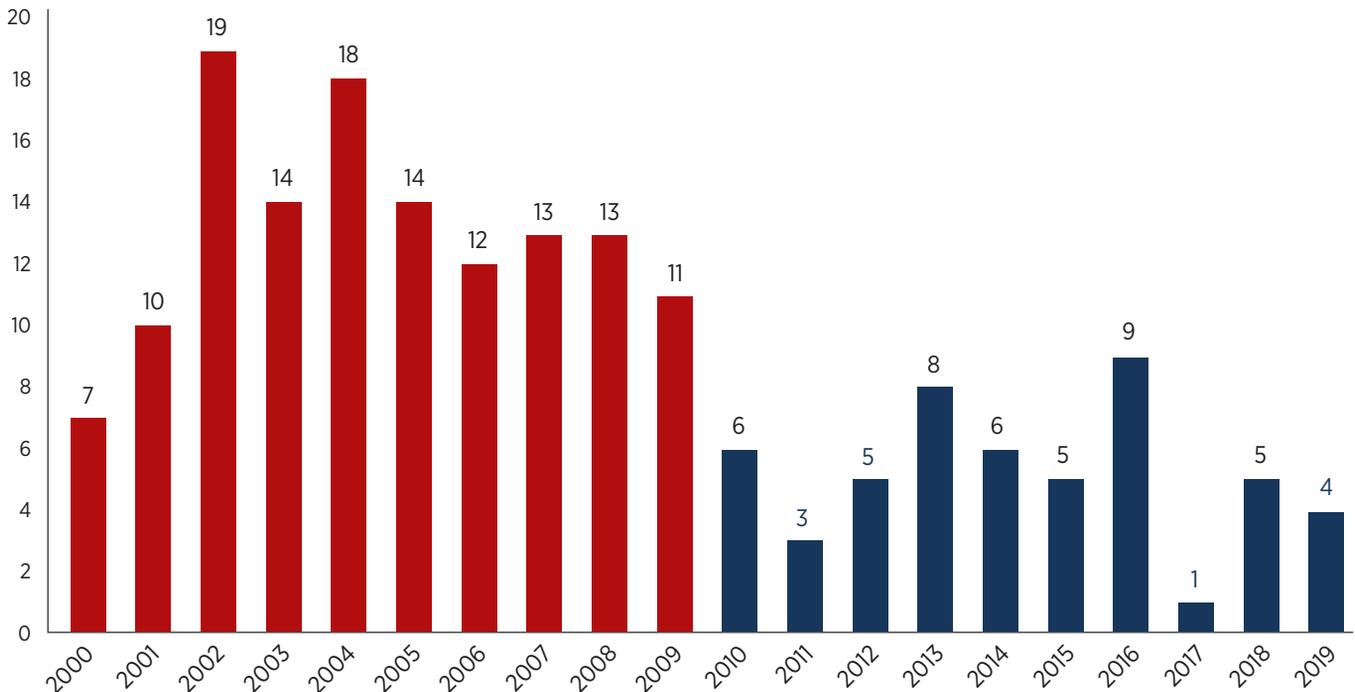
## In a Decade of OpsRAMS, Mishaps are Reduced Significantly

BY MR. KEVIN SLUSS, CSP,  
HQ AMC FLIGHT SAFETY

Since Air Mobility Command (AMC) launched OpsRAMS (Operations Risk Assessment Management System) in 2010, AMC has experienced a 60 percent reduction in major aviation mishaps (see chart below). Executing the major programs of OpsRAMS requires constant effort from aircrews and the staff to educate new aviators and follow through on initiatives. From every ASAP (Airmen Safety Action Program) report, to military FOQA (Flight Operations Quality Assurance) analysis, to AvORM (Aviation Operations Risk Management) assessments and LOSA (Line Observation Safety Audit) observations and recommendations, the cumulative effort

helps produce results such as reduced major mishaps. Your safety and OpsRAMS staff prefer tracking down answers to ASAPs or working recommendations from a LOSA rather than working the aftermath of a downed or damaged aircraft or injured personnel. Invitations go to all wings and Major Commands for participation in our monthly working groups and the quarterly Trend Review Action Committee chaired by the AMC Deputy Commander. Repeated vigilance from aircrews, maintainers, and support personnel produces results. Help us continue these processes to lower mishaps even further in the next decade. 🇺🇸

### AMC Major Aviation Mishaps by Fiscal Year



131 Major Mishaps FY 2000-2009

OpsRAMS → 60% reduction (79 fewer in the decade)

Mishaps with Damage ≥ \$500,000

AMC Accountable

# A DAY IN THE LIFE



SrA Michael Madeira, 7th Security Forces Squadron military working dog (MWD) handler, and MWD Fix, take a break at Dyess Air Force Base, TX, Jan. 21, 2020. MWDs have a diet designed for their strict training regimen, but treats are authorized.

**USAF photo by SrA River Bruce**