

Spring Edition 2015

Combat Edge



ACC's Full-Spectrum Safety Magazine



Fighter vs. RPA

Crew Resource Management

PAGE 4



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COMACC's Perspective



Gen. Herbert J. Carlisle
Commander

ACC Airmen, as you've welcomed me to this great organization, I wanted to pass a few words on a topic I feel very strongly about: safety. Last year, as an Air Force and command we had a banner year for safety. However, this can never mean the end of our focused efforts. We must remain ever vigilant and ensure we are doing everything we can to decrease mishaps across the board. As Airmen, everyone has an important role to fulfill in this effort.

There are two particular aspects of safety I want to discuss. The first is personal discipline. In all facets of our lives as Airmen, we must always do the right thing. The Air Force provides us with the training, equipment, and proper supervision to accomplish the mission. At all levels, we must always know, follow, and enforce the rules – both on and off duty, 24/7. I appreciate your assistance in ensuring our command's culture allows zero tolerance for those who "look the other way," regardless of whether we think anyone else is watching. Unfortunately, there are some who willfully choose to not follow the rules, and this has been a cause of some of our mishaps. These types of mishaps can be totally prevented in the future with proper personal discipline.

The second aspect is active risk management (RM). Effective risk management at both the unit and individual level requires active participation. There will always be hazards in whatever activity you are accomplishing, whether it is your Air Force mission or a recreational activity away from work. The key is to understand the risks associated with our activities, and eliminate or mitigate the hazards we can control to the greatest extent possible. In our units, active and engaged leadership is fundamental to ensuring a culture of proper risk management and mission execution. For individuals, especially when you are not at work, utilizing the principles of RM is also essential. We've provided you tools, such as the "Check 3 GPS" (Gear, Plan, Skills) RM Process, which can assist you in quickly assessing all your activities for hazards and mitigation. Bottom line: RM principles are great but you must use them for RM to work.

I look forward to continuing to work with our great ACC team, and I am truly impressed with the spirit and capabilities of our amazing Airmen. Let's continue a culture of discipline and risk management to preserve our precious capabilities, both in people and equipment. Whether an injury or loss occurs during work or at your home, it will impact your ACC team and family. Keep the proper focus and ensure your best efforts to prevent mishaps. In the challenging international environment we live in, your nation needs you now more than ever. Please take care of yourselves and your families so that you are ready physically and mentally to answer the call of duty.

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THE COMBAT EDGE

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THE COMBAT EDGE WILL RETURN SUMMER 2015

Why does the cover state you are a "full-spectrum safety magazine" and what does that mean exactly?

~ S.A.C

Thanks for your question. What "full-spectrum" means is The Combat Edge, along with Over the Edge content, has articles which affect the entire range of your well-being and safety ... not just on the job, but off duty as well. While keeping in line with the more traditional safety subject matter, the magazine also contains resilience-focused and Sexual Assault Prevention and Response (SAPR) content.

~ The Combat Edge

Just wanted to drop you guys a note to let you know I really enjoy your magazine ... I especially like the "Over the Edge" side.

~ T. R.

We appreciate your feedback! We strive to keep our content, throughout the entire magazine, interesting for everyone. Feedback such as yours lets us know if we're on the right track.

~ The Combat Edge

Help us shape your magazine ...

Safety is everyone's business. Hopefully, we are helping. **Let us know what you think.**

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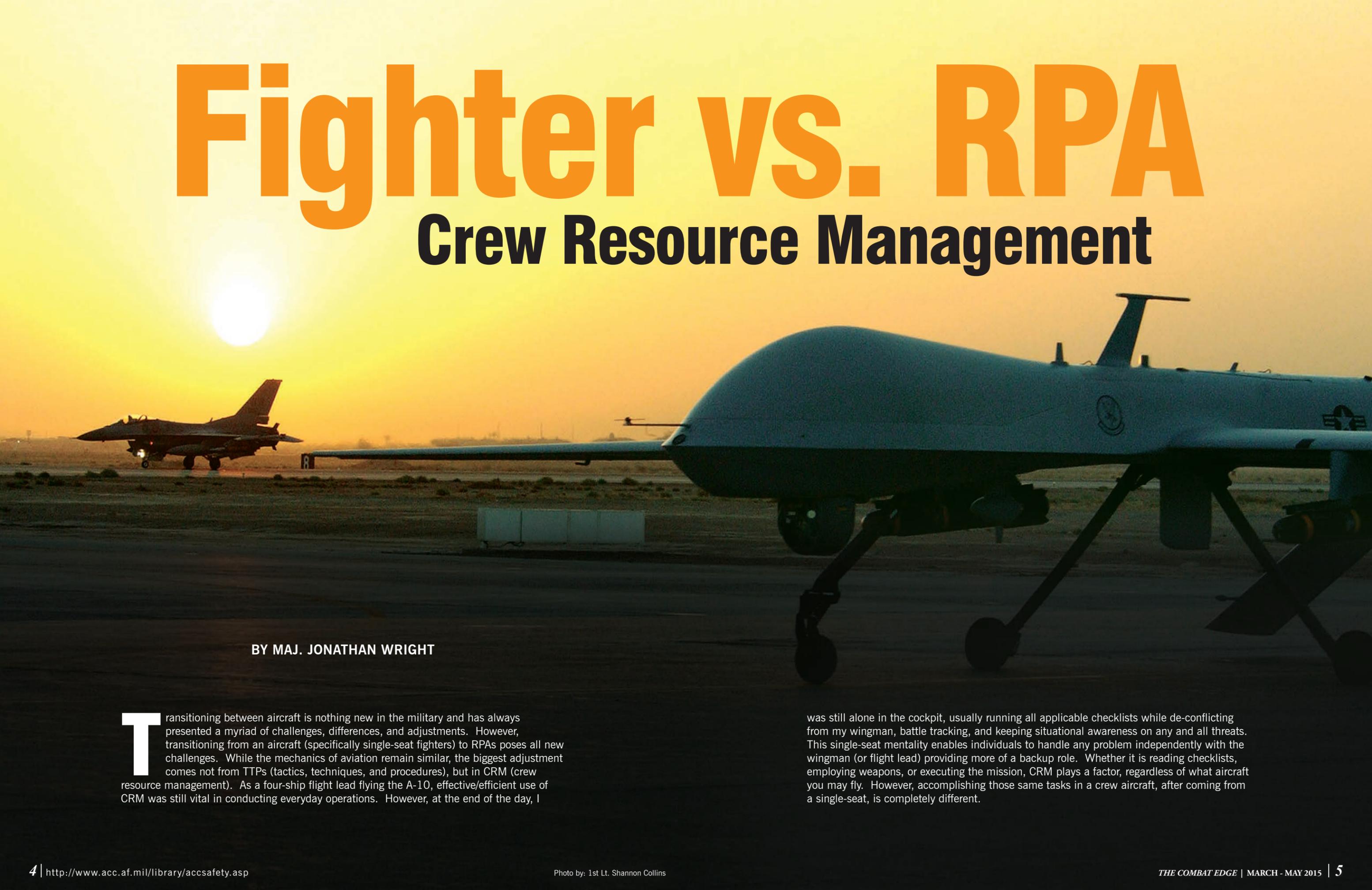
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Capt. Max Alvarado
HQ ACC/SEF and 633 AMDS/SGPT
Joint Base Langley-Eustis, Va.



In memory of
Master Sgt. Andrew Garrett
ACC/SE
Feb 2012 - Dec 2014

Fighter vs. RPA

Crew Resource Management



BY MAJ. JONATHAN WRIGHT

Transitioning between aircraft is nothing new in the military and has always presented a myriad of challenges, differences, and adjustments. However, transitioning from an aircraft (specifically single-seat fighters) to RPAs poses all new challenges. While the mechanics of aviation remain similar, the biggest adjustment comes not from TTPs (tactics, techniques, and procedures), but in CRM (crew resource management). As a four-ship flight lead flying the A-10, effective/efficient use of CRM was still vital in conducting everyday operations. However, at the end of the day, I

was still alone in the cockpit, usually running all applicable checklists while de-conflicting from my wingman, battle tracking, and keeping situational awareness on any and all threats. This single-seat mentality enables individuals to handle any problem independently with the wingman (or flight lead) providing more of a backup role. Whether it is reading checklists, employing weapons, or executing the mission, CRM plays a factor, regardless of what aircraft you may fly. However, accomplishing those same tasks in a crew aircraft, after coming from a single-seat, is completely different.

A specific example of the differences between the two aircraft regarding CRM is handling EPs (emergency procedures) and reading through checklists. In single-seat aircraft, the flight lead (or wingman) may not have the option of a "chase ship" or have another aircraft read the checklist during tactical situations. The responsibility then becomes that of the pilot with the EP. In addition, the checklists are hard copies in the jet and finding the page with the corresponding emergency can be

half the battle. In RPAs, all of the checklists/pubs live on computers within our GCS (ground control station). While being able to "Ctrl+F" to the appropriate checklist is nice, we're still at the mercy of technology (computer speed, random software crashes, etc.). Although we have hard-copy checklists in the GCS as well, most prefer to read the digital copies which include ALL notes/warnings/cautions. This is where CRM becomes a huge factor. In a single-seat, the checklist was

completed as fast as the pilot could read/execute. In a crew aircraft like RPAs, the sensor operators (who are the ones reading the checklist) are trained to read every word of every checklist, unless briefed by the pilot to "skip" while reading certain notes (which comes from a solid understanding of the EP). Needless to say, waiting to complete all the challenge/response items between the crew can be challenging and time consuming when you're used to executing immediately.



Photo by: Airman 1st Class Christian Clausen



Photo by: Staff Sgt. Adawn Kelsey

Another challenge when transitioning from fighters to RPAs is weapons employment. In fighters, the time it takes between "Tally" and weapons impact can range from seconds to minutes depending on the scenario. Even if your wingman isn't Tally on the specific DPI (desired point of impact), this won't impede the flight lead's decision to roll in and take the shot. In RPAs, the SO (Sensor Operator) is the one who actually guides the missile/bomb in, so until the crew is on the same page, the weapon stays on the rail. Since the SO is the one who fires the laser (required for all our current deliveries), the command to "fire the laser" has a tendency to get dropped from the pilot's cross check due to aircraft maneuvering, maintaining a valid WEZ (weapons engagement zone), communication with the supported unit, etc. In fighters, not only were there more options for munitions *not* requiring a laser, but the pilot is the one turning it on/off as well as controlling the TGP (targeting pod). Initially, it can be frustrating coming from a platform where the pilot controls the POD, laser, and weapons to an airframe where they are controlled by someone else. This directly correlates to the attack brief as well. Before, a simple contract between the flight lead/wingman would take about five seconds; "Wedge, shooters, guns, in East, off South, sort West." The attack brief for a crew in RPAs can take much longer because the SO is the one who codes the PRF (laser code), arms the laser, confirms the target/aimpoint, and briefs their track plan. What was done in the mind of one before must now be clearly and concisely understood by a crew.



Photo by: Tech. Sgt. Shad Eidson



Photo by: Staff Sgt. N.B.



Another example of the challenges and differences between communities involves standardization in instructing, specifically at the FTU (Formal Training Unit) level. As RPAs continue to play a bigger role in everyday operations, their mission sets are increasing as well. What started out as an ISR-only platform has evolved into one that executes almost every mission set out there, including CAS, SCAR, and even CSAR. In the fighter FTU, every IP was familiar with every mission set they were instructing, because they've done them all before. However, something

that makes the RPA community unique is the plethora of different backgrounds represented within it. Instructors come from the airlift, tanker, helicopter, bomber, and fighter, communities. Some of the instructors are directly out of pilot training and even straight out of the pipeline. While every individual has had at least one tour flying the MQ-1 or MQ-9, the mission set at their previous base may not have included everything they are required to teach. Therefore, the challenge becomes someone with little to no CAS experience (for example) now instructing students

how to execute. Granted, the instructor upgrade at the FTU is very in-depth and ensures instructors have a full understanding of each mission set BEFORE they become IP or ISOs. The MQ-1/9 FTU is also implementing more focus on the *quality* of instructors through weekly instructor meetings, instructor development sorties, and monthly instructor tests. That said, no other community has IPs instructing how to execute a specific mission set having never done it themselves until going through the IP/ISO upgrade at the FTU. This is **NOT** to say that anyone besides a

“fighter guy” can't teach; however, experience is experience, and having been involved in multiple troops in contact (TIC), CAS with a non-qualified JTAC, and CSAR exercises can provide valuable lessons learned, which is something fighter FTUs have never had to consider.

While the list of challenges, differences, and adjustments could go on forever, the intent was to briefly describe what I consider the biggest issue, in this case, CRM. However, due to the amount of outside agencies being linked-into our GCS like Intel and DGS (distributing ground system), as

well as numerous systems like Zeus, mIRC, SIPR, etc., having a single-seat mentality in an MQ-9 isn't a viable option. Aside from the obvious differences (like the fact that one is manned and the other unmanned), every aircraft abides by TTPs set forth for that mission set. Whether it's the JP 3-09.3, JP 3-50, or any other joint pub, the mission remains the same. It doesn't matter if it's in an A-10 or an MQ-9; the only change is how to effectively/efficiently employ your MWS, regardless of whether it's manned or remotely piloted. 🗡️

Everyone has an important job and plays a vital role. None of us could accomplish the mission without each other. RPAs fulfill vital missions from CONUS, shrink the forward deployed footprint, and take aircrew safety to an unprecedented level. Largely in part because of how few members need to be in place downrange to launch and recover the aircraft. After takeoff, the mission element in the CONUS takes the aircraft and flies it for 20 hours before handing the aircraft back to the launch and recovery element. For an RPA pilot, that 20-hour mission can include the tedious surveillance of a single named area of interest for 16 hours with no movement. In contrast, as a fighter pilot, the entire 20 minutes after “Fights On,” demanded all attention to fly, maintain a cross check on the radar, RWR, control and performance instruments, multi-function display, and situational awareness on flight lead. That kind of focus takes an extreme mental and physical toll. A fighter pilot may have to make as many decisions in one minute of a 20-minute vulnerability window (VUL) as an RPA pilot during an entire eight-hour surveillance mission in a ground control station (GCS). In this type of environment, it is easy to become complacent. Complacency is a natural human response to this kind of under stimulation and a predictable consequence of monotonous RPA ops. On the other hand, because of the less than optimal consideration for human factors and ergonomics that went into building the RPA, the cross check during a strike is divided across eight different screens, a situation that is just as tough and task saturating as any engagement in a fighter.

~ Capt. Adam Bushore
432 WG, Creech AFB, Nev.



**Fatigue: Are You Writing Checks
Your Body
Can't Cash?**

BY COL. DONALD J. BORCHELT and CAPT. MAX ALVARADO

So there I was ... on my very first Atlantic crossing in the F-15C. We had just spent about 36 hours after our first hop from the East Coast to Lajes. We were now on our 10-hour sortie from Lajes Field in the Azores to PSAB, Saudi Arabia, to begin our annual rotation of Operation Southern Watch. Yes, I'm that old.



During ocean transits, a risk-mitigation technique is to arrive at the destination during daylight hours; and when traveling to the east on a long sortie, that usually means a departure in the middle of the night. We left Lajes at 0200 local time after roughly 36 hours on the ground. After an uneventful first couple of hours over the pitch-black Atlantic, we rejoined with our tanker just as the sun was breaking the horizon. We were eastbound crossing into the Mediterranean right over the Straits of Gibraltar. The radio-silent tanker-rejoin with Europe to my left and Africa to my right was a demonstration in “Global Reach-Global Power” I will never forget.

During refueling, our formation flight lead suddenly came up on our inter flight frequency and coolly said: “Everyone take a go-pill, now.” I had slept well during our layover in Lajes and felt rested, but I popped a go-pill and pressed on with the mission. After landing at our destination, it became clear why we were directed to take our fatigue-countermeasure meds: the flight lead had literally dozed off while in the contact position getting gas from the tanker. He drifted out of the contact position, was disconnected, and quickly reawakened when he hit the turbulence behind the tanker. The whole thing lasted less than 10 seconds, but probably took 10 years off the pilot’s life.

The longer I’ve been around the flying business, the more similar stories I’ve heard; I’m sure you have too: Pilots micro napping and drifting out of formation before they could be roused; falling asleep during the mission brief, and even falling asleep in EOR waiting to takeoff. Those with crew backgrounds face different sets of challenges with fatigue as they are more likely to deal with circadian rhythm disruptions when crossing multiple time zones during multi-day missions.

“Back in the day,” we used to accept fatigue as just another manageable risk. We certainly didn’t have to do preflight risk assessments or tell the boss how many hours we slept the night before. I think we also believed that a pilot could “tough it out” and fly while tired, or that coffee, tobacco and a Snickers were suitable substitutes for sleep. Thankfully, those days are long gone. As our knowledge of fatigue has increased, so has our ability to identify risks associated with this threat.

Civil aviation is not exempt from this threat, as the National Transportation Safety Board (NTSB) cited aircrew fatigue as a contributing factor in two recent high-visibility accidents: Asiana Flight 214 landing short and hitting the seawall at San Francisco International Airport and UPS Flight 1354 controlled flight into terrain at Birmingham International Airport.

DoD and civilian maintenance personnel are not exempt from this threat, as fatigue was recently identified as a factor in a helicopter crash that killed the pilot and four tourists in Las Vegas. The NTSB found, “Both the mechanic and quality control inspector, who inspected the maintenance work completed the day before the accident, were likely fatigued ... because they had insufficient time to adjust to working an earlier shift than normal.”

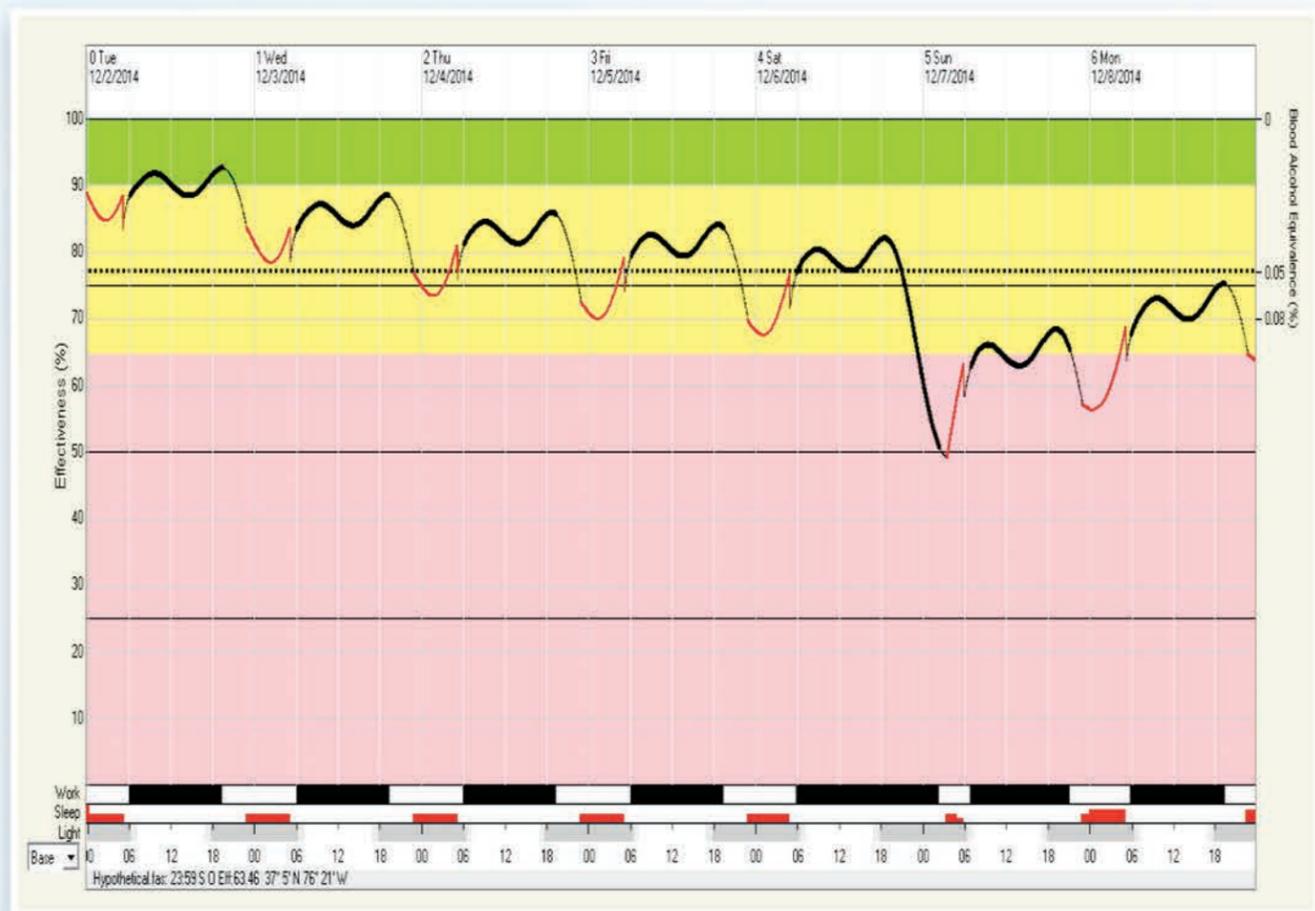
The cost associated with fatigue-related mishaps is well documented, so why does fatigue continue to challenge and degrade our operations? I propose two primary reasons: 1) desire to get the job done, and 2) a lack of understanding regarding how fatigue affects the human weapon system. Specifically, when we combine our 24/7 ops tempo with our doctrine of “owning the night,” we create an ideal environment for fatigue to generate significant risk.

We are internally driven to accomplish our mission; we want to be counted on to achieve results. That internal and external pressure to succeed can easily mask the

effects of fatigue on performance. You may feel good-to-go after a short nap or a couple hours of sleep, so you press on with your mission and daily routine, perhaps not realizing you are inducing increased risk into every task you perform. Your body won’t care how important the mission is, how motivated you are to succeed, how good you think you feel or how simple or routine the task may be to perform. The increased risks associated with fatigue stem from the insidious degradation to your mental effectiveness ... and your effectiveness degrades predictably as quantified in the Fatigue Avoidance Scheduling Tool (FAST).

FAST was developed by the Air Force under the Small Business Innovation Research (SBIR) and is based on the DoD validated Sleep, Activity, Fatigue and Task Effectiveness (SAFTE) model. FAST is a Windows program that allows users to predict the effects of various schedules on human performance (HP) effectiveness, i.e., the impact of fatigue on cognitive function. In addition to identifying elevated risk associated with fatigue, this tool provides an opportunity to insert viable mitigation strategies to improve HP by maximizing work/sleep schedules and identifying optimal type/timing of specific fatigue countermeasures (FAST is also a resource in mishap investigations). The tool assists leaders and individuals when designing work/sleep schedules in order to identify and mitigate fatigue-induced error.

Consider the following scenario: A pilot is deployed to a combat zone. She is averaging five hrs. of sleep per night and is working 9 to 3 hours per day. On day five, her mission goes longer than normal and induces a state of acute fatigue. The individual consumed 200-300mg of caffeine intake per day. She also noted that her sleeping quarters are not typically quiet. The individual also documented four occasions where workouts were completed within three hrs. of initiating sleep. Her daily routine and sleep data was applied to FAST, which produced the following assessment of her cognitive performance:



- **Green Zone:** The green zone on the graph (100% to 90%) is the range of performance during a normal daytime duty day following an eight-hour period of excellent sleep at night.
- **Yellow Zone:** The yellow zone (90% to 65%) is the range of performance during the 24 hour period after missing one night of sleep. While difficult to avoid dropping into this zone during the early morning hours (midnight to 0400), naps and other countermeasures are recommended to keep performance in the top half of the yellow zone, above the heavy dashed criterion line. Performance in the yellow zone below the criterion line represents the performance of a person following loss of an entire night's sleep. The criterion line, represents a point at which fatigue countermeasures should be employed, e.g., caffeine, go-pill, strategic nap, etc.
- **Red Zone:** The red zone (below 65%) indicates performance that is below the level that is acceptable for operations. The red zone represents performance following sleep deprivation of two full days and a night. Reaction time in the red zone is more than double normal.
- The day of the week is along the top, time of day is along the bottom, effectiveness is on the left, and Blood Alcohol Equivalent (BAE) is along the right.

- The curved line indicates the individual's effectiveness as a function of time.
 - Where the line is bolded black indicates a work period.
 - Where the line is bolded red indicates a sleep period.
 - As you can see by the work area within the red zone, the average effectiveness is in the 65% range. That equates to a BAE of .09, above the legal limit for DUI in most states. At one point the pilot reaches 50% effectiveness at the end of the work period on day five. Note: The tool can only forecast the effects of sleep and circadian rhythms on performance and cannot account for other factors that alter performance such as training, experience, motivation, environmental conditions, stress, boredom, illness, or any of a variety of other variables known to affect performance besides fatigue.
- The graphic depiction clearly shows the cumulative effect fatigue has during the week. It also shows how long it can take to recover back to "normal" from a single episode of acute fatigue. As we continue our discussion of fatigue in future editions of the Combat Edge, I ask you to keep in mind your weekly routines. Are you getting enough sleep? What would your FAST graph look like?

TIPS TO FIGHT FATIGUE

1

Keep To A Schedule

Go to bed at the same time each night and wake up at the same time each morning, even on the weekends. Experiment with different bedtimes and wake up times to find your natural sleep cycle.

2

Take Strategic Naps

Keep naps to 30 minutes or less and as a general rule, try to nap no later than 4 to 6 hours before your scheduled bedtime.

3

Power Down Electronics

Cut off electronic devices at least 30 minutes before your set bedtime. Besides keeping your mind stimulated, the lights from an iPad or other electronic devices can make your mind believe it is still day time. Make sure to keep these devices in another room, turn them off or cover up the blue displays. This includes digital clocks and televisions.

4

Dim The Lights

Start dimming lights around the house several hours before bedtime. Change a few light bulbs to a lower wattage; that way you can turn off the brighter lights and still have some light. The lower light level will signal your body to produce melatonin and get ready to go to sleep.

5

Avoid Alcohol Before Bed

While a drink at night may help you fall asleep, alcohol inhibits REM sleep, which is the mental restoration phase of sleep.

6

Avoid Caffeine Before Bed

Avoid caffeinated drinks 4 to 6 hours before bedtime. Caffeine affects people differently, so your cut off time may be a little earlier or later, but 4 to 6 hours is a general rule.

7

Keep Your Bedroom For Sleep

The room you sleep in should be a relaxing space. Avoid working on your computer, paying bills or doing other work in your bedroom. You may also want to remove the pets from your bed. Besides triggering allergies, movement might prevent you from falling or staying asleep.

8

Exercise

Exercise helps reduce anxiety and depression and improves sleep quality. You should exercise early in the day or, at the latest, 3 to 4 hours before your bedtime.

9

Use White Noise

Many people find the sound of a fan or static to be soothing and cover up other nighttime noises that are keeping you awake. Today, there are white noise machines or apps you can turn on while at home, TDY or deployed.

10

Keep Your Room Cool

Most people find they sleep best when the temperature in their room is between 65-75 degrees Fahrenheit, but everyone is a little different. You might want to write the temperature in your sleep journal to see if temperature affects your sleep.



Do You Smell Something Burning?

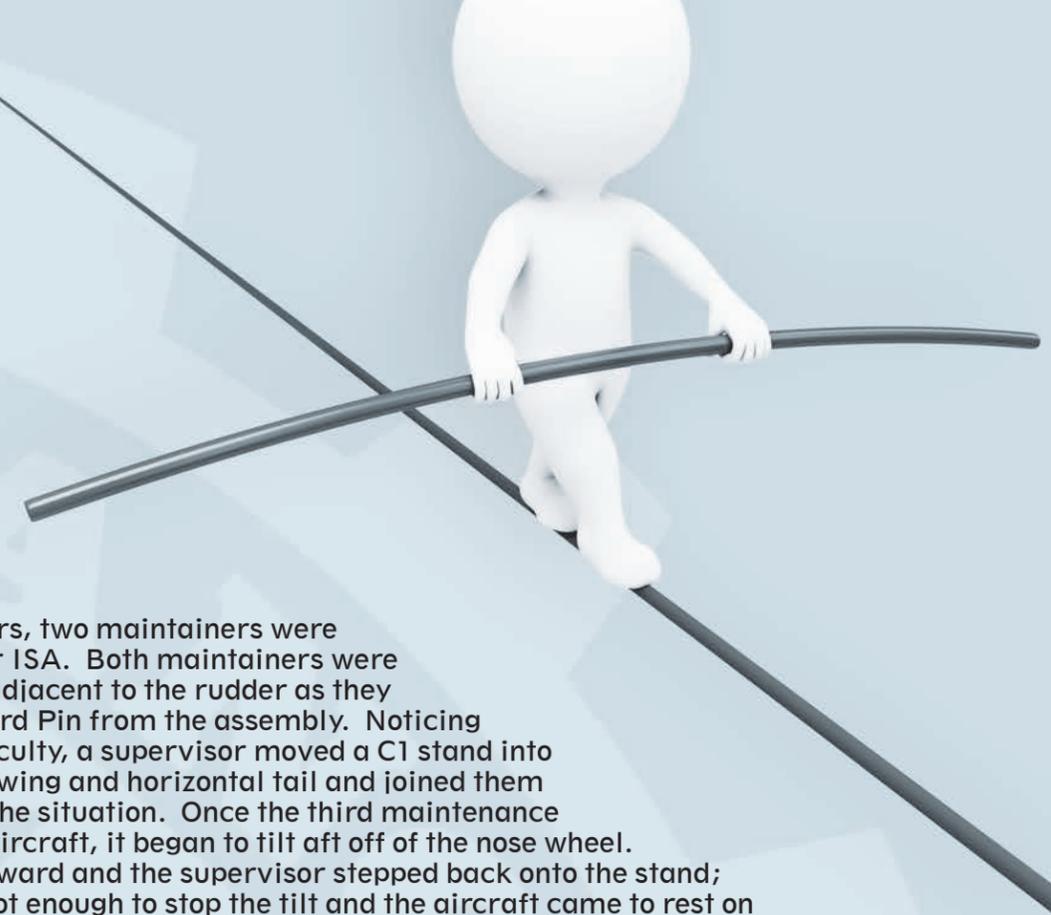
A fully loaded F-16 landed and taxied to de-arm. While in de-arm a fire sparked in the left brake area and blazed for approximately 25 seconds before maintenance crews could extinguish it. The pilot was able to shut down the engine and egressed without injury. The post-fire inspection identified a leak from the Left Brake "Banjo" fitting as the source of fuel to the fire.

Three possible causes of the leak were from 1) under-torque, 2) over-torque, or 3) seal damage. Unit personnel had a common approach to the brake banjo fitting installation—they believed that banjo fittings do frequently leak during post maintenance leak checks and they did not always adhere to the Technical Order directed torque wrench/torque settings. Instead the torque was often applied by "feel." This mishap resulted in \$85,555.00 in damage—fortunately, no one was injured in the event.

Are You Feeling A Little Tippy?

In the early morning hours, two maintainers were removing an F-16 Rudder ISA. Both maintainers were standing on the aircraft adjacent to the rudder as they worked to free the Forward Pin from the assembly. Noticing the two were having difficulty, a supervisor moved a C1 stand into position between the left wing and horizontal tail and joined them on the aircraft to assess the situation. Once the third maintenance member stepped on the aircraft, it began to tilt aft off of the nose wheel. Two members moved forward and the supervisor stepped back onto the stand; unfortunately, this was not enough to stop the tilt and the aircraft came to rest on the engine's augmentor nozzle.

The combined effects of a removed canopy, ejection seat, and no external fuel tanks or pods left the aircraft with an unsafe center of gravity. Despite a Warning in the task for removal of both the canopy and seat to ensure Weight and Balance, personnel calculate the Center of Gravity and determine whether a jack should be installed to prevent aft rotating of the aircraft—no actions were taken. Also, the aircraft was in this unsafe condition for nine full days with one maintainer even noticing the aircraft appeared off balance the day prior to the mishap. This mishap resulted in \$96,005.00 in damage – again, fortunately no one was injured in the event.



What Can We Do About It?

These two mishaps have one obvious similarity. A troubling yet all too common pitfall for maintainers: Tech-order adherence. During fiscal year 2014 in the USAF, 119 mishaps resulted from or involved maintenance actions. Of those, 35 were direct violations of technical order instruction. In fact, for the last five years, the leading cause of maintenance-related mishaps has been technical order violations. **Get out the book each and every time, follow the steps, and obey the notes, warnings and cautions!**

SEXUAL ASSAULT

It Happens.

While the victim is not to blame, it never hurts to arm yourselves with information so you will know your adversary's tactics and what to avoid.

Did You Know?

In The United States ...

- **44%** of victims are under age 18
- **80%** are under age 30
- Every **2** minutes, another American is sexually assaulted
- about **237,868** people are victims of sexual assault each year
- **60%** of sexual assaults are not reported to police
- Approximately **2/3** of assaults are committed by someone known to the victim
- **38%** of rapists are a friend or acquaintance

The Perpetrator's not hiding in the bushes: More than 50% of all rape/sexual assault incidents reported by victims occurred within 1 mile of their home or at their home. Four in 10 take place at the victim's home; 2 in 10 take place at the home of a friend, neighbor, or relative; 1 in 12 take place in a parking garage.

The Criminal: The average age of a rapist is 31 years old. In 1 of 3 sexual assaults, the perpetrator was intoxicated—30% with alcohol, 4% with drugs. Eighty-four percent of victims reported the use of physical force only.

Risk Reduction and Prevention. Common sense, situational awareness, and trusting your instincts will reduce the risk of sexual assault. While you can never completely protect yourself from sexual assault, there are some things you can do to help reduce your risk of being assaulted:

- **Be aware of your surroundings at all times.** Don't allow yourself to be isolated with a person you do not know or trust.
- **Trust your instincts.** If you feel unsafe in any situation, go with your gut. If something doesn't look right it probably isn't; ask the question, "Is everything alright?"
- **When you go to a social gathering, go with a group of friends.** Arrive together, watch out for each other, and leave together. Be a good wingman.
- **If you consume alcohol, do so in moderation.** Don't leave your drink unattended while talking, dancing, using the restroom or making a phone call. If you've left your drink alone, just get a new one. Don't accept drinks from people you don't know or trust.
- **Act and intervene in situations where people may be in jeopardy.** Taking a stand against potential perpetrators of sexual assault can make a difference; because what hurts ONE, affects ALL!

DoD
Safe Helpline
.....
Sexual Assault Support for the DoD Community
safehelpline.org | 877-995-5247



MONTHLY AWARDS

Aircrew Safety Awards of Distinction

CREW OF BATT 12 – 43 ECS, 55 WG, Offutt AFB NE (November 2014)
CAPT. MICHAEL A. DUNN, 1ST LT. BRIJEN PATEL – 427 RS, Beale AFB CA (December 2014)
CREW OF RAILER 36 – 41 EECS, Bagram, Afghanistan (January 2015)

*In memory of
 Mr. Matthew
 LaCourse, winner
 of the ASAOD,
 October 2014*

Crew Chief Safety Awards of Distinction

STAFF SGT. DAKOTA M. BOUGHTON – 723 AMXS, 23 WG, Moody AFB GA (November 2014)
SRA ANTHONY J. DEAN – 380 EAMXS, Al Dhafra AB, U.A.E. (December 2014)
STAFF SGT. WILLIAM N. RISPOLI III – 57 AMXS, 57 WG, Nellis AFB NV (January 2015)

Flight Line Safety Awards of Distinction

SRA TRAVIS A. SCOTT – 23 AMXS, 23 WG, Moody AFB GA (November 2014)
CAPT. PABLO M. PEREZ – 11 RS, Creech AFB NV (December 2014)
STAFF SGT. CHRISTOPHER L. STRAWN – 552 AMXS, 552 ACW, Tinker AFB OK (January 2015)

Ground Safety Awards of Distinction

SRA BRANDON R. ROELL – 379 EMDSS, 379 AEW, Al Udeid AB, Qatar (November 2014)
TECH. SGT. JENNIFER V. LUCAS – 432 WG, Creech AFB NV (December 2014)
TECH SGT. JONATHAN R. FRY – 552 MXS, Tinker AFB OK (January 2015)

Pilot Safety Awards of Distinction

1LT. STEPHEN R. VRABIC – 357 FS, 355 FW, Davis-Monthan AFB AZ (November 2014)
CAPT. SEAN P. O'DONNELL – 77 EFS, Muwaffaq Salti AB, Jordan (December 2014)
1LT. PHILIP A. WEST – 18 RS, 432 WG, Nellis AFB NV (January 2015)

Weapons Safety Awards of Distinction

STAFF SGTs. JASON W. OSTERBERG, JOSEPH A. MANN – 355 CES, Davis-Monthan AFB AZ (November 2014)
TECH. SGT. GENE H. TSCHIDA, STAFF SGT. NOAH M. CHENEY, AIRMAN 1ST CLASS WESTIN J. SHULAR – 9 CES, Beale AFB CA (January 2015)

Unit Safety Awards of Distinction

46TH EXPEDITIONARY RECONNAISSANCE SQUADRON – 386 AEW, Ali Al Salem AB, Kuwait (November 2014)
99TH RECONNAISSANCE SQUADRON – 9 RW, Beale AFB CA (December 2014)
EOD FLIGHT – 405 AEG, Kabul, Afghanistan (January 2015)

QUARTERLY AWARDS

Flight Safety



MAJ. DUANE J. VOLLMER, 4 FW, SEYMOUR JOHNSON AFB NC. During this period, Maj. Vollmer conducted four on-time flight mishap investigations, led the Quarterly Flight Safety meeting for over 250 aircrew, chaired the semi-annual Flight Safety Council for 12 base agencies, and oversaw three USDA wildlife biologists to manage the BASH program for the 4 FW and 916 ARW. In addition to training six rated officers for the 4 FW's innovative local Flight Safety Duty Officer Program, Maj. Vollmer also reached out to the 4 MXG to mentor 18 crew chiefs on operational safety procedures. He extended the Flight Safety program beyond 4 FW by conducting a local civilian airport visit to train aircraft recovery personnel, as well as hosting a Mid-Air Collision Avoidance seminar to brief 34 civilian pilots on SJAFB aircraft operations. He also coordinated with Raleigh-Durham's major civilian airport on new emergency divert procedures for 4 FW aircraft. Maj. Vollmer collaborated directly with SJAFB and local civilian emergency responders during a joint 4 FW/916 ARW/Wayne County Major Accident Response Exercise. As the on-scene FSO and ISB Investigating Officer, he tested and validated the 4 FW Mishap Response Plan, and identified several improvements which were incorporated into the plan. Maj. Vollmer also led an effort to streamline the Reserve 414 FG into the 4 FW Flight Safety program by identifying and training AFRC personnel with safety experience, and directly integrating five new personnel into 4 FW investigation board procedures. Under his leadership, annual Class C aviation mishaps were reduced by 38 percent from FY13—ensuring safe training for new F-15E aircrew and the combat readiness of the 4 FW's 95 Strike Eagles.

Ground Safety



STAFF SGT. JOSHUA R. BUTLER, 556 TES, CREECH AFB NV. Sgt. Butler consistently managed seven safety programs affecting two units with a total of 62 active duty personnel, Nevada National Guard, government civilians, and civilian contractors. He remedied five building hazards—his efforts were deemed flawless during a 99th Air Base Wing safety inspection of the unit's facilities. Sgt. Butler also led the charge for the 53rd Wing Commanders Cup Challenge. He led a six-person team in the production of a safety video that portrayed the 53rd Wing safety initiatives. As the unit motorcycle safety representative, Sgt. Butler conducted five safety briefings for unit motorcycle riders, and insured 100 percent contact with all unit motorcycle riders. He also conducted safety inspections of riders' motorcycles and personal protective equipment. Sgt. Butler ensured a constant safety mindset in the workplace. He maintained the squadron safety board, and also implemented a program called "Mishap Mania Minutes" in order to brief squadron leadership at the weekly standup meetings. He also remedied a potential fire hazard through coordination with host unit maintenance to relocate two portable generators that were immediately adjacent to ground control station exits. As a suitability analyst, Sgt. Butler enabled the testing and fielding of advanced technologies to keep troops in the field safe from harm. One such project which he has been intimately involved with is the OT&E of MQ-9 improvised explosives detection capabilities. This project is of such vital importance that it is Air Combat Commands number two priority on the test priority list.

Weapons Safety



MASTER SGT. ORLANDO CHAVEZ, 436 TS, DYESS AFB TX. Master Sgt. Chavez is a member of a selectively-manned MAJCOM special duty activity with an Air Force-wide readiness and training impact. He developed and presented curriculum based upon USAF, ACC and CCAF policies, procedures and requirements. During this quarter, Sgt. Chavez rejuvenated the Weapons Safety Program Management Course by obtaining and employing an interactive Quantity Distance (QD) calculation database which has greatly improved course material/content. Additionally, he guided over 70 hours of quality instruction and awarded 24 CCAF credit hours, providing the Air Force with 12 highly-trained weapons safety professionals. He was recognized as a premier instructor, received only the highest reviews from end-of-course critiques, and has been commended for his vast knowledge and expertise. Master Sgt. Chavez' significant contributions during this quarter have had a profound impact on the weapons safety community within Air Combat Command and across the United States Air Force.

FY15 Flight As of December 31, 2014			
	Fatal	Aircraft Destroyed	Class A Aircraft Damage
1 AF			
9 AF			
12 AF			
25 AF			
USAFWC			
ANG (ACC-gained)			
AFRC (ACC-gained)			

FY15 Ground As of December 31, 2014			
	Fatal	Class A	Class B
9 AF		2	0
12 AF		3	2
USAFWC		0	0
25 AF		1	0

FY15 Weapons As of December 31, 2014		
	Class A	Class B
9 AF	0	0
12 AF	0	0
USAFWC	0	0

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

Flight Notes

After the safest year in Air Force history, the first quarter of FY15 unfortunately began trending in the wrong direction. In the first three months of the fiscal year, the Air Force lost three F-16s and two MQ-9s. More tragically, the Air Force lost two Air Force members. The last three months should serve as a reminder to accomplish the mission safely by remaining focused for every sortie and exercising vigilance all the way until handing the aircraft over to maintenance.

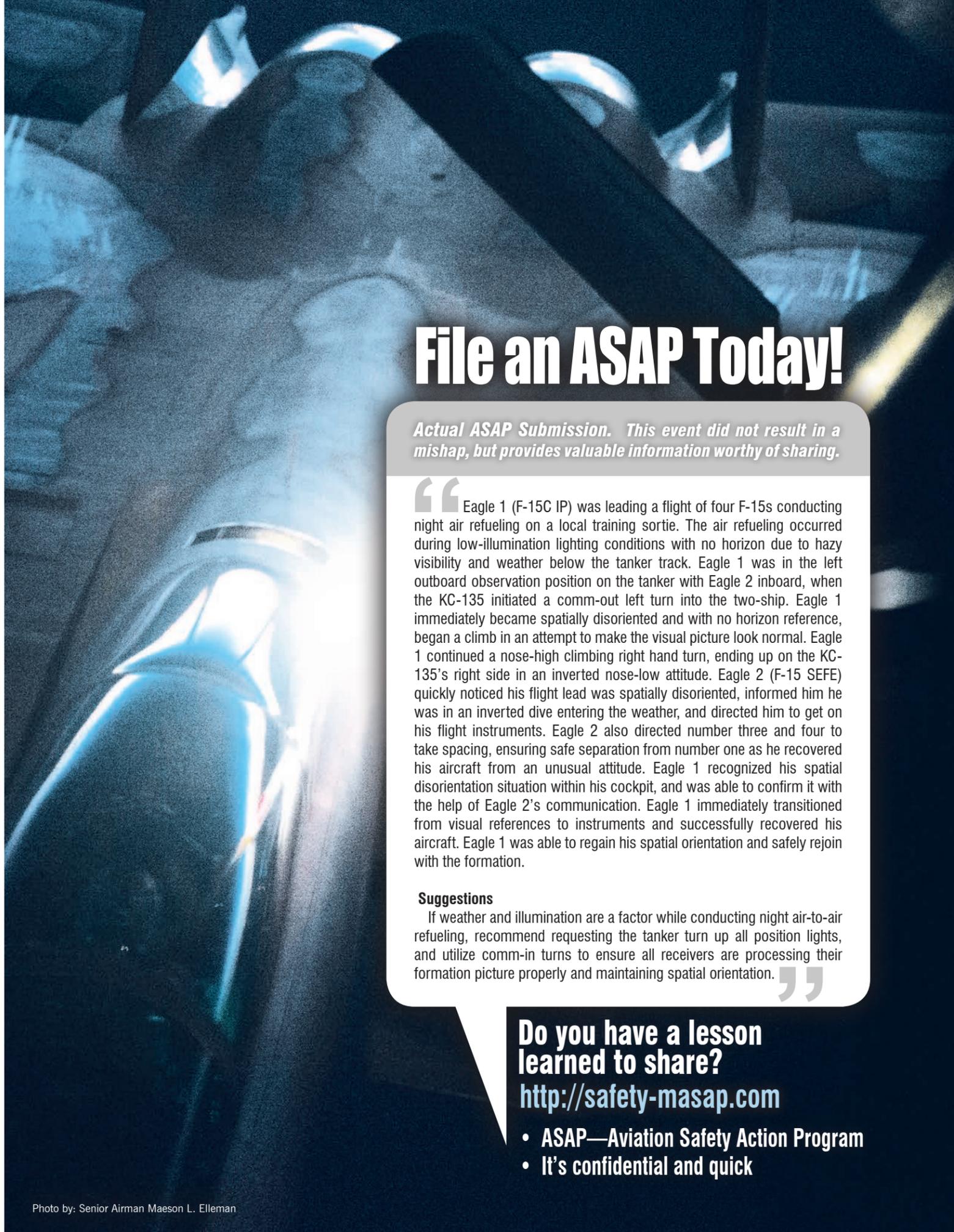
Ground Notes

ACC started out the first quarter of FY15 badly! We had six Class A mishaps compared to only four during this same time last year. Five of the six were motorcycle fatalities compared to only one motorcycle fatality for all of FY14. Did you know, for an active duty Airman to ride a motorcycle on or off base, he must: 1) receive a one-on-one briefing from his unit commander, 2) attend a beginner's rider course, 3) obtain a motorcycle endorsement on his license, 4) check in with the unit's Motorcycle Safety Representative (MSR), and 5) be loaded into the Motorcycle Unit Safety Tracking Tool (MUSTT). There is also an annual briefing and intermediate and refresher training that will follow. Please see your unit's MSR for more details.

Weapons Notes

Over the years, weapons system technology has become more advanced, safer and more reliable. However, human factors continue to impact our mishap numbers and plague our safety arena. Our community continues to do an excellent job preventing mishaps, as evidenced by the last quarter of FY14—we experienced only one Class C and one Class E mishap. FY14 mishap numbers decreased 45 percent from FY13. Stay on this mishap reduction path by making FY15 an even better year. Thanks for your hard work and efforts mitigating mishaps in ACC.

Symbols for Mishap Aircraft



File an ASAP Today!

Actual ASAP Submission. This event did not result in a mishap, but provides valuable information worthy of sharing.

“Eagle 1 (F-15C IP) was leading a flight of four F-15s conducting night air refueling on a local training sortie. The air refueling occurred during low-illumination lighting conditions with no horizon due to hazy visibility and weather below the tanker track. Eagle 1 was in the left outboard observation position on the tanker with Eagle 2 inboard, when the KC-135 initiated a comm-out left turn into the two-ship. Eagle 1 immediately became spatially disoriented and with no horizon reference, began a climb in an attempt to make the visual picture look normal. Eagle 1 continued a nose-high climbing right hand turn, ending up on the KC-135's right side in an inverted nose-low attitude. Eagle 2 (F-15 SEFE) quickly noticed his flight lead was spatially disoriented, informed him he was in an inverted dive entering the weather, and directed him to get on his flight instruments. Eagle 2 also directed number three and four to take spacing, ensuring safe separation from number one as he recovered his aircraft from an unusual attitude. Eagle 1 recognized his spatial disorientation situation within his cockpit, and was able to confirm it with the help of Eagle 2's communication. Eagle 1 immediately transitioned from visual references to instruments and successfully recovered his aircraft. Eagle 1 was able to regain his spatial orientation and safely rejoin with the formation.”

Suggestions

If weather and illumination are a factor while conducting night air-to-air refueling, recommend requesting the tanker turn up all position lights, and utilize comm-in turns to ensure all receivers are processing their formation picture properly and maintaining spatial orientation.”

Do you have a lesson learned to share?

<http://safety-masap.com>

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



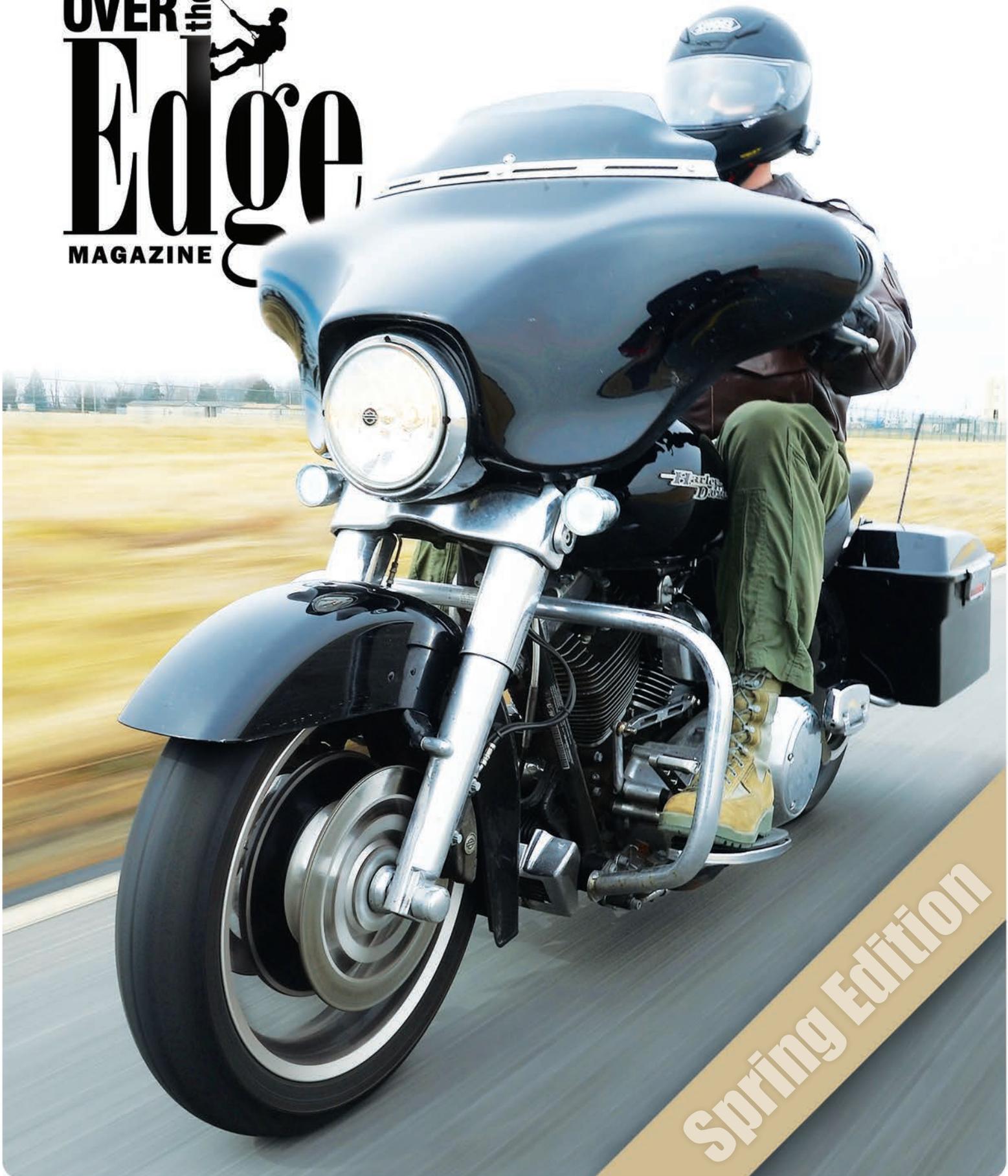
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Ride PAGE 10

OVER the Edge MAGAZINE



Spring Edition



What's A Common Cause In Too Many Tragedies?

fa·tigue
/fə'tēg/

noun

extreme tiredness, typically resulting from mental or physical exertion or lack of rest. "he was nearly dead with fatigue" (see left)

Did You Know? If you experience sleep loss, the effect is cumulative and your body carries a sleep "debt." *The only solution is sleep!* A large debt may require several days of proper sleep cycles for your body to fully recover.



4 | YEAR-ROUND MOTORCYCLE MISHAP PREVENTION

by Master Sgt. Jason D. Scott
480 ISR Wing, Joint Base Langley-Eustis, Va.

6 | MOTORCYCLE MUSTS

by Master Sgt. William G. Dwyer
192 FW, Joint Base Langley-Eustis, Va.

10 | READY, SET, RIDE

by Master Sgt. Eric R. Haselby
HQ ACC/SEW, Joint Base Langley-Eustis, Va.



Year-Round Motorcycle

Mishap Prevention

BY MASTER SGT. JASON D. SCOTT

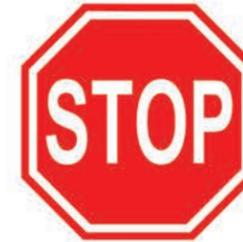
As of 3 December 2014, there are 32,924 motorcycle riders registered in the Air Force Motorcycle Unit Safety Tracking Tool (MUSTT). Since 1 October 2013, our AF has experienced 242 reportable mishaps involving PMV2s (i.e. motorcycles); 17 of these resulted in death, 3 in permanent partial disability, and the other 221 had injuries with recovery times ranging from days to weeks, many requiring some type of surgery. These mishaps are a matter of significant concern for all of us. Every injury resulting in lost workdays or loss of life reduces our combat capability. Each year, the Air Force sees an increase in PMV2 mishaps during the spring, a period of concern referred to as the "Spring Spike," and although for most of us the onset of warmer weather is a blip on the horizon, it is imperative that we do everything we can to educate and encourage our riding population to exercise their best judgment year round.

We could respond by quoting chapter and verse from our governing regulations (DoDI 6055.04, AFI 91-207, applicable MAJCOM/Installation Supplements, and local state/host nation traffic laws); however, let's try something different in this case. With the global distribution of our Air Force, here are four simple techniques that can be applied universally and year round, regardless of environment. Even if a rider is "doing everything right" IAW the applicable regulations, applying these four techniques can give riders an additional edge against the unique hazards presented while operating a motorcycle.



Speed

Adjust your speed for the appropriate situation. No matter how often this is emphasized, a major contributing factor in all motorcycle mishaps is excessive speed. To be very clear about something, a rider does not have to be 'speeding' (i.e. above the posted speed limit) for speed to be a causal factor in a safety investigation. Causal factors are not dependent on whether somebody would have received a traffic citation. If a rider is going too fast to stop or otherwise avoid a collision, then speed IS a contributing factor, and one the rider has control over.



Braking Distance

When adjusting speed for the situation, adjust following/braking distance based on the change in speed. Speed is directly related to braking distance; the faster you are travelling the more braking distance you need. A rider should always allow enough following distance to safely brake in the worst-case scenario (i.e. EXPECT the vehicle in front of you to slam on their brakes at ANY second). Following distance is also directly under the control of the rider.



Situational Awareness

Increased situational awareness is needed when *approaching* intersections. (*Before physically entering the intersection*) Situational awareness is critical to being able to make good decisions. Collisions frequently occur because one, or both vehicles didn't fully assess the traffic situation. As they approached an intersection, they looked left but not right, accelerated rather than gently applied brakes when the light changed yellow, or applied brakes at the last second because they hesitated before choosing to stop, often because they weren't paying attention as well as they ought to have been during their approach. This 'approach assessment' can be done by simply releasing the accelerator and coasting during approach while scanning ahead, and to both sides. This will give the rider time to identify the hazards in and around the intersection, and then make an informed decision about whether to proceed, stop, or turn.



Surface Hazards

Finally, many single motorcycle accidents are attributed to 'loss of control', usually after the rider passes through a patch of sand, gravel, mud, ice, or snow. Encourage riders to approach EVERY turn expecting to encounter some form of slippery surface. Slow down before the turn, and then after entering the turn and verifying surface conditions are good, gradually accelerate through the turn.

Contact your host Safety office for information about motorcycle safety activities in your areas, and encourage your riders to participate. Continue to work with your Motorcycle Safety Representatives to maintain a robust motorcycle safety program within your units and to answer any questions regarding your unit motorcycle safety program.



Motorcycle Musts

Stuff I Learned That Nobody Thinks Of For Some Reason

BY MASTER SGT. WILLIAM G. DWYER

- **Check your turn signals**

— Motorcycle turn signals usually don't turn themselves off. After every turn, make sure they are off even if you have self-cancelling signals. Think about all those times someone pulled out in front of your car as soon as they saw your turn signal, before you actually started to turn. That's the same thing that happens when you're riding along on your motorcycle with your turn signal on. Not every driver took Driver's Ed and knows turn signals are not the go ahead to pull out and that you should wait until the oncoming vehicle actually starts turning, commits to the turn, to pull out.

- **Get out of blind spots**

— Never, never, never ride in a car's blind spot that magically rear corner where you cease to exist, because you aren't in any of the mirrors. Furthermore, do not ride along next to a car if there

is any way to avoid it. Hit the gas and get past them or let them get in front of you. If they have to turn their head to see you, they won't.

- **Assume every car is going to pull out in front of you**

— Some say ride like you're invisible. I say go a step further. If you ride with a cynical mindset that every driver doesn't like you and they are going to pull out in front of you on purpose, and you prepare to react accordingly, it's less likely you'll be surprised and find yourself flipping over your handle bars while looking into the surprised facial expression of the driver who pulled out in front of you. Who's surprised now?

- **Tires** — I went on a unit ride once and listened to an Airman expound upon how he was so safe because he only rode with two other people, ever, because he didn't trust anybody and their obviously inferior skills. Meanwhile, every single rider who walked past his bike and saw the tires with no tread, cord showing and dry rot, got pained expressions on their faces. We decided to pull into a dealership along the route and we all pitched in a couple bucks to get this guy new tires before he got himself and somebody else killed.

- **Spend money** — Motorcycling isn't cheap. Or rather, don't be cheap if you're a motorcyclist. Buy quality gear. When the moment comes, you'll know what moment I'm talking about when it happens, it will make all the difference. Besides the obvious good helmet, thick leather, armor, etc. things like good cold weather gear are more important than you think. If you're freezing cold, it's difficult to keep your mind on anything other than the fact that you're freezing cold. Not to mention if you're truly hypothermic, you're brain isn't working right anyway. Gloves are the most underappreciated

piece of cold weather gear. I was on a ride in England in February on a motorway for nearly an hour. When we got off of the motorway four of the bikes almost crashed. It was at that point the riders realized their hands were frozen meat and they couldn't work the front brake or clutch and could barely even roll off the throttle. Get gloves that go over the sleeves to keep the cold air from going up your sleeves. At the end of the day, you need to accept that you're going to need two sets of gear, one for cold and one for heat.

- **Don't have a bike yet? Start buying your gear now** — I've seen it time and time again. Somebody wants to buy themselves a motorcycle. They get all excited and scrape together enough for a down payment and then they can't ride because they realize they need another \$500-\$1000 or more to buy all the gear, e.g. helmet, jacket, etc. If you plan ahead you can buy your gear one piece at a time, when it's on sale, so when the time comes to buy your ride you can actually get on it and go.



Lessons From A Close Call

I was riding with about a dozen other bikes out to Myrtle Beach one weekend, when one rider narrowly escaped a trip to the hospital. We were riding on a four lane, divided highway which had opposing lanes of traffic separated by a grassy median/drainage ditch which was about six feet deep with sloped sides. I use the term "highway" loosely as there were parking lots and side streets that had direct access without on or off ramps. There were also crossover points which allowed traffic to cross the median to the other side of the highway. The speed limit was 55 mph and cars were going in every direction with no traffic lights.

The bikes were in a loose, staggered formation in the left lane and I was the third bike, hugging the left side of the lane with the first bike in front of me. A car pulled in front of us from the right lane but its turn signal stayed on after it changed lanes. Looking ahead, there was a crossover coming up. All of the bikes moved over into the right lane except the first bike. That's when it happened. The car hit the brakes. The brake light on the bike came on for a second then went off and the bike swerved around the left side of the car just as the car started to turn left into the crossover. The bike almost got by but the bumper impacted the right side of the bike and deflected the bike's trajectory off the road, into the grass and down into the ditch-like median. At this point I was pretty sure we

were going to the nearest hospital. Then, much to my surprise and almost like something out of a movie, the bike, with rider still on board, reappeared, coming up out of the grassy ditch and back onto the pavement.

We all pulled over as soon as we could to assess the damage and calm down. The rider was fine. It turned out the point of impact was behind his leg and the only noticeable damage was the crushed right muffler, a pricey Vance and Hines which had just recently been installed on the bike. Like a true motorcyclist, the rider's primary concern was the damage to his bike. Once that was assessed, it was time to freak out about the rider almost getting killed.

- **Situational Awareness is paramount.** None of this would have happened if the rider had been paying attention to what was happening around him. He failed to notice the turn signal and the crossover coming up. The probability that the car was turning and would have to slow down to make that turn was there for all to see, and everyone saw it except him.

- **Know your bike's limits and have the skills to exploit those limits when needed.** First, he tried braking but lost confidence and decided to swerve around the car. He wasn't that close to the car when the brake lights came on. He realized, in retrospect, that he could have stopped in time. Swerving is risky business.

- **Update your defense plan in real time.** This is situational awareness part two. When you ride down any road you need to see every vehicle moving in every direction, or even not moving at all, and think to yourself, "What am I going to do if that car does X?" Nothing should really be a surprise; expect every car to do the wrong thing. He decided to swerve left, putting himself in the path of the car's turn instead of to the right because he didn't want to cut off another bike, throwing himself on the proverbial grenade.

We eventually made it to Myrtle Beach without further incident and enjoyed ourselves the rest of the weekend. A crushed muffler did not crush our spirits, but it did remain a physical reminder to all of us that motorcycle riding is full of inherent dangers.



SO NOW WHAT ... HOW DO I CHECK 3?

Regardless of your experience, knowledge, skills or abilities, always be sure to check your Gear, Plan and Skills before an activity.

Gear: Is your gear in good working order

- Check your brakes and tires before riding.
- Be sure to ride with a helmet, gloves and any other proper PPE suitable for the trip.
- Consider high visibility attire (regardless of the time of day).
- Check the overall condition of your motorcycle—headlights, oil, etc.

Plan: Plan your ride/trip

- Be prepared for the weather (hot or cold).
- Know the terrain you will be riding in (sand, gravel, ice or snow).
- Have a defensive plan of action.
- Always consider the two Ds ... Duration and Distance (plan outside of range).
- Have a way to communicate with other riders (if riding in a group) and in case of emergency (if riding alone).
- Don't drink and drive and always obey the laws!

Skills: Ensure your skills are up to the activity

- Complete all required/necessary training (i.e., MSF Basic Rider Course).
- Understand/know the risks associated; be prepared to mitigate any hazards.
- Never ride in a car's blind spot; watch your speed and braking distance.
- Make sure you're well rested; riding while fatigued is a dangerous combination!

Before you venture out on your trip, always let someone know where you're going and your expected time of return. Don't push your limits too far ... know your limitations and your bike's limits! Situational awareness is paramount—be aware of your surroundings at all times. Checking 3 before can keep you safe to ride another day! ~ Ed.





READY SET RIDE

BY MASTER SGT. ERIC R. HASELBY

Almost everyone knows of the risks and dangers involved with operating a motorcycle. However, motorcycles are not the only two-wheeled vehicles that have proven to be a dangerous mode of transportation. According to a 2014 National Highway Traffic Safety Administration report, 49,000 cyclists were injured and 726 cyclists lost their lives during traffic accidents in 2012, a six percent increase from the 682 fatalities in 2011. So, before you knock the dust off the bike and go for your first spring ride, here are some tips to help you stay safe.

Like the motorcycle "TCLOCK" inspection, bicycles need to be periodically checked to ensure your safety. A full inspection of the handlebars, pedals, saddle, brakes, grips, frame, fork, reflectors/lights, chain, wheels, and tires is warranted after being stored for long periods of time, and periodically, throughout the riding season. A quick "A, B, C, D" check should be accomplished each time you ride.

- A** Air – Is the tire pressure correct?
- B** Brakes – Do the brakes operate properly? Are the pads in good condition?
- C** Chain – Is the chain tight, straight, clean, and lightly oiled?
- D** Drop – Raise the bike about two inches and drop it. Are there any loose items or funky noises?

According to the Bicycle Helmet Safety Institute, wearing a proper fitting helmet could prevent 85 percent of cyclists head injuries. If you want to make sure you are protecting your noggin to the best of your abilities, try following these easy tips:

- Check the box to ensure the helmet meets or exceeds the Consumer Product Safety Commission standards. A CPSC sticker should also be inside the helmet.
- Most helmets are designed for "single use," meaning they may not provide adequate protection once they have been involved in a crash. If yours is damaged, don't risk it; buy a new helmet.
- Our heads are different sizes and shapes, so avoid the "one size fits all" helmets. Be sure to try on different sizes to ensure the proper fit. Helmets should fit low, level, and snug. The helmet should cover the majority of your forehead and sit level on your head. The chin strap should be tightened so it is snug beneath your chin (you should only be able to fit one finger between the strap and your chin). Try to move the helmet back and forth; if it moves more than an inch, you need to tighten it, or try a smaller size.
- Check your helmet fit often. Give your helmet the wiggle check to ensure the chin strap has not loosened over time.



Once you have deemed your bicycle and safety gear is properly working, you are ready to ride. Unfortunately, this is where the majority of mistakes by both cyclists and drivers are made. To keep from becoming a bicycling accident statistic, follow these rules and tips:

- **Just like Mom and Dad said, look both ways** – Cyclists often fail to check for approaching vehicles prior to entering a roadway. Remember, the driver has the right-of-way and it is your responsibility to yield accordingly.
- **Ride in a straight, predictable line** – Swerving from the shoulder into the traffic lane without checking for traffic or providing drivers with a hand signal is a recipe for disaster.
- **Go with the flow** – Always ride WITH traffic, not against it.
- Follow traffic rules – Be sure to stop or yield when required. Unless local laws deem otherwise, cyclists are required to follow the same rules of the road as motorists.
- **Be seen** – Know that you are much smaller than a car, and more difficult to see. Do your part to be seen. Bright colors and flashing lights may look silly to some, but they have been proven to save lives.
- **Be alert, be aware** – Ensure you are constantly looking and listening. Fancy dark sunglasses and MP3 players can inhibit two of your defenses, leading to your injury or death. Find suitable eye protection for your ride, and ditch the tunes.

Even with your bike and PPE in perfect operating order, Murphy's Law will eventually find you. Be prepared for whatever you may encounter during your ride. Here are some basic suggestions to carry in a pocket, saddle bag, or backpack:

- **Patch kit, tubes, and tire levers** – A flat tire is inevitable, be prepared.
- **Multi-tool** – A small multi-tool is worth its weight in gold when you are stranded in the middle of nowhere and need an Allen wrench or screw driver.
- **Cash** – Always have a few dollars cash with you, not everyone takes cards these days. And, a bill can be used to temporarily repair a punctured tire.
- **Cell phone** – You won't find a pay phone! Besides, you take it to the bathroom with you, why would you not take it on a bike ride?



Before you head out on that first ride of the year, be sure to

"Check Three, GPS"

- **Gear** – Make sure your bike, PPE, clothing, and food/water supplies are appropriate for the ride.
- **Plan** – Check the weather report for the area, make sure someone knows where you will be riding, and when you plan on returning. Carry enough water and food for the trip.
- **Skills** – Be familiar with your bike and the terrain and practice risk management appropriately.

Photo by: Senior Airman Kayla Newman



Some may consider these tips common sense. Unfortunately, the minute you let your guard down is when these common sense tips become not so common. Do your part to promote safe cycling, and let's strive for a mishap-free 2015!