HE MAGAZINE OF AIR MOBILITY COMMAND | SUMMER 2023

Strategies for Success

AMC Commander to KC-135 Crews: **"I Could Not Be More Proud."**

How "Get Home-itis" Can Negatively Influence Our Decision-Making 101 Critical Days of Summer Defending the Human Weapon System

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pilot, stands in front of a KC-135 Stratotanker aircraft at

MacDill Air Force Base, FL, March 7, 2023. Sackey won

the 2022 6th Air Refueling Wing award for Company

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The Mobility Forum

MOBILITY FORUM MOBILITY FORUM

USAF photo by SrA Joshua Hastings

Maj Gen Corey J. Martin of the 18th Air Force: **Being Ready** and Prepared

BY MS. KATHY ALWARD, STAFF WRITER



ife can be interesting when we start out with one goal but learn through experiences that there may be a better path. Such is the case of Maj Gen Corey J. Martin, the Commander of the 18th Air Force headquartered at Scott Air Force Base, IL. Upon graduating from the Air Force Academy, he had planned to fly fighter aircraft, but according to Martin, once he entered pilot training, he was told that there were neither fighter nor bomber aircraft available as the Air Force was downsizing after the Cold War. Martin said that hearing about C-141s sounded like a good alternative, as they could fly formations at low altitudes, deliver people and equipment, and travel across the world. Martin found it interesting, a few years into flying the C-141, that

the Air Force was actually looking for pilots in his year group to transition over to fighter aircraft. After thinking long and hard, Martin decided he was already where he was supposed to be, which led to him becoming a tactical expert in the C-141.

Martin's squadron commander also encouraged him to take part in broadening opportunities that would lead to leadership roles. "One of them was a precursor to our current Phoenix Torch program," said Martin. "And really coming out of that, I continued along both of those paths. As I went to new aircraft like the C-17, I would become a tactical expert, be an instructor, be an evaluator, but at the same time look for broadening opportunities like developmental education." Maj Gen Corey Martin, 18th Air Force Commander, speaks to Airmen assigned to the 6th Mission Support Group during a visit to MacDill Air Force Base, FL, Feb. 23, 2023.

USAF photo by A1C Zachary Foster

"As I look back now, I think that combination of having an opportunity to be an aircrew member and learn the capabilities of our aircraft, while at the same time having the opportunities in some of those command staffs to see the importance of how the aircraft are employed, has been a really good mix now that I'm sitting as the 18th Air Force Commander," Martin explained.

The 18th Air Force is the Air Mobility Command's (AMC) sole Numbered Air Force, and Martin says his duties as the 18th Air Force Commander are threefold. "First, and primarily, is ensuring ready aircraft, aircrew, and equipment for when combat



commanders request them. The second one is the deliberate development of our Airmen, both to take on today's challenges as well as tomorrow's. And the final one is to discharge the general court-martial convening authority duties to maintain good order discipline," stated Martin.

Martin oversees nearly 36,000 Airmen in the 18th Air Force, and fortunately, this is spread across 12 extremely capable wing commanders. "So I have 12 wing commanders that are responsible for sections of the command that range from about 1,500 to about 6,000 personnel. And they are co-located with their personnel. … That's what makes that span of control manageable," he explained.

"Air Mobility Command is seldom in the spotlight itself, but I just find that it is foundational to almost everything that happens within, not just our Air Force, but our U.S. military," Martin stated. Although they are not in the spotlight often, some of the high-profile operations executed can be attributed to the maneuvers that AMC provides. "When you see President Biden show up unannounced in Ukraine, well, how did he get there? It's AMC. When you hear about humanitarian aid going where natural disasters strike, well, how does that happen? ... Air Mobility played a role in that."

One of the many things Martin plans to accomplish is continually improving his command's ability to operate if control networks are degraded or interrupted, which is going to be a reality of future conflict. "For probably three decades, Airmen have been used to having [the] ability to always be connected to command and control. We're not going to have that anymore. So now what we're focusing on is reintroducing that idea of independent thought, [from] deployed commanders down to actual aircraft commanders. [We] want for them to have the ability to take a commander's intent and be able to take a mission-type order, not having exact guidance on where they're going to fly next or what they have to do, and be able to have independent thought to do that on their own," said Martin.

AMC has scheduled a tier one exercise for the summer, Mobility Guardian, which will take place in the Pacific, and according to Martin, will provide numerous opportunities for his crew force to continue to operate on missiontype orders when separated from the global command and control. This platform will allow the 18th Air Force to further develop their agile combat employment, multicapable Airmen, specialized refueling, and many other types of cross-utilization training. Maj Gen Corey Martin, 18th Air Force Commander, poses for a photo with Airmen assigned to the 305th Air Mobility Wing on Joint Base McGuire-Dix-Lakehurst, NJ, Sept. 13, 2022.

USAF photo by SrA Joseph Morales

Martin has also benefited greatly from the lessons provided by the safety offices. According to him, it is a matter of how you can do the mission and do it as safely as possible, and risk management is what helps accomplish that. A recent issue with the pins in the KC-135's vertical tail is a good example; Martin emphasized that they never doubted that the pins were strong enough, even though they were non-conformal. What they did not know without testing is how long that strength would last. Given the environment he and his crew were in, they gauged the likelihood of something happening and measured that occurrence against a consequence. In doing so, AMC made the decision to stand those aircraft down, making a risk-informed decision. Martin stressed that if the environment had changed—if they had entered into active conflict and known that they needed all of their tanker aircraft to defend America-they would have considered the risk of not having those airplanes able to fly, and that same risk management thought process would have probably led them to fly. Martin stated, "I think a structured risk management process is one of the best things that has come out of safety during my time in the Air Force." 🧶

The 618th Air Operations Center: **Delivering Our Nation's Promises**

BY MS. LAUREN SCHATZ, STAFF WRITER

any generations of children have been fascinated by anthills. Something about watching the small but mighty insects carry objects well over their body weight is captivating. There is much to take in as each worker is on a specific mission while the ant colony operates cohesively, maintaining constant productivity and deterrence.

The 618th Air Operations Center (AOC) at Scott Air Force Base, IL, mirrors that magic and is sure to instill that same awe in adults. Yet, as Henry David Thoreau put it, "It is not enough to be busy; so are the ants. The question is: What are we busy about?"

The 618 AOC is the Department of Defense's largest AOC and is responsible for supporting mobility operations "anywhere and anytime." On a global scale, the AOC provides unrivaled command and control across a full spectrum of mobility operations, including airlift, air refueling, aeromedical evacuation, and the global air mobility support system. To accomplish that level of support, the AOC is "always on the clock," maintaining 24/7 operations 365 days a year. This rigorous schedule is necessary because the AOC commands approximately 100 to 150 missions a day, with multiple sorties under those missions. In addition, they must have the necessary ground support in place to execute all missions effectively.

Brig Gen Rebecca Sonkiss, Commander of the 618 AOC, explains that the AOC's overall duty is to deliver the nation's promises.

"We've got an eye on what is going on across the globe, and we are able to shift capability and capacity to meet the needs of our nation," Sonkiss said. "We do not just deliver the Joint Force, but we ensure that the Joint Force is sustained."

Whether that means supporting the fight for Ukrainian democracy, providing evacuation services to Afghan refugees, or conducting the first in system select KC-46 intertheater aeromedical evacuation mission,* the AOC works behind the scenes to make tremendous accomplishments happen.

One Airman at the AOC added, "If there has been a global crisis on the news, chances are we were there offering support before it even hit your TV."

This high-pressure mission is coupled with the AOC's duty of ensuring that their deterrence posture is strong and that they are committed to protecting the homeland.

"To juggle all of that simultaneously is difficult work, but we do it in such a way that most people do not even think about it," Sonkiss said. "I am grateful



Brig Gen Rebecca Sonkiss, 618th Air Operations Center Commander from May 24, 2022 to May 23, 2023.

Commanding a fleet of nearly 1,100 mobility aircraft, the 618 AOC brings together more than 800 active duty, Reserve, National Guard, civilian, and contractor personnel to support global mobility operations.

MISSION

Plan, task, execute, and assess global air mobility operations.

VISION

Provide multidomain command and control of mobility forces in a contested environment. for the Mobility Airmen who take on this mission and who do it so well."

The intangible weight that individual Airmen take on is immense, and the Commander credits their mission success to the "Warrior Heart" of the Airmen. Sonkiss says her first focus is always the Airmen and preparing them to be resilient, capable, credible, and confident.

"The errors that we make in planning or in delivering products to the crew add to the error chain," she explained. "We are wholly focused on minimizing those errors and providing the best products possible ... I think that shift in mentality of being an extension of the crew has really paid huge dividends."

The AOC certainly keeps safety at the forefront. In fact, the Commander noted that safety is the first conversation regarding operations she has when she walks through the door because of the robust feedback that is provided and combed through daily. Sonkiss shared that the 618 AOC's culture of safety is the most responsive safety loop that she has seen in her career.

Sonkiss is also focused on modernizing the AOC in preparation for its move to the new Joint Operational Mission Planning Center, also at Scott Air Force Base. The building is set to be complete in 2024 and will help fuse U.S. Transportation Command, Air Mobility Command staff, and the 618 AOC to improve the ability to execute the high-end-fight. This modernization serves to increase the resiliency and capability of executing missions in highly contested environments.

"This will accelerate our decisionmaking process to ensure that we are taking the best advantage of the precious capacity available to continue to deliver our nation's promises," Sonkiss said.

Sonkiss became Commander in May 2022. She has overseen the execution



The 618th Air Operations Center provides command and control authority for Aeromedical Evacuation missions all over the world. The AE mission is to provide time-sensitive, mission-critical en-route care to patients to and between medical treatment facilities.

USAF photo by SrA Zachary Willis

of more than 315 Bomber Task Force missions and the delivery of close to 24 million pounds of fuel for the effort, as well as the completion of more than 2,100 sorties in support of Ukraine.

Sonkiss's diverse portfolio set her up perfectly for the role. With a background that covered a spectrum of advising on security cooperation, counter weapons of mass destruction, counter-terrorism, and more, Sonkiss was more than qualified to oversee the incredibly diverse operations the 618 AOC accomplishes daily.

Sonkiss most recently served as the Deputy Director for Counter Threats and International Cooperation (J-5), Joint Staff, Pentagon, Arlington, Virginia. The Deputy Directorate advised the Chairman of the Joint Chiefs of Staff on all global and functional matters. In other words, the Commander says, she went from advising how to carry out our nation's promises to overseeing the execution of those promises, adding that it was an "incredible alignment." The 618 AOC's ability to cast a net so widely while remaining focused on being the maneuver for the Joint Force is an extraordinary feat.

"It is a pretty magical organization," Sonkiss stated. "I would consider it the most impactful Command in the Department of Defense; I know other people would argue with me about that, but from my viewpoint, I truly see it," Sonkiss said.

Much like examples observed in nature—such as that fascinating anthill— working together to achieve greatness seems to be innate. Behind what appears miraculous are individuals with strength beyond themselves, dedicated to carrying out our nation's promises.

^{*}In the second week of April 2023, the 618 AOC undertook an operational patient requirement using a KC-46 for the first time. This mission, which was neither preplanned nor routine, transported two priority patients out of Guam. It required coordination with various commands to transport the patients safely to San Diego, CA. The mission was a success and an impactful vignette of the work carried out by the 618 AOC.

ASAP I LOSA I MFOQA I CRM/TEM



How "Get Home-itis" Can Negatively Influence Our Decision-Making

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

ASAP 18487 (C-17) WEATHER MINIMUMS LED TO UNSTABLE APPROACH DURING RNAV (AREA NAVIGATION) NON-PRECISION APPROACH

Preamble: Before we dive into the Aviation Safety Action Program (ASAP) analysis, the Ops RAMS (Operations Risk Assessment and Management System) Branch lauds the submitter for a powerful, self-critiquing assessment of their performance. In a Just Culture environment, we sincerely appreciate crew members who share their errors so that we can all learn how to improve our performance. Additionally, the crew member showed true professionalism and candor in assessing their decision-making. Thank you for contributing to Proactive Safety! ave you ever had one of those moments in your flying career when you are on the final leg of a long trip back to home station and cannot wait to get home? You cannot wait to see your family, or you have leave planned for the following day—you cannot get done with the trip fast enough! Unfortunately, the weather is down to minimums, you are short on crew duty day, and your crew is tired. You just have to "sneak" below the weather, stick the landing, and you are home-free!

The overwhelming desire to "get home" can adversely influence our judgment and decision-making. Recently, one crew member shared their experience and lessons learned in an ASAP in which "Get Homeitis" negatively impacted their decision-making.

ASAP 18487 SUMMARY

After air-refueling on a night local training sortie, weather had deteriorated at home station to just above minimums. With the ILS [Instrument Landing System] approach inop, we were forced to conduct an RNAV [Area Navigation] (GPS) non-precision approach. After we began the approach, there was a broken layer now reported 300' variable 700'. We continued the approach and eventually established level flight at the LNAV MDA [Lateral Navigation Minimum Descent Altitude]. The runway was obscured in the clouds until about a mile away when the clouds broke, and [we] had visual contact with the runway. I made a split decision [to] continue to land, which resulted in an unstable approach. We received the GPWS [Ground Proximity Warning System] "Sink Rate" aural warning shortly before touch down but landed softly about 2500' down the runway. We were also close to minimum fuel before we needed to depart to our alternate and would have had to spend the night and possibly not make it back to home station until the following evening due to the weather. This [possibility] had a negative effect on my decision-making.

This narrative is a very constructive ASAP with some excellent lessons learned from a Threat and Error Management perspective. The following analyzes some factors that the submitter highlights:

Threat #1: Instrument meteorological conditions (IMC) / fog / low visibility: The submitter indicates that weather was a factor in this event, with a broken layer reported at 300 feet variable 700 feet. More specifically, the submitter reported 1,000 feet of overcast clouds with a broken cloud layer, variable 300 feet to 700 feet (after they started the approach), 9° C, and rain. Due to our training and emphasis on Instrument Flight Rules procedures, we can sometimes become complacent about the weather as a threat. As we conduct our pre-mission planning, we might review the terminal aerodrome forecast and meteorological aerodrome reports and evaluate alternates and fuel planning but overlook the true impact of the weather on the mission profile. In other words, we go through the motions of reviewing the weather but fail to bring weather to the forefront of our thinking and preparation for the

mission. In this particular ASAP, we can see how the weather increased the operational complexity of the approach and landing, thus becoming a factor in the event.

Threat #2: Unusable or improperly functioning Navigational Aids: The ASAP also highlights that the ILS was out of service, which forced the crew to conduct an RNAV (Area Navigation) (GPS) non-precision approach. Wow, talk about a synergetic effect! Not only was the weather marginal, but the most precise approach was no longer an option. As we evaluate the threats mentioned in the ASAP, we can now appreciate how a "routine" night training mission can quickly become challenging due to weather and limited instrument approach options.

Threat Outcome: *Linked to crew error.* As we will discuss in a moment, these threats were contributing factors to the errors that the crew committed. Most likely, the IMC conditions were more of a factor as the submitter indicates the runway environment was not visible until approximately 1 mile from the runway.

SUBMITTER'S RECOMMENDED ACTION

Regardless from the fact that the C-17 is not yet certified for constant glide path non-precision approaches, we still need to operate with sound judgment and decision-making with what we have. I let other factors weigh into my decision-making which resulted in an unstable approach. The best thing to go [do] simply execute a Go-Around and worry about diverting after the approach.

Error #1: Unstable Approach (Descent rate?): The submitter is very broad in describing the errors committed but indicates the outcome was an unstable approach. We cannot tell from the narrative if the approach was unstable for airspeed, bank angle, or descent rate; however, the submitter does indicate that the GPWS "sink rate" alert sounded shortly before touchdown. Given the facts by the submitter of being level at the LNAV MDA, the runway environment not being in sight until approximately 1 mile from the approach end, and the GPWS "sink rate," most likely the unstable approach was the result of a high descent rate.

Error #2: Unstable Approach (Go-Around Call?): As previously mentioned, the submitter only describes the event as an unstable approach. While we might see this unstable approach as one error, there is most likely a second error in this event. Consider the Stabilized Approach Procedures as defined in the Air Mobility Command (AMC) supplement to Air Force Manual 11-202, Vol 3, Flight Operations: Overriding our personal attitudes is sometimes the most difficult CRM issue to combat. The best defense is to anticipate these events in our pre-mission planning.

- 29.8.2.3.3. (AMC): "If unstable or not in final flap configuration at 500 feet HAT [height above touchdown], the PM [Pilot Monitoring] will call "Go around," and the PF [Pilot Flying] will execute a go-around."
- 29.8.2.4. (AMC) From 500 feet HAT to the runway. "From 500 feet HAT to the runway, if the criteria in paragraph 29.8.1 are exceeded, the PM or any other crew member will announce "Go around," and the PF will execute a go-around."

Given the fact that the submitter states that a landing was made from an unstable approach, a go-around call was not made, or a go-around call was ignored. In either case, the procedural barrier, which is outlined in the procedures to prevent a landing from an unstable approach, was breached.

Error Outcome: Undesired State: The submitter reveals that the ultimate outcome of this sequence of events was an unstable approach, which is an undesired state. Additionally, the undesired state is further amplified by the aircraft GPWS "Sink Rate" warning. These aircraft safety systems, such as GPWS, the Ground Collision Avoidance System, and the Terrain Avoidance and Warning System, are additional critical safety barriers to warn the crew and prevent Controlled Flight Into Terrain (CFIT). In this case, the GPWS warned the crew of the high descent rate within close proximity to the ground, thus emphasizing the undesired state.

Crew Resource Management (CRM, Negative Contributing Personal Factor): "Get Home-itis:" Sometimes, our decision-making and judgment are erroneously influenced by personal factors and attitudes. As highlighted by the submitter, their decision-making was clouded by a "Get Home-itis" attitude-that overwhelming personal need to make it home, which impaired their judgment. The submitter provides a very honest assessment of how their personal desire to get home that night negatively influenced their decisionmaking: "We were also close to minimum fuel before we needed to depart to our alternate and would have had to spend the night and possibly not make it back to [the] home station until the following evening due to the weather. This [possibility] had a negative effect on my decision-making...Regardless [of] the fact that the C-17 is not yet certified for constant glide path non-precision approaches, we still need to operate with sound judgment and decision-making with what we have. I let other factors weigh into my decision-making which resulted in an unstable approach. The best thing to go [do] is simply execute a Go-Around and worry about *diverting after the approach."* That statement is a very powerful lesson learned—well said!

Wrapping it up: As indicated by the submitter, the focus of this ASAP is the decision-making. Their decision-making was clouded by a "Get Home-itis" attitude, which impaired their judgment. The situation was further complicated by the deteriorating weather, limited instrument approach options, and minimum fuel state, which led to a snap decision rather than a sound, deliberate thought process.

Overriding our personal attitudes is sometimes the most difficult CRM issue to combat. The best defense is to anticipate these events in our premission planning. Try to anticipate the threats, such as poor weather and limited instrument approach options, and, if possible, mitigate them before you step to the jet. Next, monitor your plan and its critical factors, plan to terminate early, or have a backup plan so you do not "paint yourself into the corner," thus eliminating the possibility of a snap decision. Next, inform your crew if you need to make it home, so there is no hidden agenda. Tell your crew in advance if you have leave scheduled for the next day or an important event to attend, so they can help you avoid an unnecessary risk of pushing a bad decision. Do not let yourself or any other crew member accept an unnecessary risk during a training mission.

Using Threat and Error Management, we can see how even a training mission can quickly degrade into a challenging ordeal. Thanks to the submitter's voluntary participation in this proactive safety program, we can learn from this event. I would much rather read a meaningful ASAP, such as this one, than read a safety report in which lives were lost.

Redefining Acceptable Risk When the Status Quo is a No Go

BY MR. STEVE PANGER, HQ AMC FLIGHT SAFETY

eb. 1, 2023, marked the 20th anniversary of the space shuttle Columbia tragedy. Much has been written on this incident, including comparisons with the space shuttle Challenger catastrophe, which occurred 17 years earlier on Jan. 28, 1986. Both disasters revealed that NASA accepted risks within the shuttle program discovered during previous flights, which had not performed as expected. These accepted risks added up, resulting in the mishaps. Also, in both instances, engineers most familiar with the relevant systems expressed concerns, but their concerns were overridden. Related in a safety sense are the fairly recent Boeing 737 MAX mishaps, which were also attributed to higher-level management concealing design flaws.

Safety is not only an engineer, maintainer, and crew member's responsibility, it is also a leadership responsibility. Some leaders only address safety when an accident results in injury or damage. If those things are not occurring, safety may take a back seat to the mission.

One of the best examples in which Air Mobility Command (AMC) leadership has advocated for aviation safety in recent years is proactive safety. Line Operations Safety Audits (LOSAs), the Aviation Safety Action Program, and Military Flight Operations Quality Assurance are a few of the more common programs tackling these safety issues. These programs have identified important underlying interrelated concepts (see inset for definitions):

- > Normalization of Deviance
- > Intentional Non-Compliance
- > Groupthink

The results of a number of LOSAs have identified intentional non-compliance as a major subject area. These intentional non-compliance errors might move away from a standard procedure without incident, mishap, or consequence but could develop into a normalization of deviance. When taking shortcuts, we accept risk, and often that risk is unnecessary. When we suffer no negative consequences, we are, in a sense, rewarded for taking this unnecessary risk. Remembering this path may compel us to take the shortcuts again because it is a faster (and perhaps even thought to be a more efficient) way to a successful outcome.

Our past successes can set us up for failure. Once we get an ample supply of previous successes under our belts while taking unnecessary risks, we may let our guard down to standard procedures that we now think were overkill. But the successful results might be based on luck, not skill.

As military members, in conditions of stress, we might rationalize that because we sense an urgency and a feeling of pressure to perform quickly, we can accept risk and deviate from

DEFINITIONS

NORMALIZATION OF DEVIANCE

Diane Vaughan, in her report on the Space Shuttle Challenger Launch Decision, defined *Normalization of Deviance* in part as: "... people within the organization become so much accustomed to a deviation that they don't consider it as deviant, despite the fact that they far exceed their own rules for the elementary safety."

INTENTIONAL NON-COMPLIANCE

According to R. Baker (2005), "Intentional Noncompliance errors are born from a lack of flight crew discipline, or a lack of procedural clarity that makes it difficult for flight crews to comply with SOPs [Standard Operating Procedures] as written, or deeper systemic/latent factors such as operations pressure, scheduling-induced fatigue, and/or morale. Intentional Non-Compliance requires three factors: motivation [reward], high probability of success, [and] absence of peer pressure or reaction. All three factors are required, or Intentional Non-Compliance does not occur."

GROUPTHINK

Irving I. Janus defined *Groupthink* as "... a quick and easy way to refer to the mode of thinking that persons engage in when *concurrence-seeking* becomes so dominant in a cohesive group that it tends to override realistic appraisal of alternative courses of action." our approved checklists. Some even go as far as to rationalize that we SHOULD shortcut our safety best practices when faced with conditions that we perceive as urgent. Individuals under certain conditions may sense that they have taken shortcuts successfully in the past and rationalize doing so by saying to themselves, "There is no time to waste. If I follow all the steps I am supposed to, the mission will be delayed."

Once we have rationalized our need to take unnecessary risks often enough, reinforced with positive (successful) outcomes, the shortcut becomes the new standard of behavior. It becomes the new "normal." Even grossly deviant behavior-the kind of behavior that would seem to be outside the bounds of safety-can become the norm. This drift into failure can be slow, sometimes taking a significant amount of time for the new "standard" to become entrenched. Once these unnecessary risks happen on a large scale, many within the organization cannot see the risk in the behavior because it now seems like a normal way of operating.

Organizations or individuals that are drifting toward failure often cannot see it. They may be so deep in their denial that anything is wrong that they defiantly defend their methods as best practices. They can even defend their close calls, near misses, and casualty events by rationalizing that they are in a dangerous profession.

In the aviation environment, intentional non-compliance errors may or may not progress into an undesirable aircraft state (checklists not run properly, aircraft systems not configured correctly, etc.) but could indicate a deterioration in flight discipline.

Safety winners are advocates: courageous, selfless, passionate individuals who do the right thing to maintain or grow a positive safety environment.

An effective safety attitude relies on individual involvement. Setting the example, visiting work centers, talking safety with your peers, and being positive in how you go about your business are traits that the safety community should keep in mind when on duty ... and off.

How would you describe yourself? Do you simply go through the motions, either lacking the courage to challenge the status quo or not caring? Have you run into Airmen who think safety gets in the way of the mission or safety is a roadblock to doing a job in an expeditious manner? We know a lot of personnel who are passionate about safety, but we also know some who are not. Some talk about a good safety game but may be all words and little action. Many others turn words into action; they are safety advocates.

Safety winners are advocates: courageous, selfless, passionate individuals who do the right thing to maintain or grow a positive safety environment. They genuinely care about people and the mission and seek lessons learned from events to prevent their reoccurrence. We set the example by doing the right thing for the safety of our people to successfully complete the mission. Are you setting the example?

Recommendations to consider as we trudge down the road of practicing safe principles in our day-to-day jobs:

- > Do not use past success to redefine acceptable performance.
 - Consider risk decision options after analyzing and objectively

assessing scenario-driven probability and severity.

- There is a difference between ASSUMING risk and CREATING risk. Those who have normalized accepting unnecessary risk have been creating risk for so long that it now feels normal. The more success they have had, the more normal it feels.
- > Prevent Groupthink; know and avoid its symptoms.
 - Ask someone on the team or crew to represent opposing views or ask everyone to voice their opinion before embarking on a mission or task.
 - Discuss areas of vulnerability in your area where it appears as though you may be drifting toward failure.
 - Discuss a close call or near-miss event where, in hindsight, it appears a contributing factor was a shortcut that members have been taking multiple times over a long period.

Bottom Line: With very few exceptions, aircrews and maintainers have conducted safe and reliable missions and maintenance processes. Our intent is, of course, for this safe process to persist. By continuing to conduct our proactive safety programs, AMC Safety will help to further analyze the root causes of Intentional Non-Compliance, Normalization of Deviance, and Groupthink behaviors and arm AMC personnel with the knowledge of the pitfalls of these behaviors.

11

See Something Do Something...Live to be Lethal

Defending the Human Weapon System

BY MS. LISA GONZALES, AIR FORCE SAFETY CENTER

with family and friends, not spend time in the

Summer is a time to enjoy the warm summer days

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he 101 Critical Days of Summer (CDS) begins on Memorial Day weekend and continues through Labor Day weekend. During this timeframe Airmen and Guardians tend to participate more in outdoor activities, take time to travel, barbeque with friends, and explore new things over a season that has historically come with a higher risk of danger.

This year the Air Force Safety Center is reinvigorating the 101 Critical Days of Summer with off-duty risk management materials created to educate Airmen and Guardians on the risks associated with summer activities. This year's theme will be "See Something, Do Something ... Live to be Lethal." The use of risk management is not only for on-duty, but belongs in our daily lives to be used to defend the Human Weapon System, *you*, from unnecessary threats that could result in injury or even death.

Reaching the goal of zero mishaps and fatalities begins with every Airman and Guardian. Over the past 10 summers, 2013–2022, beginning the Friday before Memorial Day through Labor Day, there have been 134 unnecessary fatalities off-duty. The top three riskiest activities were four-wheeled motor vehicles (47 fatalities), followed by motorcycles (41 fatalities), and water-related activities and sports (19 fatalities). One Airman or Guardian lost to a preventable mishap is one too many.

loved one, friend, or co-worker.

Additionally, there is a new trend showing a growing number of e-bike and e-scooter mishaps. E-scooters and e-bikes provide a convenient and easy way of getting around in a crowded city, and they are compact, lightweight, and environmentally friendly, but they can also be dangerous if not used with the proper training and the right personal protective equipment (PPE). Just like any motorized vehicle, you should always follow the manufacturer's safety guidelines when it comes to use and PPE.

Summer is a time to enjoy the warm summer days with family and friends, not spend time in the emergency room, or worse, mourning the loss of a loved one, friend, or co-worker. It is a time to be committed toward reducing the chance of disaster simply by speaking up before it happens.

According to the National Safety Council, an average of 17,503 people died every summer between 2016 and 2020 on roadways across the United States. Do not be one of those statistics. Prepare for your trip by getting your vehicle checked out, plan ahead to combat inclement weather and fatigue, and ensure that an emergency kit is included with your bags, stocked with vehicle supplies, extra water, food, batteries, and a phone charger.

Motorcycle riders should be 100 percent trained, prepared, and equipped with the required skills and proactive mindset to ride safely. In the first 4 months of fiscal year 2023 alone, the Department of the Air Force (DAF) experienced seven motorcycle fatalities. The leading cause of those



fatalities pointed to the lack of risk management, speeding, and alcohol.

"Enjoy your summer, but do it responsibly," said William Walkowiak, Chief of Occupational Safety for the Department of the Air Force. "I challenge each of you to make a risk assessment before participating in summer activities to prevent or mitigate injuries or deaths."

On their website, the World Health Organization states that drowning is the third leading cause of unintentional injury death worldwide, accounting for 7 percent of all injury-related deaths.

Water activities such as boating, fishing, and swimming can cool you



off, but one wrong decision could cost you or someone you know anything from injury to death. Remember to always use a life jacket around the water, do not drink and boat or swim, always keep an eye on small children, and make sure they wear life jackets.

Summer days can become extremely hot, and heat cramps, stroke, or exhaustion can happen quickly. Be prepared if you spot someone in trouble. Get them out of the sun, cool them down by applying water, cool air, wet sheets, or ice on the neck, groin, or armpits. Seek medical attention immediately.

Stay hydrated this summer. The Centers for Disease Control and Prevention states that an average adult loses about two and a half quarts of water each day. Water helps your body lubricate and cushion joints, protects your spinal cord and other sensitive tissues, and gets rid of wastes through urination, perspiration, and bowel movements. Drinking approximately eight to 12 glasses of water throughout the day will help the body stay hydrated. If you plan to be outside in the sun, consider drinking more. Dehydration can happen before you know it. Know the signs: headaches, nausea, dry skin, and muscle or joint soreness are just a few.

It is imperative that Airmen and Guardians implement proper off-duty risk management in every activity they engage in during the 101 CDS and beyond.

Go to the Air Force Safety Center's summer webpage for more tips at https://www.safety.af.mil/Divisions/Occupational-Safety-Division/Summer-Safety/.

FLIGHT SAFETY

Fatigue While Flying: Preventions and Resolutions

BY MS. TIFFANY L. TOLBERT, STAFF WRITER

any differences exist between individuals, or rather, every human being is unique. Because of this uniqueness, it is hard to definitively define what fatigue is.

From an operational perspective, fatigue is characterized by a reduced capacity for work, a reduced level of productivity, and feelings of drowsiness and exhaustion. There are many origins of fatigue; it can result from boredom or physical exertion as well as from stress, dehydration, illness, or as a side effect of medication. However, the simplest reason for fatigue is a lack of sleep.

No one is exempt from fatigue, and it is particularly common among pilots because of their unpredictable schedules, extended work hours, and travels to various time zones. Even with regulations limiting flight time and enabling optimal rostering, fatigue cannot be entirely prevented. Because it poses a safety risk to military (and civil) aviation, and to a pilot's personal well-being, it is important to learn how to detect, deter, and resolve fatigue.

Obtaining adequate sleep is the best way to discourage fatigue; sleep provides the body with a period of rest and recuperation. Rest and recuperation give the body time to repair and rebuild itself, and research shows that resting enhances one's thinking, creativity, and productivity. Seven or more hours of sleep per night is recommended for adults in addition to periods of mental downtime and recovery—which are just as important as physical rest. For pilots, mental downtime can consist of a short activity break (e.g., walking leisurely) between flight operations and activities, which allows time to relax and prepare for the time mental faculties will be most required. Other means that can aid pilots in warding off fatigue include:

- Conducting self-assessments. These assessments involve learning one's personal signs of fatigue and actively looking out for when they occur; when any sign of fatigue is first noticed, do not just continue with business as usual.
- Being mindful of medications. This involves reading the pharmacy label and any stickers that may be attached to a medicine bottle or box for information on how to properly take the medication and for possible side effects. Medications, including prescription, over-the-counter, and complementary medicines, can cause unwanted side effects, including drowsiness or impaired alertness.
- Getting plenty of rest. Resting involves a period of cessation from action or motion. When lying down, try creating a comfortable sleep environment. For example, sleep on a comfortable mattress, adjust the temperature setting of



Photo above: Capt Isaac Gotlieb, a C-17 Globemaster III pilot assigned to the 14th Airlift Squadron, monitors in-flight communications during a mobility force mission over Charleston, SC, March 13, 2023.

USAF photo by MSgt Matthew Plew

heating and cooling systems as needed, and use a sleep mask to help block out any light and other distractions. Also, taking daytime naps before shift work helps to deter fatigue and increase performance. Resting before a flight also helps to minimize stress.

 Drinking water and eating healthy. Pilots are much more likely to become dehydrated in the cockpit of the plane than on the ground. Staying hydrated and eating nutritious foods involves consuming water and the right amount and types of food at the right times. Healthy foods (e.g., vegetables, fruits, proteins, and carbohydrates) help keep pilots more alert and energized than sugary items.

Fatigue, or the feeling of exhaustion, remains an important safety risk in military aviation. Because fatigue affects everyone differently, a one-sizefits-all solution is difficult to pinpoint. However, there are several preventable measures pilots can integrate into their personal and professional routines to reduce the occurrence of fatigue and increase their alertness while flying.



AIR MOBILITY COMMAND WELL DONE AWARD

Presented to TSgt Daniel L. Hayes

733d Air Mobility Squadron Kadena Air Base, Japan

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Sgt Danie <u>L. Have</u>s

TSgt Daniel L. Hayes

s a Flight Line Expediter during a C-17 launch from Kadena Air Base, Japan, TSgt Daniel Hayes recognized an extremely unsafe situation and intervened with time-critical actions to prevent potential injury to ground personnel and aircraft damage. On Nov. 10, 2022, a C-17 aircrew was performing a non-standard engine start with external air due to an inoperative auxiliary power unit. The TO 1C-17A-1 procedure for engine start with external air is to start the number 4 engine, disconnect the air cart, and then start the number 1 and 2 engines on the opposite side, followed by the last engine. The aircrew deviated from TO guidance and started the number 3 engine first, deployed the number 3 thrust reverser, started the number 1 engine, and then requested that maintenance personnel disconnect the air cart with the thrust reverser still deployed and throttle above idle power. Hayes immediately recognized the unsafe situation and notified the aircrew to reduce power to idle and close the thrust reverser before removing the

ground equipment. After the aircraft's safe departure, Hayes filed a report using the Airman Safety Action Program (ASAP) to articulate the hazardous event and help prevent

future mishaps. Based on Hayes' ASAP report, Air Mobility Command (AMC)/A3V submitted a C-17 flight manual change request to add additional information on aircraft danger areas and a reminder to return the donor engine to idle during crossbleed starts. Additionally, AMC/A3T is including the report in its monthly Ops Risk Assessment and Management System Newsletter that is distributed to all Mobility Air Forces. Hayes' ability to recognize a dangerous situation and fortitude to intervene reinforced the Expediter's pivotal role in operations and bolstered Rapid Global Mobility capabilities in a time when every aircraft counts!

Well Done Award AMC Commander to KC-135 Crews: "I Could Not Be More Proud."

J.S.AIR FORCE

BY MS. TRENDELYN ROSS, STAFF WRITER

or more than 60 years, the KC-135 Stratotanker has been a useful enhancement to the U.S. Air Force's global reach by providing refueling support to Air Force aircraft (as well as to Navy, Marine Corps, and allied nations' aircraft) and assisting with aeromedical evacuations. Recently, the KC-135 aircrews have faced some difficult obstacles on their missions. Some of the obstacles the crews of the KC-135 have encountered include issues with the Block 45 Autopilot system and flight delays due to defective vertical stabilizer tail pins.

The Block 45 Autopilot system has had several issues over the years, including two forms of uncommanded climbs and engagements, and the inability to disconnect. Because of the autopilot restrictions, crews have been faced with flying longer sorties. Pilots have had to operate the aircraft in all weather conditions without the aid of an autopilot, which is not only mentally and physically fatiguing but cognitively taxing as well. This situation is concerning because flying in this condition increases the crew's fatigue. Another problem is that the aircraft tail securing pins in some KC-135s were not built to aircraft specifications. In an abundance of caution, the program office recommended grounding aircraft until the correct pins could be installed. Despite all these challenges, Mobility Airmen have managed to keep tankers in the air and have continued to fly critical missions around the world.

Pulling off an aerial refueling maneuver is extremely difficult, even in ideal conditions. The crew has to take many simultaneous steps, not to mention the pressure of the receiving aircraft running out of fuel mid-air. Maintaining distance from the receiving aircraft, maintaining speed and stability within a shared airspace, and keeping the filler device connected during refueling are just a few of the challenges the crew of the KC-135 faces. Successfully confronting these issues without an accurate autopilot system increases the complexity of the missions and demonstrates the skill and preciseness of the crew.

Crew Chiefs assigned to the 6th Aircraft Maintenance Squadron prepare a KC-135 Stratotanker for flight at MacDill Air Force Base, FL, March 13, 2023. The KC-135 provides aerial refueling support to Air Force, Navy, Marine Corps, and allied nation aircraft.

USAF photo by SrA Joshua Hastings

Gen Michael A. "Mike" Minihan, commander of Air Mobility Command (AMC), recognizes the expertise required to meet these challenges and is extremely proud of the KC-135 crew. He praised their accomplishments, stating, "The efforts of our Airmen have been nothing short of valiant in continuing to operate and employ this weapon system without a reliable autopilot at the times they need it most. I could not be more proud of the professionalism and airmanship of our KC-135 aircrews."

AMC implemented restrictions of autopilot use in Block 45-equipped KC-135 Stratotankers below 10,000 feet and during air refueling. These regulations became a challenge to both the KC-135 crews and the crews of the receiving aircraft. AMC continues to work with the KC-135 Program to resolve these issues and

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restore full use of the Block 45 Autopilot. "We owe our aviators a fully capable weapon system," Minihan stated.

Maj Travis Cord, of AMC Flight Safety, recounted a specific instance where the crew had to deal with the limitations caused by the autopilot system. "In one specific flight, a crew shared with me the challenges of hand flying [autopilot disengaged] the aircraft in instrument meteorological conditions [clouds] while in formation with another KC-135. This, compounded with the language barriers of communicating with foreign air traffic controllers and supervising an upgrading co-pilot, was extremely challenging/mentally taxing. Situations such as these are where crews wish they had an autopilot to give them back some of that ability/thinking capacity." Although the flight crew faced drawbacks without an autopilot system, they still demonstrated great competence and completed the flight.

Cord offered a couple of metaphors on what it is like to fly the KC-135. "A common analogy is that it feels as if you are controlling an old pick-up truck that lacks power steering. There is resistance in the flight controls as you are actuating physical cables that run all the way to the wings and tail. The flight controls feel very heavy. Imagine going around a racetrack in

The KC-135 crews have shown great adaptability and technical skills when faced with the challenges the Stratotankers have presented.

an old pickup truck for several hours. This scenario is how it might feel to be flying multiple practice approaches and landings in the KC-135." Cord continued, "Refueling without an autopilot requires an extreme amount of focus. You are attempting to fly a smooth platform for the receiver behind you by making small movements to the controls, but not jolting or quick. Think of it as balancing an egg on a plate while walking up and down stairs ... for an hour."

The Airman Safety Action Program (ASAP) enables any crew member, at any level within the command, to communicate directly with AMC staff to identify safety concerns while operating the aircraft in the air and during ground operations. AMC uses this tool as the primary method for tracking autopilot issues, advising the submitter, and relaying potential issues across the fleet. Crews have had to reassess their operational risks with each mission as the added duration and complexity of operating without the autopilot increases the risks of these missions. Crewmembers have had to practice their crew resource management skills to assess and reassess each other to identify the hazards and formulate ways to mitigate them. Crewmembers must have quick thinking and analyzation skills to assess risks and execute solutions.

The AMC Standards and Evaluations and Safety teams maintain regular contact with flying units to assess their operability and proactively address future challenges. With the issues KC-135 crews have reported, AMC's maintenance team has had to spend more time analyzing autopilot malfunctions. When an aircraft has an autopilot malfunction, it often cannot be used immediately on a subsequent flight, so maintenance must work extra hours to ready another aircraft for flight. Minihan would like to see the Block 45 Autopilot system corrected. "My #1 operational priority is the KC-135 Block 45 Autopilot, and I intend to see it through to full completion."

The tanker fleet has many aircraft with different functions that are used to meet United States Transportation Command requirements. The KC-135 is part of a broader enterprise of the tanker mission to include the KC-46A, the KC-10, and Air Reserve Component tanker capacity support. Combined, our tanker fleet provides sufficient capability and capacity to fulfill refueling and cargo missions to joint allies and partners around the globe at a moment's notice. Air Mobility Command has approximately 395 Stratotankers in its fleet.

The KC-135 crews have shown great adaptability and technical skills when faced with the challenges the Stratotankers have presented. Minihan holds the Mobility Airmen of the KC-135 Stratotankers in high regard. "I'm incredibly proud of the skill and professionalism our KC-135 crews have demonstrated in the face of recent challenges associated with the KC-135. Not only are our Airmen dealing with the problems, but they have also become part of the solution. Our Stratotanker team exemplifies the best of our Air Force. They are dedicated to their craft, passionate about the mission, and always ready to go." 🧶

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Strategies for Success

BY MS. ARYN KITCHELL, STAFF WRITER

urrent and future warfare is changing, and Air Mobility Command (AMC) is working to change with it. All domains are becoming more competitive, and the competitors have greater capabilities than ever before. Without a change in the status quo, our assets could be stretched, creating an allocation crisis. The solution is innovation and adapting to win in any future fight. As AMC adapts and ushers in innovation, they are also taking purposeful steps to foster minds, bodies, and craft to prepare Airmen across all domains.

In September of last year, the commander of the U.S. Air Force Expeditionary Center, Maj Gen John Klein, released a new strategy for the U.S. Air Force (USAF) Expeditionary Center with a primary focus on preparing for any future fight through organizing, training, and equipping Airmen for expeditionary warfare. The strategy marked the beginning of a 365-day campaign that will end with Exercise Mobility Guardian 23, which will be used to demonstrate the progress made on the initiative.

"The U.S. Air Force Expeditionary Center Strategy" was released to work in conjunction with the new "Air Mobility Command Strategy" released in March 2022. "The U.S. Air Force Expeditionary Center Strategy" was also published a month before the release of "The Mobility Manifesto" by Gen Mike Minihan in October 2022.

Airmen are the most effective weapon system in the USAF, and both the strategy and the manifesto focus on ensuring Airmen are prepared to win. In addition to the strategy and Maj Gen John Klein, U.S. Air Force Expeditionary Center Commander, speaks to a group of Airmen assigned to the 728th Air Mobility Squadron (AMS) at Incirlik Air Base (AB), Türkiye, Feb. 25, 2023. Klein visited Incirlik AB to see the efforts Airmen assigned to 728 AMS provide in support of the Turkish government's response to the Feb. 6, 2023, earthquakes.

USAF photo by SrA David D. McLoney

the manifesto, AMC's Warrior Heart campaign hopes to develop "personal, intimate, 'in-your-face' leadership" to further prepare Airmen for the future fight. This campaign acknowledges the reality of the possibility of a difficult and violent fight, but by preparing our Airmen and promoting the Warrior Heart culture, AMC can ready minds, bodies, and craft so that any fight can be won.

The USAF Expeditionary Center plans to ensure Airmen are prepared for expeditionary warfare: wars fought and — more importantly — won on foreign shores. This strategy refocuses on the threat of the pacing challenge.

The year-long campaign will allow the USAF Expeditionary Center to fill in capability gaps and begin making improvements to prepare for the next fight. The strategy has three main lines of effort: organize, train, and equip Airmen for expeditionary warfare.

To organize Airmen for expeditionary warfare, the USAF Expeditionary Center seeks to build readiness and strength. They particularly highlight mental and physical fortitude, tactical and technical competencies, and unit identity. Included in this effort are purposeful steps toward securing cross-functional talent who will act as well-rounded mobility leaders.

Next, Airmen must be trained for expeditionary warfare. Preparing Airmen to fight not only includes physical readiness but mental and spiritual readiness as well. According to the strategy, training should cover "the fundamentals of physical fitness, dress and personal appearance, customs and courtesies, and good order and discipline." By encapsulating these requirements, Airmen can embody readiness for exercises and the literal fight.

Finally, Airmen need to be equipped with both resources and knowledge for expeditionary warfare. This effort will require creativity to use our currently available resources and deliver "the trust, doctrine, policy, authorities, materiel, and manpower" that will be essential to fight—and win—future conflicts.

As a whole, "The U.S. Air Force Expeditionary Center Strategy" can be visualized as three groups—the air base wings, air base groups, air mobility operations groups, and Expeditionary Operations School; air mobility operations wings; and the Contingency Response Wing—all coming together as one entity to do their parts in organizing, training, and equipping Airmen who, at the center of the strategy, are the heart of the success of AMC.

Like the strategies, the Warrior Heart campaign from AMC is focused on supporting Airmen who make up the foundation of the Air Force. The campaign seeks to find those Airmen who embody a warrior's heart and lift them up to empower them. Another focus is ensuring leadership and wingmen focus on healing those who need it. The possibility of violence should not be ignored, and Airmen and leadership should expect to have frank conversations about challenging experiences. It is no light matter to be ignored, and part of readiness of mind and body means Airmen should be open to these conversations.

Minihan's efforts are creating a path toward preparing Airmen for the realities of a high-end fight and using every available advantage that can deliver devastation to our enemies. With Warrior Heart, AMC is taking nothing for granted; existing procedures that are standing in the way of the Warrior Heart ethos will be challenged.

As Minihan in "The Mobility Manifesto" explains, "We will trust our Airmen to take risks, to try, to fail, to learn, to recover, to succeed, to win. This will require a change in mindset and a shift to solution oriented culture with a hunger for maximizing the tools we currently have and how to apply them in today's environment." By using a critical advantage—Airmen who usher in creativity and innovation— AMC is preparing for victory no matter the circumstances.



Field Craft Hostile (FCH) students engage with hostile forces during a field training exercise at Joint Base McGuire-Dix-Lakehurst, NJ, Nov. 19, 2021. FCH places students in realistic and strenuous training scenarios used to teach skills such as weapons control, combative techniques, communications, mounted and dismounted individual and team movements, and land navigation.

USAF photos by SrA Bryan Guthrie



Airmen assigned to the 305th Air Mobility Wing conduct an Engine Running Crew Change during exercise White Stag at Joint Base McGuire-Dix-Lakehurst, NJ, March 8, 2023.

USAF photo by SrA Sergio Avalos

SAFETY CULTURE

Avoid Being a Hostage Load Victim During Your Next Relocation

BY MR. MIKE CREMEDAS, STAFF WRITER

s the first line of their creed declares, Airmen are warriors, and a common trope about warriors that holds true is that they tend to wander. According to The Soldier's Project—an organization that provides a safety net of psychological care for military service members and their loved ones—a military family typically moves every 2 to 3 years but may move more frequently, depending on the specific nature of the military family members' jobs.

Moving you, your family, and all your belongings can be a Herculean task under perfect conditions, but it can be almost unbearable when dealing with a moving company that has no respect for its customers, the law, or the military. According to the American Association of Retired Persons, the U.S. Department of Transportation (DOT) received almost 900 so-called "hostage load" complaints in 2020, a year when only 8 percent of Americans relocated. A hostage load occurs when a dishonest mover or shipper refuses to immediately release the goods on demand or otherwise exerts unauthorized control over a freight by refusing to deliver the load at the scheduled

refuses to immediately release the goods on demand or otherwise exerts unauthorized control over a freight ...

A hostage load occurs when a dishonest mover or shipper

time and place of delivery, or refusing to provide the customer information on the location of the freight.

Hostage load scams are not exclusively perpetrated on the elderly. An *Augusta Chronicle* article focused on a firm that manages relocation for certain military personnel and is accused of exaggerating prices and overbilling the federal government. If proven, the charges may subject the company which moves soldiers to and from Fort Jackson in South Carolina and Fort Gordon in Georgia—to millions of dollars in penalties and fines.

In an attempt to weed out crooked movers, the Office of Inspector General (OIG) for DOT advises keeping an eye out for many red flags, such as moving company websites with no local address and information about their Federal Motor Carrier Safety Administration (FMCSA) registration or insurance. They might also demand a large cash deposit before the move or attempt to get you to sign blank documents before beginning to load your goods. Unfortunately, scammers who claim you owe them more than a previously agreed-on price may not be knowledgeable on laws they decide to break. Calmly remind them that, pursuant to 49 U.S. Code 14915, any person, motor carrier, or broker that holds a household good (HHG) shipment hostage is subject to a \$10,000 civil penalty for each violation, and each day the goods are held may constitute a separate violation. The FMCSA may also suspend a broker or a motor carrier's registration for 12 to 36 months. If that warning fails, you can report any HHG fraud allegations to the OIG Fraud Hotline by calling 1-800-424-9071 or sending an email to **hotline@oig.dot.gov**.

The last line of The Airman's Creed focuses on never leaving Airmen behind. Do not leave your precious belongings and memories behind with disreputable movers; be aware of, keep an eye out for, and know how to avoid becoming a victim of fraud when moving.



AIR MOBILITY COMMAND WELL DONE AWARD

Presented to **TSgt Jeffrey M. Lee** 436th Maintenance Squadron Dover AFB, DE

at Jeffre

TSgt Jeffrey Lee

Sgt Jeffrey Lee stepped out of his primary career field and performed on-the-job training at Weapons Safety to supplement the primary Weapons Safety Manager during one of the busiest times of the year. Lee took charge of the pyrotechnic explosive siting coordination with the contractor and built the risk assessment portion of the '22 Thunder Over Dover Airshow at Dover Air Force Base, DE. His expert knowledge with multiple base agencies allowed safe on-base storage and transportation of 154 pounds of explosives for the aerial display. His efforts led to the airshow being lauded as one of the best at Dover, and supported an esprit de corps mindset promoting the installation mission to 136,000 spectators over the three-day event. Additionally, this year Lee coordinated, validated, and built the Hazards of Electromagnetic Radiation to Ordnance survey, which ensures safe and secure passage on the primary and alternate explosive routes for the 436th Airlift Wing, and prevents damage to munitions used to keep aircrew safe while on deployment. This survey accounted for 91 transmitters across 3.9 thousand acres and allowed the traverse of 12.3 million pounds of cargo. Later in the year, he coordinated with the Nuclear Certified Equipment monitor and validated 85 items

across two installations. Lee's work led to the annual certification package completion and security of \$9.1 million of equipment directly supporting the 18th Air

Force Prime Nuclear Airlift Force mission. In addition to these tasks, Lee utilized his extensive knowledge by instructing five additional duty weapons safety representatives across the Wing. By tailoring specific items to shops, unit representatives were armed with tools to effectively manage their weapons safety programs, and they were primed for success during their annual inspections and the Major Command Unit Effectiveness Inspection. Lastly, Lee utilized his training and real-world events to craft three newsletters for the wing. These topics helped the Aerial Port Squadron to build event waivers, which sited existing structures for an increase of explosive capacity in support of the Russian-Ukraine conflict. This allowed an increase of 313,000 pounds of Hazard Division 1.1 munitions, prepositioning of munitions laden vehicles for guicker aircraft turn time, and delivery of 32,000 tons of vital aid to our NATO allies. 🏽

AMC HERITAGE



1917 Charles F. Kettering of Dayton, OH, invented the Kettering Aerial Torpedo—also known as the "Bug."



1939 Radioplane OQ-2A, the first massproduced American drone.



1944 "Weary Willies" were Boeing B-17 Flying Fortress and B-24 Liberators turned into radio-controlled bombers.

The History of **DRONES**

BY MS. CHRISTINE WALSH, STAFF WRITER

rones have many functions, including monitoring infrastructure, crops, and wildlife; gathering, shipping, and delivering small goods; inspecting industrial sites; mapping and surveying land; responding to emergencies; protecting assets; firefighting; relaying communications; photographing; and filming. These applications would not be possible without the colorful history of drone innovation within the U.S. Air Force (UASF), including contributions from two well-known Hollywood actorsone of whom became a U.S. president.

THE KETTERING BUG

In 1917, electrical engineer Charles F. Kettering of Dayton, OH, invented the Kettering Aerial Torpedo—also known as the "Bug." Launched from a small four-wheeled carriage led down a portable track, the Bug's internal preset pneumatic and electrical controls stabilized and guided it toward a target. After its engine made the number of revolutions needed to reach its destination, a control closed an electrical circuit, shutting off the engine. Then the Bug's 12-foot cardboard, biplane-like wings were released, causing its torpedo-shaped payload-carrying fuselage to drop, and the 180 pounds of explosives it was carrying to detonate on impact.

The first pilotless vehicles were developed during World War I (WWI). Kettering's Bug first flew in October 1918. Shortly thereafter, the Dayton-Wright Airplane Company built 45 additional Bugs before WWI ended in November 1918. Although promising in tests, the Bug was not used operationally during the war. After WWI, the U.S. Army Air Service, a USAF forerunner, conducted more tests, but funding ceased, and further development ended.

RADIOPLANE-1 (RP-1)

In 1935, character actor and radiocontrolled model airplane enthusiast Reginald Denny became the first civilian to develop a remotely piloted vehicle. He began pitching his RP-1 drone to the U.S. Army Air Corps (another USAF predecessor) for anti-aircraft gunnery training. Over 2 years, he and his team conducted prototype test runs for California military leaders, first at the U.S. Army's Fort MacArthur installation in San Pedro, then at the Army Air Force's Twentynine Palms Airfield, and finally at the Army Air Corps' March Field in Riverside County. Denny's California-based Radioplane Company developed the design into the Radioplane OQ-2A, the first massproduced American drone.

At the Radioplane plant, Army photographer David Conover, assigned by Capt Ronald Reagan (who later became a Hollywood actor as well as America's 40th president), photographed Radioplane employee Norma Jeane Dougherty, leading to the first of many Hollywood screen tests (and roles) for the 18 year-old later known as Marilyn Monroe.

WEARY WILLIES

In 1944, the U.S. Army Air Forces 562d Bomb Squadron converted its battleweary Boeing B-17 Flying Fortresses and B-24 Liberators into "Weary Willies," airplanes automatically piloted and laden with explosives. Under the code name Operation Aphrodite, pilots packed the radiocontrolled bombers with 20,000 pounds of explosives. They guided them into the air before ejecting when they reached key Nazi Germanycontrolled targets and leaving the plane's control to the mothership.

LIGHTNING BUG

In July 1960, the USAF awarded a contract to Ryan Aeronautical Company to perform further studies for a project code-named "Red Wagon," which involved modifying a "Firebee" target drone to perform long-range reconnaissance missions. The radar and infrared signatures of previous drone-like structures were reduced on the Firebee by placing a wire screen over the jet intake, painting parts with nonconductive paint, placing radar-absorbing

AMC HERITAGE



1962^{Ryan} Model 147 "Lightning Bug" unmanned aerial vehicle.



1962 Lockheed D-21, guided by an preprogrammed path.



1994 RQ-1 Predator, capable of flying over dangerous areas for extended periods.

pads on both sides of the fuselage, repositioning the engine to the back of the fuselage, and using inward-canted twin tailfins to conceal the exhaust plume. The wings were lengthened for high-altitude flight, making it even more undetectable.

In 1961, the USAF ordered a photographic and signals intelligence reconnaissance version of the Firebee. Hence, the Ryan Aeronautical Company modified the Firebee with a new guidance system consisting of a time programmer, a gyroscope, and an altimeter; reconnaissance equipment, including a nose containing a U-2 camera; and a 35-inch "plug" in the fuselage to carry an additional 68 gallons of fuel. In turn, the Ryan Model 147 "Lightning Bug" unmanned aerial vehicle (UAV) was born, successfully completing 2 months of testing by May 1962. By 1964, a large number of Lightning Bugs were deployed in Southeast Asia.

D-21

The Lockheed D-21 was a UAV designed to carry out strategic reconnaissance missions over hostile territory.

D-21's development started in October 1962 when the nation's Central Intelligence Agency and USAF asked the Lockheed Martin Corporation to investigate the construction of a highspeed, high-altitude drone concept. The leader of Lockheed Skunk Works—a pseudonym for Lockheed's advanced development programs—Kelly Johnson specified speeds of Mach 3.3 to 3.5 (at least 2100 miles per hour), an operational altitude of 87,000 to 95,000 feet, and a range of 3,500 miles.

Powered by a ramjet, the Lockheed D-21 used radar-absorbent materials and stealth design. Launched from the back of an airborne mothership, the D-21 was guided by an inertial navigation system on a preprogrammed path. Initially, Lockheed testers used an M-21 (a variant of the high-altitude Lockheed A-12 aircraft) to launch the D-21 drone.

After completing its sortie, the drone would eject its parachute-equipped high-resolution photographic camera, film canister, and navigational systems for a C-130 Hercules transport aircraft to retrieve in midair. After which, the drone was programmed to then self-destruct.

The first successful D-21 launch from a B-52 aircraft occurred on June 16, 1968. The drone flew 3,000 miles at 90,000 feet. Nonetheless, the D-21 program was canceled a few years later in 1971. The cancellation was due to several reasons, including the introduction of a new generation of photo reconnaissance satellites.

PREDATOR

In 1983, Israeli immigrant Abraham Karem developed a prototype for a small, long-endurance, medium altitude tactical reconnaissance UAV, the Albatross, which evolved into the Amber, and then the GNAT 750. At altitudes of up to 25,000 feet for periods exceeding 40 hours, the drone supported military operations in Bosnia-Herzegovina from 1995 to 1996. Initially a Navy-Army joint effort, the Secretary of Defense assigned the operation and maintenance service to USAF.

In flight, the ground crew controlled the UAV and its onboard sensors with a direct data link; when the aircraft was flown beyond a direct link's range, the crew maintained control through a satellite data link.

A larger, higher endurance version, RQ-1 Predator, was designed and provided military commanders with an intelligence, surveillance, and reconnaissance platform capable of flying over dangerous areas for extended periods without risk to a pilot's wellbeing.

In 1999, work began on Predator B, a refined derivative, which entered operations in 2007 as the MQ-9 Reaper and eventually replaced the Predator.

Since Sept. 11, 2001, the United States has significantly increased its drone deployment. Defense Secretary Robert Gates said, in 2008, that more than 5,000 UAVs have been utilized for military purposes, a 25-fold increase since 2001.

The future for drones within the USAF is bright, and it is thanks to the spirit of innovation that drone use has been made possible.

Protecting Your Financial Security

BY MR. ANDREW HELLERSTEIN, STAFF WRITER

he members of Air Mobility Command (AMC) and the U.S. military are the best in the world when it comes to protecting national security. Unfortunately, their own financial security is often not as well served. Military families often have more debt than civilian families and fewer assets. According to the National Foundation for Credit Counseling and Pioneer Services, Veterans are twice as likely as civilians to carry credit card debt over several months and often become homeless due to escalating money issues. However, by using a few simple money-management strategies, Veterans and active duty service members alike can fortify their financial situation.

1. FIGURE OUT YOUR BUDGET

The first and most basic step toward building financial security is to figure out how much you can truly afford. Do not be afraid to look at your bank account, bills, debts, and paycheck to find out how much money you end up with at the end of each month. By taking stock of your finances, you will see exactly what your lifestyle costs and what you may need to adjust. This may seem like basic advice, but it is the foundation for financial security.

You will also need to make sure you are paying off any high-interest debt you might have from credit cards and loans. This debt needs to be resolved promptly, as it will grow over time due to interest, and it will demand more from your income. You might still have large debts such as student loans and mortgages, but these generally cannot be paid off in a short amount of time. Just be sure to make regular payments on these long-term debts, pay off highinterest debt as soon as possible, and avoid getting into new debt.

2. BUILD EMERGENCY SAVINGS

The next step is to set up an emergency savings fund. This account exists to be used as a last resort, such as if you lose your

job and need money to survive without an income. A good plan is for your emergency savings to have enough funds to cover your living expenses for 3 to 6 months, which should give you enough time to get back on your feet. You can keep this in your bank's savings account or even under your bed, as long as it is safe and readily available.

3. PREPARE FOR THE FUTURE

After putting away money for emergencies, you should keep saving for the long run. Most financial advisors recommend you save 15 to 20 percent of your income. You should not leave this money in the bank, as it will devalue over time due to inflation. Instead, you can put it in retirement savings options that will gradually grow, ensuring that you will have the money needed to retire or pay other large expenses. Here are some of the best options:



Most financial advisors recommend you save **15 to 20 percent** of your income.

> Stocks and bonds

The "Wall Street" style of saving. Stocks are essentially pieces of a company, which you can purchase and sell freely. If the company does well, you will gain money in the form of dividends from its stock. The stock's value can also go up over time, meaning you can sell it for more than you purchased it for. Bonds are notes that are actually contracts made with a government or financial entity that guarantees a payout after a certain amount of time. These are much safer than stocks but have a lower potential payout.

> 401(k)

Your company might offer access to a stock-and-bond-based retirement plan called a 401(k). Money you pay into your 401(k) comes from your pretax paycheck, and many companies will match your contribution up to a certain percent. It can be a great way to save money without getting into the confusing world of individual investing.

> Individual retirement account (IRA)

This is an investment account that your bank or other financial institution manages. You can add money to this account up to a certain amount each year (currently \$6,000 for individuals below the age of 50 and \$7,000 for those above), and there are two types of IRAs, each with different benefits.

- Traditional IRA: Money added to this IRA comes from your pretax income. You still have to pay taxes on withdrawals, and you will have to pay a 10-percent penalty if you withdraw money from traditional IRAs before the age of 59.5.
- Roth IRA: Money added to this comes from after-tax income, but you will not have to pay taxes on withdrawals. You can also withdraw money at any time without penalty, but you cannot take out earnings or interest before the age of 59.5 without paying a 10-percent fee.

4. KNOW WHEN TO SEEK HELP

Sometimes, just knowing how to budget and save is not enough to mount all of life's financial hurdles. Debts can pile up, and your income may not be enough to cover all of your expenses. For those situations, Veterans and service members in need can find financial aid from various programs and organizations. Here are a few options available to them:

- > The Servicemembers Civil Relief Act provides financial and legal protection for active duty service members.
- Nonprofit organizations like Operation First Response and The Coalition to Salute American Heroes provide financial assistance for Veterans and take into account individual needs such as utility shutoffs and foreclosures.
- > The U.S. Department of Veterans Affairs offers financial hardship assistance if a Veteran cannot afford their health insurance payments.

CONCLUSION

With all of that out of the way, you should be set up for financial safety. The most important things to remember are to keep track of your budget, avoid debt, and start saving for the long term right now. By keeping these concepts in mind and knowing when to ask for assistance, you will be able to protect your financial security.

The Servicemembers Civil Relief Act: https://www.militaryonesource.mil/financiallegal/personal-finance/servicemembers-civil-relief-act/ Operation First Response: https://www.operationfirstresponse.org/

The Coalition to Salute America's Heroes: https://saluteheroes.org/get-help/

U.S. Department of Veterans Affairs financial hardship assistance: https://www.va.gov/ health-care/pay-copay-bill/financial-hardship/

Online Degrees Provide Military Members Much-Needed Flexibility

BY MS. ALLISON ELLIOT, STAFF WRITER

lexibility is the key to any higher education program geared toward military personnel. Putting your college degree in the hands of an online program can be a safe choice—as long as you know how to select a program and college and use the resources available.

Military personnel seek out college degrees for various reasons: some want to advance through the ranks in their military career, and others want to prepare for life after the military in a different career. Hundreds of undergraduate and graduate degrees are available online, and choosing one can be daunting. The Air Force, however, offers resources for helping you choose your major or area of study, and also with tuition assistance. Visit your base Education Office and the Air Force Virtual Education Center (AFVEC) website at https://veteran.com/ afvec/ for more information. Once you decide-through those Air Force resources, visiting with a college counselor, a chat with your mentor, or a perusal of job postings for your desired career—you can then select which college's online program would be best for your chosen major.

Getting a degree online has risks, but offers a multitude of benefits. Some employers used to view online degrees as ones that were simply "paid for" and not earned. That is not the case today, thankfully, because

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AMC NEWS

The government provides assistance for military personnel seeking a college degree, and it is worth it to check out these benefits.



online programs allow you to access an education from anywhere and on your own time. Some "for-profit" colleges do not have a high academic standing but can lure students in with the promise of a super flexible program. Therefore, whichever online program you choose, make sure it is at an accredited college by checking out their credentials online and through your advisors.

A quick search for online degrees for military personnel brings up many lists of "military-friendly" colleges. This research is an excellent place to start looking for a program to continue or start your education after high school or undergrad. Military-friendly colleges offer various features:

- Financial benefits under the G.I. Bill and Department of Defense Tuition Assistance program.
- A discounted tuition rate for military personnel.
- A credit-transfer program that allows you to bring in credits from another college or send them to your new college.
- Military-focused areas of study or a wide range of other types of degrees.
- Flexible credit minimums that allow you to complete your degree on your time.

The government provides assistance for military personnel seeking a college degree, and it is worth it to check out these benefits. They can help defray the cost of an education, regardless of whether it is online or in-person.

If you earned a few college credits before you joined the military or during your military career, many colleges allow those credits to be transferred to apply toward the minimum required for a degree. You even have the flexibility with military-friendly colleges to switch to another college (say, if you switch duty stations or decide to enroll in a different program) and bring along your credits, so you do not start from scratch.

You can research a college's program in your major before applying to see how it could help your career. I suggest looking at:

- Each professor's resume and area of study to see if it matches your goals or interests.
- > The list of careers graduates of the program tend to have after graduation.
- The list of courses required for your major and the syllabus for each course, describing what subjects the course covers in a given semester.

Some colleges, especially graduate colleges, require their students to be full-time or to meet a minimum

credit requirement each semester. That is not the flexibility we are looking for as military personnel. You need a program that allows you to learn part-time and remotely while you serve in the military. That is why an online program at a military-friendly college is a great way to further your education.

Find an accredited military-friendly college with some or all of these benefits, and you are well on your way to achieving a higher education degree. The next step? See your college advisor.

Once enrolled in a program, colleges will assign an academic advisor to help you choose classes when they are available to meet the requirements for a degree in your major. Not all classes are offered every semester, for example, and an academic advisor should know that when helping you sign up for courses. If, for any reason, you decide to change your major, an academic advisor can help steer you toward another major where you can still apply your earned credits toward a degree.

Getting a college degree requires time, effort, and money. That is why it is worth it to do your research and find the right online program and college to help you meet your goals within your military lifestyle.

Tornado Warnings: Time To Take Action!

BY MS. CHRISTINE WALSH, STAFF WRITER

t was 12:45 p.m. on an unusually warm Sunday in fall 2013. My mother, my sister, and I had just finished brunch after returning home from church when the sky began to darken ominously. I looked out a window and saw dirt swirling up in the open farm field in a way I had never seen. We all had the same thought, which I said aloud — "There's a tornado!"

My mother's limited mobility would have made going downstairs to our basement nearly impossible, so with hearts racing, we hurried to an interior bathroom and huddled in the bathtub. We silently praved and listened to the roaring winds, waiting until we felt sure it was safe to emerge. As we did, we saw no serious damage around our property, but my sister and I hopped in her car to survey the area. We did not have to go far to see twisted metal and wood lying in the fields and in the road. As we approached a neighbor's farm, we gasped in horror-her home was completely destroyed. When we arrived at the house, we were relieved to learn that she and her family had not been home.

Miraculously, nobody in our area was killed, but about 30 homes were destroyed, 15 businesses sustained damage, and the roof of a school was peeled back, according to the National Weather Service. The damage to the area was estimated at around \$62.5 million. This terrifying event taught me that tornadoes do not always happen in the spring and summer. This EF-3 tornado — the third strongest type of tornado on the Enhanced Fujita Scale—struck on Nov. 17, hardly peak tornado season. Since then, I have learned that a National Oceanographic and Atmospheric Administration (NOAA) Weather Radio would have been a good way to be informed during a situation like that when we had no other way to be aware of the watch issued that morning.

Tornado alerts come in two types watches and warnings—which have different purposes and demand different reactions. The NOAA Storm Prediction Center issues watches. The target areas for a watch are usually broad, encompassing multiple counties or even states. A watch indicates that conditions are ideal for a tornado to form in and near the designated area, so everyone should be prepared to take shelter quickly if a warning is issued or if it seems that a tornado may be approaching.

During a watch, you should stay tuned to local radio and television stations, the National Weather Service website (https://weather.gov), your local government's emergency management website, or the NOAA Weather Radio and NOAA's Twitter (https://twitter.com/NOAA) and Facebook (https://www.facebook. com/NOAA) accounts for further weather information.

You should also be alert to changing weather conditions. The danger signs of a tornado include a dark and often greenish sky, large hail, a large and dark rotating funnel-shaped or lowlying cloud, and a loud roar similar to a freight train. You should secure or bring in outdoor items such as patio furniture, toys, and trash cans that strong winds can lift and carry.

Your local NOAA National Weather Service Forecast Office issues warnings, which usually cover only the cities or small counties that may be affected. A warning means one needs to take shelter quickly because a forecaster has identified a tornado funnel on radar, or a trained spotter has sighted a rotating funnel cloud. Lives and property are in imminent danger. Storm cellars or basements offer the most protection; otherwise, you should go to a windowless interior room, closet, or hallway on the lowest level. Secure your pets if time allows. If you are in a mobile home, vehicle, tent, shed, storage facility, or outside, move to the closest sturdy building and shield yourself from flying debris. Do not open windows.

If you are in a vehicle and cannot make it to a safe shelter, get down in your car with your seat belt on and cover your head with your arms, a blanket, coat, or another cushion. You might also consider lying flat in a low-lying area, such as a ditch, culvert, or ravine and covering your head. Avoid places with wide-span roofs, such as gymnasiums, auditoriums, cafeterias, supermarkets, and shopping malls.

During rare events such as a tornado outbreak near a heavily populated area, a tornado emergency might be issued. Emergencies are similar to warnings but indicate a powerful tornado with a much higher potential of property damage and loss of life. Just as with a tornado warning, those in the path of a tornado emergency should seek shelter and wait for authorities to declare the area safe.

After a tornado, if you are trapped and cannot call or text for help, try tapping on a pipe or wall or using a whistle to help rescuers find you. Reunite with your family members at a preplanned meeting location unless public safety officials direct otherwise. When assessing any destruction to your home or immediate surroundings, be extremely cautious of potential dangers, such as ruptured gas lines, structural damage, downed electrical lines, localized flooding, nails, and broken glass. Immediately call 911 to report any injuries, trapped persons, or hazards. Administer first aid where appropriate, but do not move seriously injured people unless they are in immediate danger. If you suspect a gas leak, go outside and do not turn on or off electrical switches or appliances. If your property is damaged, take photos or videos to document the damage, and contact your insurance company. Do not use generators inside because their fumes contain carbon monoxide.

Practice specifically how and where you take shelter and prepare an emergency kit. The kit should contain a family emergency plan that specifies how family members will get in contact with each other, where they will go, and what they will do in an emergency. The kit should be in a durable, waterproof container and include bottled water, nonperishable food, a NOAA radio, a flashlight and batteries, personal hygiene products, a first aid kit, a whistle, a manual can opener, copies of important documents, a blanket or towel, any necessary medications, basic tools, waterproof matches or a lighter, extra cash, and a change of clothes. You should also find a safe place to store photo or video records of your personal property.

Although I grew up in an area where tornado drills were common, I now realize my family and I were not as well prepared as we could have been. Thoughtful planning can help keep your loved ones safe during a tornado.

Be a Grill Master ... the Safe Way!

BY MS. DARA MARLAR, STAFF WRITER

sing the grill for a family barbecue is a favorite American summer pastime. Most people do not think about safety when grilling, but a grill fire can start easily and spread quickly. According to the National Fire Protection Association, gas and charcoal grills are involved in about 10,200 home fires per year. These outdoor cooking safety tips will help keep your home and family safe this summer while enjoying the sun!

LOCATION, LOCATION, LOCATION

Only use a grill outside, in an uncovered area. It might be tempting to grill in your open garage, under the shade of a tree, or on a covered porch, but grills need proper ventilation and space to ensure safety.

Keep grills at least 10 feet from your home or other structures. Most grills are set up just outside the back door, next to the porch railing. This can be very dangerous. Grills placed too close to your home or other wooden structures can heat up nearby materials, which can then ignite.

Grills should be used on a flat, level surface. Grills placed on slopes or uneven surfaces can easily tip over and start a fire.

WATCH WHAT YOU WEAR

Do not wear long sleeves or other items that dangle. These can easily catch fire if they get too close to the open flame.

Keep apron strings tied back. If your apron strings are long, they can fall too close to the flames and catch fire.

KEEP SAFETY ITEMS NEARBY

While starting your grill and cooking, keep a spray bottle of water on hand. Flare-ups are a common occurrence on grills when fat drips from meat as it cooks. If left to "burn out," as many people do, the flare-up can become a full-blown grill fire and spread. Keeping a spray bottle near the grill allows you to safely extinguish any small flames before they become a real issue.

Always have a fire extinguisher within reach. If a fire does break out, having a small, point-and-spray fire extinguisher allows you to put the fire out quickly, keeping your home and family safe.

START, COOK, AND FINISH SAFELY

Check for leaks. In a gas, propane, or natural gas grill, thoroughly check the gas line or tank and all connections to ensure they are free of leaks before use.

Ensure your grill lid is open when you start it. While this is almost necessary when using a grill you have to light by hand, gas grills with ignitors can cause large fires when started with the lid down. The inside of the grill fills with too much gas, and then, when the ignitor is lit, it can cause a small explosion.

Never leave the grill unattended. Anytime a live fire is left unattended, it becomes a safety and fire hazard. If you must leave the grill, ensure another adult is around to watch it while you are away.

Clean your grill after each use. Cleaning your grill after each use removes grease left behind that can start a fire. Cool off your coals. If using a charcoal grill, ensure coals are completely extinguished and cooled down before placing them in a metal can with a lid.

FOOD SAFETY

While fires are a genuine hazard when grilling, undercooked food and cross contamination can cause food poisoning or other unwanted sicknesses for you and your family. To avoid food poisoning from grilled foods, follow these guidelines:

- > Do not use the same utensils for raw chicken and seafood as you do with other raw meats.
- > Do not thaw foods at room temperature. To prevent harmful germs from multiplying, thaw food in the refrigerator, in cold water, or in the microwave.
- > Always marinate food in the refrigerator, not on the counter or at room temperature.
- Use a food thermometer to ensure meat is cooked thoroughly to eliminate harmful germs.
- Always use the U.S. Department of Agriculture's Food Safety Guidelines for the minimum internal temperatures when cooking meats, as shown in the following list.
 - 145°F whole cuts of beef, pork, lamb, and veal (then allow the meat to rest for 3 minutes before carving or eating)
 - 145°F—fish
 - 160°F—hamburgers and other ground beef
 - 165°F—all poultry and precooked meats, such as hot dogs

How to Care for Minor Burns



BY MS. LAUREN SCHATZ, STAFF WRITER

ou are working on routine vehicle maintenance, and suddenly a hose bursts, spraying a hot substance your way. This chore quickly turns into a medical situation. Maybe you are channeling your inner Gordon Ramsay and a missed flip splashes sizzling oil on you. Maybe a fun night around the campfire goes awry. No matter the cause, burns can be painful and proper medical care is essential.

First, assess your burn. Does it constitute a medical emergency?

If the burn penetrated all layers of the skin or is leathery in appearance with white, brown, or black patches, it is best to call 911 immediately—a trip to the emergency room should be your obvious path.

If the burn is minor, it is still critical to treat it properly.

Would you know what to do if you or a loved one experiences a minor burn? If not, it might be wise to review the dos and do nots of minor (first-degree) burn care.

DO:

Cool the burn by running it under cool water.

DO NOT:

Run very cold/icy water over the burn.

DO:

Apply a cool, wet compress on the burn.

DO NOT:

Apply ice, which can cause nerve damage!

DO:

Remove rings and/or tight areas of burned clothing before skin swells.

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DO NOT:

Break blisters—as oddly tempting as this procedure may be, fluid-filled blisters are often the best defense against infection.

DO:

Consider a pain killer—but not an alcoholic drink. Although a rum cocktail may sound enticing, an over-the-counter pain reliever is recommended.

DO NOT:

Forget to stay hydrated. Your skin is trying to heal and can use all the hydration it can get.

DO:

Bandage the burn. You can cover it with a sterile, nonadhesive bandage or clean cloth.

DO NOT:

Hesitate to see a doctor. If the pain worsens or your burn begins to swell or ooze, it may be a sign of infection, and it is best to seek medical care.

DO:

Use ointment, such as petroleum jelly or aloe vera.

DO NOT:

Use creams or egg whites.

Correctly taking care of your minor burn will help it heal quickly and prevent further damage. The next time you are working with hot substances, wear proper protective clothing to prevent a painful situation.

SEE THESE RESOURCES FOR MORE INFORMATION:

https://www.webmd.com/first-aid/thermal-heat-or-fireburns-treatment

https://www.mayoclinic.org/diseases-conditions/burns/diagnosistreatment/drc-20370545

https://www.webmd.com/first-aid/ss/slideshow-burnscauses-treatments



How To Pass Your Physical Fitness Test with Flying Colors

BY MS. KATHY ALWARD, STAFF WRITER

he physical fitness assessment for the U.S. Air Force was updated in 2022 after close to 20 years. Endurance is tested with the Air Force's Basic Military Training (BMT) physical fitness test (PFT), which measures cardiorespiratory fitness, physical strengths, and abilities. In order to graduate from boot camp and then continue to the advanced individual training, you are required to pass the BMT PFT.

The Air Force advises that you should work on your physical conditioning before you report for BMT. It is important to keep in mind that different body types may have different needs when getting in shape. You should review your current fitness activities and lifestyle habits, and also start a food diary to examine whether or not you have healthy dietary habits.

After your self-review, you should inform your doctor of your plans to join the military. Share with your doctor which branch of military service you plan to join and when you want to ship out and learn what kind of changes you should make in order to survive basic training and have good Photo above: Officer Training School trainees perform situps during an official Air Force physical fitness test (PFT), Aug. 8, 2019, Maxwell Air Force Base, AL. The Air Force PFT comprises four components: aerobic, body composition, pushups, and situps.

USAF photo by A1C Charles Welty

overall health. The timing of your doctor's appointment is important because it is recommended that you start your physical training program to prepare for basic training at least 6 weeks to 2 months before the BMT onsite training. The more time you have to prepare, the better.

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Although the new PT test still includes situps, pushups, and a 1.5-mile run, Airmen can now substitute other test options, such as planks, reverse crunches, a timed shuttle run, and hand-release pushups.

There are several important changes this year as well, including the permanent removal of the body composition waist measurement component from the test, as well as age groups now being broken into 5-year groups rather than the previous 10-year age groups. And although the new PFT still includes situps, pushups, and a 1.5-mile run, Airmen can now substitute other test options, such as planks, reverse crunches, a timed shuttle run, and hand-release pushups.

r T

There are three main groups in which Airmen must participate, choosing one activity from each of the three groups: core strength, upper body strength, and running. When Airmen complete their Fitness Screening Questionnaire, they must determine which test component they will complete, choosing either situps, planks, or cross-legged reverse crunches for the core strength test; standard pushups or hand-release pushups for the upper body strength test; and a 20-meter high aerobic multi-shuttle run or a 1.5-mile run for the running test.

Evidence-based training tips can help Airmen who want to succeed with their PFT. High-intensity interval training (HIIT) has been proven consistently to improve distance running speed. Speed is important in the 1.5-mile run. HIIT training includes alternating between a very high-intensity sprint and a lowintensity sprint with equal or longer duration intervals. This type of training is different from traditional cardio training because unique adaptations at the cellular level are produced. Distance running is one of the sports in which athletic performance is improved with HIIT.

Run times can also be greatly improved by losing excess body fat weight. Extra body weight can slow down a run, and you can prove this to yourself by running on a treadmill by first carrying a 15-pound weight in each hand. Test your run time when you are carrying a 15-pound weight in each hand versus your run time when you are not carrying a 15-pound weight in each hand. You will find that you run slower with the extra 15-pound weights, so imagine how much faster you will run if you lose excess body fat weight.

A workout known as "10-20-30" training has also proven to be an effective HIIT. For 30 seconds, start out with some low-intensity cardio—such as running, swimming, or biking. Then increase to a moderate-intensity level for 20 seconds. Then sprint for 10 seconds, giving it everything you've got. Repeat this sequence five times and then rest for 2 minutes. Next, repeat this sequence five more times and cool down for 2 minutes to complete the training.

Resistance training is also an effective form of exercise used to improve your PFT score. Resistance training is a type of training that uses an opposing force—such as resistance bands or dumbbells—when exercising your muscles. Other examples of resistance training include weight machines with adjustable seats and handles that are either attached to hydraulics or weights; medicine or weighted balls; and squats, pushups, Pilates, Barre, and chinups using your own body weight for resistance training. Resistance training has benefits other than helping you pass your PFT, including increased stamina; reduced risk of osteoporosis due to increased bone density and strength; the opportunity to remain independent as you age due to the maintenance of balance, stability, and flexibility; improved muscle strength; increased muscle-to-fat ratio; reduced (and sometimes prevented) cognitive decline; decreased injury risk; improved sleep; and increased selfconfidence with an improved body image, energy level, and mood.

Strength training is a type of training that also requires the use of resistance to increase muscle size and strength. A structured training program is often used for strength training to provide a stimulus to the body that requires an adaptation response. To achieve this, a professional strength and conditioning coach often designs the training program.

Joining the Air Force can change your life, but no matter what changes occur, it all starts with training. Training is where you officially become an Airman and learn to develop the physical strengths, skills, and values needed to succeed in the Air Force. The X-62A Variable Stability In-Flight Simulator Test Aircraft, or VISTA, flies over Palmdale, CA, Aug. 26, 2022. A joint Department of Defense team executed 12 artificial intelligence, or AI, flight tests in which AI agents piloted the X-62A VISTA to perform advanced fighter maneuvers at Edwards Air Force Base, CA, Dec. 1-16, 2022.

USAF photo by Kyle Brasier

Al Accelerates Unique Partnerships and Services

BY MS. TIFFANY L. TOLBERT, STAFF WRITER

xecutive Order (EO) 13859, "Maintaining American Leadership in Artificial Intelligence (AI)," states that it is the policy of the U.S. Government to "sustain and enhance the scientific, technological, and economic leadership position of the United States in AI research and development and deployment through a coordinated Federal Government strategy." Signed by the President of the United States in 2019, this strategy is guided by five principles, one of which declares that "the United States must drive technological breakthroughs in AI across the Federal Government, industry, and academia in order to promote scientific discovery, economic competitiveness, and national security."

AI is the perceiving, synthesizing, and inferring of information by machines. The term was coined in 1956 but has become increasingly popular in recent times due to society's use of AI applications such as web search engines, e-payment systems, social media, smart home devices, and music and movie streaming services.

The importance and prominence of AI today fueled the President's EO, which in turn fueled a partnership between the Department of the Air Force (DAF)—the most technologically advanced and powerful air fleet in the world—and the Massachusetts Institute of Technology (MIT) one of the world's top learning institutions. The DAF and MIT signed a cooperative agreement to jointly create an AI accelerator. In business, an accelerator is an organization that offers mentorship, capital, and connections to investors and partners. The DAF-MIT AI Accelerator leverages the combined expertise and resources of both organizations to conduct fundamental research to facilitate rapid prototyping, scaling, and the proper application of AI algorithms and systems to advance both the DAF and the world.

VACCELER

In January 2020, the DAF-MIT AI Accelerator launched more than 10 multiyear projects aiming to advance AI research in a range of areas, including weather modeling and visualization and human decision-making. The research will be conducted by integrated teams of DAF and MIT faculty, staff, and students, and is scheduled to be applied to a broad range of Air Force programs—including



Secretary of the Air Force Frank Kendall, third from left in the front row, stands for a photo with Department of the Air Force-Massachusetts Institute of Technology (MIT) Artificial Intelligence Accelerator personnel during a visit to MIT Lincoln Laboratory (LL) at Hanscom Air Force Base, MA, Aug. 5, 2022. During his visit, Kendall met with MIT LL officials to learn more about the work being done at the federally funded research and development center.

USAF photo by Todd Maki

Advancing human understanding and exploration in space is a long-standing pursuit of researchers and students at MIT.

operations, disaster response, medical preparedness, data management, maintenance and logistics, vehicle safety, and cyber resiliency.

All in all, the accelerator's research team, which includes Airmen, established a mission to create a state-of-the-art, end-to-end, sustainable pipeline for AI technology to give the United States a competitive advantage in the defense and civilian sector. This advantage will help both the Air Force and the United States Space Force (USSF) tackle Air and Space Force challenges. Advancing human understanding and exploration in space is a long-standing pursuit of researchers and students at MIT. For the U.S. military, including the Air Force, space technologies have wideranging implications on national security. As global access to space increases, so does the need to protect the systems in Earth's orbit that power much of the technology on which modern society relies (e.g., GPS and telecommunication).

MIT hosted an on-campus event in August 2021 that marked a new research engagement between the university and USSF to explore mutual interests and identify opportunities in research and education. This University Partnership Program aims "to recruit, educate, develop, and retain a competent, diverse, and inclusive workforce who possess



A team from the Air Force Institute of Technology, Air Force Research Lab, and Department of the Air Force-Massachusetts Institute of Technology Artificial Intelligence Accelerator prepare a Mag in a Box, a navigation system for GPS-denied environments, for testing on a 445th Airlift Wing C-17 Globemaster III, Aug 6, 2021.

USAF photo by MSgt Patrick O'Reilly



Students collaborate during the Department of the Air Force-Massachusetts Institute of Technology Artificial Intelligence Accelerator's Autonomous Cognitive Assistance, or CogWorks, course at MIT's open learning space in Cambridge, MA, March 28, 2022. The course taught participants how to develop algorithms to create AI capabilities. USAF photo by Capt Vicente Pamparo

the technical expertise to develop, field, and operate the world's most advanced systems." MIT is one of 11 academic institutions from around the country selected for the inaugural cohort of university participants.

In 2022, an academic program was developed at MIT to instruct U.S. Air and Space Forces personnel on understanding and utilizing AI technologies. Funded by the DAF-MIT AI Accelerator, the curriculum was constructed using existing MIT educational materials and resources. Later in the year, the program was evaluated via interviews and questionnaires completed by both program learners and staff. This information was thoroughly reviewed and used to enhance the current curriculum with additional content and technical features.

ATVS: Not the Same as "Seen on TV"

BY MS. PAULA COLLINS, STAFF WRITER

A ll-terrain vehicles (ATVs) are a popular source of summer entertainment. Whether you like mountains, prairies, dunes, or beaches, you can take an ATV there. If you do not own an ATV, they are often available for rent at venues that offer off-road riding opportunities. What better way to soak up the sun and fresh air with family or friends than on an ATV?

ATVs are appealing because they appear safe and easy to operate. These vehicles come in a variety of styles and sizes, ranging from youth-sized ATVs that have small engines to match their small sizes and weights, to large ATVs with up to 1,000-cubic centimeter (cc) engines that can accelerate to more than 75 miles per hour (mph). It is important to select an ATV that fits the rider's size and skill level.

Riders should be familiar with their ATV's throttle, brakes, and steering features before hitting the trail. Often ATVs can be operated with the handlebars and shifter alone, making it possible for even a child to operate a larger, more powerful vehicle. Ensure children do not have access while unsupervised by always removing the key when you are not riding. Typically, ATVs are intended for one rider, even though the seat will often accommodate two. If your ATV is rated for two riders, it will be indicated somewhere on the vehicle. Your safety as a recreational rider depends on having a healthy respect for the environment in which you will be riding, as well as the power of your ATV.

ATV Size	Engine Size (cc)	Maximum Speed* (mph)	Weight** (lbs.)	Driver Age
Small	50	17	200	6+
	70	10	245	6+
	90	32	265	10–12
Mid-Size	200	38	420	14+
	250	60	430	14–16
	270	40	450	14–16
	300	40	540	16+
	400	67	600	16+
	450	73	650	16+
Large	500	63	700	16+/adult
	650	73	750	16+/adult
	700	71	750	16+/adult
	800-850	75	800	16+/adult
	1,000	81	860	16+/adult

*Average speeds: subtract 5-7 mph.

**Average weights: models intended for mud or hunting may be equipped with larger tires, heavy duty shocks, and winches, all contributing to a heavier ATV. Source: https://wildatv.com

Remember to do the following when getting ready to ride:

- Learn about the area in which you will be riding.
- Stay off of paved roads.
- Inform others of your planned location and carry a cell phone, water, and snacks.
- Avoid any substance that could cloud your judgment.

- Start out slow and observe the lay of the land for any obstacles.
- Proper attire is essential for a safe, comfortable trail-riding experience.
- Wear a U.S. Department of Transportation-approved helmet, goggles, gloves, long sleeves and pants, and boots to protect you from brush, rocks, and abrasions.
- Never wear shorts or flip-flops.



You may have watched events at which the riders achieve high speeds and jump from fantastic ramps with their ATVs. It looks so exciting, and it might make you want to experience the thrill of being airborne on *your* ATV. It is important to remember that they are professionals who wear body armor and train daily for competitions on well-maintained tracks.

Your safety as a recreational rider depends on having a healthy respect for the environment in which you will be riding, as well as the power of your ATV. A leading cause of accidents is driving over unfamiliar terrain. Dry grass can cover a multitude of hazards, such as washes and ravines, rocks, stumps, and even deer antlers. Hitting any of these objects can cause the topheavy ATV to tip sideways or flip end over end, causing the operator to be thrown from the vehicle and possibly crushed by it. Great care should also be taken when approaching the top of a hill because you do not know what is waiting on the other side. It could be a boulder or another rider. Inexperienced riders may miscalculate the handling aspects of an ATV, especially at high rates of speed, and be unable to react effectively to avoid an accident.

According to the U.S. Consumer Product Safety Commission (https:// www.cpsc.gov/Safety-Education/ Safety-Education-Centers/ATV-Safety-Information-Center), 96 percent of injuries and over 30 percent of deaths from off-highway vehicle crashes (of which ATVs are a subset) are specifically attributed to ATVs. Each year there are an average of 100,000 emergency room visits, with 43 percent belonging to the 16-to-24 and 25-to-34 age cohorts combined. An average of 700 fatalities occur, with approximately 300 being children under the age of 16. Injuries to the head and neck and injuries to the

arm each accounted for 30 percent of injuries sustained. Torso and leg injuries accounted for 20 percent each. Most ATV accidents occur because of the following:

- Inexperience
- Unfamiliar surroundings
- Dangerous stunts
- Extra passengers
- Alcohol or drugs

While the dangers of riding ATVs are real, they are also preventable. If you follow good safety protocols, these powerful vehicles are well within your ability as a rider to control. Learn how to have fun and be safe at the same time. More detailed safety information is available at https://atvsafety.org/ free-booklets/.

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MISHAP-FREE FLYING HOUR MILESTONES

7,500 HOURS

182 AW, Peoria, IL Lt Col Jeffrey S. Teuscher

6,500 HOURS

109 AW, Stratton ANGB, NY SMSgt David Vesper

437 AW, JB Charleston, SC SMSgt Michael A. Morris

5,000 HOURS

109 AW, Stratton ANGB, NY

Lt Col Eric D. Wood Maj Nicholas J. Garren CMSgt Michael Cousineau

182 AW, Peoria, IL

Lt Col Robert E. Dodson Lt Col Eric H. Dolan Lt Col Jeffery S. Herrmann CMSgt Matthew J. Weghorst MSgt Craig C. Thurman

437 AW, JB Charleston, SC

MSgt Matthew D. Cunningham MSgt Spencer W. Edwards TSgt Shane C. Thaxton SSgt Gonzalo A. Wieler

3,500 HOURS

109 AW, Stratton ANGB, NY

Lt Col Ryan Giaconia Lt Col John Hughes Maj Daniel Marchegiani Maj James Nicholson Capt Richard J. VanPatten

182 AW, Peoria, IL

Col Bruce W. Bennett Lt Col Jason R. Hurt SMSgt James V. Grant 312th Airlift Squadron Travis AFB, CA 10,000 Hours

Lt Col Gabriel G. Salazar Lt Col Daniel A. Stowell Lt Col Jeffrey M. Zang CMSgt Bethany J. Hackney MSgt Justin F. Kass MSgt Nicholas R. Kenneally MSgt Jakob D. Pogeman

312 AS, Travis AFB, CA

Lt Col Nicholas J. Amenta Lt Col Thomas E. Parker Lt Col Patrick W. Pearce-Percy Maj Trent N. Colburn Maj Johnathan M. Flowers Maj Aaron R. Klang Maj Thomas H. Neveu Maj Roger D. Rabe Capt Brian D. Beard Capt Andrew R. Dillon CMSgt Scott A. Harris CMSgt Edward A. Ramirez SMSgt Ryan Chatterley SMSgt Benjamin L. Swanson MSgt Richard M. Bline MSgt Christopher E. Cosse MSgt Kristen L. Lewis MSgt Bryan P. Nalette

437 AW, JB Charleston, SC

Lt Col Clark M. Belfanti Lt Col Paul W. Bryant Lt Col Timothy R. Garland Lt Col Brian D. Phillips Maj Richard T. Elliot CMSgt Charles M. Skidmore Jr. MSgt Matthew J. Gaffney MSgt Ryan D. Yarton TSgt Derek J. Clements TSgt Nicholas D. Cook TSgt Adam J. Donahue TSgt Renee E. Walker TSgt Caleb M. Williams

2,500 HOURS

109 AW, Stratton ANGB, NY

Lt Col Andrea Rumple Maj Jesse Endres Maj Jason Grupp Maj Nathan King Maj David S. Price Maj Joshua Rogers Capt Corey Palmatier SMSgt Brandon Guthinger MSgt Christopher Dumond MSgt Dylan Hassis MSgt Wayne Mussmacher MSgt David Rodriguez TSgt Zachary Parrillo

182 AW, Peoria, IL

Col Rusty L. Ballard Lt Col Randy D. Fasig Lt Col Brandon K. Retherford Lt Col Brian P. Rezac Maj Richard J. Johnson Maj Jeffrey S. Ryan Capt Brian T. Hibbert SMSgt Brian K. Blythe SMSgt Matthew D. Ericson MSgt Joshua C. Childers MSgt Lacey J. Dilbeck

437 AW, JB Charleston, SC

Lt Col Matthew D. Hall Lt Col John C. McDaniel Lt Col Bernard J. Rapp III Lt Col Colt R. Schiefelbein Lt Col Rodger T. Welding Lt Col Michael W. Wells Maj Frank L. Baranyai, Jr. Maj Forrest M. Lampela Maj Nicholas J. Landry Maj Ryan C. Lutz Maj Rebecca L. Moran Maj Ezekial R. Odom Maj Christopher R. Rolon Maj Kirby F. Wedan Capt Trent J. Kern Capt Philip T. Lange Capt Michael J. Rowlett Capt William S. Utsey MSgt Russell S. Ludeman MSgt Liam P. McPhail TSgt Mark J. Wishall SSgt Emmanuel Gomez SSgt Dylan C. Wehunt SrA Christopher B. Symes



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TO SUBMIT MISHAP-FREE FLYING HOUR MILESTONES: Send your request to: mobilityforum@us.af.mil HQ AMC/SEE, 618.229.0927 (DSN 779)

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



Risk Management – Facilitating the Safety Process

MAJ STEVE BOSTWICK, AMC FLIGHT SAFETY

Risk Management is a foundational tenant of a sound safety culture. Preemptively identifying hazards allows personnel to assess the inherent risks within a mission and effectively develop mitigation strategies to address these potential hurdles. Additionally, this process highlights hazards to the appropriate risk acceptance authority, permitting leadership to provide supplemental guidance while also determining if the identified risk is acceptable.

Every Airman is responsible for conducting some form of risk management, whether it is an aircrew planning a sortie or a planning team coordinating an exercise. Assessing and mitigating hazards should also be an evolving process. It does not stop at the brief; rather, it continues during the execution phase. It is crucial that every team member effectively communicates the perceived threat and provides valuable input on how to eliminate or mitigate it, seeking approval from a superior if necessary.

As members within a profession of arms, we afford our leadership the opportunity to weigh in when the risk is deemed excessive beyond a "normal level." However, we owe it to ourselves to educate subordinates and teammates on risk management processes, particularly on gauging when to seek higher risk acceptance or when to call "knock-it-off." Although the identified risk may require leadership approval, this requirement does not excuse personnel from executing sound judgment. It should be understood that if we are seeking acceptance for a higher level of risk from a commander, we are at the same time acknowledging that everyone involved in the operation is comfortable in accepting said risk. When in doubt, call "knock-it-off" or "terminate."



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A DAY IN THE LIFE



Capt Courtney Smith, 60th Air Mobility Wing Judge Advocate Chief of Administrative Separations, speaks with Reserve Officer Training Corps cadets during a Project Tuskegee, Aviation Inspiration Mentorship event at Travis Air Force Base (AFB), CA, April 28, 2023. More than 400 students from surrounding schools and universities attended the aviation-focused event where they had the opportunity to learn from Airmen and discuss career prospects as well as tour a B-1B Lancer from Ellsworth AFB and a C-5M Super Galaxy, C-17 Globemaster III, and KC-10 Extender from Travis AFB.

USAF photo by Nicholas Pilch