THE MOBILITY FORUM

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AMC Commander Gen Maryanne Miller:

Investing in the Future, Reflecting on our Progress

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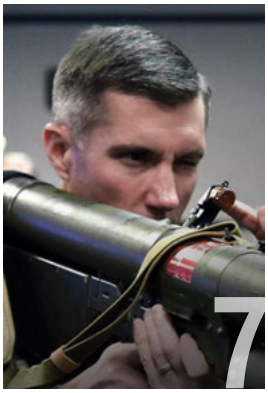

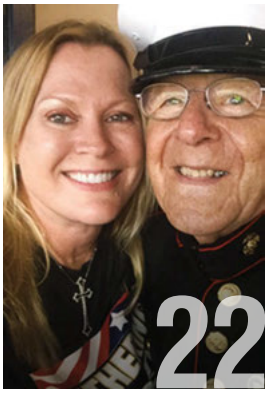

ON THE COVER

Gen Maryanne Miller, Commander, Air Mobility Command (AMC), discusses AMC's six priorities and her vision for the future in this issue of *The Mobility Forum*.

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AMC Commander Gen Maryanne Miller:

Investing in the Future, Reflecting on Our Progress

Mobility Airmen,

Thank you for the sacrifices you make every day to serve this great nation. You and your families have always been there for America, and it is an honor and privilege to serve with you!

When I accepted the guidon in September 2018, the nation's defense climate was changing. Our top defense officials took a hard look at the world and reevaluated which actors posed the greatest threat to Americans and our interests. With the first National Defense Strategy (NDS) in 10 years, they put a target on revisionist powers who seek to reshape the world by authoritarian models, and they set American defense efforts on a path to compete, deter, and when necessary, win. As our national command authority adjusted their focus, so too, Air Mobility Command (AMC) adapted to the new face of the security environment. In concert with this effort, I released a new Vision for Mobility Airmen the same autumn; a Vision you have heard me advocate ever since.

Mobility Airmen know how to pivot effort in the right direction. You have plotted this new course, pushed up the throttles, and not looked back. Nearly two years later, I am proud to say we have made significant progress. Here are some highlights of *your* progress in the context of our six priorities.

Mobility Airmen know how to pivot effort in the right direction. You have plotted this new course, pushed up the throttles, and not looked back.

FULL SPECTRUM READINESS

What it is. The lethality required by the NDS is a function of the four components of Full Spectrum Readiness. These components are the right amount of Airmen with effective leadership, armed with the right skills, and possessing situational awareness of their operating environment.

What it looks like. At the unit level it looks like a warfighting mentality intrinsic to every Airman and is spread across the Total Force. It looks like decision dominance enabled by constant awareness of the threat and streamlined command-and-control (C2) across each core mission. It also will increasingly look like operating with mission-type orders as we practice decentralized decision-making informed by commander's intent.

Progress. Together we have examined the tiles of this mosaic to be sure each piece contributes to an accurate overall picture. Under the Readiness Driven

Allocation Process, we have pushed authority down to the wings, providing ownership at the right level to custom-fit training to mission requirements. During the headquarters transformation our team of experts overhauled the command's mission execution direction. Consequently, we now have Annual Training Guidance, an Air Operations Plan, and Special Instructions accurately driving our operations cycle in alignment with the NDS.

As our crews step to a mission, they are shifting to an execution mindset based on their commander's intent, so when our C2 nodes are denied they are able to continue the operation. The 618th Air Operations Center (AOC) is busy strengthening network defense capabilities and has exercised communications denial scenarios to test vulnerabilities and build experience operating in degraded conditions.

SUSTAINING AN EFFECTIVE NUCLEAR RESPONSE

What it is. America's most visible leg of the nuclear triad is kept aloft by Mobility Airmen. Through airlift and air refueling, we deliver strategic capabilities that underpin the credibility of our nuclear deterrent.

What it looks like. This response looks like our fleet of refueling tankers extending our global reach so that we can hold any target at risk, at the time and place of our choosing. It looks like airlifting nuclear weapons and support materials to guarantee an effective supply chain. It also looks like 21st century C2 systems to ensure immediate dispersal of timely decisions and critical information.

Progress. As AMC's C2 network evolves, our nuclear C2 capability is receiving communications upgrades to keep pace with the latest technology. As we conduct Initial Operational Test and Evaluation for the KC-46, we have several parallel efforts to develop the methodology and supply the equipment to guarantee this tanker is effective in the nuclear mission.

MOBILITY OPERATIONS IN CONTESTED ENVIRONMENTS

What it is. The threats of tomorrow present an increasingly contested environment for the entire Joint Force. Mobility Airmen will face access challenges in all domains—air, land, sea, space, and cyberspace—and must be accustomed to operating in and through those domains despite these obstacles.

What it looks like. Conducting effective operations in Contested, Degraded, and Operationally-limited environments requires integrating capabilities and leveraging agility. For AMC, this looks like integrating into the operational strategies of Joint All-Domain Command-and-Control (JADC2) and Agile Combat Employment. It looks like advanced sensors and communications systems to gain battlespace awareness and to proliferate that awareness across a network of joint and allied partners. It also looks like self-protection and aircraft survivability.

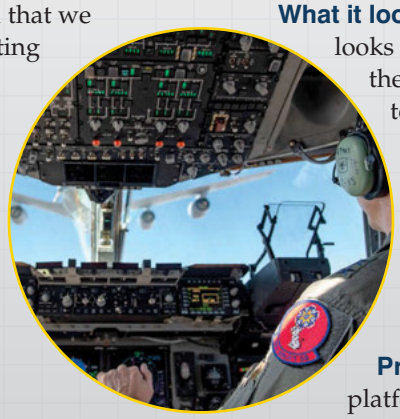
Progress. Cyber Mission Defense Teams have emerged as a nascent cyber defense capability as we develop stronger defenses against peer and near-peer adversaries. AMC's JADC2 campaign plan is a coordinated, intentional effort to rejoin the rest of the Air Force with redundant, secure beyond-line-of-sight communications and integration with the Advanced Battle Management System. Our platforms will not only perform the primary missions of airlift, air refueling, and aeromedical evacuation, but they will be connected sensors in a constellation of the JADC2 network.

Rounding out this line of effort is the Next Generation AOC. The fiscal year 2020 President's Budget fully funds a new facility that not only provides state-of-the-art C2, but is intentionally designed to integrate operational planners, intelligence, and AOC personnel to increase information sharing and gain the synergies associated with real-time collaboration.

DEVELOP THE FORCE

What it is. While technology changes the face of warfare, its nature remains the same. The clash of wills cannot be separated from its human dimension. The requirements for moral strength and physical stamina demand that we spare no expense as we cultivate a lethal fighting force by developing Airmen.

What it looks like. This development looks like arming Airmen with the experiences and knowledge that will cultivate the strength and stamina required for this type of conflict. This includes education and training, targeted development programs, and intentionally managing assignment selection and timing.



Progress. Through efforts like the Mobility Air Force Mentoring Facebook page, our personnel management team has brought clarity to the assignment process for thousands of Airmen. Intentional placement for squadron leadership and the expansion of career-broadening programs help us match the right Airmen to the right place at the right time.

In the fall of 2019, national legislation helped us realize several goals we have advocated for on behalf of our Airmen and their families. We have improved support to military families through doubled reimbursement for state licensure expenses for spouses, an establishment of a Tenant Bill of Rights for privatized military housing, flying waivers for pregnant aviators, and the Defense Department's comprehensive assessment of childcare needs. Strong families yield mission-focused Airmen.

MODERNIZATION AND RECAPITALIZATION EFFORTS

What it is. In the simplest terms, modernization is *getting* the right stuff, and recapitalization is *keeping* the right stuff. To discern what the "right stuff" is, we consider the threats, risks, and costs to custom-fit our capabilities to the needs of our NDS and the Joint Force.

What it looks like. Getting and keeping the right stuff looks like accelerating the acquisition process for the capabilities we need and the tools required to keep those capabilities competitive. This approach involves off-the-shelf solutions as well as rapid acquisition authorities. It also looks like adapting employment methods by leveraging best practices and lessons learned so that our capabilities have the sharpest edge for our modern environment.

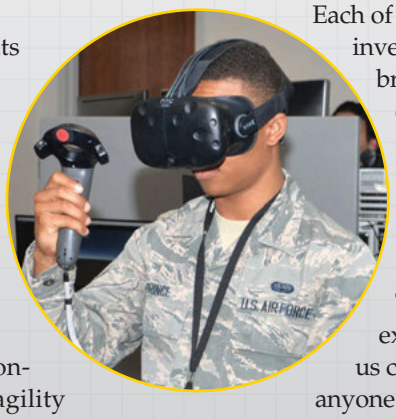
Progress. I mentioned previously that our platforms would need to do more than just perform their core missions. The KC-46 is more than just a refueling tanker. It comes complete with the tools needed for operating in future environments, such as satellite communications, tactical datalinks, and threat warning equipment.

Our command is leading the Air Force with a capability gleaned from commercial partnerships known as Conditions Based Maintenance-Plus (CBM+). Combining predictive data analytics with advanced sensing equipment, CBM+ yields higher mission-capable rates as we gain the ability to proactively schedule maintenance repairs on fatiguing parts *before* they fail, not after.

INNOVATION TOWARD A RAPID AND RESILIENT RESPONSE

What it is. In simplest terms, innovation is taking a good idea and refining it by experimentation to put it to use, resulting in improved capability. This definition is intentionally broad to encourage a variety of creative ideas to germinate. Not all ideas survive the experimentation process; however, cultivating ideas—even those that are not implemented—is essential in stimulating more ideas and expanding our thinking. All Airmen who share their ideas and innovative concepts contribute to increased mission capability.

What it looks like. Supportive environments are a critical component for ideas to thrive. As Mobility Airmen you should feel the freedom to voice your ideas to your leadership and explore them through established processes. It is incumbent on our commanders to cultivate this environment and remove obstacles to creative thought as Airmen explore ways to enhance mission capability. As always, our striving to innovate must remain mission-focused because it is our path to increased agility and warfighting readiness.



Progress. Our maintenance community has made use of Augmented Reality devices to increase the rate by which Airmen absorb information. Using artificial but highly realistic environments, they build muscle memory in various aircraft systems through task training without the need to keep an aircraft on the ground.

I am immensely proud of the progress we have made in promoting Airmen-led solutions. Each year at our Phoenix Spark Tank, we bring the top ideas from across the command to compete for prizes on the stage at the Airlift/Tanker Association Convention. Of the 10 finalists since the program's start three years ago, three Airmen have gone on to represent AMC at the Air Force's Spark Tank.

Celebrating great ideas does not end with the stage however. Sometimes it does not even start with the stage. Regardless of where an idea places in the Spark Tank, AMC is devoted to pursuing *all* ideas that bring increased mission effectiveness.

Each of these initiatives represents a significant investment of insight, energy, talent, and time. They bring our enterprise up to speed for the current operating environment and lay the footings for us to build a lethal force for the future. The requirements of tomorrow will be different than today's. We must seize this momentum and move beyond the *incremental next* in order to make *quantum leaps* into the future. The grasp of America's defense will never exceed the reach of our mobility enterprise. Let us commit to advancing our capabilities faster than anyone thought possible, and as we do, we will deliver unrivaled strength for America's global reach.

Together, we wear the cloth of our nation and stand for a purpose much more significant than ourselves. We believe in and know the power of serving others, and of bearing the weight of human need, no matter the cost. As Airmen, we succeed. As Airmen, we invest our skills, talents, and lives serving this great nation and each other. As Airmen, we lead from the front, kneel beside those in need, share in the work of our teammates, respect their lives, and honor their contributions.

As Airmen, we are never alone. We are America's Airmen.

Brig Gen John Klein: **Developing Airmen at the USAF Expeditionary Center, Joint Base McGuire-Dix-Lakehurst, NJ**

BY MS. ALLISON ELLIOT, STAFF WRITER

Brig Gen John Klein, Vice Commander of the U.S. Air Force Expeditionary Center, Joint Base McGuire-Dix-Lakehurst (JB MDL), NJ

"The U.S. Air Force [USAF] does an excellent job at not only developing leaders with expertise in their skillsets, but broadening them as well," said Brig Gen John Klein, Vice Commander of the USAF Expeditionary Center (EC), Joint Base McGuire-Dix-Lakehurst (JBMDL), NJ.

"Developing the Force" is a vital component of Klein's job within Air Mobility Command (AMC). "Developing Airmen gives us an asymmetric advantage as a service and as a mobility enterprise. AMC does this in a myriad of ways including education, training, exercises, developmental programs, and special assignments. The USAF Expeditionary Center contributes to all those efforts," said Klein.

In addition to overseeing several wings and groups distributed across the globe, the USAF Expeditionary Center serves as the "center of excellence for rapid global mobility and expeditionary agile combat support training and education," according to Klein.

The U.S. Air Force Expeditionary Operations School (EOS), which offers more than one hundred courses in advanced technical training and expeditionary skills, is a key part of the EC. The EOS trains nearly every Airman requiring pre-deployment training in an ever-evolving curriculum designed to prepare them for deployment to hostile or contingency environments.

The USAF Expeditionary Center is leveraging its corporate knowledge to help develop the Air Force's response to the requirements of the National Defense Strategy, specifically the Dynamic Force Employment (DFE) concept. "DFE prioritizes the force structure and capability for major combat, while providing options for proactive and scalable employment of the joint force," said Klein.

Agile Combat Employment (ACE) is the Air Force's contribution to the DFE concept. To enable ACE, the USAF Expeditionary Center is specifically concerned with developing Airmen to be more agile and responsive in the battlespace. One of the EC's new initiatives is developing the training baseline for Multi-Capable Airmen—"individuals trained in advanced expeditionary skills able to accomplish tasks outside of their core Air Force specialty"—to support ACE.

The evolving nature of the world requires these Multi-Capable Airmen. Some of the Air Force's posture and employment models date back to the Cold War, Klein noted. The time has come for an update in practices. "We must become more adaptable to the uncertainty in the ever-changing global security environment," said Klein.

Developing Airmen for adaptability in diverse and challenging environments is a crucial part of what Klein hopes to accomplish in his current position.

> **"In order to employ the Right Airmen at the Right Place at the Right Time, we must first develop the Right Airman."**

"This [development] is a long process, but it's something we must do at all echelons, across all career fields. That's what makes our Air Force the best in the world—our Airmen," he added.

The Advanced Study of Air Mobility (ASAM) degree program at the EOS is an essential training curriculum for Air Force mobility officers. For the officer, it is an opportunity to earn a Master of Science in Operations Management with a focus in Logistics in 11 months and have hands-on training in "solving operational and strategic issues." Klein added, "They are also earmarked with a permanent advanced academic degree code in their records identifying them as ASAM alumni."

For the Air Force, the ASAM program is building mobility experts for all environments. The program not only serves to build officers holistically,

it is an important part of the USAF Expeditionary Center.

"ASAM was envisioned to mold future senior mobility leaders for the USAF and have graduates serve as key mobility advisors to warfighting commanders. The program builds a cadre of mobility experts steeped in concepts of air, sea, and land mobility," said Klein.

The curriculum for the ASAM program involves classroom learning and real-world experience. Student officers "develop expertise in areas of joint transportation and logistics management, leadership, national security, warfare studies, joint forces and planning, and industrial entities with application to mobility," according to Klein. "We broaden their perspective through developmental trips to [AMC], U.S. Transportation Command, the Defense Logistics Agency, the Pentagon, and the Indo-Pacific and European theaters."

In addition to taking courses, the students also visit industry partners like CVS, Amazon, Atlas Air, and Boeing to study logistical practices in the commercial sector, Klein added.

Then, these officers are assigned to places like the Pentagon, Combatant Command headquarters, and AMC to apply their learning to challenging problem sets. "There, they gain experience solving operational and strategic issues, further developing them as future mobility leaders," said Klein.

Brig Gen John Klein, U.S. Air Force Expeditionary Center Vice Commander, fires an infrared missile simulator with assistance from TSgt Daniel Deel, Mobility Air Forces Intelligence Formal Training Unit NCO in charge assigned to the 423d Mobility Training Squadron, Joint Base McGuire-Dix-Lakehurst, NJ.

USAF photo by Danielle Brooks

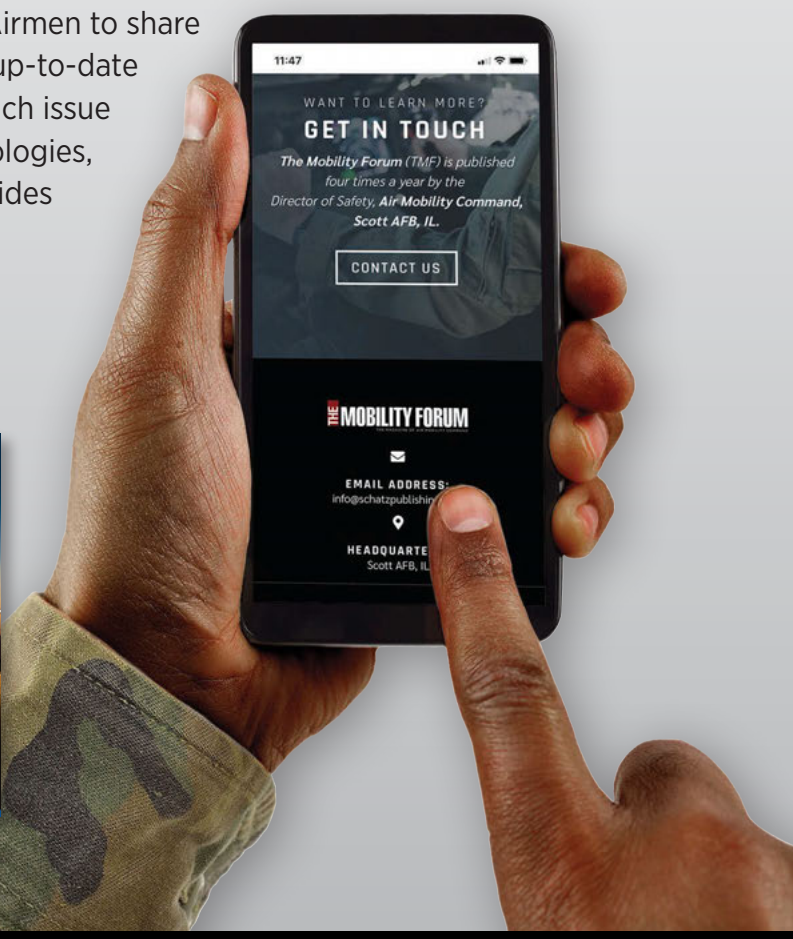
TSgt Bennie Hall, Fieldcraft Contingency Response (FCCR) Instructor assigned to the 421st Combat Training Squadron, demonstrates a cross collar choke during during Air Force Combatives Training in the FCCR course Aug. 23, 2019, at Joint Base McGuire-Dix-Lakehurst, NJ. Airmen assigned to Contingency Response units receive combatives training to protect themselves on their feet and on the ground in hostile situations.

USAF photo by TSgt Ashley Hyatt

For his part, the Air Force has afforded Klein with many opportunities for education, training, and experience, which he hopes to put to use in developing the future of the USAF.

"I feel absolutely privileged to be part of the USAF Expeditionary Center team. Due to my time in the Contingency Response Wing a decade ago, I came into the USAF Expeditionary Center with a fairly good idea about its mission and structure. That said, it's a rare day that I don't learn something new about what we do. The impact our Airmen and contractors have upon the combat capability of our Air Force is inspiring—they always rise to the occasion, no matter the challenge. We have incredibly talented teams, a dynamic mission, and global impact—if you want to be part of making important things happen, this is the place to be," stated Klein.

The Mobility Forum magazine provides a place for Airmen to share experiences, recognize accomplishments, and keep up-to-date on information important to the AMC community. Each issue is packed with articles and tools on emerging technologies, safety challenges and successes, and how AMC provides global response to developing issues.



Read *The Mobility Forum* online at https://themobilityforum.net/

Learning From Our Maintenance Mishaps

BY MR. LALO MAYNES, HQ AMC FLIGHT SAFETY

Recently within maintenance safety we've seen investigations that fall into the area of human factors or behavior-based failures. In safety, we categorize and group these behavior-based failures for the purpose of mishap prevention. This article will explore three examples and three different human factors: the normalization of deviance, the halo effect, and groupthink. It will also discuss ways to avoid these pitfalls that you may encounter in your maintenance career.

During a recent mishap, critical verbiage from the original discrepancy was omitted when transferring information into G081. A common practice during maintenance debrief is to summarize the pilot-reported discrepancy from the maintenance logbook to G081 (the maintenance data collection system). This intentional non-compliance with standard procedures resulted in an inaccurate representation of the discrepancy to the production staff and maintenance leadership. Then, due to complacency, the production staff failed to read the original pilot-reported discrepancy and did not properly update the status of the aircraft or elevate the seriousness of the discrepancy. This "intentional non-compliance" is called the *normalization of deviance*.

Dr. Diane Vaughan, a sociologist from Columbia University, coined the phrase *normalization of deviance* when writing about human factor failures in both the Challenger and Columbia Space Shuttle accidents:

"Normalization of deviance means that people within the organization become so much accustomed to a deviation that they don't consider it as deviant, despite the fact that they far exceed their own rules for elementary safety." D. Vaughan, 2010.

Dr. Terrence Kelly of Saint Louis University further explains, *"What begins as deviations from standard operating rules become, with enough repetitions, normalized behavioral patterns. When this occurs, personnel no longer regard these acts as deviant, but rather as routine, rational, and entirely acceptable." T. Kelly, 2018.*

Many of you have witnessed or been aware of deviations from policy or technical guidance. Maintenance personnel are empowered to make airworthiness judgments and decisions, and they often rationalize shortcuts in the name of production, especially when under time constraints and when similar past deviant behaviors did not result in failure. This lack of failure reinforces the bad behavior.

> **"Normalization of deviance means that people within the organization become so much accustomed to a deviation that they don't consider it as deviant, despite the fact that they far exceed their own rules for elementary safety"**

During another investigation, it was discovered that two weeks before the fatal mishap, a maintenance team was troubleshooting a pilot-reported discrepancy on the same aircraft. At that time the TSgt in charge told the SSgt performing the engine run that he would sign off the discrepancy as is. The SSgt then responded with, "Yes sir, as you say, sergeant." The SSgt performing the engine run may have perceived the more experienced TSgt

in a positive way, and therefore she did not question his authority. This is an example of the *halo effect*.

Merriam-Webster defines the halo effect as "*generalization from the perception of one outstanding personality trait to an overly favorable evaluation of the whole personality*." In the context of a mishap investigation, it is when a novice (or typical worker) has an unconscious prejudice of a more experienced or senior person, and because of that experience or rank, the worker makes a conscious decision to not question the senior's action.

Another classic example of multiple human factor failures in maintenance is when a maintenance crew continued troubleshooting a flight control reset malfunction. The access panel below the wing was stuck, and the senior member of the crew suggested an unauthorized "method" to raise the spoiler. He suggested using the spoiler switch in the flight deck to hold up the spoiler and depressurize a hydraulic system while another mechanic "takes a look" at the actuator under the open spoiler. The unauthorized method was quickly agreed to by the crew. While the mechanic was under the spoiler, he disconnected a connector on the actuator. This signaled a dual loss of electrical power to the actuator. This dual loss condition prompted the actuator to act as designed, and closed the spoiler, fatally injuring the mechanic. This decision of the crew to continue to perform the unauthorized method could be an example of *groupthink*.

Groupthink is defined as "*… a cultural phenomenon in which people strive for consensus within a group. It refers to a tendency for groups to reach a quick decision without taking the time for substantial feedback." I.L. Janis, 1972*

"Cultures are vulnerable to groupthink when group cohesion is high, decisions are deferred to the group, and the group works in relative isolation (minimal oversight and supervision). Sometimes the supervisor or manager of a group discourages disagreement and advocates unanimity to make an efficient decision and move a process along. This way individuals may be unlikely to challenge colleagues for fear of losing status. The result is a deterioration of thoughtful decision-making improvement considerations." S. Geller, 2019

What are some mitigation strategies to prevent these pitfalls?

"When leaders admit vulnerability, own up to their mistakes, and solicit corrective feedback, they set the stage for continuous improvement and naturally stifle groupthink." S. Geller, 2019.

In your career, you've seen supervisors and managers who embrace diverse opinions, invite inputs, and challenge individuals to "think outside the box," all of which will decrease the probability of all three phenomena.

"Create a culture of understanding that some deviations are likely to occur, but they require swift attention, [and that] such deviations are intolerable. Equip employees on how to address deviance in real time." T. Kelly, 2018.

Imagine a work culture where everyone involved in a mishap or close call was invited to solicit corrective feedback without fear of reprisal or reprimand. As part of the *Just Culture*, AMC has implemented and championed the Airmen Safety Action Program (ASAP). ASAPs are anonymous and are responded to by SMEs at HQ AMC. Maintenance personnel can also use an AFTO Form 22 to change technical guidance, and they may also use an AF Form 847 to submit changes to Air Force Instructions.

Hopefully this article has helped make you a little more aware of the signs of normalization of deviance, halo effect, and groupthink as well as armed you with some methods of mitigation. AMC Safety stands ready to answer any questions you may have about these Human Factors pitfalls. Email: **amc.sef@us.af.mil**. We are always here to help.

How Slow Will You Go?

BY MR. BILL KROUSE, AMC/A3TO

Photo above: A C-17 Globemaster III with the 437th Airlift Wing, Joint Base Charleston, SC, flies over southeastern United States, August 10, 2018.

USANG photo by A1C Tiffany A. Emery

We have all heard the adage, "The three most useless things to a pilot are altitude above you, runway behind you, and gas still in the fuel truck back home." Forty years of flying, instructing, and studying aviation mishaps inspires me to add a fourth—"The airspeed you don't have," which transitions to the question posited by this article: How slow will you go to facilitate an enroute rendezvous, to meet your time over target, to enable a Container Delivery System (CDS) airdrop, or while holding for your delayed cellmate to rejoin? Preflight briefs will cover speed considerations for departure and arrivals, emergency recoveries, and standard procedures for airdrop and aerial refueling operations; however, since you cannot brief every possible scenario, do you have a general minimum speed you will use when the best-laid plan falls apart?

Military Flight Operations Quality Assurance (MFOQA) analysis shows many pilots may not have considered what speed limits they will use. I am referring to the MFOQA analysis of predominately those Aircraft Mission-Design Series (MDS) with missions that included aerial refueling and low-level operations, such as KC-135 flights cruising more than 40 knots below endurance speed, C-17 crews triggering the aircraft deep stall prevention system below 750 feet, and C-130J crews decelerating to as slow as 104 knots during a CDS airdrop. This article outlines factors affecting high-altitude flight and highlights the extent to which some crews are slowing their speed.

A cruise-related urban legend states, "The slower I go, the more gas I will save." This expression is only accurate to a point. To understand why it is not a fact, review the principles of drag and the relationship of the drag components. Since the aircraft's gross weight is relatively stable over short periods of time, the principal component of lift that a crew has ready control over is total drag. Total drag is the sum of the **induced drag**, directly related to lift productions, and **parasitic drag**, all drag not associated with the production of lift (that is, drag caused by the aircraft form, airflow interference by specific components, and skin friction) at a given airspeed (Figure 1).

Figure 1 shows that as airspeed increases, induced drag decreases. This reduction occurs because the aircraft's angle of attack decreases as airspeed increases. Inversely, however, parasitic drag increases in proportion to the square of the aircraft speed. Therefore, when the induced drag and parasitic drag curves intersect, it creates the minimum total drag—sometimes

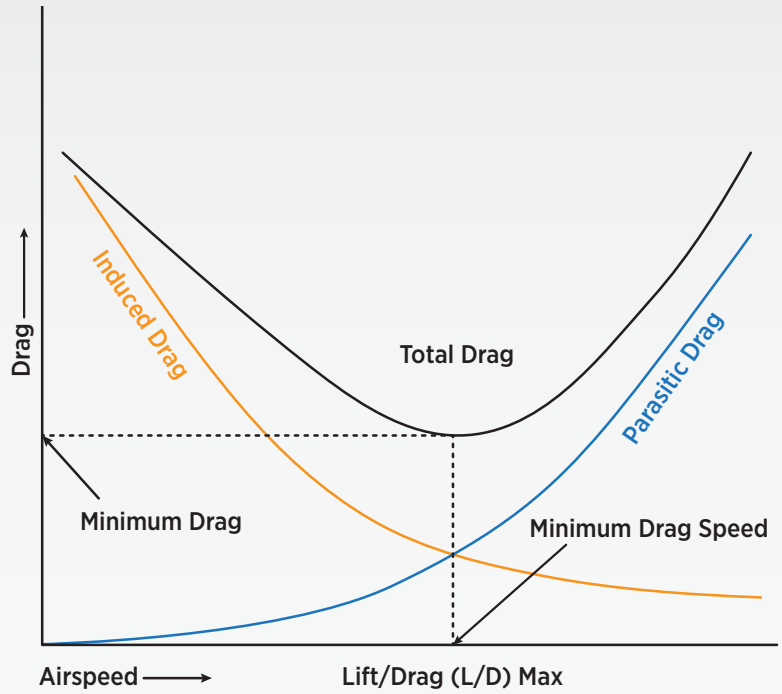


Figure 1. Induced Drag vs. Parasitic Drag

called Lift/Drag Max (L/D Max). At L/D Max, the aircraft will operate at the most energy-efficient speed, and traveling either faster or slower will cost more fuel. Thus, going any slower than minimum drag speed will not save fuel. More importantly, speed less than L/D Max will increase the angle of attack required to maintain level flight. As the speed slows, the angle of attack will increase to the point where there is insufficient thrust available to maintain level flight, or the wing exceeds the stall angle for producing lift—the result is the same: the aircraft will stall. When the pilot has a "hip-pocket" minimum speed that they will not exceed, it prevents them from having to complete mental gymnastics during high-stress situations. How often are these slow events occurring? For this article, the MDS analysts expanded their search beyond the considerable amount of analyses already completed on approaches and looked at flight data outside of approach criteria.

The C-17 analysts focused on the Alpha Limiting System (ALS), which is designed to prevent a deep stall. In the 12-month cycle ending October 2019, there were 176 ALS-activation events captured in the flight data. Of those activations, 16 were above 10,000 feet, and 74 were below 750 feet above ground level, with many activating during aggressive maneuvering while conducting low-level operations. Furthermore, of those 176 ALS-activation events not related to aggressive low-level maneuvering, peeling back the analysis onion an additional layer showed that some of those activations occurred when C-17 crews were climbing using the vertical velocity hold function of the autopilot, and failed to transition to the climb on speed control function when their available thrust was insufficient to maintain an appropriate speed above stall. Other activations occurred when crews set a descent to a lower altitude using the autopilot but failed to engage the autothrottles, and upon reaching level flight at the bottom of the descent, the crews were unable to monitor the aircraft's speed. One of ALS's limitations is that notifications of activations only appear in the heads-up display, and if the crosscheck is slow or lazy, the notifications can be missed. The analysis also revealed that, in addition to the ALS activations, there were six stall warnings above 10,000 feet lasting longer than two seconds. To stay on the safe side, the pilot will need to execute continuous automation system monitoring and not fly at speeds below those calculated by the mission computer.

Based on long-term MFOQA analysis, some C-130J crews may have developed "reduced airspeed" flying techniques (likely to counter the threat of over-speeding the flaps at higher gross weights) that appear to rely on the dynamic Stall Speed Caret, along with the idea that C-130J engines produce near-instant thrust and lift because the engines do not require a lengthy "spool-up" period, and the four large propellers provide additional lift due to the "blown wing" effect. Add in the safety pads provided by the stick pusher and stall warning special alert, and as observed in the analysis, some C-130J crews appear to feel comfortable flying relatively close to the Stall Speed Caret. Unfortunately, this mindset fails to take into account the Dash-1 warning: "Stall warning speed increases or decreases dramatically with elevator inputs, power changes, flaps selection, or change in Gs." Therefore, any unanticipated maneuvering can drive the aircraft instantly into a stall, whether it is caused by a tactical threat or the avoidance of a possible midair collision. Furthermore, a Dash-1 note highlights "the indicated airspeed at which the stick pusher activates should not be higher than the charted

The complexities of flying in the diverse and challenging arenas associated with aerial refueling and low-level operations subject crews to an intensely stressful environment where it is easy to lose situational awareness.

calibrated stall speed but may be as much as 12 knots lower due to variations in entry rate, power setting, center of gravity, stick pusher system installation, and airspeed system accuracy near stall speed"—meaning the stick pusher may not activate until after the aircraft has entered a stall. With these additional factors in mind, is this "close to the caret" flying technique creating a dangerous situation? Do aircrews realize that when they are operating that close to the stall, one or more unexpected forces acting on the aircraft could push them over the edge into disaster?

Finally, the C-130J analysts looked for all flights where the aircraft was not on takeoff or approach and flew slower than 120 knots-calibrated airspeed (KCAS). The analysis showed 96 events in the 12-month cycle ending October 2019, with one incident as slow as 104 KCAS. To counter this threat, most C-130J Stan/Eval pilots recommend 150 KCAS as the lower limit for a clean configuration C-130J, and 125 KCAS when partial flaps are selected for CDS airdrops. Although MFOQA analysis is not currently available for the C-130H until the completion of the Avionics Modernization Program, these speeds are also relevant to the H-model indicated airspeeds (please reference the applicable Flight Manual for lowest airspeeds at all specific configurations).

Similar speed-related threats are present in the KC-135 community that may have originated because of how KC-135 missions were executed during the Gulf War. During the Cold War, tanker crews trained to takeoff and meet their bomber receiver enroute to their targets, fuel was offloaded, and the mission was complete. In today's environment (Gulf War forward), the KC-135 mission has morphed into a "hurry up and wait" mission. The crew speeds to a location to meet a fuel-starved receiver and then has to wait for the next call for fuel. Naturally, crews slow to save fuel so they can stay on station longer to support the war effort.

KC-135 crews also have the same challenges as other Mobility Air Forces crews in dealing with aircraft automation and the monitoring of said automation during the long wait between aerial-refueling tasks when boredom can lead to complacency. How bad is it? The KC-135 analysts looked at incidents that were below endurance speed, finding 44 events wherein the crews slowed more than 30 knots below endurance speed above 20,000 feet. Furthermore, 14 of these events were greater than 40 knots below endurance speed, with the most serious being 71 knots below. A good rule of thumb is not to slow below endurance speed. Going slower will, in actuality, not save any fuel. In addition, develop good Crew Resource Management and Threat/Error Management techniques to mitigate complacency caused by the lulls between mission activities.

As previously mentioned, none of these MDS event examples were associated with an approach. Individual sortie analyses of these non-approach events showed that some were attributed to either misset aircraft automation (where crews failed to ensure the automation was functioning as intended) or overly aggressive maneuvering during low-level operations. Analysis of the remaining sorties, however, showed that crews were adjusting power and pitch settings to maintain a specific speed. Did these crews understand just how close they were to stalling the aircraft?

The complexities of flying in the diverse and challenging arenas associated with aerial refueling and low-level operations subject crews to an intensely stressful environment where it is easy to lose situational awareness. Any additional "trick" in the bag that can be used to help reduce this stress will improve the odds of a desirable outcome. One of those tricks is knowing how slow the MDS should be operated, thus removing one of the possible "gotchas" and allowing the pilot to focus on more daunting obstacles to a successful and safe sortie.

Answering the Call

BY MS. JENNIFER YATES, 618 AOC CHIEF OF SAFETY

When an aircrew calls the 618th Air Operations Center (AOC) at Scott Air Force Base in Illinois for assistance, it is usually the Execution Floor personnel who answer the call.

The Execution Floor is composed of personnel from several divisions, all working together to make a mission successful. The mission execution phase starts 24 hours before initial departure (or earlier for nights, weekends, and holidays) and ends when the team records the final arrival and closes the mission. One of those team members is MSgt Christopher Sabecky, an Instructor Duty Officer (DO). He transferred to the 618 AOC in 2018 after six years of experience as a C-17 Loadmaster at Travis Air Force Base in California. He volunteered to join the 618 AOC because the mission sounded interesting, and he was looking forward to advancing his career and the "30,000-foot view" of missions. Sabecky has already learned a tremendous amount in his short time at the 618 AOC and looks forward to eventually taking the knowledge with him to his next assignment.

As a duty officer, Sabecky works closely with the Deputy Directors of Operation and Command and Control personnel (1C3s). DO training is 3 weeks of formal classroom training followed by six training shifts before being certified. Once certified, DOs act as the primary focal point to ensure senior leadership and other key members of the 618 AOC receive appropriate and accurate mobility information.

Sabecky executes 15 to 20 missions in a shift, managing challenges ranging from aircraft maintenance issues to Aeromedical Evacuations (AE). Some of his primary duties include monitoring and ensuring accurate data in the Global Decision Support System, including airfield operating hours, significant airfield conditions, and Aviation Operational Risk Management (AvORM). Additionally, Sabecky ensures timely updates of data requested by aircrews, such as weather and notices to Airmen. DOs work with a wide range of both internal and external agencies. Sabecky explained that a seasoned DO will reach out to as many agencies as necessary to ensure the most up-to-date information is captured and relayed to the crew to enable mission success.

> **"There is never a dull moment on the floor, and every day is different."**
>
> *– MSgt Christopher Sabecky*

Sabecky says his favorite part of being a DO is being able to see the big picture because he can observe multiple missions instead of flying only one mission. "There is never a dull moment on the floor, and every day is different," Sabecky said. "You never know what you are walking into." One of the most exciting missions he experienced was a double air refueling for an AE patient. "All hands [were] on deck and [it] required working hand in hand with tankers for coordination." Some of the challenges a DO faces include customs holds and loss of diplomatic clearances.

The 618 AOC is transitioning to a single airlift planning directorate, and Sabecky is one of the first DOs in training as a contingency planner. Because he has already attended formal DO training, he will complete his planning division instruction on the job. He said it is very intense and distinct from being on the execution side of operations. During execution, 1C3s help to get prior permissions required, review Giant Reports, and assess flight plans and diplomatic clearance requirements, but as a planner, you are on your own. He believes his experience as a DO will be helpful, and he will be able to share his knowledge as a planner with the execution floor, including uploading the user, contact email, and discussion into the planning system. This information can be vital to understanding the history and background of a mission or make it easier to contact someone in the middle of the night.

In both planning and execution, Sabecky emphasized that 618 AOC personnel make every effort to assist the aircrews. Unfortunately, the implications of slipping a mission can have a domino effect. The 618 AOC strives to find some middle ground between the user and the crew, or if possible, help them out later. For example, Sabecky explained that if a crew was stuck overnight at a location with less than adequate crew rest facilities, a couple of legs afterward the 618 AOC might have them remain overnight somewhere with better lodging and food options and possibly an extended time for crew rest. The 618 AOC tries not to burn crews out and uses AvORM to balance user vs. crew requirements to devise a workable plan, but unfortunately, AvORM has drawbacks. It is a valuable tool, but needs to be more user-friendly and adaptable. He said the mission is always a balancing act with diplomatic clearances, cargo, users, aircraft, and crew.

His final parting comment to crews is to work with the 618 AOC to develop a plan when a mission does not go smoothly. If it is actionable, 618 AOC personnel will do their best to make it happen.

Hindsight in 2020

BY MS. ALLIE BROWN, HQ AMC OCCUPATIONAL SAFETY

Did you ever look back and think your last decision might have been a mistake?

Maybe it was the time you decided to do something and the hairs on the back of your neck stood up in protest, but you ignored it and proceeded anyway. Possibly, it was something new, and the thought never crossed your mind that the outcome might not be what you expected. Or maybe you knew about the risks, but thought your cat-like reflexes would keep you from getting hurt (this may or may not apply to my entire youth).

This year, in our annual quest to keep Airmen safe and healthy over the summer months, Air Mobility Command's safety focus is "Hindsight in 2020." Our goal during this campaign is zero fatal mishaps. From 2016 through 2018, AMC met this goal. In summer of 2019, however, two AMC Airmen lost their lives. Our hindsight tells us personal risk management could have prevented both of these mishaps.

If you knew then what you know now, would you have done things differently?

Now summer 2020 is here, and it is time to start planning new adventures and exploring new places and activities. Kayaking? Count me in. Diving? Definitely! Skydiving? Well, let us not get crazy… The point is, whatever your summer activity of choice is, there is probably some level of risk involved. It is easy to get swept up in excitement and want to cram as much fun as possible into these fleeting warm months. Unfortunately, that often leads to taking on unnecessary risk with hasty or ill-advised decisions. This summer, that risk may be compounded by the uncertainty the world faces during the COVID-19 pandemic. Between travel advisories and social distancing, participation in traditional summer events may not be possible in the coming months. So what do Airmen do when faced with a challenge? We innovate! Necessity may have been the mother of invention back in Plato's day, but necessity has nothing on a bored Airman.

As you face decisions which could increase your daily risk this summer, look back on situations where you may have made mistakes in the past. You know the ones I mean; we all have them. The decisions you are surprised you lived through. The ones that still make you wince. How did those decisions affect you? If you knew then what you know now, would you have done things differently? There is no way to see the future and prevent every single potentially dangerous situation. You can, however, use your perfect hindsight to shape future risk and devise smarter courses of action which will increase the probability of safer results. Remember, the unnecessary risk you take today might be the regret you or your loved ones live with tomorrow.

On behalf of Air Mobility Command, have a safe and healthy summer.

AIR MOBILITY COMMAND WELL DONE AWARD

Presented to MSgt TERRY J. WALL, JR. and SSgt JAMES M. ZORN

The Air Mobility Command Well Done Award is presented to MSgt Terry J. Wall, Jr. and SSgt James M. Zorn of the 317th Maintenance Squadron, 317th Maintenance Group, 317th Airlift Wing, Dyess Air Force Base, TX, for their actions on August 28, 2019. On that date, a C-130J aircraft reported an in-flight emergency due to the left aft main landing gear failing to extend. Overhearing the call on the radio, Sergeants Wall and Zorn contacted the aircrew and talked them through the troubleshooting process. They promptly discovered that the quick-disconnect mechanism had liberated itself from the vertical torque shaft, preventing the ball screw from turning to lower the gear, a scenario not covered by any aircrew emergency procedure. Sergeants Wall and Zorn instructed the crew to manually raise the gear and explained to the crew how to reconnect the vertical torque shaft, thus averting a possible accident. Without their guidance, the 317th Airlift Wing could have suffered a loss of five aircrew members and a $67 million aircraft.

Photo above: Airmen at Pope Army Airfield, Fort Bragg, NC, prepare to load a C-17 bound for the U.S. Central Command area of operations on January 4, 2020.

Photo right: A1C Estevan Grajeda pushes a pallet of equipment belonging to the 1st Brigade Combat Team onto a C-17 destined for overseas.

USAF photos by MSgt Katherine Novales

43d Air Mobility Squadron, Pope Army Airfield, Fort Bragg, NC:

Willing, Able, Ready

BY MS. KATHY ALWARD, STAFF WRITER

The 43d Air Mobility Operations Group (AMOG) at Pope Army Airfield, Fort Bragg, NC, was recently recognized by Gen Maryanne Miller, Commander of the Air Mobility Command, for its work with the recent United States Immediate Response Force (IRF) deployment to the Middle East. Among those recognized was the 43d Air Mobility Squadron (AMS), a group that often works behind the scenes to assure mission capability.

According to Jim Bove, Chief of Public Affairs at Pope, they reflected the AMOG's motto—Willing, Able, Ready—for the large-scale deployment. The squadron was notified on New Year's Eve to respond within 30 minutes if called. The IRF was activated 18 hours after the notification, and the 43d AMS was ready.

"The AMS team is responsible for the safety of all cargo on flights. During the recent deployments, AMS loaded nearly 90 aircraft with close to 3,000 tons of cargo including medical equipment, Humvees, weapons and Meals Ready-to-Eat, ensuring they all met height and weight regulations," said Bove.

MSgt Justin Davis and his team conduct preflight inspections that include fuel loads, cargo, and maintenance of all aircraft. They must give the approval

Photo above: SrA Alex Bak signals to a C-17 loadmaster while ensuring a Humvee clears all portions of the aircraft ramp during an upload.

USAF photo by MSgt Katherine Novales

Photo right: Equipment assigned to 1st Brigade Combat Team, 82d Airborne Division, is loaded into aircraft bound for the U.S. Central Command area of operations from Fort Bragg, NC, on January 4, 2020.

U.S. Army photo by SFC Zachary Vandyke

before any aircraft departs. Davis explained that since the team normally operates 24/7, they already conduct numerous training exercises, which made it easier when the actual situation arose. They were notified of the imminent deployment on December 31, 2019, according to Davis, and the first aircraft arrived within 48 hours. Most of the air traffic was loaded and deployed within 3 or 4 days.

Davis's team includes 88 mechanics with teams of 11 per shift. It requires 44 to 50 of them to prepare each aircraft, said Davis. They provide the maintenance required for any airframe that arrives at Pope. Upon arrival, the team conducts an inspection for damage or displaced panels and checks computer equipment for malfunctions. Davis said his team was well rehearsed and educated, so when a large number of aircraft appeared on short notice, it went smoothly.

TSgt Chad Dew-Williams, TSgt Ronald Blank, and SrA Kyle Aubin led the team of 50 joint inspectors that provides the safety of all cargo on flights, making sure packages are compatible with the aircraft. Dew-Williams explained that his job is to ensure his crew is fully trained to maintain and load aircraft. Additionally, all cargo, including hazardous materials, are jointly inspected, packaged correctly, and safe for travel. Dew-Williams said they exercise their capability of being able to conduct an IRF deployment regularly at Pope, but never on a scale comparable with this operation. "The Army relies on the Air Force for inspections that are done safely and correctly without delaying the mission," he said. There is a 72-hour process in place that sometimes takes weeks in advance to plan; however, the 43d reduced the IRF process to a 3- or 4-hour process, according to Dew-Williams.

At Pope, there are close to 200 "Port Dawgs," the aerial port Airmen who inspect and palletize cargo before shipment. "One thing 'Port Dawgs' don't like to do is sit still," Aubin explained. "Every one of them was willing and able, and they did their best and did it well." Aubin said the maintenance and cargo deployment-ready exercises helped them prepare for this mission. Normal training includes the preparation, proficiency, planning, paperwork, inspections, and loading of aircraft. Two of the primary factors that led to a successful operation were communication and teamwork, according to Aubin.

Dew-Williams said they operated with 12-hour shifts, 24 hours a day. Blank oversaw the day shift operations and Aubin oversaw the night shift. Dew-Williams emphasized that although it was a team effort, Blank was recognized by leadership for stepping up and assuming the role of manager for a couple of weeks. "He was a crucial piece of this operation and did an outstanding job," Dew-Williams said. "We all had to work longer hours and be away from our families, even during the holidays, but everybody wanted to do it, everybody was ready to do it, and everybody saw how important it was." He added that, when asked if they needed to bring others to assist, both cargo and maintenance leadership said, "No, we got it."

They all agree that the weather definitely did not cooperate while working the long shifts, at times including heavy rain or below freezing temperatures. The team remained persistent and professional. According to Dew-Williams, when called to serve, everyone stepped up, nobody complained, and they accomplished the mission.

Indeed, the 43d AMS was Willing, Able, and Ready.

Risk to Military Aircraft Decreases as BASH Plans to Increase Overseas Locations

BY MS. KATHY ALWARD, STAFF WRITER

The U.S. Air Forces Central Command (AFCENT) continues to progressively move forward to decrease the risk to military aircraft by managing wildlife on airfields through the Bird Aircraft Strike Hazard (BASH) Program, according to Jenny Washburn, a wildlife biologist with the United States Department of Agriculture (USDA) Wildlife Services (WS). According to Washburn, the number of biologists assigned overseas will increase from the current three at existing foreign locations to include an additional full-time position at Naval Air Station Sigonella, Sicily, Italy, in the next fiscal year.

"We have three biologists stationed overseas: one in Kuwait and two in Afghanistan, and they operate on 4-month rotations," said Washburn. "We've been assisting AFCENT for the last 10 years, so we are well established." She pointed out that the work overseas actually started when her supervisor, Mike Begier, became the National Coordinator of the Airport Wildlife Hazards Program.

"The overseas program began in 2009, the same year Mike became the lead, but also the same year the commercial plane landed in the Hudson River. It's when everyone began to recognize wildlife hazards in a greater way. Mike had just done an overseas site evaluation for BASH purposes in Afghanistan, and that's when the program jelled," said USDA communications specialist Carol A. Bannerman.

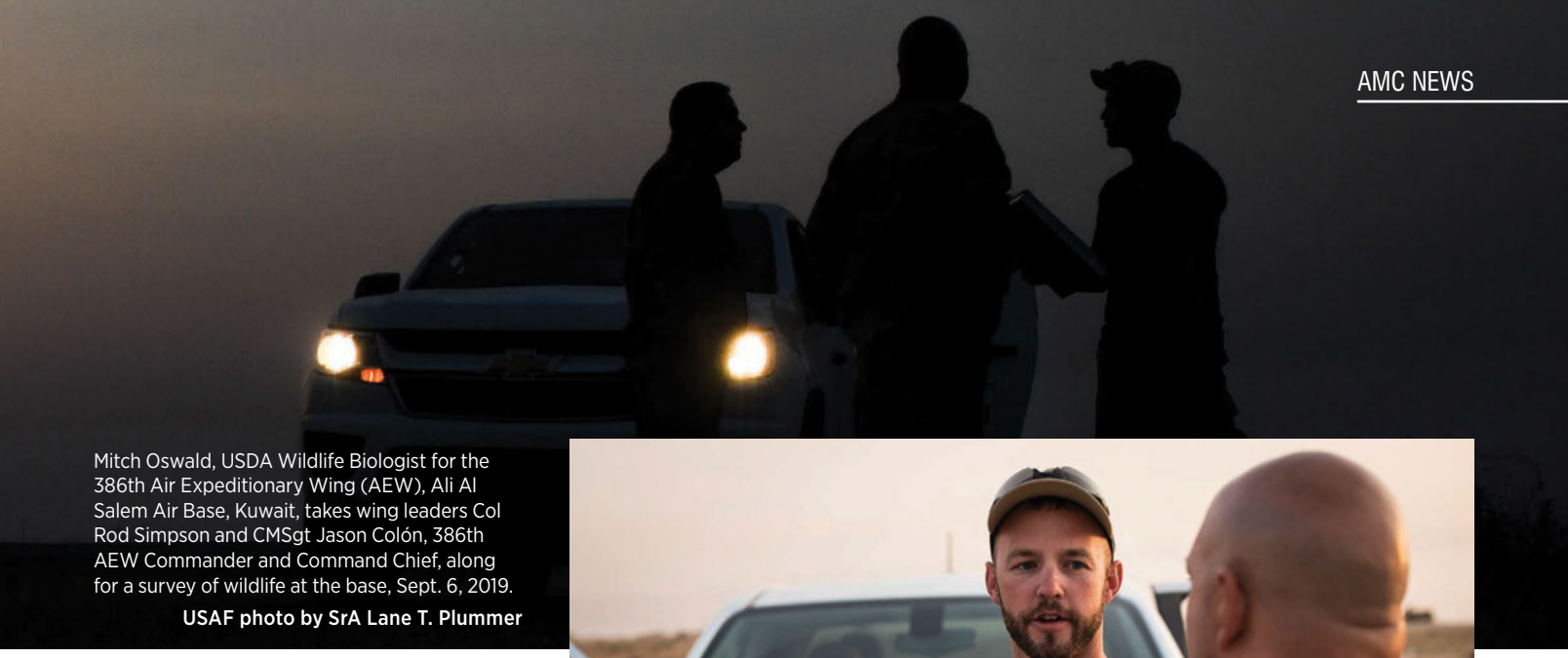
"There was a change in the wildlife strike reporting culture at airports after Miracle on the Hudson where reporting wildlife strike[s] slowly took on a more positive light," added Washburn.

Although Bagram Air Base, Afghanistan, did not report any wildlife strike injuries in 2009, a single bird strike at the air base in 2007 caused more than $1 million in damage, according to Bannerman. "After incorporating suggestions made at the time, the safety staff at Bagram reported bird strikes were cut in half for the first quarter of 2009. That was how the project took off," said Bannerman. Work at Bagram and other locations include managing wildlife issues involving raptors (for example, Black Kites), waterfowl, pigeons, and mammals such as jackals.

Part of the job for USDA biologists is to work with the Safety Office on establishing a relationship with the host nation, if possible, in contested locations. Washburn emphasized that the biologists show respect for the host nations and cultural differences are honored. For example, the biologist in Kuwait will often sit and have tea with a representative of the host nation and discuss wildlife issues the Kuwaiti representative may be seeing. "We also have a strong working relationship with the Smithsonian Institution's Feather Identification Lab, and our biologists overseas have contributed large amounts to their collection," said Washburn.

"The civil program of Wildlife Services airport work has been around since about 1985 and has grown. We provide assistance at 869 military, civil, and joint-use airports throughout the U.S.," said Washburn, with the work currently being conducted at the request of specific airports and supported by that airport financially.

USDA uses science-based, integrated methods to manage wildlife on airfields, according to Washburn, and focuses on habitat management by using tools such as anti-perch devices or netting in hangars to discourage wildlife. Washburn emphasized that, although habitat management may be more expensive, it is the best long term measure to push wildlife farther away from the active services, especially in the flight paths. "As they teach in schools these days, every living being needs certain things. Shelter, food, and water," said Bannerman, as she added that biologists in the BASH environment



Mitch Oswald, USDA Wildlife Biologist for the 386th Air Expeditionary Wing (AEW), Ali Al Salem Air Base, Kuwait, takes wing leaders Col Rod Simpson and CMSgt Jason Colón, 386th AEW Commander and Command Chief, along for a survey of wildlife at the base, Sept. 6, 2019.
USAF photo by SrA Lane T. Plummer

ask how we can change food, water, and shelter for the protection of the wildlife and aircraft.

"Education and communication are the first steps. If everyone knows what you are doing, and why, then there is less conflict when management efforts are conducted," said Washburn. An example is using pyrotechnics, which are sound- or light-scare devices used to harass birds from an area. The educational aspect is learning to use pyrotechnics correctly, for example, taking precautions to avoid pushing birds into the path of oncoming aircraft. The communication aspect is to make sure that operations and the tower are aware pyrotechnics will be used, emphasized Washburn.

The WS is currently researching bird behavior at the National Wildlife Research Center (NWRC). This research helps identify such topics as birds' different reactions to light, which variety of grass is likely to attract certain species of birds, and what types of lights or sounds have a higher probability of dispersing birds.

"We don't just act; we try and be proactive in our choices and how it will affect things down the road," said Washburn. The research conducted in the BASH program affects ongoing decision-making, according to Washburn. She described the work of their biologist, Garrett Klimkoski, who is studying a ponding issue in Kandahar and weighing the pros and cons of putting an environmentally friendly dye in the water that would kill some of the vegetation around the pond to make it less attractive to waterfowl. To find the best solution, he is also reading scientific papers and speaking with different parties, such as the safety office.

Mitch Oswald, USDA Wildlife Biologist for the 386th Air Expeditionary Wing (AEW), Ali Al Salem Air Base, Kuwait, gives a tour of the base to CMSgt Jason Colón, 386th AEW Command Chief, Sept. 6, 2019.
USAF photo by SrA Lane T. Plummer

Technology—such as Geographical Information System (GIS), radar, and even cell phones—enhances management according to Washburn. Using a GIS mapping system, her coworker, Jason Kougher, has developed an app to collect the data for mapping and data analysis so biologists can show where the hotspots of wildlife activity are occurring, said Washburn. Cameras on cell phones also have assisted with bird identification along with bird identification guide apps.

More than 60 biologists have volunteered to deploy overseas in support of the Military/AFCENT project. Some of the biologists are veterans themselves or have relatives who have served in Southwest Asia. Bannerman noted, "Some biologists that regularly work at CONUS [Continental United States] military bases have volunteered for AFCENT to share the deployment experience and support their military colleagues."

According to Washburn, "A lot of volunteers go more than once. They accept the risks, and the safety offices there are great with our biologists. They just take care of our men and women that go over, and all they [the biologists] want to do is help and stand with the military."

An Honorary Commander Fosters Community Relationships at Joint Base McGuire-Dix-Lakehurst, NJ

Photo above: Barb Borowiec and Corporal Roland Scarinci, a local WWII Veteran.

Photo courtesy of Barb Borowiec

BY MS. BETTY NYLUND BARR, STAFF WRITER

Without a doubt, Barb Borowiec understands the importance of motorcycle riders attending safety classes. At her Harley-Davidson, Inc. dealership near Joint Base McGuire-Dix-Lakehurst (JBMDL) in New Jersey, she has offered state-certified motorcycle safety courses to members of the military, Veterans, and the nearby community for the past 14 years.

Borowiec's love of motorcycles began when she was young. She bought her first Harley-Davidson motorcycle at age 20. A year later she found herself in need of a job, and she convinced the local Harley-Davidson, Inc. dealership to hire her. When the owners wanted to sell, Borowiec, her boyfriend, and another employee bought the business. "The owners wanted to sell it, and the three of us sold our motorcycles and begged our parents to take second mortgages on their homes," Borowiec reminisced. She eventually bought out her two partners.

The dealership grew from a small enterprise with a staff of five into a 35,000-square-foot business, which consists of two buildings side by side, one exclusively for used motorcycles. Borowiec now has approximately 60 employees and sells 800 to 1,000 motorcycles a year! "We try to keep active duty military at JBMDL in mind," she said. Her dealership not only caters to the military as customers, but she also hires many Veterans as employees.

Borowiec provides motorcycle safety classes on weekends and during the week. "We supply everything: the Harley [-Davidson] motorcycle, the helmet and rain gear if needed, the learning materials, and the instructor," she said. "We put weekends aside specifically for active-duty military, or police officers, or firefighters, or all-women classes. We do that so people can take the course together." After passing the written and skills exams, students qualify for a Class M license.

Together with nearly a dozen neighbors, Borowiec was made a Meritus Honorary Commander for JBMDL. Such an honor is typically bestowed on a civic leader in the community for a specific wing of the Air Force for a 1- or 2-year period. JBMDL, however, which includes all five branches of the military (Army, Air Force, Navy, Marine Corps, and Coast Guard), jointly awarded the title for multiple years to honor this group of select recipients, who have been exceptional supporters of Veterans and the Joint Base.

What does being an honorary commander entail? "We support and learn," explained Borowiec. "For me, I like to take it back to the public. When I was with the 621st [Contingency Response Wing, JBMDL], I would be sure to go to all their events. If they needed money for a Christmas event, we were there to support or donate."

"We make sure we are there for awards, trivia night, retirements, and change-of-command ceremonies," she continued. "As honorary commanders, we go tour the base—but to benefit them, just bringing the word back to the public if we have an event at the dealership."

As an example, Borowiec described a dinner that the dealership held at a restaurant. They invited people from the base, including young Airmen and Marines who were new to the community. "They are leaving the base and coming to this dinner to meet the public, and we can say 'Welcome!' and 'We are glad you are here. We are here if you need us, and we are here as a community. We know you are far from home, but this community has your back.' That's what I do as an honorary commander."

The community clearly supports the military at JBMDL. "There is a gentleman in his 80s," Borowiec related, "who takes lunch down to the base almost every Thursday to welcome those new to the base and let them know we care about them and their well-being."

In May 2007, Borowiec organized an annual motorcycle ride with the military personnel at the Joint Base. "It starts at the dealership," she said. "We ride up to the base, and they shut the flightline down for an hour. We ride our motorcycles down the flightline, [and] then we go have a barbecue and encourage all the folks to come with their families and eat with us so the motorcycle and military communities can interact on base."

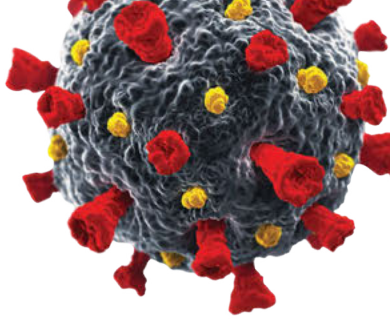
Borowiec pointed out that a considerable number of people who participate would not otherwise have access to the base except during open house when JBMDL holds an air show. She observed that some people who grew up riding with their parents in the early years are now riding their own motorcycles in the yearly event. Although the ride has developed into a fundraiser for the base, Borowiec said, "For me, it's all about bringing the two communities together and getting out there and saying thank you. It's become a great tradition and lets the base know we are thinking about them."

Borowiec recounted a particularly heartwarming event held by the community. "We used to have a Thanksgiving dinner, and buses would come from the base. The troops didn't know where they were going, and halfway down Route 95, they would be met by 100 motorcycles that would escort them to the dinner." When the buses approached the restaurant, the sight that greeted them was so moving that they "would literally be in tears because we would have Boy Scout troops, Girl Scout troops, retirement communities, and citizens that lined the entrance down the hill to the restaurant with flags and signs," recalled Borowiec. "A group would stay and feed them dinner. I would do motorcycle trivia and give away T-shirts, and Vince Papale [former Philadelphia Eagles football player and subject of the movie 'Invincible'] would come and do football trivia. That was the biggest surprise because [the guests] didn't know anything was going to happen, so some of them cried."

From housing an Airman's motorcycle while he or she is deployed to raising money for orange safety vests, Barb Borowiec represents a community that appreciates and supports the military—not only in words but also in deeds.

Motorcycle riders fill the street in a long line while riding from Barb's Harley-Davidson dealership to Joint Base McGuire-Dix-Lakehurst, NJ in the 12th Annual Armed Forces Freedom Ride, May 20, 2018.

Photo courtesy of Barb Borowiec



COVID-19 Coronavirus
and United States Air Force Precautions

BY MS. KATHY ALWARD, STAFF WRITER

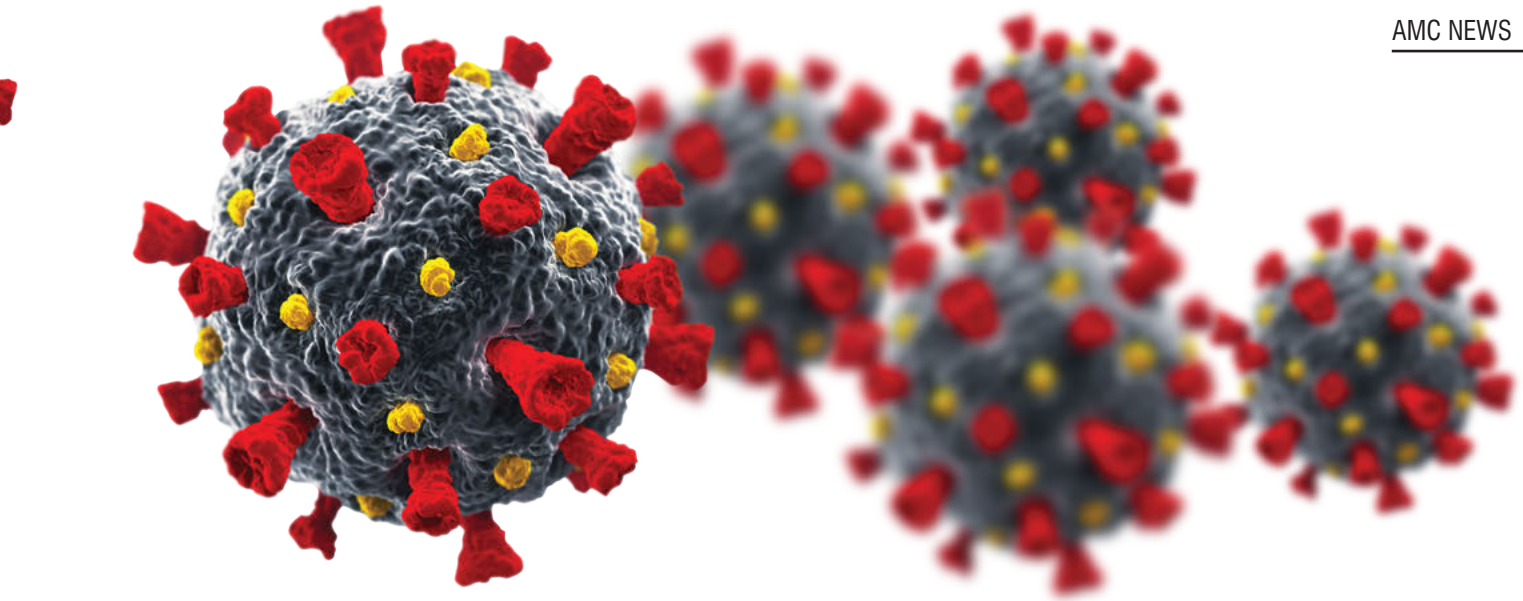
On Saturday, March 14, 2020, the United States Air Force (USAF) and U.S. Space Force (USSF) responded to the National Emergency Declaration based on the recent outbreak of coronavirus. According to Gen John W. "Jay" Raymond, Chief of Space Operations, USSF, "The World Health Organization identified COVID-19 as a global pandemic, and the President has declared it a National Emergency due to the speed and scale of transmission. Because of this [pandemic], the Secretary of Defense has directed travel restrictions for the next 60 days for uniformed members, our civilian teammates, and our family members."

Gen David L. Goldfein, USAF Chief of Staff, emphasized, "Our approach is simple. We need to take care of each other while we protect our fellow Americans. If you show symptoms consistent with COVID-19, immediately seek medical care and evaluation."

Air Mobility Command (AMC) has been issuing regular COVID-19 updates to the Air Force as the situation continues to change. Precautions were taken by the Air Force as early as March 10, 2020, stating that "All Department of the Air Force personnel have been directed to follow Centers for Disease Control (CDC) levels for travel guidance." Some restrictions at that time included official travel outside of the United States for USAF Academy cadets and cadet candidates. Personal/leisure travel to countries with a CDC Level 2 (practice enhanced precautions) or higher rating was also prohibited. The USAF suspended family attendance at the Air Force Basic Military Training graduation until further notice. The Colorado Child Development Center at the Buckley Air Force Base (AFB), Colorado, was closed for cleaning after a family member tested positive by the state for coronavirus.

On March 12, 2020, modifications were made to minimize the spread of COVID-19 and prioritize the health and safety of Air Force personnel after an active-duty Airman assigned to Altus AFB in Oklahoma, and who had also traveled to Seattle, tested positive for coronavirus. In addition, a contractor at Moody AFB in Georgia also tested positive for the virus. Cancellations included the air show scheduled for March 28–29 at March Air Reserve Base, Riverside County, California; family members were not allowed to attend Air Force Basic Military Training graduation at Lackland AFB, Texas, until further notice; and the USAF Academy in Colorado closed its campus to visitors even during home football games. Although the Air University Officer Training School at Maxwell AFB, Alabama, will continue individual commissioning ceremonies, the USAF suspended the presence of guests at the awards ceremony and the graduation parade.

The USAF made additional modifications on March 13, 2020, to minimize the spread of COVID-19, including the suspension of all outreach activities and support of community events through May 15. In hopes of maximizing the chances of the senior class graduating on time, the USAF Academy began dismissal of a large segment of their cadet population. Military treatment facilities around the world began sending potential COVID-19 samples to The USAF School of Aerospace Medicine Epidemiology Laboratory (USAFSAM Epi Lab) at the 711th Human Performance Wing at Wright Patterson AFB, Ohio. The Epi Lab will then send the samples to the Epi Reference Lab or local public health lab to conduct the CDC-approved test. Tests must then be confirmed as positive or negative by the CDC with strict guidelines. All information from the tested samples is entered into the appropriate medical system by the USAFSAM Epi Lab for medical decision-making, and daily updates are sent to the Defense Health Agency (DHA) for oversight.



A public health emergency was declared on March 16, 2020, due to the evolving threat of COVID-19 for Joint Base Andrews, Maryland, along with various counties throughout the state who were in similar emergency situations. The Commander of the 11th Wing and Joint Base Andrews, Col Andrew Purath, said, "Declaring a public health emergency on Joint Base Andrews allows us a proactive approach to protect the safety and health of our Airmen and the surrounding community. Our top priority remains mitigating the effects and potential spread of this coronavirus." The emergency order, which can be terminated or extended as required, is in place for 30 days. Also, as of March 16, 2020, Travis AFB, California, was monitoring two positive cases of COVID-19, while both Moody AFB, Georgia, and Maxwell-Gunter AFB, Alabama, were each monitoring one positive case of COVID-19.

AMC headquarters at Scott AFB, Illinois, implemented precautionary measures such as teleworking and staggering shifts to reduce exposure while ensuring mission-essential operations could still be executed. These measures will continue until the risk decreases. COVID-19 developments that may affect Scott AFB will be monitored by an Operational Planning Team to be sure that necessary measures are implemented to protect the health and welfare of the installation's community. "We will continue to do everything possible to mitigate the effects of COVID-19 to ensure we continue providing rapid global mobility operations in support of the Joint Force and our partners and allies," said Gen Maryanne Miller, Air Mobility Command Commander.

Travel restrictions due to the coronavirus are regularly updated based on presidential proclamations and, as of March 16, 2020, included certain travel restrictions for entry to and from China, Iran, South Korea, United Kingdom, Ireland, and the European Schengen area. The CDC raised England, Scotland, Wales, Northern Ireland, and the Republic of Ireland to level 3 warning to avoid nonessential travel due to widespread, ongoing transmission.

As of Friday, March 20, 2020, the first coronavirus cases inside the Pentagon were announced by the Air Force for an active-duty Airman and Air Force contractor who both visited the building in recent weeks. To continue executing rapid global mobility operations combatting the coronavirus outbreak, the Air Mobility Command transported members of the U.S. women's football team from Honduras to Joint Base Charleston, South Carolina.

An 86th Airlift Wing C-130J Super Hercules out of Ramstein Air Base, Germany, in coordination with the Department of State and the Italian government, transported 10 En-Route Patient Staging Systems (patient holding/staging beds or ERPSS) to the Italian Ministry of Defense Aviano Air Base, Italy, on March 22, 2020. The ERPSS can support up to 40 patients in a 24-hour period.

AMC announced on March 23, 2020, that Space Available travel aboard Air Mobility Command and contracted aircraft had been temporarily suspended through May 11, except for specific category I, IV, and VI travel.

"We will continue to post the latest information and keep everyone informed. You'll know what we know. Let's tackle this challenge as we do all challenges which confront us," said Raymond. "Thank you for your continued service and your professionalism. Fight's On," added Goldfein.

Please reference the following website for Air Force related updates concerning the new coronavirus: **https://www.af.mil/News/Coronavirus-Disease-2019/**

Full Spectrum Readiness: **Aeromedical Evacuation**

Airmen from the 43d Aeromedical Evacuation Squadron Detachment 1 and 60th Medical Group Critical Care Air Transport Team treat simulated patients Dec. 18, 2019, on a C-17 Globemaster III from Travis AFB, CA. The 43d AES and the 60th CCATT practiced their AE capabilities during their first integrated mission.

USAF photo by SrA Jonathon Carnell

BY MS. BETTY NYLUND BARR, STAFF WRITER

In a previous issue of *The Mobility Forum*, we examined Full Spectrum Readiness as it applies to airlift operations. In this issue, we will delve into Full Spectrum Readiness as it affects aeromedical evacuation (AE).

Under normal circumstances, people who are sick, injured, or need ongoing medical services can either drive or have someone else drive them to medical facilities. At times, they may need to enlist the services of an ambulance.

In a war zone, however, or in an area that has been ravaged by a hurricane, wildfire, flood, or other natural disaster, those modes of transport may not be available. In those circumstances, AE may be the lifesaving answer.

AE began early in the 20th century—virtually as soon as fixed-wing aircraft were invented. Dr. Bruce Green, 20th Air Force Surgeon General, described how U.S. Army medical officers Capt George H.R. Gosman and Lt A.L. Rhodes designed and built the first "air ambulance" for transporting patients using their own money.[1] Its first—and last—flight occurred in 1910 at Fort Barrancas, Florida; the plane crashed after flying only 500 yards. That flight may have been unsuccessful, but it was just the beginning.

Air Mobility Command (AMC) oversees "an integral system of command and control, training, communications, staging, and patient care" and describes the mission of the Air Force's AE System as "to provide fixed-wing movement of patients requiring supervision by AE personnel to locations offering appropriate levels of medical care." An AE crew must be able to take care of not only the systems on a huge, highly sophisticated aircraft but also the needs of critically sick or injured people. That is where Full Spectrum Readiness is needed.

A basic AE crew consists of two flight nurses and three AE technicians. That crew must consist of Airmen who have the full spectrum of training, education, and character to meet those needs—medical, mechanical, and electronic—and who are brave enough, confident enough, and focused enough to dismiss thoughts of their safety and put the needs of their patients first.

The U.S. Air Force School of Aerospace Medicine, Wright Patterson Air Force Base (AFB), Ohio, conducts a Flight Nurse and AE Technician Course that provides realistic, hands-on simulation of possible events that AE crews may encounter. Course planners may even "seed" the training with Airmen, who create fictitious dangerous scenarios, to prepare trainees to handle all types of situations. Students must complete 40 hours of missions on a mock-up of a C-130H aircraft. Other AE courses

1 Green, Bruce. "Challenges of Aeromedical Evacuation in the Post-Cold-War Era," *Aerospace Power Journal* 15, no. 4 (Winter 2001): 14ff.

Airmen from the 43d Aeromedical Evacuation Squadron (AES) Detachment 1 perform medical operations on Lt Col Michael Earl, 43d AES Detachment 1 Director of Operations, who simulates having a heart attack to test the team's capabilities Dec. 18, 2019, on a C-17 Globemaster III from Travis AFB, CA.

USAF photo by SrA Jonathon Carnell

Capt Ivy Ramirez, 60th Medical Group critical care nurse, treats a simulated patient Dec. 18, 2019, on a C-17 Globemaster III from Travis AFB, CA.

USAF photo by SrA Jonathon Carnell

may take place on a C-17 mock-up. Those "classrooms" simulate conditions on an actual mission, including the sounds of the aircraft engine, explosions, and crash landings. They can also simulate decompression, complete with the necessity of the students to use oxygen masks as they attend their patients.

At any time of the day or night, an AE crew may be mobilized to respond to a medical emergency, whether it involves two or twenty individuals, so they have to be ready. They have to be willing to drop what they are doing and go to the aid of others.

When military personnel become sick or wounded in combat, medics administer first aid and then typically arrange for AE to transport them to the closest hospital abroad—away from the combat zone—where they can receive the care they need. If they cannot receive the care they need abroad, AE medi-flights them to a U.S. hospital.

The following examples are just a few of the lifesaving efforts that AMC AE crews have accomplished:

- In October 2017, three hurricanes ripped through the Caribbean in a relatively short time, leaving millions of people without safe drinking water, shelter, food, power, or a means of communicating with the world beyond their homes. The 375th Medical Group's En Route Patient Staging System, Scott AFB, Illinois, deployed to the island of St. Croix, U.S. Virgin Islands, and picked up 100 kidney dialysis patients and delivered them stateside, where they could receive necessary medical treatment.

- In November 2017, the 379th Expeditionary Aeromedical Evacuation Squadron, Al Udeid Air Base, Qatar, picked up sick and wounded Soldiers in Iraq and transported them to hospitals with a higher echelon of care.

- In November 2018, a group of reservists from the 315th Airlift Wing, Joint Base Charleston, South Carolina, was in Germany waiting for severe weather to clear so they could head home to South Carolina. A call came in for emergency medical evacuation for a Soldier in Turkey who had been electrocuted and was suffering from second- and third-degree burns on 40 percent of his body and also had a broken femur. "There was not one hesitation; the entire crew stepped up," according to Capt Dennis Conner, the mission's aircraft commander from the 701st Airlift Squadron, Charleston AFB, South Carolina. "They put their civilian lives on hold to do this; they missed work and school to get him home." The team successfully delivered the injured Soldier to Texas after a brief refueling in Boston.

- In August 2019, AMC's 618th Air Operations Center (AOC), Scott AFB, Illinois, learned of a severely wounded Soldier at Bagram Air Base in Afghanistan who urgently needed aeromedical evacuation. The AOC devised a mission called REACH 797 to get that soldier to needed care.

Regardless of the location or danger, Airmen on an AE team are always ready, willing, and able to risk their lives to help save other people's lives. Day or night, winter or summer, rain or snow, these critical Airmen answer the call!

ENIGMA CODE:

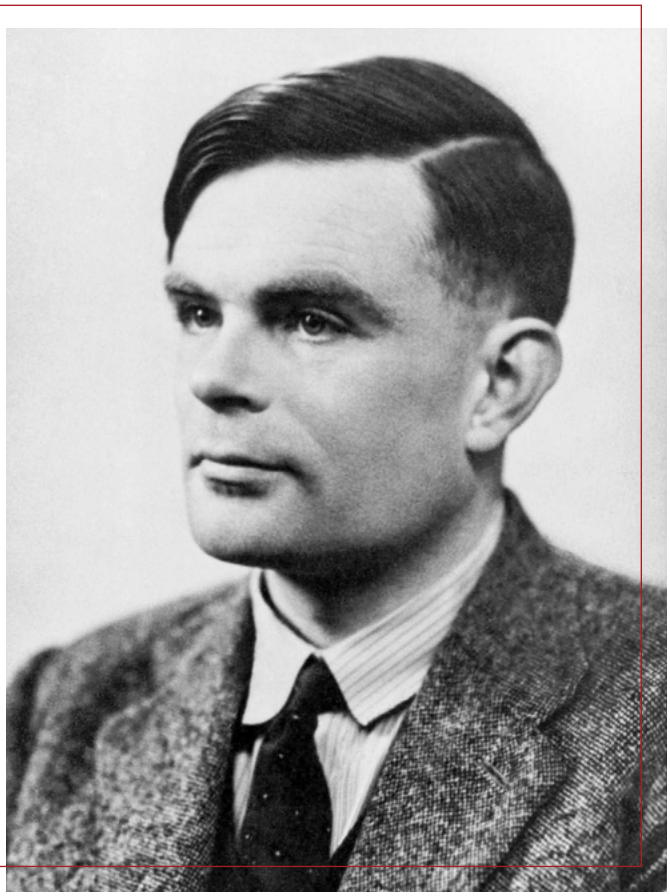
Innovation that Saved 14 Million Lives

BY MS. KIM KNIGHT, STAFF WRITER

Imagine … the strongest military forces on earth are locked in a turbulent world war. In the fierce clash of titans, the darkest side of humanity emerged, resulting in great suffering and the loss of millions of lives. Now imagine that you have the capability to ease the suffering or even end the war without the use of weapons but, instead, through intelligence and extraordinary innovation. To accomplish your mission, however, you face nearly impossible odds of 1 in 158,962,555,217,826,360,000 for success to intercept and decipher an extremely complicated encrypted code—while the clock is ticking.

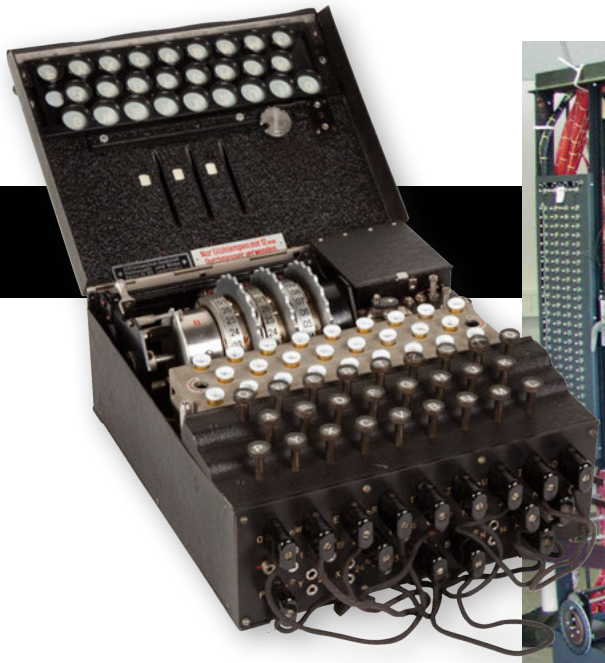
"Sometimes it is the people no one imagines anything of who do the things that no one can imagine," said British mathematician, cryptographer, and pioneer of computer science, Alan Turing. The Princeton- and Cambridge-educated scholar was recruited by the British government in 1939 to lead a group of cryptographers, known as Ultra, all housed for top-secret work at Bletchley Park in Buckinghamshire, England. His crucial task was deciphering Germany's highly encrypted classified messages that were generated by an Enigma Machine and transmitted to Nazi forces across the war front. The Enigma ciphers were thought to be unbreakable because there were 159 quintillion possibilities to correctly decipher one, and the combination for the code was changed every 24 hours. If Turing's team could decipher the codes, it would give Allied powers an enormous strategic advantage in every battle, which would swiftly end the war.

The Allied powers had retrieved an Enigma Machine from the battlefields. It looked something like an elaborate, old-fashioned typewriter but was cutting-edge technology for the time. When messages were typed into the machine, the result would be a series of seemingly random letters, such as MKRWQPO. Turing had to determine what the letter combination was to establish a key, but with so many possibilities, the ironclad system appeared impenetrable. The great mind searched relentlessly for a flaw or weakness in the code and discovered—after much trial and error—that when a specific letter was typed in, it would never be itself in the code. For instance, when an "S" was typed in, it would never



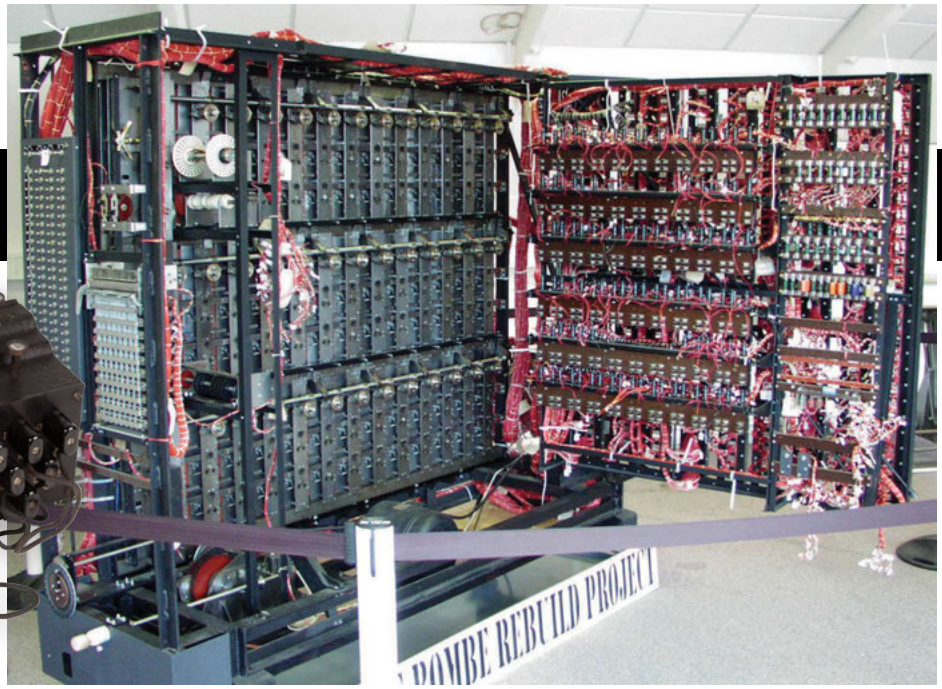
Alan Turing

"As the father of computer science and artificial intelligence, as well as war hero, Alan Turing's contributions were far ranging and path breaking. Turing is a giant on whose shoulders so many now stand."



Enigma machine, model "Enigma I", used during the late 1930s and during the war; displayed at Museo Nazionale Scienza e Tecnologia Leonardo da Vinci in Milan, Italy.

Photo by Alessandro Nassiri



A rebuild of a British Bomba located at Bletchley Park Museum.

Photo by Tom Yates

By 1943, the revolutionary machine was deciphering a staggering 84,000 messages every month, which meant the Ultra team cracked roughly two messages every minute.

be an "S" within the coded message. To test his finding, he had to unearth a word or phrase the Germans used often in Enigma-encrypted messages. The phrase he found was 'Heil Hitler' at the end of every code. It is ironic: their tribute to a tyrant leader ultimately led to their defeat.

Turing had the basic configurations worked out, but he understood that he had to build a machine to quickly beat the complexity of the Enigma machine. There simply was not enough time for the Ultra team to work through the vast number of combinations to reestablish a key each day when the code was reset and to decipher the 3,000 to 5,000 messages the Nazis were transmitting daily. Time was of the essence because it literally meant life or death for American and Allied troops fighting on the front lines.

Before the war, a Polish mathematician had designed a machine called the bomba to break the Enigma ciphers, but the Germans caught on and added more rotors and completely changed procedures, making the new machine obsolete. Turing used it as a foundation to redesign a machine to mathematically eliminate codes, which accelerated the timeframe for deciphering Nazi messages from weeks to minutes once the team streamlined the processes. By 1943, the revolutionary machine was deciphering a staggering 84,000 messages every month, which meant the Ultra team cracked roughly two messages every minute. The innovation changed the course of the war and history.

In 2019, Britain announced that Turing and images of his work would appear on its 50-pound note. "As the father of computer science and artificial intelligence, as well as war hero, Alan Turing's contributions were far ranging and path breaking. Turing is a giant on whose shoulders so many now stand," said Mark Carney, Governor of the Bank of England. The back of the note featured a quote from Turing: "This is only a foretaste of what is to come, and only the shadow of what is going to be."

It is estimated that Turing's work shortened the war by two years and saved 14 million lives. Cracking the code was a silent victory for the war hero who never wore a military uniform. Clearly, the hard work shrouded in secrecy at Bletchley was not done for honor and glory but simply out of duty—for the greater good of mankind.

Rising Above Autopilot

BY MS. KATHY ALWARD, STAFF WRITER

Sometimes life can be difficult, so much so that we stop thinking and just automatically keep moving forward, going through the motions of daily life without much thought. We are in such a routine to accomplish our goals each day that we may forget about important priorities, such as our safety, our health, taking the time to grieve, or even sleep. We are fortunate to survive these periods of operating on autopilot. The unfortunate thing is, when we continue to move forward when we actually should be resting, we accomplish less than what we would have achieved if we had taken a break. When this situation occurs, the primary goal becomes rising above autopilot.

Operating in autopilot mode has many repercussions. My most significant example is a time in my life when too many tragedies occurred simultaneously, and it was hard to work through exactly what had just happened in each instance. I had moved back to my home state of Oklahoma after living in California for 30 years. I had promised my mother I would be there for her if she ever needed me, and I learned one day, when I received a phone call from a hospital in Oklahoma, that it was time to help. The hospital said my mother had an infection, and while she was in the hospital they noticed she had a memory problem. She was tested for and diagnosed with dementia, so the hospital moved her to skilled nursing, saying she could not leave the nursing home unless someone was at home to take care of her at all times.

Lucky for me, or so I thought, my three sons, who I had raised as a single parent for 20 years, were now grown and I could move home to care for my mother. I gave notice at work, packed up my things, and was back in Oklahoma in 2 weeks to rescue my mother from the nursing home. My sons understood the situation and were busy with college, careers, or starting a family. It was imperative to immediately move to Oklahoma because my mother was fading rapidly, and I began operating on autopilot.

I remember driving over Tucumcari Pass in New Mexico on my way to Oklahoma when I was caught in the middle of a snowstorm and watching as trucks pulled over to wait out the storm. I began praying aloud because the snow and ice started falling at a faster pace. It did not seem safe to keep going, and it did not seem safe to stay on the pass either. I took a chance and kept driving, and I made it to Tucumcari just in time before the weather worsened.

When I arrived, I went straight to the nursing home because my mother was quickly fading. She blossomed when I first got her home. Sadly, her dementia deteriorated into Alzheimer's, and it became even more of a challenge because I had never been around someone with this disease. One thing I learned is that caring for an Alzheimer's patient is a 24-hour-a-day job. I also learned that a person becomes sleep deprived when being on call 24 hours a day for two years.

It took several years to work through the grief, recover from the sleep deprivation, and realize that I had been operating on autopilot for much too long.

Hospice helped me care for her as her condition worsened. We put my mother's hospital bed in front of her favorite picture window in the den so she could watch the birds outside. Although I had help, I was operating on autopilot because I was living both my life and my mother's life since she had become incapacitated. I was still a mother to my sons, helping them from a distance, and taking care of my mother's responsibilities as well as my own as her condition slowly worsened.

Just when I thought this situation was already harder than when I raised my three sons alone, I received a phone call from California. It was the most painful conversation I ever had because I received the most heartbreaking news a parent can hear. A car had hit my oldest son and he had died instantly. I was already on autopilot, but I had to dig even deeper as I arranged for help to stay with my mother so I could fly to California for the funeral service of my eldest child. I kept going because I had to, and after the funeral I flew back home to Oklahoma.

A few months passed as I was grieving the death of my oldest son and trying to help his brothers grieve from a distance. I then received a phone call from one of my twin sons, who had recently graduated from college and moved to New York City to be a Certified Public Accountant. He was living his dream as he worked through the grief of losing his brother when he became very ill. He learned he had cancer at the age of 25 years old. He started treatment but became too sick to care for himself, and at the same time my mother was getting very close to death. I made the executive decision to move my son back to California for cancer treatment and have home health care take care of my mother for a month. My son and I were fortunate enough to move back into our old apartment a block from the beach until he finished his cancer treatments. His twin brother also lived in California, and it was a bright spot in our lives that we could all be together again at this difficult time. Unfortunately, my mother passed away while I was taking care of my son. When my son's cancer treatment was over I returned to Oklahoma, and he was able to return to New York City.

My whole family was operating on autopilot at this point because that is what you do when you are in survival mode. It took several years to work through the grief, recover from the sleep deprivation, and realize that I had been operating on autopilot for much too long. Rising above autopilot can be a challenge, but I am grateful that rest, faith, exercise, and a healthy diet brought me back to a peaceful place.

It is important to remember that you are not alone if challenges become overwhelming and we are all in this together. There is help available, so be sure to reach out to others if you need assistance in rising above autopilot.

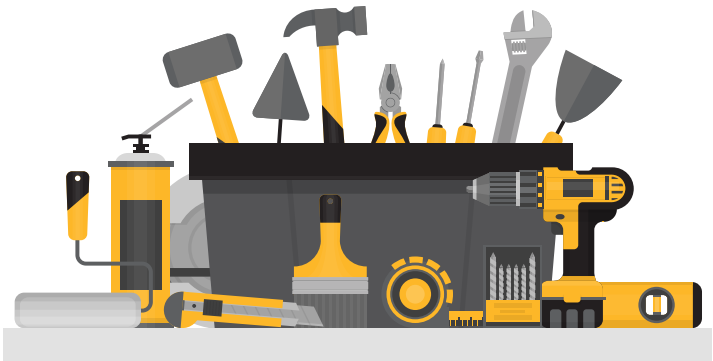
Five Tips for Home Improvement Safety

BY MR. MATTHEW LIPTAK,
STAFF WRITER

Do-it-yourself home improvement projects can be a great way to cut labor costs while improving the value and usefulness of your home as well as potentially learning a new skill. These projects, however, often involve power tools, climbing ladders, or putting yourself in other potentially risky situations. Here are a few tips to keep you safe while you tend to and enhance your home.

1. "KEEP THY SHOP AND THY SHOP WILL KEEP THEE"

That old adage is from none other than Ben Franklin. More than a couple of hundred years ago, he published those words as a saying in his *Poor Richard's Almanac*. The line may have reminded farmers and merchants back then to be more organized and thriftier, but it may have just as much impact for the modern homeowner. Keeping your tools and supplies squared away and in good running order will help you save money, but it can also keep you safe. When you are using power tools, it is a good idea to give them a close inspection before use. Look for frayed power cords or cracked or broken casings. If you find issues and cannot have them repaired by a qualified repairman, you should probably get rid of the device. Losing out on a couple of hundred dollars in tools is nothing compared with thousands of dollars in possible medical expenses! Never disable the guards on tools. They are there for a reason—to protect you. You may think you are being more efficient without them, but you are putting yourself or others who may pick up your tools at unnecessary risk. Always throw away damaged saw blades and do not leave unattended tools powered up or plugged in, especially where kids may have access to them. Maintain your power tools as recommended in the owner's manuals, and you should have a longer-lasting, safer device to work with for years to come.

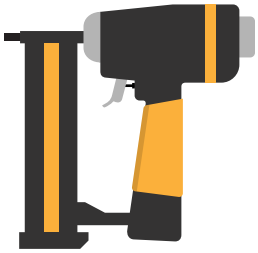


2. DO NOT CLIMB THAT LADDER RIGHT TO HEAVEN

Ladders are safe if used thoughtfully and as they are designed to be used. Remember, however, gravity is one of the primary movers and shakers of home improvement physics. Use the four to one rule—for every 4 feet of ladder height, the bottom of the ladder should be 1 foot away from the object on which it is leaning. Have a person hold the base as you climb, if possible. Pick a ladder that is a few feet taller than the elevation you need to get to, and do not climb to the top rungs of the ladder. Standing on the top rungs is unstable because of weight distribution and makes it pretty likely you will take a tumble. Beware of electrical lines nearby, especially if you are using a metal ladder.

3. NAILED IT!

Do not be a nail-gun nincompoop and become a victim of a nail gun accident. Nail guns are **guns**, so treat them with respect. Only use the full sequential actuation trigger (SAT) function. With the full SAT function, the gun will only release the nail when the trigger and touch-point safety at the tip of the tool are sequentially triggered. Although ways exist to get around this safety feature, you do so at your own risk. It becomes more likely you will nail yourself if you do an end-run around the built-in safety measures of the tool. Understand your gun and wear protective gear like boots, gloves, and eyewear to mitigate possible injury. Beware of ricochet-prone work areas. If you are unfortunate enough to be injured by a nail, get medical attention—nail injuries are likely to get infected.



4. SAFETY AND THE SAW

Use protective goggles. Make this precaution a disciplined habit before any use of a saw. It is reported that there are more eye injuries due to saw use than all other power tools and instruments combined. It is tempting to brush off the use of eyewear before using your saw because of the inconvenience, but the gift of sight is not something that can be replaced, and you will not be doing any future sawing without it. Do not wear loose-fitting clothing. If a garment gets caught on a blade it can pull you toward the saw before you can do anything about it. Again, know the guards and safeties on your tool and how to use them. **Do not disengage them**. They are there for a reason.

It is always a good idea to keep a first aid kit on hand just in case. Everybody makes mistakes.

5. BE LIKE AL, NOT TIM

Follow instructions, not intuition. Many people have watched Tim "The Tool Man" Taylor on the *Home Improvement* television show and laughed at his instinct for "more power" and the predicaments in which he finds himself. How many of his trips to the hospital could have been avoided if he had been more like his careful and controlled assistant, Al? Following impulses and intuition is no substitute for following directions and educating yourself on the project at hand. Consider taking a class at a home improvement store or a community college. At minimum, read the instructions on the correct way to operate your tools and watch an informative training video on YouTube before you get your hands dirty. Never drink alcohol while you are working with power tools or putting yourself in risky situations. Save the celebration for after the job. It is always a good idea to keep a first aid kit on hand just in case. Everybody makes mistakes. Even a mild-mannered Al can look more like a Tim sometimes.

Successfully tackling a home improvement project can be an extremely rewarding experience that also leaves your wallet a little thicker at the end of the day. You are improving the place you live in with your own two hands, what is between your ears, and the necessary tools. One project can lead to another and another until, in a few years, you have the home of your dreams. Just remember to put safety first so you can make those dreams come true. Rome was not built in a day and neither was your house. A little extra time and care applied to your home improvement project will lead to a successful and safe outcome.

Prepare for the Worst …

BY MS. BETTY NYLUND BARR, STAFF WRITER

We have all been told from an early age to "Be Prepared." Children in Boy Scouts and Girl Scouts know that is the Scout motto. For people in the military, it is just part of life.

With COVID-19 shutting down much of the world, being prepared is more than simply a way to avoid the inconvenience of not having what you need, when you need it; it is essential for health and survival. This article focuses primarily on preparing for a disease outbreak or other public health emergency, although some suggestions are applicable to preparing for many types of crises.

The Centers for Disease Control and Prevention (CDC) website has a plethora of information on preparing for and responding to various types of emergencies (**https://emergency.cdc.gov/hazards-specific.asp**). Sections cover recent outbreaks and incidents, such as COVID-19 and Ebola, natural disasters and severe weather, radiation emergencies, bioterrorism, pandemic influenza, and chemical emergencies. Regarding public health emergencies, the site also includes what to do if you believe that you are sick or if you are caring for someone who is sick.

The following are some considerations to help you plan and prepare for a crisis situation. As you are reading this article, you will probably be thinking—at least about some of the suggestions—"Why is the author saying this? Of course, I have done it!" If you find just one or two suggestions that you had not thought of, however, then I will consider this article worthwhile.

FOOD AND SHELTER

- Keep rent or mortgage and utility accounts in good standing. In a nationwide emergency, your home is your fortress. Make sure that if you lose electricity, it is not because of nonpayment.
- Have an agreed-upon place for your family to meet in case communications are interrupted.
- Stock up on canned meats, such as tuna and chicken; canned vegetables and fruits; and dried goods, such as pasta, rice, and beans.
- Stash away several cases of bottled water or extra refills for a water dispenser.

HYGIENE

- Especially during a contagion emergency, wash your hands with soap and water before and after any activity, especially food preparation, shopping, and any contact with other people.
- Keep plenty of hand sanitizer in stock in case the water supply is unreliable.
- Try to avoid touching surfaces that may have been touched by other people (just assume that they all have been), and, again, use soap and water or hand sanitizer. Wearing rubber gloves, spray surfaces with disinfectant spray, wipe them down with sanitizing wipes, or spray on a solution of bleach and water (3/4 cup of bleach to each gallon of water), then wipe with paper towels.
- Particularly if members of your immediate household venture out and are exposed to other people, do not interact with them physically. Even if they are not showing signs of illness, they may have been infected but not even be aware of it yet, and COVID-19, for example, remains active on soft surfaces (such as clothing) for up to 24 hours.

MEDICAL CARE

- Ensure that you have at least a month's supply of any prescription or over-the-counter medication that you and your family take regularly.
- Assemble a first aid kit. If you already have one, make sure it is fully stocked.

COMMUNICATION

- Keep cell phones charged so if you lose electricity, the battery is more likely to last until the power is restored. If you play games on your phone, make an exception during this time and use an alternative form of entertainment. That phone may be your lifeline.
- Make sure everyone in the family has a list of emergency contacts on their phone or in a purse or wallet. Those numbers should include, of course, 9-1-1; phone numbers for immediate family members and an emergency contact, such as a neighbor; the family physician (including the emergency or after-hours number); and anyone who may be depending on you, such as elderly parents and sick or disabled friends.
- If you do not already have a battery-powered radio, invest in one. If the crisis is not already stressful enough, imagine not knowing how much better or worse the situation is becoming. Also, you could miss out on critical information that could save your life or the lives of your family.
- If you are teleworking, or you think working from home may be a possibility, make sure your software is updated—most important, of course, is security software—and restrict the use of your work computer to work only. With more people using their home networks than during typical, non-crisis times, the vulnerability to cyberattacks increases.

Make sure everyone in the family has a list of emergency contacts on their phone or in a purse or wallet.

TRANSPORTATION

- Keep your vehicle's gas tank full. During a nationwide emergency, fuel may be harder to acquire, and lines will likely be longer.
- Also, make sure you are keeping up with regular maintenance on your vehicles, such as oil changes and tire rotations.

COMMON SENSE

- Listen to what the *official experts* are saying about the situation—the CDC if it is a health crisis, the military if the threat is from a foreign power, and local authorities if there is civil unrest—and take their advice. They are the ones who know what is best in the current state of affairs.
- Stay away from people who show signs of illness, and practice "social distancing" for your own good and the good of others. Do not interact with people outside your home unless necessary, and, if you must interact, keep at least 6 feet of space between you and them.

Keep the faith! Do not forget that this too shall pass. If you use good sense and plenty of caution and precaution, then you are doing the best you can to stay safe and healthy. Look at this period of challenge as a wakeup call to remind you of how much beauty is in the world and how sweet freedom tastes—and do not take any of it for granted once the crisis is over.

U.S. Transportation Command's Mission Assurance Division Assesses, Identifies, and Mitigates Risks to the Organization, as Well as to its Operations and Personnel

BY MR. MICHAEL P. KLEIMAN, U.S TRANSPORTATION COMMAND

Like a firewall security system protecting a computer or network from internal and external threats, the U.S. Transportation Command's (USTRANSCOM) Mission Assurance (MA) Division identifies mission risks from inside and outside the organization.

As a result, USTRANSCOM's critical capability of projecting and sustaining combat power at a time and place of the nation's choosing remains robust.

Comprising more than 60 military members, federal civil servants, and contractors, MA synchronizes all risk management programs and activities across all domains with support from the USTRANSCOM directorates. They identify how known vulnerabilities, threats, and hazards could result in risk to the command's mission of deploying the joint force to the right place, at the right time, and in the required scale to be immediate, decisive, and lethal. The division, part of the Operations Directorate (TCJ3), consists of four branches: MA Programs, MA Operations, Insider Threat Analysis, and Protection Programs, as well as one office, Information Operations.

All five synchronize their efforts assessing and identifying risks, as well as providing recommended mitigation measures to command senior leaders. In doing so, the MA team protects USTRANSCOM assets and infrastructure globally.

"Due to the evolving and increasingly-complex global security environment, MA is a 24/7 operation, but it takes all of the USTRANSCOM team to be successful. We—continuously and collaboratively—share information with transportation stakeholders, conduct 'Risk to Mission' and 'Risk to Force' assessments, and provide recommendations to leadership so they can make an informed risk decision to either accept or mitigate the threat(s)," said U.S. Air Force Lt Col Kenneth "Mike" Shirley, Chief, MA Division. "We're ultimately responsible for mitigating threats to the defense transportation system, which moves the joint force from the base to the battlefield."

One of the MA Division's branches, Protection Programs, manages several distinct areas of emphasis, including the defense security enterprise, antiterrorism, continuity of operations, and emergency management. In addition, the Defense Security Enterprise encompasses four realms of security: industrial, information, personnel, and physical.

"Our branch provides multiple protection-related customer services. For example, the industrial security specialist ensures the appropriate security language is included in approximately 100 classified contracts annually," stated Steve Strait, chief, Protection Programs Branch, USTRANSCOM's MA Division. "Our personnel security specialist works daily to ensure our members have current

eligibility for classified access. The information security specialist also daily identifies issues and actions associated with the protection of classified information. Nearly every week, we are dealing with facility physical security actions. Much of our effort is focused on developing or enforcing implementation measures to reduce security risks and unauthorized disclosures."

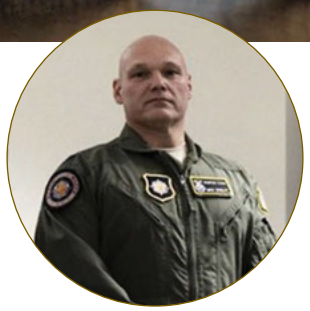
Protection Programs also focuses on emergency preparedness—providing active attacker response, bleeding control, cardiopulmonary resuscitation, and automated external defibrillator training for command members. In addition, the branch conducts mandatory travel security briefings for USTRANSCOM military, civilian, and contract personnel traveling overseas for work-related or personal reasons.

"MA is a synchronized construct. There is a lot of crossover and information sharing between the five respective entities in the MA Division," said Andrew Daub, protection specialist of the Protection Programs Branch, USTRANSCOM's MA Division. "Protection Programs bring a more tactical flavor to our MA efforts, as we're jointly concerned with security risks, hazards, and threats to USTRANSCOM Headquarters' facilities and personnel, as well as locations worldwide."

Another Protection Programs Branch entity, the Protection Services Center, located in the breezeway between the east and west buildings of the USTRANSCOM Headquarters building, administers physical security access for command members and visitors within the facility.

"Ultimately, the MA Division strives to ensure continuous global mobility mission assurance for the command," Shirley said. "We have the right people and programs in the right place to do so."

USTRANSCOM exists as a warfighting combatant command to project and sustain military power at a time and place of the nation's choosing. Powered by dedicated men and women, we underwrite the lethality of the joint force, we advance American interests around the globe, and we provide our nation's leaders with strategic flexibility to select from multiple options, while creating multiple dilemmas for our adversaries.



Lt Col Kenneth "Mike" Shirley, Chief, Mission Assurance Division, Operations Directorate, U.S. Transportation Command, Scott AFB, IL. Shirley leads a division consisting of more than 60 military members, federal civilians, and contractors who assess and identify risks, provide suggested mitigation measures to command leadership, and ultimately protect the combatant command from internal and external threats.

Photo illustration by Stephenie Wade, USTRANSCOM/PA

MISHAP-FREE FLYING HOUR

MILESTONES

7,500 HOURS

1 AS, JB Andrews, MD

MSgt Joshua P. Erhard

5,000 HOURS

1 AS, JB Andrews, MD

Lt Col Barry D. Crosby
Lt Col Tyler C. Tollman
Maj Nathan J. Bubonic
Maj Matthew J. Mihalick
Maj David L. Plachno
MSgt Russell L. Ticer

155 ARW, Lincoln, NE

Col John Williams
Lt Col Wade Holen
Maj Jonathan Mosier
CMSgt Jeff Van Nortwick
TSgt Joshua Butts

375 OG Oklahoma City, OK

Lt Col Alex E. Krause

3,500 HOURS

1 AS, JB Andrews, MD

Lt Col Michael R. Couchman
Lt Col Joel Gorham
Lt Col Jason T. Hansberger
Lt Col David J. Klein
Lt Col Jocelyn M. Smith
Maj Seth D. Ehrlich
Maj Nicole M. Grenier
Maj Tyler C. Sanborn
SMSgt Ryan M. Starkey
TSgt Allen J. Efrem
TSgt Adam T. Renwick

155 ARW, Lincoln, NE

Lt Col Edward Conner
Maj Troy Martin
Maj Ryan McGrail
TSgt Cassie Balzer

2,500 HOURS

1 AS, JB Andrews, MD

Lt Col Robert A. Smith
Maj Clark H. Condict
Maj David J. Greco
Maj James E. Miller
Maj William F. Poeschl
Capt Samantha A. Caszatt
Capt Jeffrey V. Riesterer
TSgt Joshua D. Holmgren
TSgt Michael K. Perkins
TSgt Devin L. Ramirez
TSgt Jeterria E. Thompson
SSgt Sasha Glaser

155 ARW, Lincoln, NE

Capt Sean Cappel
MSgt Bryan Schuka
TSgt Shawn Gallagher

A Michigan Air National Guard KC-135T from the 171st Air Refueling Squadron at Selfridge ANG Base in flight on a refueling mission over central United States.

USANG photo by Munnaf Joarder

TO SUBMIT MISHAP-FREE FLYING HOUR MILESTONES:

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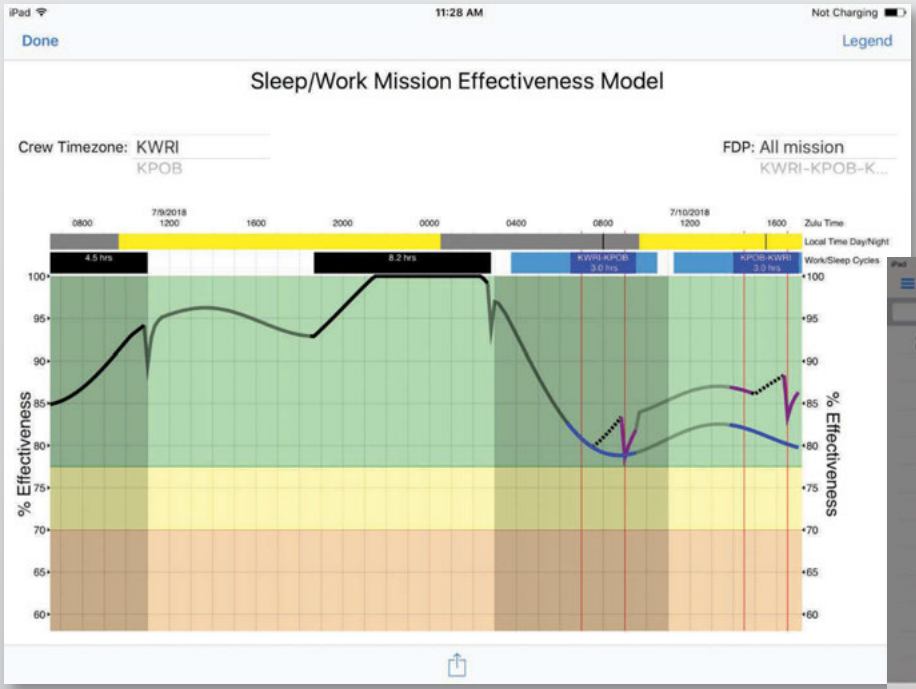
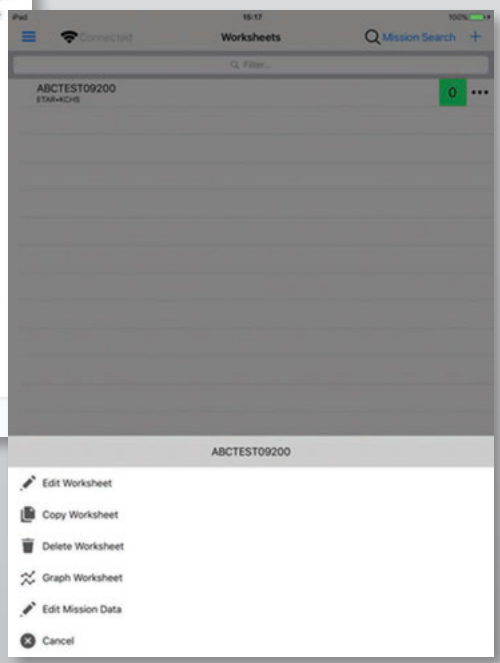
Please submit as shown in the listings above (first name, last name, sorted alphabetically within rank).

Connected AvORM EFB App

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

The next level of access to Aviation Operational Risk Management (AvORM) progressed to worldwide aircrews with the release of the AvORM Electronic Flight Bag (EFB) App version 2.1. in February 2020. Since the release of the first version of the app in February 2019, aircrews could manually enter an itinerary, make risk factor inputs, and review the mission effectiveness (fatigue) graph as a stand-alone event, and that capability remains. Now with the connected app, an aircrew can securely download an itinerary from a mission built in the Global Decision Support System (GDSS) any time the EFB contacts a Wi-Fi signal. Users can save a copy of those missions from GDSS into the local (stand-alone) portion of the app and perform any actions that were available in the earlier version of the app. While connected to Wi-Fi, users can update any previously loaded GDSS missions to the current online version. Users can now transmit updates to online AvORM through the app, particularly for the health/stress and fatigue risk factors when on a multi-day mission. This access provides the Mobility Air Forces' system with the enhanced capability to monitor the status of missions in progress. For more information, review the help document provided in the app or the AMC/SEF Air Force Portal AvORM page that now includes a short tutorial on the new app release.





AvORM Electronic Flight Bag (EFB) app screenshots

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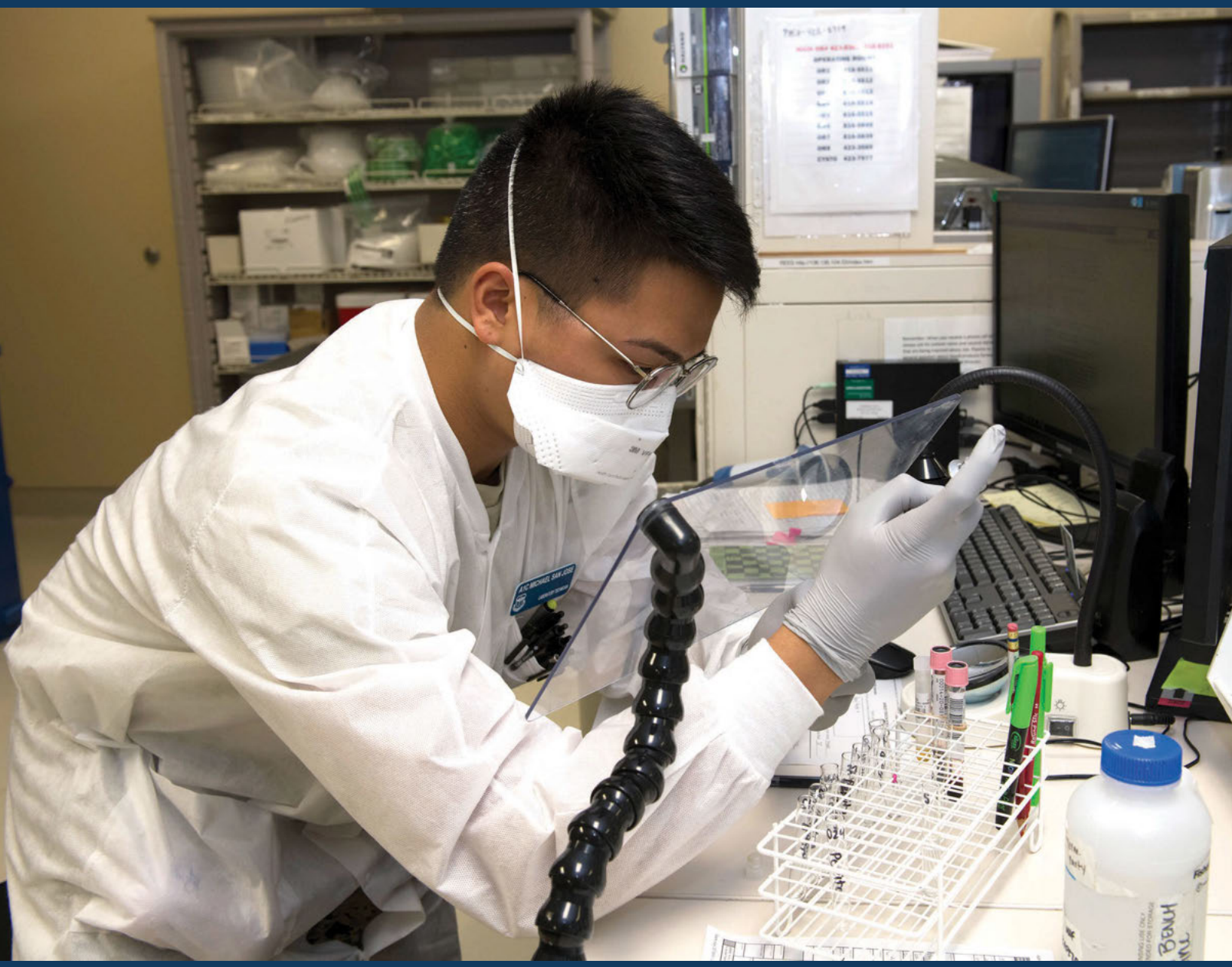
A DAY IN THE LIFE



A1C Michael San Jose, 60th Medical Diagnostics and Therapeutics Squadron Lab Technician, performs antibody titration inside the David Grant USAF Medical Center laboratory March 25, 2020, at Travis Air Force Base, CA. The lab, which supports Air Mobility Command, as well as the Pacific theater, is one of many services the medical center is providing during the COVID-19 pandemic.

USAF photo by TSgt James Hodgman