THE MOBILITY FORUM

THE MAGAZINE OF AIR MOBILITY COMMAND | FALL 2023

Building Our Warrior Heart Culture

Military Spouse and Family Appreciation

The Internet of Things: Will It Help Airmen of the Future?

The Air Traffic Controller Perspective

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THE MOBILITY FORUM

ON THE COVER

MSgt David Schnabel, 8th Expeditionary Airlift Squadron, is welcomed home from a deployment by a loved one at Joint Base Lewis-McChord, WA, April 4, 2023. The deployment was the 62d Airlift Wing's first under the new Air Force Force Generation model in support of U.S. Central Command, U.S. European Command, and U.S. Africa Command operations.

USAF photo by SrA Callie Norton

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AMC Welcomes New Director of Safety

In 2023, the Safety Directorate at Air Mobility Command (AMC) welcomed Col Jeffrey A. Smith as its new Director. Smith was commissioned in May 2000 from Fayetteville State University's Air Force Reserve Officer Training Corps program. After completing pilot training, he served in a variety of positions, including Chief of Wing Flight Safety, Advanced Instrument Instructor, Navy Crew Resource Management Instructor, Chief of Information Protection, Wing Treaty Control Officer, Headquarters Chief of Joint Manpower, and Headquarters Air Expert for NATO operations in Afghanistan. To date, Smith is a Command Pilot with over 2,400 hours in military cargo and transport aircraft.

Prior to his current assignment, Smith also served as Director of Operations at the 423d Mobility Training Squadron, Joint-Base McGuire-Dix-Lakehurst, NJ; Commander, Air Operations Squadron, Headquarters Air Mobility Command, Scott Air Force Base, IL; Deputy Command Center Director, NORAD/USNORTHCOM, Peterson Space Force Base, CO; and Director of Intelligence, Operations, and Plans, 386 AEW, Ali Al Salem Air Base, Kuwait.

As AMC's new Director, Smith will preserve the combat capability of AMC's $40 billion global airlift, air refueling, and en route mobility support forces; manage AMC Commander's Safety Investigation Boards; represent the command during Department of Defense and U.S. Air Force safety conferences; lead AMC's Mishap Response Review Panel process and Operational Risk Management program; publish *The Mobility Forum*; and oversee the command's safety award recognition program.

Col Jeffrey A. Smith

MAJOR AWARDS AND DECORATIONS

Legion of Merit

Defense Meritorious Service Medal with oak leaf cluster

Meritorious Service Medal with two oak leaf cluster

Air Medal with oak leaf cluster

Aerial Achievement Medal with oak leaf cluster

Air Force Commendation Medal with oak leaf cluster

Army Commendation Medal

Navy Commendation Medal

Air Force Achievement Medal with oak leaf cluster

Navy Achievement Medal

Afghanistan Campaign Medal with bronze star

Iraqi Campaign Medal with bronze star

Inherent Resolve Campaign Medal

Nuclear Deterrence Operations Service Medal

NATO Medal

18th Air Force is Ready Today, Prepared for Tomorrow … EXPEDITE

BY MS. KATHY ALWARD, STAFF WRITER

Col Patrick C. Winstead, Vice Commander, 18th Air Force, Scott Air Force Base, IL, brings valuable experience to his current position, in which he serves 12 wings comprising 36,000 Airmen. Winstead learned a lot working for Air Mobility Command's (AMC) personnel team in the Directorate of Manpower, Personnel and Services, including knowledge about military and civilian personnel programs and policies. He is grateful to Maj Gen Martin, the 18th Air Force Commander, for the opportunity to serve in the 18th Air Force. Their vision statement is: *Ready today, prepared for tomorrow…EXPEDITE*. "I really think that's what our wings embody, that 18th Air Force Vision. They're already doing that every day," Winstead stated.

"The 18th Air Force is AMC's sole numbered Air Force and the 12 wings of the 18th Air Force have custody of AMC's flying missions. That includes airlift, air refueling, DV transport, and aeromedical evacuation. So, the 18th Air Force Commander and his staff have a responsibility to provide ready, trained, and equipped forces to execute AMC's flying missions," said Winstead. The 12 wings of the 18th Air Force impress Winstead with how they have developed thorough and innovative ways to prepare and train for the possible future fight.

"This stretches from training Airmen in realistic combat scenarios to hone their expeditionary skills, to develop new tactics, techniques, and procedures—TTPs— that allow us to employ our aircraft in more difficult environments and at a tempo required to win," he said.

The "Warrior Heart Initiative," an endeavor started by Gen Mike Minihan, AMC Commander, that aims to support the mind, body, and craft required to win our future fight, is an example of how the wings of the 18th Air Force support the National Defense Strategy with new ways of delivering help and professional development to our Airmen. "[The] 18th Air Force's role is to advocate for the readiness of those wings, to advocate for the resources they need to prepare for the future fight, and really to develop our Airmen—because that underpins our National Defense Strategy and it prepares our forces for the future, focuses on Airmen and their readiness, and also the equipment they need to take care of our mission," said Winstead.

Based on his experiences in service, Winstead wants Airmen to prioritize

Col Patrick C. Winstead, Vice Commander, 18th Air Force, Scott Air Force Base, IL.

USAF photo 375 AMW/PA

> **"[The] 18th Air Force's role is to advocate for the readiness of those wings, to advocate for the resources they need to prepare for the future fight, and really to develop our Airmen—because that underpins our National Defense Strategy and it prepares our forces for the future, focuses on Airmen and their readiness, and also the equipment they need to take care of our mission."**

building their technical expertise. In the Air Force, most start with a basic level of knowledge in their relative specialties and develop expertise as they learn and grow, according to Winstead, who encourages all Airmen—enlisted, officers, and civilians—to strive for a high level of technical expertise and learn how to apply it to our warfighting mission. Winstead believes discipline and hard work are involved in that pursuit, which will pay off for every individual and make our Air Force even stronger. Winstead notes that as Airmen develop their technical expertise, individuals should prepare for and even aspire to increasing levels of leadership. Leadership is not all about being in charge, said Winstead, but also about serving and understanding those under your charge and preparing them for the mission at hand and future missions. "I want Airmen to learn the art of leadership at their level and be the best leader that they can be because, ultimately, military service is a team sport, and we need everybody on the team at their best and doing their best," Winstead emphasized.

According to Winstead, Mobility Guardian 2023 is an operations exercise that all AMC Airmen have been working toward. This year's exercise is the largest in AMC's history, with more than 3,000 Mobility Airmen and over 70 aircraft participating. Other recent endeavors of the 18th Air Force Winstead has worked on include Operation Centennial Contact, which, on June 27, celebrated 100 years of air refueling. The event was a collaborative effort across AMC and Headquarters Air Force, led by the 6th Air Refueling Wing. Winstead has been working to streamline the 18th Air Force Strategy, which aligns closely with AMC's strategy, and was recently published and distributed to 18 AF wings. Additionally, he is working to ensure a smooth transition and uninterrupted services for the wings of 18th Air Force, as several key positions in headquarters have turned over recently and seven new Wing Commanders are taking command.

When asked about Airmen safety stories or lessons learned, Winstead recalled his days as a pilot in the C-17 conducting air-to-air refueling with tanker aircraft. Having two large aircraft flying within 20 feet of each other at high speeds to conduct aerial refueling has multiple risks. However, over the years the Air Force developed training and equipment allowing this activity to be accomplished safely and regularly. "So how do we make the higher-risk activities into safe and regular activities? Well, you have to understand the risks that are involved in the activity, the severity of a poor outcome, and the likelihood of that outcome occurring," said Winstead. "I know we can't eliminate all risk from our activities, but safe mission accomplishment allows for quick and effective and repeatable mission accomplishment. And I think if we focus on the risks, do everything we can to mitigate them, and be really aware of our surroundings, our training, our equipment, and ourselves, then we'll be as safe as we can. And that's what we need our Airmen out there doing," Winstead emphasized.

Airmen from the 375th Air Mobility Wing, Scott AFB, IL, prepare to load simulated patients into a C-17 Globemaster III on the flight line during Ballistic Badger 2022 on Volk Field Air National Guard Base, WI, Oct. 21, 2022. Ballistic Badger 2022 is the first iteration of Scott Air Force Base's simulated expeditionary mobility rehearsal focusing on establishing a bare base and ability to survive and operate in austere conditions.

USAF photo by SSgt Solomon Cook

Total Force Mobility Air Force leaders pose for a group photo during Phoenix Rally at MacDill Air Force Base, FL, April 19, 2023. Spring Phoenix Rally brought together more than 250 Total Force Mobility Air Force leaders and spouses to discuss Warrior Heart, Mobility Guardian '23, Air Mobility Command's strategy and priorities, and how to work together to ensure the Mobility Air Force is ready to deliver Rapid Global Mobility across the Joint Force.

USAF photo by A1C Zachary Foster

Building Our Warrior Heart Culture

BY MS. LINDSEY WILKINSON, AMC PUBLIC AFFAIRS

On Jan. 28, 2022, Gen Mike Minihan, Commander for Air Mobility Command (AMC), posted a tweet with four simple words: Warrior Heart. No Stigma., along with a screen shot of a mental health appointment on his calendar. From that moment on, Warrior Heart became the mantra for a culture focused on fine tuning the mind, body, and craft to fortify the will to win.

That was the focus during the opening days of Spring Phoenix Rally held at MacDill Air Force Base (AFB), FL, April 17-21, 2023. More than 250 Total Force Mobility leaders and spouses spent 2 days discussing ideas and ongoing efforts that bring the mind into balance with body and craft.

"Warrior Heart is not a program, but rather, about our climate and our culture," said Minihan. "So when I say mind, body, craft, I mean elevating the mind to the same level as body and craft."

Minihan continued with his three objectives to helping Airmen put their mental health on equal footing with physical fitness and honing their craft: eliminate stigma, lower barriers, and increase access and options.

Col Derek Salmi, 60th Air Mobility Wing Commander, Travis AFB, CA, led the discussion that looked at warrior culture from a variety of different lenses, including sports, literature, and spirituality, as well as highlighting internal efforts at all echelons to get after the Commander's objectives.

Salmi highlighted Capt (ret) Charlie Plumb, a Vietnam War prisoner of war who spent 2,337 days in the Hanoi Hilton after being shot down on his 75th mission. According to Plumb, post-conflict surveys showed signs of post-traumatic stress (PTS) in about

You need a plan academically, athletically, and socially to build a winning culture. It is about being a part of something bigger than you and wanting it for others.

one-third of Vietnam veterans, while PTS among former POWs was only between 4 and 8 percent—dramatically lower despite everything they endured.

"Captain Plumb attributed that to one thing," said Salmi. "The leadership that was in the Hanoi Hilton and the fact that they set the conditions, set the focus, and embodied what Warrior Heart is. Leadership matters."

Coach Scott Davenport, head coach of Kentucky's Bellarmine University's men's basketball team, discussed his approach to building a winning culture, which include pressure on and off the court.

"We have a saying in our program that preparation is going to lead to confidence," said Davenport. "But at the end of the day, when they leave that huddle, who do they have? Each other. They don't have us, they have each other."

You need a plan academically, athletically, and socially to build a winning culture, he continued. It is about being a part of something bigger than you and wanting it for others.

He also urged everyone to never delay gratitude. "It takes 1.8 seconds to say 'thank you," said Davenport.

Following Davenport's speech, several wing Commanders highlighted initiatives at their bases, including Operational Support Teams at Little Rock AFB, AR, that are focused on embedded support and care within at-risk squadrons; the White Rope program at Dover AFB, DE, which is a continuation of a support program typically seen at basic military training and technical schools; the Vance AFB, OK, Comprehensive Readiness for Aircrew Flying Training (CRAFT) facility, a human performance lab that includes cognitive and nutrition specialists, among other things; and Travis AFB's Mind Gym and Comprehensive Airmen Fitness Madness Challenge, which funds quality of life upgrades in the dorms, work facilities, and fitness areas.

It was a small sampling of ongoing initiatives across the Mobility Air Force, but the roundtable allowed for cross-talk and information sharing in order to fuel mind, body, and craft together.

AMC's Command Chaplain, Col Mike Newton, focused on the Will, which he defined as the choice to act, having a clear purpose behind the action, and the beliefs, principles, and values guiding you.

Essentially, it is about the ability to lead and control one's life, said Newton. "And those components need to be active whenever an Airman needs to access them. Sometimes by making it too easy or soft, we take away the options they need to execute."

He emphasized the need for putting Airmen into "a productive struggle and a growth zone" by starting with a challenging standard or objective, a sense of motivation, sources of support, and accountability that, over time, yields a belief that success is the result of effort more than raw talent.

"We are in the profession of arms, the maintenance of violence," said Newton. "And I think one of the biggest challenges we're going to have as leaders is creating the culture and the ethos of the calling and the necessity of that … Airmen are the Magic."

Lt Col (ret.) Jeff Ulmer, a former KC-10 pilot and instructor at the U.S. Air Force Academy, built on Newton's remarks by using poetry from past conflicts to bring into sharp focus the reality of war, including despair, suffering, betrayal, moral ambiguity, and horrible death.

"However, when the leaders I've served with are able to give you the truth, to show you what it is, and they still ask you to do it, then it's probably worth fighting for," said Ulmer. "And if you're still willing to do it, then you're probably the right person for the job."

Capt Jane Marlow, Phoenix Torch Fellow, closed the discussion by presenting her cross-functional team's leadership approach to building Warrior Airmen.

"Our leaders, systems, and policies are not prepared to effectively leverage our most critical combat asset—our Airmen," Marlow posited.

Through a detailed review of Air Force Instructions, Marlow's cross-functional team identified policies that do not match current research and modern standards for care that is harming Airmen's careers when they do what they have been urged—ask for help.

Her approach includes three lines of effort: *Pathways to Care, Regulatory and Policy Updates*, and *Building and Strengthening Command Teams*.

Pathways to Care focuses on education informing Airmen and supervisors about first-tier care options, such as Military One Source, Military and Family Life Counseling, peer counseling, and group therapy that will take the burden off strained mental health clinics.

Chaplain (Col) Mike Newton, Air Mobility Command's Command Chaplain, speaks to more than 250 Total Force Mobility leaders and spouses during the Phoenix Rally conference at MacDill Air Force Base, FL, April 18, 2023. Newton focused on Will, which he defined as the choice to act, having a clear purpose behind the action, and the beliefs, principles, and values guiding you.

Courtesy photo

Regulatory and Policy Updates focus on outdated policies and antiquated waiting periods that do not match current medical guidance. In some cases, these policies are preventing Airmen from returning to duty despite medical professionals certifying them mentally fit.

"These waiting periods are very unique to mental health and are not based in robust science or data, they're based in the ways we've always done it," said Marlow. "This [policy] is an example of a myriad of regulations and policies that are woefully out of date, that are limiting our ability to field Warrior Airmen, and forcing our command teams, mental health providers, and flight surgeons to expend incredible amounts of energy fighting a system and a policy rather than fighting our adversary."

Building and Strengthening Command Teams recognizes the importance of being led by the best. This requires Commanders to know who they are and how they should lead, and provides leaders with regular access to mental health care during an extremely stressful period. It also allows them experiential knowledge of what their Airmen may be going through and how to set an example.

AMC has contracted experts in mindfulness, self-care, and resiliency who will focus on wing- and squadron-level support. These experts will soon work with wing command teams to develop presentations, workshops, and exercises that will help Airmen "lead and win at life."

Minihan closed the discussion by emphasizing what matters most when it comes to culture change and support for Airmen.

"At the end of the day, no matter what program we roll out, no matter how eloquent the rejoin is, how much money we spend, it'll never, ever, ever substitute for supervision and command when it comes to what our Airmen need."

FOR MORE INFORMATION

https://www.dover.af.mil/News/Article/3229546/436th-aw-introduces-white-rope-program-to-strengthen-resilience/

https://www.vance.af.mil/News/Article-Display/Article/2916641/vance-opens-flight-line-facility-to-craft-better-pilots/

https://www.dvidshub.net/video/876616/comprehensive-airman-fitness-madness-challenge

https://www.militaryonesource.mil/

https://www.militaryonesource.mil/non-medical-counseling/military-and-family-life-counseling/

Appropriate Risk Management in the Flying Community

BY MAJ STEVE BOSTWICK, AMC FLIGHT SAFETY

Risk Management (RM) is one of the four pillars found in the Air Force Safety Management System and is the core to Air Force Safety's sole mission of mishap prevention. The RM process is both deliberate and foundational, and is structured into a five-step process outlined in DAFI 91-202, *The US Air Force Mishap Prevention Program*: identifying hazards, assessing hazards, developing controls and making decisions, implementing controls, and supervising and evaluating. Within the confines of flight safety, most aircrew recognize this process as Operational Risk Management (ORM). Air Mobility Command aircrews utilize ORM for every mission; however, to appropriately use this important tool, our flyers must ensure that they actively contribute to the assessment of their profiles, provide genuine responses when annotating risk, and understand the fundamental purpose of the ORM program. To ensure appropriate use of ORM, it is imperative that experienced aircrew personnel teach our future generations of flyers about its application. Additionally, it is crucial for leadership to promote and foster an environment that embodies the fundamental values of ORM and encourages Airmen to highlight and mitigate risk.

To simplify, units and aircrew identify the hazards associated on a particular mission, quantify the level of risk, explore methods to eliminate or mitigate risk, and accept the residual risk at the appropriate level.

So there I was—a new KC-135 aircraft commander deployed to Central Command, executing missions for both OPERATION INHERENT RESOLVE and OPERATION ENDURING FREEDOM. On this particular day, my crew and I had been sitting alert, able to respond at any moment to the aircraft in support of either operation. In this particular case, on day two of our alert, we were informed that we needed to fly a normal mission, which required us to report to the squadron within the next four hours. Our method of notification was a physical schedule posted on our trailer, which met all legal requirements regarding crew rest; however, this timing was not within our normal schedule. Unsurprisingly, my crew and I did not get great sleep (duration or quality), and once we arrived at the squadron, we discovered that the assigned mission was scheduled to last more than 10 hours. I annotated everything on the ORM form, asked my crew if they felt comfortable proceeding with the mission, and took the form to the Operations Officer (DO). Our overall ORM score required Operations Group Commander approval, and the DO was not thrilled by this news.

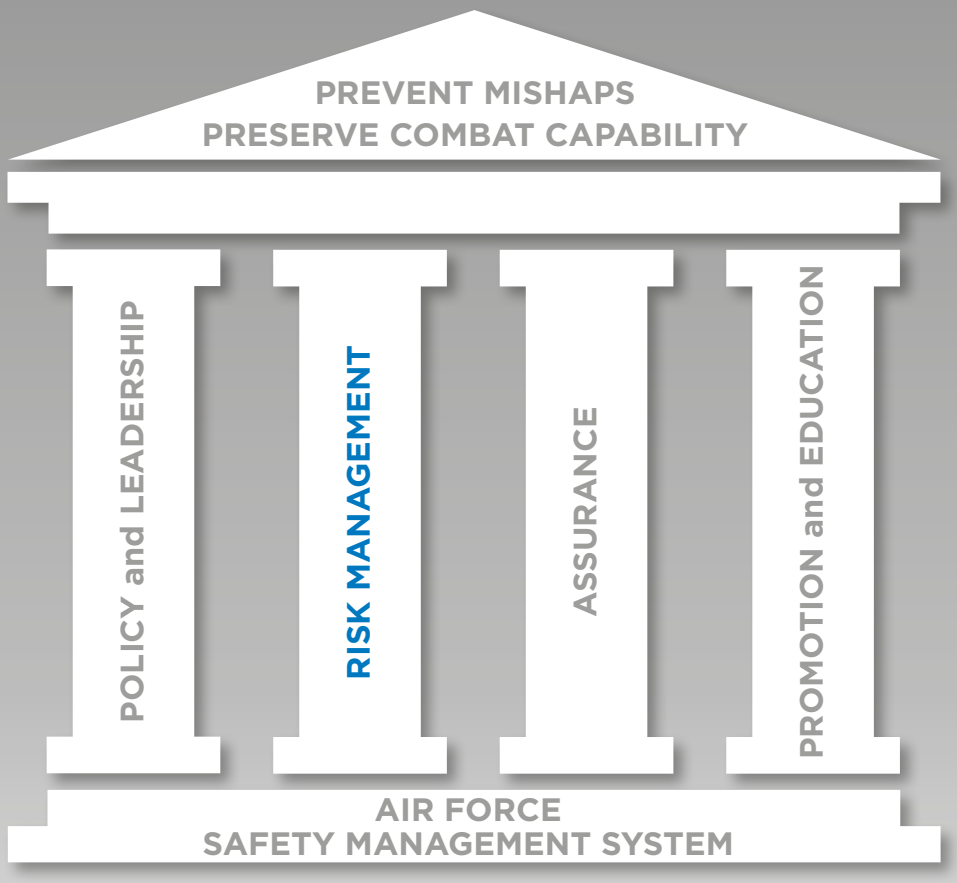
I was asked numerous questions with an aggressive tone:

> "Why didn't you get better rest?"
>
> "You were sitting alert, did you not know you could be called in?"
>
> "You realize that I will have to wake up the Group Commander, right?"

Although, in my mind, I had reasonable rebuttals to each question, I simply replied, "yes, sir." The next question from the DO made me realize something was amiss, when he asked, "Well, if we take a look at the (scheduling) board and find a shorter sortie, would you be **willing to fly**?"

I was astounded. Willing to fly? I realized my Operations Officer assumed my crew was attempting to use ORM as a method to avoid flying. I replied, "Sir, we are willing to fly now. I just need the appropriate level of approval (risk acceptance)." This moment was the first in my career that I realized that there were misconceptions or perceived misuses of ORM.

Later in my career, when I was an instructor in Undergraduate Pilot Training, I saw that many students and younger instructors possessed similar misperceptions about why we conduct ORM. DAFI 91-204, *Safety Investigations and Reports*, explains that "risk management is an expected function for all organizations … there is a responsibility to assess the associated risks, evaluate risk mitigation options, implement risk management measures, evaluate the residual risks, document approval at the appropriate level…" This excerpt explains exactly



how we use ORM before aviation sorties. To simplify, units and aircrew identify the hazards associated on a particular mission, quantify the level of risk, explore methods to eliminate or mitigate risk, and accept the residual risk at the appropriate level. The Risk Acceptance Authority is the previously mentioned "appropriate level," which can be the aircraft commander or perhaps unit leadership at higher levels. Regardless, the Risk Acceptance Authority may choose to accept or not accept the outlined risk.

If an aircrew requires approval at a higher level of authority, and they seek said approval, it should be understood that they are effectively willing to fly the mission. Never should a crew "pass the buck" to leadership with the intent that the higher commander will cancel the mission on the aircrew's behalf. If a crew determines that the accomplishment of the mission is not justifiable due to the associated risk, then the responsibility falls to them to call "knock it off."

Once the risk is accepted and the mission is in execution, aircrews are responsible for continuing risk management, as it is a varying process. On a multileg mission, flyers are expected to reevaluate their ORM. Aside from checking updated weather and Notices to Air Missions, it is sometimes overlooked. Additionally, successful ORM requires honest input; intentionally omitting or reducing the risk level to ensure a lower level of risk acceptance does not benefit the Air Force or the aircrew. How do we as an organization remedy these quandaries?

To institute sound ORM, flying units must rely on good educational practices and supportive leadership to promote the tenets of risk analysis and mitigation. When a crew sits down at the briefing table, they must work together to identify the hazards and the inherent risks associated with those hazards. Once the risks have been identified, each crew member must determine if there are safe and legal measures to eliminate or mitigate the risk. Any remaining, or residual, risk must be accepted at the appropriate level, but only if the aircrew is willing to also accept this risk. Flying is an inherently dangerous business, and we are expected to accept some risk in the defense of our nation. We cannot accept unnecessary risk, which is risk that could have been alleviated, especially when it may lead to a mishap. Comprehensive risk management does not necessarily eliminate risk; rather, it empowers our members to identify hazards while making sound and robust decisions that ultimately lead to mission success.

The Air Traffic Controller Perspective

BY SMSGT JOE SOUTHERN, MANAGER, ATC OPS & PROCEDURES, HQ AMC/A3AP

MSGT CORY KIMMEL, ASSISTANT CHIEF CONTROLLER, RAPCON, 305 OSS/OSAD

MSGT CASEY LEE, ASSISTANT CHIEF CONTROLLER, RAPCON, 60 OSS/OSAD

INTRODUCTION BY MR. SEAN BORDENAVE, HQ AMC CRM/TEM PROGRAM MANAGER

INTRODUCTION

ASAP #22399 Event Narrative

[DATE]. [CALLSIGN], [TAIL #], [WING] assigned C-17 operating local training sortie departing [LOCATION], destination Sabre AAF [Army Airfield]. at FL230 approaching waypoint NEGEE [point along an established military training route], aircrew requested pilot's discretion unlimited descent to Minimum Vectoring Altitude [MVA]. The sortie is being conducted in accordance with Integrated Mission Sortie [IMS] training requirements which place additional emphasis on tactical employment. The unrestricted descent accommodates exercise of tactical penetration descent capabilities. Aircrew received clearance to descend, however significant traffic in the vicinity resulted in an amended clearance to level off at 11,000 feet. The crew deconfigured from tactical descent configuration and, as the descent rate decreased, received a TCAS RA [Traffic Collision Avoidance System Resolution Advisory] due to aircraft passing at 10,000 feet. Visual contact was maintained with the other aircraft, clearance was maintained, and a subsequent descent to 10,000 MSL [mean sea level] was directed once traffic was clear. The PF [pilot flying] disconnected the autothrottles for the tactical descent, and once the aircraft leveled at 10,000 feet, did not recognize that throttles were at idle and airspeed was bleeding off. PF recognized the thrust deficient condition as the aircraft entered ALPHA mode which lowers the nose to maintain airspeed and prevent entering a stall condition at the expense of altitude. The PF added power to regain airspeed but descended to approximately 9,600 feet. ATC [air traffic control] queried the crew, we acknowledged the deviation and responded that we were promptly returning to our assigned altitude of 10,000 feet. The altitude deviation occurred as a result of the PF failure to recognize thrust deficient condition and correct prior to altitude deviation. Causal factors include task saturation and loss of SA [situational awareness]. This was precipitated by a TCAS RA, and unexpected deconfiguration from rapid descent. The altitude deviation was promptly recognized and corrected.

ASAP #22399 Submitter's Suggestions

I do not believe ATC was fully aware of what we were planning to do *and there was a number of other aircraft operating in the vicinity which presented a conflict to our intended flight path.* ***Prior coordination with ATC to ensure clear understanding of our capabilities and intent could have prevented the conflict.*** *We may need to alter our flight plan route to remain clear of other air traffic. We may need to perform a cruise descent which is more conducive to IFR [instrument flight rules] operations.* ***Either way, we should have a clear understanding between ATC and crews that we are transitioning from the enroute structure to low-level.***

When investigating this Aviation Safety Action Program (ASAP), I learned that

ATC did not fully comprehend the C-17's rapid tactical descent profile. The C-17's descent rate astounded Federal Aviation Administration (FAA) controllers. Although the crew did receive clearance for the descent, ATC did not anticipate how fast the crew would descend; thus, ATC subsequently amended the clearance to 11,000 feet due to traffic that was not originally anticipated to be a factor. Additionally, analysis of the event also revealed that traffic was a factor in the ATC sector in which the event occurred. Although ATC was trying to accommodate the crew's requested clearance, ATC was also trying to deconflict the C-17's descent profile with other traffic in the area.

After reviewing the event, I concluded the ASAP submitter's suggestions were accurate: *"I do not believe ATC was fully aware of what we were planning to do …* ***Prior coordination with ATC to ensure clear understanding of our capabilities and intent could have prevented the conflict.***" Later, in an email exchange with the ASAP submitter, the pilot went on to say:

> *Due to growing emphasis on tactical training, we are starting to fly in unfamiliar airspace. It is worth noting the entry point for this particular MTR [military training route] is only 14 miles from [Airfield]'s Class C airspace.* ***Our pre-mission planning failed to consider the impact of our tactical descent on arriving and departing aircraft ... I have had great success reaching out directly to the ATC facility and coordinating in advance what we wish to do. I have yet to encounter a facility unwilling to work out some way to facilitate our request and that direct coordination really goes a long way.*** *Most importantly, ensuring a clear understanding on both the crew and controller's part of what precisely is going to happen.*

Around the same time that I was working on this ASAP analysis, our military ATC experts in Air Mobility Command's (AMC) A3AP, ATC Ops & Procedures Branch, were collaborating with military ATC controllers at the wing level, analyzing a TCAS RA event reported via another ASAP. As part of their recommended actions, the military controllers invited the military pilot involved in the TCAS RA event to visit their local Radar Approach Control (RAPCON) to provide a pilot perspective, while witnessing the ATC challenges of working with the numerous visual flight rules (VFR) of aircraft within their airspace.

Our ATC experts and ASAP #22399 highlighted a vital lesson for all pilots: We do not always understand and appreciate the ATC perspective. Despite working together daily and sharing standardized procedures and communications, we (pilots) frequently do not analyze events through the view of the ATC controller.

The A3TO, Op RAMS Branch, and A3AP, ATC Ops & Procedures Branch, decided to collaborate on an article to share the ATC perspective with pilots. We asked several military ATC controllers to share their perspective via the following question: ***If a pilot visited your ATC facility for the day and you had an opportunity to share information, what topics would you emphasize with them?***

SMSgt Joe Southern, HQ AMC Operations and Procedures, Scott AFB, IL, MSgt Cory Kimmel, Air Traffic Controller from the 305th Operations Support Squadron (OSS) at Joint Base McGuire-Dix-Lakehurst (JBMDL), NJ, and MSgt Casey Lee, Air Traffic Controller from the 60 OSS at Travis AFB, CA, volunteered to share their years of air traffic expertise by emphasizing key topics that will help pilots understand Air Traffic Controller Perspective. Southern, Kimmel, and Lee have a wealth of air traffic control experience, working in various air traffic control facilities, including Tower and RAPCON. They have also served in leadership positions, including Watch Supervisor, Chief Controller and Assistant, and Major Command Staff. Additionally, they have a depth of expertise serving as Noncommissioned Officers in Charge of Training, Standardization and Evaluation, and controlling, leading, and liaising down-range alongside Host Nation and in contingency environments.

ATC PERSPECTIVE BY SMSGT SOUTHERN, MSGT KIMMEL, AND MSGT LEE

Understanding ATC's responsibility for separation of aircraft: The purpose

Airspace classification excerpt from *Pilot's Handbook of Aeronautical Knowledge*, FAA-H-8083-25A.

of the ATC system is to provide a safe, standardized, and efficient flow of air traffic. As part of the ATC system, a controller's primary responsibility is to ensure the safe separation of aircraft. Our primary responsibility is simple in premise but complex in execution. As you know from being a pilot, flight procedures are standardized, but the procedures are vast, and execution of those procedures can vary greatly depending on the situation, location, and conditions.

5-5-8. See and Avoid

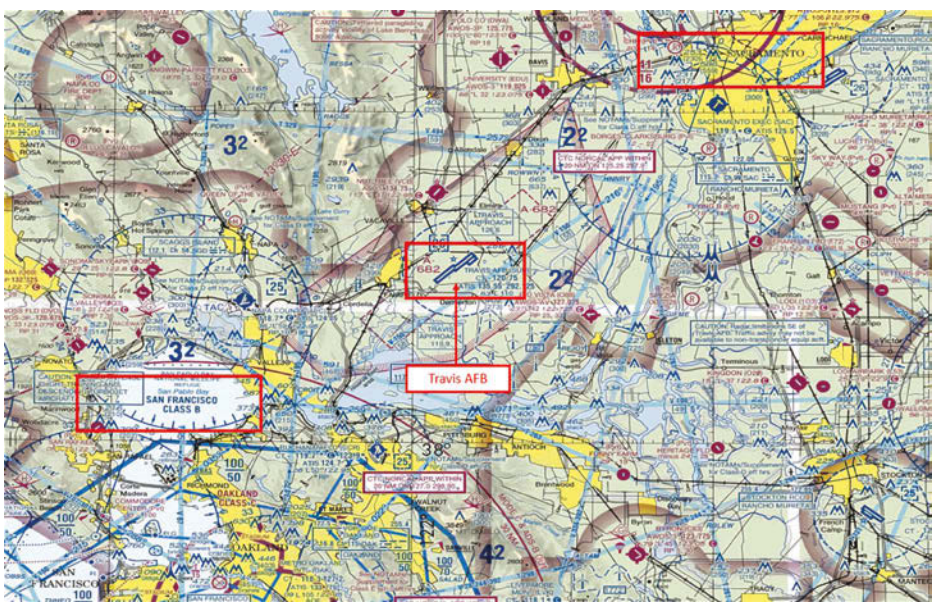
a. Pilot. When meteorological conditions permit, regardless of type of flight plan or whether or not under control of a radar facility, the pilot is responsible to see and avoid other traffic, terrain, or obstacles.

FAA's *Aeronautical Information Manual* (AIM) Excerpt

When it comes to ATC's responsibility for separation of aircraft, airspace classification (operation location) and type of clearance (IFR or VFR) the flight is operating generally determine separation criteria. ***The separation criterion that pilots most often misunderstand is the ATC separation of VFR traffic in Class Echo airspace. In Class Echo airspace, there is no set separation standard between IFR and VFR traffic.*** In accordance with the FAA's JO 7110.65Z, Air Traffic Control procedures, paragraphs 5-1-4 and 7-6-1, only traffic calls and safety alerts are required unless a pilot requests a vector. As defined by See and Avoid, throughout the AIM and JO 7110.65, verbiage states that the pilot is still responsible for the aircraft. Note 2 in the definition of "Traffic Advisories" in both regulations spells this out. This note is important as traffic advisories are conditional based on the controller's higher priority duties and controller workload. For example, when a VFR aircraft is less than 500 feet vertical separation, targets are likely to merge, and traffic advisories have been made; the controller bears no responsibility. However, many controllers believe there is an ethical responsibility in these situations in which the controller, although not required, will take action to ensure the safety of flight of all within their control. This regulatory guidance and controller perspective comes into play when non-participating VFR traffic operating Class E comes into conflict with traffic we are controlling. ***We want to emphasize that traffic separation, especially in VFR conditions, is a shared responsibility between the controller and pilot. Although controllers try to maintain a safe separation between traffic, the controller will have limited options in certain situations, especially if the VFR traffic is not in radio contact and legally flying in Class E airspace.***

We will come back to the topic of separation when we discuss TCAS RAs. Before we discuss TCAS RA events, local area airspace and traffic congestion are two important topics that provide context.

Local Airspace: From a controller's perspective, local airspace (home airfield) is an important issue for several reasons. First, as you know, the local airspace is influenced by a multitude of factors, such as environmental (prevailing winds) and geographical features (terrain and obstacles). Furthermore, ***our ATC procedures are heavily influenced by the local airspace, such as special use airspace, satellite airports in the immediate vicinity, and departure and arrival corridors of adjoining airspace***. For example, Travis AFB is "sandwiched" between San Francisco's Class Bravo airspace to the south and Sacramento's Class Charlie airspace to the Northeast. There are two airports that have operational control towers in our airspace and multiple satellite airports. Additionally, we have Napa County Airport to our immediate west. Travis' airspace essentially is a channel for aircraft flying between the two airspaces and creates a lot of overflight and VFR traffic. Likewise, JBMDL's airspace bumps against Philadelphia's Class B airspace, which influences how VFR traffic transits around JBMDL's



Travis AFB VFR sectional chart excerpt

airspace. Additionally, when active, Restricted Area 5001 constricts our ATC operations as well. ***All that being said, a lot of traffic transits the airspace that is unpredictable and varies every day.***

VFR traffic within the vicinity of airfield: As you know from flying, ***VFR traffic can be a "wildcard."*** VFR traffic congestion can be seasonal, like in Elmendorf AFB, AK, during the summer, or it can simply be a beautiful day for flying that brings out the VFR pilots.

VFR traffic creates conflicts and increases the controller's workload. It could also lead to departure delays due to unidentified targets flying across the departure end (outside of Class Delta airspace). We do not launch an aircraft into a conflict; thus, we will issue delays while on the ground. Additionally, aircraft inbound to the airport will often be given extended vectors or box patterns due to aircraft flying across final approach courses and orbiting in the same area that aircraft would be turned to final. Lastly, VFR traffic also leads to additional coordination with adjacent agencies in the event that aircraft will enter their airspace. If we are in communication with these VFR aircraft, then we are able to vector and assign altitude ranges to have positive control to prevent conflicts from occurring.

From an ATC perspective, VFR traffic can also be a "wildcard" on whether a VFR pilot communicates with us. Pilots do not understand how many aircraft operate that are not in communication with ATC. Possibly due to newer technology that allows VFR pilots to navigate without ATC assistance, a lot of traffic tends to never speak to us. ***They often push the limit of when they are required to speak to us, i.e., flying just above or around Class D airspace, which creates conflict with our local flying operations.*** This situation becomes even more challenging during tactical operations, when military aircraft are rapidly maneuvering in and out of Class Delta and Echo airspace. In these cases, VFR traffic skirting the boundaries of Class Delta can quickly become a traffic conflict with the military aircraft performing these tactical profiles.

Airman Safety Action Program (ASAP) Scoreboard

Submission Date: JUL 2022
ASAP Report#: 20415

Summary
While on vectors for an ILS approach to runway 21L at KSUU, ATC provided missed approach instructions to climb via runway heading up to 5,000 MSL. When switching over to KSUU tower on descent passing through 2,000 MSL, tower was made aware that the planned intentions would be to execute a missed approach following the ILS currently being flown. The planned missed approach was initiated at 200MSL. While rapidly climbing on runway heading through 2,300 for the assigned altitude of 5,000 MSL, KSUU tower called out a traffic conflict on our route at 3000 MSL, and instructed our aircraft to remain at or below 2,000 MSL for crossing traffic. The traffic also appeared on TCAS, and was acquired visually. We executed an immediate reversal of flightpath to level off and then begin a descent to the newly assigned altitude. As our aircraft leveled and began descending, a Cessna 210 level at 3,000 MSL flew just overhead and to the left of the aircraft's position heading opposite direction. With the near collision avoided, KSUU tower proceeded to then hand the aircraft off to departure control. When checking in with departure now level at 2,000 MSL, we were then progressively assigned higher altitudes until reaching 5,000 MSL to resume vectors for the following approach. There was no explanation to why the two aircraft were assigned conflicting altitude while in close vicinity. There were no damage, and no resolution advisories experienced on our aircraft. Current weather at KSUU at th704775 e time of the incident was VFR with the Metar reporting 23015G25KT 9999 SKC 29.92.

ASAP # 20415, which was a traffic conflict at Travis AFB, is a good example of how VFR traffic can skirt Class D airspace without communication and create a challenging situation for both the controllers and aircrew. In this ASAP, a KC-10 crew was conducting an approach to Runway 21L with a planned missed approach and were instructed to fly runway heading to 5,000 feet. An unidentified target, to which neither the Tower nor the RAPCON was speaking, crossed west to east at approximately 3,000 feet. The KC-10 crew planned a missed approach and started a rapid climb around 200 feet MSL. The control tower issued a new altitude assignment of 2,000 feet, referencing the unidentified target flying at an unverified altitude of 3,000 feet and just off departure end. From the report, the traffic appeared on TCAS and then was visually acquired. Due to the rapid climb, the KC-10 had to conduct a reversal of flightpath and descend back to 2,000 feet. An RA never occurred.

Understanding TCAS RA events in the local area pattern: When pilots step back and look at the local airspace and its constraints, VFR traffic (especially during peak congestion and without communication with ATC services) and flight procedures, they gain a better understanding of the controller perspective. First, VFR traffic can be unpredictable. Pilots can legally fly VFR in Class Echo airspace without communication with ATC provided they do not enter another class of controlled airspace (Classes A, B, C, or D) without ATC clearance. Without communication with VFR traffic, a challenging situation can occur for us and the flights we control to maintain separation from traffic. Thus, there will be events in which controllers have done their absolute best to separate

Airman Safety Action Program (ASAP) Scoreboard

Submission Date: JAN 2023
ASAP Report #: 23124

Summary
A C-32B (MA) experienced a TCAS Resolution Advisory in the radar traffic pattern. No damage was found and the MA was returned to the flying schedule. The MA was on final approach to Runway 06. Because of traffic on final that tower was not talking to, supposedly al a 1000' the crew broke out of the pattern and were vectored to the east. The MA was now headed towards another uncontrolled aircraft at 500' above us. The crew received a "monitor vertical speed" annunciation and aural warning. After passing off the MA wing the crew was clear of conflict.

Recommended Action
Limit controller training during peak hours al KWRI. What controllers may consider "legal" for aircraft separation is causing a mulitude of Resolution Advisories especially in the past month.

verified VFR aircraft from all others by no less than 500 feet vertically, and a TCAS RA could still occur.

ASAP #23124 is a good example that highlights this case. ATC analysis of this event showed that the arrival controller had attempted to contact the VFR traffic multiple times, with no success, and had given the C-32 several traffic advisory calls. The arrival controller then asked the C-32 if they would like to discontinue the approach, which they accepted. The controller provided the C-32 with traffic advisory calls for another VFR traffic, with which the controller was in communication. Bottom line: The controller maintained positive control, provided traffic advisories to the C-32 and the one participating VFR traffic, and maintained separation of traffic (laterally and vertically).

Finally, TCAS is a great safety system that requires a pilot to respond to RAs; however, keep in mind that a TCAS RA does not necessarily mean that ATC separation standards were compromised. As ASAP #23124 shows, when traffic is issued—to an IFR aircraft on a VFR target—and called "in-sight," a controller is not taking any actions unless requested. TCAS could still issue a RA. The controller does not know the limits and thresholds of the TCAS system. Additionally, FAA's JO 7110.65Z, Air Traffic Control procedures, paragraph 2-1-28 TCAS Resolution Advisories is clear that controllers will not issue control instructions contrary to the RA procedure. A controller does not know what instructions the RA is giving unless the pilot relays the information. After a pilot responds to an RA and approved separation is reestablished, the controller regains responsibility for separation.

Communication—an area that can always be improved for both controllers and pilots: As controllers, we need to be aware that we are providing a service and part of that is ensuring pilots fully understand our expectations and control instructions. We need to be clear and concise and help "paint the picture" for pilots. Conversely, if we have not done this well enough or if there is any confusion, pilots need to be sure to ask questions and clarify instructions. For both controllers and pilots alike, effective communication starts with using standardized terminology and protocols.

First, controllers and pilots must be on the same page when discussing intentions and painting the picture for both parties. When making a request with us, pilots should communicate any non-standard information that will alter the flight profile or performance of the aircraft so that we can anticipate how it might affect the clearance.

Airman Safety Action Program (ASAP) Scoreboard

Submission Date: JUL 2022
ASAP Report #: 20486

Summary
On our local sortie we experienced a TCAS RA and responded accordingly. We had planned to simulate an engine failure after takeoff during a touch and go, then break out of the tower pattern to the East and set up for an overhead pattern. After passing the required safe altitude we set up the engine failure scenario and the instructor took one throttle back to idle. The student maintained heading and we began to discuss the scenario. We leveled off to clean up flaps and accelerate when the Tower controller asked us to begin our turn to the East. Due to a local restriction on late turns below 3000 feet when traffic flows North, we had anticipated a later turn and so had to accelerate to a safe maneuver speed in order to turn when directed. As we began a turn we quickly got a Traffic alert that then progressed to an RA demanding a climb on our VSI [Vertical Speed Indicator]. The pilot flying maintained the climb and pushed all engines up while pilot monitoring used the TCAS display to visually acquire the conflict. The pilot flying continued to follow RA prompts until told "clear of conflict" and the pilot monitoring kept visual on the conflicting traffic. Distance from traffic was unknown and the other aircraft appeared to maintain their starting altitude throughout the event. Our crew continued the breakout to the East and advised Tower we had responded to an RA then the rest of the sortie continued without incident.

The ASAP program and Hazardous Air Traffic Report (HATR) reports are great safety tools for identifying safety issues at the Major Command and wing levels.

For example, in ASAP #20486, the pilot did not mention to the controller that they wanted to practice an engine fail scenario. To provide a safe and efficient flow of traffic, controllers need to anticipate pilot actions based on aircraft characteristics, which is emphasized during training. From a controller's perspective, practicing an engine fail scenario in the VFR downwind leg should not be a usual occurrence. Unless told otherwise, we expect to be able to turn, climb, or extend an aircraft without too much delay, especially in the fast moving and changing tower environment. Thus, when you review the ATC response to ASAP #20486, you see:

> *Also of note: KIAB was unaware that [CALL SIGN] required an upwind extension for the engine fail scenario. ATC is giving instructions based off of anticipated actions (i.e., normal patterns and rates of climbs/turns). If aircrews communicate the need for upwind/downwind extensions, etc., controllers can provide better services.*

When information that affects future possible actions are withheld, it is difficult to keep options open when other things do not go as planned. ***Transparent communication in this aspect comes down to painting the picture for both controller and pilots so there is no question of either's intentions or limitations.***

The second part of transparent communication has to do with getting to know each other's perspectives. Constructive and meaningful dialogue helps build a professional relationship between controllers and pilots. Constructive feedback is important to a safe and efficient flying environment. The ASAP program and Hazardous Air Traffic Report (HATR) reports are great safety tools for identifying safety issues at the Major Command and wing levels. If available, the ASAP report can be maximized by reaching out to the facility's leadership to discuss what went wrong as the ASAP is being worked. There are multiple ways to connect with your local ATC service to offer feedback and build a relationship:

1. Contact your local Airfield Operations Flight Commander or OSS leadership.
    a. Timely feedback is always best. As soon as possible after an event, please contact them via email.
    b. Be as specific as possible about the date and time of the event.
    c. Offer a brief overview of what transpired.
    d. Identify the specific issue that you are addressing.
    e. Leave emotion, frustration, or anger out of the discussion. Emotion does not help solve issues; facts do.

Note: Constructive feedback does not have to be negative. Constructive feedback can be as simple as providing positive comments or a "thank you" when the facility provides exceptional service. Positive feedback reinforces good behaviors in everyone. Please take the time to offer positive and negative constructive feedback when warranted.

2. Pilot and Controller Liaison program (or similar local wing programs): Every base should have a robust Pilot and Controller Liaison program. The purpose of the program is to create a forum to address specific issues and foster growth and learning by both professions. More importantly, the program is an opportunity to help build communication, trust, and professional relationships between controller and pilot.

Both controllers and pilots are equally committed to the safety of flight operations; thus, learning from each other's perspectives is imperative. Whether it was human error or a failed process, usually a transparent conversation between the parties can keep the situation from happening again.

CONTROLLER TRAINING

We have seen a few ASAPs expressing concerns regarding controllers in training. Training is an important topic for any profession with complex procedures that require a high degree of technical expertise. Just like pilots, training is a constant evolution for controllers. Even after earning our first facility rating and upgrading to 5-level within our Air Force Specialty Code, a U.S. Air Force controller is constantly in training. Whether training for the next qualification, learning new local area procedures after moving to a new airfield, or simply maintaining skill proficiency, training is a necessity to build and maintain a skilled controller profession.

1-1- 1. PURPOSE OF THIS ORDER

This order prescribes air traffic control procedures and phraseology for use by persons providing air traffic control services. Controllers are required to be familiar with the provisions of this order that pertain to their operational responsibilities and to exercise their best judgment if they encounter situations that are not covered by it.

FAA's JO 7110.65Z, Air Traffic Control Procedures, paragraph 1-1-1 excerpt

An essential piece of the training is actual hands-on experience. Inexperienced controllers need that real time experience, so they learn how to apply procedures in a demanding environment. A critical tenet at the very beginning of JO 7110.65 states, "Controllers are required to be familiar with the provisions of this order that pertain to their operational responsibilities and to exercise their best judgment if they encounter situations not covered by it." The more experience a controller has, the better their judgement, and the safer the skies.

There will be times when there is some fumbling around on the radio transmission or you hear that second voice boom in with a "disregard." Realize that there are times when training is in progress when you are flying and interacting with a new controller. Just like aviators, sometimes the best training is those self-critiquing moments when a new controller makes an error, and the trainer is allowing a trainee an opportunity to see the error and correct it. The trainer will allow latitude while providing oversight to ensure that safety is maintained. A good example of this training perspective is the formal response (Action Taken Section) to ASAP #23306. The Airfield Operations Flight Commander provided an assessment of the event, in which a new controller was learning:

> ***The ground controller in position at that time has been in ground control all of 3 weeks. If it sounds like the controller is reading from a script during this occasion, the individual is still learning and gaining the ability to listen to the full request before they start thinking about what they are going to say over the radio. In terms of the delayed response time, trainees tend to hesitate before making a transmission.*** *Regarding the taxi instructions as referenced at the beginning of the ASAP report, ground controller gave back correct taxi instructions. The pilot read back incorrectly, and Ground said affirmative.* ***Before the next transmission from the pilot to ask for clarification (less than 5 seconds) the trainer was pointing out a mistake and then was going to prompt the trainee to fix his mistake*** *… Listening to the tapes I believe that* ***there is no safety of flight issue****. No one was flying or moving on the airfield. That was the only flight operation at that time. Before the aircraft even moved the miscommunication was resolved.*

Airman Safety Action Program (ASAP) Scoreboard

Submission Date: JAN 2023
ASAP Report #: 23306

Summary
Upon receiving taxi clearance from ground, queried the ground controller 3 times before receiving a readable and correct taxi instructions to the correct runway. Either the controller gave wrong direction or was not speaking clearly. The crew did get confirmation before moving the aircraft. (Redacted) AFB ground controll is notoriously unreadable. This issue has been communicated and has thus far not been resolved. The controller usually begins the transmission strong, but then mumbles and trails off in unreadable non-sense. Overmore, on initial contact with ground, an extended delay getting response from ground is normal, followed by ground asking for all of the information provided in the initial transmission. Example, "[Redacted] ground, [CALLSIGN] [PARKING SPOT) request engine start pilots discretion, IFR, ready to copy.". "(CALLSIGN], [redacted] ground say request." (repeats initial call)." [CALLSIGN] engine start approved, say parking". (says spot) "[CALLSIGN] roger, ifr clearance available, advise ready to copy". This happens every time, it appears ground control is both distracted and reading from a script, not actively listening.

Recommended Action
1. Purchase new headset/mic equipment for ground control or train them on proper usage.
2. Better training for ground control on standard phraseology and active listening.

CONTINUING THE DISCUSSION

We covered many topics in this article, but we are only scratching the surface. The biggest takeaway from this article is keeping the conversation going. We encourage both controllers and pilots to connect at the local level to discuss events when they occur, provide professional and constructive feedback, and create a dialogue on local area procedures. Discussion creates an opportunity to share and understand perspectives, discuss procedures, provide meaningful feedback, and ultimately promotes growth in our professions. We share a common perspective—safety—thus, we should continue this discussion.

How OSHA Regulations Demonstrate the Need for Safety Programming

BY MS. LAUREN SCHATZ, STAFF WRITER

With the Occupational Safety and Health Act of 1970, Congress created the Occupational Safety and Health Administration (OSHA) to ensure safe and healthful working conditions for workers by setting and enforcing standards and by providing training, outreach, education, and assistance.

Flash forward half a century and OSHA violations are often joked about. In fact, social media pages even poke fun at tangled up wiring and ladder incidents waiting to happen.

Although it can be fun to make light of these situations (we all like to laugh at ridiculousness), actual OSHA violations are certainly not a joke.

In fact, each safety practice OSHA monitors has been backed with decades upon decades of improvement based on real-life scenarios. Violating these practices poses a risk to your personal well-being and the success of the mission of which you are a valuable part.

OSHA does not typically cover uniquely military operations, but OSHA's regulations do often apply when military activities relate to workplace activity.

Some individuals choose to feel "weak" if they are following safe practices. However, this mindset stems from insecurities. It often leads to harmful or deadly accidents. Strong individuals prefer to carry out their duties safely and, thus, pride themselves on mission efficiency and success. They make a conscious choice to not be caught unaware nor complacent in order to avoid a lifetime of unnecessary pain.

For those wanting to do the job right for the sake of themselves and the mission, quiz yourself on how well you really know safety.

TEST YOUR KNOWLEDGE

1. Which of the following is the most frequently violated standard?
   A. Fall Protection, construction
   B. Powered Industrial Trucks, general industry
   C. Ladders, construction
   D. Respiratory Protection, general industry
2. Worker deaths in America are down—on average, from about 38 worker deaths a day in 1970 to 13 a day in 2020.
   A. True
   B. False
3. Which are not in the "Fatal Four" (the four most common causes of worker deaths on construction sites in America, according to OSHA)?
   A. Falls
   B. Struck by an object
   C. Electrocutions
   D. Insufficient oxygen environments
4. A "Qualified Person" means someone who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
   A. True
   B. False
5. Journey for Zero is the comprehensive safety campaign introduced by the Air Force Safety Center in 2014 designed to raise awareness of the on-duty hazards faced every day.
   A. True
   B. False
6. Which of the following statements is incorrect?

A D-ring means a connector used…

   A. As the fourth connecting point in any gear.
   B. In a harness as an attachment element.
   C. In a lanyard as an integral connector.
   D. A part of a positioning or travel restraint system.
7. The preferred order of control measures for fall hazards is:
   i. Elimination or substitution.
   ii. Engineering Controls.
   iii. Warnings.
   iv. Training and Procedures.
   v. Personal Protective Systems and Equipment.
   A. True
   B. False
8. An extension or straight ladder used to access an elevated surface must extend at least 3 feet above the point of support.
   A. True
   B. False
9. To prevent injury from oversize loads, workers should seek help when:
   A. A load is so bulky that employees cannot properly grasp or lift it;
   B. Employees cannot see around or over a load; or
   C. Employees cannot safely handle a load.
   D. All of the above.
10. The U.S. Bureau of Labor Statistics 2005 annual survey data indicated that there were 8,450 non-fatal amputation cases—involving days away from work—for all private industry.
   A. True
   B. False

ANSWERS

1. A) Fall Protection, construction
2. A) True
3. D) Insufficient oxygen environments
4. B) False
5. B) False
6. A) As the fourth connecting point in any gear.
7. A) True
8. A) True
9. D) All of the above
10. A) True

Military Spouse and Family Appreciation

BY MS. SARAH PRUETT, STAFF WRITER

Not all heroes wear capes…or uniforms! Supporting a loved one in Air Mobility Command (AMC) can be quite the feat. The support given to each Airman is support for our entire nation. This article serves as a "thank you" to the strong men, women, and children who bolster the success of our military.

When speaking with individuals whose loved ones are in the military, many obstacles were discussed. One of the biggest difficulties is the heartbreaking time away. When a spouse is deployed for long periods, it can be very hard on those at home and away. When kids are growing like weeds, making the sacrifice can be painful. Often, loneliness comes along with missing out—all in addition to frequent moves, juggling obligations and navigating situations without a loved one present, and overall hard work and effort.

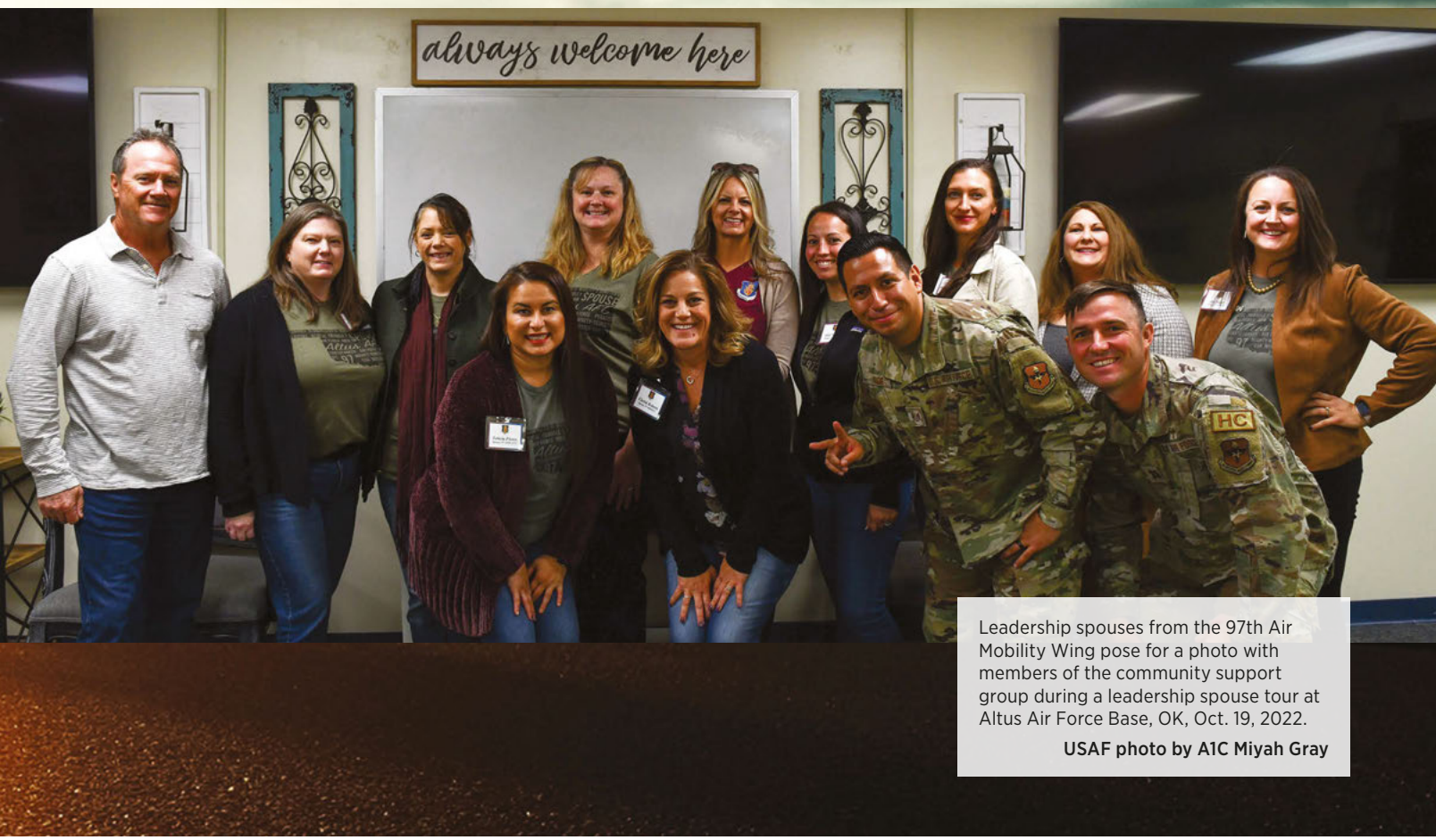
However, military families combat these challenges and roll with every punch. Therefore, we would like to thank them for their resiliency, their grit, and their heart. They build a strong foundation for our Airmen, and they deserve appreciation.

Additionally, this article serves to highlight the resources available to military families. Sharene Brown, the wife of Air Force Chief of Staff (CSAF) Gen C.Q. Brown, created the "Five & Thrive" initiative to improve the quality-of-life challenges our Air and Space Force families face in five focus areas: childcare, education, healthcare, housing, and spouse employment.

According to **www.fiveandthrive.org**, "Mrs. Brown has accompanied her husband on 20 assignments around the globe. Raised in a military family, she is an avid supporter of active duty, Air National Guard, and Air Reserve Airmen and their families. She understands the valuable contributions of a military spouse to the Air Force."

Brown's Thrive Team, a diverse group of spouses, publishes a monthly *CSAF Spouse Situation Report* and created an informational resource guidebook, *Thrive: An Educational and Inspirational Guide for Today's Air and Space Force Spouse*, which is available on the **AF.mil** website and the AF Connect App.

The 76 active duty Airman and Family Readiness Centers are among the resources available to spouses. These centers support nearly 1.7 million



Leadership spouses from the 97th Air Mobility Wing pose for a photo with members of the community support group during a leadership spouse tour at Altus Air Force Base, OK, Oct. 19, 2022.

USAF photo by A1C Miyah Gray

Airmen and families, with programs and services in 15 core areas. The centers enhance mission readiness and strengthen communities by helping families adapt to the challenges and demands of the Air Force way of life. The centers also offer proactive, preventive, and remedial services that encourage self-sufficiency and sustain the personal and family readiness of the Total Force. Information and education are offered on many aspects of family life and personal growth, as well as assessment counseling and referrals.

A parental resource is each installation's school liaison officer. The school liaison (SL) serves as the installation point of contact and subject matter expert for all local military child education matters by being committed to outreach, advocacy, and partnership. SLs provide support in educational issues such as transferring schools, registration, graduation requirements, academic planning, schooling options, enrollment, records transfer, curriculum requirements, and available programs. SLs also offer support in parental absence challenges, special education, deployment, and frequent moves. SLs can assist schools with support for military students in transition, understanding deployments and their effect on students, and learning the military culture and lifestyle. They encourage relationships between schools, military families, the military installation, and the community. SLs educate parents on the local school system policies, procedures, and schedules. They create opportunities for workforce preparation, citizenship, and leadership development.

Another resource, Heart Link, is an Air Force-wide spouse orientation program for spouses of less than five years and those new to a duty station. Heart Link is geared toward strengthening families and enhancing mission readiness. Funded by the Air Force Aid Society, the purpose is to increase the spouse's awareness of the USAF mission, customs, traditions, protocol, acronyms, and available community support resources.

If you are an Airman, do not neglect to show appreciation to your loved ones—their sacrifice for the family unit is a sacrifice for the entire nation. If you are a military spouse or family member, you are appreciated. Your support aids countless missions and helps AMC achieve its mission of "Rapid Global Mobility ... Right Effects, Right Place, Right Time!"

A communications pod installed in a KC-46 Pegasus will allow the F-35 Lightning II and F-22 Raptor to connect and instantly receive and transmit the most up-to-date information to ensure the warfighters maintain decision superiority. This concept is known as Capability Release #1 under the Advanced Battle Management System (ABMS) framework. The ABMS is the Department of the Air Force's contribution to Joint All Domain Command and Control, or CJADC2, a Department of Defense effort to digitally connect all elements of the U.S. military—from sensors to shooters—across all five warfighting domains: air, land, sea, space, and cyberspace.

USAF graphic

The Internet of Things: Will It Help Airmen of the Future?

BY MS. KRISTINA KUNKEL, STAFF WRITER

The Internet of Things (IoT) describes the network of physical objects that are embedded with sensors, software, and other technologies for connecting and exchanging data with other devices over the internet. Years ago, many imagined the concept of IoT to include going to the store to purchase a sheet of ordinary-looking stickers that could be activated to trace location. These stickers could be attached to keys or virtually anything else. Then, if one of the items or things were ever misplaced or lost, an app could view and trace the location of each sticker.

In this scenario, the things did not talk with each other, report trends to companies, or store data. However, that was long ago, perhaps before humans realized how much data they would acquire, accumulate, and analyze to gain knowledge. The above scenario, amounting to a simple mercenary exchange, was far from the reality of how interconnected and important IoT would become.

As the term IoT was still emerging in 2018, Matt Reynolds, a writer at *Wired* magazine, said the term "encompasses everything connected to the internet, but it is increasingly being used to define objects that 'talk'

A Ghost Robotics Vision 60 prototype walks at a simulated austere base during an Advanced Battle Management System exercise on Nellis Air Force Base, NV, Sept. 1, 2020. The prototype uses artificial intelligence and rapid data analytics to detect and counter threats to U.S. military assets in space and possible attacks on the U.S. homeland with missiles or other means.

USAF photo by A1C Zachary Rufus

to each other" or "connected devices with automated systems."

In 2021, the private company GlobalData published a report describing an Internet of Military Things (IoMT) that "uses multiple sensors deployed across various domains to acquire full situational awareness and control over diverse conflict zones and battle areas." In the same year, the Department of the Air Force moved its Advanced Battle Management System (ABMS)—its version of IoMT—into an operational phase, bringing the system's tools and technology one step closer for use in the real world.

ABMS is poised to connect sensors, platforms, commanders, operators, and weapon systems for information collection, decision-making, and power projection forces at a pace much faster than ever before. As the Air Force's contribution to the Pentagon's Joint All-Domain Command and Control concept, ABMS will assist in processing, securing, and relaying data across multiple domains and in the most challenging environments (where there is minimal or no stable internet connection to help Airmen of the future to keep the mission going).

Earlier this year, the U.S. Air Force sought commercial equipment it could potentially use to bolster ABMS—specifically, machinery that can boost data transfer rates and reduce latency, is hardened against jamming and intercept, and can be scalable.

The Air Force believes that IoT can offer up possibilities for pre-processing, filtering, data reduction, and feature generation—the process of creating new features from one or multiple features and adding new information to a model to make it more accurate.

According to GlobalData: "Advanced military forces have invested in command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems and infrastructure to collect, analyze, and disseminate data. C4ISR systems provide situational awareness. Command and control systems allow those connected to communicate and share information. IoMT works to bring all this information together into a single ecosystem. Information always has been, and always will be, at the center of warfare. Real-time information sharing between military sectors is one of the most important aspects of managing wars. This is especially true when the information type is critical and when timely knowledge will resolve critical situations. IoMT networks can increase situational awareness, response time, and risk assessment. Pervasive IoMT rollout will require an operating system for warfare."

For the moment, the IoMT is an emerging concept. A critical step in the progress of any military program, including ABMS, is the establishment of the manpower, resources, and doctrinal infrastructure that reinforce the program. It largely remains to be seen how IoT will change the Air Force, what good it may bring about, and what security threats may accompany its usefulness. Certainly, the U.S. military may not be able to fully share with the public the work they are doing in the field; nonetheless, Airmen are sure to evolve and face the coming age of cutting-edge technology with wit, insight, and adaptability. The Air Force is bound to harness the power of IoT and make it its own in the coming years.

The Art of Storms

BY MS. LAUREN SCHATZ, STAFF WRITER

The recipe for an exceptional story often calls for "a dark and stormy night." The tale behind how an enormous C-5M Super Galaxy rolled off its chocks in the middle of the night on December 14, 2022, is no different.

CALM BEFORE THE STORM

The story takes place at Naval Station Rota, Spain, where the 725th Air Mobility Squadron (AMS) supports strategic, theater, and contract Air Mobility Command (AMC) aircraft transiting the base.

Lt Col Michael Slaughter, Commander of the 725 AMS, recounts the incident that unfolded that night on the base.

It was a fairly busy time, with many aircraft and Mobility Airmen along the flightline. Weather conditions had been relatively calm the evening before, but in the early morning hours—around 0200—the wind started picking up, climbing to roughly 30 knots with a light mist.

The weather conditions limited some of the routine work on aircraft at the base, but most operations were able to continue. There was not much cause for alarm, as these conditions were common in Spain for the time of year. In fact, Spain had recently seen significant rain due to a system called Storm Efrain hitting the Iberian Peninsula, so the light mist was practically nothing in comparison.

LIKE A THIEF IN THE NIGHT

However, within about 5 minutes, the wind rapidly accelerated—it was later estimated to have gone above 70 knots. With the wind, extremely heavy rain came, causing near blackout conditions. Airmen who had been working on a C-17 Globemaster III took shelter inside, shielding themselves from the violent weather until it subsided a few minutes later, departing almost as quickly as it arrived.

The Airmen quickly sprang into action to orient themselves to the situation. Following a quick reaction checklist, the command post notified Slaughter of the severe wind event—and that a C-5 was rumored to be in a ditch. He knew he needed to quickly get to the bottom of what happened. The next steps were to assess exactly what had occurred on this dark and stormy night—and how bad the aftermath would be.

THE AFTERMATH

"Three aircraft were visibly affected in the immediate area the storm hit," Slaughter said.

These aircraft were two C-5s and a C-17. The first C-5 was the one that rolled off its chocks. Thankfully, it did not end up in a ditch, as had been speculated. Instead, it rolled roughly 2 yards to the edge of the ramp—just a short distance from the ditch. If it had gone into the ditch, the situation could have been catastrophic, according to Slaughter.

Unfortunately, the other C-5 sustained damage to its rudder. The C-17, on the other hand, was merely rotated slightly; it did not sustain any damage.

Although many of the aircraft appeared unscathed, Slaughter took no chances in ensuring they were safe to fly.

"It was a week straight of intensive checks," Slaughter said. These checks involved consulting engineers. "We conducted detailed evaluations of every aircraft on the base during the event to ensure there was no sustained damage from wind."

Beyond the aircraft, the base sustained light damage. This damage was mostly to unsecured structures directly in the path of the storm system; however, numerous trees around the base were also blown over. Although the Airmen directed a great deal of effort toward checks and cleanup on the base, everyone was thankful no injuries were reported.

ROGUE WATERSPOUT

But what exactly hit that night? Slaughter, along with Navy leadership, consulted weather experts.

Slaughter worked with the 21st Operational Weather Squadron to analyze what may have occurred. The conclusion? A waterspout had crept onto land, shifting into a tornado and tearing through the base and the Rota community.

Tornados that come at night are often not identified as such, because it can be difficult for people to spot them and provide eyewitness accounts. However, storm ratings assigned afterward are based on damage. Thus, the damage was analyzed for more details about the suspected tornado. According to the well-known Fujita–Pearson scale, this alleged tornado would be classified as an F1. According to another well-known scale, the Beaufort Wind Scale, the storm had hurricane-like winds.

THE ART OF STORMS

Slaughter emphasized that, although this storm may not have caused as significant a level of destruction as it could have, it did bring up important lessons.

"Weather, in some ways, is similar to the enemy," Slaughter ruminated. "You don't get a vote in what the

Photo by SSgt Jonathan Hendricks

Photo by SrA Justin Newman

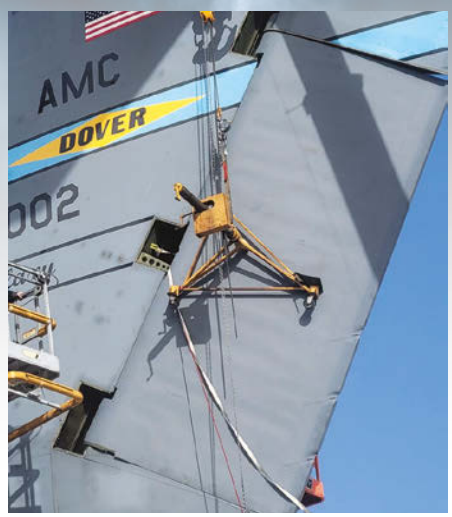


Photo by Lt Col Michael Slaughter

enemy is going to do." Thus, he is a proponent for fine tuning reactions: prevention can only go so far, but preparing for how to react best can make the biggest difference.

"Our team knew how to react immediately," he said. "They regularly conduct exercises to test their ability to do quick action checklists and to test their ability to think on their feet."

He emphasized the importance of a quick reaction checklist. Although this list cannot be used without superb critical thinking skills, it equips Airmen with concrete guidance to follow when tensions are high and details can easily be skipped.

Another important lesson involving chaotic scenarios is that it is important to assess the situation fully and recognize how miscommunication plays a role. The C-5 was reportedly in a ditch—but it had moved only a few yards. Finding the balance between quick action and careful analysis is important; recognizing the chance for miscommunication is also important.

Finetuning reactions plays a role in creating Multi-Capable Airmen. The maintainers who jumped in and performed contingency response duties showcased this concept during the storm; these Airmen executed tasks outside their regular roles, which is exactly what the situation needed.

Whether for weather events or to combat the enemy, training greatly helps support the future fight.

THE PROTAGONISTS

The 725 AMS is a key component of the 521st Air Mobility Operations Wing (AMOW), Ramstein Air Base, Germany. The 725 AMS provides premier maintenance, command and control, and aerial port support to the joint warfighter through compliance, expertise, innovation, and professionalism to ensure the safe, efficient, and effective projection of Rapid Global Mobility. This role supports the 521 AMOW's mission of "Agile, Resilient, & Reliable Air Mobility Operations . . . Always."

Capt Emma Quirk, who works in public affairs for the 521 AMOW, praised the invaluable work and support of Slaughter and the entire 725 AMS.

"They reacted instantly when it happened," Quirk said, adding, "They have always excelled at helping AMC get aircraft off the ground."

Having joined the Air Force in 2005, Slaughter is a career C-130 navigator who started flying at Dyess AFB, TX, before moving on to Little Rock AFB, AR. After seven years in the C-130 he went from the flightdeck to the flightline where he spent two years at the 621st Contingency Response Wing (CRW) at Travis AFB learning various functions of the GAMSS (Global Air Mobility Support System)—or, as he puts it, "all the different aspects of the Air Mobility world."

After another few years at the Pentagon, Slaughter moved on to an assignment in Rota, Spain, where he was an esteemed commander for almost two years. In May 2023, he moved on to AMC Headquarters at Scott AFB, IL, to further his impact and leadership as the Director of AMC's Commander's Action Group.

Slaughter concludes: "A perfect world would be safe and allow us to plan. However, that's not reality. We must do everything we can to be prepared; Airmen must be capable and trained to react in an intelligent way. We must train on how to react."

Maj Daniel S. Jones

AIR MOBILITY COMMAND

WELL DONE AWARD

Presented to

Maj Daniel S. Jones

2d Air Refueling Squadron
Joint Base McGuire-Dix-Lakehurst, NJ

The Air Mobility Command Well Done Award is presented to Maj Daniel S. Jones in recognition of outstanding contributions to the 2d Air Refueling Squadron, 305th Operations Group, 305th Air Mobility Wing, Joint Base McGuire-Dix-Lakehurst, NJ, on October 25, 2022. During a night training sortie, Jones executed an aircraft formation with a KC-46A Pegasus while commanding a C-17A Globemaster III crippled with limited communication capabilities. Upon completion of aerial refueling, the C-17A experienced multiple system failures resulting in a loss of radio contact with Air Traffic Control. Fortunately, the C-17A was still capable of maintaining communication with the KC-46A. Together, the crews established an unplanned, dissimilar-aircraft formation, relying on skill and experience to safely maintain distance because no specific guidance exists for maneuvering such a formation. In addition, the formation was confronted with deteriorating weather, forcing the crews to conduct an approach to weather minimums, execute a missed approach, and reassemble the formation. The crew's creativity and quick thinking resulted in the successful recovery of both aircraft. Jones' distinctive accomplishments reflect credit upon himself and the United States Air Force.

Maj Andrew H. Kim

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Preventing Falls: Small Adjustments That Could Save Your Life

BY MS. LAUREN SCHATZ, STAFF WRITER

Mitchell Garrett is a 20-something social media influencer with more than 170,000 followers. Since an ATV accident in 2019, Garrett has navigated popular internet challenges and trending dances from a wheelchair. The influencer also shares his struggles with missing being able to walk and not recovering the way he had dreamed of doing. However, the social media star is thankful to be alive and is dedicated to focusing on the joys of life. His humor and creativity inspire others to do the same.

Not everyone who suffers a fall-related injury is as fortunate. A few years ago my family lost a friend who slipped while putting up lights on his house for the holidays. He was nearing retirement, and he and his wife had dreams of traveling abroad when, in an unsuspecting moment, those dreams were taken away.

You have most likely shared similar experiences. Whether you have climbed on ladders, roofs, boulders, vehicles, machinery, or other heights, you have probably been elevated enough to make a fall harmful or even deadly.

Perhaps you have experienced a fall before and recovered swiftly. When you encounter high places and spaces now, you might not be overly cautious and rely on your body's resiliency.

However, each fall is different, and the outcomes are often up to chance. Do not give into the inevitable false sense of security and confidence in yourself. Recognize that life-changing slips and falls can happen to anyone—and in an instant.

Christopher Reeve is a prime example that truly no one is immune to chance accidents—no matter how fit or famous. You have probably already heard of the beloved Superman actor's famous fall, but did you know about the significance of his landing? If the actor had fallen one centimeter further to the left, he would have died almost immediately. If he had fallen one centimeter further to the right, he would have likely walked out with less than a concussion.

Although he survived that fall, it has been said that Reeve considered ending his life. However, he thankfully improved the quality of his life by setting his sights on something bigger than himself—activism. He encouraged improving the quality of life for those with similar injuries—and even for those without.

Falls are clearly unpredictable, with the accompanying injuries having a myriad of outcomes and often involving vulnerable organs. According to the Centers for Disease Control and

The Air Force recognizes the importance of fall prevention. With 19 on- and off-duty fall fatalities since 2011, the Department of the Air Force not only encourages members to adhere to safety regulations while on duty but also while enjoying recreational activities, home improvement, or other instances where falls could be a risk.

Prevention, falls are the number one cause of traumatic brain injuries (TBI). Severe bumps to the head or injuries that penetrate the head, disrupting normal brain functions, cause TBI. Those who survive TBI often must navigate severe lifelong side effects, such as impaired thinking, movement, vision, or even significant personality changes.

Spinal cord injuries are another common injury due to falls. In fact, the World Health Organization cites falls as a leading cause of spinal cord injuries.

Spinal cord injuries vary by severity, but those who survive can experience:

- Loss of sensation or movement, or both.
- Loss of bowel or bladder control, or both.
- Changes in sexual function.
- Pain or an intense stinging sensation.
- Difficulty breathing.

To best combat injury and death, fall prevention practices should be followed—even at elevations as low as 4 feet.

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Fall prevention is any system or process you use to keep an accidental fall from being a risk. Well, it seems simple—do not slip or trip. However, that is much easier said than done. Avoiding falls involves identifying specific, practical measures that can be easily implemented. The following tips are just a few of the many ways you can optimize your safety when off the ground.

- Move carefully. Not letting this mindset slip can, in turn, help you not to slip.
- Another way is to avoid loose clothing. Anything hanging can cause you to trip or can snag.
- Do exercises that improve your balance. Incorporating these exercises into your schedule when possible can make an impact.
- Make slippery areas in your home nonslip through mats or other devices.
- Hold onto railing when possible.
- Wear shoes rather than socks if on ladders, chairs, or other objects on which you are climbing.
- Clean up clutter and tripping hazards. No matter how mindful you may be about a certain tripping hazard, it is best to remove it.
- Create barriers to prevent a fall.
- Do not climb alone. As mentioned, falling the wrong way at any height can be dangerous.
- Use both hands when going up or down ladders or high devices. Splurge on a tool belt if you do not already have one.
- Face ladders when ascending or descending.
- Use the 1:4 ratio rule for ladders. The ladder's base should be 1 foot from the wall or support for every 4 feet of vertical extension.
- Do not climb on ladders or objects in walkways or doorways unless it is locked, blocked, or guarded.
- Do not overreach for items.

Prevention, as in everything else, should always be your first choice in falls. However, if a fall occurs, learn how to navigate the situation. Calling 911 and letting them guide you is best. They may advise you not to move the individual or to check for vomit in airways.

Slips, trips, and falls happen to everyone. Knowing how to best avoid them through practical tips is up to you.

You Hit Your Head: How to Know if It Is Time to See a Doctor

BY MS. CHRISTINE WALSH, STAFF WRITER

On February 10, 2022, the Orange County, FL, Medical Examiner's Office handling the death of comedian and actor Bob Saget announced that the "Full House" star had died from head trauma, probably the result of a fall backward in which he struck the back of his head. The injury was very likely an accident that the famous actor did not take seriously at the time. The case was a sobering reminder of the dangers of hitting your head and the importance of knowing when to take a head injury seriously.

The most common condition associated with head injuries is a concussion, which is a traumatic brain injury from a bump, blow, or jolt to the head that affects brain function. It occurs when the brain shakes, bounces, or twists rapidly in the skull. You can get a concussion even if your head is not directly injured if your upper body is hit in a way that causes the head and brain to move rapidly back and forth. Concussions often occur due to a fall, a contact sports injury, a motor vehicle or bicycle accident, combat, or physical abuse.

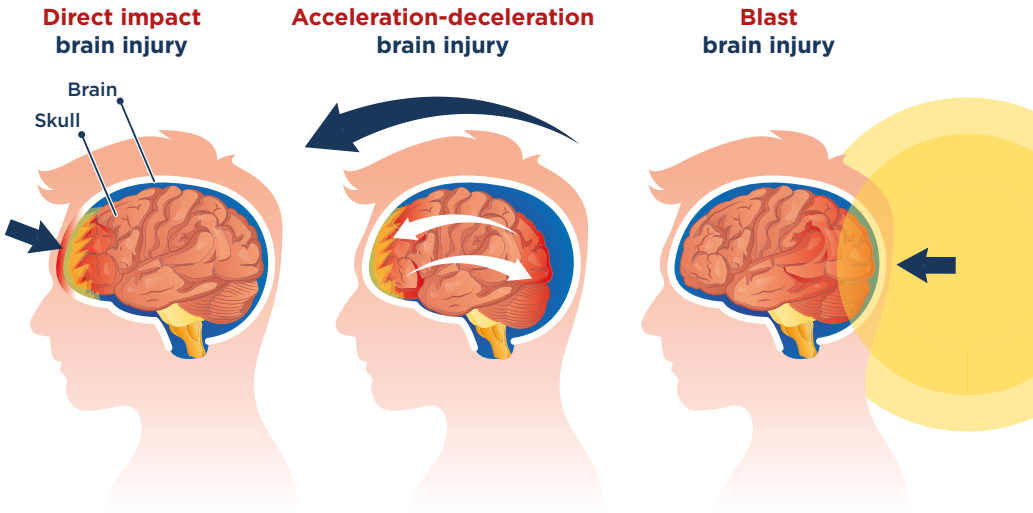
Although concussions are typically not life threatening, the effects can be serious. You should see your doctor immediately or go to the emergency room if the injury was sustained at a high speed, if you lost consciousness or became confused after the injury, are vomiting or nauseated, have trouble balancing, cannot remember details of the injury, have a seizure, or begin bleeding. Sometimes symptoms—including confusion, blurred vision, or simply "feeling down"—do not appear until hours or days after the injury.

No test can be used to diagnose a concussion. Your doctor will ask about the head injury, symptoms, and past health problems and will also test your strength, balance, reflexes, and memory. If the doctor believes that the injury is severe, he or she may order imaging tests such as a computerized tomography (CT) scan or a magnetic resonance imaging (MRI) scan of your

CONCUSSION

The most important treatment is physical and mental rest to allow the brain to heal. If you have a concussion, you should immediately stop any strenuous activity such as aerobics, weightlifting, or playing sports until your doctor tells you it is safe.

A concussion is a traumatic brain injury that affects your brain function



brain to check for damage and help the doctor diagnose the injury. You may need to stay in the hospital to allow doctors to monitor your condition.

Symptoms typically dissipate in 3 to 10 days. Recovery may take longer for those who have had a concussion previously.

The most important treatment is physical and mental rest to allow the brain to heal. If you have a concussion, you should immediately stop any strenuous activity such as aerobics, weightlifting, or playing sports until your doctor tells you it is safe. Continuing such activities while you have a concussion can result in rapid and possibly fatal brain swelling. Mental rest means avoiding activities that require a great deal of concentration, such as playing video games, text messaging, and watching television.

No medications can heal a concussion. Although your doctor may suggest over-the-counter pain relievers to treat symptoms such as headaches, some medications are unsafe. Always ask your doctor before taking medication in the days immediately following a concussion.

Besides concussions, a number of other conditions may result from a head injury, such as the following:

- **Brain contusions:** Bruises to the brain. This injury can involve minor bleeding in the brain, which causes swelling.
- **Skull fractures:** A crack in the skull. Sometimes the broken skull bones can cut into the brain, causing bleeding and possibly leading to other injuries.
- **Hematoma:** Bleeding in the brain that collects and clots, forming a bump. A hematoma may not appear for a day or even as long as several weeks and should be operated on as quickly as possible.

If you are with someone who suffers a severe head injury, call 911. If the person is bleeding, wrap gauze, a towel, or a piece of clothing over the wound to stem the blood loss. If the person is vomiting, keep them upright. If they are lying down, roll their body on the side to prevent choking. If the person is awake, instruct them not to move their head and neck to prevent further damage to the spine and brain. If the person is unconscious and breathing, try to stabilize their body to keep their neck and head in line with their spine. If the person is unconscious and not breathing, begin the process of cardiopulmonary resuscitation (CPR).

To decrease your chances of suffering a head injury, wear a seatbelt in vehicles, a helmet on a motorcycle or bicycle, and proper protective gear at work or when playing contact sports.

Navajo Code Talkers: The Allies' Secret Weapon in World War II

Cpl Henry Blake Jr., (left) and PFC George H. Kirk, Navajo Indians serving with a Marine Signal Unit, operate a portable radio set in a clearing in the dense jungle close behind the frontlines. Bougainville, December, 1943.

Courtesy of Signal Corps Archive

BY MS. BETTY NYLUND BARR, STAFF WRITER

Have you ever come up with a truly brilliant idea that changed the course of history? Well, kudos to you if you have because people who can state that honestly are rare. Philip Johnston was just such a person. His idea had an impact on the military, the United States, and, in fact, the entire world. Philip Johnston's idea likely helped the Allies win World War II.

Philip's parents were missionaries serving on the Navajo Reservation (now called the Navajo Nation), and he grew up learning and loving the language and ways of the Navajo people. At the age of 5, he was already translating the language for his parents, and at the ripe old age of 9, he traveled to Washington, D.C., as a translator with a Navajo delegation who were lobbying for Indian rights.[1]

While serving in the military during World War I, Johnston learned that American Indians—mostly Choctaw—were serving as "code talkers" for the military. They developed a code by substituting words in their language for words the military used to communicate about enemy operations. Although the Choctaw code was successful, it was eventually broken and of no further use after the war.

In World War II, strategists had to come up with another plan. "In the early part of World War II, the enemy was breaking every military code that was being used in the Pacific," said Peter MacDonald, Navajo Code Talker

[1] National Cryptologic Foundation. 2020. "1892: Birth of Philip Johnston—Whose Idea to Use the Navajo Language as a Code During WWII Would Save Countless Lives." Glen Burnie, MD: National Cryptologic Foundation.

Philip Johnston

The Navajo Code Talkers program was so top secret that it was not declassified until 1968, and the code was never broken.

and president of the Navajo Code Talkers Association. "This created a huge problem for strategizing against the enemies."[2]

Johnston was convinced that code based on the Navajo language would be even more secure than the Choctaw code had been. The Navajo language is unique in that it has incredibly complex sentence structure, has no alphabet, and, at the time, was not written down. Few non-Navajo people could speak or understand the language.

After conducting a successful trial and demonstration for the Marine Corps with four Navajo friends, Johnston convinced the Corps to let him—a man in his fifties—enlist at the rank of Staff Sergeant and to assist in the training of code talkers. He started with a group of 29 men, who had to be fluent in both Navajo and English and go through 7 weeks of Marines boot camp and combat training, as well as classes in message transmission and radio operations. By the end of the war, the group of 29 had burgeoned into more than 400.

The code developed from the Navajo language proved promisingly complex, and the Marine Corps made the code even more difficult to crack by also encoding it with word substitution. Then the code talkers had to memorize the final code.

The Navajo Code Talkers program was so top secret that it was not declassified until 1968, and the code was never broken.

In 1982, President Ronald Reagan declared August 14 "National Navajo Code Talkers Day."[3] The Honoring the Navajo Code Talkers Act was signed into law in 2000, and the following year, the Navajo Code Talkers were awarded Congressional Gold and Silver Medals.[4]

A1C Phillip Rock's great-grandfather was a code talker. "We were taught that we should be extremely thankful for what they did," Phillip said. "Without the code talkers, we wouldn't have won the war."[5]

We should *all* be extremely thankful for the contributions of those patriotic men—as we are thankful for the contributions of our brothers and sisters in the Air Mobility Command and all members of the military who serve our country daily to the best of their abilities.

[2] Silversmith, Shondiin. 2018. "Navajo Code Talkers Created an Unbreakable Code. It Helped Win World War II," *azcentral*, July 11.

[3] Reagan, Ronald. 1982. *Proclamation 4954 of July 28, 1982—National Navaho Code Talkers Day*. 96 Stat. 1752. Washington, DC: U.S. Government Publishing Office.

[4] Silversmith, "Navajo Code Talkers Created an Unbreakable Code."

[5] 509th Bomb Wing Public Affairs. 2018. "Whiteman Airman's Great Grandfather Served as a Navajo Code Talker in WWII." Defense Visual Information Distribution Service (DVIDS), November 30.

Get Your Motor Running—
Five Motorcycle Tips for New Riders

BY MR. MATT LIPTAK, STAFF WRITER

Nothing is more exciting than getting out on the highway with your motorcycle for a ride. The sense of freedom and adventure can be exhilarating. If you are a beginner or getting reacquainted with the art and science of riding a motorcycle after several years, however, there are basics you will want to keep in mind. Here are five *musts* from the Motorcycle Safety Foundation's top ten list, when it comes to hitting the road with your motorcycle.

According to *Consumer Reports*, government studies indicate riders without a helmet are 40 percent more likely to suffer a fatal head injury in a crash and are three times more likely to suffer brain injuries than those wearing helmets.

1. TAKE FORMAL TRAINING AND GET LICENSED.

This advice may sound like common sense and be a no-brainer for most, but you can always learn more about your motorcycle and how to ride it safely. The laws in all 50 states and the District of Columbia require a motorcycle license, endorsement, or a permit to ride a motorcycle legally. The Motorcycle Safety Foundation includes a well-regarded selection of courses ranging from a Basic Rider eCourse to a Circuit Rider Course with skills practice. Patrick Hahn, the communications and outreach manager for Team Oregon in 2018, recently talked to *Motosport.com*. Team Oregon, a non-profit program of Oregon State University and a partner to the Oregon Department of Transportation, teaches rider training and safety classes. "Advanced training isn't for expert riders," he said. "It's how you become an expert rider. If we've never taken training, or have only taken basic training, most riders' skills are basic skills. No matter how carefully we ride, no matter how many years we've ridden, eventually, our number will probably come up."

2. WEAR ALL GEAR WHEN RIDING.

According to the Governors Highway Safety Association (GHSA), there were an estimated 4,990 motorcyclist accident deaths in 2017. Motorcyclists were 28 times more likely to be in a fatal accident compared with their car and truck counterparts, based on fatalities per mile traveled. According to *Consumer Reports*, government studies indicate riders without a helmet are 40 percent more likely to suffer a fatal head injury in a crash and are three times more likely to suffer brain injuries than those wearing helmets. Helmets may not always be comfortable or convenient but wearing one will drastically increase your chance of keeping your noggin intact if you take a spill. Helmets are not the only gear you will need, however. Heavy denim or leather is a motorcyclist's go-to riding gear for obvious reasons.

3. RIDE UNAFFECTED BY ALCOHOL OR DRUGS.

Driving while under the influence has the same negative repercussions on a motorcycle as it does when driving a car, except with a car, you may have a little bit more protection than when you are riding a motorcycle. A GHSA report showed 25 percent of motorcyclists involved in fatal crashes in 2016 had a blood alcohol content (BAC) over the legal limit, the highest percentage of any vehicle type. State data signaled that this trend continued in 2017. The data also showed that, with recreational marijuana legalized in many states, there might be a higher number of drivers and motorcyclists under the influence of drugs. Marijuana impairment is known to increase a person's crash risk, and a 2017 Insurance Institute for Highway Safety (IIHS) study found that, overall, vehicle collision claims in states with legalized recreational marijuana were 3 percent higher than would have been expected without legalization.

4. ASSUME OTHERS DO NOT SEE YOU.

Accident reports show that it is the drivers of cars who cause most motorcycle accidents. All too often, drivers of four-wheeled vehicles do not pay close enough attention to the riders on the two-wheeled vehicles. The National Safety Council reports that car drivers often collide with motorcycles for multiple reasons: motorcycles are relatively small, and drivers do not see them; drivers do not

https://www.msf-usa.org/downloads/fools-gear-cool-gear-poster.pdf

anticipate the motorcycles' movements; the driver's view of the motorcyclist is obstructed, often by the vehicle's blind spots or other vehicles; or the driver is distracted. Motorcycle drivers should keep their distance from cars, not only so they have braking distance from the vehicles ahead of them, but, also, because they need to be able to maneuver in case an obstacle appears in the road. Road debris that can sometimes be straddled by cars can be a disaster for the biker following those cars. Also, consider wearing brightly colored clothes when riding your bike to increase your visibility to drivers. If a driver sees you, hopefully, they can avoid hitting you.

5. ENTER INTERSECTIONS AND CURVES WITH CAUTION.

Going fast on a motorcycle can go with the territory, but that can turn into a problem when coming to a turn or a bend in the road. The California Department of Motor Vehicles' motorcycle handbook advises being particularly careful when approaching a change in direction. They explain that riders often try to take curves or turns too fast. This mistake can lead to the motorcyclist not being able to hold the turn and crossing into oncoming traffic or going off the road. In some cases, riders overreact and brake too hard causing a skid and loss of control. The handbook recommends four steps for better control:

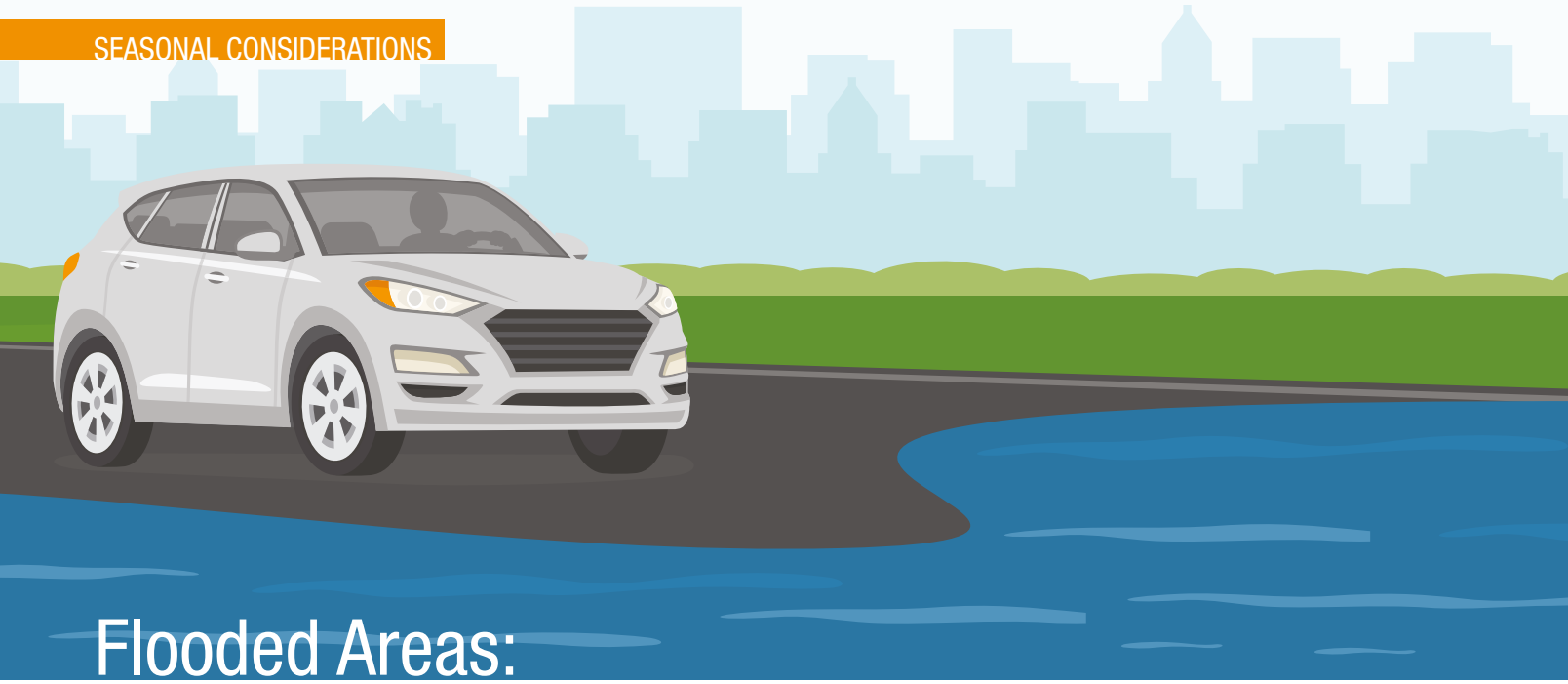
1. **Slow:** Reduce your speed before the turn by rolling off the throttle and, if necessary, applying both brakes.

2. **Look:** Look through the turn to where you want to go. Turn only your head, not your shoulders, and keep your eyes level with the horizon.

3. **Press:** To turn, the motorcycle must lean. To lean the motorcycle, press on the handle grip in the direction of the turn. Press left-lean left-go left. Press right-lean right-go right. Higher speeds and/or tighter turns require the motorcycle to lean more.

4. **Roll:** Roll on the throttle through the turn to stabilize suspension. Maintain steady speed or accelerate gradually through the turn. This safety measure will help keep the motorcycle stable.

Motorcycles can be a great passion. They can also cause serious risk to riders and others if the person at the throttle is not careful or experienced. If you are new to them or just getting back in the saddle, consider these tips and do not stop there. Educating yourself on being a better rider is a lifelong journey, not a destination.



Flooded Areas: Steer Clear

BY MS. CHRISTINE WALSH, STAFF WRITER

Flooding can happen from excessive rain or snowmelt. Although some floods develop slowly, flash floods can happen within minutes after a storm or containment system break.

According to the National Weather Service (NWS), an average of nearly 100 people drown annually in floods. The Centers for Disease Control and Prevention (CDC) reports that more than one-half of these deaths were due to motorists attempting to drive through flooded roads. Many of the deaths happened in automobiles that were swept downstream.

The dangers of driving through floodwater include hydroplaning and losing control, the vehicle being carried away, the vehicle becoming submerged, and the roadway collapsing.

What should you do if you start to skid on wet pavement?

"Always remain calm when a car is skidding to help regain control," says Laura Myers, director of the Center for Advanced Public Safety at the University of Alabama. "Slowly remove your foot from the accelerator and carefully steer in the direction you want the front of the car to go. Keep steering until the car is straight and you regain control of the car. If the car has antilocking brakes (ABS), brake firmly while steering into the skid. If the car does not have ABS brakes, do not use the brakes, just steer until you regain control."

University of Manitoba thermophysiology professor Gordon Giesbrecht said his cardinal rule is simple: Never drive into floodwater. "It can wreck the electrical system and total your car," he said. "More importantly, you can drown."

Although driving through floodwater is not advised, Myers said it is a mistake to not prepare for it. "It can happen quickly and at any time," she said.

In addition, Myers said that salt water and mud can cause rust and erosion on the undercarriage, so it should be cleaned after driving through floodwater. She added that a wet engine should be allowed to dry and be checked by a mechanic.

Pay attention to water levels—6 inches of water is enough to reach the bottom of most cars and cause loss of control and stalling. A foot of water will float most vehicles, including pickup trucks and sport utility vehicles, and 18 to 24 inches will force most vehicles off the road, according to the National Oceanic and Atmospheric Administration (NOAA).

"Once it floats, any current will push the vehicle off the road into deeper water, and your car will sink," Giesbrecht said.

During threatening conditions, do not camp or park your vehicle along streams and creeks because they can rise very quickly during heavy rains. Never drive around a barricade; roads and bridges may be washed out or structurally unsound.

The NWS advises monitoring NOAA Weather Radio or a local radio or

“Research indicates that people caught in floodwaters rationalize their actions with responses like the following: ‘It is the only way to my home or work;’ ‘I could not be late to work or school;’ ‘I had to get to my children;’ ‘I have a high vehicle that can handle water.’”

television station for weather-related information. Myers also advises having a way to get alert notifications, especially in the car while driving.

Myers noted that water causes more fatalities than any other weather risk and said that people often mistakenly believe that they and their vehicle can handle it. “Research indicates that people caught in floodwaters rationalize their actions with responses like the following: ‘It is the only way to my home or work;’ ‘I could not be late to work or school;’ ‘I had to get to my children;’ ‘I have a high vehicle that can handle water.’”

But what if you cannot turn around or take an alternate route?

“If you do drive through floodwater, drive very slowly to try and keep the water out of the exhaust pipe and the front end of the car,” Myers said.

If possible, move to the center of the road, which is usually graded higher than the edges. Do not drive through water where there are downed power lines. Look for debris traveling downstream that could trap or crush you. If you have driven through water up to the wheel rims or higher, test your brakes on a dry area of road at a low speed. If the brakes are wet, dry them by pressing lightly on the brake pedal with your left foot while maintaining speed with your right foot.

And what if your vehicle stalls and you become trapped?

“If the car stalls in floodwater, and the water is swift and/or high, getting out of the vehicle may be hazardous,” Myers said. “You can try to restart the engine, and it may cause damage to the engine, but that may be the better choice if the car and driver need to get to safety.”

But if you are overcome by rapidly rising water, Giesbrecht said you should follow the acronym “SWOC”: seat belts off, windows open, out immediately, and children first. “Try to get on the roof and assess how deep the water is and if there is any current,” he said.

If there is not a current, Giesbrecht said you can consider walking along the road to safety. “If you are floating and moving with a current, you will have to figure out where the safest spot is,” he added.

The second highest percentage of flood-related deaths are due to walking into or near floodwater. Even a 6-inch-deep stream of moving water can cause you to fall. If flooding does happen, the NWS recommends going to higher ground and avoiding areas such as drainage ditches and canyons. You should not try to cross flowing streams, especially if the water is moving rapidly.

The CDC recommends gathering emergency supplies such as food and water during flood conditions.

You should be particularly careful at night, when it is harder to see flood hazards. If you need to evacuate, secure your home, disconnect appliances, and if possible, turn off utilities at the main switches or valves if instructed to do so, but do not touch electrical equipment if you are wet.

In addition to presenting traffic safety issues, floodwater can be dangerous because it may contain snakes and insects, sharp objects, petroleum products and industrial waste, or raw sewage.

MISHAP-FREE FLYING HOUR MILESTONES

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A KC-135 Stratotanker, left, KC-46A Pegasus, center, and a KC- 10 Extender fly in formation above the Sierra Nevada Mountains, CA, as part of Operation Centennial Contact, June 27, 2023. The operation was a celebration of a century of aerial refueling capabilities involving 152 total aircraft, including 82 tankers and 70 receivers, traversing sites across the United States.

USAF photo by Heide Couch

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ASAP as an "Atta Boy"

BY MR. LALO MAYNES, AMC/SEF

While conducting launch procedures for a KC-46A Pegasus tanker aircraft, the aircrew started both engines and were going over the pre-taxi checklist in the flight deck when the Crew Chief reported hearing a strange noise coming from the main landing gear. This noise was a hissing sound that the Crew Chief thought might be a bleed air leak within the wheel well of the left main landing gear. After appropriate coordination with the aircrew, the Crew Chief lowered and pinned the forward gear door and immediately heard the loud hissing of air escaping from a bleed air duct. After further inspection, the Crew Chief discovered a large 3-inch cracked weld around one bleed air duct and notified the aircrew of this grounding item. The aircrew canceled the mission, shut down the engines, and returned the aircraft to maintenance. The Aircraft Commander later commented, "Without the demonstrated exceptional attention to detail from the Crew Chief, this grounding issue likely would not have been identified." When the aircrew conducted their preflight walk around inspection, the forward main landing gear door was in the up position, which restricted the pilot's view of this bleed air duct.

This information came to us as an Aviation Safety Action Program (ASAP) submission. ASAP is an anonymous, voluntary web-based program that Airmen use to report errors and hazards in all functional areas. It facilitates hazard submission via personal electronic devices. ASAP also provides leadership with evidence of risk that may otherwise be undetected, so that risk management actions can be taken to improve safety.

The Crew Chief's name in this event is unknown, but they did a great job and displayed assertiveness to inform the aircrew of this aircraft-grounding condition. I also want to express the importance and success of ASAP. When I was an Airman, I wish there had been an avenue to get my suggestions and recommendations to someone in Wing leadership or to Major Command staff. The Air Mobility Command (AMC) ASAP team receives, on average, four reports daily, and key players within AMC staff act on each report. My hat is off to the person who submitted this ASAP report and to the Crew Chief who likely prevented a significant mishap. Keep those ASAPs coming!

A KC-46A Pegasus takes off during an aircraft flush at McConnell Air Force Base, KS, March 27, 2023.

USAF photo by Amn Gavin Hameed

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A DAY IN THE LIFE

More than 700 ROTC and Junior ROTC cadets, Airmen, and leadership from the 6th Air Refueling Wing pose for a photo in front of a KC-135 Stratotanker during Military Career Day at MacDill Air Force Base, FL, April 28, 2023. The event provided an opportunity for Airmen to share their experiences with the next generation of service, inspiring change in America's future leaders.

USAF photo by TSgt Alexander Cook