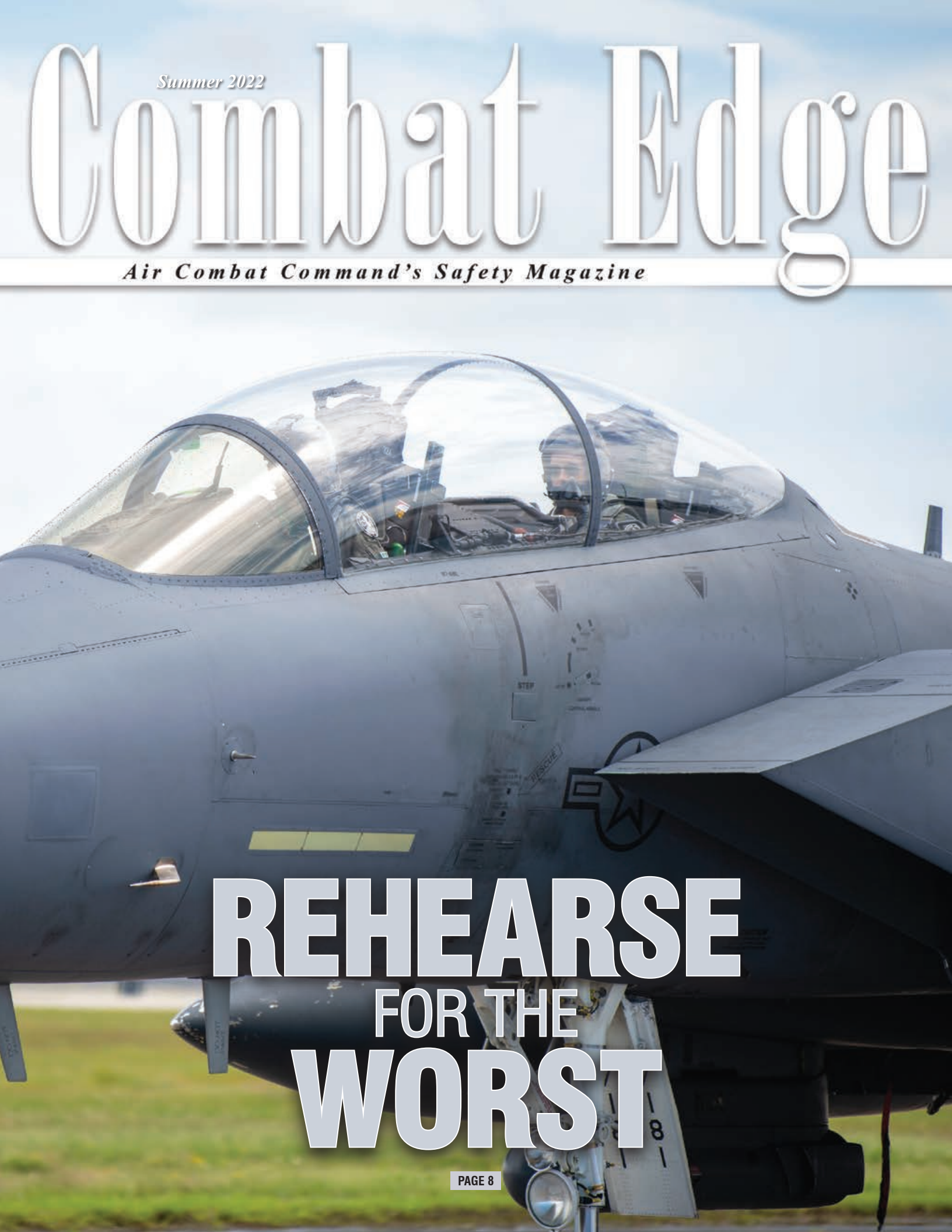
Summer 2022

Combat Edge

Air Combat Command's Safety Magazine



REHEARSE FOR THE WORST

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Combat Edge

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COVER PHOTO BY A1C TIFFANY PRICE

ACCent

ACC 30 years later ... Are we safer?

Col Anthony A. Kleiger
Director of Safety

In honor of Air Combat Command's 30th Anniversary, I want to reflect on some of our safety beginnings from 1992, and compare our status today to assess if we are any safer 30 years later. Awareness of history can be a powerful tool for our mission success by arming us with the knowledge of others' past errors to prevent future mishaps. An unknown source once said: "History may not repeat itself, but it definitely rhymes."

A glimpse of our performance …

Aviation — In 1993, as our first full year as ACC, we had 6 Class-A manned mishaps (in 1993, Class-A mishaps were $1 million or greater in damages, a fatality or both). That Class-A number jumped to 14 in 1994. The good news is ACC has experienced an overall declining trend to the present day. Aside from brief spikes, fatal mishaps are also on a declining trend, from 4 in 1992 down to 1 or zero in recent years. We are losing fewer Airmen, but we are losing increasingly more money with each mishap. As with all things, prices increase over time. In 1992, a bomber crash that destroyed the aircraft cost $257 million and a fighter destroyed cost $14 million. Now, a Class-A mishap is defined as $2.5 million or greater in damages, a fatality, or both. In 2020, a destroyed F-22 cost $202 million, and a destroyed RQ-4 cost $220 million. We obviously value each and every Airman, but our equipment also is a precious resource required to defeat the enemy.

Occupational — Since 1992, we have experienced 1 Class-A Industrial On-Duty mishap roughly every other year. The overall trend is flat (neither increasing, nor decreasing), but when we experienced a Class-A, a fatality resulted 60% of the time. Our most challenging area for Occupational Safety has been Off-Duty, with vehicle and sports/recreational mishaps. On a positive note, our Class-A 4-wheeled vehicle mishaps have steadily decreased, from an average of 10 in 1992 down to 1 in 2021. We also have seen some gradual improvement in our 2-wheeled mishaps (motorcycles). Our overall trend is decreasing, from 3 Class-As in 1992 to 1 in 2022. Finally, Sports and Recreational Class-A mishaps are similarly on a slight declining trend, from 2 in 1992 to 1 in 2021.

Weapons — Although the potential for disaster is very high, ACC has not experienced a Class-A weapons mishap since our creation. We have experienced 1 Class-B ($500K-$2.5 million) each in 2006, 2009, and 2017, where the mishap trend is flat (not trending up or down). A solid record, but it can be improved.

Conclusion — ACC's overall safety performance has improved over 30 years, and is somewhat less lethal for our personnel, but our performance is far from optimum. Airmen are still being unnecessarily injured or killed, and we are still damaging or destroying our equipment by our own actions, not the enemy's. **YOU** have the power to improve our performance and make the future better. **Follow the Technical Order(s)** (T.O.s) or other guidance, **don't take shortcuts,** and **don't repeat non-compliance patterns** from the past 30 years. Happy Anniversary ACC. Let's make our next 30 years better! Stay safe … Col Kleiger

THE WAY OF THE FUTURE

(Reprinted from TCE June 1992)

BY GENERAL JOHN M. LOH
Commander, ACC

Welcome to Air Combat Command, and a whole new Air Force. Our victory in the Cold War changed the world we live in. Like our predecessors at the end of World Wars I and II, we must adapt airpower to fit America's needs now and in the future. We are beginning this new era with a new Air Force.

Starting from the ground level and working up, our leadership created new commands that enhance our ability to provide global power and global reach for America. Air Combat Command unites the awesome firepower of our predecessors SAC and TAC. It was formed to create one mighty air arm to complement the sequenced and synchronous application of joint American military power.

Our performance in the Gulf War validated many of the changes we made in the Air Force in the 1970s and 1980s. Realistic training, an increased ops tempo, and investment in technological superiority helped us win quickly, decisively, with overwhelming advantage and few casualties. Air Combat Command will build on that foundation.

Realistic training, and the proficiency and flexibility we gain from it, begins with an assessment of the threat we expect to face. Each unit should reassess its designed and operational capability and O-Plan tasking, intelligence estimates of current threats, the requirements set out in the 51-10 or 50-16 series of regulations, and scrutinize its training program based on them. Every supervisor should be familiar with this information and ask if his or her training program matches the tasked mission.

Air and missile crews aren't the only people who benefit from realistic training. Prime Beef, Prime Rib, Red Horse, and Medical Teams were all better able to do their jobs in the Gulf because of the practice they had back home. As we become a smaller force, we must maintain the highest level of proficiency in every unit and every skill. Our future success depends on it.

But we can't become so intent on realism that we lose sight of our objective in training. Training programs prepare us for war. They reinforce basic skills through repetition and practice. Doing that successfully doesn't require us to face the most demanding threat environment every time we fly. Although training is very different for our missile crews, realism is still very important. Always following procedures precisely in training builds the discipline we count on in war. Every crew is different, and our training programs should recognize that. Mission complexity must vary based on the needs of the people involved. It should take the crew's experience, proficiency, and currency into consideration as well as the weather, newness of the equipment, or any other factors that may have an impact on the mission or ride.

Training also must be safe. ACC inherited strong safety cultures from both SAC and TAC, but ACC can be even better. As we strive for continuous improvement in all our operations, safety must remain foremost in everything we do. We don't want to lose people, planes, missiles, or other resources needlessly. Human factors are the leading cause of mishaps. We can change that. The only right way in ACC is the safe way. By working together we can continue to improve our culture of safety—in the air and on the ground.

Safe, realistic training at the unit level lets us make the most of Red Flag, Bomb Comp, Olympic Arena, Gunsmoke, and other events that let our people put it all together. Safe, realistic training ensures the next time we are called to fight, ACC will be ready to provide **GLOBAL POWER FOR AMERICA.**

General John M. Loh
Commander

AIR COMBAT COMMAND

THE WAY OF THE FUTURE

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ACC GLOBAL POWER FOR AMERICA

Safety at the Threshold

(Reprinted from TCE June 1992)

BY BRIG GEN JAMES L. COLE, JR.

You stand at the threshold of a truly historical moment, as we stand up the flag of a new major command. The activation of Air Combat Command not only brings increasing challenges, but also opportunities for all of us. Thanks to Major General Croker's leadership as the Provisional Commander of Air Combat Command, many of these challenges have already been met and successfully resolved.

Safety has been a central concern as the new command forms up. We have done our best to capture those flight, ground, weapons safety, and nuclear surety programs that have proven so valuable to SAC and TAC in the past. I am convinced we will realize great benefits from retaining and adapting the best of these programs that have made the Air Force both safer and more combat effective.

Some of you may believe safety to be a nebulous concept; something that is difficult to clearly define and articulate. I sincerely believe a solid safety program is essential to a combat organization like Air Combat Command because safety is a force protector and multiplier.

Let's assume we had been satisfied with the 1978 Class A flight mishap rate of 3.16 per 100,000 flying hours. That rate over the past twenty-four years would have cost us approximately 500 additional aircraft, or about 20 squadrons. That represents a tremendous loss of capability.

The men and women of the US Air Force made last year the safest in our history. The reason is clear. Fierce focus on the mission and staying alive kept our priorities in proper perspective. The crucible of war and the imminent risk of death really snaps things into focus. We must capture, while still fresh in our minds, the lessons learned in the Gulf War. We cannot be satisfied with the status quo. We've done well, but we can and must do better. In these times of reduced budgets and force drawdowns, we especially need to preserve our people and our equipment. We need a clear philosophy and a sound plan to carry Air Combat Command and Air Force safety into the 21st century.

Recently, I had the opportunity to speak with General Michael von Rosen, Swedish attaché to the US and former Swedish Air Force Chief of Safety. In the Swedish Air Force, "safety" boils down to one word—"honesty." At first this seems too simple, but it really strikes at the heart of the matter. We need leaders—commanders and supervisors—who care for their people and resources. Honest leaders, with the courage and intestinal fortitude to recognize the risks involved in accomplishing the mission, and who will honestly strive to protect their resources. We need frank and direct communication from the lowest levels to the highest levels to identify unsafe situations. We need to honestly assess how we train. We do not need to take unnecessary risks training in tactics we will not employ. If you are not comfortable doing your job because you are not getting the proper training or currency of training, be honest and tell your commander or supervisor.

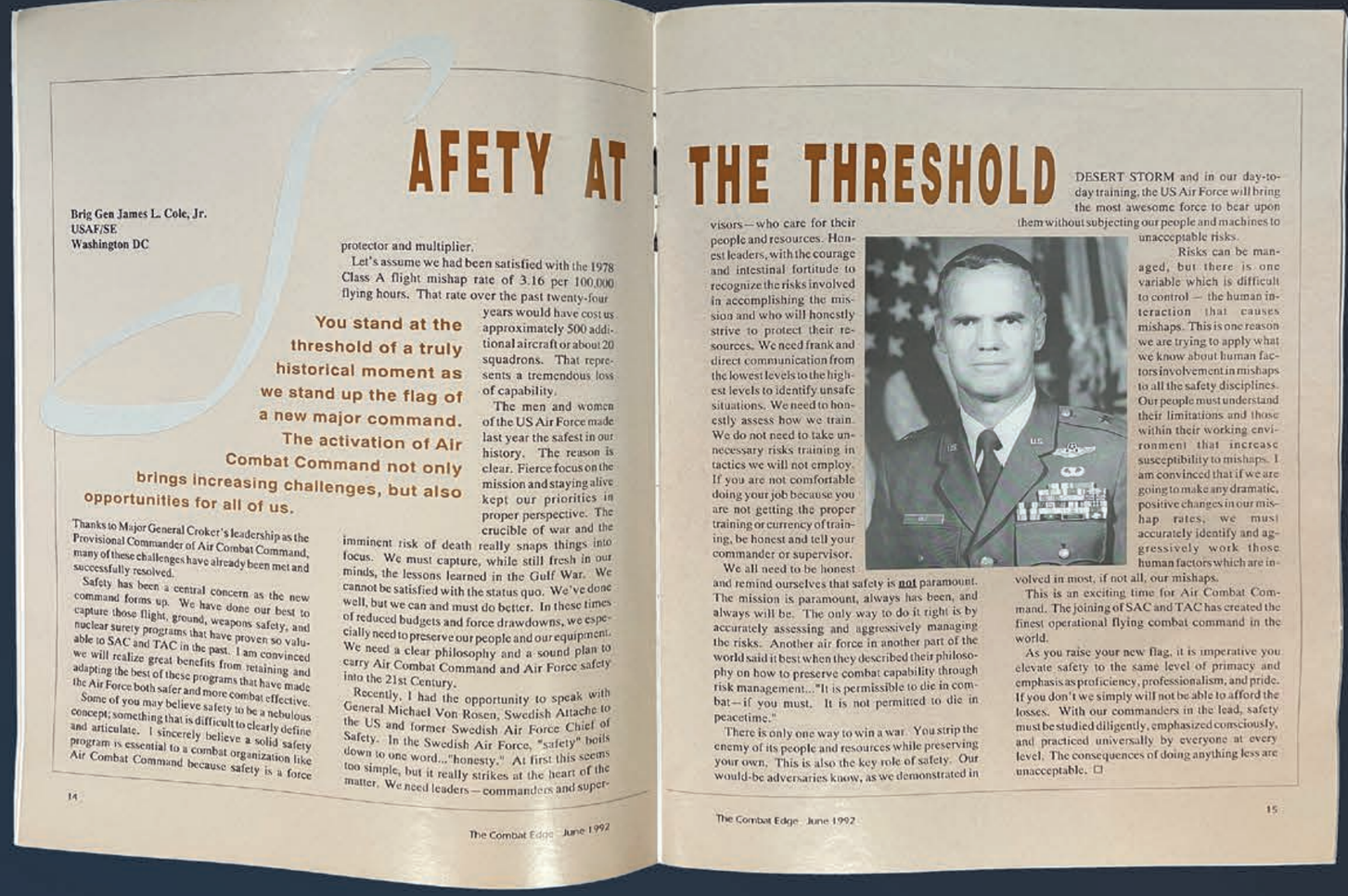
We all need to be honest and remind ourselves that safety is **not** paramount. The mission is paramount, always has been, and always will be. The only way to do it right is by accurately assessing and aggressively managing the risks. Another air force in another part of the world said it best when they described their philosophy on how to preserve combat capability through risk management: "It is permissible to die in combat—if you must. It is not permitted to die in peacetime."

There is only one way to win a war. You strip the enemy of its people and resources while preserving your own. This is also the key role of safety. Our would-be adversaries know, as we demonstrated in DESERT STORM and in our day-to-day training, the US Air Force will bring the most awesome force to bear upon them without subjecting our people and machines to unacceptable risks.

Risks can be managed, but there is one variable which is difficult to control—the human interaction that causes mishaps. This is one reason we are trying to apply what we know about human factors involvement in mishaps to all the safety disciplines. Our people must understand their limitations and those within their working environment that increase susceptibility to mishaps. I am convinced that if we are going to make any dramatic, positive changes in our mishaps rates, we must accurately identify and aggressively work those human factors which are involved in most, if not all, our mishaps.

This is an exciting time for Air Combat Command. The joining of SAC and TAC has created the finest operational flying combat command in the world.

As you raise your new flag, it is imperative you elevate safety to the same level of primacy and emphasis as proficiency, professionalism, and pride. If you don't, we simply will not be able to afford the losses. With our commanders in the lead, safety must be studied diligently, emphasized consciously, and practiced universally by everyone at every level. The consequences of doing anything less are unacceptable.



SAFETY AT THE THRESHOLD

Brig Gen James L. Cole, Jr.
USAF/SE
Washington DC

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REHEARSE FOR THE WORST

BY MAJ TYLER E. "RHINO" JENNINGS

The day was perfect—60 degrees and clear skies—a great day for a low-level flight. Weapon Systems Officer (WSO) Capt James "Fox" Egelston and I were stepping to fly our Flight Lead upgrade surface attack sortie in the mighty F-15E Strike Eagle as BASKET 11 flight. Matt "Alamo" Fair and Jake "Dred" Anderson were our number 2, with Alamo acting as our instructor for the sortie. The plan was a low-level, VR-084, from Wilmington, North Carolina, up to the Dare County Bombing Range. As things turned out, we never made it there.

Photo by A1C Kimberly Barrer

The plan, brief, and flight to the low-level entry point were unremarkable. The plan was sound, we had the proper mission materials, and we booked the low-level properly. In the brief we had discussed low-altitude emergencies, and what the formation would do in the event of an issue during various parts of the flight. This was standard in the F-15E community, and it would turn out to be extremely important for us that day. There wasn't a cloud in the sky as we let down onto the low-level at the coast of NC, a few miles north of Wilmington. We cleared Alamo and Dred to wedge formation, and they flew a few miles behind us as we tactically maneuvered on the low-level.

We were at 500 knots and 500 feet AGL, flying low toward the first turn point when things took a turn for the worse. As we approached the edge of the town of Beulaville, NC, we heard a loud "bang" in the cockpit, followed by a noticeable reduction in airflow from our Environmental Control System (ECS). Fox immediately yelled, "CLIMB!" as I yanked the stick back and pointed us up and away from the ground.

My immediate suspicion was a bird strike, and I checked my engine stack after we had settled into the climb toward our Minimum Safe Altitude (MSA). The engines both looked normal as we called a knock-it-off on the radio to Alamo and Dred. We told them the situation, and cleared them to a chase position. Since it would be a few minutes until they closed the distance between us and could look over the exterior of our aircraft, Fox and I discussed the other indications we were seeing. The cockpit airflow was still quiet, which was not normal, but there were no warnings or cautions displayed, there was nothing wrong with the engines, and there was no visible damage to the aircraft. Sixty seconds later, the problem got significantly worse.

We had leveled off at MSA by that time, but then we both noticed smoke rising from the knee level in both cockpits. I said "Hey dude, is that smoke?" to which Fox, being the absolute professional WSO that he is, immediately replied, "GANGLOAD," along with a few other colorful remarks. We gang-loaded our oxygen regulators, which gave us 100% oxygen at higher pressure, and we each got out our emergency procedures checklist. As I maintained straight and level

Photo by A1C Kylie Barrow

Photo by A1C Tiffany Emery

flight, still following the ground track of the low-level, Fox began reading off the steps in the checklist related to smoke and fumes in the cockpit. The smoke kept getting worse as I informed Alamo and Dred of our new problem. We turned off all non-essential avionics, and the smoke began to dissipate. Alamo and Dred rejoined at this point and looked over the aircraft, noting no external damage. We then declared an emergency and coordinated with ATC to exit the low-level and head back toward Seymour Johnson AFB. The cockpit airflow remained quiet, making for sweltering temperatures and an uncomfortable remainder of the flight. We dumped fuel in the Military Operating Area above the base, and no more problems arose … until we were on short final.

On short final, I noticed a burning sensation in my eyes. I asked Fox if he did, too, to which he replied, "Yeah, Bro …This is awful." I concurred, and we both agreed we were going to land and get out of this aircraft as soon as possible. On landing rollout, the burning sensation worsened, and I elected to turn and pull the emergency vent handle, dumping cabin pressure and venting outside air into the cockpit. This remedied the situation. As we pulled off the runway, we both were ready for emergency ground egress, should the smoke return.

Once we parked, I opened the canopy in order to get fresh air. We shut down immediately and egressed the aircraft right there, just off the runway. A flight doc and ambulance met us at the aircraft and gave us an exam to make sure we were all right, and then drove us back to the squadron after clearing us.

Maintenance later found that a catastrophic failure had occurred inside the Environmental Cooling System, causing the initial smoke. The loss of cooling to the avionics caused the acrid smell, as well as the extremely hot air and toxic fumes later on, as the electronics baked in the heat. The failure was outside the control of all parties. It was caused by a fly-to-fail part, which goes to show that sometimes you can do everything right and still end up in a dangerous situation.

What should have been a normal sortie turned into one of the most heart-pounding sweat-inducing emergencies I ever have experienced. Never before or since have I more strongly considered the possibility that I might have to eject from an aircraft I was flying. The mishap highlighted the importance of crew resource management in a jet such as the F-15E. Without Fox's textbook crew coordination and checklist usage, the day may have ended very differently. Complacency also may have been a factor, as neither of us expected such a serious jet issue during that part of the sortie. I learned that emergencies usually never happen the way you expect, certainly not like they do in textbooks or the training environment. This experience showed me that every Airman should be ready for things to go wrong, and should plan and think about their reactions to those scenarios.

The more you ***rehearse for the worst***, the better able you are to fall back on training when things go wrong.

LIGHTS OUT

OVER GEORGIA

BY CAPT JACK "SPARROW" O'NEILL

The 41st Rescue Squadron from Moody AFB, Georgia, has had the privilege of leading the rescue community in the conversion to the new HH-60W Jolly Green II. While it's true that fielding a new piece of equipment comes with a learning curve, our training and teamwork has made us more than capable of handling any emergency that may occur. This was the case for my crew and me on 18 August 2021.

The night began like most of our single-ship night flights: We activated our night-vision goggles and took off shortly after sunset. We flew to our aerial gunnery range, where we were to participate in a training exercise with a sister ship. This was to be followed by several instrument approaches. We were halfway through our flight when we headed to a smaller air field to complete our training. So far, everything was standard and going according to plan.

As Captain Jesse Van Horn was flying the aircraft back to base and climbing to 5,000 feet at 110 knots, the Master Caution horn blared and the lights illuminated. Things had suddenly taken an unexpected turn for the worse. The Master Warning Panel indicated that we had lost both engines. I cross-checked my engine systems, which displayed big red X's on both engines, indicating a dual-engine failure. Instead of showing engine oil pressure and temperature all dropping steadily, the display suddenly disappeared. Paradoxically, though, these indications were not accompanied by what an engine failure would feel or look like, much less a *dual* engine failure. In fact, while we had lost these readouts, the Jolly Green was still flying under control, with seemingly unimpaired power.

After an analysis of the situation, we determined the problem. We had lost both Data Concentrator Units (DCU). These units take raw data from the engines and main rotor and convert them to a digital readout in the aircraft, translating the information for the engine systems. I took control of the aircraft and turned 180 degrees back towards Thomasville Airport.

With the aircraft under control and pointed in the right direction, I declared an emergency with Valdosta Approach. Next, Capt Van Horn began coordination to land at the airport, and SSgt Hunter Taylor pulled up the checklist for "COMPLETE LOSS OF INDICATING SYSTEMS." This was the first time this particular emergency had occurred in the HH-60W. The checklist directed us to "LAND AS SOON AS POSSIBLE," which allows the pilot to land in any field that looks suitable. We elected to continue to the airport and monitored the engine and rotor performance based on our intuition regarding "normal" sound and vibrations.

While I handled the aircraft, Capt Van Horn continued to recycle the DCU to reversionary mode, which eventually brought back the number-one DCU while we were on short final approach. I continued the approach with quick glances across the cockpit to confirm engine and rotor performance. We were able to land the aircraft safely and catch a ride back to base with our sister ship.

I can say with confidence that this emergency taught me two valuable lessons. First is the importance of confirming what the actual emergency is, and working as a team to resolve it. Our experience, not just in the new HH-60W, but in the HH-60G, allowed us to handle the situation calmly and quickly. Without experience, the crew might have begun an unnecessary autorotation based on the 2 engine-out lights, thereby increasing the potential for severe damage to the aircraft and injury to the crew.

Second, whether flying a multi- or single-seat aircraft, a pilot always has the resource of working together with their crew or formation to safely resolve emergencies. SSgt Taylor quickly got out the checklist to help with the situation, while Capt Van Horn initially maintained aircraft control, and then confidently continued to troubleshoot the problem when we swapped control. Together the crew aviated, navigated, and communicated effectively while using Crew Resource Management in order to safely land the Air Force's newest aircraft.

Photo by A1C Hayden Legg

30 YEARS OF

COMBAT AIR POWER

BY SSGT DANA M. TOURTELLOTTE

On June 1, 1992, the U.S. Air Force's Tactical Air Command and Strategic Air Command major commands combined to form Air Combat Command.

The establishment of ACC followed the 1991 collapse of the Soviet Union, and marked a post-Cold War shift from preparing for large-scale peer conflict to readying forces for smaller-scale regional conflicts and humanitarian operations. Upon activating, ACC assumed control of all fighter units based in the continental United States to also include all bomber aircraft, reconnaissance platforms, battle management resources, and intercontinental ballistic missiles.

ACC focused on its newly-streamlined objectives, creating a culture of inclusivity and diversity, and laid the foundations, from past to present, for success and a legacy of Airmen-led innovation.

ACC's beginnings:

The establishment of ACC in 1992 was entrusted to retired Gen. John M. Loh, the final commander of TAC, who set his sights on defining an inclusive culture for the new command.

Loh did not consider himself to be a pioneer; he was just fortunate and humbled enough to be named the first commander of Air Combat Command, and to set the stage and operating style of the command. According to Loh, this wasn't the old SAC or the old TAC, but a new command that required a new and different culture.

He made communicating his intent for the new command a critical part of his leadership strategy.

When he went out to the field, he ensured all Airmen knew they were vitally important to the success of ACC's mission.

ACC's future:

ACC leaders are always looking to the future. The creation of a fighter roadmap, assuming the role of lead command for cyber, and other major efforts like standing up the 350th Spectrum Warfare Wing, developing cyber mission defense teams, and establishing a Diversity and Inclusion office create more opportunities for ACC Airmen to grow.

To improve readiness, the command is instituting the Combat Air Force Force Generation model. ACC is evolving its organizational structures, warfighting concept of operations, force presentation and generation, and how it prepares its Airmen to ensure they are ready for strategic competition.

Milestones:

Jul 1, 1993 – ACC's ICBM mission, along with the Twentieth Air Force and F.E. Warren AFB transferred to Air Force Space Command.

Jul 27, 1993 – The first female fighter pilot, 2nd Lt. Jeannie Flynn, began her F-15E course flight training at Luke AFB.

Aug 11-13, 1993 – Two B-1Bs from the 28th Bomb Wing at Ellsworth AFB circumnavigated the globe for the first time and in a record-breaking 24.4 hours non-stop.

Dec 11, 1993 – ACC officially accepted ACC-1 (the "Spirit of Missouri), its first B-2 aircraft.

Jun 3, 1995 – Two 7th Bomb Wing B-1Bs landed after completing a historic 36-hour, 13 minute, 20,100 mile, non-stop around-the-world flight.

Aug 25, 1995 – A 2nd Bomb Wing B-52H Stratofortress and its five-member crew set an aviation world record from Edwards AFB, flying 5,400 nautical miles, unrefueled, with a payload of 11,000 pounds – in 11 hours, 23 minutes with an average speed of 556 mph.

Aug 31, 1995 – ACC's first SR-71 Blackbird aircrew became fully mission qualified, with the second crew being qualified Nov. 21, 1995.

Jun 11, 1996 – The first production E-8 Joint Surveillance Target Attack Radar System aircraft was formally accepted by ACC and the 93d Air Control Wing at Robins AFB.

Apr 9, 1997 – The first production F-22 was unveiled and named "Spirit of America."

Sep 11, 2001 – As one of the earliest response unit F-15 Eagles from the 1st Fighter Wing at Langley AFB were scrambled in response to the Sept. 11 terrorist attacks.

Dec 30, 2002 – ACC accepted its first F-22 Raptor.

Jan 22, 2006 – The 27th Fighter Squadron from Langley AFB flew the first F-22 operational sorties in support of Operation NOBLE EAGLE.

Feb 7, 2008 – The first overseas operational deployment of the 12 F-22 Raptors from the 27th Fighter Squadron supporting the U.S. Pacific Command's Theater Security Package in the Western Pacific.

Mar 6, 2013 – ACC's first F-35s were delivered to Nellis and Edwards AFBs.

May 3, 2013 – ACC declared Initial Operation Capability for the F-35A.

Oct 1, 2015 – ACC officially transferred the B-1B lancers of the 7th and 28th Bomb Wings and the Long-Range Strike-Bomber Program to Air Force Global Strike Command, placing all strategic command bomber assets under a single MAJCOM.

Sep 1, 2017 – As the first operational F-35 unit, the 34th Fighter Squadron at Hill AFB received its twenty-sixth and final block 3F F-35A.

Jun 7, 2018 – Air Force officials announced the service's cyber responsibilities will realign to ACC from AFSPC.

Apr 15, 2019 – ACC F-35A Lightning II's deployed into combat for the first time from the 4th Fighter Squadron at Hill AFB.

Apr 30, 2019 – Two U.S. Air Force F-35A Lightning IIs conducted the first combat air strikes of that platform in support of Combined Joint Task Force – Operation Inherent Resolve.

Oct 11, 2019 – ACC activates Sixteenth Air Force at Joint Base San Antonio-Lackland, integrating Twenty-Fourth Air Force along with Air Force Cyber, and Twenty-Fifth Air Force into a single headquarters to provide global intelligence, surveillance and reconnaissance, cyber, electronic warfare and information operations.

Aug 20, 2020 – ACC activates Fifteenth Air Force, integrating wings and direct reporting units from the Twelfth Air Force and Ninth Air Force to form the 15th AF, responsible for generating and presenting ACC's conventional forces.

Oct 29, 2020 – The first iteration of AGILE FLAG ended. The experiment was a stepping stone to the ability to deploy into theater as Lead Wings.

Nov 5, 2020 – The 23rd Wing and 347th Rescue Group leadership received the Air Force's first two HH-60W Jolly Green II helicopters at Moody AFB.

Apr 20, 2021 – ACC's receives its first F-15EX Eagle II designated EX-2 at Eglin AFB, Florida.

Since its inception thirty years ago, ACC has led the way to the successes and advances we see today. Through technological innovations and progressive cultural paradigm shifts, the largest MAJCOM in the Air Force has created the blueprint for continuing its legacy of leading the way with excellence in all we do.

A GREMLIN IN THE DRAGON

BY MAJ EDISON I. ABEYTA

The mission on 28 December 2020 started like most sorties. As I hit the pre-flight briefing for the day, and integrated into the full pressure suit, the excitement of flying a long-duration, high-altitude flight at the edge of the atmosphere began to temper to a professional focus. The sequence of events followed a timeline that started before I awoke that morning, with maintenance pulling the U-2 from the hangar in a flood of artificial light, amid the hum of diesel generators.

The team effort involved to get the Dragon Lady off the ground is nothing short of impressive, and truly can be referred to as a "launch." That day was no exception. Thanks to the dedication of the ground crew, takeoff was uneventful, and I relaxed as the aircraft climbed through 60,000 feet. Unfortunately, that was when my troubles began.

Photo by A1C Matthew Seefeld

With the critical phase of flight behind me, and with all sensors operating normally, I engaged the autopilot and began to review some of my mission products. Suddenly, an aural warning sounded in my helmet. I looked at the aircraft system displays, and saw a Master Warning, accompanied by an indication that I had an electrical systems problem.

My initial reaction upon seeing the indication was disbelief. Simply put, the aircraft was trying to tell me that electricity was flowing somewhere it shouldn't, and I could have a *de facto* arc-welder on board. Working quickly, I pulled up the appropriate checklist. Though this was not a BOLDFACE item from memory, I knew it was time critical and couldn't wait.

The "Fire Hazard May Exist" warning stood out on the page. The checklist confirmed what I was seeing, and I was forced to turn off my aircraft's DC generator and transformer/rectifier in order to eliminate the fire hazard. As expected, my multifunction displays immediately went blank, and a warning sounded as the autopilot was decoupled.

I grasped the yolk and initiated a turn away from the nearest country border for a reverse course back home. The ellipse of the horizon slid across the canopy, as the U-2 danced on the narrow band of the "coffin corner" in response to the turn input. I checked the "rear-view" style mirror mounted to the forward fuselage. Fortunately, I didn't see any smoke trailing the aircraft or perceive any other indication that a fire had started onboard. I had successfully acted in time to remove the fire hazard, but I had lost my primary source of electrical power.

At this point, the only equipment I had to get me back home were my 3"x3" Standby Flight Display, a portable moving map, and limited battery power. With a few inputs on my analog electrical panel, I was able to strip down to my most basic power state in order to stretch the life of my batteries. After I got myself pointed in the right direction and on profile, I lowered the gear, reduced my power, and nosed down for the descent.

At that moment, there was a rush of foggy air, as my pressure suit inflated like the Michelin Man. In order to descend, I had to select idle power, which consequently reduced the amount of bleed air coming off the engine. Without a fully functional electrical system, the environmental control system was unable to pipe an alternate stream of bleed air into the cabin to maintain proper pressurization. Fortunately, the suit worked as advertised, thanks to my Physiological Support Division!

My mobility, reduced by the inflated suit, began to improve as the U-2 descended to a lower altitude. The aneroid controller worked to equalize the internal life-sustaining pressure; however, the heating elements on my faceplate and cockpit window struggled to keep up with the moisture that clung to the glass.

With a feeling of relief, I broke out below the weather at about 3,000 feet. Leveling out and seeing the clear horizon ahead, I felt my spirits lift. I was able to pick up some familiar landmarks and navigate back to base with enough remaining battery power to make a relatively normal approach to landing.

Not everything went perfectly that day, but a lot of things went well. Conserving electrical power was critical for the safe recovery of the aircraft after an electrical emergency. I'm thankful I could rely on my equipment and backup systems, all well maintained by the hardworking members of the U-2 community.

It was great to see the team back on the ground after I landed. I took some time to discuss the issue with the maintainers and Lockheed representatives, and learned more about the U-2's electrical system. Mechanical systems break, and some aircraft components are "fly to fail." The training and mentorship I received in the Air Force enabled me to succeed in bringing the Dragon Lady home safely that day.

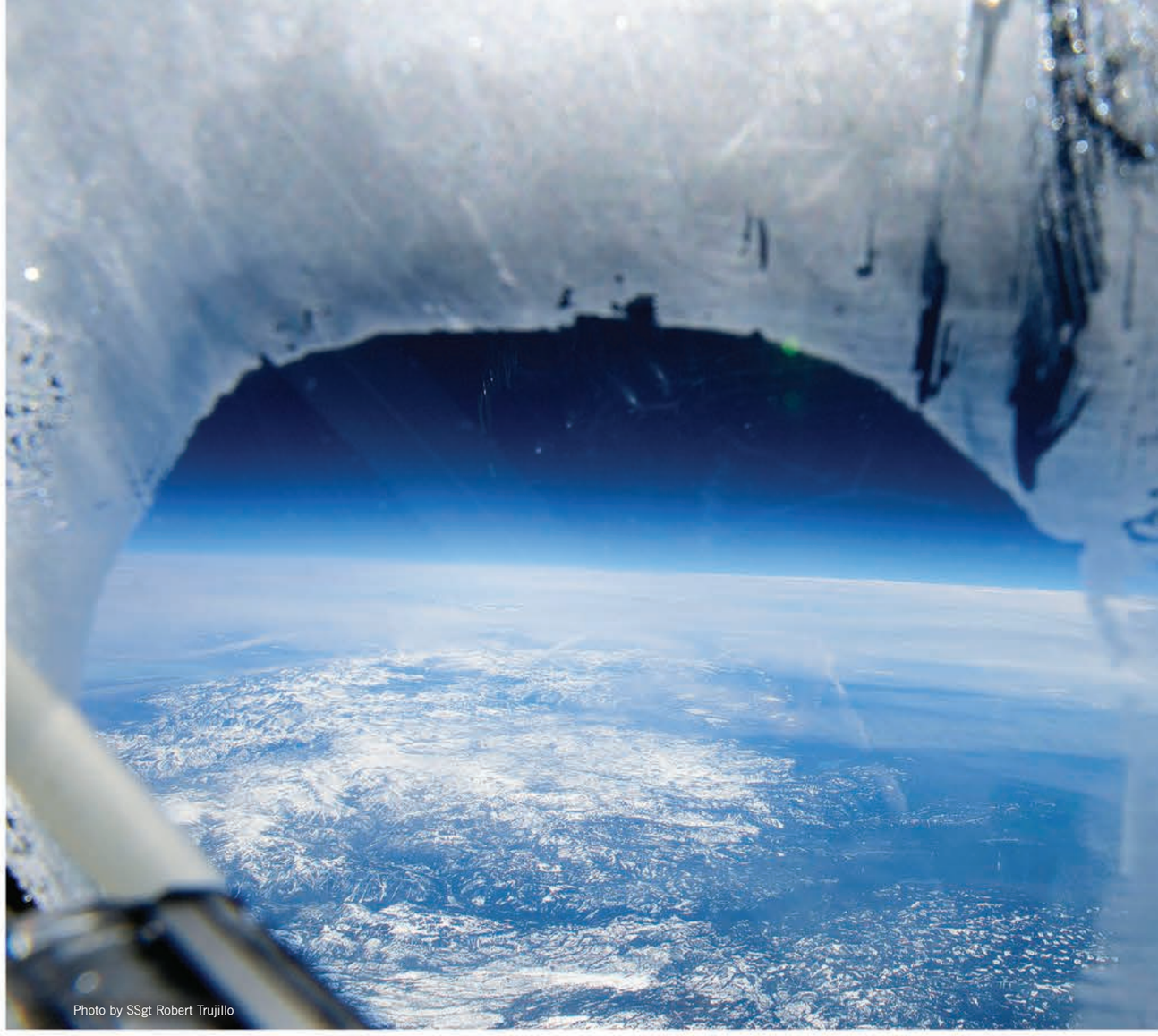


Photo by SSgt Robert Trujillo

Photo by A1C Matthew Seefeld

IN THE HEAT OF THE MOMENT

BY SRA ELIJAH L. WHITENACK

Many, many, moons ago, I was on my first deployment in a Middle Eastern desert. It was a bare base setup, and we didn't have much beyond the essentials such as food, water, shelter, etc. It was our job as Civil Engineers to build the facilities and create the base as a whole. My team and I were working on an expansion pad for the Black Hawks that were on standby for the Army. It took several weeks, but we finally had our subgrade and foundation in place, and were ready to lay the asphalt.

On the day we began paving, the temperature was roughly 120°F. The asphalt exited the paver at 280°F, which made the ambient temperature approximately 150°F. We picked up our shovels and asphalt rakes and got to work. We were set to do 3 lanes, each of which was 1,000 ft.

The first lane was rough, to say the least. It was hard work, with no time for rest, and no time to joke around—just heads down, focused, working hard. It was hot, to say the least. We were sweating profusely, and didn't stop to rest or stay hydrated. We just stayed focused on the job.

When we reset to begin lane 2, it was obvious that all of us were tired and dehydrated. The second lane was even rougher than the first. My team and I started laying asphalt, and sure enough, an individual passed out within 30 minutes—not even halfway through.

Lucky for us, the ambulance from the medical tent was only about 200 ft. away. While some of us attended to the individual who fainted, others ran to the medical tent. The ambulance was there within minutes to help the Airman. The medical personnel confirmed that the individual had suffered heat exhaustion.

We realized that we hadn't merely been overworking; we had been abusing ourselves. We had not allowed for proper breaks and rest periods—required in such harsh conditions. We had not been drinking enough water, especially considering how much we had been sweating. We hadn't briefed beforehand on the hazards of working in such conditions. We had stressed PPE in order to prevent burns, but we hadn't even thought about hydration. Even so, we should have paid attention to the symptoms our fellow Airman was presenting, and taken a moment to rest.

The human body can experience heat exhaustion when its internal temperature rises to 104°F or higher.* With an average resting body temp of 98.6°F, there's not a lot of wiggle room, especially when working in temperatures around 150°F. We should have taken more time to address all the hazards associated with project in order to mitigate risks like these. Luckily, the Airman didn't sustain serious injuries, but just needed fluids, food, and rest.

Although the incident ended well, it shouldn't have happened in the first place. As a result of our negligence, we put a fellow Airman at risk. It was a terrifying moment, and left us all with a lesson we never will forget. Stay cool—stay safe.

* The Centers for Disease Control (CDC)

Photo by SMSgt Ralph Branson

1st Quarter FY22 Awards

Aircrew Safety
Crew of Brolly 1
605 TES-Det 1, 505 CCW
Tinker AFB, OK

Aviation Maintenance Safety
SSgT Dylan C. Barto
334 FGS/MSAQA, 4 FW
Seymour Johnson AFB, NC

Flight Line Safety
Raptor Aircraft Maintenance Unit
757 AMXS/MXADA, 57 WG
Nellis AFB, NV

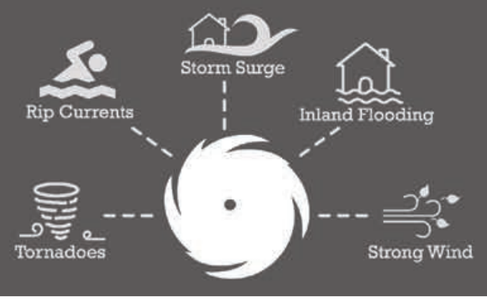
Pilot Safety
Capt Austin M. Lasch
74 FS/DOT, 23 WG
Moody AFB, GA

Safety Career Professional
SSgt Darian P. Allen
366 FW/SEO, 366 FW
Mountain Home AFB, ID

Weapons Safety
Mr. Blaine T. Schwartz
99 ABW/SEW
Nellis AFB, NV

Unit Safety Representative
SSgt Kerry S. Moody II
84 RADES/RESS, 505 CCW
Hill AFB, UT

Unit Safety
Bolt Aircraft Maintenance Unit
57 AMXS/MXAE, 57 WG
Nellis AFB, NV



Hurricane Season is here

Determine Your Risk

Hurricanes bring many hazards to the U.S. coastlines and inland areas, including storm surge along the coast, inland flooding due to heavy rainfall, tornadoes, strong wind, rip currents and large waves.

for more information vist: weather.gov

96 HRS	**HURCON 5** Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 96 hours.
72 HRS	**HURCON 4** Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 72 hours.
48 HRS	**HURCON 3** Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 48 hours.
24 HRS	**HURCON 2** Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 24 hours.
12 HRS	**HURCON 1** Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 12 hours.

HURCON 1C
Caution: Winds of 35-49 knots (40-57 mph) sustained are occurring.

HURCON 1E
Emergency: Winds of 50 knots (58 mph) sustained and/or gusts of 60 knots (69 mph) or greater are occurring and other dangerous conditions associated with the storm are present. All outside activity is strictly prohibited.

HURCON 1R
Indicates life-threatening storm hazards have passed but damage may persist and only emergency responders and damage assessment personnel are released to move about. Weather Safe (Hurcon 1R) can only be declared when winds in excess of 35 knots (40 mph) have subsided for a sustained period of two hours or more.

Mishap Statistics Scoreboard

FY22 Flight

Thru 31 Mar 2021

	Fatal	Aircraft Destroyed	Class A Aircraft Damage
15 AF	0		
16 AF	0	0	0
USAFWC	0	0	0
ANG (ACC-gained)	0		0
AFRC (ACC-gained)	0	0	0
AFCENT (ACC-gained)	0	0	

FY22 Occupational

Thru 31 Mar 2021

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

FY22 Weapons

Thru 31 Mar 2022

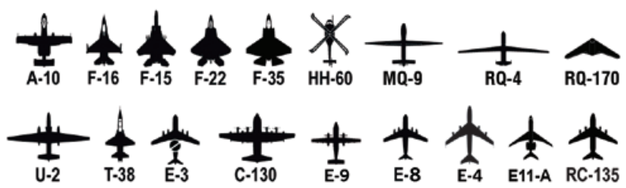
	Class A	Class B	Class C	Class D	Class E
ACC	0	0	0	1	2

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

Unfortunately, our zero Class A mishap trend abruptly ended this quarter with 5 accidents, most within a 2-week span. They all are currently under investigation, and the SIBs will be out-briefing COMACC soon. Regardless, it's a stark reminder of the dynamic environment in which we all live, work, fly, and do business. With the critical days of summer rapidly approaching, and an increase in sortie-generation on the horizon, these multiple incidents remind us of how quickly perceived "calm times" can be interrupted, both in and out of the cockpit. So, stay vigilant, stay ready, and stay safe.

Occupational Notes

The second quarter of Fiscal Year 2022 yielded one Class A mishap involving a motorcycle. Poor decision making and poor risk management factored into this mishap.

As we enter spring, the warmer weather brings with it an increase in motorcycle operations, as well as an increase in mishaps. Supervisors and peers are critical in helping to prevent these types of mishaps. Training is the first level to proactively preventing mishaps. As such, supervisors should ensure that identified operators complete required training prior to operating. Peers play an important role as well since peers are often present when members start to display unsafe behaviors and actions.

Operators of 4-wheel vehicles should be mindful that, as motorcycle operations increase, they should redouble their efforts at driving defensively to ensure a shared and safe driving experience.

During the second quarter, we also experienced one property damage mishap meeting Class B reporting criteria. This mishap involved an aircraft engine fire, and is currently under investigation.

Weapons Notes

During the second quarter of FY22, ACC experienced one Class D and two Class E mishaps. The Class D mishap involved an HH-60 hoist cable squib activating during a pre-flight check, causing the hoist cable to sheer. The first Class E was an inadvertent firearm discharge that resulted from improper arming procedures. The second Class E involved a fire bottle squib that activated during an engine run on an F-15E. Let's continue exercising mishap prevention methods. We certainly appreciate all you do for the weapons community!

OVER the Edge MAGAZINE

For more summer safety tips, visit: https://www.safety.af.mil/Divisions/Occupation-Safety-Division/Summer-Safety/

OVER the Edge MAGAZINE

Cover photo by SMSgt Sarah M. Longo

Marina & Boating Safety

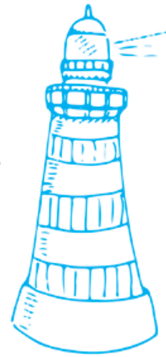
Boats can be a great source of summer fun and leisure. But, boaters, swimmers, and marina staff must be aware of dangers in and around the water. Electrical hazards and carbon monoxide (CO) bring unique risks to the boating world. Learn to protect people and pets from these dangers.

ELECTRICAL SAFETY

- Never allow swimming near the boat, marina, or launching ramp. Residual current could flow into the water from the boat or the marina's wiring. This can put anyone at risk of electrical shock drownings (ESD).
- Be sure your boat is well maintained. Have it inspected each year. Ask a qualified marine electrician to do this job.
- Ground fault circuit interrupters (GFCIs) and equipment leakage circuit interrupters (ELCIs) should be installed and tested monthly. Run tests to find out if electrical current is leaking from the boat.
- Only use cords intended for marine use. Never use household cords near water.
- Know where your main breakers are on both the boat and the shore power source. This will help you respond quickly in an emergency.

CARBON MONOXIDE SAFETY

- Poorly tuned engines produce more CO. Keep your engine properly maintained. Follow manufacturer's instructions for service.
- Proper ventilation for engine and generator exhaust vents must be clear and pipes should be inspected for leaks.
- Get into fresh air right away and get help if you feel symptoms of CO poisoning. These include headache, fatigue, confusion, dizziness, nausea, or seizures. The symptoms can be similar to seasickness. Assume it is CO exposure until you are sure the boat is safe.
- Do not swim near the boat's exhaust vents. CO accumulates there.
- Install CO alarms inside your boat. Test CO alarms before each trip.
- Choose a CO alarm that is listed by a qualified testing laboratory.
- If the CO alarm sounds, move to a fresh air location right away.



KNOW THE RISKS!

Electrical shock drownings can occur when marina electrical systems leak electrical current into the water. Boats can also serve as the source of an electrical leakage. Leakage can cause a shock that can injure, disable, or kill a person.

Carbon Monoxide is a gas you cannot see, taste, or smell. It is often called the "invisible killer." CO is created when fuels such as gasoline, diesel, or propane do not burn fully. CO is also produced when wood or charcoal is burned.

Sources of CO on your boat may include engines, gas generators, and cooking ranges. Space and water heaters can also be sources of CO. CO can collect anywhere in or around a boat. The gas is harmful to both people and to pets.

FACT

CO can remain in or around your boat at unsafe levels even if the engine has been turned off.

NFPA | **Your Source for SAFETY Information**
NFPA Public Education Division • 1 Batterymarch Park, Quincy, MA 02169

Know YOUR Limits

BY SMSGT SARAH M. LONGO

The story begins on a warm Saturday morning. I had decided to use one of my few days off to go out on the paddleboard I had just bought. Being new to the area, I downloaded a couple of apps that gave me tides and water conditions, and I checked those before packing my bags and loading the car for the trip. I knew enough to pack the usual items: bottled water, towels, clothes, dry bag, life vest, and so on. After packing everything, I told a friend where I would be going and when I expected to be back home.

Photo by SMSgt Sarah M. Longo

On the 45-minute drive out to the spot I had chosen, I soaked up the neon green developing on the trees with the coming of spring, and rolled down the window to drink in the fragrance from the flowers in bloom. The sun was warm on my left arm as it lay draped over the car window sill, and I sang along to favorite songs from my summer playlist.

Once at the beach, I was surprised to see only a few people there. It was a very small beach, and the tiny parking area usually was packed. I looked at the sparkling water and saw that the tide was almost slack, which was what my app had indicated before I left. I checked the weather again before starting to unpack all my stuff, and got ready to pump up my paddleboard.

I quickly pumped my paddleboard up to the usual setting, and packed the items I would need into my dry bag: cell phone, water, sandals, and sunglasses. I walked the paddleboard and my gear down to the water's edge and started loading up. I shoved my life vest under the elastic straps on the front of the board. I crammed the dry bag in the only space left on the front of the board, and grabbed the paddle. Pushing off into the shallows, I was sure this was going to be a beautiful trip.

The beginning of the trip was great! I saw several blue crabs as they fluttered to the surface of the calm water. As I paddled out of the bay and around the point, I saw herons gliding on the warm thermals in the sky, and turtles warming themselves on the rocks.

My plan was to paddle out of the bay and around the point. I then would circle a small island and come back home. Paddling out was easy, since the tide was slack. I had very little resistance, and I felt great about my ability to make the trip. As I rounded the point and started toward the island, the tide changed and the current picked up. I wasn't worried, though, because I felt great.

About halfway around the island, I realized I had made a mistake. My arms were tired, and the current was growing stronger because of the outgoing tide. I paddled hard for a moment to see if I could get to the island, but I had let myself get too far away, and the current was too strong. I panicked for a moment, my heart racing, as I realized I might be carried out into the ocean and would have to try to call for help. I knew my cell phone wouldn't have a signal outside the bay, and I regretted my lack of knowledge about the currents.

Photo by Feather Bloggett

Photo by Feather Bloggett

Photo by SMSgt Sarah M. Longo

I decided not to give up, and paddled steadily, even though I was tired. I made slow progress as I headed toward the mouth of the protected bay. I finally rounded the mouth of the bay. Once inside, the current was easier, and I got my second wind. I just wanted to get home! I paddled straight into the beach, panting and exhausted. I unpacked and started to deflate my paddle board.

Going over the events of the day, I promised myself that I NEVER would do that again. There were a few things I would do differently next time.

1. I would do more research on the location I was planning to visit, especially about the currents.
2. I would more closely monitor the tide times, and plan accordingly.
3. I wouldn't be overconfident about my abilities.
4. I would be realistic. I would know my limits, and I wouldn't exceed them.

Paddling can be great fun as well as great exercise, but poor planning can turn recreation into regret. Remember Check 3—GPS: *Gear, Plan, Skills!*

Mountain Bike Safety

ANONYMOUS

Mountain-bike riding is a very adventurous activity, but it also can be very strenuous and dangerous. From shooting down a 50-foot drop, hitting tree roots every three feet, to climbing straight up a 30-foot hill, the key is to remain in control at all times, taking every precaution to stay safe. Know your limits, and don't try to exceed them. Get to know your bike and how it works, and always wear a helmet!

- Gear Up – Always wear a helmet and any other appropriate Personal Protective Equipment (PPE) for the riding conditions. Carry a small bike pouch with emergency bike repair equipment. You never know when something could happen, and it's a long walk back if you're carrying your bike.

- Never Ride Above Your Abilities – There is no shame in walking sections of the trail you don't feel confident enough to ride, and don't let anybody tell you otherwise.

- Use Appropriate Equipment for the Terrain – Some bikes are better for different situations. Just because you can see tire tracks, doesn't mean you can ride it with *your* bike.

- Keep Your Speed in Check – Always keep your speed at a level that will allow you to adapt to any changes in trail conditions or unforeseen obstacles. Slow down going downhill, or risk major injury. Maintain control of your bike at all times.

- Know the Trail – Never push your limits while on a trail you don't know. Get to know a new trail at slower speeds before riding it the way you ride familiar trails.
- Slow Down for Blind Curves – You never know what or who is around a curve if you can't see past it.

- Stop and Look – Evaluate sections of a trail that look challenging before you ride them.

- Anticipate a Crash – Always foresee the consequences of crashing on a particular stretch of trail before trying to ride through it. Sometimes a section can look easy to ride, but crashing there can have deadly consequences. It also doesn't hurt to wear knee and elbow pads for extra protection.

- Start Small, Go Big – Work your way up to conquering obstacles and stunts. Find ways to practice under easier conditions or at lower speeds before committing yourself to something more dangerous.

- Play it Smart, Play it Safe – If you think what you are doing is not the smartest idea, you're probably right. Think about what you are doing, and trust your instincts. In all things, always Check 3 GPS: Gear, Plan, Skills!

Photo by Sorapop Udomsri/Shutterstock.com

THE RIDE OF YOUR LIFE

BY TSGT ASHLEY MICHONSKI

There's nothing like hitting the open road and cruising at 60 mph while listening to your favorite tunes. You get to focus on enjoying the ride and your surroundings, away from distractions. You feel everything: every bump in the road, the speed, the wind trying to push your sleeves up your arms, the heat from the sun and the way it cools when you hit a shady spot. You get to be immersed in the experience. If you ask any motorcycle rider how it feels to ride, you're going to get a wide variety of answers. Some enjoy the things I just mentioned and think of it as an escape, others like the thrill of it—the exhilaration.

To me, riding a motorcycle has always felt euphoric, calming, freeing … until I had a close call. One day back in 2020, while I was stationed at Joint Base Pearl Harbor-Hickam, HI, I was on my way into work, and came very close to getting seriously hurt, or even losing my life.

Out on the highway, I was riding in the second lane from the right, preparing to take the exit to base in a couple of miles. As I rode along, listening to my music, something on the left caught my eye. It was the hood of a small pickup truck, and it was approaching me.

When I turned my head to get a better look, I saw the vehicle's hood was only about 8 inches from my left kneecap! My life flashed before my eyes. Luckily, I had positioned myself in the center of the lane, and I was able to move to the right side in order to put some distance between myself and the truck. The driver wasn't even paying attention, and kept merging into my lane. Thankfully, the lane to my right was clear, and I was able to avoid a collision.

I am very thankful to have had multiple motorcycle training courses and good riding mentors. I learned defensive and evasive riding skills that prevented me from becoming part of a statistic.

My thoughts on riding have changed after this experience. I have a more balanced view towards it now. I still have excitement and love for the ride, but, since I have experienced danger firsthand, I also am more reserved, protective, and aware of the risks. I also have seen how the community is affected when we lose one of our own.

Our Airmen who ride must have experienced mentors who are willing to share stories and tips in order to help create safer riders. Over the past 5 years, we have lost 52 Airmen to motorcycle accidents. We have to encourage and support a strong mentorship program that promotes education beyond the mandatory Motorcycle Safety Foundation courses. We must do all we can to provide our Airmen with the diverse skill-set they need when it comes to navigating the road on a motorcycle.

Photos by TSgt Alexander Riedel

HEAT SAFETY

FOR YOU AND YOUR FAMILY

DURING A HEAT WAVE

Slow down: Reduce, eliminate or reschedule strenuous activities until the coolest time of the day. Children, seniors and anyone with health concerns should stay in the coolest available place, not necessarily indoors.

Dress for summer: Wear lightweight, loose-fitting, light-colored clothing to reflect heat.

Eat light: Choose easy-to-digest foods such as fruit or salads. If you pack food, put it in a cooler or carry an ice pack. Meats and dairy products can spoil quickly in hot weather.

Drink plenty of water (not very cold): Focus on non-alcoholic and decaffeinated fluids. Drink water even if you don't feel thirsty. If you're on a fluid-restrictive diet or have a problem with fluid retention, consult a physician before increasing consumption of fluids.

Use air conditioners: Spend time in air-conditioned locations such as malls and libraries if your home isn't air conditioned.

Use portable electric fans: Fans exhaust hot air from rooms or draw in cooler air. Do not direct the flow of portable electric fans toward yourself when room temperatures are hotter than 90°F. The dry blowing air will dehydrate you faster, endangering your health.

Minimize direct exposure to the sun: Sunburn reduces your body's ability to dissipate heat. Take a cool bath or shower.

Do not take salt tablets: Only take salt tablets if recommended by a physician.

Be aware of infants, older, sick or frail people and pets: Never leave children, disabled adults or pets in a car.

For more heat health tips visit: the Centers for Disease Control and Prevention at: **cdc.gov**

WARNING VS. WATCH

Excessive Heat Watch

An Excessive Heat Watch is typically issued two to five days ahead of possible dangerous heat conditions. Certainty regarding the development and timing of the event is lower than a warning.

Excessive Heat Warning

An Excessive Heat Warning, sometimes preceded by an Excessive Heat Watch, is typically issued within one to three days of the onset of extremely dangerous heat conditions and remains in effect until the extreme danger subsides. Certainty is high that the event will occur.

Heat Advisory

A Heat Advisory is typically issued within one to three days of the onset of dangerous heat and remains in effect until the danger subsides. These conditions pose a lesser, but still dangerous, risk to communities. Certainty is high that conditions will occur.

EXCESSIVE HEAT - AMERICA'S DEADLIEST WEATHER

Excessive heat poses a significant risk to people's health, including heat stroke and heat exhaustion, which can result in death. Excessive heat generally means unusually hot temperatures, possibly combined with oppressive humidity, that persists for two or more days. However, specific guidelines vary across the country and may be refined through work with local and state health professionals.

Drink plenty fluids in hot weather, even if you aren't thristy.

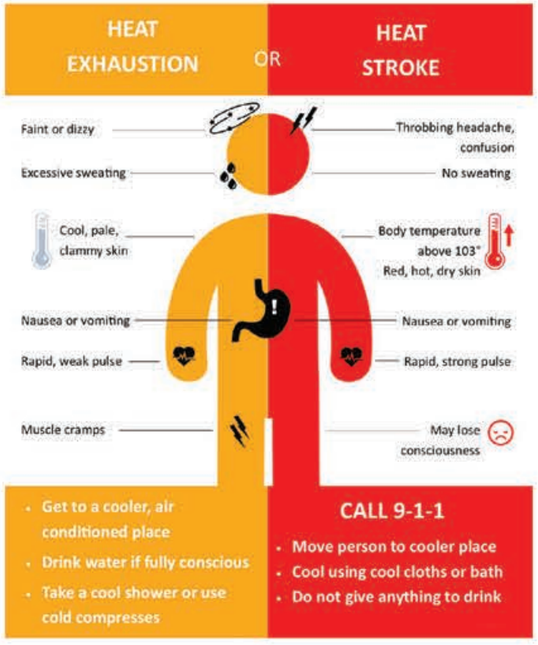
HEAT CAN BE DANGEROUS

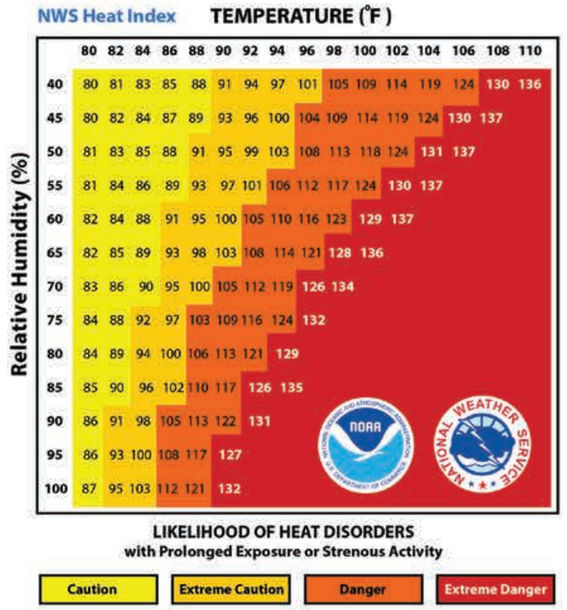
The Heat Index

The Heat Index is one way to measure how hot it feels when humidity is considered with the temperature. For example, when the temperature is 95 °F and the relative humidity is 50 percent, the Heat Index is 105 °F. To find the Heat Index temperature, use the chart or use the online calculator available at:

weather.gov/safety/heat-index

Heat Index temperatures shaded in red indicate extreme danger. The National Weather Service utilizes the Heat Index in many parts of the country to determine when and where to issue heat alerts.





NEVER leave a baby, senior or pet locked in a car, even for a few minutes. Dozens of infants and untold numbers of pets die every year in hot vehicles.

National Weather Service

for more information visit: weather.gov/safety/heat

SUMMER SAFETY CHECKLIST

Sun Safety

- ☑ Limit your sun exposure between the hours of 10:00 a.m. and 4:00 p.m.
- ☑ Get some sun-protective clothing.
- ☑ Wear a hat and sunglasses with UV-ray protection.
- ☑ Replace any sweat-saturated items with dry clothing.
- ☑ Use sunscreen that has a sun-protection factor (SPF) of at least 15.
- ☑ Use sunscreen on both sunny and cloudy days.
- ☑ Apply sunscreen every two hours, or after swimming or sweating.

Heat Safety

- ☑ Reduce the intensity of activities that are 15 minutes or longer in length.
- ☑ Make sure to stay well hydrated.
- ☑ Limit outdoor physical activity in warmer climates.
- ☑ Allow your body to acclimate to changes in temperature.

Pool Safety

- ☑ Never leave a child unsupervised in or near a pool or spa.
- ☑ Teach children to swim as early as possible.
- ☑ Avoid inflatable swimming aids such as “floaties.”
- ☑ If possible, install a fence 4 feet tall or higher around all sides of the pool.
- ☑ Do not use a pool or spa if there are broken or missing drain covers.
- ☑ Do not dive in less than nine feet of water.
- ☑ Always employ a feet-first entry.

Protect Against Bugs

- ☑ Use insect repellants to guard against ticks.
- ☑ Wear long-sleeved shirts and long pants when going outside.
- ☑ Never allow pools of water near your home to become stagnant.
- ☑ Avoid using scented soaps or perfumes.

Jet Skiing Safety

- ☑ Always wear a U.S. Coast Guard-approved life jacket.
- ☑ Know and understand all manufacturer features, and read the operator’s guide.
- ☑ Never consume alcohol or drugs before or while operating a Jet Ski.
- ☑ Always wear footwear, gloves, and goggles/glasses.
- ☑ Always stay alert, and be aware of your surroundings.
- ☑ Stay clear of all restricted areas.
- ☑ Take a boating/jet ski safety course.
- ☑ Always attach engine cutoff lanyard to your wrist or personal flotation device (PFD)
- ☑ Always operate at a safe speed, and be prepared to stop or alter course for emergencies.
- ☑ Always know the waters where you will be operating, and observe Federal, state, and local laws.

Fire Safety

- ☑ Never use gasoline to start a BBQ grill or campfire.
- ☑ BBQ grills are meant for outdoor use only.
- ☑ Ensure charcoal is cool and completely out before disposal.
- ☑ Dangerously hot surfaces are not limited to cooking surfaces.
- ☑ Build campfires in appropriate areas.
- ☑ Ensure campfires are completely out before leaving.

Safety on the Road

- ☑ Driving and texting don’t mix.
- ☑ Never drink and drive.
- ☑ Plan your outing … know the area, and pack accordingly.
- ☑ Perform a vehicle check-up.
- ☑ Slow down … enjoy the drive.
- ☑ Get a good night’s sleep the night before, and take frequent rest stops.
- ☑ Keep emergency supplies in your vehicle.

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