Winter 2026

# Combat Edge

Air Combat Command's Safety Magazine

## F-35A Combat Turnarounds: The First Hot ICT

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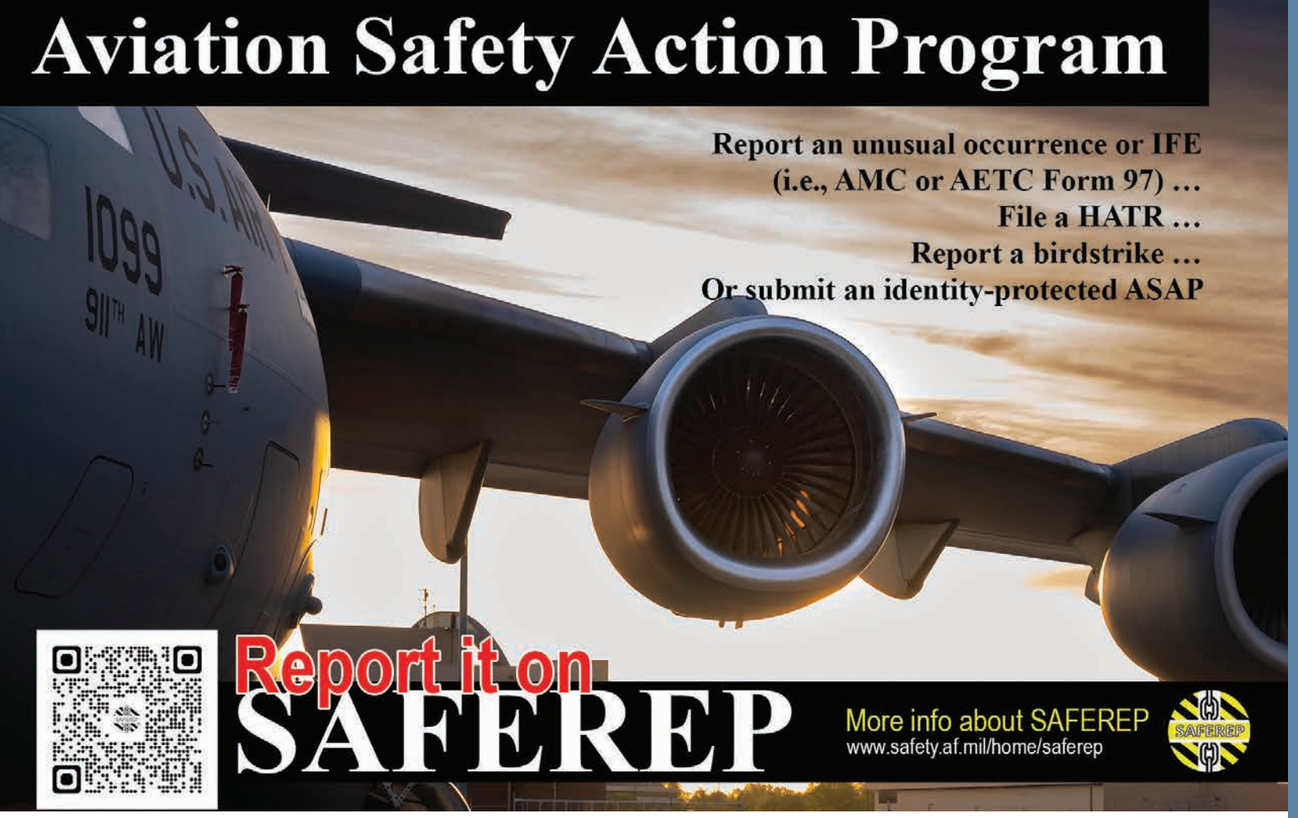


# Combat Edge






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COVER PHOTO BY 1ST LT. NATHAN POBLETE

# ACCent

**Col Jesse Doyle**
Director of Safety

The strength of Air Combat Command's mishap prevention efforts lies in the dedication of its Airmen. Operational discipline, risk management, and the consistent execution of safety programs across all ranks have proven effective in reducing the number of Class A and B mishaps in recent years. Yet Class C mishaps remain a persistent challenge. Small incidents that, when accumulated, risk creating a scenario akin to "death by a thousand cuts."

As we enter the new year, it is worth renewing our focus on ensuring mission success while managing risk to both personnel and equipment. The Chief of Staff of the Air Force and the Commander of ACC have made it clear: readiness is fundamental to the United States Air Force. Readiness is achieved by flying and fixing aircraft, a mission that depends on every Airman and every piece of equipment they operate. However, in fiscal year 2025, ACC averaged two mishaps per day across the Class A through C categories. That pace erodes readiness; sometimes immediately, but often gradually; through the cumulative effect of repeated incidents.

The new year often brings resolutions, but too many fade after an initial surge of energy. Safety emphasis can follow that same pattern: strong at first but not sustained over time. To break that cycle, we must lay the groundwork for lasting success. Establishing clear goals, forming good habits, and creating accountability are the keys to achieving and sustaining improvement. These principles are already ingrained in our daily operations and have contributed to the relatively low rates of Class A and B mishaps. But they must also extend to routine, everyday tasks that often go overlooked.

Driving to and from work, moving quickly under an aircraft during maintenance, or lifting heavy boxes in a warehouse, these are tasks many of us have performed countless times. Familiarity breeds comfort, but it can also breed complacency. Every day, an Airman in ACC experiences a mishap during one of these seemingly mundane activities. These incidents underscore the importance of applying discipline, habits, and accountability to every task, no matter how small.

No action is too minor to take seriously. Each of us is essential to accomplishing the mission, and each of us is valued by someone who depends on us. Readiness is not only about aircraft and equipment, it is about people. Your actions today may be tested tomorrow. Stay disciplined, stay accountable, and stay safe. The mission, and the people who matter most to you, depend on it.

A U.S. Air Force EC-130H Compass Call assigned to the 55th Electronic Combat Group flies over Davis-Monthan Air Force Base, Arizona, July 26, 2022. DM is home to the Air Force's only electronic attack mission, consisting of three squadrons and approximately 900 personnel. Photo by Senior Airman Kaitlyn Ergish

# Knock-It-Off

**By SSgt Anthony M. Allende**

March 4th, 2025, began like any other on the flightline for the 755th Aircraft Maintenance Squadron. The team was tasked with a periodic inspection of an outer wing mounting structure on one of our EC-130H COMPASS CALL aircraft. This meant removing the Special Emitter Array pod, a hefty, 3,000-pound piece of equipment, from the outboard wing. This particular aircraft is critical to the Air Force's mission, providing the sole electromagnetic attack capability to Combatant Commanders. The pressure to keep it mission-ready is constant.

I was filling in as the Flightline Expediter for the shift, typically an E-6 position. It was an opportunity to step up and demonstrate leadership, but I never imagined I'd be facing a situation that would test my judgment and training so acutely.

The team was well versed in pod removals, having done it countless times before. We followed the technical orders meticulously, ensuring every bolt was loosened, every safety pin was in place, and every precaution was taken. As we began the process, I observed the wing flexing. Some flexing is normal during this procedure; however, this time, something felt off.

The wing was flexing differently from the way it usually did. The difference was subtle, but I still couldn't shake the feeling that something wasn't right. Years of experience working on these aircraft had given me intuition, a gut feeling that told me to pay closer attention.

I decided to call "Knock-It-Off," a call that ceases all maintenance actions. It was questioned at first, until I explained my concerns. The weight of that 3,000-pound pod, coupled with the potential consequences of a damaged wing, weighed heavily on my mind. This wasn't about questioning the technical orders; it was about trusting my instincts and prioritizing safety.

The next step was crucial. I immediately coordinated with the Production team, explaining the situation and my concerns. Together, we came up with a plan to correctly inspect and correct the issue without causing further damage. The inspection revealed the problem: a damaged mounting surface, a wallowed-out wing attachment point, and a two-inch bend in the support bracket.

The Production team and I coordinated with the 355th Wing and the COMPASS CALL program managers. We shared our findings and collaborated to identify further inspection criteria and develop repair guidance for the affected structures. This was a team effort, involving engineers, maintenance specialists, and program managers, all working together to find a solution.

Thanks to fast action and quick thinking, the aircraft was returned to an airworthy status. The repairs were completed, the wing was deemed structurally sound, and the plane was back in the air, ready to support critical missions.

Looking back, I'm proud of the role I played in preventing further damage to mission-essential equipment and critical flight surfaces. The experience reinforced the importance of trusting one's instincts, speaking up when something doesn't feel right, and prioritizing safety above all else. It also highlighted the power of teamwork and the importance of collaboration in maintaining the Air Force's combat readiness.

This incident wasn't just about saving an aircraft. It was about ensuring the unit's ability to offer the Air Force's sole electromagnetic attack capability to complete the mission anytime, anywhere. It was a reminder that even the smallest observation or the slightest hesitation can make a significant difference in preventing a mishap and protecting our vital assets.

EC-130H Compass Call assigned to the 55th Electronic Combat Group, Davis-Monthan Air Force Base (AFB), Arizona
Photo by Senior Airman Wyatt Stabler

Damage to the bolt hole
Photo by Anthony M. Allende

Damage to the bolt
Photo by Anthony M. Allende

Damage to the pin
Photo by Anthony M. Allende

# Airmanship

By Capt Kevin J. Porath

What began as a routine training sortie for LIEGE31, rapidly escalated into a high-stakes battle for survival on the night of September 23, 2024. Demonstrating nerves of steel, impeccable coordination, and unparalleled professionalism, the crew from the 963d Airborne Air Control Squadron of the 552d Air Control Wing at Tinker AFB skillfully averted disaster, safeguarding a $550 million E-3 Sentry (AWACS) and the lives of 18 crew members.

The crew encountered their first sign of trouble while returning to Tinker AFB. It began as a gradual but troubling decline in oil quantity on one of their four engines. Initially within acceptable limits, the situation took a dangerous turn when erratic oil pressure readings appeared. With 30 minutes left in the flight, the oil quantity plummeted to a critical 0.5 gallons, leaving the engine on the brink of failure. The failing engine had to be shut down. The crew worked through the emergency checklist procedures for the shutdown. Now committed to landing with one engine inoperative, the team braced for the challenges ahead.

After declaring an emergency with Air Traffic Control, the crew requested an approach into Tinker to Runway 36. As it turned out, fate had other plans. Miles from the airport, Oklahoma City Approach Control informed LIEGE31 that, due to a sudden wind shift, the active runway was now Runway 18. The unexpected change demanded rapid adjustments.

As if the situation wasn't dire enough, the crew faced yet another obstacle. As the crew neared Tinker AFB, they realized the approach lighting for Runway 18 was dark, and the localizer for the Instrument Landing System (ILS) remained inactive. I notified Tinker Tower. The lights flickered to life shortly afterward, but we had already made the decision to forgo the ILS and execute a visual approach. We descended steadily toward the runway, and the crew executed a flawless landing. The aircraft rolled safely to a stop as emergency responders raced to meet them on the tarmac.

After landing, the maintenance crew diagnosed the problem as a ruptured oil tank. The repair required the removal and replacement of the entire engine, further highlighting the severity of the situation, as well as the crew's ability to mitigate it under such high-pressure circumstances.

This incident serves as a reminder of the unpredictable nature of aviation, and of the critical importance of preparation, communication, and adaptability. In such cases, the old adage of "practice how you play" rings as true as ever, and reaffirms the results of extensive Air Force aviation training, both in the simulator and in the jet.

The crew's actions not only preserved a valuable military asset, but also underscored the lifesaving value of rigorous training and teamwork. By sharing this story, our hope is to inspire others to stay vigilant, remain calm under pressure, and trust in their training. Doing so can mean the difference between life and death.

U.S. Air Force E-3 Sentry
Photo by Garrett N. Cole

# Small Mishap, Big Impact

**By SSgt Courtney Oldham**

Eight years ago, I was at a deployed location with the aircraft I had been maintaining as a crew chief for seven years. No task was new to me: I was the lead on shift, and our mission was ingrained into my brain as if I had been doing it my whole life. Nevertheless, complications arose every night. Multiple factors conspired to force us, at least temporarily, to prepare and launch our aircraft from a location on the other side of the airfield, far from our shelters and the spot where our jet recovered after flight.

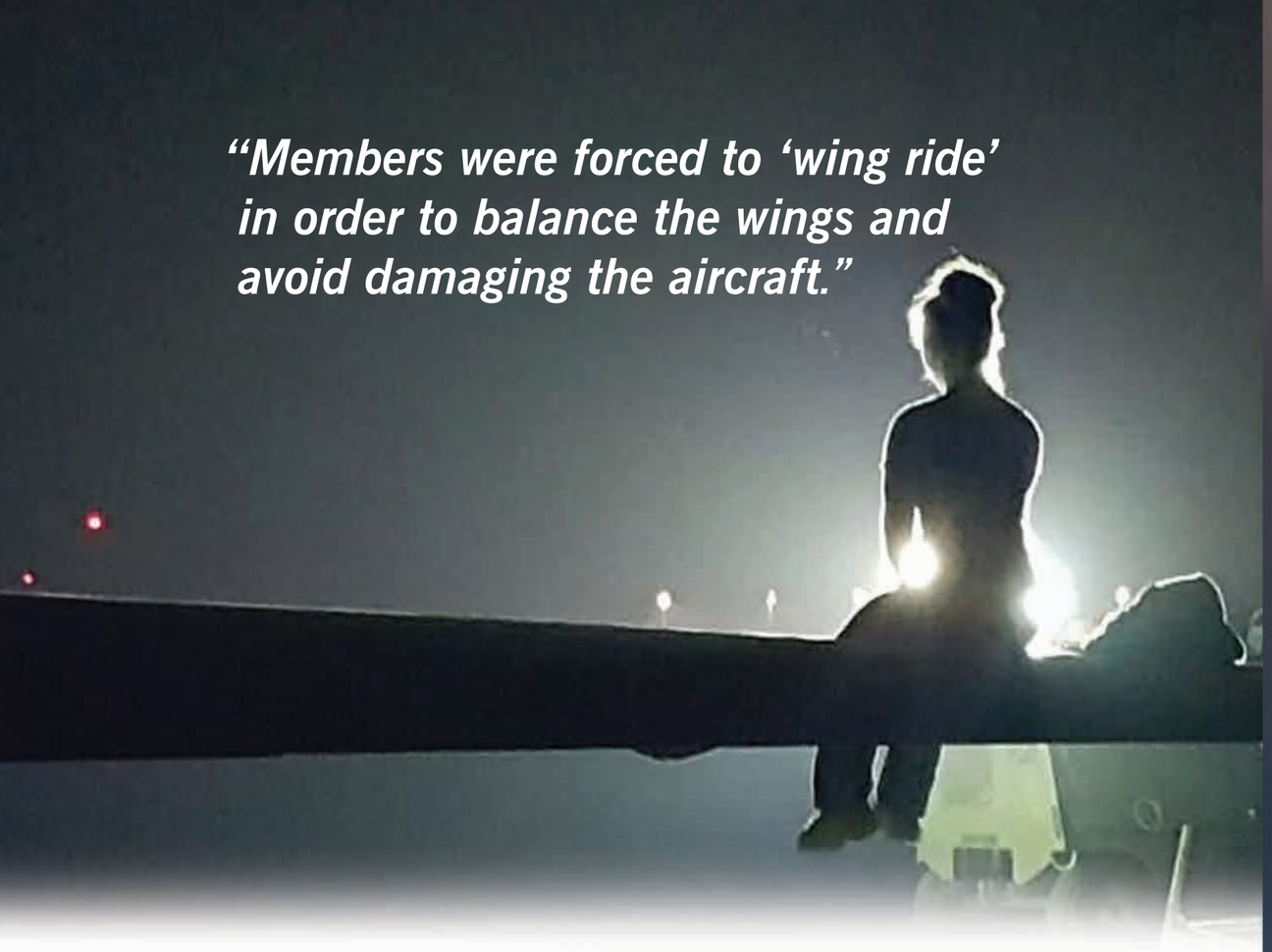
The biggest problem—one we could not overcome—had to do with runway maintenance. One of the two runways was under construction, and our jet, when fully loaded with equipment and fuel, could not make the turn onto the second runway to take off. This required us to tow our jet four miles every night across the active airfield and prepare it for flight. That sounds like just a long walk, right? Maybe even a chance to enjoy some peace while the hot sun is down. That was not the case. We were deployed, which meant other squadrons shared the airfield, and everyone had missions to fly all hours of the night.

We were constantly competing for taxiway space. We struggled to communicate with personnel in the host nation's control tower. We towed our jet across a stretch of four miles at less than ten miles an hour, with a line of running jets piling up behind us. Everyone was trying to accomplish their mission, and the traffic congestion posed a danger to the members of our tow crew.

Additionally, because a four-mile tow is not something our particular jets are designed to handle, bolts on our wheels started regularly shearing off, leaving us with tire changes on the active airfield. Adding to the problem was the asphalt. Our aircraft jacks would start to sink into the pavement as the jet was sitting positioned on them. It then became a race to get tires changed and continue our trek, with our aircraft on jacks and running jets piling up behind us. As if that wasn't enough, fuel would begin to transfer from tank to tank, creating unlevel wing conditions, due to the free flow feature of the jet's transfer valves. Members were forced to "wing ride" in order to balance the wings and avoid damaging the aircraft.

We battled these nightly obstacles for months. Our team had lost count of how many minor but routine incidents had happened. Eventually, we just expected to run into something every night. Finally, we were confronted by an obstacle that completely threw us off track. It would seem small to an outsider, but we knew what was coming the moment it happened.

I was the tow team supervisor and had us pulling into our final parking spot, as we did every night. We were about a foot and a half from the marked box for our main landing gear tires when we heard a clink. The tow truck driver halted immediately. I whipped my head around and saw our wing tip had contacted a piece of ground equipment. Immediate but organized chaos ensued; efforts to get another jet ready for the mission, calls to our



*"Members were forced to 'wing ride' in order to balance the wings and avoid damaging the aircraft."*

supervision, security forces, safety, control tower, etc. The contact had cracked the wing tip, which necessitated repairs that could not be accomplished by morning.

Ultimately, we lost the next day's mission. This was stressful for all of us, as we knew the consequences that would be coming. What we didn't know was that help was on its way to rescue us from this nightly, accident-prone, procedure we had to perform. Safety and Leadership, all the way up to the base commander, came out to hear from the maintainers who directly work on the jets, in order to assess how we were accomplishing these tasks. Some even made the tow, and walked with us across the active airfield at night. They were surprised to learn how close we were to other running jets, and were concerned by all the maintenance problems that were created by the four-mile tow.

In less than 48 hours, a new launch spot had been identified, assessed, and approved for use. By the end of the week, we were using our new location. It provided all the same necessities as before, but was less than a mile from our aircraft shelters. The move cut hours of work, and saved money on aircraft tires. Most importantly, it kept our members out of immediate danger.

We learned many lessons, the first of which was that the mission comes first, but accomplishing it in the safest way possible is a priority. Secondly, there is a whole team out there working for our safety while doing our jobs.

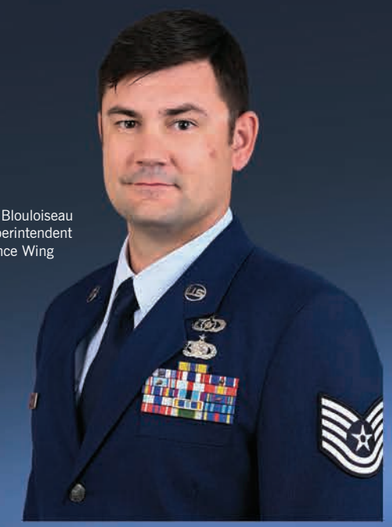


# Rising Stars of Safety 2025

## NSC Announces 2025 Rising Stars of Safety, Class of 2025

The National Safety Council has announced its 16th class of Rising Stars of Safety, recognizing 41 safety professionals, age 40 or younger, who are committed to improving safety within their organization through impactful initiatives. The award is sponsored by Dow.

Featured in the September issue of Safety+Health magazine, the Class of 2025 honorees include TSgt Clement M. Bouloiseau, Occupational Superintendent, 9th Reconnaissance Wing, Beale Air Force Base, CA.



TSgt Clement M. Blouloiseau
Occupational Superintendent
9th Reconnaissance Wing

Lorraine Martin, NSC CEO, said "This year's Rising Stars of Safety demonstrate what it means to be a safety leader and safety hero. Their dedication to creating a culture of continuous improvement is key to spreading the value of safety across our workplaces and communities. We thank these honorees for their role in making others safe and saving lives."

The recipients were formally recognized during the 2025 NSC Safety Congress & Expo, held in September in Denver, CO.

**About the National Safety Council**
The National Safety Council is America's leading nonprofit safety advocate – and has been for over 110 years. As a mission-based organization, we work to eliminate the leading causes of preventable death and injury, focusing our efforts on the workplace and roadways. We create a culture of safety to not only keep people safer at work, but also beyond the workplace so they can live their fullest lives.

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National Safety Council

# A Valiant Effort

By Capt Noah C. Sternat

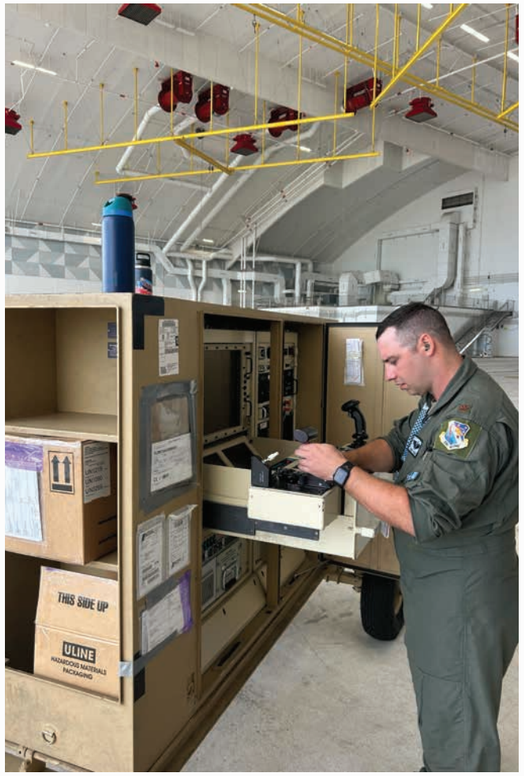
As ACC's only operational test squadron for MQ-9s, the 556 Test and Evaluation Squadron (TES) routinely conducts sorties that are a first within the MQ-9 enterprise. During participation in Valiant Shield 2024, yet another "first" was planned: capture HD, full-motion video (FMV) of the decommissioned USS Tarawa as it was bombarded by multiple aircraft during a Sink Exercise (SINKEX) in June of 2024. The presence of 556 TES and our FMV capabilities was requested by several flag officers who went out of their way to ensure 556 TES had any and all resources at our disposal to make the sortie happen. From waivers to flight plans and base resources, these high-ranking officials moved mountains and oceans to ensure 556 TES would be on-station to capture video of the sinking USS Tarawa for analysis and historical record. Another important milestone in Valiant Shield was further demonstration of MQ-9 Agile Combat Employment, which involved one MQ-9 flying across the Pacific, stopping in halfway in Hawaii. This act had only been accomplished once before in 2022 and was an entirely separate logistical effort. After the trek from Creech AFB in Nevada to Andersen AFB in Guam, which was a monumental task of its own, the MQ-9 was prepped and ready to go for SINKEX.

Aircrew and maintenance personnel launching the MQ-9 experienced no delays and were ready for taxi and an on-time takeoff from Andersen AFB. Upon calling clearance delivery and requesting activation of the flight plan, the airfield personnel at Andersen realized no flight plans had been input the night before. This left all aircraft stranded on the ground until their respective flight plans could be uploaded into the system. In addition, the system used in the Pacific theater for flight plans is different from the one used in CONUS. As a result, the flight plan filed by the 556 TES required multiple changes before the system would accept it. The entire process took approximately 2 hours.

During the delay, the MQ-9 remained in its parking spot with the engine on, waiting for approval to taxi. The aircraft is susceptible to overheating if it remains stationary on the ground for an extended duration, especially during summer months. As the crew waited, the temperatures of several aircraft control boards began to rise. By the time clearance delivery received the flight plan, the MQ-9's main aircraft control circuit board was within 3°C of its temperature limit. If this limit was reached, an immediate engine shutdown and aircraft power-down would have been required to cool the board and prevent permanent damage to the aircraft. Based on crew experience and environmental conditions, the crew made the decision to attempt a takeoff. They predicted the temperature would remain below the limit long enough for the aircraft to get airborne and cool down in flight.

To enhance Agile Combat Employment of the MQ-9, its software was updated to include automatic takeoff and landing via satellite control. This enabled the aircrew at Creech AFB, NV to launch an aircraft in Guam safely while minimizing downrange footprint. A downside of this is that the aircraft itself can determine if conditions are favorable for takeoff and can auto-abort for a number of reasons. In this instance, the MQ-9 aborted its takeoff because of an error in the runway data that was not immediately apparent to the crew. After coming to a stop, the MQ-9 was now only 1°C below the temperature limit. Despite being 2 hours behind schedule and under immense pressure for the MQ-9 to appear at SINKEX, the crew opted not to risk another takeoff and returned the aircraft to parking immediately.

After a cool-down, the MQ-9 was prepped again for launch. The same launch crew, now



approaching the end of their duty day, was able to correct the runway data issue and launch the aircraft without incident. While proceeding outbound, an overcast layer of inclement weather, with moderate to heavy precipitation, engulfed the aircraft. Only one hour into the four-hour transit to the SINKEX airspace, and immediately prior to a crew changeover, the crew in command received a caution indicating a network node fault within the MQ-9's left ruddervator. All members of both crews had experienced this caution before and initially assessed it to be erroneous, however given the near-overheat earlier in the day, rapidly deteriorating weather conditions, lack of divert options, and the crew's operational risk management matrix, the decision was made to return to Guam.

Fifteen minutes out from Andersen AFB's airspace the crew received an additional fault indicating degraded reliability of the MQ-9's automatic landing capabilities. Had the aircraft remained airborne much longer, this probably would have devolved into a total loss of automatic landing capability, forcing a 3 hour divert through deteriorating weather to an alternate airfield. Thanks to appropriate decision-making by both crews to return to Guam in an expeditious manner, the MQ-9 landed without incident and was safely recovered.

Both a risky divert through the weather or deciding to proceed towards SINKEX in an aircraft with multiple malfunctions likely would have resulted in the loss of the aircraft. The experience and systems knowledge of all members of both crews played a critical role in avoiding unnecessary damage to the aircraft and cannot be overstated. The decision to call "Knock-It-Off" despite external pressure for an MQ-9 presence at SINKEX most likely prevented the loss of a 26-million-dollar asset.

Addressing seemingly benign malfunction indications seriously, and continuously assessing and updating crew, mission, and environmental risk factors, were among the pieces of the puzzle that ensured the holes in Dr. Reason's Swiss Cheese Model* did not line up. Accomplishing the mission is important, but so is the protection of Air Force assets and personnel.

Thanks to the MQ-9 aircrew who saved a valuable asset: Maj Carter "Wario" Adams, Maj Curtis "SWAG" ODell, Maj Roy "Cowboy" Rogers, Capt Noah "VAIN" Sternat, TSgt Aaron "SLICE" Zeatlow, and TSgt Jake "GIMDIS" Emmons. Also, special thanks to the maintainers from the 432d Wing who flew across the globe to turn our jet.

** James Reason's Swiss Cheese Model is a visual metaphor for understanding how accidents and errors occur in complex systems. It depicts multiple layers of defenses, each with potential weaknesses (holes), stacked like slices of Swiss cheese. When these holes align, they create a path for an accident to occur. The model emphasizes that accidents are rarely the result of a single error, but rather of a combination of latent conditions and active failures that align to breach multiple defenses.*

# F-35A Combat Turnarounds: The First Hot ICT

**By MSgt Triston Letner**

Nellis Air Force Base's Weapons Standardization team achieved a major milestone by leading the Air Force's first F-35A Hot Integrated Combat Turnaround (ICT), proving that preparation, innovation, and teamwork can greatly improve how fast jets can get back in the fight.

**Cold vs. Hot ICT: What's the Difference?**

An ICT is a process for refueling and re-arming a combat aircraft in order to make it ready for the next mission. Traditionally, this has been done as a Cold ICT, meaning the aircraft is fully shut down before loading munitions and fuel. This is safe, but time-consuming.

A Hot ICT, on the other hand, is performed with the aircraft engine running. This allows maintenance and weapons crews to refuel and reload missiles much faster, dramatically cutting the time the aircraft spends on the ground. While Hot ICT procedures are common for some previous jets, adapting them for the advanced F-35A required careful planning, specialized training, and strict safety protocols.

*[Editor's Note: Concerns about the safety of hot-loading the F-35 have persisted for years. While the 57th Wing's efforts demonstrate that safe hot-loading is possible with proper preparation and support, the debate surrounding its overall safety continues. Nevertheless, this article highlights how the ingenuity and discipline of Airmen remain a critical force multiplier.]*

U.S. Air Force Senior Airman Anthony Silva, left, and Senior Airman Samuel Roberts, both weapons load crew members, and Staff Sgt. Andrew Wilson, weapons load crew chief, all assigned to the 57th Aircraft Maintenance Squadron's Bolt Aircraft Maintenance Unit, lift a munition during a hot integrated combat turn (ICT) exercise at Nellis Air Force Base, Nevada, June 23, 2025. During hot ICTs, four AIM-120 Advanced Medium-Range Air-to-Air Missiles are loaded onto the F-35 while the aircraft is simultaneously refueled with its engines running. Photo by William R. Lewis


U.S. Airmen at Nellis Air Force Base test newly approved F-35A hot integrated combat turn procedures, focusing on safety, efficiency, and physical demands, 23 Jun 25. With support from the 57th Maintenance Group, teams from the 59th Test and Evaluation Squadron and Human Performance Office use a hybrid loading method and monitor physiological impacts to help shape future tactics. Photo by William R. Lewis

**The Challenge:** Meeting the Combatant Command requirements, which included being able to re-arm and refuel the F-35A in less than 25 minutes. This wasn't just a matter of speed, but prioritized safety and mission effectiveness. Getting the aircraft airborne faster reduces its vulnerability on the ground and ensures our warfighters are always ready.

To meet this challenge, the Weapons Standardization team drew upon lessons from Nellis' own weapons load crew readiness initiative, Project-19. It centers on four pillars: purpose, proficiency, physical capacity, and pace. Specifically, the initiative's focus is on achieving faster loading times while maintaining safety protocols, directly contributing to the team's ability to pursue the ambitious 25-minute goal. It's about preparing Airmen for anything, anytime, and raising the bar for technical skill and teamwork.

**Building Toward the First Hot ICT**
Weapons Standardization began refining Cold ICT procedures, carefully coordinating refueling and munitions loading on the F-35A while the engine was off. These trials helped identify risks, optimize crew movements, and establish clear safety checks.

Once we were authorized to execute a Hot ICT, the team began intensive planning and training focused on safely handling fuel and munitions around a running engine. The scenario demanded flawless coordination and complete trust. The training included a fitness assessment of personnel, designed to ensure the crew was prepared physically as well as mentally.

Furthermore, the emphasis on rapid, efficient movements ingrained by Project-19 proved critical in minimizing time spent near the live engine.

The operational test crews were quickly trained, and every step was rehearsed until flawless. The Weapons Standardization team was driven by a clear mission: to safely and efficiently load the F-35A in under 25 minutes.

**The result:** During operational testing during a live-fire event at Tyndall AFB's Weapons System Evaluation Program, Weapons Standardization team and its partners accomplished the first F-35A Hot ICT in under 23 minutes.

As the F-35A's engine remained running, weapons load crews swiftly and safely loaded AIM-120 missiles, while also refueling. The teamwork and preparation paid off. The crew didn't just meet the 25-minute goal, they beat it by more than two minutes. A significant factor in exceeding expectations was the ingrained efficiency from Project-19, enabling faster, better loading coordination and refueling procedures.

This achievement was a true team effort, involving active-duty, Guard, and Reserve Airmen working side by side. It also highlighted the Project-19 philosophy: ready for anything, anytime.

**Why It Matters: Safety, Readiness, Lethality**
Reducing F-35A turnaround time isn't just about speed, it's a leap forward in both safety and combat effectiveness. Speedy turnarounds mean aircraft spend less time on the ramp, and more time in the sky.

Equally important was the development and standardization of Hot ICT procedures before they're needed in combat. This ensures Airmen will be prepared for real-world challenges. The deliberate planning, rehearsals, and risk analysis behind the achievement ensure safety is never sacrificed for speed.

**Lessons Learned and the Road Ahead**
The Weapons Standardization team learned that, with a clear mission, focused training, and a culture of innovation, today's impossible becomes tomorrow's standard. The success of Project-19 in reducing download times demonstrates the value of setting ambitious goals and providing the resources and training needed to achieve them. By training for the unpredictable, Nellis Airmen have unlocked new potential for the F-35A and for weapons load crews that follow.

The lessons from this effort will be shared across the Air Force, in order that other crews can develop similar readiness skills. The investment and dedication from Nellis Weapons Standardization, driven through initiatives like Project-19, directly translate into combat power. As the Weapons Standardization team says, "Weaponizing excellence—Standardizing victory."

The achievement is a win, not just for Nellis, but for every Airman who trusts their crew to keep them safe, ready, and lethal—anytime, anywhere.

U.S. Air Force Airmen assigned to the 57th Aircraft Maintenance Squadron's Bolt Aircraft Maintenance Unit load a munition into the weapons bay of an F-35A Lightning II during a hot integrated combat turn (ICT) exercise at Nellis Air Force Base, Nevada, June 23, 2025. Photo by William R. Lewis

U.S. Air Force Senior Airman Anthony Silva, left, weapons load crew member, and Staff Sgt. Andrew Wilson, weapons load crew chief, both assigned to the 57th Aircraft Maintenance Squadron's Bolt Aircraft Maintenance Unit, guides a munition into the weapons bay to be loaded onto an F-35A Lightning II. Photo by William R. Lewis


57 MXG, Photo by A1C Jennifer E. Nesbitt

*n.b. Project-19 was a nineteen-month initiative by the 57th Maintenance Group, and was required of all active-duty units. Developed to prepare aircraft armament systems personnel for the demands of future combat, its core goal was to instill proficiency in rapid and safe weapons loading, with significant time-reduction standards established for munitions loading. The initiative streamlined weapons loading, and fostered advanced problem-solving and risk management. It also introduced a first-of-its-kind aircraft armament fitness assessment, one that focused on mission-specific movements such as overhead press, deadlift, a weighted relay (including kettlebell carry, sled push and pull, and sandbag farmer's carry), as well as a 1,000-meter row, all designed to mirror the physical demands of weapons loading operations.*

# The Value of Checking Twice

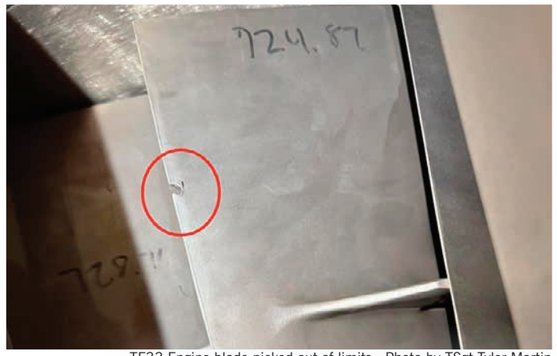
By SSgt Keenan M. Ruh

SSgt Ruh accomplishing Engine Intake and Exhaust inspection. Photo by SSgt Jacob Vernon

While serving as a Dedicated Crew Chief on E-3 Sentry AWACS at Tinker AFB, I led my team during swing shift to prepare aircraft for the following day's flying schedule. During an extensive review and transcription of the aircraft forms for Exceptional Release, I discovered an open entry for the after-flight inlet and exhaust inspections that dated back five days. This discrepancy had gone unnoticed after the second sortie was canceled, and the aircraft had since been moved to the wash hangar without the required inspection.

Recognizing the potential severity of the oversight, I personally conducted the missed inspection. During my inspection of engine #4, I identified five severely-nicked fan blades that were damaged badly enough that engine integrity could be compromised. I immediately coordinated with the jets shop, who confirmed the blades were irreparably damaged, resulting in a required engine change and cancellation of the scheduled sortie.

Attention to detail and decisive action directly prevented a possible in-flight engine failure, mitigating significant risk to the aircrew, and preserving the integrity of the mission.




TF33 Engine blade nicked out of limits. Photo by TSgt Tyler Martin





# Hurry Up And Wait

By SSgt Kevin Arredondo

There I was—a 19-year-old Airman stationed at Misawa AB, Japan, working as an aircraft armament technician. My day started like any other: inspecting tools for checkout. As I went through my routine, I noticed my expeditor assisting an NCO who was clutching his hand, clearly in pain. Emergency personnel arrived and rushed the NCO to the ER.

I had just arrived for the day shift, and asked about what had happened. The NCO and his crew had been wrapping up mids (the overnight shift), usually quiet. They had been focused on prepping aircraft for the next day, with minimal maintenance, and only occasional loading tasks such as missile moves and chaff/flare reloads.

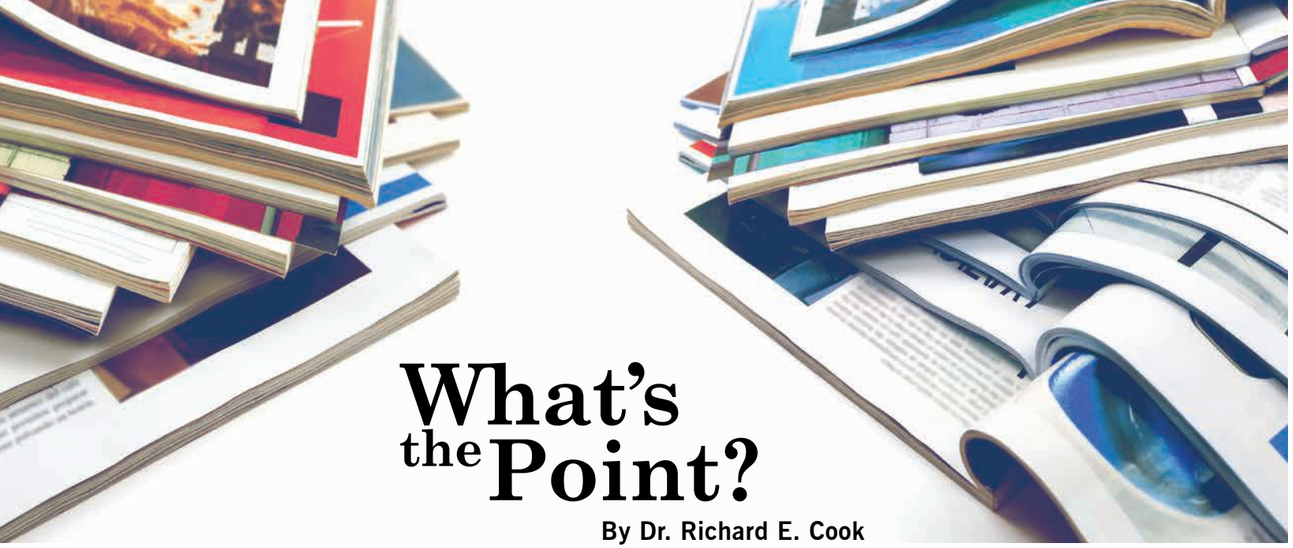
The missile moves involved manually transporting 100-200 lb missiles from aircraft to trailer, a physically demanding task. On their final move, an exhausted crew member dropped the missile onto the trailer. It slammed down, crushing the NCO's fingers beneath it. As he reflexively pulled back, the tip of his finger remained behind. Despite the injury, the NCO calmly called the expeditor to report the incident before being taken to the hospital. Later that morning, during roll call, leadership emphasized something rarely heard in our line of work: "Slow down."

Until then, it had always been "Go, go, go." Everything was urgent, everything was needed now. That moment shifted our mindset. We began to pause, assess, and prioritize safety over speed.

Maintenance is risky. Fatigue and haste can injure even the most experienced among us. We owe it to each other to slow down, catch our breath, and work smart, not just fast. No matter how routine, every task carries the potential for harm if approached without caution. Situational awareness, proper rest, and clear communication aren't just good practices; they're safeguards that keep fingers intact, missions on track, and Airmen in the fight.

That day was a painful reminder that safety isn't merely a slogan; it's a responsibility we carry with every turn of the wrench.

Airmen from the 35th Logistics Readiness Squadron and the 35th Maintenance Squadron push an ammunition cargo load at Misawa Air Base. Photo by A1C Andre Medina



# What's the Point?

**By Dr. Richard E. Cook**

Photo by carlos castilla/shutterstock.com

As of this writing, I have worked for the United States Air Force for 4 ½ years. This is a new experience for me, all the more so because I now work in a field unrelated to my former profession. I was hired not only for my skills, but also because I might be in a position to offer a fresh perspective. Writing from that unique perch, I have something to share.

One of my activities has been the cataloging of all the articles in The Combat Edge and TAC Attack. I have completed the first phase of the project—going back through 1989—a total of nearly 3,000 articles. Nearly all the stories were written by Airmen. They provide not only examples of behavior that underscores the importance of following Technical Orders (TO), but also insight into the unique cultures of their particular fields. While there is great variety in terms of topics, they all unswervingly point to a single message: compliance.

Since its inception, the Safety Directorate of Air Combat Command has worked to drive home the importance of following directions—and what happens when we don't. Failure to follow TOs has been among the main causes of mishaps from the beginning, as the stories in Tac Attack and The Combat Edge attest. Every issue contains at least one reference having to do with compliance. The stories change, but the message remains the same.

Why have we continued to remind Airmen of hazards, both general and specific, for all these years? Why do we keep writing about mishaps, occurred or averted? Why do we constantly stress the necessity of following TOs? Shouldn't once have been enough? What's the point?

The point is that the message protects people. People. Our care is for the safety of people, first and foremost. The folk who work in our field are concerned with the protection of the most valuable asset in the Air Force: you. A single aircraft can cost tens of millions of dollars, and its loss usually makes for informative (and interesting) storytelling; however, the price of the world's most expensive jet is nothing compared to the value of the life of the person flying it.

While Airmen are the most valuable parts of the system, they also are the most to blame when something goes wrong. Human error is the No. 1 cause of mishaps, without question. Some mishaps are unforeseen and unavoidable, but many can be attributed to a failure to follow procedure. We take shortcuts. We grow tired, become distracted, or are overworked. We become complacent. We don't follow the rules.

Our message is important, and it doesn't diminish over time. We care about you, and want to help keep you safe as you go about the very dangerous business of keeping the rest of us safe. As a general once said, "We must keep saying it until it sinks in." We continually welcome new Airmen to duty, and they need to learn. We also have Airmen who have been on the job for a long time, and they need reminding.

Therefore, as long as you, our Airmen, are working to accomplish the Mission of safeguarding our nation, we safety professionals will work to safeguard you. You are important to us, and that's the point.

## Mishap Statistics Scoreboard

### FY25 Flight

Thru 30 Sep 2025

| | Fatal | Aircraft Destroyed | Class A Aircraft Damage |
|---|---|---|---|
| 15 AF | 0 | | |
| 16 AF | 0 | 0 | |
| USAFWC | 0 | 0 | 0 |
| ANG | 0 | 0 | 0 |
| AFRC | 0 | 0 | 0 |
| CONTRACT | 0 | 0 | 0 |
| COCOM | 0 | 0 | 0 |

### FY25 Occupational

Thru 30 Sep 2025

| | Class A Fatal | Class A Non-Fatal | Class B |
|---|---|---|---|
| AFCENT | 1 | 0 | 0 |
| USAFWC | 0 | 0 | 0 |
| 12 AF | 0 | 0 | 0 |
| 15 AF | 4 | 0 | 2, 1 |
| 16 AF | 1 | 0 | 0 |

### FY25 Weapons

Thru 30 Sep 2025

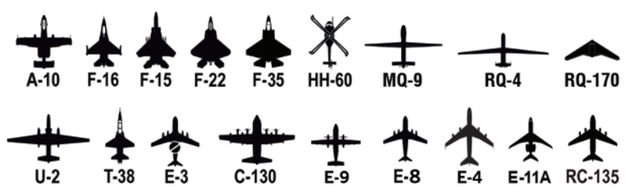
| | Class A | Class B | Class C | Class D | Class E |
|---|---|---|---|---|---|
| ACC | 0 | 0 | 3 | 2 | 11 |

**Legend**

Class A - Fatality; permanent total disability; property damage $2.5 million or more
Class B - Permanent partial disability; property damage between $600,000 and $2.5 million
Class C - Lost workday; property damage between $60,000 and $600,000
*(Class description effective Oct. 1, 2019)*

(RED) = On-duty (BLACK) = Off-duty

**Symbols for Mishap Aircraft**




## Flight Notes

ACC had one Class A mishap during the fourth quarter of FY25, resulting in the total loss of an MQ-9. Aircrew must understand their systems and mitigate risk with thorough mission planning and coordination. If incidents do occur, reporting is the first step to future mishap prevention. When in doubt of reporting criteria, reach out to your wing safety office for clarification.

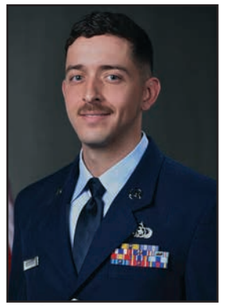
## Occupational Notes

Fiscal Year 2025 has come to an end, and ACC Occupational Safety achieved a historic 54% reduction in Class A mishaps—the lowest number in nine years. We still lost six ACC Teammates, and that is six too many. We can and must do better! Unfortunately, in the 4th Quarter of FY25 we sustained three of our six fatalities, one water-related and two involving motorcycles. As we celebrate our achievements, we must confront a hard truth: All six of our fatalities occurred off duty. Four of these tragedies involved motorcycles, stemming from deliberate choices like operating a motorcycle while above the legal alcohol limit, driving at a high rate of speed, or riding without the required Air Force training. Our other two losses occurred during water recreation, including one that was entirely preventable, when an Airman ignored posted warnings and removed his life jacket before a cliff jump. These are not statistics; they are our Wingmen. Carry your on-duty risk management mindset with you 24/7 and have the courage to intervene. Your life is our combat advantage.

## Weapons Notes

The FY-25 final mishap statistics show a positive trend with a 20% reduction compared to FY24. While this is encouraging, sustained focus on mishap prevention remains crucial. The root causes identified in FY25 mishaps – inattention to detail, deviations from technical data, and communication breakdowns – mirror those of previous years. To maintain this positive trajectory, we must proactively address the underlying causes. I urge each of you to prioritize thoroughness in your work. Ensure meticulous adherence to technical data, and foster clear and open communication within your teams. By consciously mitigating these factors, you directly contribute to a safer and more effective environment for all.

# 3rd Quarter FY25 Awards



**Safety Career Professional**
**MSgt Michael E. Uriostegui**
HQ 16 AF/SEG
JBSA-Lackland, TX

**Pilot Safety**
**Maj Daehyuc D. Yim**
357 FS, 355 WG, 15 AF
Davis-Monthan AFB, AZ

**Unit Safety Representative**
**TSgt Kevin M. Caudell II**
20 CES, 20 FW, 15 AF
Shaw AFB, SC

**Explosives Safety**
**TSgt Jonathan Valencia**
83 FWS, 53 WG, USAFWC
Tyndall AFB, FL

**Weapons Safety Professional**
**MSgt Nathen L. Inman**
332 AEW/SEW, 9 AF
undisclosed location

**Flight Line Safety**
**SSgt Brandon E. Johnson**
75 FGS, 23 WG, 15 AF
Moody AFB, GA

**Aircrew Safety Award**
**Crew of KING 15**
71 RQS, 23 WG, 15 AF
Moody AFB, GA

**Unit Safety**
**Maintenance Training Section**
388 LSS, 388 FW, 15 AF
Hill AFB, UT

**Aviation Maintenance Safety**
**Return to Flight Inspection Team**
9 AMXS & 9 MXS, 9 RW, 16 AF
Beale AFB, CA

## THE WORLD IS READING US

Each quarter, The Combat Edge is shipped to over 1,400 USAF addresses around the world. Its pages are filled with articles from Airmen who share their first-hand accounts of mishaps to over 63,000 readers. Copies of the magazine are found everywhere from back shops to front offices.

It doesn't stop there.

Since 2022, articles from The Combat Edge have appeared in the safety magazines of the following:

Hungarian Defense Forces
Air Operation Command and Control Center

UK Royal Air Force Safety Center
HQ Air Command

Royal New Zealand Air Force
Directorate of Air Force Safety and & Health

Canadian Armed Forces
Directorate of Flight Safety

That's right: The Air Forces of other nations contact our office for permission to reprint your excellent articles. Would you like your story to be appreciated at home and abroad?

It begins here.
Send it in.

Dr. Richard E. Cook
Chief Editor, The Combat Edge


Photo composited using source photo by Kaspars Grinvalds/shutterstock.com

# What's Your Story?

**Wisdom comes with age. Share yours with us.**

**You've spent years training to be a member of the world's greatest Air Force. Not only do you have skills, but you also have experience—and the wisdom that comes with it.**

**There have been countless times when you were confronted by challenges you met, obstacles you overcame. Each of them made you grow as an Airman.**

**Share a tale from your experience. Tell us about the time when ___. Write a "There I was ..." account of a mishap. Help other Airmen learn and grow. Give us the benefit of your wisdom.**

**Throughout the long history of our safety magazine, from TAC Attack (1961) to The Combat Edge (1992), the message of safety has remained the same. Help keep it current by telling it in your own, unique way. Write your safety story and send it to us at thecombatedge@us.af.mil.**

**You have something to say, and we're listening.**

# From Pain to Gain

By SSgt Marquise C. Tolliver-Stokes

Fitness is a big part of my life. I thrive on the challenge of pushing my limits and seeing the progress I make. It's not all success, though, and I recently faced an unexpected setback: I tore my rotator cuff during a workout.

It happened during what seemed like a routine session at the gym. I was doing shoulder presses with heavier weights than usual, trying to push past my previous limits. Suddenly, I felt a sharp pain in my shoulder. I knew something was wrong. I immediately stopped my workout and sought medical attention.

After a visit to the doctor and an MRI, I received the diagnosis: a torn rotator cuff. The news was a blow to my fitness goals, but I knew I had to focus on recovery. The doctor recommended a combination of rest and physical therapy, or surgery. I opted for physical therapy, hoping it would help me regain strength and mobility without my having to go under the knife.

One of the biggest lessons I learned is the importance of listening to your body. Pushing through pain isn't always the best idea, and sometimes it's better to take a step back and assess the situation. If I had paid closer attention to the warning signs, I might have avoided the injury altogether.

Another key takeaway is the value of proper form and technique. In my eagerness to lift heavier weights, I neglected the importance of maintaining the correct form. This oversight contributed to my injury. Now, I prioritize form over the amount of weight I lift, ensuring that I'm engaging the right muscles and minimizing the risk of injury.

Throughout my recovery, I faced numerous challenges. Physical therapy isn't easy, and there were days when I felt frustrated by the slow progress. However, I remained committed to my recovery plan and celebrated small victories along the way. Regaining strength and mobility in my shoulder has been a gradual process, but it's also been incredibly rewarding.

As I continue my journey to full recovery, I want to emphasize the importance of safety in workouts. Here are some tips that I've learned from my experience:

- Warm-up and Stretch: Always start your workout with a proper warm-up and stretching routine to prepare your muscles and joints.
- Listen to Your Body: If you experience pain, stop and assess the situation. Don't ignore warning signs.
- Prioritize Form: Focus on maintaining proper form and technique, even if it means using lighter weights.
- Seek Professional Guidance: If you're unsure about your workout routine, consider working with a trainer or physical therapist.
- Be Patient: Recovery takes time, and it's important to be patient and consistent with your rehabilitation plan.

SSgt Marquise C. Tolliver-Stokes work-out sessions

Tearing my rotator cuff was a challenging experience, but it taught me valuable lessons about safety and resilience. I hope my story encourages others to prioritize their well-being and take precautions to avoid injuries.

Photo by joel bubble ben/shutterstock.com

# PPE Saved Me

By MSgt Amy L. Barnett

*"It is better to have it and not need it than to need it and not have it."*

Growing up, I looked forward every winter to the arrival of snow, and the thrill of sledding down our long driveway. My parents always told us to dress warmly in boots, snow pants, jackets, gloves, and a hat. There was never any mention of wearing a helmet or Personal Protective Equipment (PPE). The thought of wearing a helmet just to go sledding down my driveway never crossed my mind. We thought we were invincible as we cruised downhill.

In May of 2017, I was stationed in Rota, Spain. During my first winter there, I was invited to go snowboarding in Sierra Nevada (Granada). It was my first time snowboarding. I was nervous, but I had a good time. A few weeks later, I went again with a group of friends. This time I felt more confident and was all right on the smaller slopes. Just as I became more at ease with my new-found sport, an unexpected hazard arose: ice under the snow.

On one of my runs, I hit a patch of ice and fell pretty hard. All I remember was going headfirst toward the snow. The next thing I knew, I was waking up on my back, dazed. The blow to my head had knocked me out, and I was left with a concussion.

While wearing a helmet is not mandatory at most ski resorts, it is highly recommended. At the time of my fall, I was wearing a properly fitted and fastened helmet. It protected my head and saved me from serious injury. I felt funny wearing it, but I am glad I did.

Using PPE during high-risk sports or activities can reduce the risk of serious injury. Understanding the proper use and wear of the required gear and protective equipment is essential in reducing the risk of injury. While some PPE may be uncomfortable, wearing it could save your life.

When using PPE, both on and off duty, inspect it before use. Dispose of damaged or expired PPE. As the saying goes: It is better to have it and not need it than to need it and not have it.

Always remember: PPE can protect you from serious injuries. PPE and risk management can save your life. Know your limits when participating in all activities - new or familiar.

MSgt Barnett snowboarding

MSgt Barnett snowboarding

Photo by Vladimir Konstantinov/shutterstock.com

# Frozen in Time: Understanding FROSTBITE

**By SSgt Dylan M. Dykstra**

In the heart of winter, when the icy grip of frost tightens its hold, the threat of frostbite looms large. For the residents of the small northern town of Walnut, Illinois, nestled amid snow-capped fields and frozen lakes, the threat of this silent assailant is an ever-present concern. As temperatures plummet far below freezing, and winds howl, the need for vigilance becomes paramount. It is in such moments that the wisdom of preparedness is a lesson learned through bitter experience.

At the onset of winter, as the first snowflakes fall, whispers of caution ripple through the village. Old-timers share tales of winters past, when frostbite claimed fingers and toes with merciless efficiency. Parents gather their children close, imparting the importance of layering clothing and covering exposed skin. In the town square, posters featuring images of frostbitten limbs serve as grim reminders of the dangers that lurk in the cold.

Photo by Alexei Vladimir/shutterstock.com



*"Dylan's recklessness nearly proved his undoing"*

For young Dylan, a spirited kid with a penchant for adventure, the warnings of his parents often fell on deaf ears. Driven by an insatiable curiosity, he often ventured into the wintry wilderness for weekend sledding and snowball fights without a second thought, wearing only jeans, tennis shoes, and a sweatshirt, and heedless of the perils that lay in wait. As the chill of winter tightened its grip, even Dylan could not ignore the biting cold that nipped at his fingertips and stung his cheeks.

It was on a particularly blustery day that Dylan's recklessness nearly proved his undoing. Venturing into the forest in search of adventure, he found himself caught in a sudden squall, the wind whipping through the trees with ferocious intensity. As he struggled to find his bearings amid the swirling snow, a creeping numbness began to spread through his extremities, a telltale sign of frostbite's icy embrace.

With a sinking heart, Dylan realized the gravity of his situation. Fingers stiff and unresponsive, cheeks flushed crimson with the telltale signs of frostbite while miles from home, he knew that he was teetering on the brink of disaster. Desperate, he stumbled through the snowdrifts, his breath coming in ragged gasps, until at last he stumbled upon the welcoming glow of a familiar house nestled amid the trees.

It was here, in the warmth of a crackling fire and the help of a kindly neighbor, that Dylan found refuge from the storm. With steady hands and a compassionate heart, the neighbor tended to his frostbitten fingers, toes and face offering words of wisdom born from a lifetime spent battling the northern icy grip.

As Dylan thawed by the fire, his heart filled with gratitude, he vowed never again to underestimate the dangers of frostbite. In an effort to educate himself and his community about steps he may have taken to avoid endangering his appendages, he became an advocate for safety. He spread awareness of the importance of recognizing signs of frostbite, such as numbness, tingling, stinging, or pain in the affected areas, along with a pale and discolored appearance of the skin.

As he grew in age and knowledge, he would speak at townhalls, discussing risk factors such as prolonged exposure to cold or wet conditions, inadequate clothing, high altitudes, and pre-existing medical conditions such as diabetes or circulatory disorders that may exacerbate frostbite conditions. Every winter, he would echo the admonitions of his elders by distributing flyers about dressing in layers of moisture-wicking fabrics, insulating materials, and windproof outerwear, as well as covering exposed skin with hats, scarves, gloves, and insulated footwear to provide additional protection.

In his later years, he volunteered for his town's winter disaster response force, preaching to the next generation of adventurers the importance of having an emergency plan, like:

- Move to a warm environment
- Immediately remove wet clothing
- Gently warming affected areas by using blankets or warm water (not hot) until sensation returns
- Avoid rubbing or massaging the area, which can further damage frozen tissue
- Seek medical attention promptly for severe frostbite or if symptoms persist

For the residents of Walnut, Dylan's brush with frostbite served as a sobering reminder of the fragility of life in the winter wilderness. Yet, from the brink of disaster emerged a newfound resolve, a determination to face the perils of winter with courage and preparedness. a testament to the power of vigilance and the strength of community.

Photo by aliasemma/shutterstock.com

# Home for the Holidays:
## A Risk-Management Odyssey

**By SSgt Quor-Darius D. Davis**

It was two days before Christmas, and I was headed home to Chester, PA, after finishing a long stint at Shaw Air Force Base, SC. The car was loaded with gifts and a bag of essentials for the holidays. The 600-mile trip up the east coast was always a grind, but this time, an impending winter storm threatened to make it more challenging.

Before hitting the road, I prepped carefully. I checked my tires, topped off all fluids, and made sure my emergency kit was fully stocked with blankets, jumper cables, and a flashlight. I also mapped out alternate routes in case I-95 became congested or dangerous. With the forecast calling for freezing rain and snow in parts of Virginia and Maryland, deliberate risk management was my priority.

The first leg of the trip was smooth. I kept an eye on the weather, and my deliberate planning—staying fueled up and maintaining a steady pace—kept everything on track; however, as I approached Richmond, Virginia, conditions began to deteriorate. Sleet tapped against the windshield, and the temperature dipped below freezing. Traffic slowed as patches of black ice began to form on the highway.

It was time to shift to real-time risk management. I reduced my speed, turned off the cruise control, and increased my following distance. Other drivers, either unaware of the danger or in too big a rush, continued to pass me. I stayed focused, knowing that safety mattered more than getting there quickly.

Near Fredericksburg, the situation escalated. A tractor-trailer in the left lane began to slide, its rear end jack-knifing into the middle lane. Cars braked hard to avoid it, creating a chain reaction of near-misses and skids. My training kicked in. Instead of slamming on the brakes, I eased off the accelerator and steered toward the shoulder to give myself space. The car behind me wasn't so lucky, and slid sideways into the median.

My heart was pounding, but I stayed calm. My earlier, deliberate planning, such as ensuring my tires were in good shape and keeping my emergency kit ready, gave me confidence to manage the unexpected. I pulled over at the next exit to reassess.

At a gas station, I checked the weather and learned the storm would worsen north of Washington, D.C. for the next few hours. It wasn't worth the risk to continue driving. I called my family to let them know I would be delayed, and waited for conditions to improve.

After two hours, the worst of the storm passed, and I cautiously got back on the road. The treated highways were more manageable, and I stayed vigilant. I arrived in Chester later that evening exhausted, but grateful to have made it safely.

Reflecting on the trip, I realize how much deliberate and real-time risk management had contributed to the outcome. Checking my car before the trip, planning alternative routes, and monitoring weather conditions had set me up for success. On the road, my ability to adapt in the moment, staying calm under pressure, and knowing when to pull over, kept me safe.

The holiday season always brings its own brand of chaos, and that day's drive was no exception. Whether it's on the road or in life, preparation and adaptability make all the difference. As I unpacked gifts in my parents' home in Chester, I knew the best gift of all was simply arriving home in one piece.


# OVER the Edge MAGAZINE





Cover Photo by Alexei Vladimir/shutterstock.com

# Annual Statement of Ownership

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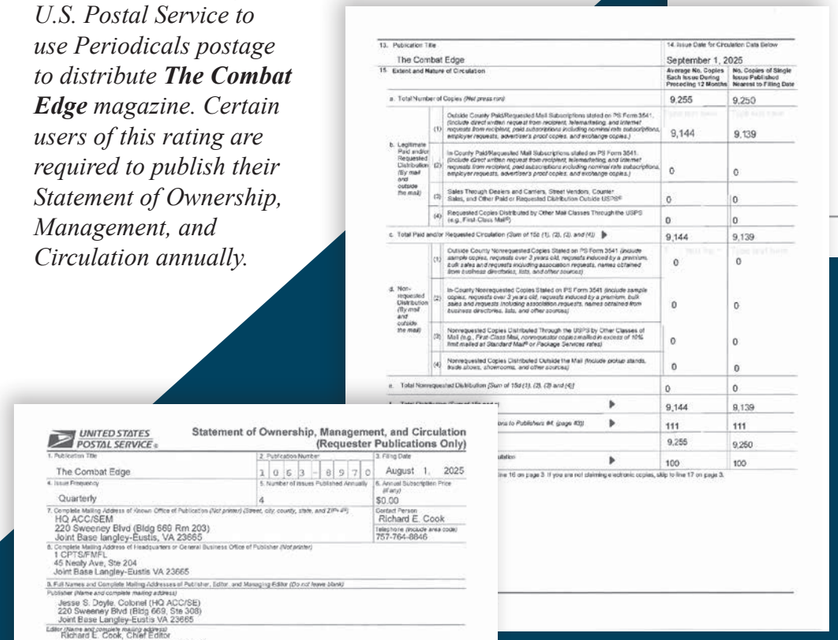

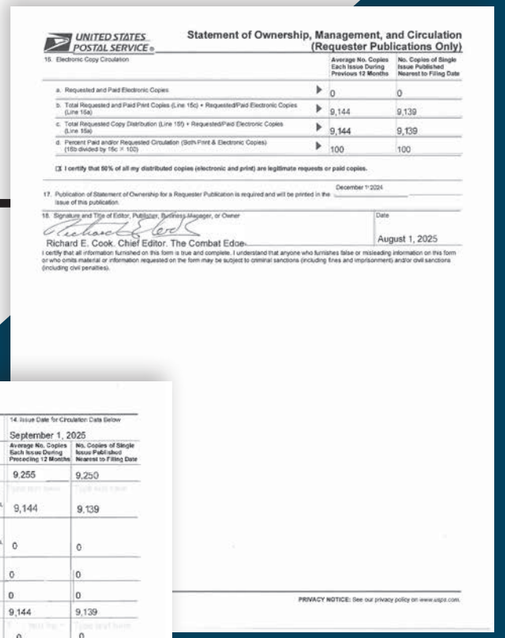

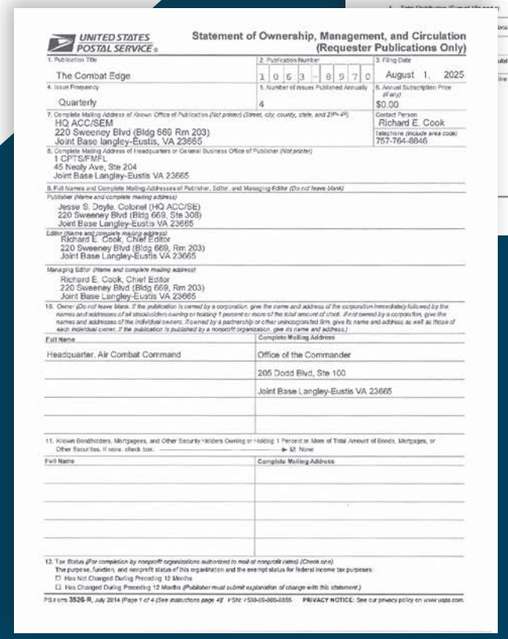

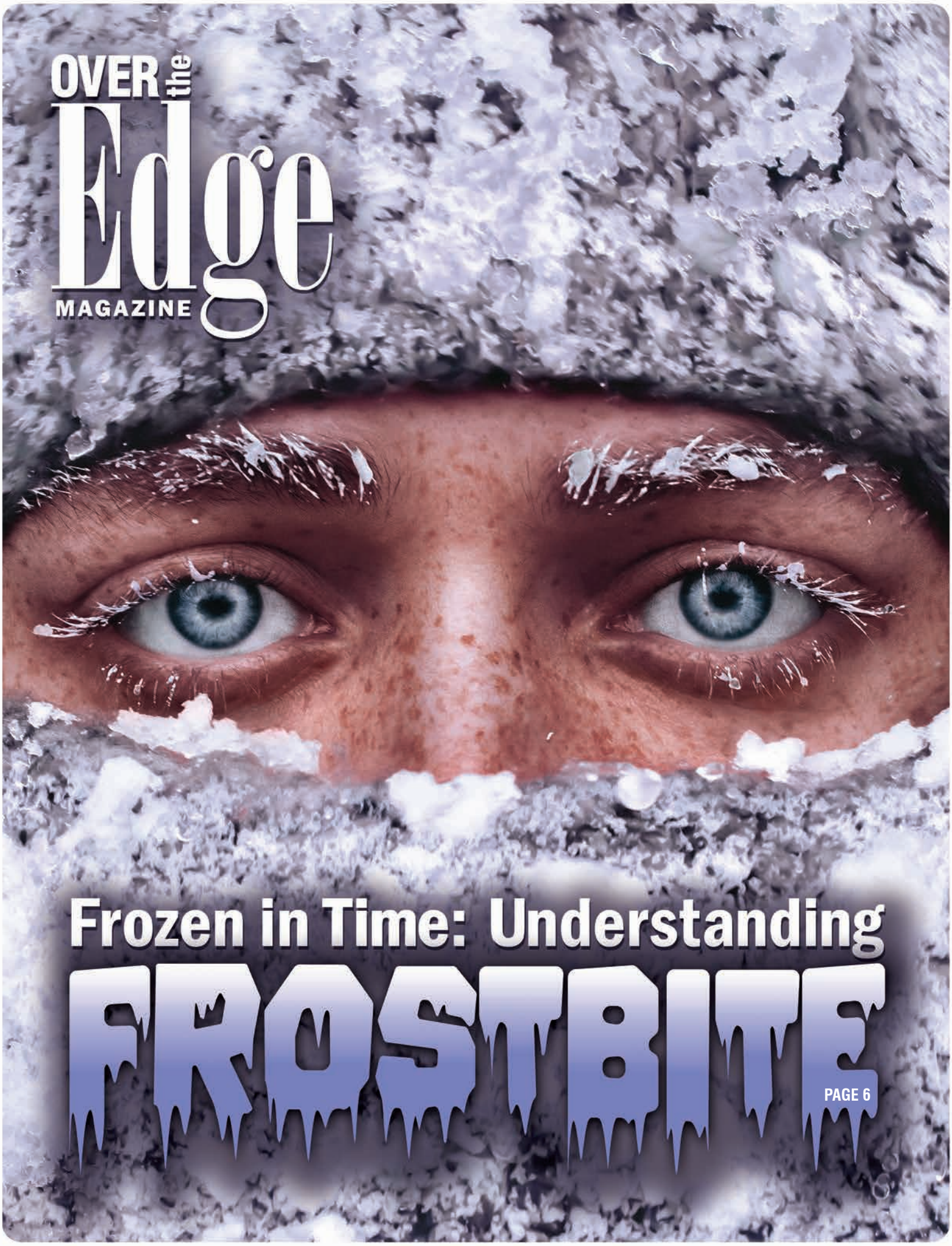
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