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Combat Edge

ACC's Full-Spe Safety Magazine

THE DANGERS of REALISTIC TRAINING *in* RPA

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Combat Edge

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COVER PHOTO BY: SENIOR AIRMAN CORY D. PAYNE

THE COMBAT EDGE WILL RETURN THIS SPRING

ACCent

"2, Ops Check"


Col. Robert B. Trsek
Director of Safety

Joining the ACC Headquarters staff in August of this year, I'm fortunate to have had time, closing out the fiscal year, to assess our command's state of affairs and take a look at our flight, weapons and occupational safety disciplines to see how we, as an Air Force, are doing in our "quest for zero" mishaps. 2, Ops Check.

The good news is that weapons safety has remained strong despite experience level challenges in the field and continued encroachment problems at many of our operating locations —otherwise, thankfully quiet on the weapons front. In occupational safety, fiscal year 2016 saw the best numbers *in a decade* in reducing on and off-duty fatalities, including privately-owned cars and motorcycles! That's no small feat; it's significant progress and something to be proud of—***your*** behavior, supported by leadership and a culture for safety has made a marked impact on the numbers and types of mishaps in our Air Force, and saved fellow Airmen's lives.

The bad news is that fiscal year 2016 saw a spike in aviation fatalities, most within our command, and several due to flight discipline, failure to adhere to published guidance, or sometimes just a lack of common sense. Moreover, we've been flying our aircraft hard for more than two decades and we're starting to see issues in structural fatigue, we continue to see mode errors with new or complex software, and our 5th generation aircraft continue to present new challenges for our aircrew and maintainers alike. Now, more than ever, we need increased vigilance and absolute dedication to "the basics" that make our forces the finest professionals in the world. Throughout the years we've written better guidance and procedures in blood, but it all goes out the window when we simply neglect the vital steps that others have paid for.

Air Combat Command's quest for zero is just that, a quest, a goal—it's what we aim for in our everyday operations. That *doesn't* mean we stop flying, stop loading munitions, or stop carrying out all the mission essential tasks that enable our great Air Force. It *does* mean that we have to carry out our mission smartly, with safety as a component of all of our processes, but our priorities haven't changed. ACC will continue to deliver air power to the combatant commands, prepare our force for the future, and support our Airmen and families—all of which aren't just compatible with safety, but are enhanced by safe practices.

ACC and the broader Air Force have done a great job over the last year by embracing a culture of safety and becoming more transparent when it comes to identifying hazards —but even one mishap is too many—we need your help to continue our quest for zero. Help us line out those few remaining mishaps that defy a common cause or trend, strike out mishaps resulting from willful misconduct, and speak up when mission requirements are pressuring us to take unsafe acts or omit necessary steps in standing guidance or procedures. Fiscal year 2016 was a great year by most accounts, but with your help we can make 2017 even better!

THE **DANGERS** of **REALISTIC TRAINING** *in* **RPA**

BY CAPT. DAVID STUKENBERG

Relatively speaking, the continuous operation of Remotely Piloted Aircraft (RPA) in the combat environment is a recent affair. RPAs routinely operate in the battlespace from 60 feet to FL600, carry a variety of weapons and payloads; and perform a variety of missions from intelligence, surveillance and reconnaissance (ISR) to close air support (CAS). As such, many of the unique challenges RPA operations and their sustained integration pose have yet to be fully examined and mitigated. I became keenly aware of this while acting as Pilot-in-Command (PIC) of a recent training sortie. In short, an experienced crew comprised of myself acting as PIC, a Sensor Operator (SO), and an Instructor Pilot (IP) (all with previous manned aircraft experience), inadvertently lased a government contractor working on the ground in a training capacity (as a Joint Terminal Attack Controller (JTAC)) for .05 seconds. The inadvertent firing of the laser could have caused the controller permanent ocular damage or even blindness.

U.S. Air Force photo illustration by Tech. Sgt. Nadine Barclay

In our case, the contractor was unharmed. After a detailed review of the day's event, we assessed human factors to be the primary cause. However, these factors were aggravated by an amalgamation of characteristics unique to RPAs. Because the mistake was preventable, an open discussion of these factors is warranted to aid in the prevention of future incidents.

On the whole, human factors are causal if not a contributor in a vast majority of aviation incidents. To address this, the Air Force puts considerable effort toward understanding and mitigating the impact of human factors on flight operations—both in real world and training environments. For example, before flight, every crew conducts a risk assessment using an Operational Risk Management (ORM) Matrix. The matrix helps pinpoint the factors most likely to have an impact on the mission. Once risk factors are pinpointed, crews may then evaluate the risks, determine how to mitigate or maintain them within acceptable limits; and implement mitigation techniques.

Having accomplished our risk assessment, I ended our brief by stating, "There will be no use of the laser on the range today." We all understood how things would proceed during the day's flight and thought ourselves well prepared to fly just as we had the three days previous. However, behind the preparation, there were a variety of subtle factors already eroding our mitigation measures.

In the days leading up to our TDY, our crew had been flying real-world contingency and combat operations for several weeks. As RPA crews we fly our aircraft via a highly sophisticated network from a stationary Ground Control Station (GCS) which is our aircraft cockpit. Regardless of where the aircraft is geographically, the cockpit and crew environment is nearly identical. Performing the quick transition to training from operations, we were not completely out of an operational mindset.

The day of the incident was the fourth day of training and our schedule was the same as it had been for the past three: two events per day (one flight in the morning and a simulator (SIM) ride in the evening). Each event's briefing followed a similar format with requisite differences between flights and SIMs briefed. Nevertheless, one detail in particular was reiterated each day: in the SIM, all switches and triggers would be actuated as though we were expending live ordnance.

Simulator training affords crews the luxury of re-enforcing proper weapons employment procedures without consequences. Conversely, for training flights, we brief, "remain two switch actuations away from actual laser or weapon employment." Although we were carrying an inert training missile, the laser could still be fired, and this "training-ism" would prevent inadvertent activation.

During the brief, the IP told us to expect a robust scenario commensurate with our experience level. The contractors on the ground would be providing a realistic tactical scenario using pyrotechnics, moving vehicles, multiple personnel playing both Opposing and Blue Forces; a casualty evacuation, and one of them acting as the JTAC to call in simulated air strikes.

After checking in with the JTAC by radio, the scenario unfolded as expected. Once we acquired the start point (objective), the JTAC directed us to execute a dynamic vehicle follow. Later, we would simulate engagement of an improvised explosive device (IED) emplacer working in advance of a friendly convoy. After this, the JTAC escalated the scenario by declaring "Troops in Contact" (TIC) and passed that personnel around him were taking casualties from enemy nearby.

Photo by Tech. Sgt. Nadine Barclay

The point was to increase the simulated delivery time of munitions—they were needed immediately. The pyro activity, smoke on ground, desperation and urgency in the JTAC's voice, and calls for casualty evacuations all had the intended effect—they added a high degree of realism. As we set up for our final simulated weapons employment—the training comms flow within the GCS should have been:

PIC: "*Simulate* Laser Armed"
SO: "*Simulate* Laser Armed"
PIC: "*Simulate* Laser On"
SO: "*Simulate* Laser On"

In reality, crew comms followed the procedure for a live weapons employment:

PIC: "Simulate Laser Armed"
SO: "Simulate Laser Armed"
PIC: "Laser On"
SO: "Laser On"

After I gave the second command, I immediately realized that I did not say "simulate," but it was too late. The SO responded, "laser on," pulled the trigger ("click"), and then a momentary "LRD Laser Firing" warning appeared on the heads-up display (HUD). Almost immediately, there was another "click" and the warning disappeared (this meant the laser was re-safed). Once the laser was safe again, the SO turned in his seat and said, "I screwed up." At which time, we called a "Knock-it-off" so we could call the contractor and advise him of what happened.

During the crew debrief, it became clear that the IP was unable to see adequately due to seating limitations in the GCS (the IP typically observes sorties from an office chair behind the PIC and SO where the view is partially obstructed). IP intervention was not possible under the circumstances. Additionally, the SO and I both acknowledged that the realism of the scenario contributed to our default into an operational mindset. We had reverted to autopilot. Indeed, between the week's real-world operations, "full switch-ology" during simulator events, the training flights, and the realism of the training scenario—the dichotomies between each of these operations became blurred. It was as if the crew experienced a temporal distortion—but rather than time slowing down, we felt as if we were in a "genuine" combat scenario. For just a few seconds, the crew performed as it should in combat …, but on that day it caused a mistake. It was a clear case of negative transfer.

As our debrief progressed, the SO, a former V-22 Osprey Crew Chief, related that when transitioning from simulator events to real world or flying missions within some communities, a mandatory 12-hour wait is required. However, the RPA community has no such requirement. The need to address this particular issue is heightened by the fact that RPA aircrews have little or no dwell time. Where typical manned aircraft crews return from theater or combat, spin down, and then begin follow-on training and exercises (as was the case with our crew); those within the RPA community must make these transitions with little or no pause between. In fact, it is entirely possible (and legal) to fly in support of combat operations, fly a training mission, and log a simulator event all in the same day. Further, many of those in the community operate in combat operations for months and years at a time.

Additionally, while conventional aircraft provide a variety of audible, visual, kinesthetic, and somatosensory cues which enhance situational awareness (SA), Mission Control Element and Launch/Recovery Element crews must rely solely on two-dimensional visual cues (from the HUD) with occasional audio input. In other words, being in a box that never moves provides actual, perceptual, and environmental cues that inhibit a crew's SA because where RPAs are concerned, the consistency of these cues equates to the crew being further limited in their ability to perceive or synthesize changes to their actual operating environment. In fact, the lack of real sensory inputs can, as in our case, make the transition between real world and training insidious. One could even say that, aside from differences in the mission tasking, transitions in the RPA community are relatively transparent to the crew.

Finally, the lasing event highlighted that there are no hardware and software safeties within the GCS that could have been used to prevent an inadvertent firing of the laser during training. Regardless, the ultimate responsibility rested with me, as PIC. As such, I encourage all RPA crews to use extreme caution when making frequent transitions between the real-world and training operations. In addition, RPA leadership must continue working to give crews the tools they need to mitigate the actual and potential dangers posed by transitions between theater and training ops. Time compression, similarities in terrain, and other subtleties should be addressed as part of an overall ORM assessment.

In military aviation, we generally address operational risks based on one of two categories: those which present during combat and those which present during training. Traditionally, this works. However, because the operations tempo within the RPA community necessitates the merger of both combat and training operations with little or no pause between; this unique characteristic can easily turn the imperceptible into palpable risks—both at home and in theater. As a community, RPA crews must work to critically examine peripheral issues such as RPA-specific human factors, dwell time, software, and hardware to better mitigate or eliminate the unique hazards they pose. If RPAs are to be central to future combat operations—and they will—then our future depends on today's response to these new challenges….

Photo by Airman 1st Class Randahl J. Jenson

Hi New Guy!

"tell us about yourself!"

BY COL. STEVE OWEN

I recently stepped into the seat as the Chief of Flight Safety for Air Combat Command. After two years serving in the joint community, I'm excited to be coming back to Big Blue. Like many of us who were raised in the fighter community, my first instinct in the new job has been to watch, listen and learn from the folks who have been here for a while. I can't help but smile as I think back to my first operational squadron in the F-15C where we had a tradition of welcoming the "New Guys" when they arrived at their first roll-call. The "mayor" of the roll-call would introduce the new guy and the rest of the squadron would respond with a raucous ***"Hi new guy! Tell us about yourself!"*** If the poor guy actually opened his mouth to respond with anything more than a quick "Happy to be here," he was quickly shot down with a roaring ***"Shut Up!"*** from the rest of the squadron. The message was simple … "We're not really interested in what you have to say right now. Your job is to listen, learn and perform … nothing more, nothing less. We'll allow you to speak once you have earned it." On one occasion, a fairly experienced F-15C pilot returned to our CAF unit after completing a staff tour. After the crowd shouted "Tell us about yourself!" he calmly held up a sign that said "are new guys allowed to talk?" He then flipped the sign over without saying a word to reveal a message that stated "Happy to be here!" The crowd roared with applause.

There are a lot of positive aspects behind the fighter pilot culture that contribute to our ability to deliver combat power to our Combatant Commands. The first of these is discipline. Much of the "keep your mouth shut" culture stems from a very significant tactical requirement to maintain radio discipline and ***listen*** in order to build and monitor the air picture that is developing around you. In a tactical environment, if you are spending too much time talking, you probably aren't spending enough time listening. Additionally, if you are keying the mic to talk when you should be listening, you are potentially preventing your flight lead from hearing vital information they need to maneuver the formation and engage a hostile threat. In other words, if you can't maintain "radio discipline" on the ground, you have the potential to get someone killed in the air. On the other hand, the right communication at the right place and the right time … *"Eagle One break right, bandit right five o'clock three miles, 20 high"* … can make all the difference between losing an aircraft and everyone coming back home safely from a mission.

Another positive aspect of this culture is that it teaches very capable Airmen to be humble and accept instruction. As the old saying goes, "iron sharpens iron." I remember watching a sortie debrief where our squadron weapons officer was the IP of record for our SQ/DO. Our DO had just returned to the CAF from a staff assignment, he had over 2,500 hours in the F-15C and he was completing his IP requalification. Instructor upgrade is extremely challenging and our DO had a rough sortie that day. When the doors closed for debrief, the rank came off and our culture enabled a very candid conversation between the O-3 IP and the O-5 student. After the weapons officer failed him on the ride, my DO calmly nodded his head, thanked the O-3 for his instruction, and performed superbly on the next ride. As a young wingman, the way my DO handled that bad ride spoke volumes about what it meant to be humble and accept feedback.

While this culture has proven to be effective in developing the world's premier Combat Air Force, it does have potential drawbacks. Prior to

Photo by Tech. Sgt. Matthew Hannen

transitioning to the CAF, I served as a First Assignment Instructor Pilot (FAIP) in the T-38A. When I received the news that I had been selected for follow-on assignment to the F-15C, I sought advice from some incredible mentors who had served in the F-15, F-16 and A-10 communities, on how to carry myself as I transitioned to the Introduction to Fighter Fundamentals (IFF) course. The most consistent piece of advice I received was "keep your mouth shut, listen and learn. The only thing you need to say as a wingman is *"2" and "lead, you are on fire."* During one of those IFF sorties, my IP was in the back seat of our T-38B and needed to update his landing currency. On final approach, he allowed his aim-point to drift long, resulting in a high, sinking flare. My gut instinct was to take the aircraft and go around. While I had very little knowledge of how to employ a weapons system in combat, I had 1,000+ hours, to include 700+ hours of IP time in the T-38A. I had seen students in UPT make the same mistake at least a hundred times in the past three years and I had always taken the aircraft or directed a "go-around" in order to prevent a dangerous situation from developing. For a very brief moment, I reached for the stick and throttles. However, a little voice inside my head told me that if I dared to intervene I would be branded as a "hot-headed FAIP" for the rest of my time in IFF. Instead of taking the controls or saying "go around," I clenched my fists, closed my eyes, and prayed we wouldn't hit too hard. The IP recognized his mistake but elected to continue the landing. We hit hard … fortunately, we didn't hit hard enough to cause a mishap. I was shaking the entire time that we taxied back to the chocks, but I never said a word about it to anyone. I simply completed the IFF course and transitioned to my F-15C Replacement Training Unit (RTU) at Tyndall AFB. The question I still ask myself to this day is *"Why didn't I intervene?"*

Photo by Airman 1st Class Daniel Lile

The 2015 ACC Strategy, Securing the High Ground, outlines three objectives that enable ACC to accomplish our mission to provide *Dominant Combat Airpower for America.* The first is to *Provide for Today: Deliver the greatest amount of combat capability to meet our national security objectives and win our nation's wars.* In order to *provide* combat power, we have to *preserve* combat power. We preserve combat power by maintaining a culture of discipline and respect that doesn't just flow from the top down but also from the bottom up. "New Guys" need to understand that their primary role is to become tactical experts within their assigned weapons system. They become experts by studying, listening to, and learning from the instructors who have come before them. However, they also need to be able to recognize a potentially dangerous situation and communicate the *"right information, to the right person, at the right place, at the right time."* The "Old guys" need to ensure that our organizational culture, both in the air and on the ground, fosters a wingman mentality that encourages "New Guys" to say something *before* a mishap occurs.

Whether you are the youngest 3-level in your MX squadron or the newest pilot in your MQ-9 squadron, I would ask you to consider the following: What would you have done if you had been the "New Guy" sitting in the front of that T-38? What would you do as a 3-level maintainer if you saw a 5- or 7-level make a mistake that could potentially cause a mishap? For our instructor cadre I would ask "What would you do if you were the IP or AC for a training event within your specific community and your "New Guy" directed you to "go around," "break out," or fly a missed approach when you felt you were in complete control of the situation?" What if you, a 5-level or 7-level maintainer, failed to properly account for a tool or document an inspection and your 3-level confronted you about it? For our Squadron DOs/CCs, what would you do if an AC or IP walked into your office and told you about the hot-headed "New Guy" that just told him/her to go-around? What if one of your 3-level maintainers came into your office and told you that one of your 7-levels almost caused a Class A mishap? Has the culture in your Squadron, Group and Wing evolved to a point where a "New Guy" would feel comfortable telling a 7-level, weapons officer, FLT/CC, SQ/DO or SQ/CC that they are about to do something dangerous?

Happy to be here! Fly Safe …

~ Grit

SOMETIMES YOU GET THE BEAR

SOMETIMES GETS YOU THE BEAR

BY "ROBO"

Riddle me this: If you were hiking through the woods and noticed a bear several hundred yards in front of you, would you continue on your current path in hopes of learning important lessons for future hikers, or would you turn around and get the heck out of there before you become his next meal? Taking it a step further—if after turning around you come across a group of hikers heading toward the bear, wouldn't you go out of your way to warn them of the danger ahead?

Although perhaps an extreme example, oftentimes in aviation we do our best to avoid hazards (if we notice them), but rarely do we go out of our way to warn our fellow aviators. In fact, we are often so embarrassed to admit that we almost made a mistake that we become reluctant to share the important lessons we've gained through these "near misses."

Granted, there are situations in which it is impossible to foresee hazards far in advance (what if the bear is around a bend on the trail?), but your chances of evading the potential danger are much better if you are actively looking down the path rather than staring at your feet (or cell phone!). And I would venture to say your probability of survival increases to nearly 100 percent if a fellow hiker warns you well before you see the bear, or more importantly, before the bear sees you!

So what can you do?

The Air Force safety program has traditionally been focused on future mishap prevention through investigating past mishaps (**reactive** safety), but has recently adopted and implemented several initiatives with the goal of preventing mishaps before they occur (**proactive** safety). While proactive flight safety (**ProSEF**) consists of a three-pronged approach to prevent potential mishaps, the program that most directly impacts us as aircrew and relies most on our inputs is the Aviation/Airman Safety Action Program (***ASAP***).

ASAP provides a non-punitive, voluntary avenue for sharing lessons learned in order to prevent future mishaps. Prior to ***ASAP***, aircrew options for sharing information were typically limited to "there I was" stories during Friday afternoon Roll Call. While effective, these informal gatherings fail to capture the larger audience, limiting the scope of these valuable lessons to the individual or, at most, squadron level.

At the risk of over-reaching on this analogy, imagine now that the bear in the woods is waiting at the convergence of multiple paths. You can turn around and tell other hikers on your path, but the poor souls hiking down other trails may still become lunch. Essentially, ***ASAP*** provides a venue to warn not only the hikers (aviators) on your path (squadron), but every hiker in the whole park (Air Force)!

Do your part to break the mishap chain:

Chances are, if you make a mistake or find yourself in a hazardous situation, you are probably not the first (or last) aviator to be in that predicament. **Don't** fall into the trap of thinking that your inputs aren't valuable or letting your pride get in the way of admitting you've made a mistake. **Do** your part to warn others if you encounter situations that, under different circumstances, could snowball into a mishap—submit an ***ASAP*** report ASAP!

Photo by: Staff Sgt. Joshua Turner

File an ASAP Today!

Taken from an actual ASAP submission.
This event did not result in a mishap, but provides valuable information worthy of sharing.

On RTB, the SOF had recently updated the pattern status to "VFR, [APPROACH] St-ins only" back home at [ICAO Base]. On short final for the ILS [RWY], condensation began to form on the HUD and inside front canopy, obscuring/ washing out the HUD. I went around at 200' AGL and cleaned up my gear. With SA on the formation on 10-mile final, I attempted to immediately pull closed to land [RWY]. I was given present position closed approved and configured abeam the touchdown point. Weather was 2,500' and 3 miles but with substantial [COUNTRY] haze—standard VFR WX for [BASE]. On downwind I was told by tower that there was arriving traffic on 4 mile final. At the perch point I was able to pick up one A/C that I incorrectly assumed was the lead A/C and called "base, gear, stop [RWY]." Tower cleared me to land, and I perched at 1,700' MSL for [RWY]. Midway 90 degrees through my turn, the senior controller got on the radio and told me to continue to extend downwind. By this time it was too late to roll out. I stopped my decent at approximately 1,200' MSL and climbed back up to initial altitude per tower's new instruction. I heard the conflict aircraft, which was at approximately 300 feet, say they were also going around. We were then sequenced safely by tower to land behind the conflict aircraft's wingman (they were a 2 ship) on runway [RWY].

Submitter's suggestions: A pilot should never perch without total SA on arriving traffic. Tower should back them up with building SA; in this instance by having me break departure end and extending downwind or recommending re-entering the radar pattern based on WX. I was also HMCS bent, but could have used the link to build my SA.

ACC/SEF comments: Thank you for your ASAP submission. It reminds all pilots and air traffic control crews to stay vigilant at all times and to maintain situational awareness in the pattern. This is a good example of leadership by the senior controller. As well, it reminds aircrews to take into account the weather and how it may impact pattern operations.

Do you have a lesson learned to share?
http://safety-masap.com

ASAP—Aviation Safety Action Program ...
It's confidential and quick

Keep An Eye Out For Your PPE

BY MASTER SGT. JEFFREY STULL

Maintaining aircraft is a dangerous business. Each aircraft has its own danger areas that must be avoided and sometimes the technical guidance directs technicians to don Personal Protective Equipment (PPE). This equipment, when properly fit and utilized, can prevent injuries. Even while wearing the proper PPE it takes only a moment of adjusting the PPE to cause a mishap. Take for instance, a maintenance technician working to repair aircraft skin on a fighter aircraft. The maintainer was utilizing eye protection while drilling out fasteners from the aircraft skin. Metal shavings were flying while the maintainer worked to free the damaged skin from the aircraft. The aircraft location was hot and the maintainer was sweating. This caused his eye protection to slide down the bridge of his nose. While continuing to drill fasteners with eye protection sliding off his face, metal shavings entered his eye. The medical clinic was able to remove the debris from the maintainer's eye and he returned to work 24 hours later with his vision intact.

In another instance, a maintainer was tasked with washing an aircraft in a hangar. The maintainer was wearing all the prescribed PPE for the job: gloves, boots, apron, and goggles. While working on cleaning the aircraft landing gear, the maintainer's goggles began to fog up. Unable to see, the maintainer removed his goggles to dry the moisture that was obstructing his view. The maintainer wiped perspiration from his face while still wearing gloves that were saturated in aircraft soap. The soap that was on the rubber gloves came in contact with the maintainer's eye. The maintainer was transported to the medical clinic where his eye was flushed and given the diagnosis of a chemical burn to the eye. The maintainer returned to work two days later with his vision intact.

Is PPE cool looking ... No?!? Is PPE comfortable to wear ... Not Always?!? Is PPE, when properly used, there to protect the user ...YES!!! These maintainers got lucky. They each returned to work with the use of both of their eyes. Some maintainers have not been so fortunate. PPE is detailed in the technical guidance for each task as required. Use the PPE prescribed by the T.O., it will help keep you safe in the often dangerous business of aircraft maintenance.

Nuclear Certified Equipment

BY MASTER SGT. DAVID INGRAM

What is it?

NCE is equipment authorized for use with nuclear weapons. NCE consists of support equipment such as jammers, forklifts, bobtails, trailers, and transport vehicles.

Why is it important?

The safety and security of the Air Force nuclear mission is critically important. Not having a nuclear mission doesn't exempt units with NCE from ensuring it is serviceable and reporting when it is not.

What to do when things go wrong with NCE.

Report incidents, accidents or deficiencies to your local safety office. They will, in turn, submit a Dull Sword Deficiency report as needed. These reports will be used to determine negative trends to NCE that may impact the Nuclear Enterprise.

MONTHLY AWARDS

Aircrew Safety Awards of Distinction

12th Airborne Command and Control Sq. – 461 ACW, Robins AFB GA *(August 2016)*
Whistler 53 Crew – 968 EAACS, 380 AEW, Al Dhafra AB, UAE *(September 2016)*
Python 96 Crew – 7 EACCS, 379 AEW, Al Udeid AB, Qatar *(October 2016)*

Crew Chief Safety Awards of Distinction

SrA Patrick C. Bruenn – 380 EAMXS, 380 AEW, Al Dhafra AB, UAE *(August 2016)*
SSgt Zachary M. Orwick – 723 AMXS, 23 WG, Moody AFB GA *(September 2016)*
SrA Matthew R. Harwood – 552 AMXS, 552 ACW, Tinker AFB OK *(October 2016)*

Flight Line Safety Awards of Distinction

A1C Lance C. Mosley – 23 AMXS, 23 WG, Moody AFB GA *(August 2016)*
A1C Dalton J. Winn – 27 AMU, 1 FW, JB Langley-Eustis VA *(September 2016)*

Occupational Safety Awards of Distinction

TSgt Darnell A. Strawder – 82 RS, 55 WG, Offutt AFB NE *(August 2016)*

Pilot Safety Awards of Distinction

Capt David E. Peck – 12 ACCS, 461 ACW, Robins AFB GA *(August 2016)*
Capt Mark Q. Kuhn – 42 ATKS, 432 WG, Creech AFB NV *(September 2016)*
Capt Jonathan V. Kay – 64 AGS, 57 WG, Nellis AFB NV *(October 2016)*

Unit Safety Awards of Distinction

Strike AMU – 380 EAMXS, 380 AEW, Al Dhafra AB, UAE *(August 2016)*

Weapons Safety Awards of Distinction

SSgt Sean A. Perez – 55 RQS, 23 WG, Davis-Monthan AFB AZ *(August 2016)*
Weapons Standardization Crew – 94 AMU, 1 MXG, 1 FW, JB Langley-Eustis VA *(September 2016)*
A1C Dylan L. Raines – 332 EMXS, 332 AEW, Diyarbakir AB, Turkey *(October 2016)*

QUARTERLY AWARDS

Flight Safety

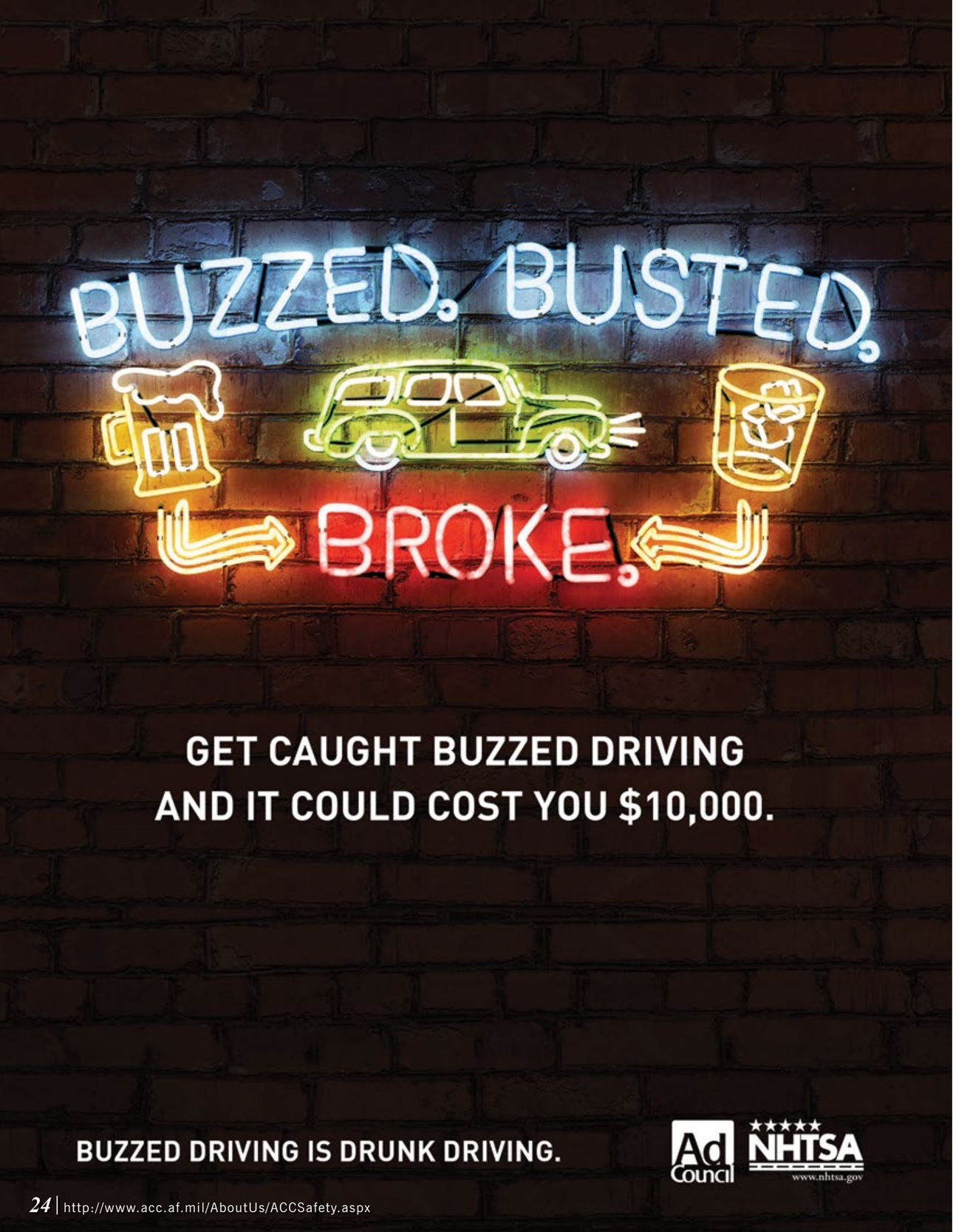
SMSgt Russell P. Sigmon, 55 WG, Offutt AFB NE. During a recent Staff Assistance Visit (SAV) from the Air Force Safety Center's Bird/Wildlife Aircraft Strike Hazard (BASH) team, SMSgt Sigmon was paramount in showcasing Offutt's dynamic BASH program. The Safety Center team "Benchmarked" five different areas and lauded the base's unified and persistent efforts in eliminating BASH threats. One area of significance highlighted was the robust working relationship between flight safety and the USDA Wildlife Services (USDA/WS) team. Their combined efforts set the standard for aggressively decreasing airfield risks while balancing Federal and State Wildlife regulatory compliance. SMSgt Sigmon played a critical role in the Mishap Program where he was the wing's top mishap investigator. He meticulously investigated and completed 24 mishaps that totaled $524,000 in damages. His expertise and oversight of the program ensured quick and concise isolation of mishap root causes for five Class C's, two Class D's, and 17 Class E's. He also skillfully pinpointed and tracked 20 potential safety trends and vigorously worked hand-in-hand with the OG and MXG to ensure any impending recurrences were identified and averted. SMSgt Sigmon led flight safety's effort in the seamless transition of the Bird Watch Condition (BWC) declaring authority conversion at Offutt AFB from the Supervisor of Flying (SOF) to Airfield Management. He also established interim policies ensuring there were no gaps in precise reporting of the current BWC until the local AFI 91-212 was rewritten to incorporate the new changes. SMSgt Sigmon has been an essential flight safety advocate and an irreplaceable asset to the entire 55 WG and the Combat Air Force (CAF) safety community.

Occupational Safety

TSgt Thomas J. Northcutt, 480 ISRW, JB Langley-Eustis VA. TSgt Northcutt bolstered the Mishap Prevention Program investigating 35 mishaps and reversing a $12K Sports and Recreation mishap trend. He invigorated mishap reporting resulting in a 700 percent reduction of late reports compared to FY15. As a WIT member, he inspected the 692 ISRG identifying 16 findings. He then worked with Group USRs to develop corrective actions, improving the safety culture for over 1,000 Airmen. Of the 23 person WIT, his demonstrated leadership resulted in TSgt Northcutt's recognition as one of four Outstanding WIT Performers. He identified JSTOs throughout the Wing, contained excessive detail on non-applicable industrial programs, and cut JSTO bulk by 38 percent, saving 48 man-hours of work for GP/SQ USRs, and focused JST on credible workplace hazards. His expert guidance enhanced job safety education for all Wing personnel. He worked with IG to integrate the Safety Assessment and Inspection into the CCIP report, producing the first ever AFI 91-202 and 90-201 compliant inspection report, eliminating redundancy and reducing the inspection burden on subordinate units. This synergy also saves an estimated $10K in annual travel by combining what are traditionally discrete inspections. For his success, he was coined by the 25 AF/SE Superintendent. TSgt Northcutt assisted 633 ABW/SEG and taught SST/FTAC for 10 hrs./68 Airmen. He organized a professional development trip to the IIHS Crash Lab, providing invaluable traffic safety training for eight JBLE 1S0s. He promoted an RM culture when he planned and implemented a Check 3 GPS Challenge which received 15 scenario-based submissions.

Weapons Safety

TSgt Lucas C. Long, 386 AEW, Ali Al Salem AB, Kuwait. TSgt Long is the sole subject matter expert on explosive storage, transportation and aircraft loading operations for Ali Al Salem and Al Mubarak Air Bases in Kuwait, and six separate 370 AEAG operating locations in Iraq. At the primary aerial port supporting Operation INHERENT RESOLVE, its sub-operations, and numerous CJTF functions, he created, rewrote, or provided oversight on 120 explosive site plans (w/45 DDESB-approved exemptions), 11 licensed locations, and three risk assessments. In addition to his responsibility for the 386 AEW's (and six GSUs) munitions' safety, TSgt Long authored nine ESP/RAs for MSAB, two for Al Jaber, Kuwait, and reviewed/assisted with multiple other units' ESS products, ensuring their accuracy and viability. His quick reaction enabled the safe transfer of 160K of JTF 94-7 munitions from aerial transport to ground transport mode for forward movement, minimizing the delay time and impact to airfield operations. As a result of the Udairi Range closure, he developed a new intentional detonation area for the 386 AEW/CE EOD flight, creating a safe location to dispose of unserviceable stockpile or locally-discovered munitions. Re-siting 14 airfield parking spots during a period of intense ramp construction, TSgt Long prepared the base for a seamless transition between C-130 "H" and "J" models, and for the arrival of AC-130Ws. Forward deploying to four geographically-separated units in Iraq, he assessed five munitions storage areas–identifying 12 violations and removing 226 unsafe munitions–and led development of their first-ever weapons safety program.



Mishap Statistics Scoreboard

FY16 Flight

As of 30 Sep 2016

	Fatal	Aircraft Destroyed	Class A Aircraft Damage
1 AF			
9 AF		1	1
12 AF		1	1
25 AF	1	1	
USAFWC		1	
ANG (ACC-gained)		2	
AFRC (ACC-gained)			1

FY16 Occupational

As of 30 Sep 2016

	Fatal	Class A	Class B
AFCENT	1	1	0
12 AF	1	1	0
USAFWC	1	1	0
25 AF	3	3	0
9 AF		0	0

FY16 Weapons

As of 30 Sep 2016

	Class A	Class B
9 AF	0	0
12 AF	0	0
USAFWC	0	0

Flight Notes

FY16 proved to be a challenging year for aviation safety. After a great start to the year with no manned Class A mishaps for the first four months, ACC suffered the complete loss of six aircraft and damage to three other combat assets. Even more upsetting than the loss of combat capability, the last mishap of the year unfortunately also claimed the life of an Airman. On the positive side, after several RPA mishaps early in the year, we finished with a strong zero Class A mishaps in the last quarter. Most of the nine MQ-1/MQ-9 mishaps occurred in the AOR providing combat support, but most of the manned flight mishaps occurred on home-station training missions and across all phases of flight. So regardless of operating location or phase of flight, keep your SA up, skills sharp, and fly safe!

Occupational Notes

ACC finished the fiscal year with vast reductions in on- and off-duty occupational mishaps. Through your hard work and dedication, Air Combat Command reduced fatal mishaps by a whopping 50 percent, (FY15: 12 fatalities, FY16: 6 fatalities). Additionally, the command had "ZERO" Class B on- and off-duty mishaps saving nearly two million dollars in property damage and 1.6 million dollars in injury costs! These lifesaving milestones were a result of supervisors and individuals alike, applying sound risk management both on the job and in their off-duty activities. As we embark on a new fiscal year, our goal is to continue to curb preventable mishaps while eliminating acts of willful non-compliance. Supervisors, remain proactive in your mishap prevention efforts while continuing to mentor your subordinates in good risk management; individuals, exercise Check, 3 GPS (Gear, Plan, Skills) in your off-duty activities and adhere to established guidance at all times. We need each of you to make the Air Force's mission a success, so let's make 2017 Air Combat Command's best year ever—thank you for your contributions to our mishap prevention program!

Weapons Notes

Last quarter we experienced three mishaps: one Class C and two Class E's. Complacency was causal for all three and contributed to half of the total mishaps during FY16. Complacency, as a cause, has risen since last fiscal year. That's not a statistic we are proud of. We should continue to strive for every member to conclude each day without property damage or personal injury. Each of us has a responsibility to preserve our resources by using mishap mitigation techniques before a negative trend is started. We appreciate your efforts in continuing to create a safe environment for those around you.

Legend

Class A - Fatality; Permanent Total Disability; Property Damage $2,000,000 or more
Class B - Permanent Partial Disability; Property Damage between $500,000 and $2,000,000
Class C - Lost Workday; Property Damage between $50,000 and $500,000
(Class Description Effective October 1, 2009)

* Fatality ** Non-rate Producing *** Performing SOUTHCOM Mission

= Fatal = Fatal due to misconduct

Symbols for Mishap Aircraft


OVER the
Edge
MAGAZINE
WINTER
DRIVING
PAGE 14

KNOW SOMEONE WHO DOESN'T WEAR THEIR SEATBELT?

YOU COULD SAVE THEIR LIFE.

BUCKLE UP AMERICA
Every Trip. Every Time.

OVER the Edge MAGAZINE

OVER THE EDGE CONTENTS

PUT A FREEZE ON WINTER FIRES

Home fires occur more in winter than in any other season. As you stay cozy and warm this winter season, **be fire smart!**

Half of all home heating fires occur in the months of

Heating equipment is involved in **1** in every **6** reported **home fires** and **1 in every 5 home fire deaths.**

Keep anything that can burn at least **3 feet from any heat source** like fireplaces, wood stoves, radiators, or space heaters.

Keep portable generators outside, away from windows, and **as far away as possible from your house.**

Install and **test** carbon monoxide alarms at least **once a month.**

Have a qualified professional clean and inspect your chimney and vents **every year.**

Store cooled ashes in a tightly covered metal container, and keep it outside at least **10 feet** from your home and any nearby buildings.

Plug only **1 heat-producing appliance** (such as a space heater) into an electrical outlet at a time.

DID YOU KNOW?

The number of fatal crashes are going down

In 2014, motor vehicle accidents killed **35,398** or down 22 percent compared with the figures a decade earlier. And, the number is significantly down from a peak of more than 53,000 in 1980.

Reasons for the Reduction

The decline in car accident fatalities include the emergence of safer vehicles, changes in driver licensing requirements and improved safety technology in cars.

Don't be another statistic

An average drunk driver has driven drunk more than 80 times before their first arrest.

Annual US Road Crash Statistics

In America **27 people die everyday** as a result of drunk driving crashes

Over **1,600** fatalities are children under 15 years of age.

Nearly **8,000** involve drivers age 16-20.

An Additional **2.35 million** are injured or disabled.

Drowsy Drivers - Facts

60% of adult drivers – about 168 million people say they have driven a vehicle while feeling drowsy in the past year, and more than one-third (37% or 103 million people), have actually fallen asleep at the wheel!

You can make a difference!

- Before drinking, designate a non-drinking driver
- Don't let your friends drive impaired
- If you have been drinking or using drugs, get a ride home or call a taxi
- If you're hosting a party where alcohol will be served, remind your guests to plan ahead and designate their sober driver; offer alcohol-free beverages, and make sure all guests leave with a sober driver.

GERM WARFARE

It's Not Just A Military Operation

BY BARBARA TAYLOR

What comes to mind when you think of germ warfare? Military operations? Chemical or biological warfare? The movie "Outbreak"? The zika virus? Well, during this time of year, I get visions of colds, flu, fever, sneezing, coughing, aches, and pains.

There are germs all around us and they take a high toll on the available workforce. Numerous workdays are lost each year because of colds, flu, and the like. Although there's still no known cure for the common cold, there are things we can do to protect ourselves.

If you do come down with something, the best thing you can do for your co-workers is to stay home. Handwashing is the single most important means of preventing the spread of germs/infection.

The CDC heavily emphasizes handwashing as the number one action to prevent getting sick:

Always wash your hands—especially before exiting the restroom!!!

- Be sure to use soap
- Hum the happy birthday song (twice) to really get them clean
- Use a paper towel to turn off the water faucet and to open the door; then discard it in the trash at your desk or a trashcan nearby

More illnesses are transmitted by germs that get on hands than by airborne droplets. When sneezing or coughing, always cover your mouth with a tissue or sneeze into your sleeve (at the bend of your elbow). If you cough or sneeze into your hand, you will contaminate any objects you touch afterward and transmit your germs to others.

Believe it or not, cleaning all of your work surfaces also makes a big difference. Did you know that using disinfectant wipes can reduce the number of germs and bacteria on office surfaces by up to 99.9 percent?

I know this may sound fanatical to some, but I make it a part of my daily routine, before starting my day's work, to clean my desk surfaces, door handles, telephone (even though the majority of time I use the speaker function), keyboard, etc. What measures are you willing to take to preserve your ability to do your job?

As in other areas of the safety world, all it takes is a few preventative actions to successfully combat the germ warfare we all face every day. It really is a critical part of making sure the mission gets accomplished.

RESILIENCY
and the Day of Infamy

BY CHAPLAIN, COLONEL DAVID L. SUMRALL

December 7, 2016, marks the 75th anniversary of the Japanese attack on Pearl Harbor, which led America to enter World War II. The resiliency shown by our military on that day and the days that followed helped define the "greatest generation" and serves as an example of what resilient people and a resilient country can do. Our country was recovering from our longest and deepest depression, when we were attacked suddenly and suffered 2,403 dead and 1,178 wounded, along with destruction or damage to 16 of our ships and 188 of our aircraft. **The next day, President Franklin D. Roosevelt declared that December 7, 1941, was "a day which will live in infamy,"** and asked Congress for a formal declaration of war on Japan.


Honolulu Star-Bulletin

24 PAGES—HONOLULU, TERRITORY OF HAWAII, U. S. A., MONDAY, DECEMBER 8, 1941—24 PAGES

★★★ PRICE FIVE CENTS

WAR DECLARED ON JAPAN BY U.S.

FDR Calls Attack Upon Oahu 'Infamous Treachery'

Our Fleet At Sea As Counter Offensive Is Begun

Among the many heroes that day were some resilient chaplains, two of whom died and others who lived to face further conflict. Navy Chaplain Thomas Kirkpatrick had served in World War I and was promoted to Captain on July 1, 1941, while serving on the U.S.S. Arizona. On Sunday morning, December 7, he had prepared for worship service and was enjoying coffee with his fellow officers when the Japanese attack began. He rushed to his battle station in the sickbay to minister to casualties and, when the forward magazine exploded, he was most likely killed instantly. He was probably the first chaplain in World War II to die in conflict and is entombed in the battleship at the bottom of Pearl Harbor. He had composed the following prayer while serving on the Arizona: "O Eternal God, Creator of the universe and governor of nations; most heartily we beseech Thee with Thy favor to uphold and bless thy servant, the President of the United States, and all the officers of our government, and so replenish them with the Grace of the Holy Spirit that they may always incline to Thy will and walk in Thy way. May the vessels of our Navy be guarded and guided by Thy providence and care. May they not bear the sword in vain but ever vanquish those who do evil and defend all who do well."

That same morning Chaplain Aloysius Herman Schmitt had just finished celebrating what was supposed to be his last Mass on the U.S.S. Oklahoma before he was reassigned to shore duty. He was a young chaplain, having finished his chaplain training earlier that year in Norfolk, Virginia. He had gone three decks below to hear confessions when the attack began, and then immediately went to the sickbay to minister. When water began pouring into the Oklahoma from a direct hit and the ship rolled over, he and other crew members made their way to a compartment with a tiny porthole to escape. He helped others escape, but he became stuck in the porthole, possibly due to his clerical gear. As he realized that he could not get through the porthole easily and other men were coming into the compartment to escape, he told the other men to push him back into the compartment so that others could easily pass through. The men protested that he would never get out alive, but he insisted, "Please let go of me, and may God bless you all." He continued pushing other men through the porthole until water filled the blackened chamber. His book of prayers was found with a marker on the prayers for the day. He was posthumously honored for "distinguished heroism and sublime devotion to his fellow man. His magnanimous courage and self-sacrifice were in keeping with the highest traditions of the United States Naval Service." The citation read, "He gallantly gave up his life for his country." Of his men, it said he had calmly urged them on with a pronouncement of his blessing and remained behind while they crawled out to safety." Months later a Jewish sailor told a Protestant church congregation that this Catholic priest had died so that he might continue to live. In 2015, bodies recovered from the Oklahoma were exhumed and Chaplain Schmitt was one of the identified sailors. On October 8, 2016, his body was laid to rest in a special Memorial Mass at his alma mater, Loras College, in Dubuque, Iowa.

Major General Terence Finnegan, the senior Army Chaplain, at Oahu's Schofield Barracks, left his home that morning to pick up some candles at a nearby chapel for an 8:15 a.m. Mass at the barrack's Assembly for 700 men. He saw a formation of airplanes in the distance which he thought were American until they dove from the sky to attack Hickam Field and ships at Pearl Harbor. He drove his 1931 Buick as fast as he could toward the Assembly Hall in order to dismiss the men before the Japanese destroyed it. A Japanese fighter spotted his car and strafed it with bullets but missed. When he made a sharp turn, he skidded into a ditch and then back onto the road. He reached the Hall and began to look for a commanding officer, when a bullet hit a young soldier in the head next to him and killed him. Finnegan and the other men in the Hall began moving the dead and wounded to a barracks nearby. At Hickam Field, a senior chaplain assistant was killed at the altar and another assistant was killed while setting up a machine gun. He ministered to men of all faiths, reciting prayers and speaking comforting words from their respective traditions. He was so busy ministering to the wounded and dying and family members that he didn't eat until evening and didn't go to bed or change clothes for three days.

Chaplain Finnegan continued to show bravery and resilience throughout World War II and the remainder of his life. He received the Bronze Star for meritorious service at Guadalcanal, where he performed the funerals for two priests and two nuns who had been tortured for 10 days and then killed by the Japanese because they refused to betray American troops. Their bodies had been left as a warning to the natives. In describing the spiritual resilience of the troops, he stated, "Our boys over there are extremely religious in the proper sense. They had seen death and destruction and their religion is not fanaticism or sentimentality, but they recognize God for what He is. It is the accepted thing for them to pray, as common for them to eat or fight. Before they begin a big push, they always ask God to give them strength to carry on and for their own safety.... All religious services are jammed, both Protestant and Catholic.... They look to the chaplain for guidance and they expect you to follow them into the attack against the enemy.... I recall being cut off for six days by the enemy with a group of our soldiers. They had no fear. They prayed and were strengthened for aid came in time."

He survived pneumonia and malaria in 1943, but was hospitalized and sent back to the states before being reassigned to Europe. He transferred to the Air Force in 1949 and was awarded two Legion of Merit medals during the Korean War for service in Japan and Korea in 1950 and with the Far East Air Forces in 1951 and 1952. He was cited for arranging for the institution of new programs of worship for all faiths and emphasizing the importance of religious and moral training, humanitarian and cultural activities, personal counseling and sound public relations programs. "Throughout this period of turmoil, Chaplain Finnegan labored tirelessly in dispensing the services of his calling. His enthusiasm inspired everyone with whom he came in contact." He organized a series of parties in which over 10,000 orphaned and destitute Japanese children received Christmas presents. He also started a program led by Air Force personnel to care for orphaned and destitute Korean children.

In 1953, he became the Deputy Chief of Chaplains and then Chief of Chaplains in 1958. During his tenure as Air Force Chief of Chaplains, he bolstered spiritual resiliency by requiring that all chaplains go on a two-week retreat to reflect and build spiritual strength and set up a chaplain course of study in marriage and family counseling. He also recruited Catholic priests by showing them the need for ministry to Air Force personnel. He stated, "The military as a whole and the Air Force in particular were enthusiastic about religion. And its services given heighten the value and the morale of the people working for them." After retirement, he devoted his life to Catholic charities and ministry as a parish priest.

These three chaplains and many other service members and fellow citizens displayed extraordinary resilience during and after the day of infamy. Many were strengthened by faith that led them to look past the temporary struggle to a better future. Today, we benefit from their legacy and have opportunities to display our spiritual resilience for the present and future generations.

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WINTER DRIVING

Severe weather can be both frightening and dangerous for automobile travel. Motorists should know some safety rules for dealing with winter road emergencies. Motorists must be cautious while driving in adverse weather and the following winter driving tips can help keep you and your family safe:

- Avoid driving while you're fatigued. Getting the proper amount of rest before taking on winter weather tasks reduces driving risks.
- Never run a vehicle in an enclosed area, such as a garage (carbon monoxide is an odorless, silent killer).
- Make certain your tires are properly inflated.
- Keep your gas tank at least half full.
- Do not use cruise control when driving on any slippery surface (wet, ice, sand).
- Use your seat belt every time you get into your vehicle.

Long-distance winter trips:

- Watch weather reports prior to a long-distance drive or before driving in isolated areas.
- Always make sure your vehicle is in peak operating condition by having it inspected.
- Keep at least half a tank of gasoline in your vehicle at all times.
- Pack blankets, gloves, hats, food, water and any needed medication in your vehicle.
- If you become snow-bound, stay with your vehicle. It provides temporary shelter and makes it easier for rescuers to locate you.
- Don't over exert yourself if you try to push or dig your vehicle out of the snow.
- Tie brightly colored cloth to the antenna or place a cloth at the top of a rolled up window to signal distress. At night, keep the dome light on if possible—it only uses a small amount of electricity and will make it easier for rescuers to find you.
- Ensure the exhaust pipe isn't clogged.
- Use whatever is available to insulate your body from the cold—floor mats, newspapers or maps.
- If possible, run the engine and heater just long enough to remove the chill to conserve gasoline.

Driving in the snow:

- Accelerate and decelerate slowly. Applying the gas slowly to accelerate is the best method for regaining traction and avoiding skids.
- Drive slowly. Everything takes longer on snow-covered roads. Accelerating, stopping, turning—nothing happens as quickly as on dry pavement. Give yourself time to maneuver by driving slowly.
- Increase following distance to 8-to-10 seconds.
- Know your brakes. If you have anti-lock brakes (ABS) and need to slow down quickly, press hard on the pedal—it's normal for the pedal to vibrate a bit when the ABS is activated. In cars without ABS, use "threshold" braking, keeping your heel on the floorboard and using the ball of your foot to apply firm, steady pressure on the brake pedal.
- Stay home. If you really don't have to go out, don't! Even if you can drive well in the snow, not everyone else can.

For more information, check out:
http://exchange.aaa.com/safety/roadway-safety/winter-driving-tips/

RIDER'S RAP

10 Winter Riding Tips

The arrival of cold weather doesn't mean the departure of the desire to ride. Many motorcyclists in cooler climates refuse to retire their favorite motorcycle or scooter to the storage shed—and, thanks to today's broad range of gear choices; it's entirely possible to enjoy two wheels right into the winter months. Here are 10 tips from the experts at **Nationwide Insurance** if you—and your bike—are on the road when temperatures dip.

Watch the Voltage.
Be sure your alternator can handle the addition of electric accessories, such as heated vests and gloves. Check your owner's manual to find out how much wattage your alternator generates and how much of that wattage is used to run lights and other electrical components. Then, subtract the wattage the electric gear needs to be sure you have the power necessary.

Get Streamlined.
Direct chilly air away from your body by adding a functional, not just cosmetic, fairing. Your height and torso length will dictate the proper height of the fairing.

Ride Down Electric Ave.
Longer trips often require additional protection, such as electric vests and gloves. These accessories use your bike's electrical system to provide heat.

Verify Your Insurance.
Make sure your insurance policy allows for year-round riding. If your policy requires your bike to be laid up during certain months, you may not be as protected as you think.

Practice Tire Smarts. If you use sticky race-type tires in the summer, switch back to ordinary street tires in colder months. They grip at lower temperatures and reach effective operating temperatures much more quickly.

Get Layered. Layering will keep you insulated and warm. Starting with a light base layer that's breathable is a good choice. Your base layer should trap warm air next to your skin and wick away sweat. Make sure your top layer is made of tough, windproof material. Be sure layered clothing hasn't restricted the movement you need to ride safely.

Trap Body Heat. Keeping your hands and head warm is crucial—most body heat escapes there. To seal the gap between jacket and gloves, consider wearing a silk or microfiber layer under your gloves as well. In addition, invest in a neck warmer or balaclava to prevent cold air from entering your helmet.

Don't Get Fooled. If you ignore early symptoms of hypothermia like uncontrolled shivering, numb fingers or toes, slow reaction times, or fuzzy thinking, you could get into trouble, fast. Wind chill adds to the danger, so make sure you stop frequently.

Don't Get Foggy. Visor fogging can cause hazardous visibility problems during cold weather. Wear a half-mask inside your helmet over a wind-proof balaclava. This combo allows your breath to escape without causing condensation inside the visor.

Put Your Oil on a Diet.
Using thinner oil during the cold months can improve your bike's performance, especially during start-up, but check your owner's manual for recommendations.

Courtesy of Brandware PR